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The Business of Innovation

US ARMY CORPS
OF ENGINEERS
New England District

Contract No. DACW33-01-D-0004
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August 2004

INTERIM-FINAL BASELINE HUMAN HEALTH RISK ASSESSMENT

VOLUME III OF III

Centredale Manor Restoration Project Superfund Site North Providence, Rhode Island

SDMS DocID 000206665

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APPENDIX E

RISK CHARACTERIZATION SUPPORT INFORMATION

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TABLE R.1
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - COMBINED FISH DIET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
BIOTA	COMBINED FISH DIET	LYMAN MILL POND	INGESTION	Acenaphthylene	0.002	mg/kg	NC		NC			3.8E-07	mg/kg/day	6.0E-02	mg/kg/day	6.E-06
				Benzo(a)anthracene	0.00443	mg/kg	1.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	8.5E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(a)pyrene	0.00545	mg/kg	1.8E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	1.0E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(b)fluoranthene	0.003	mg/kg	9.9E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-08	5.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	0.00426	mg/kg	NC		NC			8.2E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Dibenzo(a,h)anthracene	0.0012	mg/kg	3.9E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	2.3E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Indeno(1,2,3-cd)pyrene	0.00499	mg/kg	1.6E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	9.6E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Phenanthrene	0.014	mg/kg	NC		NC			2.7E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				4,4'-DDD	0.027	mg/kg	8.9E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	2.E-07	5.2E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				4,4'-DDE	0.08941	mg/kg	2.9E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	1.7E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				4,4'-DDT	0.003	mg/kg	9.9E-08	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-08	5.8E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				alpha-Chlordane	0.02	mg/kg	6.6E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	3.8E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				Aroclor-1254	2.13	mg/kg	7.0E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-04	4.1E-04	mg/kg/day	2.0E-05	mg/kg/day	2.E+01
				Aroclor-1268	0.0215	mg/kg	7.1E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-06	4.1E-06	mg/kg/day	2.0E-05	mg/kg/day	2.E-01
				beta-BHC	0.0008	mg/kg	2.6E-08	mg/kg/day	1.8E+00	(mg/kg/day)-1	5.E-08	1.5E-07	mg/kg/day	3.0E-04	mg/kg/day	5.E-04
				Dieldrin	0.0057	mg/kg	1.9E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.E-06	1.1E-06	mg/kg/day	5.0E-05	mg/kg/day	2.E-02
				gamma-Chlordane	0.013	mg/kg	4.3E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	2.5E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				Heptachlor Epoxide	0.0014	mg/kg	4.6E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	4.E-07	2.7E-07	mg/kg/day	1.3E-05	mg/kg/day	2.E-02
				Technical Chlordane	1.02	mg/kg	3.4E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	2.0E-04	mg/kg/day	5.0E-04	mg/kg/day	4.E-01
				Arsenic	0.024	mg/kg	7.9E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	4.6E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
				Cadmium	0.017	mg/kg	NC		NC			3.3E-06	mg/kg/day	1.0E-03	mg/kg/day	3.E-03
				Chromium	0.197	mg/kg	NC		NC			3.8E-05	mg/kg/day	3.0E-03	mg/kg/day	1.E-02
				Lead	0.33	mg/kg	1.1E-05	mg/kg/day	--			6.3E-05	mg/kg/day			
				Manganese	4.31	mg/kg	NC		NC			8.3E-04	mg/kg/day	1.4E-01	mg/kg/day	6.E-03
				Mercury	0.141	mg/kg	NC		NC			2.7E-05	mg/kg/day	3.0E-04	mg/kg/day	9.E-02
				Mercury (methyl)	0.127	mg/kg	NC		NC			2.4E-05	mg/kg/day	1.0E-04	mg/kg/day	2.E-01
				Toxicity Equivalency (PCB Congeners)	0.0000405	mg/kg	1.3E-09	mg/kg/day	1.0E+06	(mg/kg/day)-1	1.E-03	7.8E-09	mg/kg/day			
				Toxicity Equivalency (Dioxins/Furans)	0.00037	mg/kg	1.2E-08	mg/kg/day	1.0E+06	(mg/kg/day)-1	1.E-02	7.1E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-02					2.1.E+01
		EXPOSURE POINT TOTAL									1.E-02					2.1.E+01
	EXPOSURE MEDIUM TOTAL										1.E-02					2.1.E+01
COMBINED FISH DIET TOTAL											1.E-02					2.1.E+01
							TOTAL RECEPTOR RISK ACROSS ALL MEDIA				1.E-02	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				2.1.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

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TABLE E.2
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - COMBINED FISH DIET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
BIOTA	COMBINED FISH DIET	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	6.4E-06	NA	NA	6.4E-06
			Benzo(a)anthracene	1.1E-07	NA	NA	NA	1.1E-07	Kidney	2.8E-05	NA	NA	2.8E-05
			Benzo(a)pyrene	1.3E-06	NA	NA	NA	1.3E-06	Kidney	3.5E-05	NA	NA	3.5E-05
			Benzo(b)fluoranthene	7.2E-08	NA	NA	NA	7.2E-08	Kidney	1.9E-05	NA	NA	1.9E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	2.7E-05	NA	NA	2.7E-05
			Dibenzo(a,h)anthracene	2.9E-07	NA	NA	NA	2.9E-07	Kidney	7.7E-06	NA	NA	7.7E-06
			Indeno(1,2,3-cd)pyrene	1.2E-07	NA	NA	NA	1.2E-07	Kidney	3.2E-05	NA	NA	3.2E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	8.9E-05	NA	NA	8.9E-05
			4,4'-DDD	2.1E-07	NA	NA	NA	2.1E-07	Liver	1.0E-02	NA	NA	1.0E-02
			4,4'-DDE	1.0E-06	NA	NA	NA	1.0E-06	Liver	3.4E-02	NA	NA	3.4E-02
			4,4'-DDT	3.4E-08	NA	NA	NA	3.4E-08	Liver	1.2E-03	NA	NA	1.2E-03
			alpha-Chlordane	2.3E-07	NA	NA	NA	2.3E-07	Liver	7.7E-03	NA	NA	7.7E-03
			Aroclor-1254	1.4E-04	NA	NA	NA	1.4E-04	Immune system	2.0E+01	NA	NA	2.0E+01
			Aroclor-1268	1.4E-06	NA	NA	NA	1.4E-06	Immune system	2.1E-01	NA	NA	2.1E-01
			beta-BHC	4.7E-08	NA	NA	NA	4.7E-08	Liver / Kidney	5.1E-04	NA	NA	5.1E-04
			Dieldrin	3.0E-06	NA	NA	NA	3.0E-06	Liver	2.2E-02	NA	NA	2.2E-02
			gamma-Chlordane	1.5E-07	NA	NA	NA	1.5E-07	Liver	5.0E-03	NA	NA	5.0E-03
			Heptachlor Epoxide	4.2E-07	NA	NA	NA	4.2E-07	Liver	2.1E-02	NA	NA	2.1E-02
			Technical Chlordane	1.2E-05	NA	NA	NA	1.2E-05	Liver	3.9E-01	NA	NA	3.9E-01
			Arsenic	1.2E-06	NA	NA	NA	1.2E-06	Skin	1.5E-02	NA	NA	1.5E-02
			Cadmium	NC	NA	NA	NA		Kidney	3.3E-03	NA	NA	3.3E-03
			Chromium	NC	NA	NA	NA		NOAEL	1.3E-02	NA	NA	1.3E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	5.9E-03	NA	NA	5.9E-03
			Mercury	NC	NA	NA	NA		Immune system	9.0E-02	NA	NA	9.0E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.4E-01	NA	NA	2.4E-01
			Toxicity Equivalency (PCB Congeners) - Mam	1.3E-03	NA	NA	NA	1.3E-03		--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.2E-02	NA	NA	NA	1.2E-02		--	NA	NA	
			CHEMICAL TOTAL	1.4E-02	--	--	--	1E-02		2.1E+01	0.0E+00	--	2.1E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-02					2.1E+01
	EXPOSURE MEDIUM TOTAL							1E-02					2.1E+01
COMBINED FISH DIET TOTAL								1E-02					2.1E+01
RECEPTOR TOTAL								1E-02					2.1E+01

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TABLE E.2
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - COMBINED FISH DIET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			TOTAL RISK ACROSS ALL MEDIA					1E-02	TOTAL HAZARD ACROSS ALL MEDIA				2.1E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

	--
	--
TOTAL DEVELOPMENTAL TOXICITY HI =	2.4E-01
	--
	--
	--
	--
TOTAL IMMUNE SYSTEM HI =	2.1E+01
TOTAL KIDNEY HI =	4.0E-03
TOTAL LIVER HI =	4.9E-01
	--
	--
TOTAL NOAEL HI =	1.8E-02
	--
TOTAL SKIN HI =	1.5E-02
	--

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TABLE E-3
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - COMBINED FISH DIET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
BIOTA	COMBINED FISH DIET	LYMAN MILL POND	INGESTION	Acenaphthylene	0.002	mg/kg	NC		NC			2.4E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				Benzo(a)anthracene	0.00443	mg/kg	3.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	5.4E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	0.0022	mg/kg	1.5E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	2.7E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				Benzo(b)fluoranthene	0.003	mg/kg	2.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	3.7E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	0.0017	mg/kg	NC		NC			2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Dibenzo(a,h)anthracene	0.0012	mg/kg	8.4E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-08	1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Indeno(1,2,3-cd)pyrene	0.0019	mg/kg	1.3E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	2.3E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Phenanthrene	0.014	mg/kg	NC		NC			1.7E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				4,4'-DDD	0.027	mg/kg	1.9E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	5.E-08	3.3E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				4,4'-DDE	0.08941	mg/kg	6.2E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	1.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDT	0.003	mg/kg	2.1E-08	mg/kg/day	3.4E-01	(mg/kg/day)-1	7.E-09	3.7E-07	mg/kg/day	5.0E-04	mg/kg/day	7.E-04
				alpha-Chlordane	0.02	mg/kg	1.4E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-08	2.4E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				Aroclor-1254	2.13	mg/kg	1.5E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-05	2.6E-04	mg/kg/day	2.0E-05	mg/kg/day	1.E+01
				Aroclor-1268	0.0215	mg/kg	1.5E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-07	2.6E-06	mg/kg/day	2.0E-05	mg/kg/day	1.E-01
				beta-BHC	0.0008	mg/kg	5.6E-09	mg/kg/day	1.E+00	(mg/kg/day)-1	1.E-08	9.8E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				Dieldrin	0.0057	mg/kg	4.0E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	6.E-07	6.9E-07	mg/kg/day	5.0E-05	mg/kg/day	1.E-02
				gamma-Chlordane	0.013	mg/kg	9.1E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	1.6E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Heptachlor Epoxide	0.0014	mg/kg	9.8E-09	mg/kg/day	9.1E+00	(mg/kg/day)-1	9.E-08	1.7E-07	mg/kg/day	1.3E-05	mg/kg/day	1.E-02
				Technical Chlordane	1.02	mg/kg	7.1E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	1.2E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Arsenic	0.024	mg/kg	1.7E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-07	2.9E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				Cadmium	0.017	mg/kg	NC		NC			2.1E-06	mg/kg/day	1.0E-03	mg/kg/day	2.E-03
				Chromium	0.197	mg/kg	NC		NC			2.4E-05	mg/kg/day	3.0E-03	mg/kg/day	8.E-03
				Lead	0.33	mg/kg	2.3E-06	mg/kg/day	--			4.0E-05	mg/kg/day			
				Manganese	4.31	mg/kg	NC		NC			5.3E-04	mg/kg/day	1.4E-01	mg/kg/day	4.E-03
				Mercury	0.141	mg/kg	NC		NC			1.7E-05	mg/kg/day	3.0E-04	mg/kg/day	6.E-02
				Mercury (methyl)	0.127	mg/kg	NC		NC			1.5E-05	mg/kg/day	1.0E-04	mg/kg/day	2.E-01
				Toxicity Equivalency (PCB Congeners)	0.0000257	mg/kg	1.8E-10	mg/kg/day	1.0E+06	(mg/kg/day)-1	2.E-04	3.1E-09	mg/kg/day			
				Toxicity Equivalency (Dioxins/Furans)	0.00037	mg/kg	2.6E-09	mg/kg/day	1.0E+06	(mg/kg/day)-1	3.E-03	4.5E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-03					1.4.E+01
		EXPOSURE POINT TOTAL									3.E-03					1.4.E+01
	EXPOSURE MEDIUM TOTAL										3.E-03					1.4.E+01
COMBINED FISH DIET TOTAL											3.E-03					1.4.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	3.E-03		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		1.4.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE E-4
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - COMBINED FISH DIET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
BIOTA	COMBINED FISH DIET	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.1E-06	NA	NA	4.1E-06
			Benzo(a)anthracene	2.3E-08	NA	NA	NA	2.3E-08	Kidney	1.8E-05	NA	NA	1.8E-05
			Benzo(a)pyrene	1.1E-07	NA	NA	NA	1.1E-07	Kidney	8.9E-06	NA	NA	8.9E-06
			Benzo(b)fluoranthene	1.5E-08	NA	NA	NA	1.5E-08	Kidney	1.2E-05	NA	NA	1.2E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	6.9E-06	NA	NA	6.9E-06
			Dibenzo(a,h)anthracene	6.1E-08	NA	NA	NA	6.1E-08	Kidney	4.9E-06	NA	NA	4.9E-06
			Indeno(1,2,3-cd)pyrene	9.7E-09	NA	NA	NA	9.7E-09	Kidney	7.7E-06	NA	NA	7.7E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	5.7E-05	NA	NA	5.7E-05
			4,4'-DDD	4.5E-08	NA	NA	NA	4.5E-08	Liver	6.6E-03	NA	NA	6.6E-03
			4,4'-DDE	2.1E-07	NA	NA	NA	2.1E-07	Liver	2.2E-02	NA	NA	2.2E-02
			4,4'-DDT	7.1E-09	NA	NA	NA	7.1E-09	Liver	7.3E-04	NA	NA	7.3E-04
			alpha-Chlordane	4.9E-08	NA	NA	NA	4.9E-08	Liver	4.9E-03	NA	NA	4.9E-03
			Aroclor-1254	3.0E-05	NA	NA	NA	3.0E-05	Immune system	1.3E+01	NA	NA	1.3E+01
			Aroclor-1268	3.0E-07	NA	NA	NA	3.0E-07	Immune system	1.3E-01	NA	NA	1.3E-01
			beta-BHC	1.0E-08	NA	NA	NA	1.0E-08	Liver / Kidney	3.3E-04	NA	NA	3.3E-04
			Dieldrin	6.4E-07	NA	NA	NA	6.4E-07	Liver	1.4E-02	NA	NA	1.4E-02
			gamma-Chlordane	3.2E-08	NA	NA	NA	3.2E-08	Liver	3.2E-03	NA	NA	3.2E-03
			Heptachlor Epoxide	8.9E-08	NA	NA	NA	8.9E-08	Liver	1.3E-02	NA	NA	1.3E-02
			Technical Chlordane	2.5E-06	NA	NA	NA	2.5E-06	Liver	2.5E-01	NA	NA	2.5E-01
			Arsenic	2.5E-07	NA	NA	NA	2.5E-07	Skin	9.8E-03	NA	NA	9.8E-03
			Cadmium	NC	NA	NA	NA		Kidney	2.1E-03	NA	NA	2.1E-03
			Chromium	NC	NA	NA	NA		NOAEL	8.0E-03	NA	NA	8.0E-03
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	3.8E-03	NA	NA	3.8E-03
			Mercury	NC	NA	NA	NA		Immune system	5.7E-02	NA	NA	5.7E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.5E-01	NA	NA	1.5E-01
			Toxicity Equivalency (PCB Congeners) - Mam	1.8E-04	NA	NA	NA	1.8E-04		--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.6E-03	NA	NA	NA	2.6E-03		--	NA	NA	
			CHEMICAL TOTAL	2.8E-03	--	--	--	3E-03		1.4E+01	0.0E+00	--	1.4E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-03					1.4E+01
	EXPOSURE MEDIUM TOTAL							3E-03					1.4E+01
COMBINED FISH DIET TOTAL								3E-03					1.4E+01
RECEPTOR TOTAL								3E-03					1.4E+01

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TABLE E.4
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - COMBINED FISH DIET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			TOTAL RISK ACROSS ALL MEDIA					3E-03	TOTAL HAZARD ACROSS ALL MEDIA				1.4E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

	--
	--
TOTAL DEVELOPMENTAL TOXICITY HI =	1.5E-01
	--
	--
	--
	--
TOTAL IMMUNE SYSTEM HI =	1.3E+01
TOTAL KIDNEY HI =	2.5E-03
TOTAL LIVER HI =	3.1E-01
	--
	--
TOTAL NOAEL HI =	1.2E-02
	--
TOTAL SKIN HI =	9.8E-03
	--

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IEUBK Model

The USEPA IEUBK lead model (Windows Version 1.0; Build 253) was used to evaluate the potential risks associated with exposure to lead in sediment at the Site. The exposure point concentration for lead in sediment at Allendale Pond is 488 mg/kg; this concentration exceeds USEPA's lead screening level for residential soils. Therefore, potential risks associated with this EPC were evaluated using the IEUBK model. Since the model was developed to evaluate exposures to lead from media other than sediment (i.e., from air, dust, soil, and drinking water), the model was run using the soil input field to represent sediment. This represents and extremely conservative approach because the IEUBK model incorporates the assumption that lead is contacted through exposure to soil at a high frequency and intensity. In reality, contact with lead in sediment would be associated with a much lower intensity and frequency, as documented in the exposure parameter tables used in the BHHRA for evaluating receptor exposures to sediment.

The IEUBK model was run using default parameter values for all input fields except the following:

- Soil concentration. The sediment EPC of 488 mg/kg was used for this input parameter.
- Apportionment of soil/dust intake to soil: 100% of the ingestion intake was assumed to come from sediment, as opposed to dust (the default value is 45%).
- Mass fraction of outdoor soil to indoor dust: 0% of the sediment was assumed to become airborne as dust that could migrate indoors. However, the outdoor airborne lead to indoor household dust concentration was held at the default value of 100.

In summary, exposure to lead was assumed to occur through ingestion of sediment, inhalation of ambient airborne lead, ingestion and inhalation of ambient airborne lead that is translocated indoors, ingestion of ambient lead in drinking water, and ingestion of ambient lead in the diet.

The modeling input parameters are results are documented in the following pages. In summary, the highest geometric mean blood lead level among children ages 0.5 through 6 is 8.1 ug/dL. This value is below the threshold blood lead level of 10 ug/dL established by the USEPA. Therefore, potential exposures to lead in sediment at Allendale Pond would not be associated with intakes that exceed USEPA threshold levels.

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LEAD MODEL FOR WINDOWS Version 1.0

Model Version: 1.0 Build 253
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

The time step used in this model run: 1 - Every 4 Hours (6 times a day).

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (ug Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(ug/day)
.5-1	5.530
1-2	5.780
2-3	6.490
3-4	6.240
4-5	6.010
5-6	6.340
6-7	7.000

****** Drinking Water ******

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Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 4.000 ug Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 10.000 ug/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.000
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (ug Pb/g)	House Dust (ug Pb/g)
.5-1	488.000	10.000
1-2	488.000	10.000
2-3	488.000	10.000
3-4	488.000	10.000
4-5	488.000	10.000
5-6	488.000	10.000
6-7	488.000	10.000

****** Alternate Intake ******

Age	Alternate (ug Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

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Maternal Blood Concentration: 2.500 ug Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (ug/dL)	Diet (ug/day)	Alternate (ug/day)	Water (ug/day)
.5-1	0.021	2.368	0.000	0.343
1-2	0.034	2.420	0.000	0.837
2-3	0.062	2.776	0.000	0.890
3-4	0.067	2.725	0.000	0.926
4-5	0.067	2.734	0.000	1.001
5-6	0.093	2.929	0.000	1.072
6-7	0.093	3.258	0.000	1.099

Year	Soil+Dust (ug/day)	Total (ug/day)	Blood (ug/dL)
.5-1	10.657	13.389	7.1
1-2	16.549	19.841	8.1
2-3	16.906	20.634	7.6
3-4	17.265	20.983	7.3
4-5	13.321	17.123	6.1
5-6	12.173	16.266	5.2
6-7	11.585	16.035	4.6

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APPENDIX F

RISK CHARACTERIZATION FOR THE VISITING SUBSISTENCE ANGLER EXPOSURE SCENARIO

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1.0 INTRODUCTION

This appendix evaluates the human health risk associated with a potential future Visiting Subsistence Angler at the Centredale Manor Restoration Project Superfund Site with respect to 1) potential exposure to chemicals of potential concern (COPCs) via ingestion of fish, and 2) potential exposure COPCs via incidental ingestion and dermal contact with surface water, sediment, and bank soil. The Visiting Subsistence Angler scenario is evaluated in this appendix rather than in the main body of the report because of the uncertainty associated with this scenario. Whether there will be a significant population of Subsistence anglers at the Site is uncertain and the actual fish consumption patterns and rates are also uncertain for this exposure scenario.

Contaminants that are present ~~in surface water and aquatic~~ sediments may have ~~bio~~accumulated in fish and other biota present in the Woonasquatucket River. These fish may be consumed by individuals that catch and/or consume biota from the river. Child, older child, and adult consumers may be exposed to COPCs via ingestion of fish and other biota. Visiting Subsistence Anglers are evaluated in this appendix, focusing on three age groups that include the child (ages 1 through 6), the older child (ages 7 through 18), and the adult (19 and older). The receptor may also contact surface water, sediment, and bank soil during angling activities. COPCs selected for fish tissue in the main body of the BHHRA have been carried through the calculations in this appendix. The dose-response data used in the main body of the BHHRA have also been utilized in this appendix.

2.0 EXPOSURE ASSESSMENT

Receptor Exposure Scenarios for Biota Consumption

Currently, there is a fish consumption advisory issued by the State of Rhode Island that is not believed to be a sufficient barrier to precluding all exposure to biota from the Woonasquatucket River in the short-term. Current and potential future exposure to fish and other biota (including high lipid content biota such as eels) may occur at the river. A current biota consumption scenario as well as a future scenario is evaluated in this appendix with the understanding that the fish consumption advisory is not always completely effective.

For the purposes of this appendix, it is assumed that currently, and in the future, Visiting Local Area Residents (but not residents of the neighborhood) may visit the Site and be involved in subsistence angling and associated consumption of caught fish in each of the two reference/background areas and each of the four EAs associated with the portions of the Woonasquatucket River adjacent to and downstream of the source area.

Tables F.4.1.RME through F.4.4.RME present RME parameters for consumption of American Eel, Largemouth Bass fillet, Largemouth Bass whole body, and White Sucker respectively for the Visiting Subsistence Angler. Tables F.4.1.CT through F.4.4.CT present CT parameters for consumption of American Eel, White Sucker, and Largemouth Bass respectively for the receptor group. The documentation of the derivation of the fish consumption rates are presented in Appendix C. The anglers obviously have potential contact with surface water, sediment, and bank soil during angling activities. Those exposure scenarios are discussed below.

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The following average daily RME fish consumption rates have been identified in Appendix C: child (53.5 gram/day); older child (98.6 gram/day); adult (148 gram/day). The average daily CT fish consumption rates utilized in this appendix are: child (21.1 gram/day); older child (29.7 gram/day); adult (59.2 gram/day). The adult RME fish consumption rate corresponds to fish consumption of approximately 5.3 ounces per day.

Receptor Exposure Scenarios for Surface Water, Sediment, and Bank Soil

The following paragraphs discuss the Visiting Subsistence Angler exposure scenarios.

Exposure parameters for the RME were selected from USEPA guidance documents (USEPA, 1994; 1997; 2001b) and were based on professional judgment considering the site-specific exposure conditions. This subsection describes the exposure scenarios and RME exposure parameters in detail. Exposure parameters for the CT were based on the RME values, with the following modifications:

- CT values for incidental ingestion of soil, sediment, and surface water were identified as one-half the RME values, based on USEPA Region I guidance (USEPA, 1994) which recommends using one-half the RME value as the CT value for incidental soil ingestion.
- CT values for soil and sediment dermal adherence were the recommended CT parameters from USEPA RAGS Part E guidance (USEPA, 2001b).
- CT values for exposure frequency were identified as one-half the RME values. The RME values assume that a receptor uses the Site for all of their outdoor activities (e.g., recreational play/exploration, recreational angling, or subsistence angling). The CT parameters accommodate the assumption that a more "typical" or "average" receptor would spend a portion of their outdoor time at the Site (i.e., would access other, non-Site related areas for recreational purposes).

Visiting Subsistence Angler

Presently, despite the fish consumption advisories that have been issued by RI DOH and USEPA, subsistence angling at the Site cannot be ruled out. Potential future subsistence angling at the Site can also occur. It is assumed that subsistence anglers include older children and adults; young children would not participate in fishing, but are assumed to eat the fish that may be caught by older siblings and parents. Potential exposures to surface water and aquatic (submerged) sediment by incidental ingestion and dermal contact are assumed to occur during angling (e.g., if wading occurs as part of the angling) at Greystone Mill Pond area, Assapumpset Brook and Pond, Allendale Pond, Lyman Mill Pond, Manton Reach, and Dyerville Reach. This scenario assumes that a subsistence angler does not use waders while standing in the water. In addition, possible exposures to bank surface soils at Greystone Mill Pond area and Allendale Pond by incidental ingestion and dermal contact may occur when subsistence anglers access the water bodies for angling.

Cancer and non-cancer risk estimates are calculated separately for each of the exposure media and exposure points. The risks for each medium at each exposure point will have been summed to derive a total risk for surface water, sediment, and bank soil (Greystone Mill Pond and Allendale Pond only for soil) at each exposure point. Those risks were then be added to the risks

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for consumption of fish to derive a cumulative risk estimate for each exposure point in this appendix.

The RME and CT exposure parameters for surface water are presented in Tables F.4.5.RME and F.4.5.CT, for sediment in Tables F.4.6.RME and F.4.6.CT, and for bank soil in Tables F.4.7.RME and F.4.7.CT and are discussed below.

The exposure parameter values for a subsistence angler (except for biota consumption, which are presented in Tables F.4.1.RME through F.4.4.RME and F.4.1.CT through F.4.4.CT) are the same as those used for the recreational angler (which was evaluated in the main body of the BHHRA), with the following exceptions:

- *Exposure frequency*: It is assumed that a subsistence angler would access the Site year round (i.e., ice fishing would be performed in the winter months). However, contact with bank surface soil would only occur during months when the ground is not frozen or snow covered (April through November). Contact with surface water and sediment would potentially occur only during months when the surface water is at a temperature that allows prolonged contact (assumed to be May through September). It is assumed that a subsistence angler would access the Site six days per week. Therefore, the exposure frequency for bank surface soil would be 208 days per year, and the exposure frequency for surface water and sediment would be 130 days per year.

- *Exposure time*: It is assumed that a subsistence angler (who is dependent on catching fish for food) would tolerate standing in the water (without the use of waders) for two hours per day.

Exposure point concentrations were calculated using the same procedures and techniques identified and employed in the main body of the BHHRA. The toxicity assessment and dose-response information employed in the main body of the BHHRA have also been employed in this appendix.

3.0 RISK CHARACTERIZATION

As discussed in the main body of text of the Baseline Human Health Risk Assessment (BHHRA), the human health risk characterization for the potential visiting subsistence angler is presented in this appendix. The selection of chemicals of potential concern (COPCs) for each medium and the discussion of exposure scenarios has also been presented in the main body of the BHHRA. Therefore, this appendix presents the risk calculations (Risk Assessment Guidance for Superfund (RAGS) Part D Table 7s and 9s) and a summary and discussion of those calculations, the identification of Chemicals of Concern (in RAGS Part D Table 10s), and a summary of cancer and noncancer risks (RAGS Part D Table 11s), and the calculation and discussion of incremental risks above background with respect to the fish consumption pathway.

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The RME risk calculation spreadsheets are presented in the following order.

ASSAPUMPSET BROOK AND POND

- Visiting subsistence angler at Assapumpset Brook and Pond – adult, older child, child (consumption of fish only for child) – bank soil, surface water, sediment, consumption of American Eel. Tables F.7.1.RME through F.7.3.RME.
- Visiting subsistence angler at Assapumpset Brook and Pond – adult, older child, child (consumption of fish only for child) – surface water, sediment, consumption of Largemouth Bass fillet. Tables F.7.4.RME through F.7.6.RME.
- Visiting subsistence angler at Assapumpset Brook and Pond – adult, older child, child (consumption of fish only for child) – surface water, sediment, consumption of Largemouth Bass whole body. Tables F.7.7.RME through F.7.9.RME.
- Visiting subsistence angler at Assapumpset Brook and Pond – adult, older child, child (consumption of fish only for child) – bank soil, surface water, sediment, consumption of White Sucker. Tables 7.10.RME through 7.12.RME.

GREYSTONE MILL POND

- Visiting subsistence angler at Greystone Mill Pond – adult, older child, child (consumption of fish only for child) – bank soil, surface water, sediment, consumption of American Eel. Tables F.7.13.RME through F.7.15.RME.
- Visiting subsistence angler at Greystone Mill Pond – adult, older child, child (consumption of fish only for child) – surface water, sediment, consumption of Largemouth Bass fillet. Tables F.7.16.RME through F.7.18.RME.
- Visiting subsistence angler at Greystone Mill Pond – adult, older child, child (consumption of fish only for child) – surface water, sediment, consumption of Largemouth Bass whole body. Tables F.7.19.RME through F.7.21.RME.
- Visiting subsistence angler at Greystone Mill Pond – adult, older child, child (consumption of fish only for child) – bank soil, surface water, sediment, consumption of White Sucker. Tables 7.22.RME through 7.24.RME.

ALLENDALE POND

- Visiting subsistence angler at Allendale Pond – adult, older child, child (consumption of fish only for child) – bank soil, surface water, sediment, consumption of American Eel. Tables F.7.25.RME through 7.27.RME.
- Visiting subsistence angler at Allendale Pond – adult, older child, child (consumption of fish only for child) – bank soil, surface water, sediment, consumption of White Sucker. Tables 7.28.RME through 7.30.RME.

LYMAN MILL POND

- Visiting subsistence angler at Lyman Mill Pond – adult, older child, child (consumption of fish only for child) – surface water, sediment, consumption of American Eel. Tables 7.31.RME through 7.33.RME.
- Visiting subsistence angler at Lyman Mill Pond – adult, older child, child (consumption of fish only for child) – surface water, sediment, consumption of Largemouth Bass fillet. Tables 7.34.RME through 7.36.RME.

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- Visiting subsistence angler at Lyman Mill Pond – adult, older child, child (consumption of fish only for child) – surface water, sediment, consumption of Largemouth Bass whole body. Tables 7.37.RME through 7.39.RME.
- Visiting subsistence angler at Lyman Mill Pond – adult, older child, child (consumption of fish only for child) – surface water, sediment, consumption of White Sucker. Tables 7.40.RME through 7.42.RME.

MANTON POND

- Visiting subsistence angler at Manton Pond – adult, older child, child (consumption of fish only for child) – surface water, sediment, consumption of Largemouth Bass fillet. Tables 7.43.RME through 7.45.RME.
- Visiting subsistence angler at Manton Pond – adult, older child, child (consumption of fish only for child) – surface water, sediment, consumption of Largemouth Bass fillet. Tables 7.46.RME through 7.48.RME.

DYERVILLE POND

- Visiting subsistence angler at Dyerville Pond – adult, older child, child (consumption of fish only for child) – surface water, sediment, consumption of American Eel. Tables 7.49.RME through 7.51.RME.

The CT risk calculation spreadsheets are presented in the same order with the same numbering scheme as the RME spreadsheets, but the table numbers contain "CT" rather than "RME (e.g., Table 7.1.CT).

RAGS Part D Table 9s are presented for RME and CT scenarios in the same order with the same numbering scheme as for the Table 7s.

4.0 SUMMARY OF CALCULATION OF RECEPTOR RISKS

Tables F.11.RME and F.11.CT are risk summary tables. These tables present the medium-specific and route-specific risks for each age-group for the visiting subsistence angler exposure scenario.

In addition to the RAGS Part D Table 7s and 9s, Figures F.1 through F.4 graphically summarize the RME and CT risk calculations for the visiting subsistence angler. There are two RME figures and two CT figures. One RME figure (F.1) summarizes the noncancer risk by exposure medium for each of the four river exposure points and the background area and the reference area, while the other RME figure (F.2) summarizes cancer risk by exposure medium for each of the four river exposure points and.the background area and the reference area. The two CT figures (Figures F.3 and F.4) also present first, noncancer, and then cancer risks.

It is apparent from viewing these figures that among the exposure media, the fish consumption (American Eel, Largemouth Bass, and White Sucker) media are associated with the highest noncancer risks for all receptors at all exposure points.

As shown in Figure F.1, the Hazard Index associated with consumption of each of the fish species is greater than ten for all receptors at all four river exposure points and, with one exception, the

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two background area and the reference area (Greystone Mill Pond and Assapumpset Pond and Brook) for the RME scenarios. Among the RME scenarios for the subsistence angler, only the Hazard Index for the Brown Bullhead fish consumption at Assapumpset Pond (all three age groups) is below ten (but substantially above one). As shown in Figure F.3, the Hazard Index associated with consumption of each of the fish species is greater than one for all receptors at all four river exposure points and two reference/background areas (with the exception of the older child subsistence angler consuming Brown Bullhead from Assapumpset Pond) for the CT scenarios. The Hazard Index associated with sediment and surface water exposure for the visiting subsistence angler at all four river exposure points and the background area and reference area are less than one for both RME and CT scenarios. No Hazard index was calculated for bank soil exposure at the four river exposure points, since 2,3,7,8-TCDD was the only COPC for that medium and there is no RfD available ~~for that~~ compound. ~~The Hazard Index for~~ soil exposures at the Greystone Mill Pond area for the visiting subsistence angler was less than one for RME and CT scenarios.

The cancer risk associated with consumption of each of the species of fish is greater than one in ten-thousand (1×10^{-4}) for the visiting subsistence angler at each of the four river exposure points and the background area and reference area the RME exposure scenarios. The cancer risk associated with consumption of each of the species of fish is greater than one in ten-thousand (1×10^{-4}) for the visiting subsistence angler at each of the four river exposure points for the CT exposure scenarios. At the background area and reference area , the cancer risk associated with consumption of at least one of the species of fish by at least one age group is greater than one in ten-thousand (1×10^{-4}) for the visiting subsistence angler for the CT exposure scenarios. At Greystone Mill Pond, calculated CT cancer risks for all age groups for consumption of American Eel, whole body Largemouth Bass, and White Sucker are equal to or greater than one in ten-thousand (1×10^{-4}). At Greystone Mill Pond Only the consumption by the visiting subsistence angler of Largemouth Bass fillets is associated with cancer risk less than one in ten-thousand (1×10^{-4}). At Assapumpset Brook and Pond, the CT cancer risks associated with consumption of only whole body Largemouth Bass (adult and older child) and Brown Bullhead (child) are equal to or greater than one in ten-thousand (1×10^{-4}).

The calculated cancer risk for surface water is greater than one in ten-thousand (1×10^{-4}) at all four river exposure points for the adult and older child visiting subsistence angler for both the RME and CT exposure scenarios. The calculated cancer risk for surface water is equal to one in ten-thousand (1×10^{-4}) at the two reference/background area and the reference area for only the adult visiting subsistence angler for both the RME and CT exposure scenarios. It should be noted that for Manton Pond and Dyerville Pond, the calculated surface water exposure and risks are based on water quality data collected in Lyman Mill Pond. In the absence of analytical data for those ponds, the Lyman Mill surface water quality data were considered to be representative for those ponds. The cancer risk for surface water is primarily contributed by dermal exposures to dioxins/furans. The available data are from unfiltered surface water samples and may contain sediment particulate matter. Cancer risks associated with sediment exposure are greater than one in ten-thousand (1×10^{-4}) for the visiting subsistence angler at only Allendale Pond and Lyman Mill Pond for the RME scenarios. At Manton Pond, Dyerville Pond, Assapumpset Brook and Pond, and at Greystone Mill Pond cancer risks associated with sediment exposure are below one in ten-thousand (1×10^{-4}) for the visiting subsistence angler RME scenario. Cancer risks associated with sediment exposure are less than one in ten-thousand (1×10^{-4}) for the visiting

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subsistence angler at all four river exposure points and the background area and the reference area for the CT scenarios.

Figures F.5 and F.6 summarize the relative risk contributions by exposure media for the adult age-group for the visiting subsistence angler at Allendale Pond for RME and then CT scenarios respectively. For all scenarios, the noncancer risks are dominated by fish consumption (in this case White Sucker). More than 99% of the noncancer risk for these receptors at Allendale Pond is associated with the fish consumption pathway.

For cancer risks, the fish consumption pathway is also the primary pathway, with a contribution of 80% to as high as 95% of the total cancer risk for a given receptor. Cancer risks associated with surface water exposure contribute between 5% and 29% of the total cancer risk for the adult receptors at Allendale Pond in both RME and CT scenarios. However, as is discussed in the uncertainty analysis, the cancer risks associated with surface water exposure may be over-estimated. Overall, bank soil and sediment exposures contribute a very small portion of the total cancer risk.

Figures F.7 and F.8 identify the major chemical contributors to total noncancer and cancer risks for the visiting subsistence angler at Lyman Mill Pond for the RME and CT scenarios respectively. For noncancer risks, Aroclor 1254 (97%), Technical chlordane (2%), Aroclor 1268 (1% for RME, 0.8% for CT), and methyl mercury (0.4%) in fish tissue (White Sucker) are the predominant risk contributors. For cancer risks, Dioxins/furans (88%), Aroclor 1254 (6% for RME, 7% for CT), coplanar PCBs dioxin equivalents (5% for RME, 4% for CT), and Technical chlordane (0.5% for RME, 1% for CT) in fish tissue (White Sucker) are the predominant risk contributors.

An analysis of the contribution of congeners to the dioxins/furans TEQ in American Eel tissue in Allendale Pond, Lyman Mill Pond, Manton Pond, and Dyerville Pond indicates that the 2,3,7,8-TCDD congener consistently contributes approximately 99% of the TEQ that is comprised of the various dioxin and furan congeners as well as HCX. In contrast, for Assapumpset Brook and Pond, the 2,3,7,8-TCDD congener contributes approximately 46% of the TEQ for American Eel. For Greystone Mill Pond, the 2,3,7,8-TCDD congener contributes only approximately 23% of the TEQ for American Eel. It is clear that the 2,3,7,8-TCDD congener consistently represents a substantially greater portion of the dioxin/furan TEQ in American Eel and other biota tissue at the four river exposure points than at the Greystone Mill Pond upstream background location.

5.0 SPATIAL DISTRIBUTION OF FISH CONSUMPTION RISKS

American Eel tissue data were available for three of the four exposure points. Therefore, it is possible to review the risk assessment results for consumption of American Eel to obtain a sense of how fish consumption risks compare among the exposure points. Table F.11.RME summarizes, and Figures F.1 and F.2 present graphically the RME cancer risks and Hazard Index values for consumption of American Eel at the four exposure points.

The cancer risk (predominantly driven by 2,3,7,8-TCDD) associated with consumption of American Eel for Allendale Pond and Lyman Mill Pond for the adult visiting subsistence angler data are 4×10^{-2} and 6×10^{-2} respectively (average of 5×10^{-2}). The corresponding cancer risk for

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Dyerville Pond is 2 x 10^{-2}. The cancer risks for American Eel consumption are very similar among those three exposure points. The RME cancer risks associated with consumption of American Eel from Assapumpset Pond and Greystone Mill Pond are substantially lower than at the river exposure points. The RME cancer risks for the adult visiting subsistence angler are 9 x 10^{-4} and 2 x 10^{-3} for Assapumpset Pond and Greystone Mill Pond respectively.

The Hazard Index values (driven primarily by Aroclor-1254) for American Eel in Allendale Pond, Lyman Mill Pond, and Manton Pond are 100, 101, and 52. The Hazard Index values at Allendale Pond and Lyman Mill Pond are very similar, but the Hazard Index at Manton Pond is lower, approximately 50% of the values in Allendale and Lyman Mill. The RME Hazard Index values for Assapumpset Pond (15) and Greystone Mill Pond (44) for the same receptor are lower than at the river exposure points.

For consumption of White Sucker, RME cancer risk for the adult visiting subsistence angler at Allendale Pond and Lyman Mill Pond are 1 x 10^{-1} and 2 x 10^{-1} respectively. This again indicates that the fish consumption cancer risks are quite similar for Allendale Pond and Lyman Mill Pond. For consumption of White Sucker, RME Hazard Index for the adult visiting subsistence angler at Allendale Pond and Lyman Mill Pond are 80 and 549. The RME cancer risk (2 x 10-3) and noncancer risks (Hazard Index of 33) for the adult visiting subsistence angler at Greystone Mill Pond are lower than at the river exposure points.

For consumption of Largemouth Bass (whole body), RME cancer risk for the adult visiting subsistence angler at Lyman Mill Pond and Manton Pond are 6 x 10^{-2} and 4 x 10^{-2} respectively. This indicates that the fish consumption cancer risks are similar in Lyman Mill Pond and Manton Pond (but somewhat lower in Manton Pond). For consumption of Largemouth Bass (fillet), RME Hazard Index values for the adult visiting subsistence angler at Lyman Mill Pond and Manton Pond are 148 and 129 respectively. The corresponding cancer risks (4 x 10^{-3} and 1 x 10^{-3}) and noncancer Hazard Index values (23 and 51) for Assapumpset Pond and Greystone Mill Pond are lower than in the river exposure points.

6.0 INCREMENTAL RISKS ABOVE BACKGROUND

Table F.12 presents the calculation of incremental risks above those calculated for the background area Greystone Mill Pond for CT exposure scenarios for fish consumption for the visiting subsistence angler. The calculated human health risks are consistently higher in exposure areas EA1 through EA4 than in either Assapumpset Brook and Pond or the Greystone Mill Pond area. As shown in Table F.12, the incremental noncancer risks (Hazard Index) above background (Greystone Mill Pond) for the RME and CT exposure scenarios associated with consumption of White Sucker (Allendale Pond and Lyman Mill Pond), whole body Largemouth Bass from Lyman Mill Pond and Manton Pond, and American Eel from Allendale Pond, Lyman Mill Pond, and Dyerville Pond are above one. Also, as shown in Table F.12, the incremental cancer risks above background (Greystone Mill Pond) for the visiting subsistence angler CT exposure scenarios associated with consumption of White Sucker (Allendale Pond and Lyman Mill Pond), whole body Largemouth Bass from Lyman Mill Pond and Manton Pond, and American Eel from Allendale Pond, Lyman Mill Pond, and Dyerville Pond are greater than one in ten thousand.

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For the CT fish consumption exposure scenario for the visiting subsistence angler, on a per cent basis, the incremental noncancer risk (based on Hazard Index) above the background risk at Greystone Mill Pond for Allendale Pond is 816% for White Sucker and 124% for American Eel. For Lyman Mill Pond, the incremental noncancer risk is 1,554% for White Sucker, 194% for whole body Largemouth Bass, and 233% for American Eel. For Manton Pond, the incremental noncancer risk is 155% for whole body Largemouth Bass. For Dyerville Pond, the incremental noncancer risk is 17% for the American Eel.

For the CT fish consumption exposure scenario for the visiting subsistence angler, on a per cent basis, the incremental cancer risk above the background risk at Greystone Mill Pond for Allendale Pond is 4,900% for White Sucker and 1,900% for American Eel. For Lyman Mill Pond, the incremental cancer risk is 12,400% for White Sucker, 5,900% for whole body Largemouth Bass, and 2,900% for American Eel. For Manton Pond, the incremental noncancer risk is 3,900% for whole body Largemouth Bass. For Dyerville Pond, the incremental noncancer risk is 900% for the American Eel. Based on this evaluation, on a percentage of background basis, the incremental cancer risk associated with fish consumption by the visiting subsistence angler for Allendale Pond, Lyman Mill Pond, Manton Pond, and Dyerville Pond is much greater than the corresponding incremental noncancer risk.

7.0 IDENTIFICATION OF CHEMICALS OF CONCERN

RAGS Part D Table 10s identify, for each of the three age groups for the Visiting Subsistence Angler at Lyman Mill Pond (the receptor and exposure point with the highest cancer and noncancer risks), those chemicals that are considered chemicals of concern (COCs). COCs are those substances that have associated cancer risk greater than one in one-million (1×10^{-6}) and/or a Hazard Index greater than one for a given medium/receptor/age-group combination. COCs are those substances that would typically be considered in the Feasibility Study process. Tables 10.40.RME through 10.42.RME and Tables 10.40.CT through 10.42.CT identify the COCs and the risks associated with each of the COCs in each medium for the Visiting Subsistence Angler at Lyman Mill Pond. These tables are numbered as such to indicate that they correspond with the risk calculations that are summarized in Tables 7.40.RME through 7.42.RME and Tables 7.40.CT through 7.42.CT respectively.

The sediment COCs for Lyman Mill Pond identified include benzo(a)pyrene, dibenzo(a,h)anthracene, N-nitroso-di-n-propylamine, arsenic, dioxin/furans, and coplanar PCBs. All of these COCs are identified based on cancer risk only. The dioxins/furans are the biggest risk contributor within that group of COCs.

The surface water COCs for Lyman Mill Pond include bis(2-ethylhexyl)phthalate and dioxins/furans. Both COCs were identified based on cancer risk only. The majority of the risk is attributed to dioxin/furans based on dermal contact with surface water.

The White Sucker (fish consumption) COCs for Lyman Mill Pond include benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, alpha-chlordane, Aroclor-1254, Aroclor-1268, dieldrin, gamma-chlordane, heptachlor epoxide, technical chlordane, arsenic, methylmercury, dioxins/furans, and coplanar PCBs. All of these COCs were identified due to cancer risks. In addition, Aroclor-

1254, Aroclor-1268, technical chlordane, and methylmercury were also identified as COCs due to noncancer risks. The largest cancer risk contributors to fish consumption risk for this scenario are (in descending order of contribution) dioxins/furans, Aroclor-1254, coplanar PCBs, technical chlordane, dieldrin, benzo(a)pyrene, Aroclor-1268, and 4,4'-DDE. The largest noncancer risk contributors among these COCs are (in descending order of contribution) Aroclor-1254, technical chlordane, Aroclor-1268, and methylmercury.

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Figure F.1
Summary of RME Human Health Noncancer Risks - Visiting Subsistence Angler

Baseline Human Health Risk Assessment
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

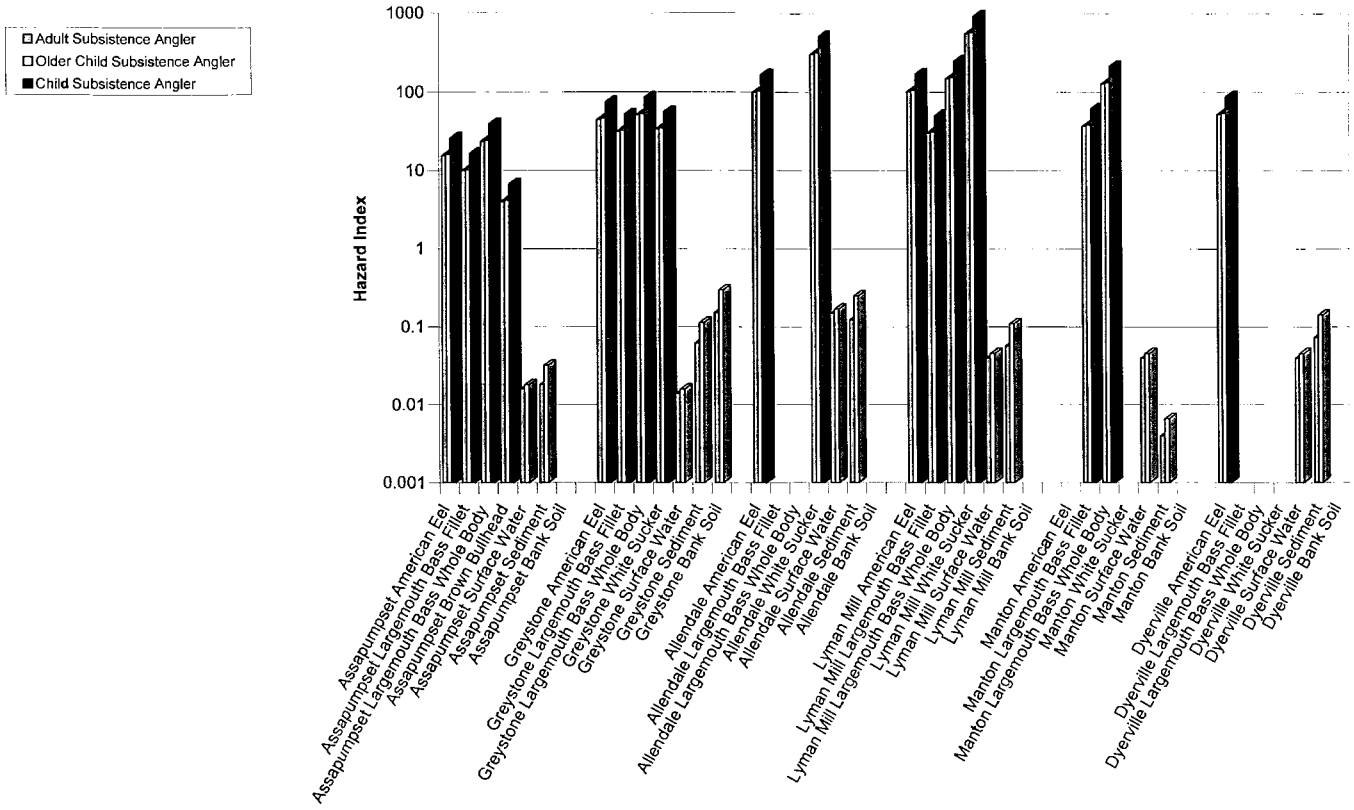

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Figure F.2
Summary of RME Human Health Cancer Risks - Visiting Subsistence Angler

Baseline Human Health Risk Assessment
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

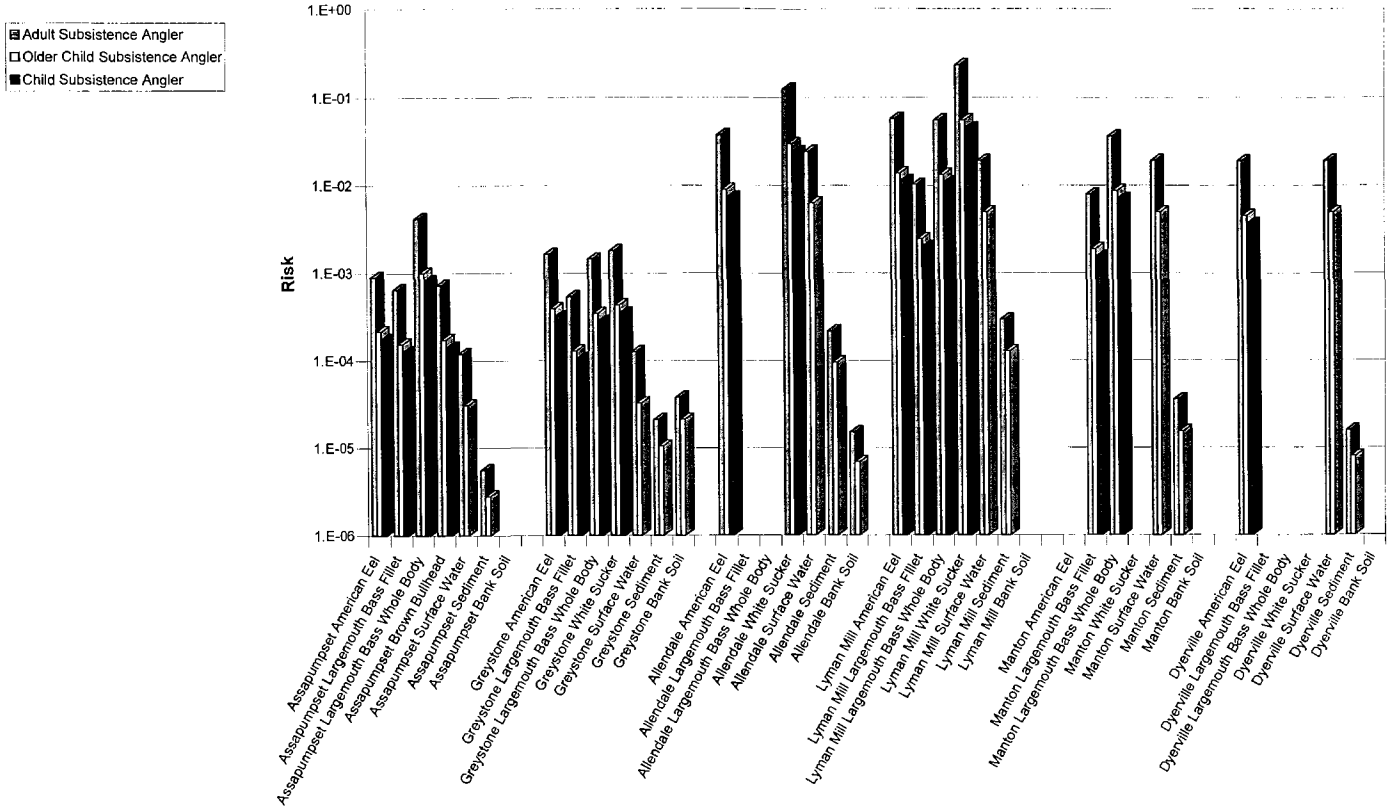

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Figure F.3
Summary of CT Human Health Noncancer Risks - Visiting Subsistence Angler

Baseline Human Health Risk Assessment
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

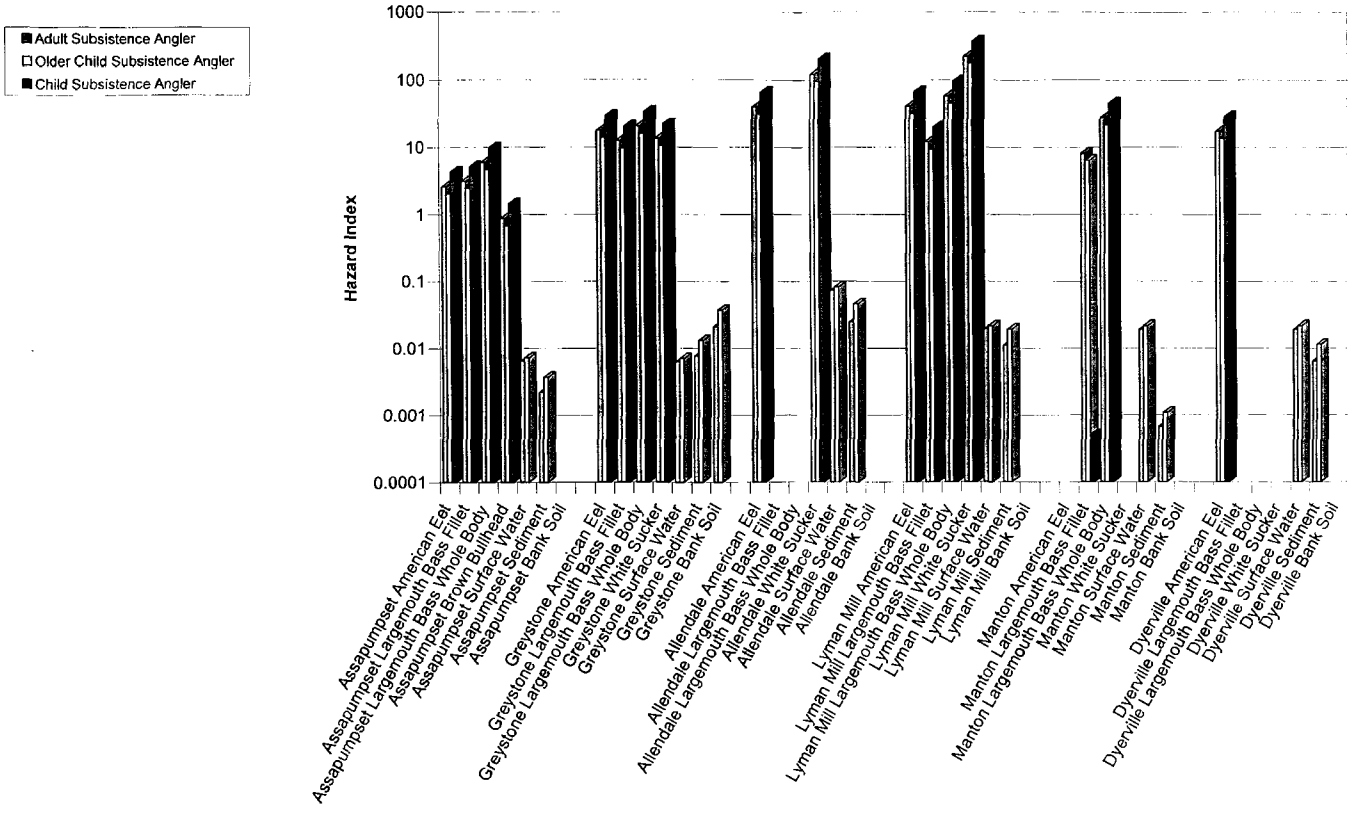

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Figure F.4
Summary of CT Human Health Cancer Risks - Visiting Subsistence Angler

Baseline Human Health Risk Assessment
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

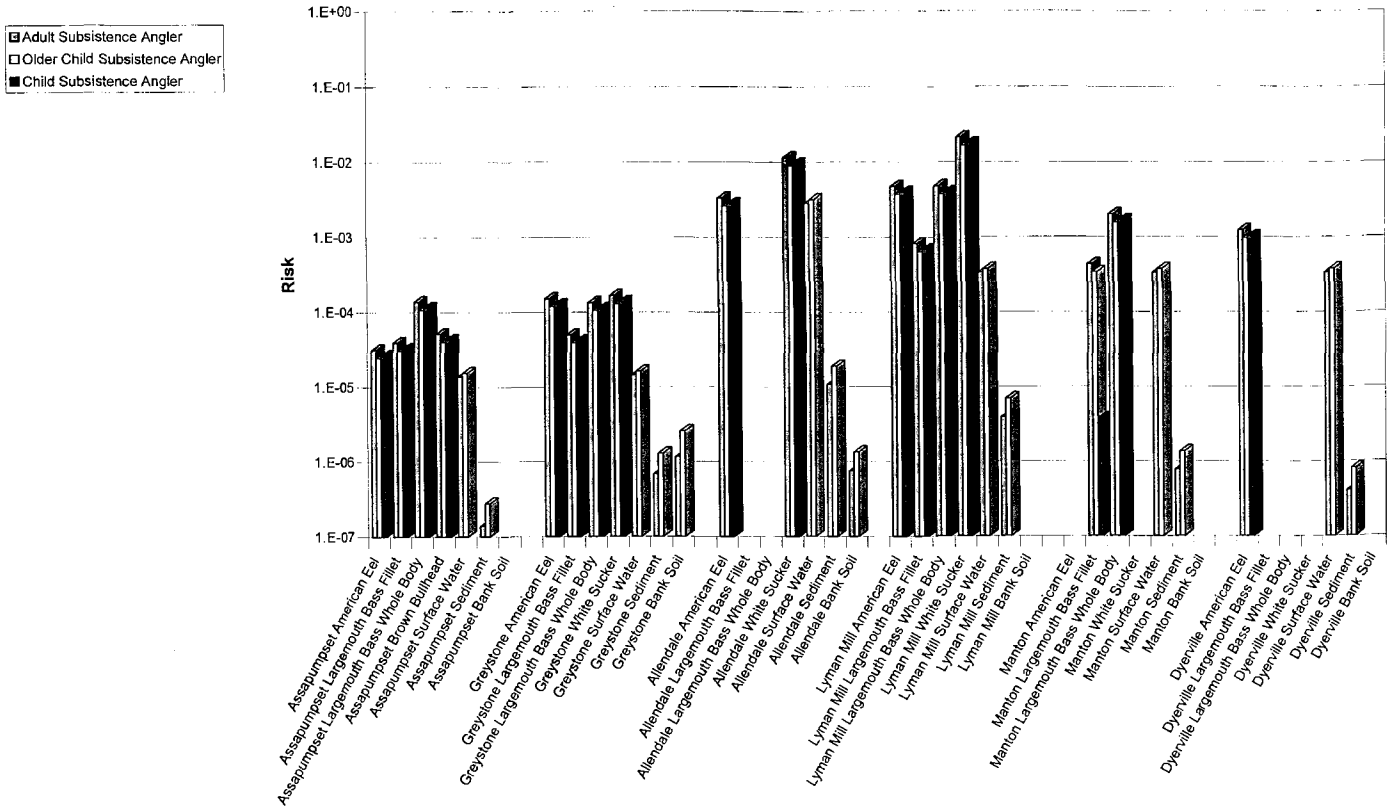

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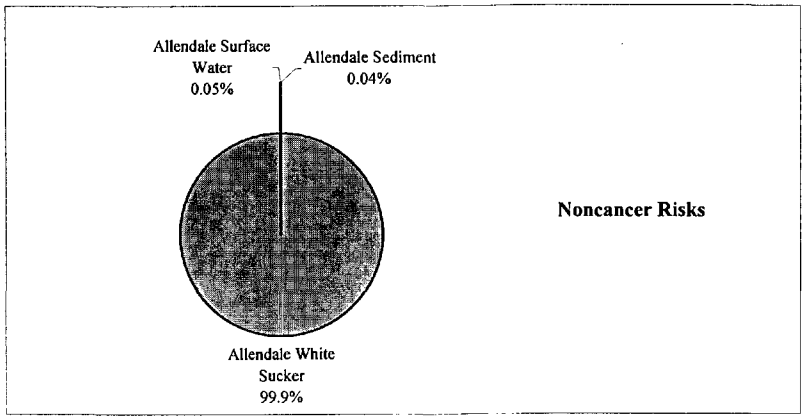
Figure F.5
Distribution of RME Human Health Noncancer and Cancer Risks by Media -
Adult Visiting Subsistence Angler
Allendale Pond

Baseline Human Health Risk Assessment
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island



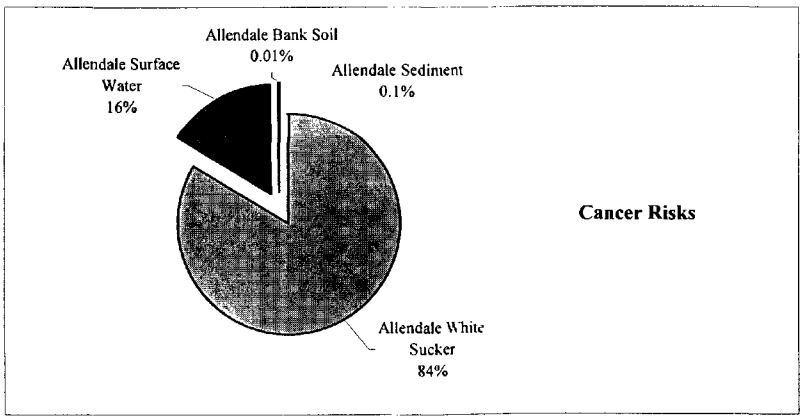


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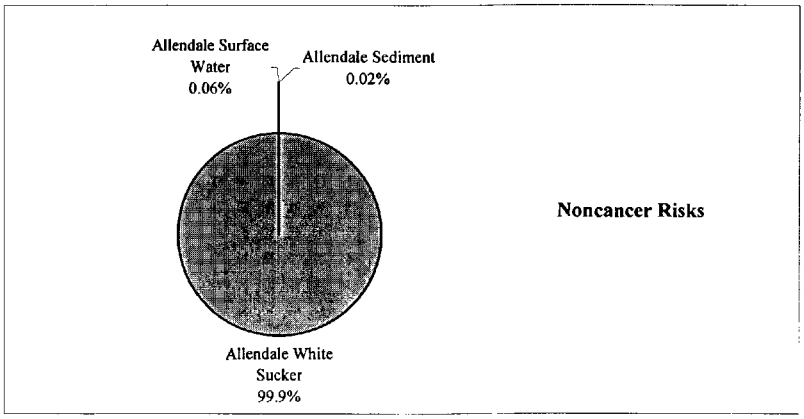
Figure F.6
Distribution of CT Human Health Noncancer and Cancer Risks by Media -
Adult Visiting Subsistence Angler
Allendale Pond

Baseline Human Health Risk Assessment
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island



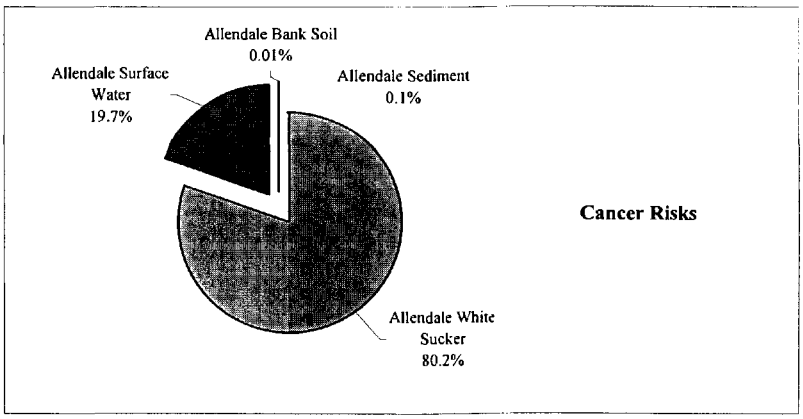


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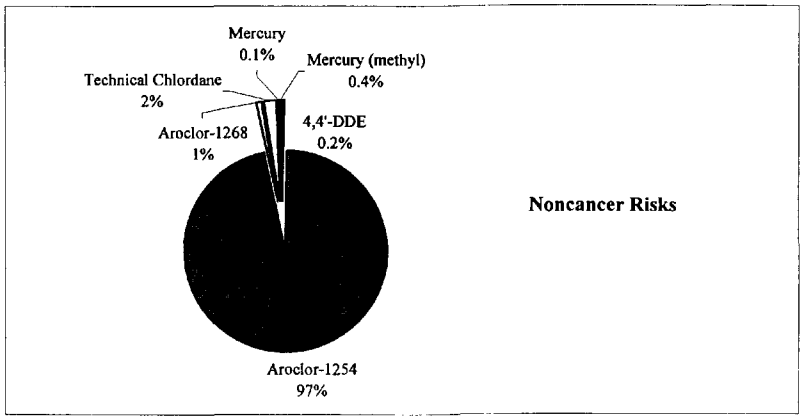
Figure F.7
Distribution of RME Human Health Noncancer and Cancer Risks by Chemical - Visiting Subsistence Angler
Lyman Mill Pond

Baseline Human Health Risk Assessment
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island



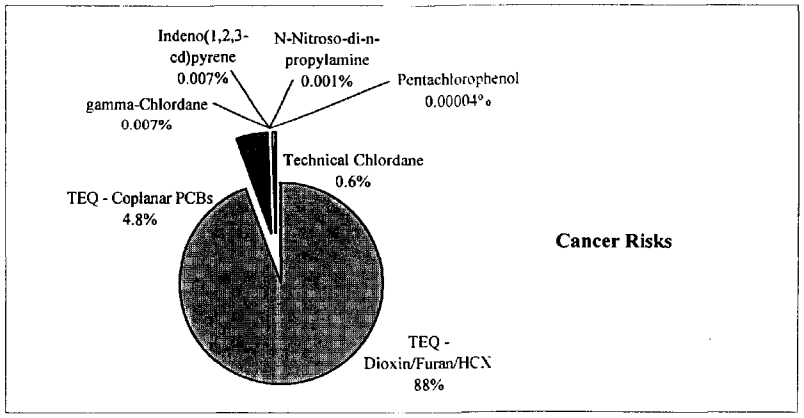


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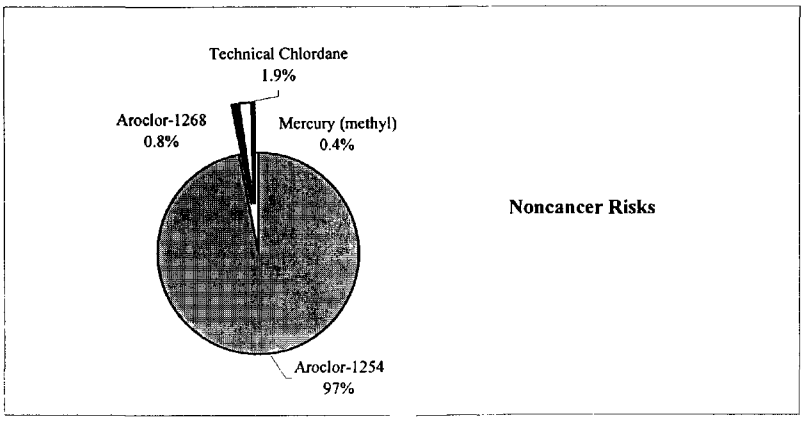
Figure F.8
Distribution of CT Human Health Noncancer and Cancer Risks by Chemical -
Visiting Subsistence Angler
Lyman Mill Pond

Baseline Human Health Risk Assessment
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island



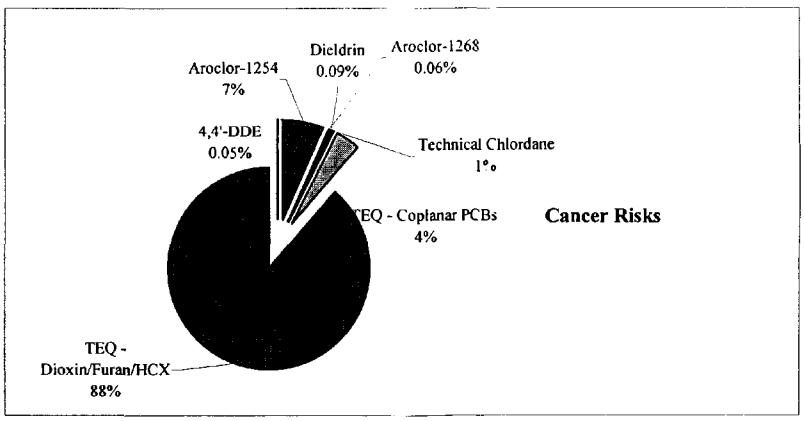


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Table F.4.1.RME
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: AMERICAN EEL
EXPOSURE MEDIUM: WHOLE BODY

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME
INGESTION	SUBSISTENCE ANGLER	ADULT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	148	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
			DYERVILLE REACH	ED	EXPOSURE DURATION	52	yr	Assumption	
				BW	BODY WEIGHT	70	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	18980	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		ADOLESCENT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	98.6	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
			DYERVILLE REACH	ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	45	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		CHILD	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	53.5	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	0.5	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
			DYERVILLE REACH	ED	EXPOSURE DURATION	6	yr	Assumption	
				BW	BODY WEIGHT	15	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	2190	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		

Balcom, N. C., C. M. Capacchione, D. W. Hirsch, 1999. Quantification of Fish and Seafood Consumption Rates in Connecticut. Submitted to CTDEP. January.
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Prepared by: KJA
Checked by: MJM

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Table F.4.2.RME
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: LARGEMOUTH BASS
EXPOSURE MEDIUM: FILLET

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME
INGESTION	SUBSISTENCE ANGLER	ADULT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	148	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			LYMAN MILL POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			MANTON REACH	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	52	yr	Assumption	
				BW	BODY WEIGHT	70	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	18980	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		ADOLESCENT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	98.6	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			LYMAN MILL POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			MANTON REACH	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	45	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		CHILD	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	53.5	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			LYMAN MILL POND	FI	FRACTION INGESTED	0.5	unitless	Assumption	
			MANTON REACH	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	6	yr	Assumption	
				BW	BODY WEIGHT	15	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	2190	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		

Balcom, N. C., C. M. Capacchione, D. W. Hirsch, 1999. Quantification of Fish and Seafood Consumption Rates in Connecticut. Submitted to CTDEP. January.
USEPA, 1989. "Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A)"; Office of Emergency and Remedial Response; EPA-540/1-89/002 (interim final); Washington, D.C., December.
USEPA, 1994. "Risk Updates No. 2"; USEPA Region I, Waste Management Division; August. Values from "Attachment 2" to Risk Updates No. 2.
USEPA, 1997. "Exposure Factors Handbook, Volume I"; Office of Research and Development; EPA-600/P-95/002Fa; Washington, D.C.; August.
USEPA, 1999. "Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part E)"; Office of Solid Waste and Emergency Response; EPA-540/R-99/005 (interim final); Washington, D.C.

Prepared by: KJA
Checked by: MJM

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Table F.4.3.RME
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: LARGEMOUTH BASS
EXPOSURE MEDIUM: FILLET

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME
INGESTION	SUBSISTENCE ANGLER	ADULT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	148	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			LYMAN MILL POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			MANTON REACH	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	52	yr	Assumption	
				BW	BODY WEIGHT	70	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	18980	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		ADOLESCENT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	98.6	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			LYMAN MILL POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			MANTON REACH	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	45	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		CHILD	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	53.5	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			LYMAN MILL POND	FI	FRACTION INGESTED	0.5	unitless	Assumption	
			MANTON REACH	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	6	yr	Assumption	
				BW	BODY WEIGHT	15	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	2190	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		

Balcom, N. C., C. M. Capacchione, D. W. Hirsch, 1999. Quantification of Fish and Seafood Consumption Rates in Connecticut. Submitted to CTDEP. January.
USEPA, 1989. "Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A)"; Office of Emergency and Remedial Response; EPA-540/1-89/002 (interim final); Washington, D.C., December.
USEPA, 1994. "Risk Updates No. 2"; USEPA Region I, Waste Management Division; August. Values from "Attachment 2" to Risk Updates No. 2.
USEPA, 1997. "Exposure Factors Handbook, Volume 1"; Office of Research and Development; EPA-600/P-95/002Fa; Washington, D.C.; August.
USEPA, 1999. "Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part E)"; Office of Solid Waste and Emergency Response; EPA-540/R-99/005 (interim final); Washington, D.C.

Prepared by: KJA
Checked by: MJM

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Table F.4.4.RME
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: WHITE SUCKER
EXPOSURE MEDIUM: WHOLE BODY

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME
INGESTION	SUBSISTENCE ANGLER	ADULT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	148	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	52	yr	Assumption	
				BW	BODY WEIGHT	70	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	18980	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		ADOLESCENT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	98.6	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	45	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		CHILD	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	53.5	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	0.5	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	6	yr	Assumption	
				BW	BODY WEIGHT	15	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	2190	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		

Balcom, N. C., C. M. Capacchione, D. W. Hirsch, 1999. Quantification of Fish and Seafood Consumption Rates in Connecticut. Submitted to CTDEP. January.
USEPA, 1989. "Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A)", Office of Emergency and Remedial Response; EPA-540/1-89/002 (interim final); Washington, D.C., December.
USEPA, 1994. "Risk Updates No. 2"; USEPA Region I, Waste Management Division; August. Values from "Attachment 2" to Risk Updates No. 2.
USEPA, 1997. "Exposure Factors Handbook, Volume 1"; Office of Research and Development; EPA-600/P-95/002Fa; Washington, D.C.; August.
USEPA, 1999. "Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part E)"; Office of Solid Waste and Emergency Response; EPA-540/R-99/005 (interim final); Washington, D.C.

Prepared by: KJA
Checked by: MJM

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Table F.4.5.RME
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: SURFACE WATER
EXPOSURE MEDIUM: SURFACE WATER

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME
INGESTION	SUBSISTENCE ANGLER	ADULT (ages 19 and above)	ASSAPUMPSET POND	CW	CHEMICAL CONCENTRATION IN WATER	chemical-specific	mg/l	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-W	INGESTION RATE OF WATER	0.005	l/hour	USEPA, 1988[10]	CW x IR-W x FI x ET x EF x ED x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Professional Judgement[2]	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	130	event/yr	Professional Judgement[13]	
			MANTON REACH	ED	EXPOSURE DURATION	52	yr	Assumes lifetime[8]	
			DYERVILLE REACH	ET	EXPOSURE TIME	2	hours/event	Professional Judgement[12]	
				BW	BODY WEIGHT	70	kg	USEPA, 1994	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	18980	day	USEPA, 1989	
		ADOLESCENT (ages 7 - 18)	ASSAPUMPSET POND	CW	CHEMICAL CONCENTRATION IN WATER	chemical-specific	mg/l	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-W	INGESTION RATE OF WATER	0.005	l/hour	USEPA, 1988[10]	CW x IR-W x FI x ET x EF x ED x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Professional Judgement[2]	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	130	event/yr	Professional Judgement[13]	
			MANTON REACH	ED	EXPOSURE DURATION	12	yr	Ages 7-18	
			DYERVILLE REACH	ET	EXPOSURE TIME	2	hours/event	Professional Judgement[12]	
				BW	BODY WEIGHT	45	kg	USEPA, 1997[7]	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1989	
DERMAL	SUBSISTENCE ANGLER	ADULT (ages 19 and above)	ASSAPUMPSET POND	CW	CHEMICAL CONCENTRATION IN WATER	chemical-specific	mg/l	EPC Table	INTAKE-DERMAL =
			GREYSTONE MILL POND	PCevent	PERMEABILITY CONSTANT PER EVENT	chemical-specific	cm	USEPA, 2001	CW x SA x PCevent x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	SA	SKIN SURFACE AREA AVAILABLE FOR CO	8700	cm2	USEPA, 1997[14]	PCevent = PC x ET; calculated in PCevent table
			LYMAN MILL POND	ET	EXPOSURE TIME	2	hr/event	Professional Judgement[12]	
			MANTON REACH	EF	EXPOSURE FREQUENCY	130	event/yr	Professional Judgement[13]	
			DYERVILLE REACH	ED	EXPOSURE DURATION	52	yr	Assumes lifetime[8]	
				BW	BODY WEIGHT	70	kg	USEPA, 1994	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	18980	day	USEPA, 1989	
				CF	CONVERSION FACTOR	0.001	l/cm3		
		ADOLESCENT (ages 7 - 18)	ASSAPUMPSET POND	CW	CHEMICAL CONCENTRATION IN WATER	chemical-specific	mg/l	EPC Table	INTAKE-DERMAL =
			GREYSTONE MILL POND	PCevent	PERMEABILITY CONSTANT PER EVENT	chemical-specific	cm	USEPA, 2001	CW x SA x PCevent x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	SA	SKIN SURFACE AREA AVAILABLE FOR CO	6260	cm2	USEPA, 1997[14]	PCevent = PC x ET; calculated in PCevent table
			LYMAN MILL POND	ET	EXPOSURE TIME	2	hr/event	Professional Judgement[12]	
			MANTON REACH	EF	EXPOSURE FREQUENCY	130	event/yr	Professional Judgement[13]	
			DYERVILLE REACH	ED	EXPOSURE DURATION	12	yr	Ages 7-18	
				BW	BODY WEIGHT	45	kg	USEPA, 1997[7]	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1989	
				CF	CONVERSION FACTOR	0.001	l/cm3		

USEPA, 1988. Superfund Exposure Assessment Manual. Office of Remedial Response; EPA/540/1-88/001; Washington, D.C.
USEPA, 1989. "Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A)"; Office of Emergency and Remedial Response; EPA-540/1-89/002 (interim final); Washington, D.C., December.
USEPA, 1994. "Risk Updates No. 2"; USEPA Region I, Waste Management Division; August. Values from "Attachment 2" to Risk Updates No. 2.
USEPA, 1997. "Exposure Factors Handbook, Volume I"; Office of Research and Development; EPA-600/P-95/002Fa; Washington, D.C.; August.
USEPA, 2001. "Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Interim. EPA/540/R/99/005.
1 - Value for swimming used
2 - 100% of daily incidental intake of surface water is attributable to incidental ingestion at the Site.
3 - Receptor assumed to visit area to wade or swim 4 days per week, June through August. Wading is expected to occur 3 of the 4 days each week and swimming 1 of the days each week. Sediment contact would only occur during wading (not swimming) activities. The child value is based on assumed wading exposure 4 days per week, June through August (the child is assumed to wade while adolescents and adults are swimming).
Since contact with surface water would occur during both wading and swimming activities, but a larger portion of the body would be exposed to surface water during swimming, contact with surface water is evaluated using parameters for swimming exposures to provide a conservative assessment.
4 - Representing ages 19 and above of a 30-year residential exposure duration.

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Table F.4.5.RME
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: SURFACE WATER
EXPOSURE MEDIUM: SURFACE WATER

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME

5 - Recommended value for swimming exposures.
6 - Assumes lifetime exposure (to age 70) and is consistent with exposure assumptions used to estimate risks for consumption of biota.
7 - Values are the average of 50th percentile body weights for males and females ages 7 through 18.
8 - Whole-body surface area values used for exposures during swimming; value for adolescents is the average of 50th percentile whole-body surface areas of males ages 7 through 18.
9 - Values are the average of 50th percentile body surface areas for body parts that may substantially contact surface water while wading (sum of areas for hands, legs, and feet) for males ages 1 through 6.
10 - It is assumed that anglers would wade during fishing; incidental ingestion of surface water during this activity assumed to occur; 1/10 value for swimming exposures (USEPA, 1988) is used.
11 - Value based on assumed exposure 1 day per week, June through August. Potential contact with surface water and sediment would not occur during months when the weather and water temperature are colder.
12 - It is assumed that wading to catch fish may occur for one hour (recreational) and two hours (subsistence).
13 - Value based on assumed exposure 6 days per week, May through September, under assumption that subsistence anglers would tolerate colder (spring/fall) water temperatures.
14 - It is assumed that receptors may wade during fishing. Exposure to water assumed to occur across feet, legs, and hands. Values are the average of 50th percentile body surface areas for those body parts for ages indicated.

mg - milligrams
cm^2 - square centimeters
cm^3 - cubic centimeters
l - liter
kg - kilograms

Prepared by: KJA
Checked by: MJM

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Table F.4.6.RME
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: SEDIMENT
EXPOSURE MEDIUM: SEDIMENT

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME
INGESTION	SUBSISTENCE ANGLER	ADULT (ages 19 and above)	ASSAPUMPSET POND	CS	CHEMICAL CONCENTRATION IN SEDIMEI	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-S	INGESTION RATE OF SEDIMENT	100	mg/day	USEPA, 1994[1]	CS x IR-S x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	0.5	unitless	Professional Judgement[2]	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	130	day/yr	Professional Judgement[12]	
			MANTON REACH	ED	EXPOSURE DURATION	52	yr	USEPA, 1994[3]	
			DYERVILLE REACH	BW	BODY WEIGHT	70	kg	USEPA, 1994	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	18980	day	USEPA, 1989	
				CF	CONVERSION FACTOR	0.000001	kg/mg		
		ADOLESCENT (ages 7 - 18)	ASSAPUMPSET POND	CS	CHEMICAL CONCENTRATION IN SEDIMEI	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-S	INGESTION RATE OF SEDIMENT	100	mg/day	USEPA, 1994[1]	CS x IR-S x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	0.5	unitless	Professional Judgement[2]	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	130	day/yr	Professional Judgement[12]	
			MANTON REACH	ED	EXPOSURE DURATION	12	yr	Ages 7-18	
			DYERVILLE REACH	BW	BODY WEIGHT	45	kg	USEPA, 1997[6]	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1989	
				CF	CONVERSION FACTOR	0.000001	kg/mg		
DERMAL	SUBSISTENCE ANGLER	ADULT (ages 19 and above)	ASSAPUMPSET POND	CS	CHEMICAL CONCENTRATION IN SEDIMEI	chemical-specific	mg/kg	EPC Table	INTAKE-DERMAL =
			GREYSTONE MILL POND	AF	ADHERENCE FACTOR	0.07	mg/cm2	USEPA, 2001[8]	DAevent x SA x EV x EF x ED x 1/BW x 1/AT
			ALLENDALE POND	AbF	ABSORPTION FACTOR	chemical-specific	unitless	USEPA, 2001[9]	
			LYMAN MILL POND	SA	SKIN SURFACE AREA AVAILABLE FOR CC	4860	cm2/day	USEPA, 1997[7]	Where DAevent =
			MANTON REACH	EV	EVENT DAY	1	unitless	Professional Judgement	CS x AF x AbF x CF
			DYERVILLE REACH	EF	EXPOSURE FREQUENCY	130	day/yr	Professional Judgement[12]	
				ED	EXPOSURE DURATION	52	yr	USEPA, 1994[3]	
				BW	BODY WEIGHT	70	kg	USEPA, 1994	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	18980	day	USEPA, 1989	
				CF	CONVERSION FACTOR	0.000001	kg/mg		
		ADOLESCENT (ages 7 - 18)	ASSAPUMPSET POND	CS	CHEMICAL CONCENTRATION IN SEDIMEI	chemical-specific	mg/kg	EPC Table	INTAKE-DERMAL =
			GREYSTONE MILL POND	AF	ADHERENCE FACTOR	0.2	mg/cm2	USEPA, 2001[8]	DAevent x SA x EV x EF x ED x 1/BW x 1/AT
			ALLENDALE POND	AbF	ABSORPTION FACTOR	chemical-specific	unitless	USEPA, 2001[9]	
			LYMAN MILL POND	SA	SKIN SURFACE AREA AVAILABLE FOR CC	3574	cm2/day	USEPA, 1997[7]	Where DAevent =
			MANTON REACH	EV	EVENT DAY	1	unitless	Professional Judgement	CS x AF x AbF x CF
			DYERVILLE REACH	EF	EXPOSURE FREQUENCY	130	day/yr	Professional Judgement[12]	
				ED	EXPOSURE DURATION	12	yr	Ages 7-18	
				BW	BODY WEIGHT	45	kg	USEPA, 1997[6]	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1989	
				CF	CONVERSION FACTOR	0.000001	kg/mg		

USEPA, 1989. "Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A)"; Office of Emergency and Remedial Response; EPA-540/1-89/002 (interim final); Washington, D.C., December.
USEPA, 1994. "Risk Updates No. 2"; USEPA Region I, Waste Management Division; August. Values from "Attachment 2" to Risk Updates No. 2.
USEPA, 1997. "Exposure Factors Handbook, Volume 1"; Office of Research and Development; EPA-600/P-95/002Fa; Washington, D.C.; August.
USEPA, 2001. "Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Interim. EPA/540/R/99/005.

1 - Soil ingestion rate used because ingestion rates for sediment are not available.
2 - 50% of daily incidental intake of soil and sediment is attributable to incidental sediment ingestion.
3 - Receptor assumed to visit area to wade or swim 4 days per week, June through August. Wading is expected to occur 3 of the 4 days each week and swimming 1 of the days each week. Sediment contact would only occur during wading (not swimming) activities. The child value is based on assumed wading exposure 4 days per week, June through August (the child is assumed to wade while adolescents and adults are swimming).
4 - Representing ages 19 and above of a 30-year residential exposure duration.
5 - Assumes lifetime exposure (to age 70) and is consistent with exposure assumptions used to estimate risks for consumption of biota.

US EPA ARCHIVE DOCUMENT

Table F.4.6.RME
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: SEDIMENT
EXPOSURE MEDIUM: SEDIMENT

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME

6 - Values are the average of 50th percentile body weights for males and females ages 7 through 18.
7 - Values are the average of 50th percentile body surface areas (sum of areas for hands, lower legs, and feet) for males in the various age groups indicated.
8 - Values for residential exposure to soil used as conservative estimate of potential sediment adherence; sediment is submerged, so adherence is unlikely.
9 - Values are provided (Table 3-4 of USEPA, 2001) for arsenic, cadmium, chlordane, 2,4-D, DDT (used for DDD, DDE), TCDD, lindane (used for other BHC isomers), PAHs, PCBs, and pentachlorophenol. *A single value is listed for all other* SVOCs.
No values are listed for VOCs, other pesticides, or other inorganics and, subsequently, no value will be assigned to the ABSd term for COPCs falling into those categories.
10 - Value is the residential soil RME value; it is used to accommodate the possibility that a young child may play in shallow water and contact sediment over more body parts than just feet, lower legs, and hands.
11 - Value based on assumed exposure 1 day per week, June through August. Potential contact with surface water and sediment would not occur during months when the weather and water temperature are colder.
12 - Value based on assumed exposure 6 days per week, May through September. Potential contact with surface water and sediment would not occur during months when the weather and water temperature are colder.

mg - milligrams
cm^2 - square centimeters
kg - kilograms

Prepared by: KJA
Checked by: MJM

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Table F.4.7.RME
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: SOIL
EXPOSURE MEDIUM: BANK SURFACE SOIL

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME
INGESTION	SUBSISTENCE ANGLER	ADULT (ages 19 and above)	GREYSTONE MILL POND ALLENDALE POND	CS	CHEMICAL CONCENTRATION IN SOIL	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION = CS x IR-S x FI x EF x ED x CF x 1/BW x 1/AT
				IR-S	INGESTION RATE OF SOIL	100	mg/day	USEPA, 1994[1]	
				FI	FRACTION INGESTED	0.5	unitless	Professional Judgement[2]	
				EF	EXPOSURE FREQUENCY	208	day/yr	Professional Judgement[12]	
				ED	EXPOSURE DURATION	52	yr	Lifetime exposure[5]	
				BW	BODY WEIGHT	70	kg	USEPA, 1994	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	18980	day	USEPA, 1989	
				CF	CONVERSION FACTOR	0.000001	kg/mg		
		ADOLESCENT (ages 7 - 18)	GREYSTONE MILL POND ALLENDALE POND	CS	CHEMICAL CONCENTRATION IN SOIL	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION = CS x IR-S x FI x EF x ED x CF x 1/BW x 1/AT
				IR-S	INGESTION RATE OF SOIL	100	mg/day	USEPA, 1994[1]	
				FI	FRACTION INGESTED	0.5	unitless	Professional Judgement[2]	
				EF	EXPOSURE FREQUENCY	208	day/yr	Professional Judgement[12]	
				ED	EXPOSURE DURATION	12	yr	Ages 7-18	
				BW	BODY WEIGHT	45	kg	USEPA, 1997[6]	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1989	
				CF	CONVERSION FACTOR	0.000001	kg/mg		
DERMAL	SUBSISTENCE ANGLER	ADULT (ages 19 and above)	GREYSTONE MILL POND ALLENDALE POND	CS	CHEMICAL CONCENTRATION IN SOIL	chemical-specific	mg/kg	EPC Table	INTAKE-DERMAL = DAevent x SA x EV x EF x ED x 1/BW x 1/AT
				AF	ADHERENCE FACTOR	0.07	mg/cm2	USEPA, 2001[8]	
				AbF	ABSORPTION FACTOR	chemical-specific	unitless	USEPA, 2001[9]	
				SA	SKIN SURFACE AREA AVAILABLE FOR CO	5700	cm2/day	USEPA, 2001[10]	Where DAevent = CS x AF x AbF x CF
				EV	EVENT DAY	1	unitless	Professional Judgement	
				EF	EXPOSURE FREQUENCY	208	day/yr	Professional Judgement[12]	
				ED	EXPOSURE DURATION	52	yr	Lifetime exposure[5]	
				BW	BODY WEIGHT	70	kg	USEPA, 1994	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	18980	day	USEPA, 1989	
				CF	CONVERSION FACTOR	0.000001	kg/mg		
		ADOLESCENT (ages 7 - 18)	GREYSTONE MILL POND ALLENDALE POND	CS	CHEMICAL CONCENTRATION IN SOIL	chemical-specific	mg/kg	EPC Table	INTAKE-DERMAL = DAevent x SA x EV x EF x ED x 1/BW x 1/AT
				AF	ADHERENCE FACTOR	0.2	mg/cm2	USEPA, 2001[8]	
				AbF	ABSORPTION FACTOR	chemical-specific	unitless	USEPA, 2001[9]	
				SA	SKIN SURFACE AREA AVAILABLE FOR CO	4800	cm2/day	USEPA, 1997[7]	Where DAevent = CS x AF x AbF x CF
				EV	EVENT DAY	1	unitless	Professional Judgement	
				EF	EXPOSURE FREQUENCY	208	day/yr	Professional Judgement[12]	
				ED	EXPOSURE DURATION	12	yr	Ages 7-18	
				BW	BODY WEIGHT	45	kg	USEPA, 1997[6]	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1989	
				CF	CONVERSION FACTOR	0.000001	kg/mg		

USEPA, 1989. "Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A)"; Office of Emergency and Remedial Response; EPA-540/1-89/002 (interim final); Washington, D.C., December.
USEPA, 1994. "Risk Updates No. 2"; USEPA Region I, Waste Management Division; August. Values from "Attachment 2" to Risk Updates No. 2.
USEPA, 1997. "Exposure Factors Handbook, Volume 1"; Office of Research and Development; EPA-600/P-95/002Fa; Washington, D.C.; August.
USEPA, 2001. "Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Interim. EPA/540/R/99/005.

1 - Soil ingestion rate used.
2 - 50% of daily incidental intake of soil and sediment is attributable to incidental ingestion of soil at bank.
3 - Value based on exposure during wading, swimming, and walking/exploring banks (4 days per week June - August), and walking/exploring banks (2 days per week May, Sept, Oct).
4 - Representing ages 19 and above of a 30-year residential exposure duration.
5 - Assumes lifetime exposure (to age 70) and is consistent with exposure assumptions used to estimate risks for consumption of biota.
6 - Values are the average of 50th percentile body weights for males and females ages 7 through 18.

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Table F.4.7.RME
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: SOIL
EXPOSURE MEDIUM: BANK SURFACE SOIL

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME

7 - Values are the average of 50th percentile body surface areas (sum of areas for face, hands, forearms, lower legs, and feet) for males in the various age groups indicated.
8 - Values for residential exposure to soil used as conservative estimate of potential soil adherence associated with recreational walking/exploring.
9 - Values are provided (Table 3-4 of USEPA, 2001) for arsenic, cadmium, chlordane, 2,4-D, DDT (used for DDD, DDE), TCDD, lindane (used for other BHC isomers), PAHs, PCBs, and pentachlorophenol. A single value is listed for all other SVOCs.
No values are listed for VOCs, other pesticides, or other inorganics and, subsequently, no value will be assigned to the ABSd term for COPCs falling into those categories.
10 - Values for residential exposure to soil used as conservative estimate of potential surface area exposed to soil during recreational walking/exploring.
11 - Contact with soil assumed to occur when accessing water bodies for angling (assumed exposure 1 day per week, June through August).
12 - Contact with soil assumed to occur when accessing water bodies for angling; this is assumed to occur 6 days per week, April through November.

mg - milligrams
cm^2 - square centimeters
kg - kilograms

Prepared by: KJA
Checked by: MJM

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Table F.4.1.CT
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: AMERICAN EEL
EXPOSURE MEDIUM: WHOLE BODY

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME
INGESTION	SUBSISTENCE ANGLER	ADULT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	59.2	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
			DYERVILLE REACH	ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	70	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		ADOLESCENT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	29.7	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
			DYERVILLE REACH	ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	45	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		CHILD	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	21.1	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	0.5	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
			DYERVILLE REACH	ED	EXPOSURE DURATION	6	yr	Assumption	
				BW	BODY WEIGHT	15	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	2190	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		

Balcom, N. C., C. M. Capacchione, D. W. Hirsch, 1999. Quantification of Fish and Seafood Consumption Rates in Connecticut. Submitted to CTDEP. January.
USEPA, 1989. "Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A)"; Office of Emergency and Remedial Response; EPA-540/1-89/002 (interim final); Washington, D.C., December.
USEPA, 1994. "Risk Updates No. 2"; USEPA Region I, Waste Management Division; August. Values from "Attachment 2" to Risk Updates No. 2.
USEPA, 1997. "Exposure Factors Handbook, Volume I"; Office of Research and Development; EPA-600/P-95/002Fa; Washington, D.C.; August.
USEPA, 1999. "Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part E)"; Office of Solid Waste and Emergency Response; EPA-540/R-99/005 (interim final); Washington, D.C.

Prepared by: KJA
Checked by: MJM

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Table F.4.2.CT
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: LARGEMOUTH BASS
EXPOSURE MEDIUM: FILLET

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME
INGESTION	SUBSISTENCE ANGLER	ADULT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	59.2	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			LYMAN MILL POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			MANTON REACH	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	70	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		ADOLESCENT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	29.7	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			LYMAN MILL POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			MANTON REACH	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	45	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		CHILD	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	21.1	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			LYMAN MILL POND	FI	FRACTION INGESTED	0.5	unitless	Assumption	
			MANTON REACH	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	6	yr	Assumption	
				BW	BODY WEIGHT	15	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	2190	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		

Balcom, N. C., C. M. Capacchione, D. W. Hirsch, 1999. Quantification of Fish and Seafood Consumption Rates in Connecticut. Submitted to CTDEP. January.
USEPA, 1989. "Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A)"; Office of Emergency and Remedial Response; EPA-540/1-89/002 (interim final); Washington, D.C., December.
USEPA, 1994. "Risk Updates No. 2"; USEPA Region I, Waste Management Division; August. Values from "Attachment 2" to Risk Updates No. 2.
USEPA, 1997. "Exposure Factors Handbook, Volume 1"; Office of Research and Development; EPA-600/P-95/002Fa; Washington, D.C.; August.
USEPA, 1999. "Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part E)"; Office of Solid Waste and Emergency Response; EPA-540/R-99/005 (interim final); Washington, D.C.

Prepared by: KJA
Checked by: MJM

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Table F.4.3.CT
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: LARGEMOUTH BASS
EXPOSURE MEDIUM: WHOLE BODY

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME
INGESTION	SUBSISTENCE ANGLER	ADULT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	59.2	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			LYMAN MILL POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			MANTON REACH	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	70	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		ADOLESCENT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	29.7	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			LYMAN MILL POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			MANTON REACH	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	45	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		CHILD	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	21.1	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			LYMAN MILL POND	FI	FRACTION INGESTED	0.5	unitless	Assumption	
			MANTON REACH	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	6	yr	Assumption	
				BW	BODY WEIGHT	15	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	2190	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		

Balcom, N. C., C. M. Capacchione, D. W. Hirsch, 1999. Quantification of Fish and Seafood Consumption Rates in Connecticut. Submitted to CTDEP. January.
USEPA, 1989. "Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A)"; Office of Emergency and Remedial Response; EPA-540/1-89/002 (interim final); Washington, D.C., December.
USEPA, 1994. "Risk Updates No. 2"; USEPA Region I, Waste Management Division; August. Values from "Attachment 2" to Risk Updates No. 2.
USEPA, 1997. "Exposure Factors Handbook, Volume 1"; Office of Research and Development; EPA-600/P-95/002Fa; Washington, D.C.; August.
USEPA, 1999. "Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part E)"; Office of Solid Waste and Emergency Response; EPA-540/R-99/005 (interim final); Washington, D.C.

Prepared by: KJA
Checked by: MJM

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Table F.4.4.CT
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: WHITE SUCKER
EXPOSURE MEDIUM: WHOLE BODY

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME
INGESTION	*SUBSISTENCE ANGLER*	*ADULT*	*ASSAPUMPSET POND*	CB	*CHEMICAL CONCENTRATION IN BIOTA*	chemical-specific	mg/kg	*EPC Table*	*INTAKE-INGESTION =*
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	59.2	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	*FI*	*FRACTION INGESTED*	1	*unitless*	*Assumption*	
				EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	70	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		ADOLESCENT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	29.7	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
				EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	45	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		CHILD	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	21.1	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	0.5	unitless	Assumption	
				EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	*EXPOSURE DURATION*	6	yr	Assumption	
				BW	BODY WEIGHT	15	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	2190	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		

Balcom, N. C., C. M. Capacchione, D. W. Hirsch, 1999. Quantification of Fish and Seafood Consumption Rates in Connecticut. Submitted to CTDEP. January.
USEPA, 1989. "Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A)"; Office of Emergency and Remedial Response; EPA-540/1-89/002 (interim final); Washington, D.C., December.
USEPA, 1994. "Risk Updates No. 2"; USEPA Region 1, Waste Management Division; August. Values from "Attachment 2" to Risk Updates No. 2.
USEPA, 1997. "Exposure Factors Handbook, Volume 1"; Office of Research and Development; EPA-600/P-95/002Fa; Washington, D.C.; August.
USEPA, 1999. "Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part E)"; Office of Solid Waste and Emergency Response; EPA-540/R-99/005 (interim final); Washington, D.C.

Prepared by: KJA
Checked by: MJM

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Table F.4.5.CT
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: SURFACE WATER
EXPOSURE MEDIUM: SURFACE WATER

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME
INGESTION	SUBSISTENCE ANGLER	ADULT (ages 19 and above)	ASSAPUMPSET POND	CW	CHEMICAL CONCENTRATION IN WATER	chemical-specific	mg/l	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-W	INGESTION RATE OF WATER	0.0025	l/hour	USEPA, 1988[9]	CW x IR-W x FI x ET x EF x ED x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Professional Judgement[2]	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	65	event/yr	Professional Judgement[12]	
			MANTON REACH	ED	EXPOSURE DURATION	12	yr	USEPA, 1994[15]	
			DYERVILLE REACH	ET	EXPOSURE TIME	2	hours/event	Professional Judgement[13]	
				BW	BODY WEIGHT	70	kg	USEPA, 1994	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1989	
		ADOLESCENT (ages 7 - 18)	ASSAPUMPSET POND	CW	CHEMICAL CONCENTRATION IN WATER	chemical-specific	mg/l	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-W	INGESTION RATE OF WATER	0.0025	l/hour	USEPA, 1988[9]	CW x IR-W x FI x ET x EF x ED x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Professional Judgement[2]	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	65	event/yr	Professional Judgement[12]	
			MANTON REACH	ED	EXPOSURE DURATION	12	yr	USEPA, 1994[15]	
			DYERVILLE REACH	ET	EXPOSURE TIME	2	hours/event	Professional Judgement[13]	
				BW	BODY WEIGHT	45	kg	USEPA, 1997[4]	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1989	
DERMAL	SUBSISTENCE ANGLER	ADULT (ages 19 and above)	ASSAPUMPSET POND	CW	CHEMICAL CONCENTRATION IN WATER	chemical-specific	mg/l	EPC Table	INTAKE-DERMAL =
			GREYSTONE MILL POND	PCevent	PERMEABILITY CONSTANT PER EVENT	chemical-specific	cm	USEPA, 2001	CW x SA x PCevent x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	SA	SKIN SURFACE AREA AVAILABLE FOR CO	8700	cm2	USEPA, 1997[14]	PCevent = PC x ET; calculated in PCevent table
			LYMAN MILL POND	ET	EXPOSURE TIME	2	hr/event	Professional Judgement[13]	
			MANTON REACH	EF	EXPOSURE FREQUENCY	65	event/yr	Professional Judgement[12]	
			DYERVILLE REACH	ED	EXPOSURE DURATION	12	yr	USEPA, 1994[15]	
				BW	BODY WEIGHT	70	kg	USEPA, 1994	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1989	
				CF	CONVERSION FACTOR	0.001	l/cm3		
		ADOLESCENT (ages 7 - 18)	ASSAPUMPSET POND	CW	CHEMICAL CONCENTRATION IN WATER	chemical-specific	mg/l	EPC Table	INTAKE-DERMAL =
			GREYSTONE MILL POND	PCevent	PERMEABILITY CONSTANT PER EVENT	chemical-specific	cm	USEPA, 2001	CW x SA x PCevent x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	SA	SKIN SURFACE AREA AVAILABLE FOR CO	6260	cm2	USEPA, 1997[14]	PCevent = PC x ET; calculated in PCevent table
			LYMAN MILL POND	ET	EXPOSURE TIME	2	hr/event	Professional Judgement[13]	
			MANTON REACH	EF	EXPOSURE FREQUENCY	65	event/yr	Professional Judgement[12]	
			DYERVILLE REACH	ED	EXPOSURE DURATION	12	yr	USEPA, 1994[15]	
				BW	BODY WEIGHT	45	kg	USEPA, 1997[4]	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1989	
				CF	CONVERSION FACTOR	0.001	l/cm3		

USEPA, 1988. Superfund Exposure Assessment Manual. Office of Remedial Response; EPA/540/1-88/001; Washington, D.C.

USEPA, 1989. "Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A)"; Office of Emergency and Remedial Response; EPA-540/1-89/002 (interim final); Washington, D.C., December.

USEPA, 1994. "Risk Updates No. 2"; USEPA Region I, Waste Management Division; August. Values from "Attachment 2" to Risk Updates No. 2.

USEPA, 1997. "Exposure Factors Handbook, Volume I"; Office of Research and Development; EPA-600/P-95/002Fa; Washington, D.C.; August.

USEPA, 2001. "Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Interim. EPA/540/R/99/005.

1 - One-half the value for swimming used; use of one-half the RME value is based on USEPA Region I guidance that specifies use of 1/2 RME value as the CT value for soil ingestion (USEPA, 1994)

2 - 100% of daily incidental intake of surface water is attributable to incidental ingestion at the Site.

3 - Receptor assumed to visit area to wade or swim 2 days per week, June through August. Wading is expected to occur 1 of the 2 days each week and swimming 1 of the days each week. Sediment contact would only occur during wading (not swimming) activities. The child value is based on assumed wading exposure 2 days per week, June through August (the child is assumed to wade while adolescents and adults are swimming). Since contact with surface water would occur during both wading and swimming activities, but a larger portion of the body would be exposed to surface water during swimming, contact with surface water is evaluated using parameters for swimming exposures to provide a conservative assessment.

4 - Representing a 9 year exposure duration during ages 19 and above.

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Table F.4.5.CT
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: SURFACE WATER
EXPOSURE MEDIUM: SURFACE WATER

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME

5 - Recommended value for swimming exposures.
6 - Values are the average of 50th percentile body weights for males and females ages 7 - 18.
7 - Whole-body surface area values used for exposures during swimming; value for adolescents is the average of 50th percentile whole-body surface areas of males ages 7 through 18.
8 - Values are the average of 50th percentile body surface areas for body parts that may substantially contact surface water while wading (sum of areas for hands, legs, and feet) for males ages 1 through 6.
9 - It is assumed that anglers would wade during fishing; incidental ingestion of surface water during this activity assumed to occur; 1/10 CT value for swimming exposures is used.
10 - Value based on assumed exposure 1 day every other week, June through August. Potential contact with surface water and sediment would not occur during months when the weather and water temperature are colder.
11 - It is assumed that a recreational angler would not wade for more than one hour.
12 - Value assumes that one-half of subsistence fishing occurs at the Site; therefore, one-half of an assumed exposure 6 days per week, May through September.
13 - It is assumed that wading to catch fish may occur for two hours.
14 - It is assumed that receptors may wade during fishing. Exposure to water assumed to occur across feet, legs, and hands. Values are the average of 50th percentile body surface areas for those body parts for ages indicated.
15 - Representing ages 7 - 18 (12 years) and ages 19 and above (12 years) of a 30-year residential exposure duration (the young child, representing the first 6 years, is not evaluated for the angling activity).

mg - milligrams
cm^2 - square centimeters
cm^3 - cubic centimeters
l - liter
kg - kilograms

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

Table F.4.6.CT
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: SEDIMENT
EXPOSURE MEDIUM: SEDIMENT

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME
INGESTION	SUBSISTENCE ANGLER	ADULT	ASSAPUMPSET POND	CS	CHEMICAL CONCENTRATION IN SEDIMEN	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
		(ages 19 and above)	GREYSTONE MILL POND	IR-S	INGESTION RATE OF SEDIMENT	50	mg/day	USEPA, 1994[1]	CS x IR-S x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	0.5	unitless	Professional Judgement[2]	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	65	day/yr	Professional Judgement[11]	
			MANTON REACH	ED	EXPOSURE DURATION	12	yr	USEPA, 1994[12]	
			DYERVILLE REACH	BW	BODY WEIGHT	70	kg	USEPA, 1994	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1989	
				CF	CONVERSION FACTOR	0.000001	kg/mg		
		ADOLESCENT	ASSAPUMPSET POND	CS	CHEMICAL CONCENTRATION IN SEDIMEN	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
		(ages 7 - 18)	GREYSTONE MILL POND	IR-S	INGESTION RATE OF SEDIMENT	50	mg/day	USEPA, 1994[1]	CS x IR-S x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	0.5	unitless	Professional Judgement[2]	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	65	day/yr	Professional Judgement[11]	
			MANTON REACH	ED	EXPOSURE DURATION	12	yr	USEPA, 1994[12]	
			DYERVILLE REACH	BW	BODY WEIGHT	45	kg	USEPA, 1997[5]	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1989	
				CF	CONVERSION FACTOR	0.000001	kg/mg		
DERMAL	SUBSISTENCE ANGLER	ADULT	ASSAPUMPSET POND	CS	CHEMICAL CONCENTRATION IN SEDIMEN	chemical-specific	mg/kg	EPC Table	INTAKE-DERMAL =
		(ages 19 and above)	GREYSTONE MILL POND	AF	ADHERENCE FACTOR	0.01	mg/cm2	USEPA, 2001[7]	DAevent x SA x EV x EF x ED x 1/BW x 1/AT
			ALLENDALE POND	AbF	ABSORPTION FACTOR	chemical-specific	unitless	USEPA, 2001[8]	
			LYMAN MILL POND	SA	SKIN SURFACE AREA AVAILABLE FOR CO	4860	cm2/day	USEPA, 1997[6]	Where DAevent =
			MANTON REACH	EV	EVENT DAY	1	unitless	Professional Judgement	CS x AF x AbF x CF
			DYERVILLE REACH	EF	EXPOSURE FREQUENCY	65	day/yr	Professional Judgement[11]	
				ED	EXPOSURE DURATION	12	yr	USEPA, 1994[12]	
				BW	BODY WEIGHT	70	kg	USEPA, 1994	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1989	
				CF	CONVERSION FACTOR	0.000001	kg/mg		
		ADOLESCENT	ASSAPUMPSET POND	CS	CHEMICAL CONCENTRATION IN SEDIMEN	chemical-specific	mg/kg	EPC Table	INTAKE-DERMAL =
		(ages 7 - 18)	GREYSTONE MILL POND	AF	ADHERENCE FACTOR	0.04	mg/cm2	USEPA, 2001[7]	DAevent x SA x EV x EF x ED x 1/BW x 1/AT
			ALLENDALE POND	AbF	ABSORPTION FACTOR	chemical-specific	unitless	USEPA, 2001[8]	
			LYMAN MILL POND	SA	SKIN SURFACE AREA AVAILABLE FOR CO	3574	cm2/day	USEPA, 1997[6]	Where DAevent =
			MANTON REACH	EV	EVENT DAY	1	unitless	Professional Judgement	CS x AF x AbF x CF
			DYERVILLE REACH	EF	EXPOSURE FREQUENCY	65	day/yr	Professional Judgement[11]	
				ED	EXPOSURE DURATION	12	yr	USEPA, 1994[12]	
				BW	BODY WEIGHT	45	kg	USEPA, 1997[5]	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1989	
				CF	CONVERSION FACTOR	0.000001	kg/mg		

USEPA, 1989. "Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A)"; Office of Emergency and Remedial Response; EPA-540/1-89/002 (interim final); Washington, D.C., December.

USEPA, 1994. "Risk Updates No. 2"; USEPA Region I, Waste Management Division; August. Values from "Attachment 2" to Risk Updates No. 2.

USEPA, 1997. "Exposure Factors Handbook, Volume 1"; Office of Research and Development; EPA-600/P-95/002Fa; Washington, D.C.; August.

USEPA, 2001. "Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Interim. EPA/540/R/99/005.

1 - CT soil ingestion rate used because ingestion rates for sediment are not available.

2 - 50% of daily incidental intake of soil and sediment is attributable to incidental sediment ingestion.

3 - Receptor assumed to visit area to wade or swim 2 days per week, June through August. Wading is expected to occur 1 of the 2 days each week and swimming 1 of the days each week. Sediment contact would only occur during wading (not swimming) activities. The child value is based on assumed wading exposure 2 days per week, June through August (the child is assumed to wade while adolescents and adults are swimming).

4 - Representing a 9 year exposure duration during ages 19 and above

5 - Values are the average of 50th percentile body weights for males and females ages 7 - 18.

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Table F.4.6.CT
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: SEDIMENT
EXPOSURE MEDIUM: SEDIMENT

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME

6 - Values are the average of 50th percentile body surface areas (sum of areas for hands, lower legs, and feet) for males in the various age groups indicated.
7 - CT values for residential exposure to soil used as conservative estimate of potential sediment adherence; sediment is submerged, so adherence is unlikely.
8 - Values are provided (Table 3-4 of USEPA, 2001) for arsenic, cadmium, chlordane, 2,4-D, DDT (used for DDD, DDE), TCDD, lindane (used for other BHC isomers), PAHs, PCBs, and pentachlorophenol. A single value is listed for all other SVOCs.
No values are listed for VOCs, other pesticides, or other inorganics and, subsequently, no value will be assigned to the ABSd term for COPCs falling into those categories.
9 - Value is the residential soil CT value; it is used to accommodate the possibility that a young child may play in shallow water and contact sediment over more body parts than just feet, lower legs, and hands.
10 - Value based on assumed exposure 1 day every other week, June through August. Potential contact with surface water and sediment would not occur during months when the weather and water temperature are colder.
11 - Value assumes that one-half of subsistence fishing occurs at the Site; therefore, one-half of an assumed exposure 6 days per week, May through September.
Potential contact with surface water and sediment would not occur during months when the weather and water temperature are colder.
12 - Representing ages 7 - 18 (12 years) and ages 19 and above (12 years) of a 30-year residential exposure duration (the young child, representing the first 6 years, is not evaluated for the angling activity).

mg - milligrams
cm^2 - square centimeters
kg - kilograms

Prepared by: KJA
Checked by: MJM

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Table F.4.7.CT
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: SOIL
EXPOSURE MEDIUM: BANK SURFACE SOIL

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME
INGESTION	SUBSISTENCE ANGLER	ADULT (ages 19 and above)	GREYSTONE MILL POND ALLENDALE POND	CS	CHEMICAL CONCENTRATION IN SOIL	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION = CS x IR-S x FI x EF x ED x CF x 1/BW x 1/AT
				IR-S	INGESTION RATE OF SOIL	50	mg/day	USEPA, 1994[1]	
				FI	FRACTION INGESTED	0.5	unitless	Professional Judgement[2]	
				EF	EXPOSURE FREQUENCY	104	day/yr	Professional Judgement[11]	
				ED	EXPOSURE DURATION	12	yr	USEPA, 1994[12]	
				BW	BODY WEIGHT	70	kg	USEPA, 1994	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1989	
				CF	CONVERSION FACTOR	0.000001	kg/mg		
		ADOLESCENT (ages 7 - 18)	GREYSTONE MILL POND ALLENDALE POND	CS	CHEMICAL CONCENTRATION IN SOIL	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION = CS x IR-S x FI x EF x ED x CF x 1/BW x 1/AT
				IR-S	INGESTION RATE OF SOIL	50	mg/day	USEPA, 1994[1]	
				FI	FRACTION INGESTED	0.5	unitless	Professional Judgement[2]	
				EF	EXPOSURE FREQUENCY	104	day/yr	Professional Judgement[11]	
				ED	EXPOSURE DURATION	12	yr	USEPA, 1994[12]	
				BW	BODY WEIGHT	45	kg	USEPA, 1997[5]	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1989	
				CF	CONVERSION FACTOR	0.000001	kg/mg		
DERMAL	SUBSISTENCE ANGLER	ADULT (ages 19 and above)	GREYSTONE MILL POND ALLENDALE POND	CS	CHEMICAL CONCENTRATION IN SOIL	chemical-specific	mg/kg	EPC Table	INTAKE-DERMAL = DAevent x SA x EV x EF x ED x 1/BW x 1/AT
				AF	ADHERENCE FACTOR	0.01	mg/cm2	USEPA, 2001[7]	
				AbF	ABSORPTION FACTOR	chemical-specific	unitless	USEPA, 2001[8]	
				SA	SKIN SURFACE AREA AVAILABLE FOR CO	5700	cm2/day	USEPA, 2001[9]	Where DAevent = CS x AF x AbF x CF
				EV	EVENT DAY	1	unitless	Professional Judgement	
				EF	EXPOSURE FREQUENCY	104	day/yr	Professional Judgement[11]	
				ED	EXPOSURE DURATION	12	yr	USEPA, 1994[12]	
				BW	BODY WEIGHT	70	kg	USEPA, 1994	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1989	
				CF	CONVERSION FACTOR	0.000001	kg/mg		
		ADOLESCENT (ages 7 - 18)	GREYSTONE MILL POND ALLENDALE POND	CS	CHEMICAL CONCENTRATION IN SOIL	chemical-specific	mg/kg	EPC Table	INTAKE-DERMAL = DAevent x SA x EV x EF x ED x 1/BW x 1/AT
				AF	ADHERENCE FACTOR	0.04	mg/cm2	USEPA, 2001[7]	
				AbF	ABSORPTION FACTOR	chemical-specific	unitless	USEPA, 2001[8]	
				SA	SKIN SURFACE AREA AVAILABLE FOR CO	4800	cm2/day	USEPA, 1997[6]	Where DAevent = CS x AF x AbF x CF
				EV	EVENT DAY	1	unitless	Professional Judgement	
				EF	EXPOSURE FREQUENCY	104	day/yr	Professional Judgement[11]	
				ED	EXPOSURE DURATION	12	yr	USEPA, 1994[12]	
				BW	BODY WEIGHT	45	kg	USEPA, 1997[5]	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1989	
				CF	CONVERSION FACTOR	0.000001	kg/mg		

USEPA, 1989. "Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A)"; Office of Emergency and Remedial Response; EPA-540/1-89/002 (interim final); Washington, D.C., December.
USEPA, 1994. "Risk Updates No. 2"; USEPA Region I, Waste Management Division; August. Values from "Attachment 2" to Risk Updates No. 2.
USEPA, 1997. "Exposure Factors Handbook, Volume 1"; Office of Research and Development; EPA-600/P-95/002Fa; Washington, D.C.; August.
USEPA, 2001. "Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Interim. EPA/540/R/99/005.
1 - CT soil ingestion rate used.
2 - 50% of daily incidental intake of soil and sediment is attributable to incidental ingestion of soil at bank.
3 - Value based on exposure during wading, swimming, and walking/exploring banks (2 days per week June - August), and walking/exploring banks (1 day per week May, Sept, Oct).
4 - Representing a 9 year exposure duration during ages 19 and above.
5 - Values are the average of 50th percentile body weights for males and females ages 7 - 18.
6 - Values are the average of 50th percentile body surface areas (sum of areas for face, hands, forearms, lower legs, and feet) for males in the various age groups indicated.

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Table F.4.7.CT
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: SOIL
EXPOSURE MEDIUM: BANK SURFACE SOIL

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME

7 - CT values for residential exposure to soil used as conservative estimate of potential soil adherence associated with recreational walking/exploring.
8 - Values are provided (Table 3-4 of USEPA, 2001) for arsenic, cadmium, chlordane, 2,4-D, DDT (used for DDD, DDE), TCDD, lindane (used for other BHC isomers), PAHs, PCBs, and pentachlorophenol. A single value is listed for all other SVOCs.
No values are listed for VOCs, other pesticides, or other inorganics and, subsequently, no value will be assigned to the ABSd term for COPCs falling into those categories.
9 - Values for residential exposure to soil used as conservative estimate of potential surface area exposed to soil during recreational walking/exploring.
10 - Contact with soil assumed to occur when accessing water bodies for angling (assumed exposure 1 day every other week, June through August).
11 - Value assumes that one-half of subsistence fishing occurs at the Site; therefore, one-half of an assumed exposure 6 days per week, April through November.
Potential contact with surface water and sediment would not occur during months when the weather and water temperature are colder.
12 - Representing ages 7 - 18 (12 years) and ages 19 and above (12 years) of a 30-year residential exposure duration (the young child, representing the first 6 years, is not evaluated for the angling activity).

mg - milligrams
cm^2 - square centimeters
kg - kilograms

Prepared by: KJA
Checked by: MJM

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TABLE F.7.1.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	INGESTION	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			4.7E-09	mg/kg/day	2.0E-02	mg/kg/day	2.E-07
				Acenaphthylene	0.0589	mg/kg	NC		NC			1.5E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				Benzo(a)anthracene	1	mg/kg	1.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	2.5E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Benzo(a)pyrene	0.84	mg/kg	1.6E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Benzo(b)fluoranthene	1.4	mg/kg	2.6E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	3.6E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	0.59468	mg/kg	NC		NC			1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Dibenzo(a,h)anthracene	0.17898	mg/kg	3.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	4.6E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	0.65	mg/kg	1.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-08	1.7E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Phenanthrene	0.79474	mg/kg	NC		NC			2.0E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				alpha-Chlordane	0.00133	mg/kg	2.5E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-11	3.4E-10	mg/kg/day	5.0E-04	mg/kg/day	7.E-07
				Aroclor-1254	0.05755	mg/kg	1.1E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-08	1.5E-08	mg/kg/day	2.0E-05	mg/kg/day	7.E-04
				Aroclor-1268	0.04166	mg/kg	7.9E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-08	1.1E-08	mg/kg/day	2.0E-05	mg/kg/day	5.E-04
				gamma-Chlordane	0.00065	mg/kg	1.2E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-11	1.7E-10	mg/kg/day	5.0E-04	mg/kg/day	3.E-07
				Technical Chlordane	0.15253	mg/kg	2.9E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	3.9E-08	mg/kg/day	5.0E-04	mg/kg/day	8.E-05
				Aluminum	21774	mg/kg	NC		NC			5.5E-03	mg/kg/day			
				Arsenic	5.21	mg/kg	9.8E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	1.3E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				Cadmium	0.858	mg/kg	NC		NC			2.2E-07	mg/kg/day	1.0E-03	mg/kg/day	2.E-04
				Chromium	17.5	mg/kg	NC		NC			4.5E-06	mg/kg/day	3.0E-03	mg/kg/day	1.E-03
				Copper	18.3	mg/kg	NC		NC			4.7E-06	mg/kg/day			
				Lead	88.6	mg/kg	1.7E-05	mg/kg/day				2.3E-05	mg/kg/day			
				Manganese	1590	mg/kg	NC		NC			4.0E-04	mg/kg/day	7.1E-02	mg/kg/day	6.E-03
				Mercury	0.114	mg/kg	NC		NC			2.9E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				Nickel	20	mg/kg	NC		NC			5.1E-06	mg/kg/day	2.0E-02	mg/kg/day	3.E-04
				Thallium	0.354	mg/kg	NC		NC			9.0E-08	mg/kg/day	8.0E-05	mg/kg/day	1.E-03
				Vanadium	32	mg/kg	NC		NC			8.1E-06	mg/kg/day	7.0E-03	mg/kg/day	1.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.00000773	mg/kg	1.5E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-07	2.0E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-06					2.E-02
			DERMAL	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			4.2E-09	mg/kg/day	2.0E-02	mg/kg/day	2.E-07
				Acenaphthylene	0.0589	mg/kg	NC		NC			1.3E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				Benzo(a)anthracene	1	mg/kg	1.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	2.3E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Benzo(a)pyrene	0.84	mg/kg	1.4E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	1.9E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Benzo(b)fluoranthene	1.4	mg/kg	2.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	3.2E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	0.59468	mg/kg	NC		NC			1.3E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Dibenzo(a,h)anthracene	0.17898	mg/kg	3.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	4.0E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Indeno(1,2,3-cd)pyrene	0.65	mg/kg	1.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-08	1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Phenanthrene	0.79474	mg/kg	NC		NC			1.8E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				alpha-Chlordane	0.00133	mg/kg	6.8E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-11	9.2E-11	mg/kg/day	5.0E-04	mg/kg/day	2.E-07
				Aroclor-1254	0.05755	mg/kg	1.0E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-08	1.4E-08	mg/kg/day	2.0E-05	mg/kg/day	7.E-04
				Aroclor-1268	0.04166	mg/kg	7.5E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-08	1.0E-08	mg/kg/day	2.0E-05	mg/kg/day	5.E-04
				gamma-Chlordane	0.00065	mg/kg	3.3E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-11	4.5E-11	mg/kg/day	5.0E-04	mg/kg/day	9.E-08
				Technical Chlordane	0.15253	mg/kg	7.8E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-09	1.1E-08	mg/kg/day	5.0E-04	mg/kg/day	2.E-05
				Aluminum	21774	mg/kg	NC		NC			--				
				Arsenic	5.21	mg/kg	2.0E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-07	2.7E-07	mg/kg/day	3.0E-04	mg/kg/day	9.E-04
				Cadmium	0.858	mg/kg	NC		NC			1.5E-09	mg/kg/day	2.5E-05	mg/kg/day	6.E-05
				Chromium	17.5	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	18.3	mg/kg	NC		NC			--				
				Lead	88.6	mg/kg	--					--				
				Manganese	1590	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.114	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	20	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.354	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	32	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00000773	mg/kg	3.0E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-08	4.0E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-06					2.E-03
		EXPOSURE POINT TOTAL									6.E-06					2.E-02
	EXPOSURE MEDIUM TOTAL										6.E-06					2.E-02
SEDIMENT TOTAL											6.E-06					2.E-02

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TABLE F.7.1.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	CSF/UNIT RISK VALUE	CSF UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	RfD/RfC (1) VALUE	RfD/RfC UNITS	HAZARD QUOTIENT
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	INGESTION	Arsenic	0.000491	mg/l	1.9E-08	mg/kg/day	1.5E+00	mg/kg/day	3.E-08	2.5E-08	mg/kg/day	3.0E-04	mg/kg/day	8.E-05
				Manganese	0.166	mg/l	NC		NC			8.4E-06	mg/kg/day	2.4E-02	mg/kg/day	4.E-04
				Mercury	0.00000215	mg/l	NC		NC			1.1E-10	mg/kg/day	3.0E-04	mg/kg/day	4.E-07
				Nitrite-N	0.0051	mg/l	NC		NC			2.6E-07	mg/kg/day	1.0E-01	mg/kg/day	3.E-06
				Toxicity Equivalency (Dioxins/Furans)	5.34E-09	mg/l	2.0E-13	mg/kg/day	1.5E+05	mg/kg/day	3.E-08	2.7E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-08					4.E-04
			DERMAL	Arsenic	0.000491	mg/l	3.2E-08	mg/kg/day	1.5E+00	mg/kg/day	5.E-08	4.3E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				Manganese	0.166	mg/l	NC		NC			1.5E-05	mg/kg/day	9.6E-04	mg/kg/day	2.E-02
				Mercury	0.00000215	mg/l	NC		NC			1.9E-10	mg/kg/day	2.1E-05	mg/kg/day	9.E-06
				Nitrite-N	0.0051	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	5.34E-09	mg/l	8.0E-10	mg/kg/day	1.5E+05	mg/kg/day	1.E-04	1.1E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					2.E-02
		EXPOSURE POINT TOTAL									1.E-04					2.E-02
	EXPOSURE MEDIUM TOTAL										1.E-04					2.E-02
SURFACE WATER TOTAL											1.E-04					2.E-02
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00179	mg/kg	NC		NC			3.6E-06	mg/kg/day	6.0E-02	mg/kg/day	6.E-05
				Phenanthrene	0.00876	mg/kg	NC		NC			1.8E-05	mg/kg/day	3.0E-02	mg/kg/day	6.E-04
				4,4'-DDD	0.00828	mg/kg	1.2E-05	mg/kg/day	2.4E-01	(mg/kg/day)-1	3.E-06	1.7E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				4,4'-DDE	0.0373	mg/kg	5.6E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-05	7.6E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				alpha-Chlordane	0.00487	mg/kg	7.3E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-06	9.9E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	0.10246	mg/kg	1.5E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-04	2.1E-04	mg/kg/day	2.0E-05	mg/kg/day	1.E+01
				Dieldrin	0.00246	mg/kg	3.7E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	6.E-05	5.0E-06	mg/kg/day	5.0E-05	mg/kg/day	1.E-01
				gamma-Chlordane	0.00185	mg/kg	2.8E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	3.8E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				Heptachlor Epoxide	0.00138	mg/kg	2.1E-06	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-05	2.8E-06	mg/kg/day	1.3E-05	mg/kg/day	2.E-01
				Technical Chlordane	0.16108	mg/kg	2.4E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-05	3.3E-04	mg/kg/day	5.0E-04	mg/kg/day	7.E-01
				Lead	0.0893	mg/kg	1.3E-04	mg/kg/day				1.8E-04	mg/kg/day			
				Mercury	0.14	mg/kg	NC		NC			2.8E-04	mg/kg/day	3.0E-04	mg/kg/day	9.E-01
				Mercury (methyl)	0.137	mg/kg	NC		NC			2.8E-04	mg/kg/day	1.0E-04	mg/kg/day	3.E+00
				Zinc	26.2	mg/kg	NC		NC			5.3E-02	mg/kg/day	3.0E-01	mg/kg/day	2.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.00000178	mg/kg	2.7E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-04	3.6E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								9.E-04					1.5 E+01
		EXPOSURE POINT TOTAL									9.E-04					1.5 E+01
	EXPOSURE MEDIUM TOTAL										9.E-04					1.5 E+01
WHOLE BODY TOTAL											9.E-04					1.5 E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		1.E-03	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.6 E+01

NOTES.
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.2.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	CSF/UNIT RISK VALUE	CSF UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	RfD/RfC (1) VALUE	RfD/RfC UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	INGESTION	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			7.3E-09	mg/kg/day	2.0E-02	mg/kg/day	4.E-07
				Acenaphthylene	0.0589	mg/kg	NC		NC			2.3E-08	mg/kg/day	6.0E-02	mg/kg/day	4.E-07
				Benzo(a)anthracene	1	mg/kg	6.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	4.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(a)pyrene	0.84	mg/kg	5.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	3.3E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(b)fluoranthene	1.4	mg/kg	9.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-08	5.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	0.59468	mg/kg	NC		NC			2.4E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Dibenzo(a,h)anthracene	0.17898	mg/kg	1.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-08	7.1E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	0.65	mg/kg	4.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.6E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				Phenanthrene	0.79474	mg/kg	NC		NC			3.1E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				alpha-Chlordane	0.00133	mg/kg	9.0E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-11	5.3E-10	mg/kg/day	5.0E-04	mg/kg/day	1.E-06
				Aroclor-1254	0.05755	mg/kg	3.9E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-09	2.3E-08	mg/kg/day	2.0E-05	mg/kg/day	1.E-03
				Aroclor-1268	0.04166	mg/kg	2.8E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-09	1.6E-08	mg/kg/day	2.0E-05	mg/kg/day	8.E-04
				gamma-Chlordane	0.00065	mg/kg	4.4E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-11	2.6E-10	mg/kg/day	5.0E-04	mg/kg/day	5.E-07
				Technical Chlordane	0.15253	mg/kg	1.0E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-09	6.0E-08	mg/kg/day	5.0E-04	mg/kg/day	1.E-04
				Aluminum	21774	mg/kg	NC		NC			8.6E-03	mg/kg/day			
				Arsenic	5.21	mg/kg	3.5E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	5.E-07	2.1E-06	mg/kg/day	3.0E-04	mg/kg/day	7.E-03
				Cadmium	0.858	mg/kg	NC		NC			3.4E-07	mg/kg/day	1.0E-03	mg/kg/day	3.E-04
				Chromium	17.5	mg/kg	NC		NC			6.9E-06	mg/kg/day	3.0E-03	mg/kg/day	2.E-03
				Copper	18.3	mg/kg	NC		NC			7.2E-06	mg/kg/day			
				Lead	88.6	mg/kg	6.0E-06	mg/kg/day				3.5E-05	mg/kg/day			
				Manganese	1590	mg/kg	NC		NC			6.3E-04	mg/kg/day	7.1E-02	mg/kg/day	9.E-03
				Mercury	0.114	mg/kg	NC		NC			4.5E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Nickel	20	mg/kg	NC		NC			7.9E-06	mg/kg/day	2.0E-02	mg/kg/day	4.E-04
				Thallium	0.354	mg/kg	NC		NC			1.4E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Vanadium	32	mg/kg	NC		NC			1.3E-05	mg/kg/day	7.0E-03	mg/kg/day	2.E-03
				Toxicity Equivalency (Dioxins/Furans	0.00000773	mg/kg	5.2E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-08	3.1E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-06					2.E-02
			DERMAL	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			1.4E-08	mg/kg/day	2.0E-02	mg/kg/day	7.E-07
				Acenaphthylene	0.0589	mg/kg	NC		NC			4.3E-08	mg/kg/day	6.0E-02	mg/kg/day	7.E-07
				Benzo(a)anthracene	1	mg/kg	1.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-08	7.4E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	0.84	mg/kg	1.1E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-07	6.2E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	1.4	mg/kg	1.8E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	1.0E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(g,h,i)perylene	0.59468	mg/kg	NC		NC			4.4E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.17898	mg/kg	2.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.3E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Indeno(1,2,3-cd)pyrene	0.65	mg/kg	8.2E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	4.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.79474	mg/kg	NC		NC			5.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				alpha-Chlordane	0.00133	mg/kg	5.2E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-11	3.0E-10	mg/kg/day	5.0E-04	mg/kg/day	6.E-07
				Aroclor-1254	0.05755	mg/kg	7.8E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-08	4.6E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				Aroclor-1268	0.04166	mg/kg	5.7E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-08	3.3E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				gamma-Chlordane	0.00065	mg/kg	2.5E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-12	1.5E-10	mg/kg/day	5.0E-04	mg/kg/day	3.E-07
				Technical Chlordane	0.15253	mg/kg	5.9E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-09	3.5E-08	mg/kg/day	5.0E-04	mg/kg/day	7.E-05
				Aluminum	21774	mg/kg	NC		NC			--				
				Arsenic	5.21	mg/kg	1.5E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-07	8.8E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				Cadmium	0.858	mg/kg	NC		NC			4.9E-09	mg/kg/day	2.5E-05	mg/kg/day	2.E-04
				Chromium	17.5	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	18.3	mg/kg	NC		NC			--				
				Lead	88.6	mg/kg	--					--				
				Manganese	1590	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.114	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	20	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.354	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	32	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans	0.00000773	mg/kg	2.2E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-08	1.3E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-06					7.E-03
		EXPOSURE POINT TOTAL									3.E-06					3.E-02
	EXPOSURE MEDIUM TOTAL										3.E-06					3.E-02
SEDIMENT TOTAL											3.E-06					3.E-02

US EPA ARCHIVE DOCUMENT

TABLE F.7.2.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	INGESTION	Arsenic	0.000491	mg/l	6.7E-09	mg/kg/day	1.5E+00	mg/kg/day	1.E-08	3.9E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				Manganese	0.166	mg/l	NC		NC			1.3E-05	mg/kg/day	2.4E-02	mg/kg/day	5.E-04
				Mercury	0.00000215	mg/l	NC		NC			1.7E-10	mg/kg/day	3.0E-04	mg/kg/day	6.E-07
				Nitrite-N	0.0051	mg/l	NC		NC			4.0E-07	mg/kg/day	1.0E-01	mg/kg/day	4.E-06
				Toxicity Equivalency (Dioxins/Furans	5.34E-09	mg/l	7.2E-14	mg/kg/day	1.5E+05	mg/kg/day	1.E-08	4.2E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-08					7.E-04
			DERMAL	Arsenic	0.000491	mg/l	8.3E-09	mg/kg/day	1.5E+00	mg/kg/day	1.E-08	4.9E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Manganese	0.166	mg/l	NC		NC			1.6E-05	mg/kg/day	9.6E-04	mg/kg/day	2.E-02
				Mercury	0.00000215	mg/l	NC		NC			2.1E-10	mg/kg/day	2.1E-05	mg/kg/day	1.E-05
				Nitrite-N	0.0051	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans	5.34E-09	mg/l	2.1E-10	mg/kg/day	1.5E+05	mg/kg/day	3.E-05	1.2E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-05					2.E-02
		EXPOSURE POINT TOTAL									3.E-05					2.E-02
	EXPOSURE MEDIUM TOTAL										3.E-05					2.E-02
SURFACE WATER TOTAL											3.E-05					2.E-02
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00179	mg/kg	NC		NC			3.8E-06	mg/kg/day	6.0E-02	mg/kg/day	6.E-05
				Phenanthrene	0.00876	mg/kg	NC		NC			1.8E-05	mg/kg/day	3.0E-02	mg/kg/day	6.E-04
				4,4'-DDD	0.00828	mg/kg	3.0E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	7.E-07	1.7E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				4,4'-DDE	0.0373	mg/kg	1.3E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-06	7.8E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				alpha-Chlordane	0.00487	mg/kg	1.8E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-07	1.0E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	0.10246	mg/kg	3.7E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-05	2.2E-04	mg/kg/day	2.0E-05	mg/kg/day	1.E+01
				Dieldrin	0.00246	mg/kg	8.9E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	5.2E-06	mg/kg/day	5.0E-05	mg/kg/day	1.E-01
				gamma-Chlordane	0.00185	mg/kg	6.7E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	3.9E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				Heptachlor Epoxide	0.00138	mg/kg	5.0E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	5.E-06	2.9E-06	mg/kg/day	1.3E-05	mg/kg/day	2.E-01
				Technical Chlordane	0.16108	mg/kg	5.8E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-05	3.4E-04	mg/kg/day	5.0E-04	mg/kg/day	7.E-01
				Lead	0.0893	mg/kg	3.2E-05	mg/kg/day				1.9E-04	mg/kg/day			
				Mercury	0.14	mg/kg	NC		NC			2.9E-04	mg/kg/day	3.0E-04	mg/kg/day	1.E+00
				Mercury (methyl)	0.137	mg/kg	NC		NC			2.9E-04	mg/kg/day	1.0E-04	mg/kg/day	3.E+00
				Zinc	26.2	mg/kg	NC		NC			5.5E-02	mg/kg/day	3.0E-01	mg/kg/day	2.E-01
				Toxicity Equivalency (Dioxins/Furans	0.00000178	mg/kg	6.4E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-04	3.7E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-04					1.6.E+01
		EXPOSURE POINT TOTAL									2.E-04					1.6.E+01
	EXPOSURE MEDIUM TOTAL										2.E-04					1.6.E+01
WHOLE BODY TOTAL											2.E-04					1.6.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		2.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.6.E+01

NOTES.
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.3.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00179	mg/kg	NC		NC			6.1E-06	mg/kg/day	6.0E-02	mg/kg/day	1.E-04
				Phenanthrene	0.00876	mg/kg	NC		NC			3.0E-05	mg/kg/day	3.0E-02	mg/kg/day	1.E-03
				4,4'-DDD	0.00828	mg/kg	2.4E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	6.E-07	2.8E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				4,4'-DDE	0.0373	mg/kg	1.1E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-06	1.3E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				alpha-Chlordane	0.00487	mg/kg	1.4E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-07	1.7E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Aroclor-1254	0.10246	mg/kg	3.0E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-05	3.5E-04	mg/kg/day	2.0E-05	mg/kg/day	2.E+01
				Dieldrin	0.00246	mg/kg	7.2E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	8.4E-06	mg/kg/day	5.0E-05	mg/kg/day	2.E-01
				gamma-Chlordane	0.00185	mg/kg	5.4E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	6.3E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Heptachlor Epoxide	0.00138	mg/kg	4.0E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	4.E-06	4.7E-06	mg/kg/day	1.3E-05	mg/kg/day	4.E-01
				Technical Chlordane	0.16108	mg/kg	4.7E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-05	5.5E-04	mg/kg/day	5.0E-04	mg/kg/day	1.E+00
				Lead	0.0893	mg/kg	2.6E-05	mg/kg/day				3.1E-04	mg/kg/day			
				Mercury	0.14	mg/kg	NC		NC			4.8E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				Mercury (methyl)	0.137	mg/kg	NC		NC			4.7E-04	mg/kg/day	1.0E-04	mg/kg/day	5.E+00
				Zinc	26.2	mg/kg	NC		NC			9.0E-02	mg/kg/day	3.0E-01	mg/kg/day	3.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.00000178	mg/kg	5.2E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-05	6.1E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-04					2.6.E+01
		EXPOSURE POINT TOTAL									2.E-04					2.6.E+01
	EXPOSURE MEDIUM TOTAL										2.E-04					2.6.E+01
WHOLE BODY TOTAL											2.E-04					2.6.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											2.E-04					2.6.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalaiilable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.4.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	INGESTION	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			4.7E-09	mg/kg/day	2.0E-02	mg/kg/day	2.E-07
				Acenaphthylene	0.0589	mg/kg	NC		NC			1.5E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				Benzo(a)anthracene	1	mg/kg	1.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	2.5E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Benzo(a)pyrene	0.84	mg/kg	1.6E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Benzo(b)fluoranthene	1.4	mg/kg	2.6E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	3.6E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	0.59468	mg/kg	NC		NC			1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Dibenzo(a,h)anthracene	0.17898	mg/kg	3.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	4.6E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	0.65	mg/kg	1.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-08	1.7E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Phenanthrene	0.79474	mg/kg	NC		NC			2.0E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				alpha-Chlordane	0.00133	mg/kg	2.5E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-11	3.4E-10	mg/kg/day	5.0E-04	mg/kg/day	7.E-07
				Aroclor-1254	0.05755	mg/kg	1.1E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-08	1.5E-06	mg/kg/day	2.0E-05	mg/kg/day	7.E-04
				Aroclor-1268	0.04166	mg/kg	7.9E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-08	1.1E-08	mg/kg/day	2.0E-05	mg/kg/day	5.E-04
				gamma-Chlordane	0.00065	mg/kg	1.2E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-11	1.7E-10	mg/kg/day	5.0E-04	mg/kg/day	3.E-07
				Technical Chlordane	0.15253	mg/kg	2.9E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	3.9E-08	mg/kg/day	5.0E-04	mg/kg/day	8.E-05
				Aluminum	21774	mg/kg	NC		NC			5.5E-03	mg/kg/day			
				Arsenic	5.21	mg/kg	9.8E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	1.3E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				Cadmium	0.858	mg/kg	NC		NC			2.2E-07	mg/kg/day	1.0E-03	mg/kg/day	2.E-04
				Chromium	17.5	mg/kg	NC		NC			4.5E-06	mg/kg/day	3.0E-03	mg/kg/day	1.E-03
				Copper	18.3	mg/kg	NC		NC			4.7E-06	mg/kg/day			
				Lead	88.6	mg/kg	1.7E-05	mg/kg/day				2.3E-05	mg/kg/day			
				Manganese	1590	mg/kg	NC		NC			4.0E-04	mg/kg/day	7.1E-02	mg/kg/day	6.E-03
				Mercury	0.114	mg/kg	NC		NC			2.9E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				Nickel	20	mg/kg	NC		NC			5.1E-06	mg/kg/day	2.0E-02	mg/kg/day	3.E-04
				Thallium	0.354	mg/kg	NC		NC			9.0E-08	mg/kg/day	8.0E-05	mg/kg/day	1.E-03
				Vanadium	32	mg/kg	NC		NC			8.1E-06	mg/kg/day	7.0E-03	mg/kg/day	1.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.00000773	mg/kg	1.5E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-07	2.0E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-06					2.E-02
			DERMAL	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			4.2E-09	mg/kg/day	2.0E-02	mg/kg/day	2.E-07
				Acenaphthylene	0.0589	mg/kg	NC		NC			1.3E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				Benzo(a)anthracene	1	mg/kg	1.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	2.3E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Benzo(a)pyrene	0.84	mg/kg	1.4E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	1.9E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Benzo(b)fluoranthene	1.4	mg/kg	2.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	3.2E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	0.59468	mg/kg	NC		NC			1.3E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Dibenzo(a,h)anthracene	0.17898	mg/kg	3.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	4.0E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Indeno(1,2,3-cd)pyrene	0.65	mg/kg	1.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-08	1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Phenanthrene	0.79474	mg/kg	NC		NC			1.8E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				alpha-Chlordane	0.00133	mg/kg	6.8E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-11	9.2E-11	mg/kg/day	5.0E-04	mg/kg/day	2.E-07
				Aroclor-1254	0.05755	mg/kg	1.0E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-08	1.4E-08	mg/kg/day	2.0E-05	mg/kg/day	7.E-04
				Aroclor-1268	0.04166	mg/kg	7.5E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-08	1.0E-08	mg/kg/day	2.0E-05	mg/kg/day	5.E-04
				gamma-Chlordane	0.00065	mg/kg	3.3E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-11	4.5E-11	mg/kg/day	5.0E-04	mg/kg/day	9.E-08
				Technical Chlordane	0.15253	mg/kg	7.8E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-09	1.1E-08	mg/kg/day	5.0E-04	mg/kg/day	2.E-05
				Aluminum	21774	mg/kg	NC		NC			--				
				Arsenic	5.21	mg/kg	2.0E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-07	2.7E-07	mg/kg/day	3.0E-04	mg/kg/day	9.E-04
				Cadmium	0.858	mg/kg	NC		NC			1.5E-09	mg/kg/day	2.5E-05	mg/kg/day	6.E-05
				Chromium	17.5	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	18.3	mg/kg	NC		NC			--				
				Lead	88.6	mg/kg	--					--				
				Manganese	1590	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.114	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	20	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.354	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	32	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00000773	mg/kg	3.0E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-08	4.0E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-06					2.E-03
		EXPOSURE POINT TOTAL									6.E-06					2.E-02
	EXPOSURE MEDIUM TOTAL										6.E-06					2.E-02
SEDIMENT TOTAL											**6.E-06**					**2.E-02**

US EPA ARCHIVE DOCUMENT

TABLE F.7.4.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	INGESTION	Arsenic	0.000491	mg/l	1.9E-08	mg/kg/day	1.5E+00	mg/kg/day	3.E-08	2.5E-08	mg/kg/day	3.0E-04	mg/kg/day	8.E-05
				Manganese	0.166	mg/l	NC		NC			8.4E-06	mg/kg/day	2.4E-02	mg/kg/day	4.E-04
				Mercury	0.00000215	mg/l	NC		NC			1.1E-10	mg/kg/day	3.0E-04	mg/kg/day	4.E-07
				Nitrite-N	0.0051	mg/l	NC		NC			2.6E-07	mg/kg/day	1.0E-01	mg/kg/day	3.E-06
				Toxicity Equivalency (Dioxins/Furans)	5.34E-09	mg/l	2.0E-13	mg/kg/day	1.5E+05	mg/kg/day	3.E-08	2.7E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-08					4.E-04
			DERMAL	Arsenic	0.000491	mg/l	3.2E-08	mg/kg/day	1.5E+00	mg/kg/day	5.E-08	4.3E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				Manganese	0.166	mg/l	NC		NC			1.5E-05	mg/kg/day	9.6E-04	mg/kg/day	2.E-02
				Mercury	0.00000215	mg/l	NC		NC			1.9E-10	mg/kg/day	2.1E-05	mg/kg/day	9.E-06
				Nitrite-N	0.0051	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	5.34E-09	mg/l	8.0E-10	mg/kg/day	1.5E+05	mg/kg/day	1.E-04	1.1E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					2.E-02
		EXPOSURE POINT TOTAL									1.E-04					2.E-02
	EXPOSURE MEDIUM TOTAL										1.E-04					2.E-02
SURFACE WATER TOTAL											1.E-04					2.E-02
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00032	mg/kg	NC		NC			6.5E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)pyrene	0.00128	mg/kg	1.9E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-05	2.6E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				Phenanthrene	0.00119	mg/kg	NC		NC			2.4E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				4,4'-DDE	0.00932	mg/kg	1.4E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-06	1.9E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				alpha-Chlordane	0.00031	mg/kg	4.7E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	6.3E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Mercury	0.315	mg/kg	NC		NC			6.4E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				Mercury (methyl)	0.379	mg/kg	NC		NC			7.7E-04	mg/kg/day	1.0E-04	mg/kg/day	8.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.00000279	mg/kg	4.2E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-04	5.7E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-04					1.E+01
		EXPOSURE POINT TOTAL									6.E-04					1.E+01
	EXPOSURE MEDIUM TOTAL										6.E-04					1.E+01
FILLET TOTAL											6.E-04					1.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		8.E-04			TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		9.9.E+00

NOTES
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.5.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	INGESTION	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			7.3E-09	mg/kg/day	2.0E-02	mg/kg/day	4.E-07
				Acenaphthylene	0.0589	mg/kg	NC		NC			2.3E-08	mg/kg/day	6.0E-02	mg/kg/day	4.E-07
				Benzo(a)anthracene	1	mg/kg	6.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	4.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(a)pyrene	0.84	mg/kg	5.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	3.3E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(b)fluoranthene	1.4	mg/kg	9.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-08	5.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	0.59468	mg/kg	NC		NC			2.4E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Dibenzo(a,h)anthracene	0.17898	mg/kg	1.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-08	7.1E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	0.65	mg/kg	4.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.6E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				Phenanthrene	0.79474	mg/kg	NC		NC			3.1E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				alpha-Chlordane	0.00133	mg/kg	9.0E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-11	5.3E-10	mg/kg/day	5.0E-04	mg/kg/day	1.E-06
				Aroclor-1254	0.05755	mg/kg	3.9E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-09	2.3E-08	mg/kg/day	2.0E-05	mg/kg/day	1.E-03
				Aroclor-1268	0.04166	mg/kg	2.8E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-09	1.6E-08	mg/kg/day	2.0E-05	mg/kg/day	8.E-04
				gamma-Chlordane	0.00065	mg/kg	4.4E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-11	2.6E-10	mg/kg/day	5.0E-04	mg/kg/day	5.E-07
				Technical Chlordane	0.15253	mg/kg	1.0E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-09	6.0E-08	mg/kg/day	5.0E-04	mg/kg/day	1.E-04
				Aluminum	21774	mg/kg	NC		NC			8.6E-03	mg/kg/day			
				Arsenic	5.21	mg/kg	3.5E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	5.E-07	2.1E-06	mg/kg/day	3.0E-04	mg/kg/day	7.E-03
				Cadmium	0.858	mg/kg	NC		NC			3.4E-07	mg/kg/day	1.0E-03	mg/kg/day	3.E-04
				Chromium	17.5	mg/kg	NC		NC			6.9E-06	mg/kg/day	3.0E-03	mg/kg/day	2.E-03
				Copper	18.3	mg/kg	NC		NC			7.2E-06	mg/kg/day			
				Lead	88.6	mg/kg	6.0E-06	mg/kg/day				3.5E-05	mg/kg/day			
				Manganese	1590	mg/kg	NC		NC			6.3E-04	mg/kg/day	7.1E-02	mg/kg/day	9.E-03
				Mercury	0.114	mg/kg	NC		NC			4.5E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Nickel	20	mg/kg	NC		NC			7.9E-06	mg/kg/day	2.0E-02	mg/kg/day	4.E-04
				Thallium	0.354	mg/kg	NC		NC			1.4E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Vanadium	32	mg/kg	NC		NC			1.3E-05	mg/kg/day	7.0E-03	mg/kg/day	2.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.00000773	mg/kg	5.2E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-08	3.1E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-06					2.E-02
			DERMAL	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			1.4E-08	mg/kg/day	2.0E-02	mg/kg/day	7.E-07
				Acenaphthylene	0.0589	mg/kg	NC		NC			4.3E-08	mg/kg/day	6.0E-02	mg/kg/day	7.E-07
				Benzo(a)anthracene	1	mg/kg	1.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-08	7.4E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	0.84	mg/kg	1.1E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-07	6.2E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	1.4	mg/kg	1.8E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	1.0E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(g,h,i)perylene	0.59468	mg/kg	NC		NC			4.4E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.17898	mg/kg	2.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.3E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Indeno(1,2,3-cd)pyrene	0.65	mg/kg	8.2E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	4.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.79474	mg/kg	NC		NC			5.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				alpha-Chlordane	0.00133	mg/kg	5.2E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-11	3.0E-10	mg/kg/day	5.0E-04	mg/kg/day	6.E-07
				Aroclor-1254	0.05755	mg/kg	7.8E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-08	4.6E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				Aroclor-1268	0.04166	mg/kg	5.7E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-08	3.3E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				gamma-Chlordane	0.00065	mg/kg	2.5E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-12	1.5E-10	mg/kg/day	5.0E-04	mg/kg/day	3.E-07
				Technical Chlordane	0.15253	mg/kg	5.9E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-09	3.5E-08	mg/kg/day	5.0E-04	mg/kg/day	7.E-05
				Aluminum	21774	mg/kg	NC		NC			--				
				Arsenic	5.21	mg/kg	1.5E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-07	8.8E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				Cadmium	0.858	mg/kg	NC		NC			4.9E-09	mg/kg/day	2.5E-05	mg/kg/day	2.E-04
				Chromium	17.5	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	18.3	mg/kg	NC		NC			--				
				Lead	88.6	mg/kg	--					--				
				Manganese	1590	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.114	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	20	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.354	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	32	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00000773	mg/kg	2.2E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-08	1.3E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-06					7.E-03
		EXPOSURE POINT TOTAL									3.E-06					3.E-02
	EXPOSURE MEDIUM TOTAL										3.E-06					3.E-02
SEDIMENT TOTAL											**3.E-06**					**3.E-02**

US EPA ARCHIVE DOCUMENT

TABLE F.7.5.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	INGESTION	Arsenic	0.000491	mg/l	6.7E-09	mg/kg/day	1.5E+00	mg/kg/day	1.E-08	3.9E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				Manganese	0.166	mg/l	NC		NC			1.3E-05	mg/kg/day	2.4E-02	mg/kg/day	5.E-04
				Mercury	0.00000215	mg/l	NC		NC			1.7E-10	mg/kg/day	3.0E-04	mg/kg/day	6.E-07
				Nitrite-N	0.0051	mg/l	NC		NC			4.0E-07	mg/kg/day	1.0E-01	mg/kg/day	4.E-06
				Toxicity Equivalency (Dioxins/Furans)	5.34E-09	mg/l	7.2E-14	mg/kg/day	1.5E+05	mg/kg/day	1.E-08	4.2E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-08					7.E-04
			DERMAL	Arsenic	0.000491	mg/l	8.3E-09	mg/kg/day	1.5E+00	mg/kg/day	1.E-08	4.9E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Manganese	0.166	mg/l	NC		NC			1.6E-05	mg/kg/day	9.6E-04	mg/kg/day	2.E-02
				Mercury	0.00000215	mg/l	NC		NC			2.1E-10	mg/kg/day	2.1E-05	mg/kg/day	1.E-05
				Nitrite-N	0.0051	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	5.34E-09	mg/l	2.1E-10	mg/kg/day	1.5E+05	mg/kg/day	3.E-05	1.2E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-05					2.E-02
		EXPOSURE POINT TOTAL									3.E-05					2.E-02
	EXPOSURE MEDIUM TOTAL										3.E-05					2.E-02
SURFACE WATER TOTAL											3.E-05					2.E-02
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00032	mg/kg	NC		NC			6.7E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)pyrene	0.00128	mg/kg	4.6E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	2.7E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				Phenanthrene	0.00119	mg/kg	NC		NC			2.5E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				4,4'-DDE	0.00932	mg/kg	3.4E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	2.0E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				alpha-Chlordane	0.00031	mg/kg	1.1E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-08	6.5E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Mercury	0.315	mg/kg	NC		NC			6.6E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				Mercury (methyl)	0.379	mg/kg	NC		NC			8.0E-04	mg/kg/day	1.0E-04	mg/kg/day	8.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.00000279	mg/kg	1.0E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	5.9E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-04					1.E+01
		EXPOSURE POINT TOTAL									2.E-04					1.E+01
	EXPOSURE MEDIUM TOTAL										2.E-04					1.E+01
FILLET TOTAL											2.E-04					1.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		2.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.0.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.6.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00032	mg/kg	NC		NC			1.1E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	0.00128	mg/kg	3.8E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	4.4E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Phenanthrene	0.00119	mg/kg	NC		NC			4.1E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDE	0.00932	mg/kg	2.7E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	9.E-07	3.2E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				alpha-Chlordane	0.00031	mg/kg	9.1E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	1.1E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Mercury	0.315	mg/kg	NC		NC			1.1E-03	mg/kg/day	3.0E-04	mg/kg/day	4.E+00
				Mercury (methyl)	*0.379*	*mg/kg*	NC		NC			*1.3E-03*	*mg/kg/day*	*1.0E-04*	*mg/kg/day*	*1.E+01*
				Toxicity Equivalency (Dioxins/Furans)	0.00000279	mg/kg	8.2E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-04	9.5E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					2.E+01
		EXPOSURE POINT TOTAL									1.E-04					2.E+01
	EXPOSURE MEDIUM TOTAL										1.E-04					2.E+01
FILLET TOTAL											1.E-04					2.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											1.E-04					1.7E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.7.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	INGESTION	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			4.7E-09	mg/kg/day	2.0E-02	mg/kg/day	2.E-07
				Acenaphthylene	0.0589	mg/kg	NC		NC			1.5E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				Benzo(a)anthracene	1	mg/kg	1.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	2.5E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Benzo(a)pyrene	0.84	mg/kg	1.6E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Benzo(b)fluoranthene	1.4	mg/kg	2.6E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	3.6E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	0.59468	mg/kg	NC		NC			1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Dibenzo(a,h)anthracene	0.17898	mg/kg	3.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	4.6E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	0.65	mg/kg	1.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-08	1.7E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Phenanthrene	0.79474	mg/kg	NC		NC			2.0E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				alpha-Chlordane	0.00133	mg/kg	2.5E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-11	3.4E-10	mg/kg/day	5.0E-04	mg/kg/day	7.E-07
				Aroclor-1254	0.05755	mg/kg	1.1E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-08	1.5E-08	mg/kg/day	2.0E-05	mg/kg/day	7.E-04
				Aroclor-1268	0.04166	mg/kg	7.9E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-08	1.1E-08	mg/kg/day	2.0E-05	mg/kg/day	5.E-04
				gamma-Chlordane	0.00065	mg/kg	1.2E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-11	1.7E-10	mg/kg/day	5.0E-04	mg/kg/day	3.E-07
				Technical Chlordane	0.15253	mg/kg	2.9E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	3.9E-08	mg/kg/day	5.0E-04	mg/kg/day	8.E-05
				Aluminum	21774	mg/kg	NC		NC			5.5E-03	mg/kg/day			
				Arsenic	5.21	mg/kg	9.8E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	1.3E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				Cadmium	0.858	mg/kg	NC		NC			2.2E-07	mg/kg/day	1.0E-03	mg/kg/day	2.E-04
				Chromium	17.5	mg/kg	NC		NC			4.5E-06	mg/kg/day	3.0E-03	mg/kg/day	1.E-03
				Copper	18.3	mg/kg	NC		NC			4.7E-06	mg/kg/day			
				Lead	88.6	mg/kg	1.7E-05	mg/kg/day				2.3E-05	mg/kg/day			
				Manganese	1590	mg/kg	NC		NC			4.0E-04	mg/kg/day	7.1E-02	mg/kg/day	6.E-03
				Mercury	0.114	mg/kg	NC		NC			2.9E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				Nickel	20	mg/kg	NC		NC			5.1E-06	mg/kg/day	2.0E-02	mg/kg/day	3.E-04
				Thallium	0.354	mg/kg	NC		NC			9.0E-08	mg/kg/day	8.0E-05	mg/kg/day	1.E-03
				Vanadium	32	mg/kg	NC		NC			8.1E-06	mg/kg/day	7.0E-03	mg/kg/day	1.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.00000773	mg/kg	1.5E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-07	2.0E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-06					2.E-02
			DERMAL	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			4.2E-09	mg/kg/day	2.0E-02	mg/kg/day	2.E-07
				Acenaphthylene	0.0589	mg/kg	NC		NC			1.3E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				Benzo(a)anthracene	1	mg/kg	1.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	2.3E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Benzo(a)pyrene	0.84	mg/kg	1.4E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	1.9E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Benzo(b)fluoranthene	1.4	mg/kg	2.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	3.2E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	0.59468	mg/kg	NC		NC			1.3E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Dibenzo(a,h)anthracene	0.17898	mg/kg	3.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	4.0E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Indeno(1,2,3-cd)pyrene	0.65	mg/kg	1.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-08	1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Phenanthrene	0.79474	mg/kg	NC		NC			1.8E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				alpha-Chlordane	0.00133	mg/kg	6.8E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-11	9.2E-11	mg/kg/day	5.0E-04	mg/kg/day	2.E-07
				Aroclor-1254	0.05755	mg/kg	1.0E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-08	1.4E-08	mg/kg/day	2.0E-05	mg/kg/day	7.E-04
				Aroclor-1268	0.04166	mg/kg	7.5E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-08	1.0E-08	mg/kg/day	2.0E-05	mg/kg/day	5.E-04
				gamma-Chlordane	0.00065	mg/kg	3.3E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-11	4.5E-11	mg/kg/day	5.0E-04	mg/kg/day	9.E-08
				Technical Chlordane	0.15253	mg/kg	7.8E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-09	1.1E-08	mg/kg/day	5.0E-04	mg/kg/day	2.E-05
				Aluminum	21774	mg/kg	NC		NC			--				
				Arsenic	5.21	mg/kg	2.0E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-07	2.7E-07	mg/kg/day	3.0E-04	mg/kg/day	9.E-04
				Cadmium	0.858	mg/kg	NC		NC			1.5E-09	mg/kg/day	2.5E-05	mg/kg/day	6.E-05
				Chromium	17.5	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	18.3	mg/kg	NC		NC			--				
				Lead	88.6	mg/kg	--					--				
				Manganese	1590	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.114	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	20	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.354	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	32	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00000773	mg/kg	3.0E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-08	4.0E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-06					2.E-03
		EXPOSURE POINT TOTAL									6.E-06					2.E-02
	EXPOSURE MEDIUM TOTAL										6.E-06					2.E-02
SEDIMENT TOTAL											6.E-06					2.E-02

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TABLE F.7.7.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	INGESTION	Arsenic	0.000491	mg/l	1.9E-08	mg/kg/day	1.5E+00	mg/kg/day	3.E-08	2.5E-08	mg/kg/day	3.0E-04	mg/kg/day	8.E-05
				Manganese	0.166	mg/l	NC		NC			8.4E-06	mg/kg/day	2.4E-02	mg/kg/day	4.E-04
				Mercury	0.00000215	mg/l	NC		NC			1.1E-10	mg/kg/day	3.0E-04	mg/kg/day	4.E-07
				Nitrite-N	0.0051	mg/l	NC		NC			2.6E-07	mg/kg/day	1.0E-01	mg/kg/day	3.E-06
				Toxicity Equivalency (Dioxins/Furans)	5.34E-09	mg/l	2.0E-13	mg/kg/day	1.5E+05	mg/kg/day	3.E-08	2.7E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-08					4.E-04
			DERMAL	Arsenic	0.000491	mg/l	3.2E-08	mg/kg/day	1.5E+00	mg/kg/day	5.E-08	4.3E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				Manganese	0.166	mg/l	NC		NC			1.5E-05	mg/kg/day	9.6E-04	mg/kg/day	2.E-02
				Mercury	0.00000215	mg/l	NC		NC			1.9E-10	mg/kg/day	2.1E-05	mg/kg/day	9.E-06
				Nitrite-N	0.0051	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	5.34E-09	mg/l	8.0E-10	mg/kg/day	1.5E+05	mg/kg/day	1.E-04	1.1E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					2.E-02
		EXPOSURE POINT TOTAL									1.E-04					2.E-02
	EXPOSURE MEDIUM TOTAL										1.E-04					2.E-02
SURFACE WATER TOTAL											1.E-04					2.E-02
LARGEMOUTH BASS	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00132	mg/kg	NC		NC			2.7E-06	mg/kg/day	6.0E-02	mg/kg/day	4.E-05
				Phenanthrene	0.00573	mg/kg	NC		NC			1.2E-05	mg/kg/day	3.0E-02	mg/kg/day	4.E-04
				4,4'-DDE	0.05823	mg/kg	8.8E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-05	1.2E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				alpha-Chlordane	0.00186	mg/kg	2.8E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	3.8E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				Aroclor-1254	0.13847	mg/kg	2.1E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-04	2.8E-04	mg/kg/day	2.0E-05	mg/kg/day	1.E+01
				Aroclor-1268	0.01407	mg/kg	2.1E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-05	2.9E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Dieldrin	0.00081	mg/kg	1.2E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-05	1.6E-06	mg/kg/day	5.0E-05	mg/kg/day	3.E-02
				gamma-Chlordane	0.00051	mg/kg	7.7E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	1.0E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Technical Chlordane	0.12021	mg/kg	1.8E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-05	2.4E-04	mg/kg/day	5.0E-04	mg/kg/day	5.E-01
				Lead	0.0204	mg/kg	3.1E-05	mg/kg/day				4.1E-05	mg/kg/day			
				Mercury	0.265	mg/kg	NC		NC			5.4E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				Mercury (methyl)	0.247	mg/kg	NC		NC			5.0E-04	mg/kg/day	1.0E-04	mg/kg/day	5.E+00
				Thallium	0.0112	mg/kg	NC		NC			2.3E-05	mg/kg/day	8.0E-05	mg/kg/day	3.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000016	mg/kg	2.4E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-03	3.2E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-03					2.E+01
		EXPOSURE POINT TOTAL									4.E-03					2.E+01
	EXPOSURE MEDIUM TOTAL										4.E-03					2.E+01
WHOLE BODY TOTAL											4.E-03					2.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		4.E-03	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				2.3.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availablable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.8.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		R/D/R/C (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	INGESTION	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			7.3E-09	mg/kg/day	2.0E-02	mg/kg/day	4.E-07
				Acenaphthylene	0.0589	mg/kg	NC		NC			2.3E-08	mg/kg/day	6.0E-02	mg/kg/day	4.E-07
				Benzo(a)anthracene	1	mg/kg	6.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	4.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(a)pyrene	0.84	mg/kg	5.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	3.3E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(b)fluoranthene	1.4	mg/kg	9.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-08	5.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	0.59468	mg/kg	NC		NC			2.4E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Dibenzo(a,h)anthracene	0.17898	mg/kg	1.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-08	7.1E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	0.65	mg/kg	4.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.6E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				Phenanthrene	0.79474	mg/kg	NC		NC			3.1E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				alpha-Chlordane	0.00133	mg/kg	9.0E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-11	5.3E-10	mg/kg/day	5.0E-04	mg/kg/day	1.E-06
				Aroclor-1254	0.05755	mg/kg	3.9E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-09	2.3E-08	mg/kg/day	2.0E-05	mg/kg/day	1.E-03
				Aroclor-1268	0.04166	mg/kg	2.8E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-09	1.6E-08	mg/kg/day	2.0E-05	mg/kg/day	8.E-04
				gamma-Chlordane	0.00065	mg/kg	4.4E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-11	2.6E-10	mg/kg/day	5.0E-04	mg/kg/day	5.E-07
				Technical Chlordane	0.15253	mg/kg	1.0E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-09	6.0E-08	mg/kg/day	5.0E-04	mg/kg/day	1.E-04
				Aluminum	21774	mg/kg	NC		NC			8.6E-03	mg/kg/day			
				Arsenic	5.21	mg/kg	3.5E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	5.E-07	2.1E-06	mg/kg/day	3.0E-04	mg/kg/day	7.E-03
				Cadmium	0.858	mg/kg	NC		NC			3.4E-07	mg/kg/day	1.0E-03	mg/kg/day	3.E-04
				Chromium	17.5	mg/kg	NC		NC			6.9E-06	mg/kg/day	3.0E-03	mg/kg/day	2.E-03
				Copper	18.3	mg/kg	NC		NC			7.2E-06	mg/kg/day			
				Lead	88.6	mg/kg	6.0E-06	mg/kg/day				3.5E-05	mg/kg/day			
				Manganese	1590	mg/kg	NC		NC			6.3E-04	mg/kg/day	7.1E-02	mg/kg/day	9.E-03
				Mercury	0.114	mg/kg	NC		NC			4.5E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Nickel	20	mg/kg	NC		NC			7.9E-06	mg/kg/day	2.0E-02	mg/kg/day	4.E-04
				Thallium	0.354	mg/kg	NC		NC			1.4E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Vanadium	32	mg/kg	NC		NC			1.3E-05	mg/kg/day	7.0E-03	mg/kg/day	2.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.00000773	mg/kg	5.2E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-08	3.1E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-06					2.E-02
			DERMAL	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			1.4E-08	mg/kg/day	2.0E-02	mg/kg/day	7.E-07
				Acenaphthylene	0.0589	mg/kg	NC		NC			4.3E-08	mg/kg/day	6.0E-02	mg/kg/day	7.E-07
				Benzo(a)anthracene	1	mg/kg	1.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-08	7.4E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	0.84	mg/kg	1.1E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-07	6.2E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	1.4	mg/kg	1.8E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	1.0E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(g,h,i)perylene	0.59468	mg/kg	NC		NC			4.4E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.17898	mg/kg	2.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.3E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Indeno(1,2,3-cd)pyrene	0.65	mg/kg	8.2E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	4.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.79474	mg/kg	NC		NC			5.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				alpha-Chlordane	0.00133	mg/kg	5.2E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-11	3.0E-10	mg/kg/day	5.0E-04	mg/kg/day	6.E-07
				Aroclor-1254	0.05755	mg/kg	7.8E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-08	4.6E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				Aroclor-1268	0.04166	mg/kg	5.7E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-08	3.3E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				gamma-Chlordane	0.00065	mg/kg	2.5E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-12	1.5E-10	mg/kg/day	5.0E-04	mg/kg/day	3.E-07
				Technical Chlordane	0.15253	mg/kg	5.9E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-09	3.5E-08	mg/kg/day	5.0E-04	mg/kg/day	7.E-05
				Aluminum	21774	mg/kg	NC		NC			--				
				Arsenic	5.21	mg/kg	1.5E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-07	8.8E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				Cadmium	0.858	mg/kg	NC		NC			4.9E-09	mg/kg/day	2.5E-05	mg/kg/day	2.E-04
				Chromium	17.5	mg/kg	NC		NC			--		7.3E-05	mg/kg/day	
				Copper	18.3	mg/kg	NC		NC			--				
				Lead	88.6	mg/kg	--					--				
				Manganese	1590	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.114	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	20	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.354	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	32	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00000773	mg/kg	2.2E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-08	1.3E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-06					7.E-03
		EXPOSURE POINT TOTAL									3.E-06					3.E-02
	EXPOSURE MEDIUM TOTAL										3.E-06					3.E-02
SEDIMENT TOTAL											3.E-06					3.E-02

US EPA ARCHIVE DOCUMENT

TABLE F.7.8.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	INGESTION	Arsenic	0.000491	mg/l	6.7E-09	mg/kg/day	1.5E+00	mg/kg/day	1.E-08	3.9E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				Manganese	0.166	mg/l	NC		NC			1.3E-05	mg/kg/day	2.4E-02	mg/kg/day	5.E-04
				Mercury	0.00000215	mg/l	NC		NC			1.7E-10	mg/kg/day	3.0E-04	mg/kg/day	6.E-07
				Nitrite-N	0.0051	mg/l	NC		NC			4.0E-07	mg/kg/day	1.0E-01	mg/kg/day	4.E-06
				Toxicity Equivalency (Dioxins/Furans)	5.34E-09	mg/l	7.2E-14	mg/kg/day	1.5E+05	mg/kg/day	1.E-08	4.2E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-08					7.E-04
			DERMAL	Arsenic	0.000491	mg/l	8.3E-09	mg/kg/day	1.5E+00	mg/kg/day	1.E-08	4.9E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Manganese	0.166	mg/l	NC		NC			1.6E-05	mg/kg/day	9.6E-04	mg/kg/day	2.E-02
				Mercury	0.00000215	mg/l	NC		NC			2.1E-10	mg/kg/day	2.1E-05	mg/kg/day	1.E-05
				Nitrite-N	0.0051	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	5.34E-09	mg/l	2.1E-10	mg/kg/day	1.5E+05	mg/kg/day	3.E-05	1.2E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-05					2.E-02
		EXPOSURE POINT TOTAL									3.E-05					2.E-02
	EXPOSURE MEDIUM TOTAL										3.E-05					2.E-02
SURFACE WATER TOTAL											3.E-05					2.E-02
LARGEMOUTH BASS	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00132	mg/kg	NC		NC			2.8E-06	mg/kg/day	6.0E-02	mg/kg/day	5.E-05
				Phenanthrene	0.00573	mg/kg	NC		NC			1.2E-05	mg/kg/day	3.0E-02	mg/kg/day	4.E-04
				4,4'-ODE	0.05823	mg/kg	2.1E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	7.E-06	1.2E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				alpha-Chlordane	0.00186	mg/kg	6.7E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	3.9E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				Aroclor-1254	0.13847	mg/kg	5.0E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-04	2.9E-04	mg/kg/day	2.0E-05	mg/kg/day	1.E+01
				Aroclor-1268	0.01407	mg/kg	5.1E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	3.0E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Dieldrin	0.00081	mg/kg	2.9E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.E-06	1.7E-06	mg/kg/day	5.0E-05	mg/kg/day	3.E-02
				gamma-Chlordane	0.00051	mg/kg	1.8E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-08	1.1E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Technical Chlordane	0.12021	mg/kg	4.3E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-05	2.5E-04	mg/kg/day	5.0E-04	mg/kg/day	5.E-01
				Lead	0.0204	mg/kg	7.3E-06	mg/kg/day				4.3E-05	mg/kg/day			
				Mercury	0.265	mg/kg	NC		NC			5.6E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				Mercury (methyl)	0.247	mg/kg	NC		NC			5.2E-04	mg/kg/day	1.0E-04	mg/kg/day	5.E+00
				Thallium	0.0112	mg/kg	NC		NC			2.4E-05	mg/kg/day	8.0E-05	mg/kg/day	3.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000016	mg/kg	5.8E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	9.E-04	3.4E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-03					2.E+01
		EXPOSURE POINT TOTAL									1.E-03					2.E+01
	EXPOSURE MEDIUM TOTAL										1.E-03					2.E+01
WHOLE BODY TOTAL											1.E-03					2.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		1.E-03	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				2.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.9.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00132	mg/kg	NC		NC			4.5E-06	mg/kg/day	6.0E-02	mg/kg/day	8.E-05
				Phenanthrene	0.00573	mg/kg	NC		NC			2.0E-05	mg/kg/day	3.0E-02	mg/kg/day	7.E-04
				4,4'-DDE	0.05823	mg/kg	1.7E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	6.E-06	2.0E-04	mg/kg/day	5.0E-04	mg/kg/day	4.E-01
				alpha-Chlordane	0.00186	mg/kg	5.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	6.4E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Aroclor-1254	0.13847	mg/kg	4.1E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-05	4.7E-04	mg/kg/day	2.0E-05	mg/kg/day	2.E+01
				Aroclor-1268	0.01407	mg/kg	4.1E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-06	4.8E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Dieldrin	0.00081	mg/kg	2.4E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	2.8E-06	mg/kg/day	5.0E-05	mg/kg/day	6.E-02
				gamma-Chlordane	0.00051	mg/kg	1.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-08	1.7E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Technical Chlordane	0.12021	mg/kg	3.5E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	4.1E-04	mg/kg/day	5.0E-04	mg/kg/day	8.E-01
				Lead	0.0204	mg/kg	6.0E-06	mg/kg/day				7.0E-05	mg/kg/day			
				Mercury	0.265	mg/kg	NC		NC			9.1E-04	mg/kg/day	3.0E-04	mg/kg/day	3.E+00
				Mercury (methyl)	0.247	mg/kg	NC		NC			8.4E-04	mg/kg/day	1.0E-04	mg/kg/day	8.E+00
				Thallium	0.0112	mg/kg	NC		NC			3.8E-05	mg/kg/day	8.0E-05	mg/kg/day	5.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000016	mg/kg	4.7E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-04	5.5E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								8.E-04					4.E+01
		EXPOSURE POINT TOTAL									8.E-04					4.E+01
	EXPOSURE MEDIUM TOTAL										8.E-04					4.E+01
WHOLE BODY TOTAL											8.E-04					4.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	8.E-04		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		3.9.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE P.7.10.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	INGESTION	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			4.7E-09	mg/kg/day	2.0E-02	mg/kg/day	2.E-07
				Acenaphthylene	0.0589	mg/kg	NC		NC			1.5E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				Benzo(a)anthracene	1	mg/kg	1.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	2.5E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Benzo(a)pyrene	0.84	mg/kg	1.6E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Benzo(b)fluoranthene	1.4	mg/kg	2.6E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	3.6E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	0.59468	mg/kg	NC		NC			1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Dibenzo(a,h)anthracene	0.17898	mg/kg	3.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	4.6E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	0.65	mg/kg	1.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-08	1.7E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Phenanthrene	0.79474	mg/kg	NC		NC			2.0E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				alpha-Chlordane	0.00133	mg/kg	2.5E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-11	3.4E-10	mg/kg/day	5.0E-04	mg/kg/day	7.E-07
				Aroclor-1254	0.05755	mg/kg	1.1E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-08	1.5E-08	mg/kg/day	2.0E-05	mg/kg/day	7.E-04
				Aroclor-1268	0.04166	mg/kg	7.9E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-08	1.1E-08	mg/kg/day	2.0E-05	mg/kg/day	5.E-04
				gamma-Chlordane	0.00065	mg/kg	1.2E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-11	1.7E-10	mg/kg/day	5.0E-04	mg/kg/day	3.E-07
				Technical Chlordane	0.15253	mg/kg	2.9E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	3.9E-08	mg/kg/day	5.0E-04	mg/kg/day	8.E-05
				Aluminum	21774	mg/kg	NC		NC			5.5E-03	mg/kg/day			
				Arsenic	5.21	mg/kg	9.8E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	1.3E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				Cadmium	0.858	mg/kg	NC		NC			2.2E-07	mg/kg/day	1.0E-03	mg/kg/day	2.E-04
				Chromium	17.5	mg/kg	NC		NC			4.5E-06	mg/kg/day	3.0E-03	mg/kg/day	1.E-03
				Copper	18.3	mg/kg	NC		NC			4.7E-06	mg/kg/day			
				Lead	88.6	mg/kg	1.7E-05	mg/kg/day				2.3E-05	mg/kg/day			
				Manganese	1590	mg/kg	NC		NC			4.0E-04	mg/kg/day	7.1E-02	mg/kg/day	6.E-03
				Mercury	0.114	mg/kg	NC		NC			2.9E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				Nickel	20	mg/kg	NC		NC			5.1E-06	mg/kg/day	2.0E-02	mg/kg/day	3.E-04
				Thallium	0.354	mg/kg	NC		NC			9.0E-08	mg/kg/day	8.0E-05	mg/kg/day	1.E-03
				Vanadium	32	mg/kg	NC		NC			8.1E-06	mg/kg/day	7.0E-03	mg/kg/day	1.E-03
				Toxicity Equivalency (Dioxins/Furans	0.00000773	mg/kg	1.5E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-07	2.0E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-06					2.E-02
			DERMAL	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			4.2E-09	mg/kg/day	2.0E-02	mg/kg/day	2.E-07
				Acenaphthylene	0.0589	mg/kg	NC		NC			1.3E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				Benzo(a)anthracene	1	mg/kg	1.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	2.3E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Benzo(a)pyrene	0.84	mg/kg	1.4E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	1.9E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Benzo(b)fluoranthene	1.4	mg/kg	2.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	3.2E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	0.59468	mg/kg	NC		NC			1.3E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Dibenzo(a,h)anthracene	0.17898	mg/kg	3.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	4.0E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Indeno(1,2,3-cd)pyrene	0.65	mg/kg	1.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-08	1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Phenanthrene	0.79474	mg/kg	NC		NC			1.8E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				alpha-Chlordane	0.00133	mg/kg	6.8E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-11	9.2E-11	mg/kg/day	5.0E-04	mg/kg/day	2.E-07
				Aroclor-1254	0.05755	mg/kg	1.0E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-08	1.4E-08	mg/kg/day	2.0E-05	mg/kg/day	7.E-04
				Aroclor-1268	0.04166	mg/kg	7.5E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-08	1.0E-08	mg/kg/day	2.0E-05	mg/kg/day	5.E-04
				gamma-Chlordane	0.00065	mg/kg	3.3E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-11	4.5E-11	mg/kg/day	5.0E-04	mg/kg/day	9.E-08
				Technical Chlordane	0.15253	mg/kg	7.8E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-09	1.1E-08	mg/kg/day	5.0E-04	mg/kg/day	2.E-05
				Aluminum	21774	mg/kg	NC		NC			--				
				Arsenic	5.21	mg/kg	2.0E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-07	2.7E-07	mg/kg/day	3.0E-04	mg/kg/day	9.E-04
				Cadmium	0.858	mg/kg	NC		NC			1.5E-09	mg/kg/day	2.5E-05	mg/kg/day	6.E-05
				Chromium	17.5	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	18.3	mg/kg	NC		NC			--				
				Lead	88.6	mg/kg	--					--				
				Manganese	1590	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.114	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	20	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.354	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	32	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans	0.00000773	mg/kg	3.0E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-08	4.0E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-06					2.E-03
		EXPOSURE POINT TOTAL									6.E-06					2.E-02
	EXPOSURE MEDIUM TOTAL										6.E-06					2.E-02
SEDIMENT TOTAL											6.E-06					2.E-02

US EPA ARCHIVE DOCUMENT

TABLE F.7.10.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	INGESTION	Arsenic	0.000491	mg/l	1.9E-08	mg/kg/day	1.5E+00	mg/kg/day	3.E-08	2.5E-08	mg/kg/day	3.0E-04	mg/kg/day	8.E-05
				Manganese	0.166	mg/l	NC		NC			8.4E-06	mg/kg/day	2.4E-02	mg/kg/day	4.E-04
				Mercury	0.00000215	mg/l	NC		NC			1.1E-10	mg/kg/day	3.0E-04	mg/kg/day	4.E-07
				Nitrite-N	0.0051	mg/l	NC		NC			2.6E-07	mg/kg/day	1.0E-01	mg/kg/day	3.E-06
				Toxicity Equivalency (Dioxins/Furans	5.34E-09	mg/l	2.0E-13	mg/kg/day	1.5E+05	mg/kg/day	3.E-08	2.7E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-08					4.E-04
			DERMAL	Arsenic	0.000491	mg/l	3.2E-08	mg/kg/day	1.5E+00	mg/kg/day	5.E-08	4.3E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				Manganese	0.166	mg/l	NC		NC			1.5E-05	mg/kg/day	9.6E-04	mg/kg/day	2.E-02
				Mercury	0.00000215	mg/l	NC		NC			1.9E-10	mg/kg/day	2.1E-05	mg/kg/day	9.E-06
				Nitrite-N	0.0051	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans	5.34E-09	mg/l	8.0E-10	mg/kg/day	1.5E+05	mg/kg/day	1.E-04	1.1E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					2.E-02
		EXPOSURE POINT TOTAL									1.E-04					2.E-02
	EXPOSURE MEDIUM TOTAL										1.E-04					2.E-02
SURFACE WATER TOTAL											1.E-04					2.E-02
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00122	mg/kg	NC		NC			2.5E-06	mg/kg/day	6.0E-02	mg/kg/day	4.E-05
				Benzo(a)anthracene	0.00808	mg/kg	1.2E-05	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-06	1.6E-05	mg/kg/day	3.0E-02	mg/kg/day	5.E-04
				Benzo(a)pyrene	0.00791	mg/kg	1.2E-05	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-05	1.6E-05	mg/kg/day	3.0E-02	mg/kg/day	5.E-04
				Benzo(b)fluoranthene	0.01058	mg/kg	1.6E-05	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-05	2.1E-05	mg/kg/day	3.0E-02	mg/kg/day	7.E-04
				Benzo(g,h,i)perylene	0.00462	mg/kg	NC		NC			9.4E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				Dibenzo(a,h)anthracene	0.00129	mg/kg	1.9E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-05	2.6E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				Indeno(1,2,3-cd)pyrene	0.00653	mg/kg	9.8E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-06	1.3E-05	mg/kg/day	3.0E-02	mg/kg/day	4.E-04
				Phenanthrene	0.00776	mg/kg	NC		NC			1.6E-05	mg/kg/day	3.0E-02	mg/kg/day	5.E-04
				4,4'-DDE	0.02374	mg/kg	3.6E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-05	4.8E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				alpha-Chlordane	0.00288	mg/kg	4.3E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	5.8E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				gamma-Chlordane	0.0013	mg/kg	2.0E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-07	2.6E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				Lead	0.129	mg/kg	1.9E-04	mg/kg/day				2.6E-04	mg/kg/day			
				Mercury	0.137	mg/kg	NC		NC			2.8E-04	mg/kg/day	3.0E-04	mg/kg/day	9.E-01
				Mercury (methyl)	0.145	mg/kg	NC		NC			2.9E-04	mg/kg/day	1.0E-04	mg/kg/day	3.E+00
				Toxicity Equivalency (Dioxins/Furans	0.00000258	mg/kg	3.9E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-04	5.2E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								7.E-04					4.0.E+00
		EXPOSURE POINT TOTAL									7.E-04					4.0.E+00
	EXPOSURE MEDIUM TOTAL										7.E-04					4.0.E+00
WHOLE BODY TOTAL											7.E-04					4.0.E+00
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		9.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				4.0.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.11.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	INGESTION	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			7.3E-09	mg/kg/day	2.0E-02	mg/kg/day	4.E-07
				Acenaphthylene	0.0589	mg/kg	NC		NC			2.3E-08	mg/kg/day	6.0E-02	mg/kg/day	4.E-07
				Benzo(a)anthracene	1	mg/kg	6.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	4.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(a)pyrene	0.84	mg/kg	5.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	3.3E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(b)fluoranthene	1.4	mg/kg	9.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-08	5.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	0.59468	mg/kg	NC		NC			2.4E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Dibenzo(a,h)anthracene	0.17898	mg/kg	1.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-08	7.1E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	0.65	mg/kg	4.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.6E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				Phenanthrene	0.79474	mg/kg	NC		NC			3.1E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				alpha-Chlordane	0.00133	mg/kg	9.0E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-11	5.3E-10	mg/kg/day	5.0E-04	mg/kg/day	1.E-06
				Aroclor-1254	0.05755	mg/kg	3.9E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-09	2.3E-08	mg/kg/day	2.0E-05	mg/kg/day	1.E-03
				Aroclor-1268	0.04166	mg/kg	2.8E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-09	1.6E-08	mg/kg/day	2.0E-05	mg/kg/day	8.E-04
				gamma-Chlordane	0.00065	mg/kg	4.4E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-11	2.6E-10	mg/kg/day	5.0E-04	mg/kg/day	5.E-07
				Technical Chlordane	0.15253	mg/kg	1.0E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-09	6.0E-08	mg/kg/day	5.0E-04	mg/kg/day	1.E-04
				Aluminum	21774	mg/kg	NC		NC			8.6E-03	mg/kg/day			
				Arsenic	5.21	mg/kg	3.5E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	5.E-07	2.1E-06	mg/kg/day	3.0E-04	mg/kg/day	7.E-03
				Cadmium	0.858	mg/kg	NC		NC			3.4E-07	mg/kg/day	1.0E-03	mg/kg/day	3.E-04
				Chromium	17.5	mg/kg	NC		NC			6.9E-06	mg/kg/day	3.0E-03	mg/kg/day	2.E-03
				Copper	18.3	mg/kg	NC		NC			7.2E-06	mg/kg/day			
				Lead	88.6	mg/kg	6.0E-06	mg/kg/day				3.5E-05	mg/kg/day			
				Manganese	1590	mg/kg	NC		NC			6.3E-04	mg/kg/day	7.1E-02	mg/kg/day	9.E-03
				Mercury	0.114	mg/kg	NC		NC			4.5E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Nickel	20	mg/kg	NC		NC			7.9E-06	mg/kg/day	2.0E-02	mg/kg/day	4.E-04
				Thallium	0.354	mg/kg	NC		NC			1.4E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Vanadium	32	mg/kg	NC		NC			1.3E-05	mg/kg/day	7.0E-03	mg/kg/day	2.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.00000773	mg/kg	5.2E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-08	3.1E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-06					2.E-02
			DERMAL	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			1.4E-08	mg/kg/day	2.0E-02	mg/kg/day	7.E-07
				Acenaphthylene	0.0589	mg/kg	NC		NC			4.3E-08	mg/kg/day	6.0E-02	mg/kg/day	7.E-07
				Benzo(a)anthracene	1	mg/kg	1.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-08	7.4E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	0.84	mg/kg	1.1E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-07	6.2E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	1.4	mg/kg	1.8E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	1.0E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(g,h,i)perylene	0.59468	mg/kg	NC		NC			4.4E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.17898	mg/kg	2.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.3E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Indeno(1,2,3-cd)pyrene	0.65	mg/kg	8.2E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	4.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.79474	mg/kg	NC		NC			5.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				alpha-Chlordane	0.00133	mg/kg	5.2E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-11	3.0E-10	mg/kg/day	5.0E-04	mg/kg/day	6.E-07
				Aroclor-1254	0.05755	mg/kg	7.8E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-08	4.6E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				Aroclor-1268	0.04166	mg/kg	5.7E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-08	3.3E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				gamma-Chlordane	0.00065	mg/kg	2.5E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-12	1.5E-10	mg/kg/day	5.0E-04	mg/kg/day	3.E-07
				Technical Chlordane	0.15253	mg/kg	5.9E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-09	3.5E-08	mg/kg/day	5.0E-04	mg/kg/day	7.E-05
				Aluminum	21774	mg/kg	NC		NC			--				
				Arsenic	5.21	mg/kg	1.5E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-07	8.8E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				Cadmium	0.858	mg/kg	NC		NC			4.9E-09	mg/kg/day	2.5E-05	mg/kg/day	2.E-04
				Chromium	17.5	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	18.3	mg/kg	NC		NC			--				
				Lead	88.6	mg/kg	--					--				
				Manganese	1590	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.114	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	20	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.354	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	32	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00000773	mg/kg	2.2E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-08	1.3E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-06					7.E-03
		EXPOSURE POINT TOTAL									3.E-06					3.E-02
	EXPOSURE MEDIUM TOTAL										3.E-06					3.E-02
SEDIMENT TOTAL											3.E-06					3.E-02

US EPA ARCHIVE DOCUMENT

TABLE F.7.11.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	INGESTION	Arsenic	0.000491	mg/l	6.7E-09	mg/kg/day	1.5E+00	mg/kg/day	1.E-08	3.9E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				Manganese	0.166	mg/l	NC		NC			1.3E-05	mg/kg/day	2.4E-02	mg/kg/day	5.E-04
				Mercury	0.00000215	mg/l	NC		NC			1.7E-10	mg/kg/day	3.0E-04	mg/kg/day	6.E-07
				Nitrite-N	0.0051	mg/l	NC		NC			4.0E-07	mg/kg/day	1.0E-01	mg/kg/day	4.E-06
				Toxicity Equivalency (Dioxins/Furans)	5.34E-09	mg/l	7.2E-14	mg/kg/day	1.5E+05	mg/kg/day	1.E-08	4.2E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-08					7.E-04
			DERMAL	Arsenic	0.000491	mg/l	8.3E-09	mg/kg/day	1.5E+00	mg/kg/day	1.E-08	4.9E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Manganese	0.166	mg/l	NC		NC			1.6E-05	mg/kg/day	9.6E-04	mg/kg/day	2.E-02
				Mercury	0.00000215	mg/l	NC		NC			2.1E-10	mg/kg/day	2.1E-05	mg/kg/day	1.E-05
				Nitrite-N	0.0051	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	5.34E-09	mg/l	2.1E-10	mg/kg/day	1.5E+05	mg/kg/day	3.E-05	1.2E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-05					2.E-02
		EXPOSURE POINT TOTAL									3.E-05					2.E-02
	EXPOSURE MEDIUM TOTAL										3.E-05					2.E-02
SURFACE WATER TOTAL											3.E-05					2.E-02
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00122	mg/kg	NC		NC			2.6E-06	mg/kg/day	6.0E-02	mg/kg/day	4.E-05
				Benzo(a)anthracene	0.00808	mg/kg	2.9E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-06	1.7E-05	mg/kg/day	3.0E-02	mg/kg/day	6.E-04
				Benzo(a)pyrene	0.00791	mg/kg	2.8E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-05	1.7E-05	mg/kg/day	3.0E-02	mg/kg/day	6.E-04
				Benzo(b)fluoranthene	0.01058	mg/kg	3.8E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-06	2.2E-05	mg/kg/day	3.0E-02	mg/kg/day	7.E-04
				Benzo(g,h,i)perylene	0.00462	mg/kg	NC		NC			9.7E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				Dibenzo(a,h)anthracene	0.00129	mg/kg	4.6E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	2.7E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				Indeno(1,2,3-cd)pyrene	0.00653	mg/kg	2.4E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-06	1.4E-05	mg/kg/day	3.0E-02	mg/kg/day	5.E-04
				Phenanthrene	0.00776	mg/kg	NC		NC			1.6E-05	mg/kg/day	3.0E-02	mg/kg/day	5.E-04
				4,4'-DDE	0.02374	mg/kg	8.6E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-06	5.0E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				alpha-Chlordane	0.00288	mg/kg	1.0E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-07	6.1E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				gamma-Chlordane	0.0013	mg/kg	4.7E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	2.7E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				Lead	0.129	mg/kg	4.6E-05	mg/kg/day				2.7E-04	mg/kg/day			
				Mercury	0.137	mg/kg	NC		NC			2.9E-04	mg/kg/day	3.0E-04	mg/kg/day	1.E+00
				Mercury (methyl)	0.145	mg/kg	NC		NC			3.0E-04	mg/kg/day	1.0E-04	mg/kg/day	3.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.00000258	mg/kg	9.3E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-04	5.4E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-04					4.1.E+00
		EXPOSURE POINT TOTAL									2.E-04					4.1.E+00
	EXPOSURE MEDIUM TOTAL										2.E-04					4.1.E+00
WHOLE BODY TOTAL											2.E-04					4.1.E+00
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		2.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				4.2.E+00

NOTES
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
--- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.12.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00122	mg/kg	NC		NC			4.2E-06	mg/kg/day	6.0E-02	mg/kg/day	7.E-05
				Benzo(a)anthracene	0.00808	mg/kg	2.4E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-06	2.8E-05	mg/kg/day	3.0E-02	mg/kg/day	9.E-04
				Benzo(a)pyrene	0.00791	mg/kg	2.3E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-05	2.7E-05	mg/kg/day	3.0E-02	mg/kg/day	9.E-04
				Benzo(b)fluoranthene	0.01058	mg/kg	3.1E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-06	3.6E-05	mg/kg/day	3.0E-02	mg/kg/day	1.E-03
				Benzo(g,h,i)perylene	0.00462	mg/kg	NC		NC			1.6E-05	mg/kg/day	3.0E-02	mg/kg/day	5.E-04
				Dibenzo(a,h)anthracene	0.00129	mg/kg	3.8E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	4.4E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Indeno(1,2,3-cd)pyrene	0.00653	mg/kg	1.9E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-06	2.2E-05	mg/kg/day	3.0E-02	mg/kg/day	7.E-04
				Phenanthrene	0.00776	mg/kg	NC		NC			2.7E-05	mg/kg/day	3.0E-02	mg/kg/day	9.E-04
				4,4'-DDE	0.02374	mg/kg	7.0E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	8.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				alpha-Chlordane	0.00288	mg/kg	8.4E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	9.8E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				gamma-Chlordane	0.0013	mg/kg	3.8E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	4.4E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				Lead	0.129	mg/kg	3.8E-05	mg/kg/day				4.4E-04	mg/kg/day			
				Mercury	0.137	mg/kg	NC		NC			4.7E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				Mercury (methyl)	0.145	mg/kg	NC		NC			5.0E-04	mg/kg/day	1.0E-04	mg/kg/day	5.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.00000258	mg/kg	7.6E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-04	8.8E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					6.7.E+00
		EXPOSURE POINT TOTAL									1.E-04					6.7.E+00
	EXPOSURE MEDIUM TOTAL										1.E-04					6.7.E+00
WHOLE BODY TOTAL											1.E-04					6.7.E+00
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		1.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				6.7.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
--- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE P.7.13.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SOIL	SOIL	GREYSTONE MILL POND	INGESTION	2-Methylnaphthalene	0.17022	mg/kg	NC		NC			6.9E-08	mg/kg/day	2.0E-02	mg/kg/day	3.E-06
				Acenaphthylene	0.49749	mg/kg	NC		NC			2.0E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Benzo(a)anthracene	3.41086	mg/kg	1.0E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-07	1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(a)pyrene	3.41803	mg/kg	1.0E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-06	1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(b)fluoranthene	4.28861	mg/kg	1.3E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-07	1.7E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Benzo(g,h,i)perylene	2.87139	mg/kg	NC		NC			1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Dibenzo(a,h)anthracene	0.72851	mg/kg	2.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	3.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Indeno(1,2,3-cd)pyrene	3.0929	mg/kg	9.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-07	1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Phenanthrene	5.30136	mg/kg	NC		NC			2.2E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				alpha-Chlordane	0.03592	mg/kg	1.1E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-09	1.5E-08	mg/kg/day	5.0E-04	mg/kg/day	3.E-05
				Aroclor-1254	0.83872	mg/kg	2.5E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-07	3.4E-07	mg/kg/day	2.0E-05	mg/kg/day	2.E-02
				Aroclor-1268	0.13953	mg/kg	4.2E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-08	5.7E-08	mg/kg/day	2.0E-05	mg/kg/day	3.E-03
				Endosulfan Sulfate	0.01269	mg/kg	NC		NC			5.2E-09	mg/kg/day	6.0E-03	mg/kg/day	9.E-07
				Technical Chlordane	0.73538	mg/kg	2.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-08	3.0E-07	mg/kg/day	5.0E-04	mg/kg/day	6.E-04
				Aluminum	21793	mg/kg	NC		NC			8.9E-03	mg/kg/day			
				Arsenic	12.2	mg/kg	3.9E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	6.E-06	5.0E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
				Chromium	291	mg/kg	NC		NC			1.2E-04	mg/kg/day	3.0E-03	mg/kg/day	4.E-02
				Copper	324	mg/kg	NC		NC			1.3E-04	mg/kg/day			
				Lead	591	mg/kg	1.8E-04	mg/kg/day	--			2.4E-04	mg/kg/day			
				Manganese	4126	mg/kg	NC		NC			1.7E-03	mg/kg/day	7.1E-02	mg/kg/day	2.E-02
				Mercury	0.811	mg/kg	NC		NC			3.3E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Molybdenum	87.7	mg/kg	NC		NC			3.6E-05	mg/kg/day	5.0E-03	mg/kg/day	7.E-03
				Nickel	387	mg/kg	NC		NC			1.6E-04	mg/kg/day	2.0E-02	mg/kg/day	8.E-03
				Thallium	0.585	mg/kg	NC		NC			2.4E-07	mg/kg/day	8.0E-05	mg/kg/day	3.E-03
				Vanadium	103	mg/kg	NC		NC			4.2E-05	mg/kg/day	7.0E-03	mg/kg/day	6.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.000109	mg/kg	3.3E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-06	4.4E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-05					1.E-01
			DERMAL	2-Methylnaphthalene	0.17022	mg/kg	NC		NC			7.2E-08	mg/kg/day	2.0E-02	mg/kg/day	4.E-06
				Acenaphthylene	0.49749	mg/kg	NC		NC			2.1E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				Benzo(a)anthracene	3.41086	mg/kg	1.1E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-07	1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(a)pyrene	3.41803	mg/kg	1.1E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-06	1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(b)fluoranthene	4.28861	mg/kg	1.3E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-06	1.8E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Benzo(g,h,i)perylene	2.87139	mg/kg	NC		NC			1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Dibenzo(a,h)anthracene	0.72851	mg/kg	2.3E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	3.1E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Indeno(1,2,3-cd)pyrene	3.0929	mg/kg	9.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-07	1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Phenanthrene	5.30136	mg/kg	NC		NC			2.2E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				alpha-Chlordane	0.03592	mg/kg	3.5E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-09	4.7E-09	mg/kg/day	5.0E-04	mg/kg/day	9.E-06
				Aroclor-1254	0.83872	mg/kg	2.8E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-07	3.8E-07	mg/kg/day	2.0E-05	mg/kg/day	2.E-02
				Aroclor-1268	0.13953	mg/kg	4.7E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-08	6.3E-08	mg/kg/day	2.0E-05	mg/kg/day	3.E-03
				Endosulfan Sulfate	0.01269	mg/kg	NC		NC			4.1E-09	mg/kg/day	6.0E-03	mg/kg/day	7.E-07
				Technical Chlordane	0.73538	mg/kg	7.1E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	9.6E-08	mg/kg/day	5.0E-04	mg/kg/day	2.E-04
				Aluminum	21793	mg/kg	NC		NC			--				
				Arsenic	12.2	mg/kg	8.8E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	1.2E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				Chromium	291	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	324	mg/kg	NC		NC			--				
				Lead	591	mg/kg	--		--			--				
				Manganese	4126	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.811	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Molybdenum	87.7	mg/kg	NC		NC			--		5.0E-03	mg/kg/day	
				Nickel	387	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.585	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	103	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000109	mg/kg	7.9E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-06	1.1E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-05					3.E-02
		EXPOSURE POINT TOTAL									4.E-05					2.E-01
	EXPOSURE MEDIUM TOTAL										4.E-05					2.E-01
SOIL TOTAL											4.E-05					2.E-01

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TABLE F.7.13.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	GREYSTONE MILL POND	INGESTION	2-Methylnaphthalene	0.07478	mg/kg	NC		NC			1.9E-08	mg/kg/day	2.0E-02	mg/kg/day	1.E-06
				Acenaphthylene	0.19279	mg/kg	NC		NC			4.9E-08	mg/kg/day	6.0E-02	mg/kg/day	8.E-07
				Benzo(a)anthracene	3.5	mg/kg	6.6E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-07	8.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(a)pyrene	3.1	mg/kg	5.9E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-06	7.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(b)fluoranthene	3.1	mg/kg	5.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	7.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(g,h,i)perylene	2.07671	mg/kg	NC		NC			5.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.77	mg/kg	1.5E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	2.0E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Indeno(1,2,3-cd)pyrene	2.18335	mg/kg	4.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	5.6E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	4.8	mg/kg	NC		NC			1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				alpha-Chlordane	0.0061	mg/kg	1.2E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-10	1.6E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Aroclor-1254	0.38	mg/kg	7.2E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-07	9.7E-08	mg/kg/day	2.0E-05	mg/kg/day	5.E-03
				Aroclor-1268	0.24667	mg/kg	4.7E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-08	6.3E-08	mg/kg/day	2.0E-05	mg/kg/day	3.E-03
				gamma-Chlordane	0.005	mg/kg	9.4E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-10	1.3E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Technical Chlordane	0.62618	mg/kg	1.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-08	1.6E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Aluminum	15554	mg/kg	NC		NC			4.0E-03	mg/kg/day			
				Antimony	4.3	mg/kg	NC		NC			1.1E-06	mg/kg/day	4.0E-04	mg/kg/day	3.E-03
				Arsenic	9.6	mg/kg	1.8E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-06	2.4E-06	mg/kg/day	3.0E-04	mg/kg/day	8.E-03
				Cadmium	4.35	mg/kg	NC		NC			1.1E-06	mg/kg/day	1.0E-03	mg/kg/day	1.E-03
				Chromium	271	mg/kg	NC		NC			6.9E-05	mg/kg/day	3.0E-03	mg/kg/day	2.E-02
				Copper	436	mg/kg	NC		NC			1.1E-04	mg/kg/day			
				Lead	179	mg/kg	3.4E-05	mg/kg/day				4.6E-05	mg/kg/day			
				Manganese	599	mg/kg	NC		NC			1.5E-04	mg/kg/day	7.1E-02	mg/kg/day	2.E-03
				Mercury	0.757	mg/kg	NC		NC			1.9E-07	mg/kg/day	3.0E-04	mg/kg/day	6.E-04
				Nickel	142	mg/kg	NC		NC			3.6E-05	mg/kg/day	2.0E-02	mg/kg/day	2.E-03
				Thallium	0.37	mg/kg	NC		NC			9.4E-08	mg/kg/day	8.0E-05	mg/kg/day	1.E-03
				Vanadium	79	mg/kg	NC		NC			2.0E-05	mg/kg/day	7.0E-03	mg/kg/day	3.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.00012	mg/kg	2.3E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-06	3.1E-11	mg/kg/day			
				Toxicity Equivalency (PCB Congeners	0.0000249	mg/kg	4.7E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-07	6.3E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					5.E-02
			DERMAL	2-Methylnaphthalene	0.07478	mg/kg	NC		NC			1.7E-08	mg/kg/day	2.0E-02	mg/kg/day	8.E-07
				Acenaphthylene	0.19279	mg/kg	NC		NC			4.3E-08	mg/kg/day	6.0E-02	mg/kg/day	7.E-07
				Benzo(a)anthracene	3.5	mg/kg	5.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	7.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(a)pyrene	3.1	mg/kg	5.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-06	7.0E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	3.1	mg/kg	5.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	7.0E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	2.07671	mg/kg	NC		NC			4.7E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.77	mg/kg	1.3E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-07	1.7E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Indeno(1,2,3-cd)pyrene	2.18335	mg/kg	3.6E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	4.9E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	4.8	mg/kg	NC		NC			1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				alpha-Chlordane	0.0061	mg/kg	1.1E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	4.2E-10	mg/kg/day	5.0E-04	mg/kg/day	8.E-07
				Aroclor-1254	0.38	mg/kg	6.8E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-07	9.2E-08	mg/kg/day	2.0E-05	mg/kg/day	5.E-03
				Aroclor-1268	0.24667	mg/kg	4.4E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-08	6.0E-08	mg/kg/day	2.0E-05	mg/kg/day	3.E-03
				gamma-Chlordane	0.005	mg/kg	2.6E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-11	3.5E-10	mg/kg/day	5.0E-04	mg/kg/day	7.E-07
				Technical Chlordane	0.62618	mg/kg	3.2E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	4.3E-08	mg/kg/day	5.0E-04	mg/kg/day	9.E-05
				Aluminum	15554	mg/kg	NC		NC			--				
				Antimony	4.3	mg/kg	NC		NC			--		6.0E-05	mg/kg/day	
				Arsenic	9.6	mg/kg	3.7E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	6.E-07	5.0E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Cadmium	4.35	mg/kg	NC		NC			7.5E-09	mg/kg/day	2.5E-05	mg/kg/day	3.E-04
				Chromium	271	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	436	mg/kg	NC		NC			--				
				Lead	179	mg/kg	--					--				
				Manganese	599	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.757	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	142	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.37	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	79	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	

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TABLE F.7.13.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	CSF/UNIT RISK VALUE	CSF UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	RfD/RfC (1) VALUE	RfD/RfC UNITS	HAZARD QUOTIENT
				Toxicity Equivalency (Dioxins/Furans)	0.00012	mg/kg	4.6E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-07	6.2E-12	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000249	mg/kg	9.6E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-07	1.3E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								7.E-06					1.E-02
		EXPOSURE POINT TOTAL									2.E-05					6.E-02
	EXPOSURE MEDIUM TOTAL										2.E-05					6.E-02
SEDIMENT TOTAL											2.E-05					6.E-02
SURFACE WATER	SURFACE WATER	GREYSTONE MILL POND	INGESTION	Arsenic	0.00055	mg/l	2.1E-08	mg/kg/day	1.5E+00	mg/kg/day	3.E-08	2.8E-08	mg/kg/day	3.0E-04	mg/kg/day	9.E-05
				Manganese	0.144	mg/l	NC		NC			7.3E-06	mg/kg/day	2.4E-02	mg/kg/day	3.E-04
				Mercury	0.00000193	mg/l	NC		NC			9.8E-11	mg/kg/day	3.0E-04	mg/kg/day	3.E-07
				Nitrite-N	0.13	mg/l	NC		NC			6.6E-06	mg/kg/day	1.0E-01	mg/kg/day	7.E-05
				Toxicity Equivalency (Dioxins/Furans)	5.64E-09	mg/l	2.1E-13	mg/kg/day	1.5E+05	mg/kg/day	3.E-08	2.9E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-08					5.E-04
			DERMAL	Arsenic	0.00055	mg/l	3.6E-08	mg/kg/day	1.5E+00	mg/kg/day	5.E-08	4.9E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Manganese	0.144	mg/l	NC		NC			1.3E-05	mg/kg/day	9.6E-04	mg/kg/day	1.E-02
				Mercury	0.00000193	mg/l	NC		NC			1.7E-10	mg/kg/day	2.1E-05	mg/kg/day	8.E-06
				Nitrite-N	0.13	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	5.64E-09	mg/l	8.4E-10	mg/kg/day	1.5E+05	mg/kg/day	1.E-04	1.1E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					1.E-02
		EXPOSURE POINT TOTAL									1.E-04					1.E-02
	EXPOSURE MEDIUM TOTAL										1.E-04					1.E-02
SURFACE WATER TOTAL											1.E-04					1.E-02
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00121	mg/kg	NC	mg/kg/day	NC			2.5E-06	mg/kg/day	6.0E-02	mg/kg/day	4.E-05
				Benzo(a)pyrene	0.00132	mg/kg	2.0E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-05	2.7E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				Benzo(b)fluoranthene	0.00149	mg/kg	2.2E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-06	3.0E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Dibenzo(a,h)anthracene	0.000799	mg/kg	1.2E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-06	1.6E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Indeno(1,2,3-cd)pyrene	0.00132	mg/kg	2.0E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-06	2.7E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				Phenanthrene	0.00475	mg/kg	NC		NC			9.6E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				4,4'-DDD	0.015	mg/kg	2.3E-05	mg/kg/day	2.4E-01	(mg/kg/day)-1	5.E-06	3.0E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				4,4'-DDE	0.03161	mg/kg	4.8E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-05	6.4E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				alpha-Chlordane	0.017	mg/kg	2.6E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-06	3.4E-05	mg/kg/day	5.0E-04	mg/kg/day	7.E-02
				Aroclor-1254	0.25318	mg/kg	3.8E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-04	5.1E-04	mg/kg/day	2.0E-02	mg/kg/day	3.E+01
				Aroclor-1268	0.1251	mg/kg	1.9E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-04	2.5E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E+01
				Dieldrin	0.00353	mg/kg	5.3E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	9.E-05	7.2E-06	mg/kg/day	5.0E-05	mg/kg/day	1.E-01
				gamma-Chlordane	0.0069	mg/kg	1.0E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-06	1.4E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Heptachlor Epoxide	0.0012	mg/kg	1.8E-06	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-05	2.4E-06	mg/kg/day	1.3E-05	mg/kg/day	2.E-01
				Technical Chlordane	0.31695	mg/kg	4.8E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-04	6.4E-04	mg/kg/day	5.0E-04	mg/kg/day	1.E+00
				Lead	1.47	mg/kg	2.2E-03	mg/kg/day				3.0E-03	mg/kg/day			
				Mercury	0.0706	mg/kg	NC		NC			1.4E-04	mg/kg/day	3.0E-04	mg/kg/day	5.E-01
				Mercury (methyl)	0.165	mg/kg	NC		NC			3.3E-04	mg/kg/day	1.0E-04	mg/kg/day	3.E+00
				Zinc	41.5	mg/kg	NC		NC			8.4E-02	mg/kg/day	3.0E-01	mg/kg/day	3.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000000749	mg/kg	1.1E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	1.5E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-03					4.4.E+01
		EXPOSURE POINT TOTAL									2.E-03					4.4.E+01
	EXPOSURE MEDIUM TOTAL										2.E-03					4.4.E+01
WHOLE BODY TOTAL											2.E-03					4.4.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		2.E-03	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				4.5.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.14.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	GREYSTONE MILL POND	INGESTION	2-Methylnaphthalene	0.17022	mg/kg	NC		NC			1.1E-07	mg/kg/day	2.0E-02	mg/kg/day	5.E-06
				Acenaphthylene	0.49749	mg/kg	NC		NC			3.2E-07	mg/kg/day	6.0E-02	mg/kg/day	5.E-06
				Benzo(a)anthracene	3.41086	mg/kg	3.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.2E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(a)pyrene	3.41803	mg/kg	3.7E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	2.2E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(b)fluoranthene	4.28861	mg/kg	4.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.7E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				Benzo(g,h,i)perylene	2.87139	mg/kg	NC		NC			1.8E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Dibenzo(a,h)anthracene	0.72851	mg/kg	7.9E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-07	4.6E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Indeno(1,2,3-cd)pyrene	3.0929	mg/kg	3.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	2.0E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Phenanthrene	5.30136	mg/kg	NC		NC			3.4E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				alpha-Chlordane	0.03592	mg/kg	3.9E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-09	2.3E-08	mg/kg/day	5.0E-04	mg/kg/day	5.E-05
				Aroclor-1254	0.83872	mg/kg	9.1E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-07	5.3E-07	mg/kg/day	2.0E-05	mg/kg/day	3.E-02
				Aroclor-1268	0.13953	mg/kg	1.5E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-08	8.8E-08	mg/kg/day	2.0E-05	mg/kg/day	4.E-03
				Endosulfan Sulfate	0.01269	mg/kg	NC		NC			8.0E-09	mg/kg/day	6.0E-03	mg/kg/day	1.E-06
				Technical Chlordane	0.73538	mg/kg	8.0E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	4.7E-07	mg/kg/day	5.0E-04	mg/kg/day	9.E-04
				Aluminum	21793	mg/kg	NC		NC			1.4E-02	mg/kg/day			
				Arsenic	12.2	mg/kg	1.3E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-06	7.7E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-02
				Chromium	291	mg/kg	NC		NC			1.8E-04	mg/kg/day	3.0E-03	mg/kg/day	6.E-02
				Copper	324	mg/kg	NC		NC			2.1E-04	mg/kg/day			
				Lead	591	mg/kg	6.4E-05	mg/kg/day	--			3.7E-04	mg/kg/day			
				Manganese	4126	mg/kg	NC		NC			2.6E-03	mg/kg/day	7.1E-02	mg/kg/day	4.E-02
				Mercury	0.811	mg/kg	NC		NC			5.1E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Molybdenum	87.7	mg/kg	NC		NC			5.6E-05	mg/kg/day	5.0E-03	mg/kg/day	1.E-02
				Nickel	387	mg/kg	NC		NC			2.5E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				Thallium	0.585	mg/kg	NC		NC			3.7E-07	mg/kg/day	8.0E-05	mg/kg/day	5.E-03
				Vanadium	103	mg/kg	NC		NC			6.5E-05	mg/kg/day	7.0E-03	mg/kg/day	9.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.000109	mg/kg	1.2E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-06	6.9E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								8.E-06					2.E-01
			DERMAL	2-Methylnaphthalene	0.17022	mg/kg	NC		NC			2.7E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				Acenaphthylene	0.49749	mg/kg	NC		NC			7.9E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)anthracene	3.41086	mg/kg	9.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-07	5.4E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(a)pyrene	3.41803	mg/kg	9.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-06	5.4E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(b)fluoranthene	4.28861	mg/kg	1.2E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-07	6.8E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(g,h,i)perylene	2.87139	mg/kg	NC		NC			4.5E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Dibenzo(a,h)anthracene	0.72851	mg/kg	2.0E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Indeno(1,2,3-cd)pyrene	3.0929	mg/kg	8.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-07	4.9E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Phenanthrene	5.30136	mg/kg	NC		NC			8.4E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				alpha-Chlordane	0.03592	mg/kg	3.0E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-09	1.7E-08	mg/kg/day	5.0E-04	mg/kg/day	3.E-05
				Aroclor-1254	0.83872	mg/kg	2.4E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-07	1.4E-06	mg/kg/day	2.0E-05	mg/kg/day	7.E-02
				Aroclor-1268	0.13953	mg/kg	4.1E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-08	2.4E-07	mg/kg/day	2.0E-05	mg/kg/day	1.E-02
				Endosulfan Sulfate	0.01269	mg/kg	NC		NC			1.5E-08	mg/kg/day	6.0E-03	mg/kg/day	3.E-06
				Technical Chlordane	0.73538	mg/kg	6.1E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	3.6E-07	mg/kg/day	5.0E-04	mg/kg/day	7.E-04
				Aluminum	21793	mg/kg	NC		NC			--				
				Arsenic	12.2	mg/kg	7.6E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	4.4E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				Chromium	291	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	324	mg/kg	NC		NC			--				
				Lead	591	mg/kg	--		--			--				
				Manganese	4126	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.811	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Molybdenum	87.7	mg/kg	NC		NC			--		5.0E-03	mg/kg/day	
				Nickel	387	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.585	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	103	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000109	mg/kg	6.8E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-06	4.0E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					1.E-01
		EXPOSURE POINT TOTAL									2.E-05					3.E-01
	EXPOSURE MEDIUM TOTAL										2.E-05					3.E-01
SOIL TOTAL											2.E-05					3.E-01

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TABLE F.7.14.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	GREYSTONE MILL POND	INGESTION	2-Methylnaphthalene	0.07478	mg/kg	NC		NC			3.0E-08	mg/kg/day	2.0E-02	mg/kg/day	1.E-06
				Acenaphthylene	0.19279	mg/kg	NC		NC			7.6E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				Benzo(a)anthracene	3.5	mg/kg	2.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(a)pyrene	3.1	mg/kg	2.1E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(b)fluoranthene	3.1	mg/kg	2.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(g,h,i)perylene	2.07671	mg/kg	NC		NC			8.2E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Dibenzo(a,h)anthracene	0.77	mg/kg	5.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	3.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Indeno(1,2,3-cd)pyrene	2.18335	mg/kg	1.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	8.6E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Phenanthrene	4.8	mg/kg	NC		NC			1.9E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				alpha-Chlordane	0.0061	mg/kg	4.1E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	2.4E-09	mg/kg/day	5.0E-04	mg/kg/day	5.E-06
				Aroclor-1254	0.38	mg/kg	2.6E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-08	1.5E-07	mg/kg/day	2.0E-05	mg/kg/day	8.E-03
				Aroclor-1268	0.24667	mg/kg	1.7E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-08	9.8E-08	mg/kg/day	2.0E-05	mg/kg/day	5.E-03
				gamma-Chlordane	0.005	mg/kg	3.4E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	2.0E-09	mg/kg/day	5.0E-04	mg/kg/day	4.E-06
				Technical Chlordane	0.62618	mg/kg	4.2E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	2.5E-07	mg/kg/day	5.0E-04	mg/kg/day	5.E-04
				Aluminum	15554	mg/kg	NC		NC			6.2E-03	mg/kg/day			
				Antimony	4.3	mg/kg	NC		NC			1.7E-06	mg/kg/day	4.0E-04	mg/kg/day	4.E-03
				Arsenic	9.6	mg/kg	6.5E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	3.8E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				Cadmium	4.35	mg/kg	NC		NC			1.7E-06	mg/kg/day	1.0E-03	mg/kg/day	2.E-03
				Chromium	271	mg/kg	NC		NC			1.1E-04	mg/kg/day	3.0E-03	mg/kg/day	4.E-02
				Copper	436	mg/kg	NC		NC			1.7E-04	mg/kg/day			
				Lead	179	mg/kg	1.2E-05	mg/kg/day				7.1E-05	mg/kg/day			
				Manganese	599	mg/kg	NC		NC			2.4E-04	mg/kg/day	7.1E-02	mg/kg/day	3.E-03
				Mercury	0.757	mg/kg	NC		NC			3.0E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Nickel	142	mg/kg	NC		NC			5.6E-05	mg/kg/day	2.0E-02	mg/kg/day	3.E-03
				Thallium	0.37	mg/kg	NC		NC			1.5E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Vanadium	79	mg/kg	NC		NC			3.1E-05	mg/kg/day	7.0E-03	mg/kg/day	4.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.00012	mg/kg	8.1E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-06	4.7E-11	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000249	mg/kg	1.7E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-07	9.9E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-06					8.E-02
			DERMAL	2-Methylnaphthalene	0.07478	mg/kg	NC		NC			5.5E-08	mg/kg/day	2.0E-02	mg/kg/day	3.E-06
				Acenaphthylene	0.19279	mg/kg	NC		NC			1.4E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				Benzo(a)anthracene	3.5	mg/kg	4.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.6E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				Benzo(a)pyrene	3.1	mg/kg	3.9E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	2.3E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				Benzo(b)fluoranthene	3.1	mg/kg	3.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.3E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				Benzo(g,h,i)perylene	2.07671	mg/kg	NC		NC			1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Dibenzo(a,h)anthracene	0.77	mg/kg	9.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-07	5.7E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Indeno(1,2,3-cd)pyrene	2.18335	mg/kg	2.8E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.6E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Phenanthrene	4.8	mg/kg	NC		NC			3.5E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				alpha-Chlordane	0.0061	mg/kg	2.4E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-11	1.4E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Aroclor-1254	0.38	mg/kg	5.2E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-07	3.0E-07	mg/kg/day	2.0E-05	mg/kg/day	2.E-02
				Aroclor-1268	0.24667	mg/kg	3.3E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-08	2.0E-07	mg/kg/day	2.0E-05	mg/kg/day	1.E-02
				gamma-Chlordane	0.005	mg/kg	1.9E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-11	1.1E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Technical Chlordane	0.62618	mg/kg	2.4E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-09	1.4E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Aluminum	15554	mg/kg	NC		NC			--				
				Antimony	4.3	mg/kg	NC		NC			--		6.0E-05	mg/kg/day	
				Arsenic	9.6	mg/kg	2.8E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-07	1.6E-06	mg/kg/day	3.0E-04	mg/kg/day	5.E-03
				Cadmium	4.35	mg/kg	NC		NC			2.5E-08	mg/kg/day	2.5E-05	mg/kg/day	1.E-03
				Chromium	271	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	436	mg/kg	NC		NC			--				
				Lead	179	mg/kg	--					--				
				Manganese	599	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.757	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	142	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.37	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	

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TABLE F.7.14.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	CSF/UNIT RISK VALUE	CSF UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	RfD/RfC (1) VALUE	RfD/RfC UNITS	HAZARD QUOTIENT
				Vanadium	79	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00012	mg/kg	3.5E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-07	2.0E-11	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000249	mg/kg	7.2E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-07	4.2E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-06					3.E-02
		EXPOSURE POINT TOTAL									1.E-05					1.E-01
	EXPOSURE MEDIUM TOTAL										1.E-05					1.E-01
SEDIMENT TOTAL											1.E-05					1.E-01
SURFACE WATER	SURFACE WATER	GREYSTONE MILL POND	INGESTION	Arsenic	0.00055	mg/l	7.5E-09	mg/kg/day	1.5E+00	mg/kg/day	1.E-08	4.4E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				Manganese	0.144	mg/l	NC		NC			1.1E-05	mg/kg/day	2.4E-02	mg/kg/day	5.E-04
				Mercury	0.00000193	mg/l	NC		NC			1.5E-10	mg/kg/day	3.0E-04	mg/kg/day	5.E-07
				Nitrite-N	0.13	mg/l	NC		NC			1.0E-05	mg/kg/day	1.0E-01	mg/kg/day	1.E-04
				Toxicity Equivalency (Dioxins/Furans)	5.64E-09	mg/l	7.7E-14	mg/kg/day	1.5E+05	mg/kg/day	1.E-08	4.5E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-08					7.E-04
			DERMAL	Arsenic	0.00055	mg/l	9.3E-09	mg/kg/day	1.5E+00	mg/kg/day	1.E-08	5.5E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Manganese	0.144	mg/l	NC		NC			1.4E-05	mg/kg/day	9.6E-04	mg/kg/day	1.E-02
				Mercury	0.00000193	mg/l	NC		NC			1.9E-10	mg/kg/day	2.1E-05	mg/kg/day	9.E-06
				Nitrite-N	0.13	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	5.64E-09	mg/l	2.2E-10	mg/kg/day	1.5E+05	mg/kg/day	3.E-05	1.3E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-05					2.E-02
		EXPOSURE POINT TOTAL									3.E-05					2.E-02
	EXPOSURE MEDIUM TOTAL										3.E-05					2.E-02
SURFACE WATER TOTAL											3.E-05					2.E-02
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00121	mg/kg	NC		NC			2.5E-06	mg/kg/day	6.0E-02	mg/kg/day	4.E-05
				Benzo(a)pyrene	0.00132	mg/kg	4.8E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	2.8E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				Benzo(b)fluoranthene	0.00149	mg/kg	5.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	3.1E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Dibenzo(a,h)anthracene	0.000799	mg/kg	2.9E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	1.7E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Indeno(1,2,3-cd)pyrene	0.00132	mg/kg	4.8E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.8E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				Phenanthrene	0.00475	mg/kg	NC		NC			1.0E-05	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				4,4'-DDD	0.015	mg/kg	5.4E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-06	3.2E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				4,4'-DDE	0.03161	mg/kg	1.1E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-06	6.6E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				alpha-Chlordane	0.017	mg/kg	6.1E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	3.6E-05	mg/kg/day	5.0E-04	mg/kg/day	7.E-02
				Aroclor-1254	0.25318	mg/kg	9.1E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	5.3E-04	mg/kg/day	2.0E-05	mg/kg/day	3.E+01
				Aroclor-1268	0.1251	mg/kg	4.5E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-05	2.6E-04	mg/kg/day	2.0E-05	mg/kg/day	1.E+01
				Dieldrin	0.00353	mg/kg	1.3E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-05	7.4E-06	mg/kg/day	5.0E-05	mg/kg/day	1.E-01
				gamma-Chlordane	0.0069	mg/kg	2.5E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-07	1.4E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Heptachlor Epoxide	0.0012	mg/kg	4.3E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	4.E-06	2.5E-06	mg/kg/day	1.3E-05	mg/kg/day	2.E-01
				Technical Chlordane	0.31695	mg/kg	1.1E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-05	6.7E-04	mg/kg/day	5.0E-04	mg/kg/day	1.E+00
				Lead	1.47	mg/kg	5.3E-04	mg/kg/day				3.1E-03	mg/kg/day			
				Mercury	0.0706	mg/kg	NC		NC			1.5E-04	mg/kg/day	3.0E-04	mg/kg/day	5.E-01
				Mercury (methyl)	0.165	mg/kg	NC		NC			3.5E-04	mg/kg/day	1.0E-04	mg/kg/day	3.E+00
				Zinc	41.5	mg/kg	NC		NC			8.7E-02	mg/kg/day	3.0E-01	mg/kg/day	3.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000000749	mg/kg	2.7E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-05	1.6E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-04					4.6.E+01
		EXPOSURE POINT TOTAL									4.E-04					4.6.E+01
	EXPOSURE MEDIUM TOTAL										4.E-04					4.6.E+01
WHOLE BODY TOTAL											4.E-04					4.6.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	5.E-04		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		4.6.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.15.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00121	mg/kg	NC		NC			4.1E-06	mg/kg/day	6.0E-02	mg/kg/day	7.E-05
				Benzo(a)pyrene	0.00132	mg/kg	3.9E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	4.5E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(b)fluoranthene	0.00149	mg/kg	4.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	5.1E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Dibenzo(a,h)anthracene	0.000799	mg/kg	2.3E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	2.7E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				Indeno(1,2,3-cd)pyrene	0.00132	mg/kg	3.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	4.5E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Phenanthrene	0.00475	mg/kg	NC		NC			1.6E-05	mg/kg/day	3.0E-02	mg/kg/day	5.E-04
				4,4'-DDD	0.015	mg/kg	4.4E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-06	5.1E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				4,4'-DDE	0.03161	mg/kg	9.3E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-06	1.1E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				alpha-Chlordane	0.017	mg/kg	5.0E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	5.8E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Aroclor-1254	0.25318	mg/kg	7.4E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-04	8.7E-04	mg/kg/day	2.0E-05	mg/kg/day	4.E+01
				Aroclor-1268	0.1251	mg/kg	3.7E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-05	4.3E-04	mg/kg/day	2.0E-05	mg/kg/day	2.E+01
				Dieldrin	0.00353	mg/kg	1.0E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-05	1.2E-05	mg/kg/day	5.0E-05	mg/kg/day	2.E-01
				gamma-Chlordane	0.0069	mg/kg	2.0E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-07	2.4E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				Heptachlor Epoxide	0.0012	mg/kg	3.5E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.E-06	4.1E-06	mg/kg/day	1.3E-05	mg/kg/day	3.E-01
				Technical Chlordane	0.31695	mg/kg	9.3E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-05	1.1E-03	mg/kg/day	5.0E-04	mg/kg/day	2.E+00
				Lead	1.47	mg/kg	4.3E-04	mg/kg/day				5.0E-03	mg/kg/day			
				Mercury	0.0706	mg/kg	NC		NC			2.4E-04	mg/kg/day	3.0E-04	mg/kg/day	8.E-01
				Mercury (methyl)	0.165	mg/kg	NC		NC			5.6E-04	mg/kg/day	1.0E-04	mg/kg/day	6.E+00
				Zinc	41.5	mg/kg	NC		NC			1.4E-01	mg/kg/day	3.0E-01	mg/kg/day	5.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000000749	mg/kg	2.2E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-05	2.6E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-04					7.5.E+01
		EXPOSURE POINT TOTAL									3.E-04					7.5.E+01
	EXPOSURE MEDIUM TOTAL										3.E-04					7.5.E+01
WHOLE BODY TOTAL											3.E-04					7.5.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											3.E-04					7.5.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.16.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	GREYSTONE MILL POND	INGESTION	2-Methylnaphthalene	0.17022	mg/kg	NC		NC			6.9E-08	mg/kg/day	2.0E-02	mg/kg/day	3.E-06
				Acenaphthylene	0.49749	mg/kg	NC		NC			2.0E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Benzo(a)anthracene	3.41086	mg/kg	1.0E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-07	1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(a)pyrene	3.41803	mg/kg	1.0E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-06	1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(b)fluoranthene	4.28861	mg/kg	1.3E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-07	1.7E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Benzo(g,h,i)perylene	2.87139	mg/kg	NC		NC			1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Dibenzo(a,h)anthracene	0.72851	mg/kg	2.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	3.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Indeno(1,2,3-cd)pyrene	3.0929	mg/kg	9.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-07	1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Phenanthrene	5.30136	mg/kg	NC		NC			2.2E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				alpha-Chlordane	0.03592	mg/kg	1.1E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-09	1.5E-08	mg/kg/day	5.0E-04	mg/kg/day	3.E-05
				Aroclor-1254	0.83872	mg/kg	2.5E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-07	3.4E-07	mg/kg/day	2.0E-05	mg/kg/day	2.E-02
				Aroclor-1268	0.13953	mg/kg	4.2E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-08	5.7E-08	mg/kg/day	2.0E-05	mg/kg/day	3.E-03
				Endosulfan Sulfate	0.01269	mg/kg	NC		NC			5.2E-09	mg/kg/day	6.0E-03	mg/kg/day	9.E-07
				Technical Chlordane	0.73538	mg/kg	2.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-08	3.0E-07	mg/kg/day	5.0E-04	mg/kg/day	6.E-04
				Aluminum	21793	mg/kg	NC		NC			8.9E-03	mg/kg/day			
				Arsenic	12.2	mg/kg	3.7E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	6.E-06	5.0E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
				Chromium	291	mg/kg	NC		NC			1.2E-04	mg/kg/day	3.0E-03	mg/kg/day	4.E-02
				Copper	324	mg/kg	NC		NC			1.3E-04	mg/kg/day			
				Lead	591	mg/kg	1.8E-04	mg/kg/day	--			2.4E-04	mg/kg/day			
				Manganese	4126	mg/kg	NC		NC			1.7E-03	mg/kg/day	7.1E-02	mg/kg/day	2.E-02
				Mercury	0.811	mg/kg	NC		NC			3.3E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Molybdenum	87.7	mg/kg	NC		NC			3.6E-05	mg/kg/day	5.0E-03	mg/kg/day	7.E-03
				Nickel	387	mg/kg	NC		NC			1.6E-04	mg/kg/day	2.0E-02	mg/kg/day	8.E-03
				Thallium	0.585	mg/kg	NC		NC			2.4E-07	mg/kg/day	8.0E-05	mg/kg/day	3.E-03
				Vanadium	103	mg/kg	NC		NC			4.2E-05	mg/kg/day	7.0E-03	mg/kg/day	6.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.000109	mg/kg	3.3E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-06	4.4E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-05					1.E-01
			DERMAL	2-Methylnaphthalene	0.17022	mg/kg	NC		NC			7.2E-08	mg/kg/day	2.0E-02	mg/kg/day	4.E-06
				Acenaphthylene	0.49749	mg/kg	NC		NC			2.1E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				Benzo(a)anthracene	3.41086	mg/kg	1.1E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-07	1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(a)pyrene	3.41803	mg/kg	1.1E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-06	1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(b)fluoranthene	4.28861	mg/kg	1.3E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-06	1.8E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Benzo(g,h,i)perylene	2.87139	mg/kg	NC		NC			1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Dibenzo(a,h)anthracene	0.72851	mg/kg	2.3E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	3.1E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Indeno(1,2,3-cd)pyrene	3.0929	mg/kg	9.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-07	1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Phenanthrene	5.30136	mg/kg	NC		NC			2.2E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				alpha-Chlordane	0.03592	mg/kg	3.5E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-09	4.7E-09	mg/kg/day	5.0E-04	mg/kg/day	9.E-06
				Aroclor-1254	0.83872	mg/kg	2.8E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-07	3.8E-07	mg/kg/day	2.0E-05	mg/kg/day	2.E-02
				Aroclor-1268	0.13953	mg/kg	4.7E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-08	6.3E-08	mg/kg/day	2.0E-05	mg/kg/day	3.E-03
				Endosulfan Sulfate	0.01269	mg/kg	NC		NC			4.1E-09	mg/kg/day	6.0E-03	mg/kg/day	7.E-07
				Technical Chlordane	0.73538	mg/kg	7.1E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	9.6E-08	mg/kg/day	5.0E-04	mg/kg/day	2.E-04
				Aluminum	21793	mg/kg	NC		NC			--				
				Arsenic	12.2	mg/kg	8.8E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	1.2E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				Chromium	291	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	324	mg/kg	NC		NC			--				
				Lead	591	mg/kg	--		--			--				
				Manganese	4126	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.811	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Molybdenum	87.7	mg/kg	NC		NC			--		5.0E-03	mg/kg/day	
				Nickel	387	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.585	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	103	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000109	mg/kg	7.9E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-06	1.1E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-05					3.E-02
		EXPOSURE POINT TOTAL									4.E-05					2.E-01
	EXPOSURE MEDIUM TOTAL										4.E-05					2.E-01
SOIL TOTAL											4.E-05					2.E-01

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TABLE F.7.16.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	GREYSTONE MILL POND	INGESTION	2-Methylnaphthalene	0.07478	mg/kg	NC		NC			1.9E-08	mg/kg/day	2.0E-02	mg/kg/day	1.E-06
				Acenaphthylene	0.19279	mg/kg	NC		NC			4.9E-08	mg/kg/day	6.0E-02	mg/kg/day	8.E-07
				Benzo(a)anthracene	3.5	mg/kg	6.6E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-07	8.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(a)pyrene	3.1	mg/kg	5.9E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-06	7.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(b)fluoranthene	3.1	mg/kg	5.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	7.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(g,h,i)perylene	2.07671	mg/kg	NC		NC			5.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.77	mg/kg	1.5E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	2.0E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Indeno(1,2,3-cd)pyrene	2.18335	mg/kg	4.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	5.6E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	4.8	mg/kg	NC		NC			1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				alpha-Chlordane	0.0061	mg/kg	1.2E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-10	1.6E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Aroclor-1254	0.38	mg/kg	7.2E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-07	9.7E-08	mg/kg/day	2.0E-05	mg/kg/day	5.E-03
				Aroclor-1268	0.24667	mg/kg	4.7E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-08	6.3E-08	mg/kg/day	2.0E-05	mg/kg/day	3.E-03
				gamma-Chlordane	0.005	mg/kg	9.4E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-10	1.3E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Technical Chlordane	0.62618	mg/kg	1.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-08	1.6E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Aluminum	15554	mg/kg	NC		NC			4.0E-03	mg/kg/day			
				Antimony	4.3	mg/kg	NC		NC			1.1E-06	mg/kg/day	4.0E-04	mg/kg/day	3.E-03
				Arsenic	9.6	mg/kg	1.8E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-06	2.4E-06	mg/kg/day	3.0E-04	mg/kg/day	8.E-03
				Cadmium	4.35	mg/kg	NC		NC			1.1E-06	mg/kg/day	1.0E-03	mg/kg/day	1.E-03
				Chromium	271	mg/kg	NC		NC			6.9E-05	mg/kg/day	3.0E-03	mg/kg/day	2.E-02
				Copper	436	mg/kg	NC		NC			1.1E-04	mg/kg/day			
				Lead	179	mg/kg	3.4E-05	mg/kg/day				4.6E-05	mg/kg/day			
				Manganese	599	mg/kg	NC		NC			1.5E-04	mg/kg/day	7.1E-02	mg/kg/day	2.E-03
				Mercury	0.757	mg/kg	NC		NC			1.9E-07	mg/kg/day	3.0E-04	mg/kg/day	6.E-04
				Nickel	142	mg/kg	NC		NC			3.6E-05	mg/kg/day	2.0E-02	mg/kg/day	2.E-03
				Thallium	0.37	mg/kg	NC		NC			9.4E-08	mg/kg/day	8.0E-05	mg/kg/day	1.E-03
				Vanadium	79	mg/kg	NC		NC			2.0E-05	mg/kg/day	7.0E-03	mg/kg/day	3.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.00012	mg/kg	2.3E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-06	3.1E-11	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000249	mg/kg	4.7E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-07	6.3E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					5.E-02
			DERMAL	2-Methylnaphthalene	0.07478	mg/kg	NC		NC			1.7E-08	mg/kg/day	2.0E-02	mg/kg/day	8.E-07
				Acenaphthylene	0.19279	mg/kg	NC		NC			4.3E-08	mg/kg/day	6.0E-02	mg/kg/day	7.E-07
				Benzo(a)anthracene	3.5	mg/kg	5.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	7.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(a)pyrene	3.1	mg/kg	5.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-06	7.0E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	3.1	mg/kg	5.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	7.0E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	2.07671	mg/kg	NC		NC			4.7E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.77	mg/kg	1.3E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-07	1.7E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Indeno(1,2,3-cd)pyrene	2.18335	mg/kg	3.6E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	4.9E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	4.8	mg/kg	NC		NC			1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				alpha-Chlordane	0.0061	mg/kg	3.1E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	4.2E-10	mg/kg/day	5.0E-04	mg/kg/day	8.E-07
				Aroclor-1254	0.38	mg/kg	6.8E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-07	9.2E-08	mg/kg/day	2.0E-05	mg/kg/day	5.E-03
				Aroclor-1268	0.24667	mg/kg	4.4E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-08	6.0E-08	mg/kg/day	2.0E-05	mg/kg/day	3.E-03
				gamma-Chlordane	0.005	mg/kg	2.6E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-11	3.5E-10	mg/kg/day	5.0E-04	mg/kg/day	7.E-07
				Technical Chlordane	0.62618	mg/kg	3.2E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	4.3E-08	mg/kg/day	5.0E-04	mg/kg/day	9.E-05
				Aluminum	15554	mg/kg	NC		NC			--				
				Antimony	4.3	mg/kg	NC		NC			--		6.0E-05	mg/kg/day	
				Arsenic	9.6	mg/kg	3.7E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	6.E-07	5.0E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Cadmium	4.35	mg/kg	NC		NC			7.5E-09	mg/kg/day	2.5E-05	mg/kg/day	3.E-04
				Chromium	271	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	436	mg/kg	NC		NC			--				
				Lead	179	mg/kg	--					--				
				Manganese	599	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.757	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	142	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.37	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	79	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	

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TABLE F.7.16.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Toxicity Equivalency (Dioxins/Furans)	0.00012	mg/kg	4.6E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-07	6.2E-12	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000249	mg/kg	9.6E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-07	1.3E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								7.E-06					1.E-02
		EXPOSURE POINT TOTAL									2.E-05					6.E-02
	EXPOSURE MEDIUM TOTAL										2.E-05					6.E-02
SEDIMENT TOTAL											2.E-05					6.E-02
SURFACE WATER	SURFACE WATER	GREYSTONE MILL POND	INGESTION	Arsenic	0.00055	mg/l	2.1E-08	mg/kg/day	1.5E+00	mg/kg/day	3.E-08	2.8E-08	mg/kg/day	3.0E-04	mg/kg/day	9.E-05
				Manganese	0.144	mg/l	NC		NC			7.3E-06	mg/kg/day	2.4E-02	mg/kg/day	3.E-04
				Mercury	0.00000193	mg/l	NC		NC			9.8E-11	mg/kg/day	3.0E-04	mg/kg/day	3.E-07
				Nitrite-N	0.13	mg/l	NC		NC			6.6E-06	mg/kg/day	1.0E-01	mg/kg/day	7.E-05
				Toxicity Equivalency (Dioxins/Furans)	5.64E-09	mg/l	2.1E-13	mg/kg/day	1.5E+05	mg/kg/day	3.E-08	2.9E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-08					5.E-04
			DERMAL	Arsenic	0.00055	mg/l	3.6E-08	mg/kg/day	1.5E+00	mg/kg/day	5.E-08	4.9E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Manganese	0.144	mg/l	NC		NC			1.3E-05	mg/kg/day	9.6E-04	mg/kg/day	1.E-02
				Mercury	0.00000193	mg/l	NC		NC			1.7E-10	mg/kg/day	2.1E-05	mg/kg/day	8.E-06
				Nitrite-N	0.13	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	5.64E-09	mg/l	8.4E-10	mg/kg/day	1.5E+05	mg/kg/day	1.E-04	1.1E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					1.E-02
		EXPOSURE POINT TOTAL									1.E-04					1.E-02
	EXPOSURE MEDIUM TOTAL										1.E-04					1.E-02
SURFACE WATER TOTAL											1.E-04					1.E-02
LARGEMOUTH BASS	FILLET	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00047	mg/kg	NC		NC			9.5E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.001	mg/kg	NC		NC			2.0E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				4,4'-DDE	0.0157	mg/kg	2.4E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	8.E-06	3.2E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				alpha-Chlordane	0.00064	mg/kg	9.6E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	1.3E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Aroclor-1254	0.0766	mg/kg	1.2E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	1.6E-04	mg/kg/day	2.0E-05	mg/kg/day	8.E+00
				Aroclor-1268	0.075	mg/kg	1.1E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	1.5E-04	mg/kg/day	2.0E-05	mg/kg/day	8.E+00
				Dieldrin	0.00035	mg/kg	5.3E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	8.E-06	7.1E-07	mg/kg/day	5.0E-05	mg/kg/day	1.E-02
				gamma-Chlordane	0.0007	mg/kg	1.1E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-07	1.4E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Technical Chlordane	0.01794	mg/kg	2.7E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-06	3.6E-05	mg/kg/day	5.0E-04	mg/kg/day	7.E-02
				Mercury	0.419	mg/kg	NC		NC			8.5E-04	mg/kg/day	3.0E-04	mg/kg/day	3.E+00
				Mercury (methyl)	0.625	mg/kg	NC		NC			1.3E-03	mg/kg/day	1.0E-04	mg/kg/day	1.E+01
				Toxicity Equivalency (Dioxins/Furans)	0.000000242	mg/kg	3.6E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-05	4.9E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-04					3.E+01
		EXPOSURE POINT TOTAL									5.E-04					3.E+01
	EXPOSURE MEDIUM TOTAL										5.E-04					3.E+01
FILLET TOTAL											5.E-04					3.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		7.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				3.1E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.17.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	GREYSTONE POND	INGESTION	2-Methylnaphthalene	0.17022	mg/kg	NC		NC			1.1E-07	mg/kg/day	2.0E-02	mg/kg/day	5.E-06
				Acenaphthylene	0.49749	mg/kg	NC		NC			3.2E-07	mg/kg/day	6.0E-02	mg/kg/day	5.E-06
				Benzo(a)anthracene	3.41086	mg/kg	3.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.2E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(a)pyrene	3.41803	mg/kg	3.7E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	2.2E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(b)fluoranthene	4.28861	mg/kg	4.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.7E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				Benzo(g,h,i)perylene	2.87139	mg/kg	NC		NC			1.8E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Dibenzo(a,h)anthracene	0.72851	mg/kg	7.9E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-07	4.6E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Indeno(1,2,3-cd)pyrene	3.0929	mg/kg	3.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	2.0E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Phenanthrene	5.30136	mg/kg	NC		NC			3.4E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				alpha-Chlordane	0.03592	mg/kg	3.9E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-09	2.3E-08	mg/kg/day	5.0E-04	mg/kg/day	5.E-05
				Aroclor-1254	0.83872	mg/kg	9.1E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-07	5.3E-07	mg/kg/day	2.0E-05	mg/kg/day	3.E-02
				Aroclor-1268	0.13953	mg/kg	1.5E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-08	8.8E-08	mg/kg/day	2.0E-05	mg/kg/day	4.E-03
				Endosulfan Sulfate	0.01269	mg/kg	NC		NC			8.0E-09	mg/kg/day	6.0E-03	mg/kg/day	1.E-06
				Technical Chlordane	0.73538	mg/kg	8.0E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	4.7E-07	mg/kg/day	5.0E-04	mg/kg/day	9.E-04
				Aluminum	21793	mg/kg	NC		NC			1.4E-02	mg/kg/day			
				Arsenic	12.2	mg/kg	1.3E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-06	7.7E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-02
				Chromium	291	mg/kg	NC		NC			1.8E-04	mg/kg/day	3.0E-03	mg/kg/day	6.E-02
				Copper	324	mg/kg	NC		NC			2.1E-04	mg/kg/day			
				Lead	591	mg/kg	6.4E-05	mg/kg/day	--			3.7E-04	mg/kg/day			
				Manganese	4126	mg/kg	NC		NC			2.6E-03	mg/kg/day	7.1E-02	mg/kg/day	4.E-02
				Mercury	0.811	mg/kg	NC		NC			5.1E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Molybdenum	87.7	mg/kg	NC		NC			5.6E-05	mg/kg/day	5.0E-03	mg/kg/day	1.E-02
				Nickel	387	mg/kg	NC		NC			2.5E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				Thallium	0.585	mg/kg	NC		NC			3.7E-07	mg/kg/day	8.0E-05	mg/kg/day	5.E-03
				Vanadium	103	mg/kg	NC		NC			6.5E-05	mg/kg/day	7.0E-03	mg/kg/day	9.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.000109	mg/kg	1.2E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-06	6.9E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								8.E-06					2.E-01
			DERMAL	2-Methylnaphthalene	0.17022	mg/kg	NC		NC			2.7E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				Acenaphthylene	0.49749	mg/kg	NC		NC			7.9E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)anthracene	3.41086	mg/kg	9.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-07	5.4E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(a)pyrene	3.41803	mg/kg	9.3E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-06	5.4E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(b)fluoranthene	4.28861	mg/kg	1.2E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-07	6.8E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(g,h,i)perylene	2.87139	mg/kg	NC		NC			4.5E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Dibenzo(a,h)anthracene	0.72851	mg/kg	2.0E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Indeno(1,2,3-cd)pyrene	3.0929	mg/kg	8.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-07	4.9E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Phenanthrene	5.30136	mg/kg	NC		NC			8.4E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				alpha-Chlordane	0.03592	mg/kg	3.0E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-09	1.7E-08	mg/kg/day	5.0E-04	mg/kg/day	3.E-05
				Aroclor-1254	0.83872	mg/kg	2.4E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-07	1.4E-06	mg/kg/day	2.0E-05	mg/kg/day	7.E-02
				Aroclor-1268	0.13953	mg/kg	4.1E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-08	2.4E-07	mg/kg/day	2.0E-05	mg/kg/day	1.E-02
				Endosulfan Sulfate	0.01269	mg/kg	NC		NC			1.5E-08	mg/kg/day	6.0E-03	mg/kg/day	3.E-06
				Technical Chlordane	0.73538	mg/kg	6.1E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	3.6E-07	mg/kg/day	5.0E-04	mg/kg/day	7.E-04
				Aluminum	21793	mg/kg	NC		NC			--				
				Arsenic	12.2	mg/kg	7.6E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	4.4E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				Chromium	291	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	324	mg/kg	NC		NC			--				
				Lead	591	mg/kg	--		--			--				
				Manganese	4126	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.811	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Molybdenum	87.7	mg/kg	NC		NC			--		5.0E-03	mg/kg/day	
				Nickel	387	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.585	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	103	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000109	mg/kg	6.8E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-06	4.0E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					1.E-01
		EXPOSURE POINT TOTAL									2.E-05					3.E-01
	EXPOSURE MEDIUM TOTAL										2.E-05					3.E-01
SOIL TOTAL											2.E-05					3.E-01

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TABLE F.7.17.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	GREYSTONE POND	INGESTION	2-Methylnaphthalene	0.07478	mg/kg	NC		NC			3.0E-08	mg/kg/day	2.0E-02	mg/kg/day	1.E-06
				Acenaphthylene	0.19279	mg/kg	NC		NC			7.6E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				Benzo(a)anthracene	3.5	mg/kg	2.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(a)pyrene	3.1	mg/kg	2.1E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(b)fluoranthene	3.1	mg/kg	2.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(g,h,i)perylene	2.07671	mg/kg	NC		NC			8.2E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Dibenzo(a,h)anthracene	0.77	mg/kg	5.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	3.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Indeno(1,2,3-cd)pyrene	2.18335	mg/kg	1.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	8.6E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Phenanthrene	4.8	mg/kg	NC		NC			1.9E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				alpha-Chlordane	0.0061	mg/kg	4.1E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	2.4E-09	mg/kg/day	5.0E-04	mg/kg/day	5.E-06
				Aroclor-1254	0.38	mg/kg	2.6E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-08	1.5E-07	mg/kg/day	2.0E-05	mg/kg/day	8.E-03
				Aroclor-1268	0.24667	mg/kg	1.7E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-08	9.8E-08	mg/kg/day	2.0E-05	mg/kg/day	5.E-03
				gamma-Chlordane	0.005	mg/kg	3.4E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	2.0E-09	mg/kg/day	5.0E-04	mg/kg/day	4.E-06
				Technical Chlordane	0.62618	mg/kg	4.2E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	2.5E-07	mg/kg/day	5.0E-04	mg/kg/day	5.E-04
				Aluminum	15554	mg/kg	NC		NC			6.2E-03	mg/kg/day			
				Antimony	4.3	mg/kg	NC		NC			1.7E-06	mg/kg/day	4.0E-04	mg/kg/day	4.E-03
				Arsenic	9.6	mg/kg	6.5E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	3.8E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				Cadmium	4.35	mg/kg	NC		NC			1.7E-06	mg/kg/day	1.0E-03	mg/kg/day	2.E-03
				Chromium	271	mg/kg	NC		NC			1.1E-04	mg/kg/day	3.0E-03	mg/kg/day	4.E-02
				Copper	436	mg/kg	NC		NC			1.7E-04	mg/kg/day			
				Lead	179	mg/kg	1.2E-05	mg/kg/day				7.1E-05	mg/kg/day			
				Manganese	599	mg/kg	NC		NC			2.4E-04	mg/kg/day	7.1E-02	mg/kg/day	3.E-03
				Mercury	0.757	mg/kg	NC		NC			3.0E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Nickel	142	mg/kg	NC		NC			5.6E-05	mg/kg/day	2.0E-02	mg/kg/day	3.E-03
				Thallium	0.37	mg/kg	NC		NC			1.5E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Vanadium	79	mg/kg	NC		NC			3.1E-05	mg/kg/day	7.0E-03	mg/kg/day	4.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.00012	mg/kg	8.1E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-06	4.7E-11	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000249	mg/kg	1.7E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-07	9.9E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-06					8.E-02
			DERMAL	2-Methylnaphthalene	0.07478	mg/kg	NC		NC			5.5E-08	mg/kg/day	2.0E-02	mg/kg/day	3.E-06
				Acenaphthylene	0.19279	mg/kg	NC		NC			1.4E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				Benzo(a)anthracene	3.5	mg/kg	4.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.6E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				Benzo(a)pyrene	3.1	mg/kg	3.9E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	2.3E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				Benzo(b)fluoranthene	3.1	mg/kg	3.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.3E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				Benzo(g,h,i)perylene	2.07671	mg/kg	NC		NC			1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Dibenzo(a,h)anthracene	0.77	mg/kg	9.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-07	5.7E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Indeno(1,2,3-cd)pyrene	2.18335	mg/kg	2.8E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.6E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Phenanthrene	4.8	mg/kg	NC		NC			3.5E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				alpha-Chlordane	0.0061	mg/kg	2.4E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-11	1.4E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Aroclor-1254	0.38	mg/kg	5.2E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-07	3.0E-07	mg/kg/day	2.0E-05	mg/kg/day	2.E-02
				Aroclor-1268	0.24667	mg/kg	3.3E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-08	2.0E-07	mg/kg/day	2.0E-05	mg/kg/day	1.E-02
				gamma-Chlordane	0.005	mg/kg	1.9E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-11	1.1E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Technical Chlordane	0.62618	mg/kg	2.4E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-09	1.4E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Aluminum	15554	mg/kg	NC		NC			--				
				Antimony	4.3	mg/kg	NC		NC			--		6.0E-05	mg/kg/day	
				Arsenic	9.6	mg/kg	2.8E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-07	1.6E-06	mg/kg/day	3.0E-04	mg/kg/day	5.E-03
				Cadmium	4.35	mg/kg	NC		NC			2.5E-08	mg/kg/day	2.5E-05	mg/kg/day	1.E-03
				Chromium	271	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	436	mg/kg	NC		NC			--				
				Lead	179	mg/kg	--					--				
				Manganese	599	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.757	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	142	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.37	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	79	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	

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TABLE F.7.17.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	CSF/UNIT RISK VALUE	CSF UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	RfD/RfC (1) VALUE	RfD/RfC UNITS	HAZARD QUOTIENT
				Toxicity Equivalency (Dioxins/Furans)	0.00012	mg/kg	3.5E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-07	2.0E-11	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000249	mg/kg	7.2E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-07	4.2E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-06					3.E-02
		EXPOSURE POINT TOTAL									1.E-05					1.E-01
	EXPOSURE MEDIUM TOTAL										1.E-05					1.E-01
SEDIMENT TOTAL											1.E-05					1.E-01
SURFACE WATER	SURFACE WATER	GREYSTONE POND	INGESTION	Arsenic	0.00055	mg/l	7.5E-09	mg/kg/day	1.5E+00	mg/kg/day	1.E-08	4.4E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				Manganese	0.144	mg/l	NC		NC			1.1E-05	mg/kg/day	2.4E-02	mg/kg/day	5.E-04
				Mercury	0.00000193	mg/l	NC		NC			1.5E-10	mg/kg/day	3.0E-04	mg/kg/day	5.E-07
				Nitrite-N	0.13	mg/l	NC		NC			1.0E-05	mg/kg/day	1.0E-01	mg/kg/day	1.E-04
				Toxicity Equivalency (Dioxins/Furans)	5.64E-09	mg/l	7.7E-14	mg/kg/day	1.5E+05	mg/kg/day	1.E-08	4.5E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-08					7.E-04
			DERMAL	Arsenic	0.00055	mg/l	9.3E-09	mg/kg/day	1.5E+00	mg/kg/day	1.E-08	5.5E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Manganese	0.144	mg/l	NC		NC			1.4E-05	mg/kg/day	9.6E-04	mg/kg/day	1.E-02
				Mercury	0.00000193	mg/l	NC		NC			1.9E-10	mg/kg/day	2.1E-05	mg/kg/day	9.E-06
				Nitrite-N	0.13	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	5.64E-09	mg/l	2.2E-10	mg/kg/day	1.5E+05	mg/kg/day	3.E-05	1.3E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-05					2.E-02
		EXPOSURE POINT TOTAL									3.E-05					2.E-02
	EXPOSURE MEDIUM TOTAL										3.E-05					2.E-02
SURFACE WATER TOTAL											3.E-05					2.E-02
LARGEMOUTH BASS	FILLET	GREYSTONE POND	INGESTION	Acenaphthylene	0.00047	mg/kg	NC		NC			9.9E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.001	mg/kg	NC		NC			2.1E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				4,4'-DDE	0.0157	mg/kg	5.7E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	3.3E-05	mg/kg/day	5.0E-04	mg/kg/day	7.E-02
				alpha-Chlordane	0.00064	mg/kg	2.3E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-08	1.3E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Aroclor-1254	0.0766	mg/kg	2.8E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-05	1.6E-04	mg/kg/day	2.0E-05	mg/kg/day	8.E+00
				Aroclor-1268	0.075	mg/kg	2.7E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-05	1.6E-04	mg/kg/day	2.0E-05	mg/kg/day	8.E+00
				Dieldrin	0.00035	mg/kg	1.3E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-06	7.4E-07	mg/kg/day	5.0E-05	mg/kg/day	1.E-02
				gamma-Chlordane	0.0007	mg/kg	2.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-08	1.5E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Technical Chlordane	0.01794	mg/kg	6.5E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	3.8E-05	mg/kg/day	5.0E-04	mg/kg/day	8.E-02
				Mercury	0.419	mg/kg	NC		NC			8.8E-04	mg/kg/day	3.0E-04	mg/kg/day	3.E+00
				Mercury (methyl)	0.625	mg/kg	NC		NC			1.3E-03	mg/kg/day	1.0E-04	mg/kg/day	1.E+01
				Toxicity Equivalency (Dioxins/Furans)	0.000000242	mg/kg	8.7E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-05	5.1E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					3.E+01
		EXPOSURE POINT TOTAL									1.E-04					3.E+01
	EXPOSURE MEDIUM TOTAL										1.E-04					3.E+01
FILLET TOTAL											1.E-04					3.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		2.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				3.3.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.18.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	R/D/R/C (1) VALUE	R/D/R/C (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00047	mg/kg	NC		NC			1.6E-06	mg/kg/day	6.0E-02	mg/kg/day	3.E-05
				Phenanthrene	0.001	mg/kg	NC		NC			3.4E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDE	0.0157	mg/kg	4.6E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	5.4E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				alpha-Chlordane	0.00064	mg/kg	1.9E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-08	2.2E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				Aroclor-1254	0.0766	mg/kg	2.2E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-05	2.6E-04	mg/kg/day	2.0E-05	mg/kg/day	1.E+01
				Aroclor-1268	0.075	mg/kg	2.2E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-05	2.6E-04	mg/kg/day	2.0E-05	mg/kg/day	1.E+01
				Dieldrin	0.00035	mg/kg	1.0E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-06	1.2E-06	mg/kg/day	5.0E-05	mg/kg/day	2.E-02
				gamma-Chlordane	0.0007	mg/kg	2.1E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-08	2.4E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				Technical Chlordane	0.01794	mg/kg	5.3E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	6.1E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Mercury	0.419	mg/kg	NC		NC			1.4E-03	mg/kg/day	3.0E-04	mg/kg/day	5.E+00
				Mercury (methyl)	0.625	mg/kg	NC		NC			2.1E-03	mg/kg/day	1.0E-04	mg/kg/day	2.E+01
				Toxicity Equivalency (Dioxins/Furans)	0.000000242	mg/kg	7.1E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-05	8.3E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					5.E+01
		EXPOSURE POINT TOTAL									1.E-04					5.E+01
	EXPOSURE MEDIUM TOTAL										1.E-04					5.E+01
FILLET TOTAL											1.E-04					5.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		1.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				5.2.E+01

NOTES:
(1) - Blank cells indicate that an R/D or R/C is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.19.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SOIL	SOIL	GREYSTONE MILL POND	INGESTION	2-Methylnaphthalene	0.17022	mg/kg	NC		NC			6.9E-08	mg/kg/day	2.0E-02	mg/kg/day	3.E-06
				Acenaphthylene	0.49749	mg/kg	NC		NC			2.0E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Benzo(a)anthracene	3.41086	mg/kg	1.0E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-07	1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(a)pyrene	3.41803	mg/kg	1.0E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-06	1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(b)fluoranthene	4.28861	mg/kg	1.3E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-07	1.7E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Benzo(g,h,i)perylene	2.87139	mg/kg	NC		NC			1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Dibenzo(a,h)anthracene	0.72851	mg/kg	2.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	3.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Indeno(1,2,3-cd)pyrene	3.0929	mg/kg	9.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-07	1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Phenanthrene	5.30136	mg/kg	NC		NC			2.2E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				alpha-Chlordane	0.03592	mg/kg	1.1E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-09	1.5E-08	mg/kg/day	5.0E-04	mg/kg/day	3.E-05
				Aroclor-1254	0.83872	mg/kg	2.5E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-07	3.4E-07	mg/kg/day	2.0E-05	mg/kg/day	2.E-02
				Aroclor-1268	0.13953	mg/kg	4.2E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-08	5.7E-08	mg/kg/day	2.0E-05	mg/kg/day	3.E-03
				Endosulfan Sulfate	0.01269	mg/kg	NC		NC			5.2E-09	mg/kg/day	6.0E-03	mg/kg/day	9.E-07
				Technical Chlordane	0.73538	mg/kg	2.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-08	3.0E-07	mg/kg/day	5.0E-04	mg/kg/day	6.E-04
				Aluminum	21793	mg/kg	NC		NC			8.9E-03	mg/kg/day			
				Arsenic	12.2	mg/kg	3.7E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	6.E-06	5.0E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
				Chromium	291	mg/kg	NC		NC			1.2E-04	mg/kg/day	3.0E-03	mg/kg/day	4.E-02
				Copper	324	mg/kg	NC		NC			1.3E-04	mg/kg/day			
				Lead	591	mg/kg	1.8E-04	mg/kg/day	--			2.4E-04	mg/kg/day			
				Manganese	4126	mg/kg	NC		NC			1.7E-03	mg/kg/day	7.1E-02	mg/kg/day	2.E-02
				Mercury	0.811	mg/kg	NC		NC			3.3E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Molybdenum	87.7	mg/kg	NC		NC			3.6E-05	mg/kg/day	5.0E-03	mg/kg/day	7.E-03
				Nickel	387	mg/kg	NC		NC			1.6E-04	mg/kg/day	2.0E-02	mg/kg/day	8.E-03
				Thallium	0.585	mg/kg	NC		NC			2.4E-07	mg/kg/day	8.0E-05	mg/kg/day	3.E-03
				Vanadium	103	mg/kg	NC		NC			4.2E-05	mg/kg/day	7.0E-03	mg/kg/day	6.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.000109	mg/kg	3.3E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-06	4.4E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-05					1.E-01
			DERMAL	2-Methylnaphthalene	0.17022	mg/kg	NC		NC			7.2E-08	mg/kg/day	2.0E-02	mg/kg/day	4.E-06
				Acenaphthylene	0.49749	mg/kg	NC		NC			2.1E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				Benzo(a)anthracene	3.41086	mg/kg	1.1E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-07	1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(a)pyrene	3.41803	mg/kg	1.1E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-06	1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(b)fluoranthene	4.28861	mg/kg	1.3E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-06	1.8E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Benzo(g,h,i)perylene	2.87139	mg/kg	NC		NC			1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Dibenzo(a,h)anthracene	0.72851	mg/kg	2.3E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	3.1E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Indeno(1,2,3-cd)pyrene	3.0929	mg/kg	9.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-07	1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Phenanthrene	5.30136	mg/kg	NC		NC			2.2E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				alpha-Chlordane	0.03592	mg/kg	3.5E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-09	4.7E-09	mg/kg/day	5.0E-04	mg/kg/day	9.E-06
				Aroclor-1254	0.83872	mg/kg	2.8E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-07	3.8E-07	mg/kg/day	2.0E-05	mg/kg/day	2.E-02
				Aroclor-1268	0.13953	mg/kg	4.7E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-08	6.3E-08	mg/kg/day	2.0E-05	mg/kg/day	3.E-03
				Endosulfan Sulfate	0.01269	mg/kg	NC		NC			4.1E-09	mg/kg/day	6.0E-03	mg/kg/day	7.E-07
				Technical Chlordane	0.73538	mg/kg	7.1E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	9.6E-08	mg/kg/day	5.0E-04	mg/kg/day	2.E-04
				Aluminum	21793	mg/kg	NC		NC			--				
				Arsenic	12.2	mg/kg	8.8E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	1.2E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				Chromium	291	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	324	mg/kg	NC		NC			--				
				Lead	591	mg/kg	--		--			--				
				Manganese	4126	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.811	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Molybdenum	87.7	mg/kg	NC		NC			--		5.0E-03	mg/kg/day	
				Nickel	387	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.585	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	103	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000109	mg/kg	7.9E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-06	1.1E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-05					3.E-02
		EXPOSURE POINT TOTAL									4.E-05					2.E-01
	EXPOSURE MEDIUM TOTAL										4.E-05					2.E-01
SOIL TOTAL											4.E-05					2.E-01

US EPA ARCHIVE DOCUMENT

TABLE F.7.19.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	GREYSTONE MILL POND	INGESTION	2-Methylnaphthalene	0.07478	mg/kg	NC		NC			1.9E-08	mg/kg/day	2.0E-02	mg/kg/day	1.E-06
				Acenaphthylene	0.19279	mg/kg	NC		NC			4.9E-08	mg/kg/day	6.0E-02	mg/kg/day	8.E-07
				Benzo(a)anthracene	3.5	mg/kg	6.6E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-07	8.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(a)pyrene	3.1	mg/kg	5.9E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-06	7.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(b)fluoranthene	3.1	mg/kg	5.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	7.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(g,h,i)perylene	2.07671	mg/kg	NC		NC			5.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.77	mg/kg	1.5E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	2.0E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Indeno(1,2,3-cd)pyrene	2.18335	mg/kg	4.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	5.6E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	4.8	mg/kg	NC		NC			1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				alpha-Chlordane	0.0061	mg/kg	1.2E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-10	1.6E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Aroclor-1254	0.38	mg/kg	7.2E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-07	9.7E-08	mg/kg/day	2.0E-05	mg/kg/day	5.E-03
				Aroclor-1268	0.24667	mg/kg	4.7E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-08	6.3E-08	mg/kg/day	2.0E-05	mg/kg/day	3.E-03
				gamma-Chlordane	0.005	mg/kg	9.4E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-10	1.3E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Technical Chlordane	0.62618	mg/kg	1.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-08	1.6E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Aluminum	15554	mg/kg	NC		NC			4.0E-03	mg/kg/day			
				Antimony	4.3	mg/kg	NC		NC			1.1E-06	mg/kg/day	4.0E-04	mg/kg/day	3.E-03
				Arsenic	9.6	mg/kg	1.8E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-06	2.4E-06	mg/kg/day	3.0E-04	mg/kg/day	8.E-03
				Cadmium	4.35	mg/kg	NC		NC			1.1E-06	mg/kg/day	1.0E-03	mg/kg/day	1.E-03
				Chromium	271	mg/kg	NC		NC			6.9E-05	mg/kg/day	3.0E-03	mg/kg/day	2.E-02
				Copper	436	mg/kg	NC		NC			1.1E-04	mg/kg/day			
				Lead	179	mg/kg	3.4E-05	mg/kg/day				4.6E-05	mg/kg/day			
				Manganese	599	mg/kg	NC		NC			1.5E-04	mg/kg/day	7.1E-02	mg/kg/day	2.E-03
				Mercury	0.757	mg/kg	NC		NC			1.9E-07	mg/kg/day	3.0E-04	mg/kg/day	6.E-04
				Nickel	142	mg/kg	NC		NC			3.6E-05	mg/kg/day	2.0E-02	mg/kg/day	2.E-03
				Thallium	0.37	mg/kg	NC		NC			9.4E-08	mg/kg/day	8.0E-05	mg/kg/day	1.E-03
				Vanadium	79	mg/kg	NC		NC			2.0E-05	mg/kg/day	7.0E-03	mg/kg/day	3.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.00012	mg/kg	2.3E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-06	3.1E-11	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000249	mg/kg	4.7E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-07	6.3E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					5.E-02
			DERMAL	2-Methylnaphthalene	0.07478	mg/kg	NC		NC			1.7E-08	mg/kg/day	2.0E-02	mg/kg/day	8.E-07
				Acenaphthylene	0.19279	mg/kg	NC		NC			4.3E-08	mg/kg/day	6.0E-02	mg/kg/day	7.E-07
				Benzo(a)anthracene	3.5	mg/kg	5.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	7.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(a)pyrene	3.1	mg/kg	5.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-06	7.0E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	3.1	mg/kg	5.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	7.0E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	2.07671	mg/kg	NC		NC			4.7E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.77	mg/kg	1.3E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-07	1.7E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Indeno(1,2,3-cd)pyrene	2.18335	mg/kg	3.6E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	4.9E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	4.8	mg/kg	NC		NC			1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				alpha-Chlordane	0.0061	mg/kg	3.1E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	4.2E-10	mg/kg/day	5.0E-04	mg/kg/day	8.E-07
				Aroclor-1254	0.38	mg/kg	6.8E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-07	9.2E-08	mg/kg/day	2.0E-05	mg/kg/day	5.E-03
				Aroclor-1268	0.24667	mg/kg	4.4E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-08	6.0E-08	mg/kg/day	2.0E-05	mg/kg/day	3.E-03
				gamma-Chlordane	0.005	mg/kg	2.6E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-11	3.5E-10	mg/kg/day	5.0E-04	mg/kg/day	7.E-07
				Technical Chlordane	0.62618	mg/kg	3.2E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	4.3E-08	mg/kg/day	5.0E-04	mg/kg/day	9.E-05
				Aluminum	15554	mg/kg	NC		NC			--				
				Antimony	4.3	mg/kg	NC		NC			--		6.0E-05	mg/kg/day	
				Arsenic	9.6	mg/kg	3.7E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	6.E-07	5.0E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Cadmium	4.35	mg/kg	NC		NC			7.5E-09	mg/kg/day	2.5E-05	mg/kg/day	3.E-04
				Chromium	271	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	436	mg/kg	NC		NC			--				
				Lead	179	mg/kg	--					--				
				Manganese	599	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.757	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	142	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.37	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	79	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	

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TABLE F.7.19.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Toxicity Equivalency (Dioxins/Furans)	0.00012	mg/kg	4.6E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-07	6.2E-12	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000249	mg/kg	9.6E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-07	1.3E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								7.E-06					1.E-02
		EXPOSURE POINT TOTAL									2.E-05					6.E-02
	EXPOSURE MEDIUM TOTAL										2.E-05					6.E-02
SEDIMENT TOTAL											2.E-05					6.E-02
SURFACE WATER	SURFACE WATER	GREYSTONE MILL POND	INGESTION	Arsenic	0.00055	mg/l	2.1E-08	mg/kg/day	1.5E+00	mg/kg/day	3.E-08	2.8E-08	mg/kg/day	3.0E-04	mg/kg/day	9.E-05
				Manganese	0.144	mg/l	NC		NC			7.3E-06	mg/kg/day	2.4E-02	mg/kg/day	3.E-04
				Mercury	0.00000193	mg/l	NC		NC			9.8E-11	mg/kg/day	3.0E-04	mg/kg/day	3.E-07
				Nitrite-N	0.13	mg/l	NC		NC			6.6E-06	mg/kg/day	1.0E-01	mg/kg/day	7.E-05
				Toxicity Equivalency (Dioxins/Furans)	5.64E-09	mg/l	2.1E-13	mg/kg/day	1.5E+05	mg/kg/day	3.E-08	2.9E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-08					5.E-04
			DERMAL	Arsenic	0.00055	mg/l	3.6E-08	mg/kg/day	1.5E+00	mg/kg/day	5.E-08	4.9E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Manganese	0.144	mg/l	NC		NC			1.3E-05	mg/kg/day	9.6E-04	mg/kg/day	1.E-02
				Mercury	0.00000193	mg/l	NC		NC			1.7E-10	mg/kg/day	2.1E-05	mg/kg/day	8.E-06
				Nitrite-N	0.13	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	5.64E-09	mg/l	8.4E-10	mg/kg/day	1.5E+05	mg/kg/day	1.E-04	1.1E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					1.E-02
		EXPOSURE POINT TOTAL									1.E-04					1.E-02
	EXPOSURE MEDIUM TOTAL										1.E-04					1.E-02
SURFACE WATER TOTAL											1.E-04					1.E-02
LARGEMOUTH BASS	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.0008	mg/kg	NC		NC			1.6E-06	mg/kg/day	6.0E-02	mg/kg/day	3.E-05
				Benzo(g,h,i)perylene	0.00039	mg/kg	NC		NC			7.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Phenanthrene	0.003	mg/kg	NC		NC			6.1E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDE	0.0642	mg/kg	9.7E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-05	1.3E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				alpha-Chlordane	0.004	mg/kg	6.0E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	8.1E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	0.318	mg/kg	4.8E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-03	6.4E-04	mg/kg/day	2.0E-05	mg/kg/day	3.E+01
				Aroclor-1268	0.0921	mg/kg	1.4E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-04	1.9E-04	mg/kg/day	2.0E-05	mg/kg/day	9.E+00
				Dieldrin	0.00078	mg/kg	1.2E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-05	1.6E-06	mg/kg/day	5.0E-05	mg/kg/day	3.E-02
				gamma-Chlordane	0.002	mg/kg	3.0E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	4.1E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				Technical Chlordane	0.0439	mg/kg	6.6E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-05	8.9E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Lead	0.0556	mg/kg	8.4E-05	mg/kg/day				1.1E-04	mg/kg/day			
				Mercury	0.31	mg/kg	NC		NC			6.3E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				Mercury (methyl)	0.314	mg/kg	NC		NC			6.4E-04	mg/kg/day	1.0E-04	mg/kg/day	6.E+00
				Thallium	0.00493	mg/kg	NC		NC			1.0E-05	mg/kg/day	8.0E-05	mg/kg/day	1.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.00000061	mg/kg	9.2E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-04	1.2E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-03					5.E+01
		EXPOSURE POINT TOTAL									1.E-03					5.E+01
	EXPOSURE MEDIUM TOTAL										1.E-03					5.E+01
WHOLE BODY TOTAL											1.E-03					5.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		2.E-03			TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		5.1.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.20.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SOIL	SOIL	GREYSTONE MILL POND	INGESTION	2-Methylnaphthalene	0.17022	mg/kg	NC		NC			1.1E-07	mg/kg/day	2.0E-02	mg/kg/day	5.E-06
				Acenaphthylene	0.49749	mg/kg	NC		NC			3.2E-07	mg/kg/day	6.0E-02	mg/kg/day	5.E-06
				Benzo(a)anthracene	3.41086	mg/kg	3.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.2E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(a)pyrene	3.41803	mg/kg	3.7E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	2.2E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(b)fluoranthene	4.28861	mg/kg	4.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.7E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				Benzo(g,h,i)perylene	2.87139	mg/kg	NC		NC			1.8E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Dibenzo(a,h)anthracene	0.72851	mg/kg	7.9E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-07	4.6E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Indeno(1,2,3-cd)pyrene	3.0929	mg/kg	3.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	2.0E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Phenanthrene	5.30136	mg/kg	NC		NC			3.4E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				alpha-Chlordane	0.03592	mg/kg	3.9E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-09	2.3E-08	mg/kg/day	5.0E-04	mg/kg/day	5.E-05
				Aroclor-1254	0.83872	mg/kg	9.1E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-07	5.3E-07	mg/kg/day	2.0E-05	mg/kg/day	3.E-02
				Aroclor-1268	0.13953	mg/kg	1.5E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-08	8.8E-08	mg/kg/day	2.0E-05	mg/kg/day	4.E-03
				Endosulfan Sulfate	0.01269	mg/kg	NC		NC			8.0E-09	mg/kg/day	6.0E-03	mg/kg/day	1.E-06
				Technical Chlordane	0.73538	mg/kg	8.0E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	4.7E-07	mg/kg/day	5.0E-04	mg/kg/day	9.E-04
				Aluminum	21793	mg/kg	NC		NC			1.4E-02	mg/kg/day			
				Arsenic	12.2	mg/kg	1.3E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-06	7.7E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-02
				Chromium	291	mg/kg	NC		NC			1.8E-04	mg/kg/day	3.0E-03	mg/kg/day	6.E-02
				Copper	324	mg/kg	NC		NC			2.1E-04	mg/kg/day			
				Lead	591	mg/kg	6.4E-05	mg/kg/day	--			3.7E-04	mg/kg/day			
				Manganese	4126	mg/kg	NC		NC			2.6E-03	mg/kg/day	7.1E-02	mg/kg/day	4.E-02
				Mercury	0.811	mg/kg	NC		NC			5.1E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Molybdenum	87.7	mg/kg	NC		NC			5.6E-05	mg/kg/day	5.0E-03	mg/kg/day	1.E-02
				Nickel	387	mg/kg	NC		NC			2.5E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				Thallium	0.585	mg/kg	NC		NC			3.7E-07	mg/kg/day	8.0E-05	mg/kg/day	5.E-03
				Vanadium	103	mg/kg	NC		NC			6.5E-05	mg/kg/day	7.0E-03	mg/kg/day	9.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.000109	mg/kg	1.2E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-06	6.9E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								8.E-06					2.E-01
			DERMAL	2-Methylnaphthalene	0.17022	mg/kg	NC		NC			2.7E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				Acenaphthylene	0.49749	mg/kg	NC		NC			7.9E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)anthracene	3.41086	mg/kg	9.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-07	5.4E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(a)pyrene	3.41803	mg/kg	9.3E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-06	5.4E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(b)fluoranthene	4.28861	mg/kg	1.2E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-07	6.8E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(g,h,i)perylene	2.87139	mg/kg	NC		NC			4.5E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Dibenzo(a,h)anthracene	0.72851	mg/kg	2.0E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Indeno(1,2,3-cd)pyrene	3.0929	mg/kg	8.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-07	4.9E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Phenanthrene	5.30136	mg/kg	NC		NC			8.4E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				alpha-Chlordane	0.03592	mg/kg	3.0E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-09	1.7E-08	mg/kg/day	5.0E-04	mg/kg/day	3.E-05
				Aroclor-1254	0.83872	mg/kg	2.4E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-07	1.4E-06	mg/kg/day	2.0E-05	mg/kg/day	7.E-02
				Aroclor-1268	0.13953	mg/kg	4.1E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-08	2.4E-07	mg/kg/day	2.0E-05	mg/kg/day	1.E-02
				Endosulfan Sulfate	0.01269	mg/kg	NC		NC			1.5E-08	mg/kg/day	6.0E-03	mg/kg/day	3.E-06
				Technical Chlordane	0.73538	mg/kg	6.1E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	3.6E-07	mg/kg/day	5.0E-04	mg/kg/day	7.E-04
				Aluminum	21793	mg/kg	NC		NC			--				
				Arsenic	12.2	mg/kg	7.6E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	4.4E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				Chromium	291	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	324	mg/kg	NC		NC			--				
				Lead	591	mg/kg	--		--			--				
				Manganese	4126	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.811	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Molybdenum	87.7	mg/kg	NC		NC			--		5.0E-03	mg/kg/day	
				Nickel	387	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.585	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	103	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000109	mg/kg	6.8E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-06	4.0E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					1.E-01
		EXPOSURE POINT TOTAL									2.E-05					3.E-01
	EXPOSURE MEDIUM TOTAL										2.E-05					3.E-01
SOIL TOTAL											2.E-05					3.E-01

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TABLE F.7.10.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	GREYSTONE MILL POND	INGESTION	2-Methylnaphthalene	0.07478	mg/kg	NC		NC			3.0E-08	mg/kg/day	2.0E-02	mg/kg/day	1.E-06
				Acenaphthylene	0.19279	mg/kg	NC		NC			7.6E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				Benzo(a)anthracene	3.5	mg/kg	2.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(a)pyrene	3.1	mg/kg	2.1E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(b)fluoranthene	3.1	mg/kg	2.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(g,h,i)perylene	2.07671	mg/kg	NC		NC			8.2E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Dibenzo(a,h)anthracene	0.77	mg/kg	5.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	3.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Indeno(1,2,3-cd)pyrene	2.18335	mg/kg	1.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	8.6E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Phenanthrene	4.8	mg/kg	NC		NC			1.9E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				alpha-Chlordane	0.0061	mg/kg	4.1E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	2.4E-09	mg/kg/day	5.0E-04	mg/kg/day	5.E-06
				Aroclor-1254	0.38	mg/kg	2.6E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-08	1.5E-07	mg/kg/day	2.0E-05	mg/kg/day	8.E-03
				Aroclor-1268	0.24667	mg/kg	1.7E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-08	9.8E-08	mg/kg/day	2.0E-05	mg/kg/day	5.E-03
				gamma-Chlordane	0.005	mg/kg	3.4E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	2.0E-09	mg/kg/day	5.0E-04	mg/kg/day	4.E-06
				Technical Chlordane	0.62618	mg/kg	4.2E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	2.5E-07	mg/kg/day	5.0E-04	mg/kg/day	5.E-04
				Aluminum	15554	mg/kg	NC		NC			6.2E-03	mg/kg/day			
				Antimony	4.3	mg/kg	NC		NC			1.7E-06	mg/kg/day	4.0E-04	mg/kg/day	4.E-03
				Arsenic	9.6	mg/kg	6.5E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	3.8E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				Cadmium	4.35	mg/kg	NC		NC			1.7E-06	mg/kg/day	1.0E-03	mg/kg/day	2.E-03
				Chromium	271	mg/kg	NC		NC			1.1E-04	mg/kg/day	3.0E-03	mg/kg/day	4.E-02
				Copper	436	mg/kg	NC		NC			1.7E-04	mg/kg/day			
				Lead	179	mg/kg	1.2E-05	mg/kg/day				7.1E-05	mg/kg/day			
				Manganese	599	mg/kg	NC		NC			2.4E-04	mg/kg/day	7.1E-02	mg/kg/day	3.E-03
				Mercury	0.757	mg/kg	NC		NC			3.0E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Nickel	142	mg/kg	NC		NC			5.6E-05	mg/kg/day	2.0E-02	mg/kg/day	3.E-03
				Thallium	0.37	mg/kg	NC		NC			1.5E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Vanadium	79	mg/kg	NC		NC			3.1E-05	mg/kg/day	7.0E-03	mg/kg/day	4.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.00012	mg/kg	8.1E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-06	4.7E-11	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000249	mg/kg	1.7E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-07	9.9E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-06					8.E-02
			DERMAL	2-Methylnaphthalene	0.07478	mg/kg	NC		NC			5.5E-08	mg/kg/day	2.0E-02	mg/kg/day	3.E-06
				Acenaphthylene	0.19279	mg/kg	NC		NC			1.4E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				Benzo(a)anthracene	3.5	mg/kg	4.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.6E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				Benzo(a)pyrene	3.1	mg/kg	3.9E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	2.3E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				Benzo(b)fluoranthene	3.1	mg/kg	3.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.3E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				Benzo(g,h,i)perylene	2.07671	mg/kg	NC		NC			1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Dibenzo(a,h)anthracene	0.77	mg/kg	9.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-07	5.7E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Indeno(1,2,3-cd)pyrene	2.18335	mg/kg	2.8E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.6E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Phenanthrene	4.8	mg/kg	NC		NC			3.5E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				alpha-Chlordane	0.0061	mg/kg	2.4E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-11	1.4E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Aroclor-1254	0.38	mg/kg	5.2E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-07	3.0E-07	mg/kg/day	2.0E-05	mg/kg/day	2.E-02
				Aroclor-1268	0.24667	mg/kg	3.3E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-08	2.0E-07	mg/kg/day	2.0E-05	mg/kg/day	1.E-02
				gamma-Chlordane	0.005	mg/kg	1.9E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-11	1.1E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Technical Chlordane	0.62618	mg/kg	2.4E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-09	1.4E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Aluminum	15554	mg/kg	NC		NC			--				
				Antimony	4.3	mg/kg	NC		NC			--		6.0E-05	mg/kg/day	
				Arsenic	9.6	mg/kg	2.8E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-07	1.6E-06	mg/kg/day	3.0E-04	mg/kg/day	5.E-03
				Cadmium	4.35	mg/kg	NC		NC			2.5E-08	mg/kg/day	2.5E-05	mg/kg/day	1.E-03
				Chromium	271	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	436	mg/kg	NC		NC			--				
				Lead	179	mg/kg	--					--				
				Manganese	599	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.757	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	142	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.37	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	79	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	

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TABLE F.7.20.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Toxicity Equivalency (Dioxins/Furans)	*0.00012*	*mg/kg*	*3.5E-12*	*mg/kg/day*	*1.5E+05*	*(mg/kg/day)-1*	*5.E-07*	*2.0E-11*	*mg/kg/day*			
				Toxicity Equivalency (PCB Congeners	0.0000249	mg/kg	7.2E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-07	4.2E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-06					3.E-02
		EXPOSURE POINT TOTAL									1.E-05					1.E-01
	EXPOSURE MEDIUM TOTAL										1.E-05					1.E-01
SEDIMENT TOTAL											1.E-05					1.E-01
SURFACE WATER	SURFACE WATER	GREYSTONE MILL POND	INGESTION	Arsenic	0.00055	mg/l	7.5E-09	mg/kg/day	1.5E+00	mg/kg/day	1.E-08	4.4E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				Manganese	0.144	mg/l	NC		NC			1.1E-05	mg/kg/day	2.4E-02	mg/kg/day	5.E-04
				Mercury	0.00000193	mg/l	NC		NC			1.5E-10	mg/kg/day	3.0E-04	mg/kg/day	5.E-07
				Nitrite-N	0.13	mg/l	NC		NC			1.0E-05	mg/kg/day	1.0E-01	mg/kg/day	1.E-04
				Toxicity Equivalency (Dioxins/Furans)	5.64E-09	mg/l	7.7E-14	mg/kg/day	1.5E+05	mg/kg/day	1.E-08	4.5E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-08					7.E-04
			DERMAL	Arsenic	0.00055	mg/l	9.3E-09	mg/kg/day	1.5E+00	mg/kg/day	1.E-08	5.5E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Manganese	0.144	mg/l	NC		NC			1.4E-05	mg/kg/day	9.6E-04	mg/kg/day	1.E-02
				Mercury	0.00000193	mg/l	NC		NC			1.9E-10	mg/kg/day	2.1E-05	mg/kg/day	9.E-06
				Nitrite-N	0.13	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	5.64E-09	mg/l	2.2E-10	mg/kg/day	1.5E+05	mg/kg/day	3.E-05	1.3E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-05					2.E-02
		EXPOSURE POINT TOTAL									3.E-05					2.E-02
	EXPOSURE MEDIUM TOTAL										3.E-05					2.E-02
SURFACE WATER TOTAL											3.E-05					2.E-02
LARGEMOUTH BASS	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.0008	mg/kg	NC		NC			1.7E-06	mg/kg/day	6.0E-02	mg/kg/day	3.E-05
				Benzo(g,h,i)perylene	0.00039	mg/kg	NC		NC			8.2E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Phenanthrene	0.003	mg/kg	NC		NC			6.3E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDE	0.0642	mg/kg	2.3E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	8.E-06	1.3E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				alpha-Chlordane	0.004	mg/kg	1.4E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-07	8.4E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	0.318	mg/kg	1.1E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	6.7E-04	mg/kg/day	2.0E-05	mg/kg/day	3.E+01
				Aroclor-1268	0.0921	mg/kg	3.3E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-05	1.9E-04	mg/kg/day	2.0E-05	mg/kg/day	9.E+01
				Dieldrin	0.00078	mg/kg	2.8E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	1.6E-06	mg/kg/day	5.0E-05	mg/kg/day	3.E-02
				gamma-Chlordane	0.002	mg/kg	7.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	4.2E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				Technical Chlordane	0.0439	mg/kg	1.6E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-06	9.2E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Lead	0.0556	mg/kg	2.0E-05	mg/kg/day				1.2E-04	mg/kg/day			
				Mercury	0.31	mg/kg	NC		NC			6.5E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				Mercury (methyl)	0.314	mg/kg	NC		NC			6.6E-04	mg/kg/day	1.0E-04	mg/kg/day	7.E+00
				Thallium	0.00493	mg/kg	NC		NC			1.0E-05	mg/kg/day	8.0E-05	mg/kg/day	1.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.00000061	mg/kg	2.2E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-05	1.3E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-04					5.E+01
		EXPOSURE POINT TOTAL									3.E-04					5.E+01
	EXPOSURE MEDIUM TOTAL										3.E-04					5.E+01
WHOLE BODY TOTAL											3.E-04					5.E+01
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	4.E-04			TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		5.3.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.21.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.0008	mg/kg	NC		NC			2.7E-06	mg/kg/day	6.0E-02	mg/kg/day	5.E-05
				Benzo(g,h,i)perylene	0.00039	mg/kg	NC		NC			1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Phenanthrene	0.003	mg/kg	NC		NC			1.0E-05	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				4,4'-DDE	0.0642	mg/kg	1.9E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	6.E-06	2.2E-04	mg/kg/day	5.0E-04	mg/kg/day	4.E-01
				alpha-Chlordane	0.004	mg/kg	1.2E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-07	1.4E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Aroclor-1254	0.318	mg/kg	9.3E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	1.1E-03	mg/kg/day	2.0E-05	mg/kg/day	5.E+01
				Aroclor-1268	0.0921	mg/kg	2.7E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-05	3.1E-04	mg/kg/day	2.0E-05	mg/kg/day	2.E+01
				Dieldrin	0.00078	mg/kg	2.3E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	2.7E-06	mg/kg/day	5.0E-05	mg/kg/day	5.E-02
				gamma-Chlordane	0.002	mg/kg	5.9E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	6.8E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Technical Chlordane	0.0439	mg/kg	1.3E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-06	1.5E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				Lead	0.0556	mg/kg	1.6E-05	mg/kg/day				1.9E-04	mg/kg/day			
				Mercury	0.31	mg/kg	NC		NC			1.1E-03	mg/kg/day	3.0E-04	mg/kg/day	4.E+00
				Mercury (methyl)	0.314	mg/kg	NC		NC			1.1E-03	mg/kg/day	1.0E-04	mg/kg/day	1.E+01
				Thallium	0.00493	mg/kg	NC		NC			1.7E-05	mg/kg/day	8.0E-05	mg/kg/day	2.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.00000061	mg/kg	1.8E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-05	2.1E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-04					9.E+01
		EXPOSURE POINT TOTAL									3.E-04					9.E+01
	EXPOSURE MEDIUM TOTAL										3.E-04					9.E+01
WHOLE BODY TOTAL											3.E-04					9.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											3.E-04					8.5.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.22.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SOIL	SOIL	GREYSTONE MILL POND	INGESTION	2-Methylnaphthalene	0.17022	mg/kg	NC		NC			6.9E-08	mg/kg/day	2.0E-02	mg/kg/day	3.E-06
				Acenaphthylene	0.49749	mg/kg	NC		NC			2.0E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Benzo(a)anthracene	3.41086	mg/kg	1.0E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-07	1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(a)pyrene	3.41803	mg/kg	1.0E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-06	1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(b)fluoranthene	4.28861	mg/kg	1.3E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-07	1.7E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Benzo(g,h,i)perylene	2.87139	mg/kg	NC		NC			1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Dibenzo(a,h)anthracene	0.72851	mg/kg	2.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	3.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Indeno(1,2,3-cd)pyrene	3.0929	mg/kg	9.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-07	1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Phenanthrene	5.30136	mg/kg	NC		NC			2.2E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				alpha-Chlordane	0.03592	mg/kg	1.1E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-09	1.5E-08	mg/kg/day	5.0E-04	mg/kg/day	3.E-05
				Aroclor-1254	0.83872	mg/kg	2.5E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-07	3.4E-07	mg/kg/day	2.0E-05	mg/kg/day	2.E-02
				Aroclor-1268	0.13953	mg/kg	4.2E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-08	5.7E-08	mg/kg/day	2.0E-05	mg/kg/day	3.E-03
				Endosulfan Sulfate	0.01269	mg/kg	NC		NC			5.2E-09	mg/kg/day	6.0E-03	mg/kg/day	9.E-07
				Technical Chlordane	0.73538	mg/kg	2.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-08	3.0E-07	mg/kg/day	5.0E-04	mg/kg/day	6.E-04
				Aluminum	21793	mg/kg	NC		NC			8.9E-03	mg/kg/day			
				Arsenic	12.2	mg/kg	3.7E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	6.E-06	5.0E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
				Chromium	291	mg/kg	NC		NC			1.2E-04	mg/kg/day	3.0E-03	mg/kg/day	4.E-02
				Copper	324	mg/kg	NC		NC			1.3E-04	mg/kg/day			
				Lead	591	mg/kg	1.8E-04	mg/kg/day	--			2.4E-04	mg/kg/day			
				Manganese	4126	mg/kg	NC		NC			1.7E-03	mg/kg/day	7.1E-02	mg/kg/day	2.E-02
				Mercury	0.811	mg/kg	NC		NC			3.3E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Molybdenum	87.7	mg/kg	NC		NC			3.6E-05	mg/kg/day	5.0E-03	mg/kg/day	7.E-03
				Nickel	387	mg/kg	NC		NC			1.6E-04	mg/kg/day	2.0E-02	mg/kg/day	8.E-03
				Thallium	0.585	mg/kg	NC		NC			2.4E-07	mg/kg/day	8.0E-05	mg/kg/day	3.E-03
				Vanadium	103	mg/kg	NC		NC			4.2E-05	mg/kg/day	7.0E-03	mg/kg/day	6.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.000109	mg/kg	3.3E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-06	4.4E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-05					1.E-01
			DERMAL	2-Methylnaphthalene	0.17022	mg/kg	NC		NC			7.2E-08	mg/kg/day	2.0E-02	mg/kg/day	4.E-06
				Acenaphthylene	0.49749	mg/kg	NC		NC			2.1E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				Benzo(a)anthracene	3.41086	mg/kg	1.1E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-07	1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(a)pyrene	3.41803	mg/kg	1.1E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-06	1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(b)fluoranthene	4.28861	mg/kg	1.3E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-06	1.8E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Benzo(g,h,i)perylene	2.87139	mg/kg	NC		NC			1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Dibenzo(a,h)anthracene	0.72851	mg/kg	2.3E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	3.1E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Indeno(1,2,3-cd)pyrene	3.0929	mg/kg	9.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-07	1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Phenanthrene	5.30136	mg/kg	NC		NC			2.2E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				alpha-Chlordane	0.03592	mg/kg	3.5E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-09	4.7E-09	mg/kg/day	5.0E-04	mg/kg/day	9.E-06
				Aroclor-1254	0.83872	mg/kg	2.8E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-07	3.8E-07	mg/kg/day	2.0E-05	mg/kg/day	2.E-02
				Aroclor-1268	0.13953	mg/kg	4.7E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-08	6.3E-08	mg/kg/day	2.0E-05	mg/kg/day	3.E-03
				Endosulfan Sulfate	0.01269	mg/kg	NC		NC			4.1E-09	mg/kg/day	6.0E-03	mg/kg/day	7.E-07
				Technical Chlordane	0.73538	mg/kg	7.1E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	9.6E-08	mg/kg/day	5.0E-04	mg/kg/day	2.E-04
				Aluminum	21793	mg/kg	NC		NC			--				
				Arsenic	12.2	mg/kg	8.8E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	1.2E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				Chromium	291	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	324	mg/kg	NC		NC			--				
				Lead	591	mg/kg	--		--			--				
				Manganese	4126	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.811	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Molybdenum	87.7	mg/kg	NC		NC			--		5.0E-03	mg/kg/day	
				Nickel	387	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.585	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	103	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000109	mg/kg	7.9E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-06	1.1E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-05					3.E-02
		EXPOSURE POINT TOTAL									4.E-05					2.E-01
	EXPOSURE MEDIUM TOTAL										4.E-05					2.E-01
SOIL TOTAL											4.E-05					2.E-01

US EPA ARCHIVE DOCUMENT

TABLE F.7.22.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	GREYSTONE MILL POND	INGESTION	2-Methylnaphthalene	0.07478	mg/kg	NC		NC			1.9E-08	mg/kg/day	2.0E-02	mg/kg/day	1.E-06
				Acenaphthylene	0.19279	mg/kg	NC		NC			4.9E-08	mg/kg/day	6.0E-02	mg/kg/day	8.E-07
				Benzo(a)anthracene	3.5	mg/kg	6.6E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-07	8.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(a)pyrene	3.1	mg/kg	5.9E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-06	7.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(b)fluoranthene	3.1	mg/kg	5.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	7.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(g,h,i)perylene	2.07671	mg/kg	NC		NC			5.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.77	mg/kg	1.5E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	2.0E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Indeno(1,2,3-cd)pyrene	2.18335	mg/kg	4.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	5.6E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	4.8	mg/kg	NC		NC			1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				alpha-Chlordane	0.0061	mg/kg	1.2E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-10	1.6E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Aroclor-1254	0.38	mg/kg	7.2E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-07	9.7E-08	mg/kg/day	2.0E-05	mg/kg/day	5.E-03
				Aroclor-1268	0.24667	mg/kg	4.7E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-08	6.3E-08	mg/kg/day	2.0E-05	mg/kg/day	3.E-03
				gamma-Chlordane	0.005	mg/kg	9.4E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-10	1.3E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Technical Chlordane	0.62618	mg/kg	1.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-08	1.6E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Aluminum	15554	mg/kg	NC		NC			4.0E-03	mg/kg/day			
				Antimony	4.3	mg/kg	NC		NC			1.1E-06	mg/kg/day	4.0E-04	mg/kg/day	3.E-03
				Arsenic	9.6	mg/kg	1.8E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-06	2.4E-06	mg/kg/day	3.0E-04	mg/kg/day	8.E-03
				Cadmium	4.35	mg/kg	NC		NC			1.1E-06	mg/kg/day	1.0E-03	mg/kg/day	1.E-03
				Chromium	271	mg/kg	NC		NC			6.9E-05	mg/kg/day	3.0E-03	mg/kg/day	2.E-02
				Copper	436	mg/kg	NC		NC			1.1E-04	mg/kg/day			
				Lead	179	mg/kg	3.4E-05	mg/kg/day				4.6E-05	mg/kg/day			
				Manganese	599	mg/kg	NC		NC			1.5E-04	mg/kg/day	7.1E-02	mg/kg/day	2.E-03
				Mercury	0.757	mg/kg	NC		NC			1.9E-07	mg/kg/day	3.0E-04	mg/kg/day	6.E-04
				Nickel	142	mg/kg	NC		NC			3.6E-05	mg/kg/day	2.0E-02	mg/kg/day	2.E-03
				Thallium	0.37	mg/kg	NC		NC			9.4E-08	mg/kg/day	8.0E-05	mg/kg/day	1.E-03
				Vanadium	79	mg/kg	NC		NC			2.0E-05	mg/kg/day	7.0E-03	mg/kg/day	3.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.00012	mg/kg	2.3E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-06	3.1E-11	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000249	mg/kg	4.7E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-07	6.3E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					5.E-02
			DERMAL	2-Methylnaphthalene	0.07478	mg/kg	NC		NC			1.7E-08	mg/kg/day	2.0E-02	mg/kg/day	8.E-07
				Acenaphthylene	0.19279	mg/kg	NC		NC			4.3E-08	mg/kg/day	6.0E-02	mg/kg/day	7.E-07
				Benzo(a)anthracene	3.5	mg/kg	5.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	7.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(a)pyrene	3.1	mg/kg	5.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-06	7.0E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	3.1	mg/kg	5.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	7.0E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	2.07671	mg/kg	NC		NC			4.7E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.77	mg/kg	1.3E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-07	1.7E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Indeno(1,2,3-cd)pyrene	2.18335	mg/kg	3.6E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	4.9E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	4.8	mg/kg	NC		NC			1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				alpha-Chlordane	0.0061	mg/kg	3.1E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	4.2E-10	mg/kg/day	5.0E-04	mg/kg/day	8.E-07
				Aroclor-1254	0.38	mg/kg	6.8E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-07	9.2E-08	mg/kg/day	2.0E-05	mg/kg/day	5.E-03
				Aroclor-1268	0.24667	mg/kg	4.4E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-08	6.0E-08	mg/kg/day	2.0E-05	mg/kg/day	3.E-03
				gamma-Chlordane	0.005	mg/kg	2.6E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-11	3.5E-10	mg/kg/day	5.0E-04	mg/kg/day	7.E-07
				Technical Chlordane	0.62618	mg/kg	3.2E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	4.3E-08	mg/kg/day	5.0E-04	mg/kg/day	9.E-05
				Aluminum	15554	mg/kg	NC		NC			--				
				Antimony	4.3	mg/kg	NC		NC			--		6.0E-05	mg/kg/day	
				Arsenic	9.6	mg/kg	3.7E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	6.E-07	5.0E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Cadmium	4.35	mg/kg	NC		NC			7.5E-09	mg/kg/day	2.5E-05	mg/kg/day	3.E-04
				Chromium	271	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	436	mg/kg	NC		NC			--				
				Lead	179	mg/kg	--					--				
				Manganese	599	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.757	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	142	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.37	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	79	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	

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TABLE F.7.22.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Toxicity Equivalency (Dioxins/Furans)	0.00012	mg/kg	4.6E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-07	6.2E-12	mg/kg/day			
				Toxicity Equivalency (PCB Congoners)	0.0000249	mg/kg	9.6E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-07	1.3E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								7.E-06					1.E-02
		EXPOSURE POINT TOTAL									2.E-05					6.E-02
	EXPOSURE MEDIUM TOTAL										2.E-05					6.E-02
SEDIMENT TOTAL											2.E-05					6.E-02
SURFACE WATER	SURFACE WATER	GREYSTONE MILL POND	INGESTION	Arsenic	0.00055	mg/l	2.1E-08	mg/kg/day	1.5E+00	mg/kg/day	3.E-08	2.8E-08	mg/kg/day	3.0E-04	mg/kg/day	9.E-05
				Manganese	0.144	mg/l	NC		NC			7.3E-06	mg/kg/day	2.4E-02	mg/kg/day	3.E-04
				Mercury	0.00000193	mg/l	NC		NC			9.8E-11	mg/kg/day	3.0E-04	mg/kg/day	3.E-07
				Nitrite-N	0.13	mg/l	NC		NC			6.6E-06	mg/kg/day	1.0E-01	mg/kg/day	7.E-05
				Toxicity Equivalency (Dioxins/Furans)	5.64E-09	mg/l	2.1E-13	mg/kg/day	1.5E+05	mg/kg/day	3.E-08	2.9E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-08					5.E-04
			DERMAL	Arsenic	0.00055	mg/l	3.6E-08	mg/kg/day	1.5E+00	mg/kg/day	5.E-08	4.9E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Manganese	0.144	mg/l	NC		NC			1.3E-05	mg/kg/day	9.6E-04	mg/kg/day	1.E-02
				Mercury	0.00000193	mg/l	NC		NC			1.7E-10	mg/kg/day	2.1E-05	mg/kg/day	8.E-06
				Nitrite-N	0.13	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	5.64E-09	mg/l	8.4E-10	mg/kg/day	1.5E+05	mg/kg/day	1.E-04	1.1E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					1.E-02
		EXPOSURE POINT TOTAL									1.E-04					1.E-02
	EXPOSURE MEDIUM TOTAL										1.E-04					1.E-02
SURFACE WATER TOTAL											1.E-04					1.E-02
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00482	mg/kg	NC		NC			9.8E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-04
				Benzo(a)pyrene	0.00112	mg/kg	1.7E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-05	2.3E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				Benzo(g,h,i)perylene	0.000988	mg/kg	NC		NC			2.0E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Phenanthrene	0.0172	mg/kg	NC		NC			3.5E-05	mg/kg/day	3.0E-02	mg/kg/day	1.E-03
				4,4'-DDD	0.0218	mg/kg	3.3E-05	mg/kg/day	2.4E-01	(mg/kg/day)-1	8.E-06	4.4E-05	mg/kg/day	5.0E-04	mg/kg/day	9.E-02
				4,4'-DDE	0.0513	mg/kg	7.7E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-05	1.0E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				4,4'-DDT	0.00626	mg/kg	9.4E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-06	1.3E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				alpha-Chlordane	0.02431	mg/kg	3.7E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	4.9E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Aroclor-1254	0.20236	mg/kg	3.0E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-04	4.1E-04	mg/kg/day	2.0E-05	mg/kg/day	2.E+01
				Aroclor-1268	0.05512	mg/kg	8.3E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	1.1E-04	mg/kg/day	2.0E-05	mg/kg/day	6.E+00
				Dieldrin	0.00417	mg/kg	6.3E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-04	8.5E-06	mg/kg/day	5.0E-05	mg/kg/day	2.E-01
				gamma-Chlordane	0.0112	mg/kg	1.7E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-06	2.3E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				Heptachlor Epoxide	0.00081	mg/kg	1.2E-06	mg/kg/day	9.1E+00	(mg/kg/day)-1	1.E-05	1.6E-06	mg/kg/day	1.3E-05	mg/kg/day	1.E-01
				Technical Chlordane	0.282	mg/kg	4.2E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-04	5.7E-04	mg/kg/day	5.0E-04	mg/kg/day	1.E+00
				Lead	0.012	mg/kg	1.8E-05	mg/kg/day				2.4E-05	mg/kg/day			
				Mercury	0.19	mg/kg	NC		NC			3.9E-04	mg/kg/day	3.0E-04	mg/kg/day	1.E+00
				Mercury (methyl)	0.193	mg/kg	NC		NC			3.9E-04	mg/kg/day	1.0E-04	mg/kg/day	4.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.0000031	mg/kg	4.7E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-04	6.3E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-03					3.3.E+01
		EXPOSURE POINT TOTAL									2.E-03					3.3.E+01
	EXPOSURE MEDIUM TOTAL										2.E-03					3.3.E+01
WHOLE BODY TOTAL											2.E-03					3.3.E+01
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	2.E-03	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				3.3.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TABLE F.7.23.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	GREYSTONE MILL POND	INGESTION	2-Methylnaphthalene	0.17022	mg/kg	NC		NC			1.1E-07	mg/kg/day	2.0E-02	mg/kg/day	5.E-06
				Acenaphthylene	0.49749	mg/kg	NC		NC			3.2E-07	mg/kg/day	6.0E-02	mg/kg/day	5.E-06
				Benzo(a)anthracene	3.41086	mg/kg	3.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.2E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(a)pyrene	3.41803	mg/kg	3.7E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	2.2E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(b)fluoranthene	4.28861	mg/kg	4.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.7E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				Benzo(g,h,i)perylene	2.87139	mg/kg	NC		NC			1.8E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Dibenzo(a,h)anthracene	0.72851	mg/kg	7.9E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-07	4.6E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Indeno(1,2,3-cd)pyrene	3.0929	mg/kg	3.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	2.0E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Phenanthrene	5.30136	mg/kg	NC		NC			3.4E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				alpha-Chlordane	0.03592	mg/kg	3.9E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-09	2.3E-08	mg/kg/day	5.0E-04	mg/kg/day	5.E-05
				Aroclor-1254	0.83872	mg/kg	9.1E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-07	5.3E-07	mg/kg/day	2.0E-05	mg/kg/day	3.E-02
				Aroclor-1268	0.13953	mg/kg	1.5E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-08	8.8E-08	mg/kg/day	2.0E-05	mg/kg/day	4.E-03
				Endosulfan Sulfate	0.01269	mg/kg	NC		NC			8.0E-09	mg/kg/day	6.0E-03	mg/kg/day	1.E-06
				Technical Chlordane	0.73538	mg/kg	8.0E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	4.7E-07	mg/kg/day	5.0E-04	mg/kg/day	9.E-04
				Aluminum	21793	mg/kg	NC		NC			1.4E-02	mg/kg/day			
				Arsenic	12.2	mg/kg	1.3E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-06	7.7E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-02
				Chromium	291	mg/kg	NC		NC			1.8E-04	mg/kg/day	3.0E-03	mg/kg/day	6.E-02
				Copper	324	mg/kg	NC		NC			2.1E-04	mg/kg/day			
				Lead	591	mg/kg	6.4E-05	mg/kg/day	--			3.7E-04	mg/kg/day			
				Manganese	4126	mg/kg	NC		NC			2.6E-03	mg/kg/day	7.1E-02	mg/kg/day	4.E-02
				Mercury	0.811	mg/kg	NC		NC			5.1E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Molybdenum	87.7	mg/kg	NC		NC			5.6E-05	mg/kg/day	5.0E-03	mg/kg/day	1.E-02
				Nickel	387	mg/kg	NC		NC			2.5E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				Thallium	0.585	mg/kg	NC		NC			3.7E-07	mg/kg/day	8.0E-05	mg/kg/day	5.E-03
				Vanadium	103	mg/kg	NC		NC			6.5E-05	mg/kg/day	7.0E-03	mg/kg/day	9.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.000109	mg/kg	1.2E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-06	6.9E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								8.E-06					2.E-01
			DERMAL	2-Methylnaphthalene	0.17022	mg/kg	NC		NC			2.7E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				Acenaphthylene	0.49749	mg/kg	NC		NC			7.9E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)anthracene	3.41086	mg/kg	9.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-07	5.4E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(a)pyrene	3.41803	mg/kg	9.3E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-06	5.4E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(b)fluoranthene	4.28861	mg/kg	1.2E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-07	6.8E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(g,h,i)perylene	2.87139	mg/kg	NC		NC			4.5E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Dibenzo(a,h)anthracene	0.72851	mg/kg	2.0E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Indeno(1,2,3-cd)pyrene	3.0929	mg/kg	8.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-07	4.9E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Phenanthrene	5.30136	mg/kg	NC		NC			8.4E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				alpha-Chlordane	0.03592	mg/kg	3.0E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-09	1.7E-08	mg/kg/day	5.0E-04	mg/kg/day	3.E-05
				Aroclor-1254	0.83872	mg/kg	2.4E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-07	1.4E-06	mg/kg/day	2.0E-05	mg/kg/day	7.E-02
				Aroclor-1268	0.13953	mg/kg	4.1E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-08	2.4E-07	mg/kg/day	2.0E-05	mg/kg/day	1.E-02
				Endosulfan Sulfate	0.01269	mg/kg	NC		NC			1.5E-08	mg/kg/day	6.0E-03	mg/kg/day	3.E-06
				Technical Chlordane	0.73538	mg/kg	6.1E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	3.6E-07	mg/kg/day	5.0E-04	mg/kg/day	7.E-04
				Aluminum	21793	mg/kg	NC		NC			--				
				Arsenic	12.2	mg/kg	7.6E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	4.4E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				Chromium	291	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	324	mg/kg	NC		NC			--				
				Lead	591	mg/kg	--		--			--				
				Manganese	4126	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.811	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Molybdenum	87.7	mg/kg	NC		NC			--		5.0E-03	mg/kg/day	
				Nickel	387	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.585	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	103	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000109	mg/kg	6.8E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-06	4.0E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					1.E-01
		EXPOSURE POINT TOTAL									2.E-05					3.E-01
	EXPOSURE MEDIUM TOTAL										2.E-05					3.E-01
SOIL TOTAL											2.E-05					3.E-01

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TABLE F.7.23.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	GREYSTONE MILL POND	INGESTION	2-Methylnaphthalene	0.07478	mg/kg	NC		NC			3.0E-08	mg/kg/day	2.0E-02	mg/kg/day	1.E-06
				Acenaphthylene	0.19279	mg/kg	NC		NC			7.6E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				Benzo(a)anthracene	3.5	mg/kg	2.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(a)pyrene	3.1	mg/kg	2.1E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(b)fluoranthene	3.1	mg/kg	2.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(g,h,i)perylene	2.07671	mg/kg	NC		NC			8.2E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Dibenzo(a,h)anthracene	0.77	mg/kg	5.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	3.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Indeno(1,2,3-cd)pyrene	2.18335	mg/kg	1.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	8.6E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Phenanthrene	4.8	mg/kg	NC		NC			1.9E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				alpha-Chlordane	0.0061	mg/kg	4.1E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	2.4E-09	mg/kg/day	5.0E-04	mg/kg/day	5.E-06
				Aroclor-1254	0.38	mg/kg	2.6E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-08	1.5E-07	mg/kg/day	2.0E-05	mg/kg/day	8.E-03
				Aroclor-1268	0.24667	mg/kg	1.7E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-08	9.8E-08	mg/kg/day	2.0E-05	mg/kg/day	5.E-03
				gamma-Chlordane	0.005	mg/kg	3.4E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	2.0E-09	mg/kg/day	5.0E-04	mg/kg/day	4.E-06
				Technical Chlordane	0.62618	mg/kg	4.2E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	2.5E-07	mg/kg/day	5.0E-04	mg/kg/day	5.E-04
				Aluminum	15554	mg/kg	NC		NC			6.2E-03	mg/kg/day			
				Antimony	4.3	mg/kg	NC		NC			1.7E-06	mg/kg/day	4.0E-04	mg/kg/day	4.E-03
				Arsenic	9.6	mg/kg	6.5E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	3.8E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				Cadmium	4.35	mg/kg	NC		NC			1.7E-06	mg/kg/day	1.0E-03	mg/kg/day	2.E-03
				Chromium	271	mg/kg	NC		NC			1.1E-04	mg/kg/day	3.0E-03	mg/kg/day	4.E-02
				Copper	436	mg/kg	NC		NC			1.7E-04	mg/kg/day			
				Lead	179	mg/kg	1.2E-05	mg/kg/day				7.1E-05	mg/kg/day			
				Manganese	599	mg/kg	NC		NC			2.4E-04	mg/kg/day	7.1E-02	mg/kg/day	3.E-03
				Mercury	0.757	mg/kg	NC		NC			3.0E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Nickel	142	mg/kg	NC		NC			5.6E-05	mg/kg/day	2.0E-02	mg/kg/day	3.E-03
				Thallium	0.37	mg/kg	NC		NC			1.5E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Vanadium	79	mg/kg	NC		NC			3.1E-05	mg/kg/day	7.0E-03	mg/kg/day	4.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.00012	mg/kg	8.1E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-06	4.7E-11	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000249	mg/kg	1.7E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-07	9.9E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-06					8.E-02
			DERMAL	2-Methylnaphthalene	0.07478	mg/kg	NC		NC			5.5E-08	mg/kg/day	2.0E-02	mg/kg/day	3.E-06
				Acenaphthylene	0.19279	mg/kg	NC		NC			1.4E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				Benzo(a)anthracene	3.5	mg/kg	4.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.6E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				Benzo(a)pyrene	3.1	mg/kg	3.9E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	2.3E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				Benzo(b)fluoranthene	3.1	mg/kg	3.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.3E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				Benzo(g,h,i)perylene	2.07671	mg/kg	NC		NC			1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Dibenzo(a,h)anthracene	0.77	mg/kg	9.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-07	5.7E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Indeno(1,2,3-cd)pyrene	2.18335	mg/kg	2.8E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.6E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Phenanthrene	4.8	mg/kg	NC		NC			3.5E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				alpha-Chlordane	0.0061	mg/kg	2.4E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-11	1.4E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Aroclor-1254	0.38	mg/kg	5.2E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-07	3.0E-07	mg/kg/day	2.0E-05	mg/kg/day	2.E-02
				Aroclor-1268	0.24667	mg/kg	3.3E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-08	2.0E-07	mg/kg/day	2.0E-05	mg/kg/day	1.E-02
				gamma-Chlordane	0.005	mg/kg	1.9E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-11	1.1E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Technical Chlordane	0.62618	mg/kg	2.4E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-09	1.4E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Aluminum	15554	mg/kg	NC		NC			--				
				Antimony	4.3	mg/kg	NC		NC			--		6.0E-05	mg/kg/day	
				Arsenic	9.6	mg/kg	2.8E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-07	1.6E-06	mg/kg/day	3.0E-04	mg/kg/day	5.E-03
				Cadmium	4.35	mg/kg	NC		NC			2.5E-08	mg/kg/day	2.5E-05	mg/kg/day	1.E-03
				Chromium	271	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	436	mg/kg	NC		NC			--				
				Lead	179	mg/kg	--					--				
				Manganese	599	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.757	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	142	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.37	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	79	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00012	mg/kg	3.5E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-07	2.0E-11	mg/kg/day			

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TABLE F.7.23.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Toxicity Equivalency (PCB Congeners	0.0000249	mg/kg	7.2E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-07	4.2E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-06					3.E-02
		EXPOSURE POINT TOTAL									1.E-05					1.E-01
	EXPOSURE MEDIUM TOTAL										1.E-05					1.E-01
SEDIMENT TOTAL											1.E-05					1.E-01
SURFACE WATER	SURFACE WATER	GREYSTONE MILL POND	INGESTION	Arsenic	0.00055	mg/l	7.5E-09	mg/kg/day	1.5E+00	mg/kg/day	1.E-08	4.4E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				Manganese	0.144	mg/l	NC		NC			1.1E-05	mg/kg/day	2.4E-02	mg/kg/day	5.E-04
				Mercury	0.00000193	mg/l	NC		NC			1.5E-10	mg/kg/day	3.0E-04	mg/kg/day	5.E-07
				Nitrite-N	0.13	mg/l	NC		NC			1.0E-05	mg/kg/day	1.0E-01	mg/kg/day	1.E-04
				Toxicity Equivalency (Dioxins/Furans	5.64E-09	mg/l	7.7E-14	mg/kg/day	1.5E+05	mg/kg/day	1.E-08	4.5E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-08					7.E-04
			DERMAL	Arsenic	0.00055	mg/l	9.3E-09	mg/kg/day	1.5E+00	mg/kg/day	1.E-08	5.5E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Manganese	0.144	mg/l	NC		NC			1.4E-05	mg/kg/day	9.6E-04	mg/kg/day	1.E-02
				Mercury	0.00000193	mg/l	NC		NC			1.9E-10	mg/kg/day	2.1E-05	mg/kg/day	9.E-06
				Nitrite-N	0.13	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans	5.64E-09	mg/l	2.2E-10	mg/kg/day	1.5E+05	mg/kg/day	3.E-05	1.3E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-05					2.E-02
		EXPOSURE POINT TOTAL									3.E-05					2.E-02
	EXPOSURE MEDIUM TOTAL										3.E-05					2.E-02
SURFACE WATER TOTAL											3.E-05					2.E-02
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00482	mg/kg	NC		NC			1.0E-05	mg/kg/day	6.0E-02	mg/kg/day	2.E-04
				Benzo(a)pyrene	0.00112	mg/kg	4.0E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	2.4E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				Benzo(g,h,i)perylene	0.000988	mg/kg	NC		NC			2.1E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Phenanthrene	0.0172	mg/kg	NC		NC			3.6E-05	mg/kg/day	3.0E-02	mg/kg/day	1.E-03
				4,4'-DDD	0.0218	mg/kg	7.9E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	2.E-06	4.6E-05	mg/kg/day	5.0E-04	mg/kg/day	9.E-02
				4,4'-DDE	0.0513	mg/kg	1.8E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	6.E-06	1.1E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				4,4'-DDT	0.00626	mg/kg	2.3E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	8.E-07	1.3E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				alpha-Chlordane	0.02431	mg/kg	8.8E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-06	5.1E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Aroclor-1254	0.20236	mg/kg	7.3E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-04	4.3E-04	mg/kg/day	2.0E-05	mg/kg/day	2.E+01
				Aroclor-1268	0.05512	mg/kg	2.0E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-05	1.2E-04	mg/kg/day	2.0E-05	mg/kg/day	6.E+00
				Dieldrin	0.00417	mg/kg	1.5E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-05	8.8E-06	mg/kg/day	5.0E-05	mg/kg/day	2.E-01
				gamma-Chlordane	0.0112	mg/kg	4.0E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	2.4E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				Heptachlor Epoxide	0.00081	mg/kg	2.9E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.E-06	1.7E-06	mg/kg/day	1.3E-05	mg/kg/day	1.E-01
				Technical Chlordane	0.282	mg/kg	1.0E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-05	5.9E-04	mg/kg/day	5.0E-04	mg/kg/day	1.E+00
				Lead	0.012	mg/kg	4.3E-06	mg/kg/day				2.5E-05	mg/kg/day			
				Mercury	0.19	mg/kg	NC		NC			4.0E-04	mg/kg/day	3.0E-04	mg/kg/day	1.E+00
				Mercury (methyl)	0.193	mg/kg	NC		NC			4.1E-04	mg/kg/day	1.0E-04	mg/kg/day	4.E+00
				Toxicity Equivalency (Dioxins/Furans	0.0000031	mg/kg	1.1E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	6.5E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-04					3.4.E+01
		EXPOSURE POINT TOTAL									4.E-04					3.4.E+01
	EXPOSURE MEDIUM TOTAL										4.E-04					3.4.E+01
WHOLE BODY TOTAL											4.E-04					3.4.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		5.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				3.5.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.14.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00482	mg/kg	NC		NC			1.6E-05	mg/kg/day	6.0E-02	mg/kg/day	3.E-04
				Benzo(a)pyrene	0.00112	mg/kg	3.3E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	3.8E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(g,h,i)perylene	0.000988	mg/kg	NC		NC			3.4E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Phenanthrene	0.0172	mg/kg	NC		NC			5.9E-05	mg/kg/day	3.0E-02	mg/kg/day	2.E-03
				4,4'-DDD	0.0218	mg/kg	6.4E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	2.E-06	7.5E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				4,4'-DDE	0.0513	mg/kg	1.5E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-06	1.8E-04	mg/kg/day	5.0E-04	mg/kg/day	4.E-01
				4,4'-DDT	0.00626	mg/kg	1.8E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	6.E-07	2.1E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				alpha-Chlordane	0.02431	mg/kg	7.1E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	8.3E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Aroclor-1254	0.20236	mg/kg	5.9E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-04	6.9E-04	mg/kg/day	2.0E-05	mg/kg/day	3.E+01
				Aroclor-1268	0.05512	mg/kg	1.6E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-05	1.9E-04	mg/kg/day	2.0E-05	mg/kg/day	9.E+00
				Dieldrin	0.00417	mg/kg	1.2E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-05	1.4E-05	mg/kg/day	5.0E-05	mg/kg/day	3.E-01
				gamma-Chlordane	0.0112	mg/kg	3.3E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	3.8E-05	mg/kg/day	5.0E-04	mg/kg/day	8.E-02
				Heptachlor Epoxide	0.00081	mg/kg	2.4E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-06	2.8E-06	mg/kg/day	1.3E-05	mg/kg/day	2.E-01
				Technical Chlordane	0.282	mg/kg	8.3E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-05	9.6E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E+00
				Lead	0.012	mg/kg	3.5E-06	mg/kg/day				4.1E-05	mg/kg/day			
				Mercury	0.19	mg/kg	NC		NC			6.5E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				Mercury (methyl)	0.193	mg/kg	NC		NC			6.6E-04	mg/kg/day	1.0E-04	mg/kg/day	7.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.0000031	mg/kg	9.1E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-04	1.1E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-04					5.6.E+01
		EXPOSURE POINT TOTAL									4.E-04					5.6.E+01
	EXPOSURE MEDIUM TOTAL										4.E-04					5.6.E+01
WHOLE BODY TOTAL											4.E-04					5.6.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	4.E-04				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	5.6.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.25.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SOIL	SOIL	ALLENDALE POND	INGESTION	2,3,7,8-TCDD	0.00027	mg/kg	8.2E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-05	1.1E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					--
			DERMAL	2,3,7,8-TCDD	0.00027	mg/kg	2.0E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-06	2.6E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-06					--
		EXPOSURE POINT TOTAL									2.E-05					0.E+00
	EXPOSURE MEDIUM TOTAL										2.E-05					0.E+00
SOIL TOTAL											2.E-05					0.E+00
SEDIMENT	SEDIMENT	ALLENDALE POND	INGESTION	2-Methylnaphthalene	0.13608	mg/kg	NC		NC			3.5E-08	mg/kg/day	2.0E-02	mg/kg/day	2.E-06
				Acenaphthylene	0.97	mg/kg	NC		NC			2.5E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				Benzo(a)anthracene	3.4	mg/kg	6.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-07	8.6E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(a)pyrene	4	mg/kg	7.6E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-06	1.0E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(b)fluoranthene	4.4	mg/kg	8.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-07	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(g,h,i)perylene	2	mg/kg	NC		NC			5.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(k)fluoranthene	3.9	mg/kg	7.4E-07	mg/kg/day	7.3E-02	(mg/kg/day)-1	5.E-08	9.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				bis(2-Ethylhexyl)phthalate	3.2	mg/kg	6.0E-07	mg/kg/day	1.4E-02	(mg/kg/day)-1	8.E-09	8.1E-07	mg/kg/day	2.0E-02	mg/kg/day	4.E-05
				Dibenzo(a,h)anthracene	2	mg/kg	3.8E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	5.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Indeno(1,2,3-cd)pyrene	3.2	mg/kg	6.0E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	8.1E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Pentachlorophenol	6.5	mg/kg	1.2E-06	mg/kg/day	1.2E-01	(mg/kg/day)-1	1.E-07	1.7E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Phenanthrene	4.8	mg/kg	NC		NC			1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				alpha-Chlordane	0.0113	mg/kg	2.1E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-10	2.9E-09	mg/kg/day	5.0E-04	mg/kg/day	6.E-06
				Aroclor-1254	2.4	mg/kg	4.5E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-07	6.1E-07	mg/kg/day	2.0E-05	mg/kg/day	3.E-02
				Aroclor-1260	0.2	mg/kg	3.8E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-08	5.1E-08	mg/kg/day	2.0E-05	mg/kg/day	3.E-03
				Aroclor-1268	0.079	mg/kg	1.5E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-08	2.0E-08	mg/kg/day	2.0E-05	mg/kg/day	1.E-03
				delta-BHC	0.0014	mg/kg	NC		NC			3.6E-10	mg/kg/day	3.0E-04	mg/kg/day	1.E-06
				Dieldrin	0.009	mg/kg	1.7E-09	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.E-08	2.3E-09	mg/kg/day	5.0E-05	mg/kg/day	5.E-05
				Endosulfan II	0.037	mg/kg	NC		NC			9.4E-09	mg/kg/day	6.0E-03	mg/kg/day	2.E-06
				Endosulfan sulfate	0.0027	mg/kg	NC		NC			6.9E-10	mg/kg/day	6.0E-03	mg/kg/day	1.E-07
				Endrin aldehyde	0.0029	mg/kg	NC		NC			7.4E-10	mg/kg/day	3.0E-04	mg/kg/day	2.E-06
				Endrin Ketone	0.0038	mg/kg	NC		NC			9.7E-10	mg/kg/day	3.0E-04	mg/kg/day	3.E-06
				gamma-Chlordane	0.017	mg/kg	3.2E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-09	4.3E-09	mg/kg/day	5.0E-04	mg/kg/day	9.E-06
				Technical Chlordane	0.65	mg/kg	1.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-08	1.7E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Antimony	4.8	mg/kg	NC		NC			1.2E-06	mg/kg/day	4.0E-04	mg/kg/day	3.E-03
				Arsenic	5.8	mg/kg	1.1E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-06	1.5E-06	mg/kg/day	3.0E-04	mg/kg/day	5.E-03
				Cadmium	1.2	mg/kg	NC		NC			3.1E-07	mg/kg/day	1.0E-03	mg/kg/day	3.E-04
				Chromium	238	mg/kg	NC		NC			6.1E-05	mg/kg/day	3.0E-03	mg/kg/day	2.E-02
				Lead	488	mg/kg	9.2E-05	mg/kg/day	--			1.2E-04	mg/kg/day			
				Manganese	531	mg/kg	NC		NC			1.4E-04	mg/kg/day	7.1E-02	mg/kg/day	2.E-03
				Mercury	0.97	mg/kg	NC		NC			2.5E-07	mg/kg/day	3.0E-04	mg/kg/day	8.E-04
				Nickel	26.7	mg/kg	NC		NC			6.8E-06	mg/kg/day	2.0E-02	mg/kg/day	3.E-04
				Thallium	6.8	mg/kg	NC		NC			1.7E-06	mg/kg/day	8.0E-05	mg/kg/day	2.E-02
				Vanadium	45.9	mg/kg	NC		NC			1.2E-05	mg/kg/day	7.0E-03	mg/kg/day	2.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.0057	mg/kg	1.1E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	1.5E-09	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000000112	mg/kg	2.1E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-09	2.8E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-04					9.E-02
			DERMAL	2-Methylnaphthalene	0.13608	mg/kg	NC		NC			3.1E-08	mg/kg/day	2.0E-02	mg/kg/day	2.E-06
				Acenaphthylene	0.97	mg/kg	NC		NC			2.2E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				Benzo(a)anthracene	3.4	mg/kg	5.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	7.7E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(a)pyrene	4	mg/kg	6.7E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-06	9.0E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(b)fluoranthene	4.4	mg/kg	7.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-07	9.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(g,h,i)perylene	2	mg/kg	NC		NC			4.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(k)fluoranthene	3.9	mg/kg	6.5E-07	mg/kg/day	7.3E-02	(mg/kg/day)-1	5.E-08	8.8E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				bis(2-Ethylhexyl)phthalate	3.2	mg/kg	4.1E-07	mg/kg/day	1.4E-02	(mg/kg/day)-1	6.E-09	5.5E-07	mg/kg/day	2.0E-02	mg/kg/day	3.E-05
				Dibenzo(a,h)anthracene	2	mg/kg	3.3E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	4.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Indeno(1,2,3-cd)pyrene	3.2	mg/kg	5.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	7.2E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Pentachlorophenol	6.5	mg/kg	2.1E-06	mg/kg/day	1.2E-01	(mg/kg/day)-1	3.E-07	2.8E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				Phenanthrene	4.8	mg/kg	NC		NC			1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05

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TABLE F.7.25.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
				alpha-Chlordane	0.0113	mg/kg	5.8E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-10	7.8E-10	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Aroclor-1254	2.4	mg/kg	4.3E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-07	5.8E-07	mg/kg/day	2.0E-05	mg/kg/day	3.E-02
				Aroclor-1260	0.2	mg/kg	3.6E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-08	4.8E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				Aroclor-1268	0.079	mg/kg	1.4E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-08	1.9E-08	mg/kg/day	2.0E-05	mg/kg/day	1.E-03
				delta-BHC	0.0014	mg/kg	NC		NC			2.4E-10	mg/kg/day	3.0E-04	mg/kg/day	8.E-07
				Dieldrin	0.009	mg/kg	1.2E-09	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-08	1.6E-09	mg/kg/day	5.0E-05	mg/kg/day	3.E-05
				Endosulfan II	0.037	mg/kg	NC		NC			6.4E-09	mg/kg/day	6.0E-03	mg/kg/day	1.E-06
				Endosulfan sulfate	0.0027	mg/kg	NC		NC			4.7E-10	mg/kg/day	6.0E-03	mg/kg/day	8.E-08
				Endrin aldehyde	0.0029	mg/kg	NC		NC			5.0E-10	mg/kg/day	3.0E-04	mg/kg/day	2.E-06
				Endrin Ketone	0.0038	mg/kg	NC		NC			6.6E-10	mg/kg/day	3.0E-04	mg/kg/day	2.E-06
				gamma-Chlordane	0.017	mg/kg	8.7E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-10	1.2E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Technical Chlordane	0.65	mg/kg	3.3E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	4.5E-08	mg/kg/day	5.0E-04	mg/kg/day	9.E-05
				Antimony	4.8	mg/kg	NC		NC					6.0E-05	mg/kg/day	
				Arsenic	5.8	mg/kg	2.2E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-07	3.0E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Cadmium	1.2	mg/kg	NC		NC			2.1E-09	mg/kg/day	2.5E-05	mg/kg/day	8.E-05
				Chromium	238	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	488	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	531	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Mercury	0.97	mg/kg	NC		NC					2.1E-05	mg/kg/day	
				Nickel	26.7	mg/kg	NC		NC					8.0E-04	mg/kg/day	
				Thallium	6.8	mg/kg	NC		NC					8.0E-05	mg/kg/day	
				Vanadium	45.9	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.0057	mg/kg	2.2E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-05	3.0E-10	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000000112	mg/kg	4.3E-15	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-10	5.8E-15	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-05					3.E-02
		EXPOSURE POINT TOTAL									2.E-04					1.E-01
	EXPOSURE MEDIUM TOTAL										2.E-04					1.E-01
SEDIMENT TOTAL											2.E-04					1.E-01
SURFACE WATER	SURFACE WATER	ALLENDALE POND	INGESTION	Tetrachloroethene	0.0007	mg/l	2.6E-08	mg/kg/day	5.4E-01	mg/kg/day	1.E-08	3.6E-08	mg/kg/day	1.0E-02	mg/kg/day	4.E-06
				bis(2-Ethylhexyl)phthalate	0.001	mg/l	3.8E-08	mg/kg/day	1.4E-02	mg/kg/day	5.E-10	5.1E-08	mg/kg/day	2.0E-02	mg/kg/day	3.E-06
				Aldrin	0.000011	mg/l	4.2E-10	mg/kg/day	1.7E+01	mg/kg/day	7.E-09	5.6E-10	mg/kg/day	3.0E-05	mg/kg/day	2.E-05
				alpha-Chlordane	0.00000069	mg/l	2.6E-11	mg/kg/day	3.5E-01	mg/kg/day	9.E-12	3.5E-11	mg/kg/day	5.0E-04	mg/kg/day	7.E-08
				Aroclor-1254	0.0006	mg/l	2.3E-08	mg/kg/day	2.0E+00	mg/kg/day	5.E-08	3.1E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				delta-BHC	0.0000096	mg/l	NC		NC			4.9E-10	mg/kg/day	3.0E-04	mg/kg/day	2.E-06
				Endosulfan Sulfate	0.00043	mg/l	NC		NC			2.2E-08	mg/kg/day	6.0E-03	mg/kg/day	4.E-06
				Endrin Aldehyde	0.0000028	mg/l	NC		NC			1.4E-10	mg/kg/day	3.0E-04	mg/kg/day	5.E-07
				gamma-Chlordane	0.000025	mg/l	9.4E-10	mg/kg/day	3.5E-01	mg/kg/day	3.E-10	1.3E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Arsenic	0.0044	mg/l	1.7E-07	mg/kg/day	1.5E+00	mg/kg/day	2.E-07	2.2E-07	mg/kg/day	3.0E-04	mg/kg/day	7.E-04
				Barium	0.044	mg/l	NC		NC			2.2E-06	mg/kg/day	7.0E-02	mg/kg/day	3.E-05
				Chromium	0.018	mg/l	NC		NC			9.2E-07	mg/kg/day	3.0E-03	mg/kg/day	3.E-04
				Lead	0.021	mg/l	7.9E-07	mg/kg/day	--			1.1E-06	mg/kg/day			
				Manganese	0.98	mg/l	NC		NC			5.0E-05	mg/kg/day	2.4E-02	mg/kg/day	2.E-03
				Mercury	0.00000519	mg/l	NC		NC			1.6E-10	mg/kg/day	3.0E-04	mg/kg/day	5.E-07
				Thallium	0.0037	mg/l	NC		NC			1.9E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Nitrate	0.773	mg/l	NC		NC			3.9E-05	mg/kg/day	1.6E+00	mg/kg/day	2.E-05
				Nitrite-N	0.139	mg/l	NC		NC			7.1E-06	mg/kg/day	1.0E-01	mg/kg/day	7.E-05
				Toxicity Equivalency (Dioxins/Furans)	0.0000011	mg/l	4.2E-11	mg/kg/day	1.5E+05	mg/kg/day	6.E-06	5.6E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								7.E-06					7.E-03
			DERMAL	Tetrachloroethene	0.0007	mg/l	3.0E-06	mg/kg/day	5.4E-01	mg/kg/day	2.E-06	4.1E-06	mg/kg/day	1.0E-02	mg/kg/day	4.E-04
				bis(2-Ethylhexyl)phthalate	0.001	mg/l	1.1E-05	mg/kg/day	1.4E-02	mg/kg/day	2.E-07	1.5E-05	mg/kg/day	2.0E-02	mg/kg/day	8.E-04
				Aldrin	0.000011	mg/l	7.2E-09	mg/kg/day	1.7E+01	mg/kg/day	1.E-07	9.7E-09	mg/kg/day	3.0E-05	mg/kg/day	3.E-04
				alpha-Chlordane	0.00000069	mg/l	1.0E-08	mg/kg/day	3.5E-01	mg/kg/day	4.E-09	1.4E-08	mg/kg/day	5.0E-04	mg/kg/day	3.E-05
				Aroclor-1254	0.0006	mg/l	--		2.0E+00	mg/kg/day		--		2.0E-05	mg/kg/day	
				delta-BHC	0.0000096	mg/l	NC		NC			3.7E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04

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TABLE F.7.25.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Endosulfan Sulfate	0.00043	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.0000028	mg/l	NC		NC			1.9E-08	mg/kg/day	3.0E-04	mg/kg/day	6.E-05
				gamma-Chlordane	0.000025	mg/l	3.8E-07	mg/kg/day	3.5E-01	mg/kg/day	1.E-07	5.1E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Arsenic	0.0044	mg/l	2.9E-07	mg/kg/day	1.5E+00	mg/kg/day	4.E-07	3.9E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Barium	0.044	mg/l	NC		NC			3.9E-06	mg/kg/day	4.9E-03	mg/kg/day	8.E-04
				Chromium	0.018	mg/l	NC		NC			3.2E-06	mg/kg/day	7.5E-05	mg/kg/day	4.E-02
				Lead	0.021	mg/l	--		--			--				
				Manganese	0.98	mg/l	NC		NC			8.7E-05	mg/kg/day	9.6E-04	mg/kg/day	9.E-02
				Mercury	0.00000319	mg/l	NC		NC			2.8E-10	mg/kg/day	2.(E-05	mg/kg/day	1.E-05
				Thallium	0.0037	mg/l	NC		NC			3.3E-07	mg/kg/day	8.0E-05	mg/kg/day	4.E-03
				Nitrate	0.773	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.139	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.0000011	mg/l	1.6E-07	mg/kg/day	1.5E+05	mg/kg/day	2.E-02	2.2E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-02					1.E-01
		EXPOSURE POINT TOTAL									2.E-02					1.E-01
	EXPOSURE MEDIUM TOTAL										2.E-02					1.E-01
SURFACE WATER TOTAL											2.E-02					1.E-01
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.0013	mg/kg	NC		NC			2.6E-06	mg/kg/day	6.0E-02	mg/kg/day	4.E-05
				Phenanthrene	0.00807	mg/kg	NC		NC			1.6E-05	mg/kg/day	3.0E-02	mg/kg/day	5.E-04
				4,4'-DDD	0.0131	mg/kg	2.0E-05	mg/kg/day	2.4E-01	(mg/kg/day)-1	5.E-06	2.7E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				4,4'-DDE	0.021	mg/kg	3.2E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-05	4.3E-05	mg/kg/day	5.0E-04	mg/kg/day	9.E-02
				4,4'-DDT	0.00892	mg/kg	1.3E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-06	1.8E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				alpha-Chlordane	0.0192	mg/kg	2.9E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	3.9E-05	mg/kg/day	5.0E-04	mg/kg/day	8.E-02
				Aroclor-1254	0.88187	mg/kg	1.3E-03	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-03	1.8E-03	mg/kg/day	2.0E-05	mg/kg/day	9.E+01
				Aroclor-1268	0.01504	mg/kg	2.3E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-05	3.0E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				beta-BHC	0.00062	mg/kg	9.3E-07	mg/kg/day	1.8E+00	(mg/kg/day)-1	2.E-06	1.3E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				Dieldrin	0.00912	mg/kg	1.4E-05	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-04	1.8E-05	mg/kg/day	5.0E-05	mg/kg/day	4.E-01
				Endosulfan Sulfate	0.00158	mg/kg	NC		NC			3.2E-06	mg/kg/day	6.0E-03	mg/kg/day	5.E-04
				Endrin Aldehyde	0.001	mg/kg	NC		NC			2.0E-06	mg/kg/day	3.0E-04	mg/kg/day	7.E-03
				gamma-Chlordane	0.00712	mg/kg	1.1E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-06	1.4E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Heptachlor	0.000678	mg/kg	1.0E-06	mg/kg/day	4.5E+00	(mg/kg/day)-1	5.E-06	1.4E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Heptachlor Epoxide	0.0015	mg/kg	2.3E-06	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-05	3.0E-06	mg/kg/day	1.3E-05	mg/kg/day	2.E-01
				Technical Chlordane	0.2615	mg/kg	3.9E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-04	5.3E-04	mg/kg/day	5.0E-04	mg/kg/day	1.E+00
				Cadmium	0.0971	mg/kg	NC		NC			2.0E-04	mg/kg/day	1.0E-03	mg/kg/day	2.E-01
				Lead	0.58	mg/kg	8.7E-04	mg/kg/day	--			1.2E-03	mg/kg/day			
				Manganese	5.04	mg/kg	NC		NC			1.0E-02	mg/kg/day	1.4E-01	mg/kg/day	7.E-02
				Mercury	0.153	mg/kg	NC		NC			3.1E-04	mg/kg/day	3.0E-04	mg/kg/day	1.E+00
				Mercury (methyl)	0.269	mg/kg	NC		NC			5.5E-04	mg/kg/day	1.0E-04	mg/kg/day	5.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000111	mg/kg	1.7E-07	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-02	2.3E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000042	mg/kg	6.3E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	9.E-03	8.5E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-02					1.0.E+02
		EXPOSURE POINT TOTAL									4.E-02					1.0.E+02
	EXPOSURE MEDIUM TOTAL										4.E-02					1.0.E+02
WHOLE BODY TOTAL											4.E-03					1.0.E+02
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											6.E-02					1.0.E+02

NOTES
(1) - Blank cells indicate that an RfD or RfC is not availaitable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available

Prepared by: RAR
Checked by: KJA

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TABLE F.7.26.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SOIL	SOIL	ALLENDALE POND	INGESTION	2,3,7,8-TCDD	0.00027	mg/kg	2.9E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-06	1.7E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-06					--
			DERMAL	2,3,7,8-TCDD	0.00027	mg/kg	1.7E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-06	9.8E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-06					--
		EXPOSURE POINT TOTAL									7.E-06					0.E+00
	EXPOSURE MEDIUM TOTAL										7.E-06					0.E+00
SOIL TOTAL											7.E-06					0.E+00
SEDIMENT	SEDIMENT	ALLENDALE POND	INGESTION	2-Methylnaphthalene	0.13608	mg/kg	NC		NC			5.4E-08	mg/kg/day	2.0E-02	mg/kg/day	3.E-06
				Acenaphthylene	0.97	mg/kg	NC		NC			3.8E-07	mg/kg/day	6.0E-02	mg/kg/day	6.E-06
				Benzo(a)anthracene	3.4	mg/kg	2.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(a)pyrene	4	mg/kg	2.7E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	1.6E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(b)fluoranthene	4.4	mg/kg	3.0E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.7E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Benzo(g,h,i)perylene	2	mg/kg	NC		NC			7.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(k)fluoranthene	3.9	mg/kg	2.6E-07	mg/kg/day	7.3E-02	(mg/kg/day)-1	2.E-08	1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				bis(2-Ethylhexyl)phthalate	3.2	mg/kg	2.2E-07	mg/kg/day	1.4E-02	(mg/kg/day)-1	3.E-09	1.3E-06	mg/kg/day	2.0E-02	mg/kg/day	6.E-05
				Dibenzo(a,h)anthracene	2	mg/kg	1.4E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	7.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Indeno(1,2,3-cd)pyrene	3.2	mg/kg	2.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Pentachlorophenol	6.5	mg/kg	4.4E-07	mg/kg/day	1.2E-01	(mg/kg/day)-1	5.E-08	2.6E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				Phenanthrene	4.8	mg/kg	NC		NC			1.9E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				alpha-Chlordane	0.0113	mg/kg	7.7E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-10	4.5E-09	mg/kg/day	5.0E-04	mg/kg/day	9.E-06
				Aroclor-1254	2.4	mg/kg	1.6E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-07	9.5E-07	mg/kg/day	2.0E-05	mg/kg/day	5.E-02
				Aroclor-1260	0.2	mg/kg	1.4E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-08	7.9E-08	mg/kg/day	2.0E-05	mg/kg/day	4.E-03
				Aroclor-1268	0.079	mg/kg	5.4E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-08	3.1E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				delta-BHC	0.0014	mg/kg	NC		NC			5.5E-10	mg/kg/day	3.0E-04	mg/kg/day	2.E-06
				Dieldrin	0.009	mg/kg	6.1E-10	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-08	3.6E-09	mg/kg/day	5.0E-05	mg/kg/day	7.E-05
				Endosulfan II	0.037	mg/kg	NC		NC			1.5E-08	mg/kg/day	6.0E-03	mg/kg/day	2.E-06
				Endosulfan sulfate	0.0027	mg/kg	NC		NC			1.1E-09	mg/kg/day	6.0E-03	mg/kg/day	2.E-07
				Endrin aldehyde	0.0029	mg/kg	NC		NC			1.1E-09	mg/kg/day	3.0E-04	mg/kg/day	4.E-06
				Endrin Ketone	0.0038	mg/kg	NC		NC			1.5E-09	mg/kg/day	3.0E-04	mg/kg/day	5.E-06
				gamma-Chlordane	0.017	mg/kg	1.2E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-10	6.7E-09	mg/kg/day	5.0E-04	mg/kg/day	1.E-05
				Technical Chlordane	0.65	mg/kg	4.4E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	2.6E-07	mg/kg/day	5.0E-04	mg/kg/day	5.E-04
				Antimony	4.8	mg/kg	NC		NC			1.9E-06	mg/kg/day	4.0E-04	mg/kg/day	5.E-03
				Arsenic	5.8	mg/kg	3.9E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	6.E-07	2.3E-06	mg/kg/day	3.0E-04	mg/kg/day	8.E-03
				Cadmium	1.2	mg/kg	NC		NC			4.7E-07	mg/kg/day	1.0E-03	mg/kg/day	5.E-04
				Chromium	238	mg/kg	NC		NC			9.4E-05	mg/kg/day	3.0E-03	mg/kg/day	3.E-02
				Lead	488	mg/kg	3.3E-05	mg/kg/day	--			1.9E-04	mg/kg/day			
				Manganese	531	mg/kg	NC		NC			2.1E-04	mg/kg/day	7.1E-02	mg/kg/day	3.E-03
				Mercury	0.97	mg/kg	NC		NC			3.8E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Nickel	26.7	mg/kg	NC		NC			1.1E-05	mg/kg/day	2.0E-02	mg/kg/day	5.E-04
				Thallium	6.8	mg/kg	NC		NC			2.7E-06	mg/kg/day	8.0E-05	mg/kg/day	3.E-02
				Vanadium	45.9	mg/kg	NC		NC			1.8E-05	mg/kg/day	7.0E-03	mg/kg/day	3.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.0057	mg/kg	3.9E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-05	2.3E-09	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000000112	mg/kg	7.6E-15	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-09	4.4E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-05					1.E-01
			DERMAL	2-Methylnaphthalene	0.13608	mg/kg	NC		NC			1.0E-07	mg/kg/day	2.0E-02	mg/kg/day	5.E-06
				Acenaphthylene	0.97	mg/kg	NC		NC			7.1E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)anthracene	3.4	mg/kg	4.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.5E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				Benzo(a)pyrene	4	mg/kg	5.0E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-06	2.9E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(b)fluoranthene	4.4	mg/kg	5.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	3.2E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(g,h,i)perylene	2	mg/kg	NC		NC			1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(k)fluoranthene	3.9	mg/kg	4.9E-07	mg/kg/day	7.3E-02	(mg/kg/day)-1	4.E-08	2.9E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				bis(2-Ethylhexyl)phthalate	3.2	mg/kg	3.1E-07	mg/kg/day	1.4E-02	(mg/kg/day)-1	4.E-09	1.8E-06	mg/kg/day	2.0E-02	mg/kg/day	9.E-05
				Dibenzo(a,h)anthracene	2	mg/kg	2.5E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Indeno(1,2,3-cd)pyrene	3.2	mg/kg	4.0E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.4E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				Pentachlorophenol	6.5	mg/kg	1.6E-06	mg/kg/day	1.2E-01	(mg/kg/day)-1	2.E-07	9.2E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				Phenanthrene	4.8	mg/kg	NC		NC			3.5E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04

US EPA ARCHIVE DOCUMENT

TABLE F.7.26.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				alpha-Chlordane	0.0113	mg/kg	4.4E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-10	2.6E-09	mg/kg/day	5.0E-04	mg/kg/day	5.E-06
				Aroclor-1254	2.4	mg/kg	3.3E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-07	1.9E-06	mg/kg/day	2.0E-05	mg/kg/day	1.E-01
				Aroclor-1260	0.2	mg/kg	2.7E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-08	1.6E-07	mg/kg/day	2.0E-05	mg/kg/day	8.E-03
				Aroclor-1268	0.079	mg/kg	1.1E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-08	6.3E-08	mg/kg/day	2.0E-05	mg/kg/day	3.E-03
				delta-BHC	0.0014	mg/kg	NC		NC			7.9E-10	mg/kg/day	3.0E-04	mg/kg/day	3.E-06
				Dieldrin	0.009	mg/kg	8.7E-10	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-08	5.1E-09	mg/kg/day	5.0E-05	mg/kg/day	1.E-04
				Endosulfan II	0.037	mg/kg	NC		NC			2.1E-08	mg/kg/day	6.0E-03	mg/kg/day	3.E-06
				Endosulfan sulfate	0.0027	mg/kg	NC		NC			1.5E-09	mg/kg/day	6.0E-03	mg/kg/day	3.E-07
				Endrin aldehyde	0.0029	mg/kg	NC		NC			1.6E-09	mg/kg/day	3.0E-04	mg/kg/day	5.E-06
				Endrin Ketone	0.0038	mg/kg	NC		NC			2.1E-09	mg/kg/day	3.0E-04	mg/kg/day	7.E-06
				gamma-Chlordane	0.017	mg/kg	6.6E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-10	3.8E-09	mg/kg/day	5.0E-04	mg/kg/day	8.E-06
				Technical Chlordane	0.65	mg/kg	2.5E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-09	1.5E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Antimony	4.8	mg/kg	NC		NC					6.0E-05	mg/kg/day	
				Arsenic	5.8	mg/kg	1.7E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-07	9.8E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				Cadmium	1.2	mg/kg	NC		NC			6.8E-09	mg/kg/day	2.5E-05	mg/kg/day	3.E-04
				Chromium	238	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	488	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	531	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Mercury	0.97	mg/kg	NC		NC					2.1E-05	mg/kg/day	
				Nickel	26.7	mg/kg	NC		NC					8.0E-04	mg/kg/day	
				Thallium	6.8	mg/kg	NC		NC					8.0E-05	mg/kg/day	
				Vanadium	45.9	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.0057	mg/kg	1.7E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-05	9.7E-10	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000000112	mg/kg	3.3E-15	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-10	1.9E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-05					1.E-01
		EXPOSURE POINT TOTAL									*1.E-04*					*3.E-01*
	EXPOSURE MEDIUM TOTAL										1.E-04					3.E-01
SEDIMENT TOTAL											1.E-04					3.E-01
SURFACE WATER	SURFACE WATER	ALLENDALE POND	INGESTION	Tetrachloroethene	0.0007	mg/l	9.5E-09	mg/kg/day	5.4E-01	mg/kg/day	5.E-09	5.5E-08	mg/kg/day	1.0E-02	mg/kg/day	6.E-06
				bis(2-Ethylhexyl)phthalate	0.001	mg/l	1.4E-08	mg/kg/day	1.4E-02	mg/kg/day	2.E-10	7.9E-08	mg/kg/day	2.0E-02	mg/kg/day	4.E-06
				Aldrin	0.000011	mg/l	1.5E-10	mg/kg/day	1.7E+01	mg/kg/day	3.E-09	8.7E-10	mg/kg/day	3.0E-05	mg/kg/day	3.E-05
				alpha-Chlordane	0.00000069	mg/l	9.4E-12	mg/kg/day	3.5E-01	mg/kg/day	3.E-12	5.5E-11	mg/kg/day	5.0E-04	mg/kg/day	1.E-07
				Aroclor-1254	0.0006	mg/l	8.1E-09	mg/kg/day	2.0E+00	mg/kg/day	2.E-08	4.7E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				delta-BHC	0.0000096	mg/l	NC		NC			7.6E-10	mg/kg/day	3.0E-04	mg/kg/day	3.E-06
				Endosulfan Sulfate	0.00043	mg/l	NC		NC			3.4E-08	mg/kg/day	6.0E-03	mg/kg/day	6.E-06
				Endrin Aldehyde	0.0000028	mg/l	NC		NC			2.2E-10	mg/kg/day	3.0E-04	mg/kg/day	7.E-07
				gamma-Chlordane	0.000025	mg/l	3.4E-10	mg/kg/day	3.5E-01	mg/kg/day	1.E-10	2.0E-09	mg/kg/day	5.0E-04	mg/kg/day	4.E-06
				Arsenic	0.0044	mg/l	6.0E-08	mg/kg/day	1.5E+00	mg/kg/day	9.E-08	3.5E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Barium	0.044	mg/l	NC		NC			3.5E-06	mg/kg/day	7.0E-02	mg/kg/day	5.E-05
				Chromium	0.018	mg/l	NC		NC			1.4E-06	mg/kg/day	3.0E-03	mg/kg/day	5.E-04
				Lead	0.021	mg/l	2.8E-07	mg/kg/day	--			1.7E-06	mg/kg/day			
				Manganese	0.98	mg/l	NC		NC			7.8E-05	mg/kg/day	2.4E-02	mg/kg/day	3.E-03
				Mercury	0.00000319	mg/l	NC		NC			2.5E-10	mg/kg/day	3.0E-04	mg/kg/day	8.E-07
				Thallium	0.0037	mg/l	NC		NC			2.9E-07	mg/kg/day	8.0E-05	mg/kg/day	4.E-03
				Nitrate	0.773	mg/l	NC		NC			6.1E-05	mg/kg/day	1.6E+00	mg/kg/day	4.E-05
				Nitrite-N	0.139	mg/l	NC		NC			1.1E-05	mg/kg/day	1.0E-01	mg/kg/day	1.E-04
				Toxicity Equivalency (Dioxins/Furans)	0.0000011	mg/l	1.5E-11	mg/kg/day	1.5E+05	mg/kg/day	2.E-06	8.7E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-06					1.E-02
			DERMAL	Tetrachloroethene	0.0007	mg/l	7.8E-07	mg/kg/day	5.4E-01	mg/kg/day	4.E-07	4.5E-06	mg/kg/day	1.0E-02	mg/kg/day	5.E-04
				bis(2-Ethylhexyl)phthalate	0.001	mg/l	2.9E-06	mg/kg/day	1.4E-02	mg/kg/day	4.E-08	1.7E-05	mg/kg/day	2.0E-02	mg/kg/day	8.E-04
				Aldrin	0.000011	mg/l	1.9E-09	mg/kg/day	1.7E+01	mg/kg/day	3.E-08	1.1E-08	mg/kg/day	3.0E-05	mg/kg/day	4.E-04
				alpha-Chlordane	0.00000069	mg/l	2.7E-09	mg/kg/day	3.5E-01	mg/kg/day	9.E-10	1.6E-08	mg/kg/day	5.0E-04	mg/kg/day	3.E-05
				Aroclor-1254	0.0006	mg/l	--		2.0E+00	mg/kg/day		--		2.0E-05	mg/kg/day	
				delta-BHC	0.0000096	mg/l	NC		NC			4.1E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04

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TABLE F.7.26.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	CSF/UNIT RISK VALUE	CSF UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	RfD/RfC (1) VALUE	RfD/RfC UNITS	HAZARD QUOTIENT
				Endosulfan Sulfate	0.00043	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.0000028	mg/l	NC		NC			2.2E-08	mg/kg/day	3.0E-04	mg/kg/day	7.E-05
				gamma-Chlordane	0.000025	mg/l	9.8E-08	mg/kg/day	3.5E-01	mg/kg/day	3.E-08	5.7E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Arsenic	0.0044	mg/l	7.5E-08	mg/kg/day	1.5E+00	mg/kg/day	1.E-07	4.4E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Barium	0.044	mg/l	NC		NC			4.4E-06	mg/kg/day	4.9E-03	mg/kg/day	9.E-04
				Chromium	0.018	mg/l	NC		NC			3.6E-06	mg/kg/day	7.5E-05	mg/kg/day	5.E-02
				Lead	0.021	mg/l	--		--			--				
				Manganese	0.98	mg/l	NC		NC			9.7E-05	mg/kg/day	9.6E-04	mg/kg/day	1.E-01
				Mercury	0.00000319	mg/l	NC		NC			3.2E-10	mg/kg/day	2.1E-05	mg/kg/day	2.E-05
				Thallium	0.0037	mg/l	NC		NC			3.7E-07	mg/kg/day	8.0E-05	mg/kg/day	5.E-03
				Nitrate	0.773	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.139	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.0000011	mg/l	4.2E-08	mg/kg/day	1.5E+05	mg/kg/day	6.E-03	2.5E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-03					2.E-01
		EXPOSURE POINT TOTAL									6.E-03					2.E-01
	EXPOSURE MEDIUM TOTAL										6.E-03					2.E-01
SURFACE WATER TOTAL											6.E-03					2.E-01
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.0013	mg/kg	NC		NC			2.7E-06	mg/kg/day	6.0E-02	mg/kg/day	5.E-05
				Phenanthrene	0.00807	mg/kg	NC		NC			1.7E-05	mg/kg/day	3.0E-02	mg/kg/day	6.E-04
				4,4'-DDD	0.0131	mg/kg	4.7E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-06	2.8E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				4,4'-DDE	0.021	mg/kg	7.6E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-06	4.4E-05	mg/kg/day	5.0E-04	mg/kg/day	9.E-02
				4,4'-DDT	0.00892	mg/kg	3.2E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	1.9E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				alpha-Chlordane	0.0192	mg/kg	6.9E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	4.0E-05	mg/kg/day	5.0E-04	mg/kg/day	8.E-02
				Aroclor-1254	0.88187	mg/kg	3.2E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-04	1.9E-03	mg/kg/day	2.0E-05	mg/kg/day	9.E+01
				Aroclor-1268	0.01504	mg/kg	5.4E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	3.2E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				beta-BHC	0.00062	mg/kg	2.2E-07	mg/kg/day	1.8E+00	(mg/kg/day)-1	4.E-07	1.3E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				Dieldrin	0.00912	mg/kg	3.3E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.E-05	1.9E-05	mg/kg/day	5.0E-05	mg/kg/day	4.E-01
				Endosulfan Sulfate	0.00158	mg/kg	NC		NC			3.3E-06	mg/kg/day	6.0E-03	mg/kg/day	6.E-04
				Endrin Aldehyde	0.001	mg/kg	NC		NC			2.1E-06	mg/kg/day	3.0E-04	mg/kg/day	7.E-03
				gamma-Chlordane	0.00712	mg/kg	2.6E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-07	1.5E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Heptachlor	0.000678	mg/kg	2.4E-07	mg/kg/day	4.5E+00	(mg/kg/day)-1	1.E-06	1.4E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Heptachlor Epoxide	0.0015	mg/kg	5.4E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	5.E-06	3.2E-06	mg/kg/day	1.3E-05	mg/kg/day	2.E-01
				Technical Chlordane	0.2615	mg/kg	9.4E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-05	5.5E-04	mg/kg/day	5.0E-04	mg/kg/day	1.E+00
				Cadmium	0.0971	mg/kg	NC		NC			2.0E-04	mg/kg/day	1.0E-03	mg/kg/day	2.E-01
				Lead	0.58	mg/kg	2.1E-04	mg/kg/day	--			1.2E-03	mg/kg/day			
				Manganese	5.04	mg/kg	NC		NC			1.1E-02	mg/kg/day	1.4E-01	mg/kg/day	8.E-02
				Mercury	0.153	mg/kg	NC		NC			3.2E-04	mg/kg/day	3.0E-04	mg/kg/day	1.E+00
				Mercury (methyl)	0.269	mg/kg	NC		NC			5.7E-04	mg/kg/day	1.0E-04	mg/kg/day	6.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000111	mg/kg	4.0E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-03	2.3E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000042	mg/kg	1.5E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-03	8.8E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								9.E-03					1.0E+02
		EXPOSURE POINT TOTAL									9.E-03					1.0E+02
	EXPOSURE MEDIUM TOTAL										9.E-03					1.0E+02
WHOLE BODY TOTAL											9.E-03					1.0E+02
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		2.E-02	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.0.E+02

NOTES
(1) - Blank cells indicate that an RfD or RfC is not availablable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.27.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.0013	mg/kg	NC		NC			4.4E-06	mg/kg/day	6.0E-02	mg/kg/day	7.E-05
				Phenanthrene	0.00807	mg/kg	NC		NC			2.8E-05	mg/kg/day	3.0E-02	mg/kg/day	9.E-04
				4,4'-DDD	0.0131	mg/kg	3.8E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	9.E-07	4.5E-05	mg/kg/day	5.0E-04	mg/kg/day	9.E-02
				4,4'-DDE	0.021	mg/kg	6.2E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	7.2E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				4,4'-DDT	0.00892	mg/kg	2.6E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	9.E-07	3.1E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				alpha-Chlordane	0.0192	mg/kg	5.6E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	6.6E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Aroclor-1254	0.88187	mg/kg	2.6E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-04	3.0E-03	mg/kg/day	2.0E-05	mg/kg/day	2.E+02
				Aroclor-1268	0.01504	mg/kg	4.4E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-06	5.1E-05	mg/kg/day	2.0E-05	mg/kg/day	3.E+00
				beta-BHC	0.00062	mg/kg	1.8E-07	mg/kg/day	1.8E+00	(mg/kg/day)-1	3.E-07	2.1E-06	mg/kg/day	3.0E-04	mg/kg/day	7.E-03
				Dieldrin	0.00912	mg/kg	2.7E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-05	3.1E-05	mg/kg/day	5.0E-05	mg/kg/day	6.E-01
				Endosulfan Sulfate	0.00158	mg/kg	NC		NC			5.4E-06	mg/kg/day	6.0E-03	mg/kg/day	9.E-04
				Endrin Aldehyde	0.001	mg/kg	NC		NC			3.4E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				gamma-Chlordane	0.00712	mg/kg	2.1E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-07	2.4E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				Heptachlor	0.000678	mg/kg	2.0E-07	mg/kg/day	4.5E+00	(mg/kg/day)-1	9.E-07	2.3E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				Heptachlor Epoxide	0.0015	mg/kg	4.4E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	4.E-06	5.1E-06	mg/kg/day	1.3E-03	mg/kg/day	4.E-01
				Technical Chlordane	0.2615	mg/kg	7.7E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-05	8.9E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E+00
				Cadmium	0.0971	mg/kg	NC		NC			3.3E-04	mg/kg/day	1.0E-03	mg/kg/day	3.E-01
				Lead	0.58	mg/kg	1.7E-04	mg/kg/day	--			2.0E-03	mg/kg/day			
				Manganese	5.04	mg/kg	NC		NC			1.7E-02	mg/kg/day	1.4E-01	mg/kg/day	1.E-01
				Mercury	0.153	mg/kg	NC		NC			5.2E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				Mercury (methyl)	0.269	mg/kg	NC		NC			9.2E-04	mg/kg/day	1.0E-04	mg/kg/day	9.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000111	mg/kg	3.3E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-03	3.8E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000042	mg/kg	1.2E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-03	1.4E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								7.E-03					1.7.E+02
		EXPOSURE POINT TOTAL									7.E-03					1.7.E+02
	EXPOSURE MEDIUM TOTAL										7.E-03					1.7.E+02
WHOLE BODY TOTAL											7.E-03					1.7.E+02
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	7.E-03		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		1.7.E+02

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.2B.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SOIL	SOIL	ALLENDALE POND	INGESTION	2,3,7,8-TCDD	0.00027	mg/kg	8.2E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-05	1.1E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					--
			DERMAL	2,3,7,8-TCDD	0.00027	mg/kg	2.0E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-06	2.6E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-06					--
		EXPOSURE POINT TOTAL									2.E-05					0.E+00
	EXPOSURE MEDIUM TOTAL										2.E-05					0.E+00
SOIL TOTAL											2.E-05					0.E+00
SEDIMENT	SEDIMENT	ALLENDALE POND	INGESTION	2-Methylnaphthalene	0.13608	mg/kg	NC		NC			3.5E-08	mg/kg/day	2.0E-02	mg/kg/day	2.E-06
				Acenaphthylene	0.97	mg/kg	NC		NC			2.5E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				Benzo(a)anthracene	3.4	mg/kg	6.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-07	8.6E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(a)pyrene	4	mg/kg	7.6E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-06	1.0E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(b)fluoranthene	4.4	mg/kg	8.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-07	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(g,h,i)perylene	2	mg/kg	NC		NC			5.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(k)fluoranthene	3.9	mg/kg	7.4E-07	mg/kg/day	7.3E-02	(mg/kg/day)-1	5.E-08	9.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				bis(2-Ethylhexyl)phthalate	3.2	mg/kg	6.0E-07	mg/kg/day	1.4E-02	(mg/kg/day)-1	8.E-09	8.1E-07	mg/kg/day	2.0E-02	mg/kg/day	4.E-05
				Dibenzo(a,h)anthracene	2	mg/kg	3.8E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	5.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Indeno(1,2,3-cd)pyrene	3.2	mg/kg	6.0E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	8.1E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Pentachlorophenol	6.5	mg/kg	1.2E-06	mg/kg/day	1.2E-01	(mg/kg/day)-1	1.E-07	1.7E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Phenanthrene	4.8	mg/kg	NC		NC			1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				alpha-Chlordane	0.013	mg/kg	2.1E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-10	2.9E-09	mg/kg/day	5.0E-04	mg/kg/day	6.E-06
				Aroclor-1254	2.4	mg/kg	4.5E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-07	6.1E-07	mg/kg/day	2.0E-05	mg/kg/day	3.E-02
				Aroclor-1260	0.2	mg/kg	3.8E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-08	5.1E-08	mg/kg/day	2.0E-05	mg/kg/day	3.E-03
				Aroclor-1268	0.079	mg/kg	1.5E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-08	2.0E-08	mg/kg/day	2.0E-05	mg/kg/day	1.E-03
				delta-BHC	0.0014	mg/kg	NC		NC			3.6E-10	mg/kg/day	3.0E-04	mg/kg/day	1.E-06
				Dieldrin	0.009	mg/kg	1.7E-09	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.E-08	2.3E-09	mg/kg/day	5.0E-05	mg/kg/day	5.E-05
				Endosulfan II	0.037	mg/kg	NC		NC			9.4E-09	mg/kg/day	6.0E-03	mg/kg/day	2.E-06
				Endosulfan sulfate	0.0027	mg/kg	NC		NC			6.9E-10	mg/kg/day	6.0E-03	mg/kg/day	1.E-07
				Endrin aldehyde	0.0029	mg/kg	NC		NC			7.4E-10	mg/kg/day	3.0E-04	mg/kg/day	2.E-06
				Endrin Ketone	0.0038	mg/kg	NC		NC			9.7E-10	mg/kg/day	3.0E-04	mg/kg/day	3.E-06
				gamma-Chlordane	0.017	mg/kg	3.2E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-09	4.3E-09	mg/kg/day	5.0E-04	mg/kg/day	9.E-06
				Technical Chlordane	0.65	mg/kg	1.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-08	1.7E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Antimony	4.8	mg/kg	NC		NC			1.2E-06	mg/kg/day	4.0E-04	mg/kg/day	3.E-03
				Arsenic	5.8	mg/kg	1.1E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-06	1.5E-06	mg/kg/day	3.0E-04	mg/kg/day	5.E-03
				Cadmium	1.2	mg/kg	NC		NC			3.1E-07	mg/kg/day	1.0E-03	mg/kg/day	3.E-04
				Chromium	238	mg/kg	NC		NC			6.1E-05	mg/kg/day	3.0E-03	mg/kg/day	2.E-02
				Lead	488	mg/kg	9.2E-05	mg/kg/day	--			1.2E-04	mg/kg/day			
				Manganese	531	mg/kg	NC		NC			1.4E-04	mg/kg/day	7.1E-02	mg/kg/day	2.E-03
				Mercury	0.97	mg/kg	NC		NC			2.5E-07	mg/kg/day	3.0E-04	mg/kg/day	8.E-04
				Nickel	26.7	mg/kg	NC		NC			6.8E-06	mg/kg/day	2.0E-02	mg/kg/day	3.E-04
				Thallium	6.8	mg/kg	NC		NC			1.7E-06	mg/kg/day	8.0E-05	mg/kg/day	2.E-02
				Vanadium	45.9	mg/kg	NC		NC			1.2E-05	mg/kg/day	7.0E-03	mg/kg/day	2.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.0057	mg/kg	1.1E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	1.5E-09	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000000112	mg/kg	2.1E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-09	2.8E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-04					9.E-02
			DERMAL	2-Methylnaphthalene	0.13608	mg/kg	NC		NC			3.1E-08	mg/kg/day	2.0E-02	mg/kg/day	2.E-06
				Acenaphthylene	0.97	mg/kg	NC		NC			2.2E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				Benzo(a)anthracene	3.4	mg/kg	5.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	7.7E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(a)pyrene	4	mg/kg	6.7E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-06	9.0E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(b)fluoranthene	4.4	mg/kg	7.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-07	9.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(g,h,i)perylene	2	mg/kg	NC		NC			4.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(k)fluoranthene	3.9	mg/kg	6.5E-07	mg/kg/day	7.3E-02	(mg/kg/day)-1	5.E-08	8.8E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				bis(2-Ethylhexyl)phthalate	3.2	mg/kg	4.1E-07	mg/kg/day	1.4E-02	(mg/kg/day)-1	6.E-09	5.5E-07	mg/kg/day	2.0E-02	mg/kg/day	3.E-05
				Dibenzo(a,h)anthracene	2	mg/kg	3.3E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	4.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Indeno(1,2,3-cd)pyrene	3.2	mg/kg	5.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	7.2E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Pentachlorophenol	6.5	mg/kg	2.1E-06	mg/kg/day	1.2E-01	(mg/kg/day)-1	3.E-07	2.8E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				Phenanthrene	4.8	mg/kg	NC		NC			1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05

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TABLE F.7.28.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
				alpha-Chlordane	0.0113	mg/kg	5.8E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-10	7.8E-10	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Aroclor-1254	2.4	mg/kg	4.3E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-07	5.8E-07	mg/kg/day	2.0E-05	mg/kg/day	3.E-02
				Aroclor-1260	0.2	mg/kg	3.6E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-08	4.8E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				Aroclor-1268	0.079	mg/kg	1.4E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-08	1.9E-08	mg/kg/day	2.0E-05	mg/kg/day	1.E-03
				delta-BHC	0.0014	mg/kg	NC		NC			2.4E-10	mg/kg/day	3.0E-04	mg/kg/day	8.E-07
				Dieldrin	0.009	mg/kg	1.2E-09	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-08	1.6E-09	mg/kg/day	5.0E-05	mg/kg/day	3.E-05
				Endosulfan II	0.037	mg/kg	NC		NC			6.4E-09	mg/kg/day	6.0E-03	mg/kg/day	1.E-06
				Endosulfan sulfate	0.0027	mg/kg	NC		NC			4.7E-10	mg/kg/day	6.0E-03	mg/kg/day	8.E-08
				Endrin aldehyde	0.0029	mg/kg	NC		NC			5.0E-10	mg/kg/day	3.0E-04	mg/kg/day	2.E-06
				Endrin Ketone	0.0038	mg/kg	NC		NC			6.6E-10	mg/kg/day	3.0E-04	mg/kg/day	2.E-06
				gamma-Chlordane	0.017	mg/kg	8.7E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-10	1.2E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Technical Chlordane	0.65	mg/kg	3.3E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	4.5E-08	mg/kg/day	5.0E-04	mg/kg/day	9.E-05
				Antimony	4.8	mg/kg	NC		NC					6.0E-05	mg/kg/day	
				Arsenic	5.8	mg/kg	2.2E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-07	3.0E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Cadmium	1.2	mg/kg	NC		NC			2.1E-09	mg/kg/day	2.5E-05	mg/kg/day	8.E-05
				Chromium	238	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	488	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	531	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Mercury	0.97	mg/kg	NC		NC					2.1E-05	mg/kg/day	
				Nickel	26.7	mg/kg	NC		NC					8.0E-04	mg/kg/day	
				Thallium	6.8	mg/kg	NC		NC					8.0E-05	mg/kg/day	
				Vanadium	45.9	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.0057	mg/kg	2.2E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-05	3.0E-10	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000009112	mg/kg	4.3E-15	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-10	5.8E-15	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-05					3.E-02
		EXPOSURE POINT TOTAL									2.E-04					1.E-01
	EXPOSURE MEDIUM TOTAL										2.E-04					1.E-01
SEDIMENT TOTAL											2.E-04					1.E-01
SURFACE WATER	SURFACE WATER	ALLENDALE POND	INGESTION	Tetrachloroethene	0.0007	mg/l	2.6E-08	mg/kg/day	5.4E-01	mg/kg/day	1.E-08	3.6E-08	mg/kg/day	1.0E-02	mg/kg/day	4.E-06
				bis(2-Ethylhexyl)phthalate	0.001	mg/l	3.8E-08	mg/kg/day	1.4E-02	mg/kg/day	5.E-10	5.1E-08	mg/kg/day	2.0E-02	mg/kg/day	3.E-06
				Aldrin	0.000011	mg/l	4.2E-10	mg/kg/day	1.7E+01	mg/kg/day	7.E-09	5.6E-10	mg/kg/day	3.0E-05	mg/kg/day	2.E-05
				alpha-Chlordane	0.00000069	mg/l	2.6E-11	mg/kg/day	3.5E-01	mg/kg/day	9.E-12	3.5E-11	mg/kg/day	5.0E-04	mg/kg/day	7.E-08
				Aroclor-1254	0.0006	mg/l	2.3E-08	mg/kg/day	2.0E+00	mg/kg/day	5.E-08	3.1E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				delta-BHC	0.0000096	mg/l	NC		NC			4.9E-10	mg/kg/day	3.0E-04	mg/kg/day	2.E-06
				Endosulfan Sulfate	0.00043	mg/l	NC		NC			2.2E-08	mg/kg/day	6.0E-03	mg/kg/day	4.E-06
				Endrin Aldehyde	0.0000028	mg/l	NC		NC			1.4E-10	mg/kg/day	3.0E-04	mg/kg/day	5.E-07
				gamma-Chlordane	0.000025	mg/l	9.4E-10	mg/kg/day	3.5E-01	mg/kg/day	3.E-10	1.3E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Arsenic	0.0044	mg/l	1.7E-07	mg/kg/day	1.5E+00	mg/kg/day	2.E-07	2.2E-07	mg/kg/day	3.0E-04	mg/kg/day	7.E-04
				Barium	0.044	mg/l	NC		NC			2.2E-06	mg/kg/day	7.0E-02	mg/kg/day	3.E-05
				Chromium	0.018	mg/l	NC		NC			9.2E-07	mg/kg/day	3.0E-03	mg/kg/day	3.E-04
				Lead	0.021	mg/l	7.9E-07	mg/kg/day	--			1.1E-06	mg/kg/day			
				Manganese	0.98	mg/l	NC		NC			5.0E-05	mg/kg/day	2.4E-02	mg/kg/day	2.E-03
				Mercury	0.00000319	mg/l	NC		NC			1.6E-10	mg/kg/day	3.0E-04	mg/kg/day	5.E-07
				Thallium	0.0037	mg/l	NC		NC			1.9E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Nitrate	0.773	mg/l	NC		NC			3.9E-05	mg/kg/day	1.6E+00	mg/kg/day	2.E-05
				Nitrite-N	0.139	mg/l	NC		NC			7.1E-06	mg/kg/day	1.0E-01	mg/kg/day	7.E-05
				Toxicity Equivalency (Dioxins/Furans)	0.000011	mg/l	4.2E-11	mg/kg/day	1.5E+05	mg/kg/day	6.E-06	5.6E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								7.E-06					7.E-03
			DERMAL	Tetrachloroethene	0.0007	mg/l	3.0E-06	mg/kg/day	5.4E-01	mg/kg/day	2.E-06	4.1E-06	mg/kg/day	1.0E-02	mg/kg/day	4.E-04
				bis(2-Ethylhexyl)phthalate	0.001	mg/l	1.1E-05	mg/kg/day	1.4E-02	mg/kg/day	2.E-07	1.5E-05	mg/kg/day	2.0E-02	mg/kg/day	8.E-04
				Aldrin	0.000011	mg/l	7.2E-09	mg/kg/day	1.7E+01	mg/kg/day	1.E-07	9.7E-09	mg/kg/day	3.0E-05	mg/kg/day	3.E-04
				alpha-Chlordane	0.00000069	mg/l	1.0E-08	mg/kg/day	3.5E-01	mg/kg/day	4.E-09	1.4E-08	mg/kg/day	5.0E-04	mg/kg/day	3.E-05
				Aroclor-1254	0.0006	mg/l	--		2.0E+00	mg/kg/day		--		2.0E-05	mg/kg/day	
				delta-BHC	0.0000096	mg/l	NC		NC			3.7E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				Endosulfan Sulfate	0.00043	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.0000028	mg/l	NC		NC			1.9E-08	mg/kg/day	3.0E-04	mg/kg/day	6.E-05
				gamma-Chlordane	0.000025	mg/l	3.8E-07	mg/kg/day	3.5E-01	mg/kg/day	1.E-07	5.1E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Arsenic	0.0044	mg/l	2.9E-07	mg/kg/day	1.5E+00	mg/kg/day	4.E-07	3.9E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Barium	0.044	mg/l	NC		NC			3.9E-06	mg/kg/day	4.9E-03	mg/kg/day	8.E-04

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TABLE F.7.28.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	R/D/R/C (1) VALUE	R/D/R/C (1) UNITS	HAZARD QUOTIENT
				Chromium	0.018	mg/l	NC		NC			3.2E-06	mg/kg/day	7.5E-05	mg/kg/day	4.E-02
				Lead	0.021	mg/l	--		--			--				
				Manganese	0.98	mg/l	NC		NC			8.7E-05	mg/kg/day	9.6E-04	mg/kg/day	9.E-02
				Mercury	0.00000319	mg/l	NC		NC			2.8E-10	mg/kg/day	2.1E-05	mg/kg/day	1.E-05
				Thallium	0.0037	mg/l	NC		NC			3.3E-07	mg/kg/day	8.0E-05	mg/kg/day	4.E-03
				Nitrate	0.773	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.139	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.0000011	mg/l	1.6E-07	mg/kg/day	1.5E+05	mg/kg/day	2.E-02	2.2E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-02					1.E-01
		EXPOSURE POINT TOTAL									2.E-02					1.E-01
	EXPOSURE MEDIUM TOTAL										2.E-02					1.E-01
SURFACE WATER TOTAL											2.E-02					1.E-01
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.00268	mg/kg	NC		NC			5.4E-06	mg/kg/day	6.0E-02	mg/kg/day	9.E-05
				Benzo(a)anthracene	0.0022	mg/kg	3.3E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-06	4.5E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(a)pyrene	0.0024	mg/kg	3.6E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-05	4.9E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(b)fluoranthene	0.0025	mg/kg	3.8E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-06	5.1E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(g,h,i)perylene	0.000632	mg/kg	NC		NC			1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Dibenzo(a,h)anthracene	0.0004	mg/kg	6.0E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-06	8.1E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Indeno(1,2,3-cd)pyrene	0.00079	mg/kg	1.2E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-07	1.6E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Phenanthrene	0.0114	mg/kg	NC		NC			2.3E-05	mg/kg/day	3.0E-02	mg/kg/day	8.E-04
				4,4'-DDD	0.0126	mg/kg	1.9E-05	mg/kg/day	2.4E-01	(mg/kg/day)-1	5.E-06	2.6E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				4,4'-DDE	0.02869	mg/kg	4.3E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-05	5.8E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				4,4'-DDT	0.00686	mg/kg	1.0E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-06	1.4E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				alpha-Chlordane	0.0236	mg/kg	3.6E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	4.8E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Aroclor-1254	2.8888	mg/kg	4.4E-03	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-03	5.9E-03	mg/kg/day	2.0E-05	mg/kg/day	3.E+02
				Aroclor-1268	0.03843	mg/kg	5.8E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-04	7.8E-05	mg/kg/day	2.0E-05	mg/kg/day	4.E+00
				Dieldrin	0.00866	mg/kg	1.3E-05	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-04	1.8E-05	mg/kg/day	5.0E-05	mg/kg/day	4.E-01
				gamma-Chlordane	0.0089	mg/kg	1.3E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-06	1.8E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				Heptachlor Epoxide	0.0007	mg/kg	1.1E-06	mg/kg/day	9.1E+00	(mg/kg/day)-1	1.E-05	1.4E-06	mg/kg/day	1.3E-05	mg/kg/day	1.E-01
				Technical Chlordane	0.674	mg/kg	1.0E-03	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-04	1.4E-03	mg/kg/day	5.0E-04	mg/kg/day	3.E+00
				Chromium	0.112	mg/kg	NC		NC			2.3E-04	mg/kg/day	3.0E-03	mg/kg/day	8.E-02
				Lead	0.349	mg/kg	5.3E-04	mg/kg/day	--			7.1E-04	mg/kg/day			
				Mercury	0.136	mg/kg	NC		NC			2.8E-04	mg/kg/day	3.0E-04	mg/kg/day	9.E-01
				Mercury (methyl)	0.147	mg/kg	NC		NC			3.0E-04	mg/kg/day	1.0E-04	mg/kg/day	3.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000492	mg/kg	7.4E-07	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-01	1.0E-06	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000215	mg/kg	3.2E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-03	4.4E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-01					3.0.E+02
		EXPOSURE POINT TOTAL									1.E-01					3.0.E+02
	EXPOSURE MEDIUM TOTAL										1.E-01					3.0.E+02
WHOLE BODY TOTAL											1.E-01					3.0.E+02
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											2.E-01					3.0.E+02

NOTES:
(1) - Blank cells indicate that an R/D or R/C is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TABLE F.7.29.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	ALLENDALE POND	INGESTION	2,3,7,8-TCDD	0.00027	mg/kg	2.9E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-06	1.7E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-06					--
			DERMAL	2,3,7,8-TCDD	0.00027	mg/kg	1.7E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-06	9.8E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-06					--
		EXPOSURE POINT TOTAL									7.E-06					0.E+00
	EXPOSURE MEDIUM TOTAL										7.E-06					0.E+00
SOIL TOTAL											7.E-06					0.E+00
SEDIMENT	SEDIMENT	ALLENDALE POND	INGESTION	2-Methylnaphthalene	0.13608	mg/kg	NC		NC			5.4E-08	mg/kg/day	2.0E-02	mg/kg/day	3.E-06
				Acenaphthylene	0.97	mg/kg	NC		NC			3.8E-07	mg/kg/day	6.0E-02	mg/kg/day	6.E-06
				Benzo(a)anthracene	3.4	mg/kg	2.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(a)pyrene	4	mg/kg	2.7E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	1.6E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(b)fluoranthene	4.4	mg/kg	3.0E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.7E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Benzo(g,h,i)perylene	2	mg/kg	NC		NC			7.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(k)fluoranthene	3.9	mg/kg	2.6E-07	mg/kg/day	7.3E-02	(mg/kg/day)-1	2.E-08	1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				bis(2-Ethylhexyl)phthalate	3.2	mg/kg	2.2E-07	mg/kg/day	1.4E-02	(mg/kg/day)-1	3.E-09	1.3E-06	mg/kg/day	2.0E-02	mg/kg/day	6.E-05
				Dibenzo(a,h)anthracene	2	mg/kg	1.4E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	7.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Indeno(1,2,3-cd)pyrene	3.2	mg/kg	2.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Pentachlorophenol	6.5	mg/kg	4.4E-07	mg/kg/day	1.2E-01	(mg/kg/day)-1	5.E-08	2.6E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				Phenanthrene	4.8	mg/kg	NC		NC			1.9E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				alpha-Chlordane	0.0113	mg/kg	7.7E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-10	4.5E-09	mg/kg/day	5.0E-04	mg/kg/day	9.E-06
				Aroclor-1254	2.4	mg/kg	1.6E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-07	9.5E-07	mg/kg/day	2.0E-05	mg/kg/day	5.E-02
				Aroclor-1260	0.2	mg/kg	1.4E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-08	7.9E-08	mg/kg/day	2.0E-05	mg/kg/day	4.E-03
				Aroclor-1268	0.079	mg/kg	5.4E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-08	3.1E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				delta-BHC	0.0014	mg/kg	NC		NC			5.5E-10	mg/kg/day	3.0E-04	mg/kg/day	2.E-06
				Dieldrin	0.009	mg/kg	6.1E-10	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-08	3.6E-09	mg/kg/day	5.0E-05	mg/kg/day	7.E-05
				Endosulfan II	0.037	mg/kg	NC		NC			1.5E-08	mg/kg/day	6.0E-03	mg/kg/day	2.E-06
				Endosulfan sulfate	0.0027	mg/kg	NC		NC			1.1E-09	mg/kg/day	6.0E-03	mg/kg/day	2.E-07
				Endrin aldehyde	0.0029	mg/kg	NC		NC			1.1E-09	mg/kg/day	3.0E-04	mg/kg/day	4.E-06
				Endrin Ketone	0.0038	mg/kg	NC		NC			1.5E-09	mg/kg/day	3.0E-04	mg/kg/day	5.E-06
				gamma-Chlordane	0.017	mg/kg	1.2E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-10	6.7E-09	mg/kg/day	5.0E-04	mg/kg/day	1.E-05
				Technical Chlordane	0.65	mg/kg	4.4E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	2.6E-07	mg/kg/day	5.0E-04	mg/kg/day	5.E-04
				Antimony	4.8	mg/kg	NC		NC			1.9E-06	mg/kg/day	4.0E-04	mg/kg/day	5.E-03
				Arsenic	5.8	mg/kg	3.9E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	6.E-07	2.3E-06	mg/kg/day	3.0E-04	mg/kg/day	8.E-03
				Cadmium	1.2	mg/kg	NC		NC			4.7E-07	mg/kg/day	1.0E-03	mg/kg/day	5.E-04
				Chromium	238	mg/kg	NC		NC			9.4E-05	mg/kg/day	3.0E-03	mg/kg/day	3.E-02
				Lead	458	mg/kg	3.3E-05	mg/kg/day	--			1.9E-04	mg/kg/day			
				Manganese	531	mg/kg	NC		NC			2.1E-04	mg/kg/day	7.1E-02	mg/kg/day	3.E-03
				Mercury	0.97	mg/kg	NC		NC			3.8E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Nickel	26.7	mg/kg	NC		NC			1.1E-05	mg/kg/day	2.0E-02	mg/kg/day	5.E-04
				Thallium	6.8	mg/kg	NC		NC			2.7E-06	mg/kg/day	8.0E-05	mg/kg/day	3.E-02
				Vanadium	45.9	mg/kg	NC		NC			1.8E-05	mg/kg/day	7.0E-03	mg/kg/day	3.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.0057	mg/kg	3.9E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-05	2.3E-09	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000001112	mg/kg	7.6E-15	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-09	4.4E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-05					1.E-01
			DERMAL	2-Methylnaphthalene	0.13608	mg/kg	NC		NC			1.0E-07	mg/kg/day	2.0E-02	mg/kg/day	5.E-06
				Acenaphthylene	0.97	mg/kg	NC		NC			7.1E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)anthracene	3.4	mg/kg	4.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.5E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				Benzo(a)pyrene	4	mg/kg	5.0E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-06	2.9E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(b)fluoranthene	4.4	mg/kg	5.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	3.2E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(g,h,i)perylene	2	mg/kg	NC		NC			1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(k)fluoranthene	3.9	mg/kg	4.9E-07	mg/kg/day	7.3E-02	(mg/kg/day)-1	4.E-08	2.9E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				bis(2-Ethylhexyl)phthalate	3.2	mg/kg	3.1E-07	mg/kg/day	1.4E-02	(mg/kg/day)-1	4.E-09	1.8E-06	mg/kg/day	2.0E-02	mg/kg/day	9.E-05
				Dibenzo(a,h)anthracene	2	mg/kg	2.5E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Indeno(1,2,3-cd)pyrene	3.2	mg/kg	4.0E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.4E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				Pentachlorophenol	6.5	mg/kg	1.6E-06	mg/kg/day	1.2E-01	(mg/kg/day)-1	2.E-07	9.2E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				Phenanthrene	4.8	mg/kg	NC		NC			3.5E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04

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TABLE F.7.29.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	CSF/UNIT RISK VALUE	CSF UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	RfD/RfC (1) VALUE	RfD/RfC UNITS	HAZARD QUOTIENT
				alpha-Chlordane	0.0113	mg/kg	4.4E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-10	2.6E-09	mg/kg/day	5.0E-04	mg/kg/day	5.E-06
				Aroclor-1254	2.4	mg/kg	3.3E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-07	1.9E-06	mg/kg/day	2.0E-05	mg/kg/day	1.E-01
				Aroclor-1260	0.2	mg/kg	2.7E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-08	1.6E-07	mg/kg/day	2.0E-05	mg/kg/day	8.E-03
				Aroclor-1268	0.079	mg/kg	1.1E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-08	6.3E-08	mg/kg/day	2.0E-05	mg/kg/day	3.E-03
				delta-BHC	0.0014	mg/kg	NC		NC			7.9E-10	mg/kg/day	3.0E-04	mg/kg/day	3.E-06
				Dieldrin	0.009	mg/kg	8.7E-10	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-08	5.1E-09	mg/kg/day	5.0E-05	mg/kg/day	1.E-04
				Endosulfan II	0.037	mg/kg	NC		NC			2.1E-08	mg/kg/day	6.0E-03	mg/kg/day	3.E-06
				Endosulfan sulfate	0.0027	mg/kg	NC		NC			1.5E-09	mg/kg/day	6.0E-03	mg/kg/day	3.E-07
				Endrin aldehyde	0.0029	mg/kg	NC		NC			1.6E-09	mg/kg/day	3.0E-04	mg/kg/day	5.E-06
				Endrin Ketone	0.0038	mg/kg	NC		NC			2.1E-09	mg/kg/day	3.0E-04	mg/kg/day	7.E-06
				gamma-Chlordane	0.017	mg/kg	6.6E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-10	3.8E-09	mg/kg/day	5.0E-04	mg/kg/day	8.E-06
				Technical Chlordane	0.65	mg/kg	2.5E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-09	1.5E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Antimony	4.8	mg/kg	NC		NC					6.0E-05	mg/kg/day	
				Arsenic	5.8	mg/kg	1.7E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-07	9.8E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				Cadmium	1.2	mg/kg	NC		NC			6.8E-09	mg/kg/day	2.5E-05	mg/kg/day	3.E-04
				Chromium	238	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	488	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	531	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Mercury	0.97	mg/kg	NC		NC					2.1E-05	mg/kg/day	
				Nickel	26.7	mg/kg	NC		NC					8.0E-04	mg/kg/day	
				Thallium	6.8	mg/kg	NC		NC					8.0E-05	mg/kg/day	
				Vanadium	45.9	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.0057	mg/kg	1.7E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-05	9.7E-10	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000000112	mg/kg	3.3E-15	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-10	1.9E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-05					1.E-01
		EXPOSURE POINT TOTAL									4.E-04					3.E-01
	EXPOSURE MEDIUM TOTAL										1.E-04					3.E-01
SEDIMENT TOTAL											1.E-04					3.E-01
SURFACE WATER	SURFACE WATER	ALLENDALE POND	INGESTION	Tetrachloroethene	0.0007	mg/l	9.5E-09	mg/kg/day	5.4E-01	mg/kg/day	5.E-09	5.5E-08	mg/kg/day	1.0E-02	mg/kg/day	6.E-06
				bis(2-Ethylhexyl)phthalate	0.001	mg/l	1.4E-08	mg/kg/day	1.4E-02	mg/kg/day	2.E-10	7.9E-08	mg/kg/day	2.0E-02	mg/kg/day	4.E-06
				Aldrin	0.000011	mg/l	1.5E-10	mg/kg/day	1.7E+01	mg/kg/day	3.E-09	8.7E-10	mg/kg/day	3.0E-03	mg/kg/day	3.E-05
				alpha-Chlordane	0.00000069	mg/l	9.4E-12	mg/kg/day	3.5E-01	mg/kg/day	3.E-12	5.5E-11	mg/kg/day	5.0E-04	mg/kg/day	1.E-07
				Aroclor-1254	0.0006	mg/l	8.1E-09	mg/kg/day	2.0E+00	mg/kg/day	2.E-08	4.7E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				delta-BHC	0.0000096	mg/l	NC		NC			7.6E-10	mg/kg/day	3.0E-04	mg/kg/day	3.E-06
				Endosulfan Sulfate	0.00043	mg/l	NC		NC			3.4E-08	mg/kg/day	6.0E-03	mg/kg/day	6.E-06
				Endrin Aldehyde	0.0000028	mg/l	NC		NC			2.2E-10	mg/kg/day	3.0E-04	mg/kg/day	7.E-07
				gamma-Chlordane	0.000025	mg/l	3.4E-10	mg/kg/day	3.5E-01	mg/kg/day	1.E-10	2.0E-09	mg/kg/day	5.0E-04	mg/kg/day	4.E-06
				Arsenic	0.0044	mg/l	6.0E-08	mg/kg/day	1.5E+00	mg/kg/day	9.E-08	3.5E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Barium	0.044	mg/l	NC		NC			3.5E-06	mg/kg/day	7.0E-02	mg/kg/day	5.E-05
				Chromium	0.018	mg/l	NC		NC			1.4E-06	mg/kg/day	3.0E-03	mg/kg/day	5.E-04
				Lead	0.021	mg/l	2.8E-07	mg/kg/day	--			1.7E-06	mg/kg/day			
				Manganese	0.98	mg/l	NC		NC			7.8E-05	mg/kg/day	2.4E-02	mg/kg/day	3.E-03
				Mercury	0.00000319	mg/l	NC		NC			2.5E-10	mg/kg/day	3.0E-04	mg/kg/day	8.E-07
				Thallium	0.0037	mg/l	NC		NC			2.9E-07	mg/kg/day	8.0E-05	mg/kg/day	4.E-03
				Nitrate	0.773	mg/l	NC		NC			6.1E-05	mg/kg/day	1.6E+00	mg/kg/day	4.E-05
				Nitrite-N	0.139	mg/l	NC		NC			1.1E-05	mg/kg/day	1.0E-01	mg/kg/day	1.E-04
				Toxicity Equivalency (Dioxins/Furans)	0.0000011	*mg/l*	1.5E-11	*mg/kg/day*	1.5E+05	*mg/kg/day*	2.E-06	8.7E-11	*mg/kg/day*			
			EXPOSURE ROUTE TOTAL								2.E-06					1.E-02
			DERMAL	Tetrachloroethene	0.0007	mg/l	7.8E-07	mg/kg/day	5.4E-01	mg/kg/day	4.E-07	4.5E-06	mg/kg/day	1.0E-02	mg/kg/day	5.E-04
				bis(2-Ethylhexyl)phthalate	0.001	mg/l	2.9E-06	mg/kg/day	1.4E-02	mg/kg/day	4.E-08	1.7E-05	mg/kg/day	2.0E-02	mg/kg/day	8.E-04
				Aldrin	0.000011	mg/l	1.9E-09	mg/kg/day	1.7E+01	mg/kg/day	3.E-08	1.1E-08	mg/kg/day	3.0E-05	mg/kg/day	4.E-04
				alpha-Chlordane	0.00000069	*mg/l*	2.7E-09	*mg/kg/day*	3.5E-01	mg/kg/day	9.E-10	1.6E-08	mg/kg/day	5.0E-04	mg/kg/day	3.E-05
				Aroclor-1254	0.0006	mg/l	--		2.0E+00	mg/kg/day		--		2.0E-05	mg/kg/day	
				delta-BHC	0.0000096	mg/l	NC		NC			4.1E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				Endosulfan Sulfate	0.00043	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.0000028	mg/l	NC		NC			2.2E-08	mg/kg/day	3.0E-04	mg/kg/day	7.E-05
				gamma-Chlordane	0.000025	mg/l	9.8E-08	mg/kg/day	3.5E-01	mg/kg/day	3.E-08	5.7E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Arsenic	0.0044	mg/l	7.5E-08	mg/kg/day	1.5E+00	mg/kg/day	1.E-07	4.4E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Barium	0.044	mg/l	NC		NC			4.4E-06	mg/kg/day	4.9E-03	mg/kg/day	9.E-04

US EPA ARCHIVE DOCUMENT

TABLE F.7.29.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	CSF/UNIT RISK VALUE	CSF UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	RfD/RfC (1) VALUE	RfD/RfC UNITS	HAZARD QUOTIENT
				Chromium	0.018	mg/l	NC		NC			3.6E-06	mg/kg/day	7.5E-05	mg/kg/day	5 E-02
				Lead	0.021	mg/l	--		--			--				
				Manganese	0.98	mg/l	NC		NC			9.7E-05	mg/kg/day	9.6E-04	mg/kg/day	1.E-01
				Mercury	0.00000319	mg/l	NC		NC			3.2E-10	mg/kg/day	2.1E-05	mg/kg/day	2 E-05
				Thallium	0.0037	mg/l	NC		NC			3.7E-07	mg/kg/day	8.0E-05	mg/kg/day	5 E-03
				Nitrate	0.773	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.139	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.0000011	mg/l	4.2E-08	mg/kg/day	1.5E+05	mg/kg/day	6.E-03	2.5E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-03					2.E-01
		EXPOSURE POINT TOTAL									6.E-03					2.E-01
	EXPOSURE MEDIUM TOTAL										6.E-03					2.E-01
SURFACE WATER TOTAL											6.E-03					2.E-01
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.00268	mg/kg	NC		NC			5.6E-06	mg/kg/day	6.0E-02	mg/kg/day	9 E-05
				Benzo(a)anthracene	0.0022	mg/kg	7.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-07	4.6E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(a)pyrene	0.0024	mg/kg	8.6E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-06	5.0E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(b)fluoranthene	0.0025	mg/kg	9.0E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-07	5.3E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(g,h,i)perylene	0.000632	mg/kg	NC		NC			1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Dibenzo(a,h)anthracene	0.0004	mg/kg	1.4E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	8.4E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Indeno(1,2,3-cd)pyrene	0.00079	mg/kg	2.8E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.7E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Phenanthrene	0.0114	mg/kg	NC		NC			2.4E-05	mg/kg/day	3.0E-02	mg/kg/day	8.E-04
				4,4'-DDD	0.0126	mg/kg	4.5E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-06	2.6E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				4,4'-DDE	0.02869	mg/kg	1.0E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-06	6.0E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				4,4'-DDT	0.00686	mg/kg	2.5E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	8.E-07	1.4E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				alpha-Chlordane	0.0236	mg/kg	8.5E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-06	5.0E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Aroclor-1254	2.8888	mg/kg	1.0E-03	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-03	6.1E-03	mg/kg/day	2.0E-05	mg/kg/day	3 E+02
				Aroclor-1268	0.03843	mg/kg	1.4E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-05	8.1E-05	mg/kg/day	2.0E-05	mg/kg/day	4.E+00
				Dieldrin	0.00866	mg/kg	3.1E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.E-05	1.8E-05	mg/kg/day	5.0E-05	mg/kg/day	4.E-01
				gamma-Chlordane	0.0089	mg/kg	3.2E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	1.9E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				Heptachlor Epoxide	0.0007	mg/kg	2.5E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-06	1.5E-06	mg/kg/day	1.3E-05	mg/kg/day	1.E-01
				Technical Chlordane	0.674	mg/kg	2.4E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-05	1.4E-03	mg/kg/day	5.0E-04	mg/kg/day	3.E+00
				Chromium	0.112	mg/kg	NC		NC			2.4E-04	mg/kg/day	3.0E-03	mg/kg/day	8.E-02
				Lead	0.349	mg/kg	1.3E-04	mg/kg/day	--			7.3E-04	mg/kg/day			
				Mercury	0.136	mg/kg	NC		NC			2.9E-04	mg/kg/day	3.0E-04	mg/kg/day	1.E+00
				Mercury (methyl)	0.147	mg/kg	NC		NC			3.1E-04	mg/kg/day	1.0E-04	mg/kg/day	3 E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000492	mg/kg	1.8E-07	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-02	1.0E-06	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000215	mg/kg	7.7E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-03	4.5E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-02					3.2.E+02
		EXPOSURE POINT TOTAL									3.E-02					3.2.E+02
	EXPOSURE MEDIUM TOTAL										3.E-02					3.2.E+02
WHOLE BODY TOTAL											3.E-02					3.2.E+02
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		4.E-02	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				3.2.E+02

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.30.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.00268	mg/kg	NC		NC			9.2E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-04
				Benzo(a)anthracene	0.0022	mg/kg	6.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-07	7.5E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				Benzo(a)pyrene	0.0024	mg/kg	7.0E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-06	8.2E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				Benzo(b)fluoranthene	0.0025	mg/kg	7.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-07	8.6E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				Benzo(g,h,i)perylene	0.000632	mg/kg	NC		NC			2.2E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Dibenzo(a,h)anthracene	0.0004	mg/kg	1.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-07	1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Indeno(1,2,3-cd)pyrene	0.00079	mg/kg	2.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	2.7E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				Phenanthrene	0.0114	mg/kg	NC		NC			3.9E-05	mg/kg/day	3.0E-02	mg/kg/day	1.E-03
				4,4'-DDD	0.0126	mg/kg	3.7E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	9.E-07	4.3E-05	mg/kg/day	5.0E-04	mg/kg/day	9.E-02
				4,4'-DDE	0.02859	mg/kg	8.4E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-06	9.8E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				4,4'-DDT	0.00686	mg/kg	2.0E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	7.E-07	2.3E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				alpha-Chlordane	0.0236	mg/kg	6.9E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	8.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Aroclor-1254	2.8888	mg/kg	8.5E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-03	9.9E-03	mg/kg/day	2.0E-05	mg/kg/day	5.E+02
				Aroclor-1268	0.03843	mg/kg	1.1E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	1.3E-04	mg/kg/day	2.0E-05	mg/kg/day	7.E+00
				Dieldrin	0.00866	mg/kg	2.5E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-05	3.0E-05	mg/kg/day	5.0E-05	mg/kg/day	6.E-01
				gamma-Chlordane	0.0089	mg/kg	2.6E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-07	3.0E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				Heptachlor Epoxide	0.0007	mg/kg	2.1E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-06	2.4E-06	mg/kg/day	1.3E-05	mg/kg/day	2.E-01
				Technical Chlordane	0.674	mg/kg	2.0E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-05	2.3E-03	mg/kg/day	5.0E-04	mg/kg/day	5.E+00
				Chromium	0.112	mg/kg	NC		NC			3.8E-04	mg/kg/day	3.0E-03	mg/kg/day	1.E-01
				Lead	0.349	mg/kg	1.0E-04	mg/kg/day	--			1.2E-03	mg/kg/day			
				Mercury	0.136	mg/kg	NC		NC			4.7E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				Mercury (methyl)	0.147	mg/kg	NC		NC			5.0E-04	mg/kg/day	1.0E-04	mg/kg/day	5.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000492	mg/kg	1.4E-07	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-02	1.7E-06	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000215	mg/kg	6.3E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	9.E-04	7.4E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-02					5.1.E+02
		EXPOSURE POINT TOTAL									2.E-02					5.1.E+02
	EXPOSURE MEDIUM TOTAL										2.E-02					5.1.E+02
WHOLE BODY TOTAL											2.E-02					5.1.E+02
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	2.E-02				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	5.1.E+02

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.3LRME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	LYMAN MILL POND	INGESTION	2-Methylnaphthalene	0.1	mg/kg	NC		NC			2.5E-08	mg/kg/day	2.0E-02	mg/kg/day	1.E-06
				4-Chloro-3-methylphenol	1.3	mg/kg	NC		NC			3.3E-07	mg/kg/day	5.0E-03	mg/kg/day	7.E-05
				4-Nitrophenol	2.2	mg/kg	NC		NC			5.6E-07	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			1.1E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				Benzo(a)anthracene	2.8	mg/kg	5.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	7.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	2.9	mg/kg	5.5E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-06	7.4E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	4.5	mg/kg	8.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-07	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			7.6E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(k)fluoranthene	2.1	mg/kg	4.0E-07	mg/kg/day	7.3E-02	(mg/kg/day)-1	3.E-08	5.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	9.8E-07	mg/kg/day	1.4E-02	(mg/kg/day)-1	1.E-08	1.3E-06	mg/kg/day	2.0E-02	mg/kg/day	7.E-05
				Dibenzo(a,h)anthracene	1.0694	mg/kg	2.0E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	2.7E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	5.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	6.9E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				N-Nitroso-di-n-propylamine	1.3	mg/kg	2.5E-07	mg/kg/day	7.0E+00	(mg/kg/day)-1	2.E-06	3.3E-07	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	2.6E-07	mg/kg/day	1.2E-01	(mg/kg/day)-1	3.E-08	3.6E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	2.8	mg/kg	NC		NC			7.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				alpha-Chlordane	0.032	mg/kg	6.0E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-09	8.1E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-05
				Aroclor-1254	0.49	mg/kg	9.3E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-07	1.2E-07	mg/kg/day	2.0E-05	mg/kg/day	6.E-03
				Aroclor-1260	0.027	mg/kg	5.1E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-08	6.9E-09	mg/kg/day	2.0E-05	mg/kg/day	3.E-04
				Aroclor-1268	0.31379	mg/kg	5.9E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-07	8.0E-08	mg/kg/day	2.0E-05	mg/kg/day	4.E-03
				Dieldrin	0.0044	mg/kg	8.3E-10	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-08	1.1E-09	mg/kg/day	5.0E-05	mg/kg/day	2.E-05
				Endosulfan II	0.005	mg/kg	NC		NC			1.3E-09	mg/kg/day	6.0E-03	mg/kg/day	2.E-07
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			7.4E-10	mg/kg/day	6.0E-03	mg/kg/day	1.E-07
				gamma-Chlordane	0.015	mg/kg	2.8E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-09	3.8E-09	mg/kg/day	5.0E-04	mg/kg/day	8.E-06
				Technical Chlordane	2.21273	mg/kg	4.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	5.6E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Antimony	3.1	mg/kg	NC		NC			7.9E-07	mg/kg/day	4.0E-04	mg/kg/day	2.E-03
				Arsenic	6.4	mg/kg	1.2E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-06	1.6E-06	mg/kg/day	3.0E-04	mg/kg/day	5.E-03
				Cadmium	2.1	mg/kg	NC		NC			5.3E-07	mg/kg/day	1.0E-03	mg/kg/day	5.E-04
				Chromium	200	mg/kg	NC		NC			5.1E-05	mg/kg/day	3.0E-03	mg/kg/day	2.E-02
				Lead	375	mg/kg	7.1E-05	mg/kg/day	--			9.5E-05	mg/kg/day			
				Manganese	843	mg/kg	NC		NC			2.1E-04	mg/kg/day	7.1E-02	mg/kg/day	3.E-03
				Mercury	0.62	mg/kg	NC		NC			1.6E-07	mg/kg/day	3.0E-04	mg/kg/day	5.E-04
				Nickel	69.2	mg/kg	NC		NC			1.8E-05	mg/kg/day	2.0E-02	mg/kg/day	9.E-04
				Thallium	0.58	mg/kg	NC		NC			1.5E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Vanadium	42.4	mg/kg	NC		NC			1.1E-05	mg/kg/day	7.0E-03	mg/kg/day	2.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.00806	mg/kg	1.5E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	2.1E-09	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000649	mg/kg	1.2E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-06	1.7E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-04					4.E-02
			DERMAL	2-Methylnaphthalene	0.1	mg/kg	NC		NC			2.3E-08	mg/kg/day	2.0E-02	mg/kg/day	1.E-06
				4-Chloro-3-methylphenol	1.3	mg/kg	NC		NC			2.3E-07	mg/kg/day	5.0E-03	mg/kg/day	5.E-05
				4-Nitrophenol	2.2	mg/kg	NC		NC			3.8E-07	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			9.6E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				Benzo(a)anthracene	2.8	mg/kg	4.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	2.9	mg/kg	4.8E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-06	6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	4.5	mg/kg	7.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-07	1.0E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			6.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(k)fluoranthene	2.1	mg/kg	3.5E-07	mg/kg/day	7.3E-02	(mg/kg/day)-1	3.E-08	4.7E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	6.7E-07	mg/kg/day	1.4E-02	(mg/kg/day)-1	9.E-09	9.0E-07	mg/kg/day	2.0E-02	mg/kg/day	5.E-05
				Dibenzo(a,h)anthracene	1.0694	mg/kg	1.8E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	2.4E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	4.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	6.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				N-Nitroso-di-n-propylamine	1.3	mg/kg	1.7E-07	mg/kg/day	7.0E+00	(mg/kg/day)-1	1.E-06	2.3E-07	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	4.5E-07	mg/kg/day	1.2E-01	(mg/kg/day)-1	5.E-08	6.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	2.8	mg/kg	NC		NC			6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				alpha-Chlordane	0.032	mg/kg	1.6E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-10	2.2E-09	mg/kg/day	5.0E-04	mg/kg/day	4.E-06
				Aroclor-1254	0.49	mg/kg	8.8E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-07	1.2E-07	mg/kg/day	2.0E-05	mg/kg/day	6.E-03
				Aroclor-1260	0.027	mg/kg	4.9E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-08	6.5E-09	mg/kg/day	2.0E-05	mg/kg/day	3.E-04
				Aroclor-1268	0.31379	mg/kg	5.6E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-07	7.6E-08	mg/kg/day	2.0E-05	mg/kg/day	4.E-03
				Dieldrin	0.0044	mg/kg	7.7E-10	mg/kg/day	1.6E+01	(mg/kg/day)-1	9.E-09	7.6E-10	mg/kg/day	5.0E-05	mg/kg/day	2.E-05
				Endosulfan II	0.005	mg/kg	NC		NC			8.7E-10	mg/kg/day	6.0E-03	mg/kg/day	1.E-07
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			5.0E-10	mg/kg/day	6.0E-03	mg/kg/day	8.E-08
				gamma-Chlordane	0.015	mg/kg	7.7E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-10	1.0E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Technical Chlordane	2.21273	mg/kg	1.1E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-08	1.5E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Antimony	3.1	mg/kg	NC		NC					6.0E-05	mg/kg/day	

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TABLE F.7.31.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Arsenic	6.4	mg/kg	2.5E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-07	3.3E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Cadmium	2.1	mg/kg	NC		NC			3.6E-09	mg/kg/day	2.5E-05	mg/kg/day	1.E-04
				Chromium	200	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	375	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	843	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Mercury	0.62	mg/kg	NC		NC					2.1E-05	mg/kg/day	
				Nickel	69.2	mg/kg	NC		NC					8.0E-04	mg/kg/day	
				Thallium	0.58	mg/kg	NC		NC					8.0E-05	mg/kg/day	
				Vanadium	42.4	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00806	mg/kg	3.1E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-05	4.2E-10	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000649	mg/kg	2.5E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-07	3.4E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-05					1.E-02
		EXPOSURE POINT TOTAL									3.E-04					6.E-02
	EXPOSURE MEDIUM TOTAL										3.E-04					6.E-02
SEDIMENT TOTAL											3.E-04					6.E-02
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00000132	mg/l	NC		NC			6.7E-11	mg/kg/day	6.0E-02	mg/kg/day	1.E-09
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	6.4E-07	mg/kg/day	1.4E-02	mg/kg/day	9.E-09	8.6E-07	mg/kg/day	2.0E-02	mg/kg/day	4.E-05
				Aldrin	0.000023	mg/l	8.7E-10	mg/kg/day	1.7E+01	mg/kg/day	1.E-08	1.2E-09	mg/kg/day	3.0E-05	mg/kg/day	4.E-05
				alpha-Chlordane	0.000019	mg/l	7.2E-10	mg/kg/day	3.5E-01	mg/kg/day	3.E-10	9.7E-10	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			1.6E-10	mg/kg/day	6.0E-03	mg/kg/day	3.E-08
				Endrin Aldehyde	0.000005	mg/l	NC		NC			2.5E-10	mg/kg/day	3.0E-04	mg/kg/day	8.E-07
				gamma-Chlordane	0.000021	mg/l	7.9E-10	mg/kg/day	3.5E-01	mg/kg/day	3.E-10	1.1E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Arsenic	0.0046	mg/l	1.7E-07	mg/kg/day	1.5E+00	mg/kg/day	3.E-07	2.3E-07	mg/kg/day	3.0E-04	mg/kg/day	8.E-04
				Barium	0.021	mg/l	NC		NC			1.1E-06	mg/kg/day	7.0E-02	mg/kg/day	2.E-05
				Chromium	0.0023	mg/l	NC		NC			1.2E-07	mg/kg/day	3.0E-03	mg/kg/day	4.E-05
				Lead	0.0044	mg/l	1.7E-07	mg/kg/day	--			2.2E-07	mg/kg/day			
				Manganese	0.13	mg/l	NC		NC			6.6E-06	mg/kg/day	2.4E-02	mg/kg/day	3.E-04
				Mercury	0.00000394	mg/l	NC		NC			2.0E-10	mg/kg/day	3.0E-04	mg/kg/day	7.E-07
				Thallium	0.0022	mg/l	NC		NC			1.1E-07	mg/kg/day	8.0E-05	mg/kg/day	1.E-03
				Nitrate	0.765	mg/l	NC		NC			3.9E-05	mg/kg/day	1.6E+00	mg/kg/day	2.E-05
				Nitrite-N	0.0865	mg/l	NC		NC			4.4E-06	mg/kg/day	1.0E-01	mg/kg/day	4.E-05
				Toxicity Equivalency (Dioxins/Furans)	0.000000861	mg/l	3.3E-11	mg/kg/day	1.5E+05	mg/kg/day	5.E-06	4.4E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-06					3.E-03
			DERMAL	Acenaphthylene	0.00000132	mg/l	NC		NC			--		6.0E-02	mg/kg/day	
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	1.9E-04	mg/kg/day	1.4E-02	mg/kg/day	3.E-06	2.6E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				Aldrin	0.000023	mg/l	1.5E-08	mg/kg/day	1.7E+01	mg/kg/day	3.E-07	2.0E-08	mg/kg/day	3.0E-05	mg/kg/day	7.E-04
				alpha-Chlordane	0.000019	mg/l	2.9E-07	mg/kg/day	3.5E-01	mg/kg/day	1.E-07	3.9E-07	mg/kg/day	5.0E-04	mg/kg/day	8.E-04
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.000005	mg/l	NC		NC			3.5E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				gamma-Chlordane	0.000021	mg/l	3.2E-07	mg/kg/day	3.5E-01	mg/kg/day	1.E-07	4.3E-07	mg/kg/day	5.0E-04	mg/kg/day	9.E-04
				Arsenic	0.0046	mg/l	3.0E-07	mg/kg/day	1.5E+00	mg/kg/day	5.E-07	4.1E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Barium	0.021	mg/l	NC		NC			1.9E-06	mg/kg/day	4.9E-03	mg/kg/day	4.E-04
				Chromium	0.0023	mg/l	NC		NC			4.1E-07	mg/kg/day	7.5E-05	mg/kg/day	5.E-03
				Lead	0.0044	mg/l	--		--			--				
				Manganese	0.13	mg/l	NC		NC			1.2E-05	mg/kg/day	9.6E-04	mg/kg/day	1.E-02
				Mercury	0.00000394	mg/l	NC		NC			3.5E-10	mg/kg/day	2.1E-05	mg/kg/day	2.E-05
				Thallium	0.0022	mg/l	NC		NC			1.9E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Nitrate	0.765	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.0865	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000000861	mg/l	1.3E-07	mg/kg/day	1.5E+05	mg/kg/day	2.E-02	1.7E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-02					4.E-02
		EXPOSURE POINT TOTAL									2.E-02					4.E-02
	EXPOSURE MEDIUM TOTAL										2.E-02					4.E-02
SURFACE WATER TOTAL											2.E-02					4.E-02

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TABLE F.7.31.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00193	mg/kg	NC		NC			3.9E-06	mg/kg/day	6.0E-02	mg/kg/day	7.E-05
				Benzo(a)pyrene	0.000962	mg/kg	1.4E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-05	2.0E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(b)fluoranthene	0.00119	mg/kg	1.8E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-06	2.4E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				Dibenzo(a,h)anthracene	0.00065	mg/kg	9.8E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-06	1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Phenanthrene	0.02012	mg/kg	NC		NC			4.1E-05	mg/kg/day	3.0E-02	mg/kg/day	1.E-03
				4,4'-DDD	0.01469	mg/kg	2.2E-05	mg/kg/day	2.4E-01	(mg/kg/day)-1	5.E-06	3.0E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				4,4'-DDE	0.04451	mg/kg	6.7E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-05	9.0E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				4,4'-DDT	0.00337	mg/kg	5.1E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	6.8E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.02007	mg/kg	3.0E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	4.1E-05	mg/kg/day	5.0E-04	mg/kg/day	8.E-02
				Aroclor-1254	0.95861	mg/kg	1.4E-03	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-03	1.9E-03	mg/kg/day	2.0E-05	mg/kg/day	1.E+02
				beta-BHC	0.0018	mg/kg	2.7E-06	mg/kg/day	1.8E+00	(mg/kg/day)-1	5.E-06	3.6E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				Dieldrin	0.00789	mg/kg	1.2E-05	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-04	1.6E-05	mg/kg/day	5.0E-05	mg/kg/day	3.E-01
				gamma-Chlordane	0.00859	mg/kg	1.3E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-06	1.7E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Heptachlor Epoxide	0.00227	mg/kg	3.4E-06	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.E-05	4.6E-06	mg/kg/day	1.3E-05	mg/kg/day	4.E-01
				Technical Chlordane	0.44722	mg/kg	6.7E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-04	9.1E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E+00
				Cadmium	0.026	mg/kg	NC		NC			5.3E-05	mg/kg/day	1.0E-03	mg/kg/day	5.E-02
				Lead	0.38	mg/kg	5.7E-04	mg/kg/day	--			7.7E-04	mg/kg/day			
				Manganese	4.98	mg/kg	NC		NC			1.0E-02	mg/kg/day	1.4E-01	mg/kg/day	7.E-02
				Mercury	0.0349	mg/kg	NC		NC			7.1E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.0367	mg/kg	NC		NC			7.4E-05	mg/kg/day	1.0E-04	mg/kg/day	7.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000181	mg/kg	2.7E-07	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-02	3.7E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000604	mg/kg	9.1E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-02	1.2E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-02					1.0.E+02
		EXPOSURE POINT TOTAL									6.E-02					1.0.E+02
	EXPOSURE MEDIUM TOTAL										6.E-02					1.0.E+02
WHOLE BODY TOTAL											6.E-02					1.0.E+02
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	8.E-02		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA			1.0.E+02

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE 7.32.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	LYMAN MILL POND	INGESTION	2-Methylnaphthalene	0.1	mg/kg	NC		NC			4.0E-08	mg/kg/day	2.0E-02	mg/kg/day	2.E-06
				4-Chloro-3-methylphenol	1.3	mg/kg	NC		NC			5.1E-07	mg/kg/day	5.0E-03	mg/kg/day	1.E-04
				4-Nitrophenol	2.2	mg/kg	NC		NC			8.7E-07	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			1.7E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Benzo(a)anthracene	2.8	mg/kg	1.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(a)pyrene	2.9	mg/kg	2.0E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(b)fluoranthene	4.5	mg/kg	3.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.8E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(k)fluoranthene	2.1	mg/kg	1.4E-07	mg/kg/day	7.3E-02	(mg/kg/day)-1	1.E-08	8.3E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	3.5E-07	mg/kg/day	1.4E-02	(mg/kg/day)-1	5.E-09	2.1E-06	mg/kg/day	2.0E-02	mg/kg/day	1.E-04
				Dibenzo(a,h)anthracene	1.0694	mg/kg	7.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-07	4.2E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	1.8E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				N-Nitroso-di-n-propylamine	1.3	mg/kg	8.8E-08	mg/kg/day	7.0E+00	(mg/kg/day)-1	6.E-07	5.1E-07	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	9.5E-08	mg/kg/day	1.2E-01	(mg/kg/day)-1	1.E-08	5.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	2.8	mg/kg	NC		NC			1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				alpha-Chlordane	0.032	mg/kg	2.2E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-10	1.3E-08	mg/kg/day	5.0E-04	mg/kg/day	3.E-05
				Aroclor-1254	0.49	mg/kg	3.3E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-08	1.9E-07	mg/kg/day	2.0E-05	mg/kg/day	1.E-02
				Aroclor-1260	0.027	mg/kg	1.8E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-09	1.1E-08	mg/kg/day	2.0E-05	mg/kg/day	5.E-04
				Aroclor-1268	0.31379	mg/kg	2.1E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-08	1.2E-07	mg/kg/day	2.0E-05	mg/kg/day	6.E-03
				Dieldrin	0.0044	mg/kg	3.0E-10	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.E-09	1.7E-09	mg/kg/day	5.0E-05	mg/kg/day	3.E-05
				Endosulfan II	0.005	mg/kg	NC		NC			2.0E-09	mg/kg/day	6.0E-03	mg/kg/day	3.E-07
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			1.1E-09	mg/kg/day	6.0E-03	mg/kg/day	2.E-07
				gamma-Chlordane	0.015	mg/kg	1.0E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-10	5.9E-09	mg/kg/day	5.0E-04	mg/kg/day	1.E-05
				Technical Chlordane	2.21273	mg/kg	1.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-08	8.8E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Antimony	3.1	mg/kg	NC		NC			1.2E-06	mg/kg/day	4.0E-04	mg/kg/day	3.E-03
				Arsenic	6.4	mg/kg	4.3E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	7.E-07	2.5E-06	mg/kg/day	3.0E-04	mg/kg/day	8.E-03
				Cadmium	2.1	mg/kg	NC		NC			8.3E-07	mg/kg/day	1.0E-03	mg/kg/day	8.E-04
				Chromium	200	mg/kg	NC		NC			7.9E-05	mg/kg/day	3.0E-03	mg/kg/day	3.E-02
				Lead	375	mg/kg	2.5E-05	mg/kg/day	--			1.5E-04	mg/kg/day			
				Manganese	843	mg/kg	NC		NC			3.3E-04	mg/kg/day	7.1E-02	mg/kg/day	5.E-03
				Mercury	0.62	mg/kg	NC		NC			2.5E-07	mg/kg/day	3.0E-04	mg/kg/day	8.E-04
				Nickel	69.2	mg/kg	NC		NC			2.7E-05	mg/kg/day	2.0E-02	mg/kg/day	1.E-03
				Thallium	0.58	mg/kg	NC		NC			2.3E-07	mg/kg/day	8.0E-05	mg/kg/day	3.E-03
				Vanadium	42.4	mg/kg	NC		NC			1.7E-05	mg/kg/day	7.0E-03	mg/kg/day	2.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.00806	mg/kg	5.5E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-05	3.2E-09	mg/kg/day			
				Toxicity Equivalency (PCB Congeners	0.0000649	mg/kg	4.4E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-07	2.6E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								9.E-05					7.E-02
			DERMAL	2-Methylnaphthalene	0.1	mg/kg	NC		NC			7.4E-08	mg/kg/day	2.0E-02	mg/kg/day	4.E-06
				4-Chloro-3-methylphenol	1.3	mg/kg	NC		NC			7.4E-07	mg/kg/day	5.0E-03	mg/kg/day	1.E-04
				4-Nitrophenol	2.2	mg/kg	NC		NC			1.2E-06	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			3.2E-07	mg/kg/day	6.0E-02	mg/kg/day	5.E-06
				Benzo(a)anthracene	2.8	mg/kg	3.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.1E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(a)pyrene	2.9	mg/kg	3.7E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	2.1E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(b)fluoranthene	4.5	mg/kg	5.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	3.3E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			2.2E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(k)fluoranthene	2.1	mg/kg	2.6E-07	mg/kg/day	7.3E-02	(mg/kg/day)-1	2.E-08	1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	5.0E-07	mg/kg/day	1.4E-02	(mg/kg/day)-1	7.E-09	2.9E-06	mg/kg/day	2.0E-02	mg/kg/day	1.E-04
				Dibenzo(a,h)anthracene	1.0694	mg/kg	1.3E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	7.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	3.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	2.0E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				N-Nitroso-di-n-propylamine	1.3	mg/kg	1.3E-07	mg/kg/day	7.0E+00	(mg/kg/day)-1	9.E-07	7.4E-07	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	3.4E-07	mg/kg/day	1.2E-01	(mg/kg/day)-1	4.E-08	2.0E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Phenanthrene	2.8	mg/kg	NC		NC			2.1E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				alpha-Chlordane	0.032	mg/kg	1.2E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-10	7.2E-09	mg/kg/day	5.0E-04	mg/kg/day	1.E-05
				Aroclor-1254	0.49	mg/kg	6.7E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-07	3.9E-07	mg/kg/day	2.0E-05	mg/kg/day	2.E-02
				Aroclor-1260	0.027	mg/kg	3.7E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-09	2.1E-08	mg/kg/day	2.0E-05	mg/kg/day	1.E-03
				Aroclor-1268	0.31379	mg/kg	4.3E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-08	2.5E-07	mg/kg/day	2.0E-05	mg/kg/day	1.E-02
				Dieldrin	0.0044	mg/kg	4.3E-10	mg/kg/day	1.6E+01	(mg/kg/day)-1	7.E-09	2.5E-09	mg/kg/day	5.0E-05	mg/kg/day	5.E-05
				Endosulfan II	0.005	mg/kg	NC		NC			2.8E-09	mg/kg/day	6.0E-03	mg/kg/day	5.E-07
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			1.6E-09	mg/kg/day	6.0E-03	mg/kg/day	3.E-07

US EPA ARCHIVE DOCUMENT

TABLE 7.32.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				gamma-Chlordane	0.015	mg/kg	5.8E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-10	3.4E-09	mg/kg/day	5.0E-04	mg/kg/day	7.E-06
				Technical Chlordane	2.21273	mg/kg	8.6E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	5.0E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Antimony	3.1	mg/kg	NC		NC					6.0E-05	mg/kg/day	
				Arsenic	6.4	mg/kg	1.9E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-07	1.1E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				Cadmium	2.1	mg/kg	NC		NC			1.2E-08	mg/kg/day	2.5E-05	mg/kg/day	5.E-04
				Chromium	200	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	375	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	843	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Mercury	0.62	mg/kg	NC		NC					2.1E-05	mg/kg/day	
				Nickel	69.2	mg/kg	NC		NC					8.0E-04	mg/kg/day	
				Thallium	0.58	mg/kg	NC		NC					8.0E-05	mg/kg/day	
				Vanadium	42.4	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00806	mg/kg	2.3E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-05	1.4E-09	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000649	mg/kg	1.9E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-07	1.1E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-05					4.E-02
		EXPOSURE POINT TOTAL									1.E-04					1.E-01
	EXPOSURE MEDIUM TOTAL										1.E-04					1.E-01
SEDIMENT TOTAL											1.E-04					1.E-01
	SURFACE WATER	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00000132	mg/l	NC		NC			1.0E-10	mg/kg/day	6.0E-02	mg/kg/day	2.E-09
SURFACE WATER				bis(2-Ethylhexyl)phthalate	0.017	mg/l	2.3E-07	mg/kg/day	1.4E-02	mg/kg/day	3.E-09	1.3E-06	mg/kg/day	2.0E-02	mg/kg/day	7.E-05
				Aldrin	0.000023	mg/l	3.1E-10	mg/kg/day	1.7E+01	mg/kg/day	5.E-09	1.8E-09	mg/kg/day	3.0E-05	mg/kg/day	6.E-05
				alpha-Chlordane	0.000019	mg/l	2.6E-10	mg/kg/day	3.5E-01	mg/kg/day	9.E-11	1.5E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			2.5E-10	mg/kg/day	6.0E-03	mg/kg/day	4.E-08
				Endrin Aldehyde	0.000005	mg/l	NC		NC			4.0E-10	mg/kg/day	3.0E-04	mg/kg/day	1.E-06
				gamma-Chlordane	0.000021	mg/l	2.8E-10	mg/kg/day	3.5E-01	mg/kg/day	1.E-10	1.7E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Arsenic	0.0046	mg/l	6.2E-08	mg/kg/day	1.5E+00	mg/kg/day	9.E-08	3.6E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Barium	0.021	mg/l	NC		NC			1.7E-06	mg/kg/day	7.0E-02	mg/kg/day	2.E-05
				Chromium	0.0023	mg/l	NC		NC			1.8E-07	mg/kg/day	3.0E-03	mg/kg/day	6.E-05
				Lead	0.0044	mg/l	6.0E-08	mg/kg/day	--			3.5E-07	mg/kg/day			
				Manganese	0.13	mg/l	NC		NC			1.0E-05	mg/kg/day	2.4E-02	mg/kg/day	4.E-04
				Mercury	0.00000394	mg/l	NC		NC			3.1E-10	mg/kg/day	3.0E-04	mg/kg/day	1.E-06
				Thallium	0.0022	mg/l	NC		NC			1.7E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Nitrate	0.765	mg/l	NC		NC			6.1E-05	mg/kg/day	1.6E+00	mg/kg/day	4.E-05
				Nitrite-N	0.0865	mg/l	NC		NC			6.8E-06	mg/kg/day	1.0E-01	mg/kg/day	7.E-05
				Toxicity Equivalency (Dioxins/Furans)	0.000000861	mg/l	1.2E-11	mg/kg/day	1.5E+05	mg/kg/day	2.E-06	8.8E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-06					4.E-03
			DERMAL	Acenaphthylene	0.00000132	mg/l	NC		NC			--		6.0E-02	mg/kg/day	
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	4.9E-05	mg/kg/day	1.4E-02	mg/kg/day	7.E-07	2.9E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				Aldrin	0.000023	mg/l	3.9E-09	mg/kg/day	1.7E+01	mg/kg/day	7.E-08	2.3E-08	mg/kg/day	3.0E-05	mg/kg/day	8.E-04
				alpha-Chlordane	0.000019	mg/l	7.5E-08	mg/kg/day	3.5E-01	mg/kg/day	3.E-08	4.4E-07	mg/kg/day	5.0E-04	mg/kg/day	9.E-04
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.000005	mg/l	NC		NC			3.9E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				gamma-Chlordane	0.000021	mg/l	8.2E-08	mg/kg/day	3.5E-01	mg/kg/day	3.E-08	4.8E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Arsenic	0.0046	mg/l	7.8E-08	mg/kg/day	1.5E+00	mg/kg/day	1.E-07	4.6E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Barium	0.021	mg/l	NC		NC			2.1E-06	mg/kg/day	4.9E-03	mg/kg/day	4.E-04
				Chromium	0.0023	mg/l	NC		NC			4.6E-07	mg/kg/day	7.5E-05	mg/kg/day	6.E-03
				Lead	0.0044	mg/l	--		--			--				
				Manganese	0.13	mg/l	NC		NC			1.3E-05	mg/kg/day	9.6E-04	mg/kg/day	1.E-02
				Mercury	0.00000394	mg/l	NC		NC			3.9E-10	mg/kg/day	2.1E-03	mg/kg/day	2.E-05
				Thallium	0.0022	mg/l	NC		NC			2.2E-07	mg/kg/day	8.0E-05	mg/kg/day	3.E-03
				Nitrate	0.765	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.0865	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000000861	mg/l	3.3E-08	mg/kg/day	1.5E+05	mg/kg/day	5.E-03	1.9E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-03					4.E-02
		EXPOSURE POINT TOTAL									5.E-03					5.E-02
	EXPOSURE MEDIUM TOTAL										5.E-03					5.E-02
SURFACE WATER TOTAL											5.E-03					5.E-02

US EPA ARCHIVE DOCUMENT

TABLE 7.32.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	INGESTION	Acenaphthylene	0.0004	mg/kg	NC		NC			8.4E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)pyrene	0.000704	mg/kg	2.5E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(b)fluoranthene	0.0008	mg/kg	2.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.7E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Benzo(g,h,i)perylene	0.000703	mg/kg	NC		NC			1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Dibenzo(a,h)anthracene	0.00038	mg/kg	1.4E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	8.0E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Phenanthrene	0.0014	mg/kg	NC		NC			2.9E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDE	0.0104	mg/kg	3.7E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	2.2E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				alpha-Chlordane	0.002	mg/kg	7.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	4.2E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				Aroclor-1254	0.2166	mg/kg	7.8E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	4.6E-04	mg/kg/day	2.0E-05	mg/kg/day	2.E+01
				Aroclor-1268	0.0127	mg/kg	4.6E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-06	2.7E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Dieldrin	0.00061	mg/kg	2.2E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	1.3E-06	mg/kg/day	5.0E-05	mg/kg/day	3.E-02
				gamma-Chlordane	0.00086	mg/kg	3.1E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	1.8E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				Technical Chlordane	0.03671	mg/kg	1.3E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-06	7.7E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Lead	0.009	mg/kg	3.2E-06	mg/kg/day	--			1.9E-05	mg/kg/day			
				Mercury	0.269	mg/kg	NC		NC			5.7E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				Mercury (methyl)	0.236	mg/kg	NC		NC			5.0E-04	mg/kg/day	1.0E-04	mg/kg/day	5.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.0000315	mg/kg	1.1E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-03	6.6E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000109	mg/kg	3.9E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-04	2.3E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-03					3.E+01
		EXPOSURE POINT TOTAL									2.E-03					3.E+01
	EXPOSURE MEDIUM TOTAL										2.E-03					3.E+01
FILLET TOTAL											2.E-03					3.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											8.E-03					3.1.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.33.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00193	mg/kg	NC		NC			6.6E-06	mg/kg/day	6.0E-02	mg/kg/day	1.E-04
				Benzo(a)pyrene	0.000962	mg/kg	2.8E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	3.3E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(b)fluoranthene	0.00119	mg/kg	3.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	4.1E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Dibenzo(a,h)anthracene	0.00065	mg/kg	1.9E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	2.2E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Phenanthrene	0.02012	mg/kg	NC		NC			6.9E-05	mg/kg/day	3.0E-02	mg/kg/day	2.E-03
				4,4'-DDD	0.01469	mg/kg	4.3E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-06	5.0E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				4,4'-DDE	0.04451	mg/kg	1.3E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-06	1.5E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				4,4'-DDT	0.00337	mg/kg	9.9E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-07	1.2E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.02007	mg/kg	5.9E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	6.9E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Aroclor-1254	0.95861	mg/kg	2.8E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-04	3.3E-03	mg/kg/day	2.0E-05	mg/kg/day	2.E+02
				beta-BHC	0.0018	mg/kg	5.3E-07	mg/kg/day	1.8E+00	(mg/kg/day)-1	9.E-07	6.2E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
				Dieldrin	0.00789	mg/kg	2.3E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-05	2.7E-05	mg/kg/day	5.0E-05	mg/kg/day	5.E-01
				gamma-Chlordane	0.00859	mg/kg	2.5E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-07	2.9E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				Heptachlor Epoxide	0.00227	mg/kg	6.7E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	6.E-06	7.8E-06	mg/kg/day	1.3E-05	mg/kg/day	6.E-01
				Technical Chlordane	0.44722	mg/kg	1.3E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-05	1.5E-03	mg/kg/day	5.0E-04	mg/kg/day	3.E+00
				Cadmium	0.026	mg/kg	NC		NC			8.9E-05	mg/kg/day	1.0E-03	mg/kg/day	9.E-02
				Lead	0.38	mg/kg	1.1E-04	mg/kg/day	--			1.3E-03	mg/kg/day			
				Manganese	4.98	mg/kg	NC		NC			1.7E-02	mg/kg/day	1.4E-01	mg/kg/day	1.E-01
				Mercury	0.0349	mg/kg	NC		NC			1.2E-04	mg/kg/day	3.0E-04	mg/kg/day	4.E-01
				Mercury (methyl)	0.0367	mg/kg	NC		NC			1.3E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000181	mg/kg	5.3E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-03	6.2E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0009604	mg/kg	1.8E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-03	2.1E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-02					1.7.E+02
		EXPOSURE POINT TOTAL									1.E-02					1.7.E+02
	EXPOSURE MEDIUM TOTAL										1.E-02					1.7.E+02
WHOLE BODY TOTAL											1.E-02					1.7.E+02
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	1.E-02				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	1.7.E+02

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.34.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		R/D/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	LYMAN MILL POND	INGESTION	2-Methylnaphthalene	0.1	mg/kg	NC		NC			2.5E-08	mg/kg/day	2.0E-02	mg/kg/day	1.E-06
				4-Chloro-3-methylphenol	1.3	mg/kg	NC		NC			3.3E-07	mg/kg/day	5.0E-03	mg/kg/day	7.E-05
				4-Nitrophenol	2.2	mg/kg	NC		NC			5.6E-07	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			1.1E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				Benzo(a)anthracene	2.8	mg/kg	5.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	7.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	2.9	mg/kg	5.5E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-06	7.4E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	4.5	mg/kg	8.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-07	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			7.6E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(k)fluoranthene	2.1	mg/kg	4.0E-07	mg/kg/day	7.3E-02	(mg/kg/day)-1	3.E-08	5.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	9.8E-07	mg/kg/day	1.4E-02	(mg/kg/day)-1	1.E-08	1.3E-06	mg/kg/day	2.0E-02	mg/kg/day	7.E-05
				Dibenzo(a,h)anthracene	1.0694	mg/kg	2.0E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	2.7E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	*5.1E-07*	*mg/kg/day*	*7.3E-01*	*(mg/kg/day)-1*	*4.E-07*	6.9E-07	*mg/kg/day*	*3.0E-02*	mg/kg/day	*2.E-05*
				N-Nitroso-di-n-propylamine	1.3	mg/kg	2.5E-07	mg/kg/day	7.0E+00	(mg/kg/day)-1	2.E-06	3.3E-07	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	2.6E-07	mg/kg/day	1.2E-01	(mg/kg/day)-1	3.E-08	3.6E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	2.8	mg/kg	NC		NC			7.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				alpha-Chlordane	0.032	mg/kg	6.0E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-09	8.1E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-05
				Aroclor-1254	0.49	mg/kg	9.3E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-07	1.2E-07	mg/kg/day	2.0E-05	mg/kg/day	6.E-03
				Aroclor-1260	0.027	mg/kg	5.1E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-08	6.9E-09	mg/kg/day	2.0E-05	mg/kg/day	3.E-04
				Aroclor-1268	0.31379	mg/kg	5.9E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-07	8.0E-08	mg/kg/day	2.0E-05	mg/kg/day	4.E-03
				Dieldrin	0.0044	mg/kg	8.3E-10	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-08	1.1E-09	mg/kg/day	5.0E-05	mg/kg/day	2.E-05
				Endosulfan II	0.005	mg/kg	NC		NC			1.3E-09	mg/kg/day	6.0E-03	mg/kg/day	2.E-07
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			7.4E-10	mg/kg/day	6.0E-03	mg/kg/day	1.E-07
				gamma-Chlordane	0.015	mg/kg	2.8E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-09	3.8E-09	mg/kg/day	5.0E-04	mg/kg/day	8.E-06
				Technical Chlordane	2.21273	mg/kg	4.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	5.6E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Antimony	3.1	mg/kg	NC		NC			7.9E-07	mg/kg/day	4.0E-04	mg/kg/day	2.E-03
				Arsenic	6.4	mg/kg	1.2E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-06	1.6E-06	mg/kg/day	3.0E-04	mg/kg/day	5.E-03
				Cadmium	2.1	mg/kg	NC		NC			5.3E-07	mg/kg/day	1.0E-03	mg/kg/day	5.E-04
				Chromium	200	mg/kg	NC		NC			5.1E-05	mg/kg/day	3.0E-03	mg/kg/day	2.E-02
				Lead	375	mg/kg	7.1E-05	mg/kg/day	--			9.5E-05	mg/kg/day			
				Manganese	843	mg/kg	NC		NC			2.1E-04	mg/kg/day	7.1E-02	mg/kg/day	3.E-03
				Mercury	0.62	mg/kg	NC		NC			1.6E-07	mg/kg/day	3.0E-04	mg/kg/day	5.E-04
				Nickel	69.2	mg/kg	NC		NC			1.8E-05	mg/kg/day	2.0E-02	mg/kg/day	9.E-04
				Thallium	0.58	mg/kg	NC		NC			1.5E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Vanadium	42.4	mg/kg	NC		NC			1.1E-05	mg/kg/day	7.0E-03	mg/kg/day	2.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.00806	mg/kg	1.5E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	2.1E-09	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000649	mg/kg	1.2E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-06	1.7E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-04					4.E-02
			DERMAL	2-Methylnaphthalene	0.1	mg/kg	NC		NC			2.3E-08	mg/kg/day	2.0E-02	mg/kg/day	1.E-06
				4-Chloro-3-methylphenol	1.3	mg/kg	NC		NC			2.3E-07	mg/kg/day	5.0E-03	mg/kg/day	5.E-05
				4-Nitrophenol	2.2	mg/kg	NC		NC			3.8E-07	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			9.6E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				Benzo(a)anthracene	2.8	mg/kg	4.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	2.9	mg/kg	4.8E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-06	6.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	4.5	mg/kg	7.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-07	1.0E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			6.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(k)fluoranthene	2.1	mg/kg	3.5E-07	mg/kg/day	7.3E-02	(mg/kg/day)-1	3.E-08	4.7E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	6.7E-07	mg/kg/day	1.4E-02	(mg/kg/day)-1	9.E-09	9.0E-07	mg/kg/day	2.0E-02	mg/kg/day	5.E-05
				Dibenzo(a,h)anthracene	1.0694	mg/kg	1.8E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	2.4E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	4.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	6.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				N-Nitroso-di-n-propylamine	1.3	mg/kg	1.7E-07	mg/kg/day	7.0E+00	(mg/kg/day)-1	1.E-06	2.3E-07	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	4.5E-07	mg/kg/day	1.2E-01	(mg/kg/day)-1	5.E-08	6.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	2.8	mg/kg	NC		NC			6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				alpha-Chlordane	0.032	mg/kg	1.6E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-10	2.2E-09	mg/kg/day	5.0E-04	mg/kg/day	4.E-06
				Aroclor-1254	0.49	mg/kg	8.8E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-07	1.2E-07	mg/kg/day	2.0E-05	mg/kg/day	6.E-03
				Aroclor-1260	0.027	mg/kg	4.9E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-08	6.5E-09	mg/kg/day	2.0E-05	mg/kg/day	3.E-04
				Aroclor-1268	0.31379	mg/kg	5.6E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-07	7.6E-08	mg/kg/day	2.0E-05	mg/kg/day	4.E-03
				Dieldrin	0.0044	mg/kg	5.7E-10	mg/kg/day	1.6E+01	(mg/kg/day)-1	9.E-09	7.6E-10	mg/kg/day	5.0E-05	mg/kg/day	2.E-05
				Endosulfan II	0.005	mg/kg	NC		NC			8.7E-10	mg/kg/day	6.0E-03	mg/kg/day	1.E-07
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			5.0E-10	mg/kg/day	6.0E-03	mg/kg/day	8.E-08
				gamma-Chlordane	0.015	mg/kg	7.7E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-10	1.0E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Technical Chlordane	2.21273	mg/kg	1.1E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-08	1.5E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04

US EPA ARCHIVE DOCUMENT

TABLE F.7.34.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Antimony	3.1	mg/kg	NC		NC					6.0E-05	mg/kg/day	
				Arsenic	6.4	mg/kg	2.5E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-07	3.3E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Cadmium	2.1	mg/kg	NC		NC			3.6E-09	mg/kg/day	2.5E-05	mg/kg/day	1.E-04
				Chromium	200	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	375	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	843	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Mercury	0.62	mg/kg	NC		NC					2.1E-05	mg/kg/day	
				Nickel	69.2	mg/kg	NC		NC					8.0E-04	mg/kg/day	
				Thallium	0.58	mg/kg	NC		NC					8.0E-05	mg/kg/day	
				Vanadium	42.4	mg/kg	NC		NC					1.9E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00806	mg/kg	3.1E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-05	4.2E-10	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000649	mg/kg	2.5E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-07	3.4E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-05					1.E-02
		EXPOSURE POINT TOTAL									3.E-04					6.E-02
	EXPOSURE MEDIUM TOTAL										3.E-04					6.E-02
SEDIMENT TOTAL											3.E-04					6.E-02
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00000132	mg/l	NC		NC			6.7E-11	mg/kg/day	6.0E-02	mg/kg/day	1.E-09
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	6.4E-07	mg/kg/day	1.4E-02	mg/kg/day	9.E-09	8.6E-07	mg/kg/day	2.0E-02	mg/kg/day	4.E-05
				Aldrin	0.000023	mg/l	8.7E-10	mg/kg/day	1.7E+01	mg/kg/day	1.E-08	1.2E-09	mg/kg/day	3.0E-05	mg/kg/day	4.E-05
				alpha-Chlordane	0.000019	mg/l	7.2E-10	mg/kg/day	3.5E-01	mg/kg/day	3.E-10	9.7E-10	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			1.6E-10	mg/kg/day	6.0E-03	mg/kg/day	3.E-08
				Endrin Aldehyde	0.000005	mg/l	NC		NC			2.5E-10	mg/kg/day	3.0E-04	mg/kg/day	8.E-07
				gamma-Chlordane	0.000021	mg/l	7.9E-10	mg/kg/day	3.5E-01	mg/kg/day	3.E-10	1.1E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Arsenic	0.0046	mg/l	1.7E-07	mg/kg/day	1.5E+00	mg/kg/day	3.E-07	2.3E-07	mg/kg/day	3.0E-04	mg/kg/day	8.E-04
				Barium	0.021	mg/l	NC		NC			1.1E-06	mg/kg/day	7.0E-02	mg/kg/day	2.E-05
				Chromium	0.0023	mg/l	NC		NC			1.2E-07	mg/kg/day	3.0E-03	mg/kg/day	4.E-05
				Lead	0.0044	mg/l	1.7E-07	mg/kg/day	--			2.2E-07	mg/kg/day			
				Manganese	0.13	mg/l	NC		NC			6.6E-06	mg/kg/day	2.4E-02	mg/kg/day	3.E-04
				Mercury	0.00000394	mg/l	NC		NC			2.0E-10	mg/kg/day	3.0E-04	mg/kg/day	7.E-07
				Thallium	0.0022	mg/l	NC		NC			1.1E-07	mg/kg/day	8.0E-05	mg/kg/day	1.E-03
				Nitrate	0.765	mg/l	NC		NC			3.9E-05	mg/kg/day	1.6E+00	mg/kg/day	2.E-05
				Nitrite-N	0.0865	mg/l	NC		NC			4.4E-06	mg/kg/day	1.0E-01	mg/kg/day	4.E-05
				Toxicity Equivalency (Dioxins/Furans)	0.000000861	mg/l	3.3E-11	mg/kg/day	1.5E+05	mg/kg/day	5.E-06	4.4E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-06					3.E-03
			DERMAL	Acenaphthylene	0.00000132	mg/l	NC		NC			--		6.0E-02	mg/kg/day	
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	1.9E-04	mg/kg/day	1.4E-02	mg/kg/day	3.E-06	2.6E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				Aldrin	0.000023	mg/l	1.5E-08	mg/kg/day	1.7E+01	mg/kg/day	3.E-07	2.0E-08	mg/kg/day	3.0E-05	mg/kg/day	7.E-04
				alpha-Chlordane	0.000019	mg/l	2.9E-07	mg/kg/day	3.5E-01	mg/kg/day	1.E-07	3.9E-07	mg/kg/day	5.0E-04	mg/kg/day	8.E-04
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.000005	mg/l	NC		NC			3.5E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				gamma-Chlordane	0.000021	mg/l	3.2E-07	mg/kg/day	3.5E-01	mg/kg/day	1.E-07	4.3E-07	mg/kg/day	5.0E-04	mg/kg/day	9.E-04
				Arsenic	0.0046	mg/l	3.9E-07	mg/kg/day	1.5E+00	mg/kg/day	5.E-07	4.1E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Barium	0.021	mg/l	NC		NC			1.9E-06	mg/kg/day	4.9E-03	mg/kg/day	4.E-04
				Chromium	0.0023	mg/l	NC		NC			4.1E-07	mg/kg/day	7.5E-05	mg/kg/day	5.E-03
				Lead	0.0044	mg/l	--		--			--				
				Manganese	0.13	mg/l	NC		NC			1.2E-05	mg/kg/day	9.6E-04	mg/kg/day	1.E-02
				Mercury	0.00000394	mg/l	NC		NC			3.5E-10	mg/kg/day	2.1E-05	mg/kg/day	2.E-05
				Thallium	0.0022	mg/l	NC		NC			1.9E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Nitrate	0.765	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.0865	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000000861	mg/l	1.3E-07	mg/kg/day	1.5E+05	mg/kg/day	2.E-02	1.7E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-02					4.E-02
		EXPOSURE POINT TOTAL									2.E-02					4.E-02
	EXPOSURE MEDIUM TOTAL										2.E-02					4.E-02
SURFACE WATER TOTAL											2.E-02					4.E-02

US EPA ARCHIVE DOCUMENT

TABLE F.7.34.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	INGESTION	Acenaphthylene	0.0004	mg/kg	NC		NC			8.1E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)pyrene	0.000704	mg/kg	1.1E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-06	1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(b)fluoranthene	0.0008	mg/kg	1.2E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-07	1.6E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(g,h,i)perylene	0.000703	mg/kg	NC		NC			1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Dibenzo(a,h)anthracene	0.00038	mg/kg	5.7E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-06	7.7E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Phenanthrene	0.0014	mg/kg	NC		NC			2.8E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				4,4'-DDE	0.0104	mg/kg	1.6E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-06	2.1E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				alpha-Chlordane	0.002	mg/kg	3.0E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	4.1E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				Aroclor-1254	0.2166	mg/kg	3.3E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-04	4.4E-04	mg/kg/day	2.0E-05	mg/kg/day	2.E+01
				Aroclor-1268	0.0127	mg/kg	1.9E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-05	2.6E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Dieldrin	0.00061	mg/kg	9.2E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	1.2E-06	mg/kg/day	5.0E-05	mg/kg/day	2.E-02
				gamma-Chlordane	0.00086	mg/kg	1.3E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-07	1.7E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Technical Chlordane	0.03671	mg/kg	5.5E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-05	7.4E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Lead	0.009	mg/kg	1.4E-05	mg/kg/day	--			1.8E-05	mg/kg/day			
				Mercury	0.269	mg/kg	NC		NC			5.5E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				Mercury (methyl)	0.236	mg/kg	NC		NC			4.8E-04	mg/kg/day	1.0E-04	mg/kg/day	5.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.0000315	mg/kg	4.7E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-03	6.4E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000109	mg/kg	1.6E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-03	2.2E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-02					3.E+01
		EXPOSURE POINT TOTAL									1.E-02					3.E+01
	EXPOSURE MEDIUM TOTAL										1.E-02					3.E+01
FILLET TOTAL											1.E-02					3.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	3.E-02		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA			3.0.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availaible from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not appticable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TABLE F.7.35.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	LYMAN MILL POND	INGESTION	2-Methylnaphthalene	0.1	mg/kg	NC		NC			4.0E-08	mg/kg/day	2.0E-02	mg/kg/day	2.E-06
				4-Chloro-3-methylphenol	1.3	mg/kg	NC		NC			5.1E-07	mg/kg/day	5.0E-03	mg/kg/day	1.E-04
				4-Nitrophenol	2.2	mg/kg	NC		NC			8.7E-07	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			1.7E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Benzo(a)anthracene	2.8	mg/kg	1.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(a)pyrene	2.9	mg/kg	2.0E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(b)fluoranthene	4.5	mg/kg	3.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.8E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(k)fluoranthene	2.1	mg/kg	1.4E-07	mg/kg/day	7.3E-02	(mg/kg/day)-1	1.E-08	8.3E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	3.5E-07	mg/kg/day	1.4E-02	(mg/kg/day)-1	5.E-09	2.1E-06	mg/kg/day	2.0E-02	mg/kg/day	1.E-04
				Dibenzo(a,h)anthracene	1.0694	mg/kg	7.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-07	4.2E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	1.8E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				N-Nitroso-di-n-propylamine	1.3	mg/kg	8.8E-08	mg/kg/day	7.0E+00	(mg/kg/day)-1	6.E-07	5.1E-07	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	9.5E-08	mg/kg/day	1.2E-01	(mg/kg/day)-1	1.E-08	5.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	2.8	mg/kg	NC		NC			1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				alpha-Chlordane	0.032	mg/kg	2.2E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-10	1.3E-08	mg/kg/day	5.0E-04	mg/kg/day	3.E-05
				Aroclor-1254	0.49	mg/kg	3.3E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-08	1.9E-07	mg/kg/day	2.0E-05	mg/kg/day	1.E-02
				Aroclor-1260	0.027	mg/kg	1.8E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-09	1.1E-08	mg/kg/day	2.0E-05	mg/kg/day	5.E-04
				Aroclor-1268	0.31379	mg/kg	2.1E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-08	1.2E-07	mg/kg/day	2.0E-05	mg/kg/day	6.E-03
				Dieldrin	0.0044	mg/kg	3.0E-10	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.E-09	1.7E-09	mg/kg/day	5.0E-05	mg/kg/day	3.E-05
				Endosulfan II	0.005	mg/kg	NC		NC			2.0E-09	mg/kg/day	6.0E-03	mg/kg/day	3.E-07
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			1.1E-09	mg/kg/day	6.0E-03	mg/kg/day	2.E-07
				gamma-Chlordane	0.015	mg/kg	1.0E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-10	5.9E-09	mg/kg/day	5.0E-04	mg/kg/day	1.E-05
				Technical Chlordane	2.21273	mg/kg	1.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-08	8.8E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Antimony	3.1	mg/kg	NC		NC			1.2E-06	mg/kg/day	4.0E-04	mg/kg/day	3.E-03
				Arsenic	6.4	mg/kg	4.3E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	7.E-07	2.5E-06	mg/kg/day	3.0E-04	mg/kg/day	8.E-03
				Cadmium	2.1	mg/kg	NC		NC			8.3E-07	mg/kg/day	1.0E-03	mg/kg/day	8.E-04
				Chromium	200	mg/kg	NC		NC			7.9E-05	mg/kg/day	3.0E-03	mg/kg/day	3.E-02
				Lead	375	mg/kg	2.5E-05	mg/kg/day	--			1.5E-04	mg/kg/day			
				Manganese	843	mg/kg	NC		NC			3.3E-04	mg/kg/day	7.1E-02	mg/kg/day	5.E-03
				Mercury	0.62	mg/kg	NC		NC			2.5E-07	mg/kg/day	3.0E-04	mg/kg/day	8.E-04
				Nickel	69.2	mg/kg	NC		NC			2.7E-05	mg/kg/day	2.0E-02	mg/kg/day	1.E-03
				Thallium	0.58	mg/kg	NC		NC			2.3E-07	mg/kg/day	8.0E-05	mg/kg/day	3.E-03
				Vanadium	42.4	mg/kg	NC		NC			1.7E-05	mg/kg/day	7.0E-03	mg/kg/day	2.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.00806	mg/kg	5.5E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-05	3.2E-09	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000649	mg/kg	4.4E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-07	2.6E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								9.E-05					7.E-02
			DERMAL	2-Methylnaphthalene	0.1	mg/kg	NC		NC			7.4E-08	mg/kg/day	2.0E-02	mg/kg/day	4.E-06
				4-Chloro-3-methylphenol	1.3	mg/kg	NC		NC			7.4E-07	mg/kg/day	5.0E-03	mg/kg/day	1.E-04
				4-Nitrophenol	2.2	mg/kg	NC		NC			1.2E-06	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			3.2E-07	mg/kg/day	6.0E-02	mg/kg/day	5.E-06
				Benzo(a)anthracene	2.8	mg/kg	3.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.1E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(a)pyrene	2.9	mg/kg	3.7E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	2.1E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(b)fluoranthene	4.5	mg/kg	5.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	3.3E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			2.2E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(k)fluoranthene	2.1	mg/kg	2.6E-07	mg/kg/day	7.3E-02	(mg/kg/day)-1	2.E-08	1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	5.0E-07	mg/kg/day	1.4E-02	(mg/kg/day)-1	7.E-09	2.9E-06	mg/kg/day	2.0E-02	mg/kg/day	1.E-04
				Dibenzo(a,h)anthracene	1.0694	mg/kg	1.3E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	7.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	3.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	2.0E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				N-Nitroso-di-n-propylamine	1.3	mg/kg	1.3E-07	mg/kg/day	7.0E+00	(mg/kg/day)-1	9.E-07	7.4E-07	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	3.4E-07	mg/kg/day	1.2E-01	(mg/kg/day)-1	4.E-08	2.0E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Phenanthrene	2.8	mg/kg	NC		NC			2.1E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				alpha-Chlordane	0.032	mg/kg	1.2E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-10	7.2E-09	mg/kg/day	5.0E-04	mg/kg/day	1.E-05
				Aroclor-1254	0.49	mg/kg	6.7E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-07	3.9E-07	mg/kg/day	2.0E-05	mg/kg/day	2.E-02
				Aroclor-1260	0.027	mg/kg	3.7E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-09	2.1E-08	mg/kg/day	2.0E-05	mg/kg/day	1.E-03
				Aroclor-1268	0.31379	mg/kg	4.3E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-08	2.5E-07	mg/kg/day	2.0E-05	mg/kg/day	1.E-02
				Dieldrin	0.0044	mg/kg	4.3E-10	mg/kg/day	1.6E+01	(mg/kg/day)-1	7.E-09	2.5E-09	mg/kg/day	5.0E-05	mg/kg/day	5.E-05
				Endosulfan II	0.005	mg/kg	NC		NC			2.8E-09	mg/kg/day	6.0E-03	mg/kg/day	5.E-07
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			1.6E-09	mg/kg/day	6.0E-03	mg/kg/day	3.E-07

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TABLE F.7.35.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
				gamma-Chlordane	0.015	mg/kg	5.8E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-10	3.4E-09	mg/kg/day	5.0E-04	mg/kg/day	7.E-06
				Technical Chlordane	2.21273	mg/kg	8.6E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	5.0E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Antimony	3.1	mg/kg	NC		NC					6.0E-05	mg/kg/day	
				Arsenic	6.4	mg/kg	1.9E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-07	1.1E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				Cadmium	2.1	mg/kg	NC		NC			1.2E-08	mg/kg/day	2.5E-05	mg/kg/day	5.E-04
				Chromium	200	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	375	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	843	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Mercury	0.62	mg/kg	NC		NC					2.1E-05	mg/kg/day	
				Nickel	69.2	mg/kg	NC		NC					8.0E-04	mg/kg/day	
				Thallium	0.58	mg/kg	NC		NC					8.0E-05	mg/kg/day	
				Vanadium	42.4	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00806	mg/kg	2.3E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-05	1.4E-09	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000649	mg/kg	1.9E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-07	1.1E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-05					4.E-02
		EXPOSURE POINT TOTAL									1.E-04					1.E-01
	EXPOSURE MEDIUM TOTAL										1.E-04					1.E-01
SEDIMENT TOTAL											1.E-04					1.E-01
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00000132	mg/l	NC		NC			1.0E-10	mg/kg/day	6.0E-02	mg/kg/day	2.E-09
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	2.3E-07	mg/kg/day	1.4E-02	mg/kg/day	3.E-09	1.3E-06	mg/kg/day	2.0E-02	mg/kg/day	7.E-05
				Aldrin	0.000023	mg/l	3.1E-10	mg/kg/day	1.7E+01	mg/kg/day	5.E-09	1.8E-09	mg/kg/day	3.0E-05	mg/kg/day	6.E-05
				alpha-Chlordane	0.000019	mg/l	2.6E-10	mg/kg/day	3.5E-01	mg/kg/day	9.E-11	1.5E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			2.5E-10	mg/kg/day	6.0E-03	mg/kg/day	4.E-08
				Endrin Aldehyde	0.000005	mg/l	NC		NC			4.0E-10	mg/kg/day	3.0E-04	mg/kg/day	1.E-06
				gamma-Chlordane	0.000021	mg/l	2.8E-10	mg/kg/day	3.5E-01	mg/kg/day	1.E-10	1.7E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Arsenic	0.0046	mg/l	6.2E-08	mg/kg/day	1.5E+00	mg/kg/day	9.E-08	3.6E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Barium	0.021	mg/l	NC		NC			1.7E-06	mg/kg/day	7.0E-02	mg/kg/day	2.E-05
				Chromium	0.0023	mg/l	NC		NC			1.8E-07	mg/kg/day	3.0E-03	mg/kg/day	6.E-05
				Lead	0.0044	mg/l	6.0E-08	mg/kg/day	--			3.5E-07	mg/kg/day			
				Manganese	0.13	mg/l	NC		NC			1.0E-05	mg/kg/day	2.4E-02	mg/kg/day	4.E-04
				Mercury	0.00000394	mg/l	NC		NC			3.1E-10	mg/kg/day	3.0E-04	mg/kg/day	1.E-06
				Thallium	0.0022	mg/l	NC		NC			1.7E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Nitrate	0.765	mg/l	NC		NC			6.1E-05	mg/kg/day	1.6E+00	mg/kg/day	4.E-05
				Nitrite-N	0.0865	mg/l	NC		NC			6.8E-06	mg/kg/day	1.0E-01	mg/kg/day	7.E-05
				Toxicity Equivalency (Dioxins/Furans)	0.000000861	mg/l	1.2E-11	mg/kg/day	1.5E+05	mg/kg/day	2.E-06	6.8E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-06					4.E-03
			DERMAL	Acenaphthylene	0.00000132	mg/l	NC		NC			--		6.0E-02	mg/kg/day	
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	4.9E-05	mg/kg/day	1.4E-02	mg/kg/day	7.E-07	2.9E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				Aldrin	0.000023	mg/l	3.9E-09	mg/kg/day	1.7E+01	mg/kg/day	7.E-08	2.3E-08	mg/kg/day	3.0E-05	mg/kg/day	8.E-04
				alpha-Chlordane	0.000019	mg/l	7.5E-08	mg/kg/day	3.5E-01	mg/kg/day	3.E-08	4.4E-07	mg/kg/day	5.0E-04	mg/kg/day	9.E-04
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.000005	mg/l	NC		NC			3.9E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				gamma-Chlordane	0.000021	mg/l	8.2E-08	mg/kg/day	3.5E-01	mg/kg/day	3.E-08	4.8E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Arsenic	0.0046	mg/l	7.8E-08	mg/kg/day	1.5E+00	mg/kg/day	1.E-07	4.6E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Barium	0.021	mg/l	NC		NC			2.1E-06	mg/kg/day	4.9E-03	mg/kg/day	4.E-04
				Chromium	0.0023	mg/l	NC		NC			4.6E-07	mg/kg/day	7.5E-05	mg/kg/day	6.E-03
				Lead	0.0044	mg/l	--		--			--				
				Manganese	0.13	mg/l	NC		NC			1.3E-05	mg/kg/day	9.6E-04	mg/kg/day	1.E-02
				Mercury	0.00000394	mg/l	NC		NC			3.9E-10	mg/kg/day	2.1E-05	mg/kg/day	2.E-05
				Thallium	0.0022	mg/l	NC		NC			2.2E-07	mg/kg/day	8.0E-05	mg/kg/day	3.E-03
				Nitrate	0.765	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.0865	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000000861	mg/l	3.3E-08	mg/kg/day	1.5E+05	mg/kg/day	5.E-03	1.9E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-03					4.E-02
		EXPOSURE POINT TOTAL									5.E-03					5.E-02
	EXPOSURE MEDIUM TOTAL										5.E-03					5.E-02
SURFACE WATER TOTAL											5.E-03					5.E-02

US EPA ARCHIVE DOCUMENT

TABLE F.7.3S.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	INGESTION	Acenaphthylene	0.0004	mg/kg	NC		NC			8.4E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)pyrene	0.000704	mg/kg	2.5E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(b)fluoranthene	0.0008	mg/kg	2.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.7E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Benzo(g,h,i)perylene	0.000703	mg/kg	NC		NC			1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Dibenzo(a,h)anthracene	0.00038	mg/kg	1.4E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	8.0E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.0014	mg/kg	NC		NC			2.9E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDE	0.0104	mg/kg	3.7E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	2.2E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				alpha-Chlordane	0.002	mg/kg	7.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	4.2E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				Aroclor-1254	0.2166	mg/kg	7.8E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	4.6E-04	mg/kg/day	2.0E-05	mg/kg/day	2.E+01
				Aroclor-1268	0.0127	mg/kg	4.6E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-06	2.7E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Dieldrin	0.00061	mg/kg	2.2E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	1.3E-06	mg/kg/day	5.0E-05	mg/kg/day	3.E-02
				gamma-Chlordane	0.00086	mg/kg	3.1E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	1.8E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				Technical Chlordane	0.03671	mg/kg	1.3E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-06	7.7E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Lead	0.009	mg/kg	3.2E-06	mg/kg/day	--			1.9E-05	mg/kg/day			
				Mercury	0.269	mg/kg	NC		NC			5.7E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				Mercury (methyl)	0.236	mg/kg	NC		NC			5.0E-04	mg/kg/day	1.0E-04	mg/kg/day	5.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.0000315	mg/kg	1.1E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-03	6.6E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000109	mg/kg	3.9E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-04	2.3E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-03					3.E+01
		EXPOSURE POINT TOTAL									2.E-03					3.E+01
	EXPOSURE MEDIUM TOTAL										2.E-03					3.E+01
FILLET TOTAL											2.E-03					3.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	8.E-03				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	3.1.E+01

NOTES.
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.36.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	INGESTION	Acenaphthylene	0.0004	mg/kg	NC		NC			1.4E-06	mg/kg/day	6.0E-02	mg/kg/day	2 E-05
				Benzo(a)pyrene	0.000704	mg/kg	2.1E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	2.4E-06	mg/kg/day	3.0E-02	mg/kg/day	8 E-05
				Benzo(b)fluoranthene	0.0008	mg/kg	2.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	2.7E-06	mg/kg/day	3.0E-02	mg/kg/day	9 E-05
				Benzo(g,h,i)perylene	0.000703	mg/kg	NC		NC			2.4E-06	mg/kg/day	3.0E-02	mg/kg/day	8 E-05
				Dibenzo(a,h)anthracene	0.00038	mg/kg	1.1E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-07	1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4 E-05
				Phenanthrene	0.0014	mg/kg	NC		NC			4.8E-06	mg/kg/day	3.0E-02	mg/kg/day	2 E-04
				4,4'-DDE	0.0104	mg/kg	3.0E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	3.6E-05	mg/kg/day	5.0E-04	mg/kg/day	7 E-02
				alpha-Chlordane	0.002	mg/kg	5.9E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	6.8E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Aroclor-1254	0.2166	mg/kg	6.3E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-04	7.4E-04	mg/kg/day	2.0E-05	mg/kg/day	4.E+01
				Aroclor-1268	0.0127	mg/kg	3.7E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-06	4.3E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Dieldrin	0.00061	mg/kg	1.8E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.E-06	2.1E-06	mg/kg/day	5.0E-05	mg/kg/day	4.E-02
				gamma-Chlordane	0.00086	mg/kg	2.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-08	2.9E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				Technical Chlordane	0.03671	mg/kg	1.1E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-06	1.3E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				Lead	0.909	mg/kg	2.6E-06	mg/kg/day	--			3.1E-05	mg/kg/day			
				Mercury	0.269	mg/kg	NC		NC			9.2E-04	mg/kg/day	3.0E-04	mg/kg/day	3 E+00
				Mercury (methyl)	0.236	mg/kg	NC		NC			8.1E-04	mg/kg/day	1.0E-04	mg/kg/day	8.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.0000315	mg/kg	9.2E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-03	1.1E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners	0.0000109	mg/kg	3.2E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-04	3.7E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-03					5 E+01
		EXPOSURE POINT TOTAL									2.E-03					5 E+01
	EXPOSURE MEDIUM TOTAL										2.E-03					5 E+01
FILLET TOTAL											2.E-03					5.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											2.E-03					5.1.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
--- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.37.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	LYMAN MILL POND	INGESTION	2-Methylnaphthalene	0.1	mg/kg	NC		NC			2.5E-08	mg/kg/day	2.0E-02	mg/kg/day	1.E-06
				4-Chloro-3-methylphenol	1.3	mg/kg	NC		NC			3.3E-07	mg/kg/day	5.0E-03	mg/kg/day	7.E-05
				4-Nitrophenol	2.2	mg/kg	NC		NC			5.6E-07	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			1.1E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				Benzo(a)anthracene	2.8	mg/kg	5.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	7.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	2.9	mg/kg	5.5E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-06	7.4E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	4.5	mg/kg	8.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-07	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			7.6E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(k)fluoranthene	2.1	mg/kg	4.0E-07	mg/kg/day	7.3E-02	(mg/kg/day)-1	3.E-08	5.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	9.8E-07	mg/kg/day	1.4E-02	(mg/kg/day)-1	1.E-08	1.3E-06	mg/kg/day	2.0E-02	mg/kg/day	7.E-05
				Dibenzo(a,h)anthracene	1.0694	mg/kg	2.0E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	2.7E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	5.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	6.9E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				N-Nitroso-di-n-propylamine	1.3	mg/kg	2.5E-07	mg/kg/day	7.0E+00	(mg/kg/day)-1	2.E-06	3.3E-07	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	2.6E-07	mg/kg/day	1.2E-01	(mg/kg/day)-1	3.E-08	3.6E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	2.8	mg/kg	NC		NC			7.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				alpha-Chlordane	0.032	mg/kg	6.0E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-09	8.1E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-05
				Aroclor-1254	0.49	mg/kg	9.3E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-07	1.2E-07	mg/kg/day	2.0E-05	mg/kg/day	6.E-03
				Aroclor-1260	0.027	mg/kg	5.1E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-08	6.9E-09	mg/kg/day	2.0E-05	mg/kg/day	3.E-04
				Aroclor-1268	0.31379	mg/kg	5.9E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-07	8.0E-08	mg/kg/day	2.0E-05	mg/kg/day	4.E-03
				Dieldrin	0.0044	mg/kg	8.3E-10	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-08	1.1E-09	mg/kg/day	5.0E-05	mg/kg/day	2.E-05
				Endosulfan II	0.005	mg/kg	NC		NC			1.3E-09	mg/kg/day	6.0E-03	mg/kg/day	2.E-07
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			7.4E-10	mg/kg/day	6.0E-03	mg/kg/day	1.E-07
				gamma-Chlordane	0.015	mg/kg	2.8E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-09	3.8E-09	mg/kg/day	5.0E-04	mg/kg/day	8.E-06
				Technical Chlordane	2.21273	mg/kg	4.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	5.6E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Antimony	3.1	mg/kg	NC		NC			7.9E-07	mg/kg/day	4.0E-04	mg/kg/day	2.E-03
				Arsenic	6.4	mg/kg	1.2E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-06	1.6E-06	mg/kg/day	3.0E-04	mg/kg/day	5.E-03
				Cadmium	2.1	mg/kg	NC		NC			5.3E-07	mg/kg/day	1.0E-03	mg/kg/day	5.E-04
				Chromium	200	mg/kg	NC		NC			5.1E-05	mg/kg/day	3.0E-03	mg/kg/day	2.E-02
				Lead	375	mg/kg	7.1E-05	mg/kg/day	--			9.5E-05	mg/kg/day			
				Manganese	843	mg/kg	NC		NC			2.1E-04	mg/kg/day	7.1E-02	mg/kg/day	3.E-03
				Mercury	0.62	mg/kg	NC		NC			1.6E-07	mg/kg/day	3.0E-04	mg/kg/day	5.E-04
				Nickel	69.2	mg/kg	NC		NC			1.8E-05	mg/kg/day	2.0E-02	mg/kg/day	9.E-04
				Thallium	0.58	mg/kg	NC		NC			1.5E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Vanadium	42.4	mg/kg	NC		NC			1.1E-05	mg/kg/day	7.0E-03	mg/kg/day	2.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.00806	mg/kg	1.5E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	2.1E-09	mg/kg/day			
				Toxicity Equivalency (PCB Congeners	0.0000649	mg/kg	1.2E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-06	1.7E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-04					4.E-02
			DERMAL	2-Methylnaphthalene	0.1	mg/kg	NC		NC			2.3E-08	mg/kg/day	2.0E-02	mg/kg/day	1.E-06
				4-Chloro-3-methylphenol	1.3	mg/kg	NC		NC			2.3E-07	mg/kg/day	5.0E-03	mg/kg/day	5.E-05
				4-Nitrophenol	2.2	mg/kg	NC		NC			3.8E-07	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			9.6E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				Benzo(a)anthracene	2.8	mg/kg	4.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	2.9	mg/kg	4.8E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-06	6.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	4.5	mg/kg	7.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-07	1.0E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			6.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(k)fluoranthene	2.1	mg/kg	3.5E-07	mg/kg/day	7.3E-02	(mg/kg/day)-1	3.E-08	4.7E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	6.7E-07	mg/kg/day	1.4E-02	(mg/kg/day)-1	9.E-09	9.0E-07	mg/kg/day	2.0E-02	mg/kg/day	5.E-05
				Dibenzo(a,h)anthracene	1.0694	mg/kg	1.8E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	2.4E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	4.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	6.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				N-Nitroso-di-n-propylamine	1.3	mg/kg	1.7E-07	mg/kg/day	7.0E+00	(mg/kg/day)-1	1.E-06	2.3E-07	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	4.5E-07	mg/kg/day	1.2E-01	(mg/kg/day)-1	5.E-08	6.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	2.8	mg/kg	NC		NC			6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				alpha-Chlordane	0.032	mg/kg	1.6E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-10	2.2E-09	mg/kg/day	5.0E-04	mg/kg/day	4.E-06
				Aroclor-1254	0.49	mg/kg	8.8E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-07	1.2E-07	mg/kg/day	2.0E-05	mg/kg/day	6.E-03
				Aroclor-1260	0.027	mg/kg	4.9E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-08	6.5E-09	mg/kg/day	2.0E-05	mg/kg/day	3.E-04
				Aroclor-1268	0.31379	mg/kg	5.6E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-07	7.6E-08	mg/kg/day	2.0E-05	mg/kg/day	4.E-03
				Dieldrin	0.0044	mg/kg	5.7E-10	mg/kg/day	1.6E+01	(mg/kg/day)-1	9.E-09	7.6E-10	mg/kg/day	5.0E-05	mg/kg/day	2.E-05
				Endosulfan II	0.005	mg/kg	NC		NC			8.7E-10	mg/kg/day	6.0E-03	mg/kg/day	1.E-07
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			5.0E-10	mg/kg/day	6.0E-03	mg/kg/day	8.E-08
				gamma-Chlordane	0.015	mg/kg	7.7E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-10	1.0E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Technical Chlordane	2.21273	mg/kg	1.1E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-08	1.5E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04

US EPA ARCHIVE DOCUMENT

TABLE F.7.37.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Antimony	3.1	*mg/kg*	NC		NC					6.0E-05	*mg/kg/day*	
				Arsenic	6.4	mg/kg	2.5E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-07	3.3E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Cadmium	2.1	mg/kg	NC		NC			3.6E-09	mg/kg/day	2.5E-05	mg/kg/day	1.E-04
				Chromium	200	*mg/kg*	NC		NC					7.5E-05	mg/kg/day	
				Lead	375	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	843	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Mercury	0.62	mg/kg	NC		NC					2.1E-05	mg/kg/day	
				Nickel	69.2	mg/kg	NC		NC					8.0E-04	mg/kg/day	
				Thallium	0.58	mg/kg	NC		NC					8.0E-05	mg/kg/day	
				Vanadium	42.4	*mg/kg*	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00806	mg/kg	3.1E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-05	4.2E-10	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000649	mg/kg	2.5E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-07	3.4E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-05					1.E-02
		EXPOSURE POINT TOTAL									3.E-04					6.E-02
	EXPOSURE MEDIUM TOTAL										3.E-04					6.E-02
SEDIMENT TOTAL											3.E-04					6.E-02
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	*INGESTION*	Acenaphthylene	0.00000132	mg/l	NC		NC			6.7E-11	mg/kg/day	6.0E-02	mg/kg/day	1.E-09
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	6.4E-07	mg/kg/day	1.4E-02	mg/kg/day	9.E-09	8.6E-07	mg/kg/day	2.0E-02	mg/kg/day	4.E-05
				Aldrin	0.000023	mg/l	8.7E-10	mg/kg/day	1.7E+01	mg/kg/day	1.E-08	1.2E-09	mg/kg/day	3.0E-05	mg/kg/day	4.E-05
				alpha-Chlordane	0.000019	mg/l	7.2E-10	mg/kg/day	3.5E-01	mg/kg/day	3.E-10	9.7E-10	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			1.6E-10	mg/kg/day	6.0E-03	mg/kg/day	3.E-08
				Endrin Aldehyde	0.000005	mg/l	NC		NC			2.5E-10	mg/kg/day	3.0E-04	mg/kg/day	8.E-07
				gamma-Chlordane	0.000021	mg/l	7.9E-10	mg/kg/day	3.5E-01	mg/kg/day	3.E-10	1.1E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Arsenic	0.0046	mg/l	1.7E-07	mg/kg/day	1.5E+00	mg/kg/day	3.E-07	2.3E-07	mg/kg/day	3.0E-04	mg/kg/day	8.E-04
				Barium	0.021	mg/l	NC		NC			1.1E-06	mg/kg/day	7.0E-02	mg/kg/day	2.E-05
				Chromium	0.0023	mg/l	NC		NC			1.2E-07	mg/kg/day	3.0E-03	mg/kg/day	4.E-05
				Lead	0.0044	mg/l	1.7E-07	mg/kg/day	--			2.2E-07	mg/kg/day			
				Manganese	0.13	mg/l	NC		NC			6.6E-06	mg/kg/day	2.4E-02	mg/kg/day	3.E-04
				Mercury	0.00000394	mg/l	NC		NC			2.0E-10	mg/kg/day	3.0E-04	mg/kg/day	7.E-07
				Thallium	0.0022	mg/l	NC		NC			1.1E-07	mg/kg/day	8.0E-05	mg/kg/day	1.E-03
				Nitrate	0.765	mg/l	NC		NC			3.9E-05	mg/kg/day	1.6E+00	mg/kg/day	2.E-05
				Nitrite-N	0.0865	mg/l	NC		NC			4.4E-06	mg/kg/day	1.0E-01	mg/kg/day	4.E-05
				Toxicity Equivalency (Dioxins/Furans)	0.000000861	mg/l	3.3E-11	mg/kg/day	1.5E+05	mg/kg/day	5.E-06	4.4E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-06					3.E-03
			DERMAL	Acenaphthylene	0.00000132	mg/l	NC		NC			--		6.0E-02	mg/kg/day	
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	1.9E-04	mg/kg/day	1.4E-02	mg/kg/day	3.E-06	2.6E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				Aldrin	0.000023	mg/l	1.5E-08	mg/kg/day	1.7E+01	mg/kg/day	3.E-07	2.0E-08	mg/kg/day	3.0E-05	mg/kg/day	7.E-04
				alpha-Chlordane	0.000019	mg/l	2.9E-07	mg/kg/day	3.5E-01	mg/kg/day	1.E-07	3.9E-07	mg/kg/day	5.0E-04	mg/kg/day	8.E-04
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.000005	mg/l	NC		NC			3.5E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				gamma-Chlordane	0.000021	mg/l	3.2E-07	mg/kg/day	3.5E-01	mg/kg/day	1.E-07	4.3E-07	mg/kg/day	5.0E-04	mg/kg/day	9.E-04
				Arsenic	0.0046	mg/l	3.0E-07	mg/kg/day	1.5E+00	mg/kg/day	5.E-07	4.1E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Barium	0.021	mg/l	NC		NC			1.9E-06	mg/kg/day	4.9E-03	mg/kg/day	4.E-04
				Chromium	0.0023	mg/l	NC		NC			4.1E-07	mg/kg/day	7.5E-05	mg/kg/day	5.E-03
				Lead	0.0044	mg/l	--		--			--				
				Manganese	0.13	mg/l	NC		NC			1.2E-05	mg/kg/day	9.6E-04	mg/kg/day	1.E-02
				Mercury	0.00000394	mg/l	NC		NC			3.5E-10	mg/kg/day	2.1E-05	mg/kg/day	2.E-05
				Thallium	0.0022	mg/l	NC		NC			1.9E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Nitrate	0.765	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.0865	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000000861	mg/l	1.3E-07	mg/kg/day	1.5E+05	mg/kg/day	2.E-02	1.7E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-02					4.E-02
		EXPOSURE POINT TOTAL									2.E-02					4.E-02
	EXPOSURE MEDIUM TOTAL										2.E-02					4.E-02
SURFACE WATER TOTAL											2.E-02					4.E-02

US EPA ARCHIVE DOCUMENT

TABLE F.7.37.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
LARGEMOUTH BASS	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00046	mg/kg	NC		NC			9.3E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	0.000782	mg/kg	1.2E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-06	1.6E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(b)fluoranthene	0.001	mg/kg	1.5E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-06	2.0E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(g,h,i)perylene	0.001	mg/kg	NC		NC			2.0E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Dibenzo(a,h)anthracene	0.000382	mg/kg	5.8E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-06	7.7E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Indeno(1,2,3-cd)pyrene	0.001	mg/kg	1.5E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-06	2.0E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Phenanthrene	0.004254	mg/kg	NC		NC			8.6E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				4,4'-DDE	0.05885	mg/kg	8.9E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-05	1.2E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				alpha-Chlordane	0.00827	mg/kg	1.2E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-06	1.7E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Aroclor-1254	1.34366	mg/kg	2.0E-03	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-03	2.7E-03	mg/kg/day	2.0E-05	mg/kg/day	1.E+02
				Aroclor-1268	0.036586	mg/kg	5.5E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-04	7.4E-05	mg/kg/day	2.0E-05	mg/kg/day	4.E+00
				Dieldrin	0.0024	mg/kg	3.6E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	6.E-05	4.9E-06	mg/kg/day	5.0E-05	mg/kg/day	1.E-01
				gamma-Chlordane	0.0034	mg/kg	5.1E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	6.9E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Technical Chlordane	0.1282	mg/kg	1.9E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-05	2.6E-04	mg/kg/day	5.0E-04	mg/kg/day	5.E-01
				Lead	0.0879	mg/kg	1.3E-04	mg/kg/day				1.8E-04	mg/kg/day			
				Mercury	0.233	mg/kg	NC		NC			4.7E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				Mercury (methyl)	0.278	mg/kg	NC		NC			5.6E-04	mg/kg/day	1.0E-04	mg/kg/day	6.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000191	mg/kg	2.9E-07	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-02	3.9E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000372	mg/kg	5.6E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-03	7.5E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-02					1.E+02
		EXPOSURE POINT TOTAL									6.E-02					1.E+02
	EXPOSURE MEDIUM TOTAL										6.E-02					1.E+02
WHOLE BODY TOTAL											6.E-02					*1.E+02*
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											8.E-02					1.5.E+02

NOTES.
(1) - Blank cells indicate that an RfD or RfC is not availalable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE F.7.3S.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	LYMAN MILL POND	INGESTION	2-Methylnaphthalene	0.1	mg/kg	NC		NC			4.0E-08	mg/kg/day	2.0E-02	mg/kg/day	2.E-06
				4-Chloro-3-methylphenol	1.3	mg/kg	NC		NC			5.1E-07	mg/kg/day	5.0E-03	mg/kg/day	1.E-04
				4-Nitrophenol	2.2	mg/kg	NC		NC			8.7E-07	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			1.7E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Benzo(a)anthracene	2.8	mg/kg	1.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(a)pyrene	2.9	mg/kg	2.0E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(b)fluoranthene	4.5	mg/kg	3.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.8E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(k)fluoranthene	2.1	mg/kg	1.4E-07	mg/kg/day	7.3E-02	(mg/kg/day)-1	1.E-08	8.3E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	3.5E-07	mg/kg/day	1.4E-02	(mg/kg/day)-1	5.E-09	2.1E-06	mg/kg/day	2.0E-02	mg/kg/day	1.E-04
				Dibenzo(a,h)anthracene	1.0694	mg/kg	7.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-07	4.2E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	1.8E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				N-Nitroso-di-n-propylamine	1.3	mg/kg	8.8E-08	mg/kg/day	7.0E+00	(mg/kg/day)-1	6.E-07	5.1E-07	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	9.5E-08	mg/kg/day	1.2E-01	(mg/kg/day)-1	1.E-08	5.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	2.8	mg/kg	NC		NC			1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				alpha-Chlordane	0.032	mg/kg	2.2E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-10	1.3E-08	mg/kg/day	5.0E-04	mg/kg/day	3.E-05
				Aroclor-1254	0.49	mg/kg	3.3E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-08	1.9E-07	mg/kg/day	2.0E-05	mg/kg/day	1.E-02
				Aroclor-1260	0.027	mg/kg	1.8E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-09	1.1E-08	mg/kg/day	2.0E-05	mg/kg/day	5.E-04
				Aroclor-1268	0.31379	mg/kg	2.1E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-08	1.2E-07	mg/kg/day	2.0E-05	mg/kg/day	6.E-03
				Dieldrin	0.0044	mg/kg	3.0E-10	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.E-09	1.7E-09	mg/kg/day	5.0E-05	mg/kg/day	3.E-05
				Endosulfan II	0.005	mg/kg	NC		NC			2.0E-09	mg/kg/day	6.0E-03	mg/kg/day	3.E-07
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			1.1E-09	mg/kg/day	6.0E-03	mg/kg/day	2.E-07
				gamma-Chlordane	0.015	mg/kg	1.0E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-10	5.9E-09	mg/kg/day	5.0E-04	mg/kg/day	1.E-05
				Technical Chlordane	2.21273	mg/kg	1.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-08	8.8E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Antimony	3.1	mg/kg	NC		NC			1.2E-06	mg/kg/day	4.0E-04	mg/kg/day	3.E-03
				Arsenic	6.4	mg/kg	4.3E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	7.E-07	2.5E-06	mg/kg/day	3.0E-04	mg/kg/day	8.E-03
				Cadmium	2.1	mg/kg	NC		NC			8.3E-07	mg/kg/day	1.0E-03	mg/kg/day	8.E-04
				Chromium	200	mg/kg	NC		NC			7.9E-05	mg/kg/day	3.0E-03	mg/kg/day	3.E-02
				Lead	375	mg/kg	2.5E-05	mg/kg/day	--			1.5E-04	mg/kg/day			
				Manganese	843	mg/kg	NC		NC			3.3E-04	mg/kg/day	7.1E-02	mg/kg/day	5.E-03
				Mercury	0.62	mg/kg	NC		NC			2.5E-07	mg/kg/day	3.0E-04	mg/kg/day	8.E-04
				Nickel	69.2	mg/kg	NC		NC			2.7E-05	mg/kg/day	2.0E-02	mg/kg/day	1.E-03
				Thallium	0.58	mg/kg	NC		NC			2.3E-07	mg/kg/day	8.0E-05	mg/kg/day	3.E-03
				Vanadium	42.4	mg/kg	NC		NC			1.7E-05	mg/kg/day	7.0E-03	mg/kg/day	2.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.00806	mg/kg	5.5E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-05	3.2E-09	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000649	mg/kg	4.4E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-07	2.6E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								9.E-05					7.E-02
			DERMAL	2-Methylnaphthalene	0.1	mg/kg	NC		NC			7.4E-08	mg/kg/day	2.0E-02	mg/kg/day	4.E-06
				4-Chloro-3-methylphenol	1.3	mg/kg	NC		NC			7.4E-07	mg/kg/day	5.0E-03	mg/kg/day	1.E-04
				4-Nitrophenol	2.2	mg/kg	NC		NC			1.2E-06	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			3.2E-07	mg/kg/day	6.0E-02	mg/kg/day	5.E-06
				Benzo(a)anthracene	2.8	mg/kg	3.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.1E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(a)pyrene	2.9	mg/kg	3.7E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	2.1E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(b)fluoranthene	4.5	mg/kg	5.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	3.3E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			2.2E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(k)fluoranthene	2.1	mg/kg	2.6E-07	mg/kg/day	7.3E-02	(mg/kg/day)-1	2.E-08	1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	5.0E-07	mg/kg/day	1.4E-02	(mg/kg/day)-1	7.E-09	2.9E-06	mg/kg/day	2.0E-02	mg/kg/day	1.E-04
				Dibenzo(a,h)anthracene	1.0694	mg/kg	1.3E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	7.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	3.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	2.0E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				N-Nitroso-di-n-propylamine	1.3	mg/kg	1.3E-07	mg/kg/day	7.0E+00	(mg/kg/day)-1	9.E-07	7.4E-07	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	3.4E-07	mg/kg/day	1.2E-01	(mg/kg/day)-1	4.E-08	2.0E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Phenanthrene	2.8	mg/kg	NC		NC			2.1E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				alpha-Chlordane	0.032	mg/kg	1.2E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-10	7.2E-09	mg/kg/day	5.0E-04	mg/kg/day	1.E-05
				Aroclor-1254	0.49	mg/kg	6.7E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-07	3.9E-07	mg/kg/day	2.0E-05	mg/kg/day	2.E-02
				Aroclor-1260	0.027	mg/kg	3.7E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-09	2.1E-08	mg/kg/day	2.0E-05	mg/kg/day	1.E-03
				Aroclor-1268	0.31379	mg/kg	4.3E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-08	2.5E-07	mg/kg/day	2.0E-05	mg/kg/day	1.E-02
				Dieldrin	0.0044	mg/kg	4.3E-10	mg/kg/day	1.6E+01	(mg/kg/day)-1	7.E-09	2.5E-09	mg/kg/day	5.0E-05	mg/kg/day	5.E-05
				Endosulfan II	0.005	mg/kg	NC		NC			2.8E-09	mg/kg/day	6.0E-03	mg/kg/day	5.E-07
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			1.6E-09	mg/kg/day	6.0E-03	mg/kg/day	3.E-07

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TABLE F.7.38.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
				gamma-Chlordane	0.015	mg/kg	5.8E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-10	3.4E-09	mg/kg/day	5.0E-04	mg/kg/day	7.E-06
				Technical Chlordane	2.21273	mg/kg	8.6E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	5.0E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Antimony	3.1	mg/kg	NC		NC					6.0E-05	mg/kg/day	
				Arsenic	6.4	mg/kg	1.9E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-07	1.1E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				Cadmium	2.1	mg/kg	NC		NC			1.2E-08	mg/kg/day	2.5E-05	mg/kg/day	5.E-04
				Chromium	200	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	375	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	843	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Mercury	0.62	mg/kg	NC		NC					2.1E-05	mg/kg/day	
				Nickel	69.2	mg/kg	NC		NC					8.0E-04	mg/kg/day	
				Thallium	0.58	mg/kg	NC		NC					8.0E-05	mg/kg/day	
				Vanadium	42.4	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00806	mg/kg	2.3E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-05	1.4E-09	mg/kg/day			
				Toxicity Equivalency (PCB Congeners	0.0000649	mg/kg	1.9E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-07	1.1E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-05					4.E-02
		EXPOSURE POINT TOTAL									1.E-04					1.E-01
	EXPOSURE MEDIUM TOTAL										1.E-04					1.E-01
SEDIMENT TOTAL											1.E-04					1.E-01
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00000132	mg/l	NC		NC			1.0E-10	mg/kg/day	6.0E-02	mg/kg/day	2.E-09
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	2.3E-07	mg/kg/day	1.4E-02	mg/kg/day	3.E-09	1.3E-06	mg/kg/day	2.0E-02	mg/kg/day	7.E-05
				Aldrin	0.000023	mg/l	3.1E-10	mg/kg/day	1.7E+01	mg/kg/day	5.E-09	1.8E-09	mg/kg/day	3.0E-05	mg/kg/day	6.E-05
				alpha-Chlordane	0.000019	mg/l	2.6E-10	mg/kg/day	3.5E-01	mg/kg/day	9.E-11	1.5E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			2.5E-10	mg/kg/day	6.0E-03	mg/kg/day	4.E-08
				Endrin Aldehyde	0.000005	mg/l	NC		NC			4.0E-10	mg/kg/day	3.0E-04	mg/kg/day	1.E-06
				gamma-Chlordane	0.000021	mg/l	2.8E-10	mg/kg/day	3.5E-01	mg/kg/day	1.E-10	1.7E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Arsenic	0.0046	mg/l	6.2E-08	mg/kg/day	1.5E+00	mg/kg/day	9.E-08	3.6E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Barium	0.021	mg/l	NC		NC			1.7E-06	mg/kg/day	7.0E-02	mg/kg/day	2.E-05
				Chromium	0.0023	mg/l	NC		NC			1.8E-07	mg/kg/day	3.0E-03	mg/kg/day	6.E-05
				Lead	0.0044	mg/l	6.0E-08	mg/kg/day	--			3.5E-07	mg/kg/day			
				Manganese	0.13	mg/l	NC		NC			1.0E-05	mg/kg/day	2.4E-02	mg/kg/day	4.E-04
				Mercury	0.00000394	mg/l	NC		NC			3.1E-10	mg/kg/day	3.0E-04	mg/kg/day	1.E-06
				Thallium	0.0022	mg/l	NC		NC			1.7E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Nitrate	0.765	mg/l	NC		NC			6.1E-05	mg/kg/day	1.6E+00	mg/kg/day	4.E-05
				Nitrite-N	0.0865	mg/l	NC		NC			6.8E-06	mg/kg/day	1.0E-01	mg/kg/day	7.E-05
				Toxicity Equivalency (Dioxins/Furans)	0.000000861	mg/l	1.2E-11	mg/kg/day	1.5E+05	mg/kg/day	2.E-06	6.8E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-06					4.E-03
			DERMAL	Acenaphthylene	0.00000132	mg/l	NC		NC			--		6.0E-02	mg/kg/day	
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	4.9E-05	mg/kg/day	1.4E-02	mg/kg/day	7.E-07	2.9E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				Aldrin	0.000023	mg/l	3.9E-09	mg/kg/day	1.7E+01	mg/kg/day	7.E-08	2.3E-08	mg/kg/day	3.0E-05	mg/kg/day	8.E-04
				alpha-Chlordane	0.000019	mg/l	7.5E-08	mg/kg/day	3.5E-01	mg/kg/day	3.E-08	4.4E-07	mg/kg/day	5.0E-04	mg/kg/day	9.E-04
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.000005	mg/l	NC		NC			3.9E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				gamma-Chlordane	0.000021	mg/l	8.2E-08	mg/kg/day	3.5E-01	mg/kg/day	3.E-08	4.8E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Arsenic	0.0046	mg/l	7.8E-08	mg/kg/day	1.5E+00	mg/kg/day	1.E-07	4.6E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Barium	0.021	mg/l	NC		NC			2.1E-06	mg/kg/day	4.9E-03	mg/kg/day	4.E-04
				Chromium	0.0023	mg/l	NC		NC			4.6E-07	mg/kg/day	7.5E-05	mg/kg/day	6.E-03
				Lead	0.0044	mg/l	--		--			--				
				Manganese	0.13	mg/l	NC		NC			1.3E-05	mg/kg/day	9.6E-04	mg/kg/day	1.E-02
				Mercury	0.00000394	mg/l	NC		NC			3.9E-10	mg/kg/day	2.1E-05	mg/kg/day	2.E-05
				Thallium	0.0022	mg/l	NC		NC			2.2E-07	mg/kg/day	8.0E-05	mg/kg/day	3.E-03
				Nitrate	0.765	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.0865	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000000861	mg/l	3.3E-08	mg/kg/day	1.5E+05	mg/kg/day	5.E-03	1.9E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-03					4.E-02
		EXPOSURE POINT TOTAL									5.E-03					5.E-02
	EXPOSURE MEDIUM TOTAL										5.E-03					5.E-02
SURFACE WATER TOTAL											5.E-03					5.E-02

US EPA ARCHIVE DOCUMENT

TABLE P.7.38.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00046	mg/kg	NC		NC			9.7E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	0.000782	mg/kg	2.8E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	1.6E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(b)fluoranthene	0.001	mg/kg	3.6E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.1E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(g,h,i)perylene	0.001	mg/kg	NC		NC			2.1E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Dibenzo(a,h)anthracene	0.000382	mg/kg	1.4E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	8.0E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Indeno(1,2,3-cd)pyrene	0.001	mg/kg	3.6E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.1E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Phenanthrene	0.004254	mg/kg	NC		NC			8.9E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				4,4'-DDE	0.05885	mg/kg	2.1E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	7.E-06	1.2E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				alpha-Chlordane	0.00827	mg/kg	3.0E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	1.7E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Aroclor-1254	1.34366	mg/kg	4.8E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-03	2.8E-03	mg/kg/day	2.0E-05	mg/kg/day	1.E+02
				Aroclor-1268	0.036586	mg/kg	1.3E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-05	7.7E-05	mg/kg/day	2.0E-05	mg/kg/day	4.E+00
				Dieldrin	0.0024	mg/kg	8.6E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	5.0E-06	mg/kg/day	5.0E-05	mg/kg/day	1.E-01
				gamma-Chlordane	0.0034	mg/kg	1.2E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-07	7.1E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Technical Chlordane	0.1282	mg/kg	4.6E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-05	2.7E-04	mg/kg/day	5.0E-04	mg/kg/day	5.E-01
				Lead	0.0879	mg/kg	3.2E-05	mg/kg/day				1.8E-04	mg/kg/day			
				Mercury	0.233	mg/kg	NC		NC			4.9E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				Mercury (methyl)	0.278	mg/kg	NC		NC			5.8E-04	mg/kg/day	1.0E-04	mg/kg/day	6.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000191	mg/kg	6.9E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-02	4.0E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000372	mg/kg	1.3E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-03	7.8E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-02					2.E+02
		EXPOSURE POINT TOTAL									1.E-02					2.E+02
	EXPOSURE MEDIUM TOTAL										1.E-02					2.E+02
WHOLE BODY TOTAL											1.E-02					2.E+02
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											2.E-02					1.5.E+02

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE F.7.39.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00046	mg/kg	NC		NC			1.6E-06	mg/kg/day	6.0E-02	mg/kg/day	3 E-05
				Benzo(a)pyrene	0.000782	mg/kg	2.3E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	2.7E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				Benzo(b)fluoranthene	0.001	mg/kg	2.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	3.4E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(g,h,i)perylene	0.001	mg/kg	NC		NC			3.4E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Dibenzo(a,h)anthracene	0.000382	mg/kg	1.1E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-07	1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Indeno(1,2,3-cd)pyrene	0.001	mg/kg	2.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	3.4E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Phenanthrene	0.004254	mg/kg	NC		NC			1.5E-05	mg/kg/day	3.0E-02	mg/kg/day	5.E-04
				4,4'-DDE	0.05885	mg/kg	1.7E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	6.E-06	2.0E-04	mg/kg/day	5.0E-04	mg/kg/day	4.E-01
				alpha-Chlordane	0.00827	mg/kg	2.4E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-07	2.8E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				Aroclor-1254	1.34366	mg/kg	3.9E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-04	4.6E-03	mg/kg/day	2.0E-05	mg/kg/day	2.E+02
				Aroclor-1268	0.036586	mg/kg	1.1E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	1.3E-04	mg/kg/day	2.0E-05	mg/kg/day	6.E+00
				Dieldrin	0.0024	mg/kg	7.0E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	8.2E-06	mg/kg/day	5.0E-05	mg/kg/day	2.E-01
				gamma-Chlordane	0.0034	mg/kg	1.0E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	1.2E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Technical Chlordane	0.1282	mg/kg	3.8E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	4.4E-04	mg/kg/day	5.0E-04	mg/kg/day	9.E-01
				Lead	0.0879	mg/kg	2.6E-05	mg/kg/day				3.0E-04	mg/kg/day			
				Mercury	0.233	mg/kg	NC		NC			8.0E-04	mg/kg/day	3.0E-04	mg/kg/day	3.E+00
				Mercury (methyl)	0.278	mg/kg	NC		NC			9.5E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+01
				Toxicity Equivalency (Dioxins/Furans)	0.000191	mg/kg	5.6E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-03	6.5E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000372	mg/kg	1.1E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-03	1.3E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-02					2.E+02
		EXPOSURE POINT TOTAL									1.E-02					2.E+02
	EXPOSURE MEDIUM TOTAL										1.E-02					2.E+02
WHOLE BODY TOTAL											1.E-02					2.E+02
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											1.E-02					2.5.E+02

NOTES.
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE F.7.40.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	LYMAN MILL POND	INGESTION	2-Methylnaphthalene	0.1	mg/kg	NC		NC			2.5E-08	mg/kg/day	2.0E-02	mg/kg/day	1.E-06
				4-Chloro-3-methylphenol	1.3	mg/kg	NC		NC			3.3E-07	mg/kg/day	5.0E-03	mg/kg/day	7.E-05
				4-Nitrophenol	2.2	mg/kg	NC		NC			5.6E-07	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			1.1E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				Benzo(a)anthracene	2.8	mg/kg	5.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	7.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	2.9	mg/kg	5.5E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-06	7.4E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	4.5	mg/kg	8.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-07	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			7.6E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(k)fluoranthene	2.1	mg/kg	4.0E-07	mg/kg/day	7.3E-02	(mg/kg/day)-1	3.E-08	5.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	9.8E-07	mg/kg/day	1.4E-02	(mg/kg/day)-1	1.E-08	1.3E-06	mg/kg/day	2.0E-02	mg/kg/day	7.E-05
				Dibenzo(a,h)anthracene	1.0694	mg/kg	2.0E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	2.7E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	5.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	6.9E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				N-Nitroso-di-n-propylamine	1.3	mg/kg	2.5E-07	mg/kg/day	7.0E+00	(mg/kg/day)-1	2.E-06	3.3E-07	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	2.6E-07	mg/kg/day	1.2E-01	(mg/kg/day)-1	3.E-08	3.6E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	2.8	mg/kg	NC		NC			7.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				alpha-Chlordane	0.032	mg/kg	6.0E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-09	8.1E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-05
				Aroclor-1254	0.49	mg/kg	9.3E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-07	1.2E-07	mg/kg/day	2.0E-05	mg/kg/day	6.E-03
				Aroclor-1260	0.027	mg/kg	5.1E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-08	6.9E-09	mg/kg/day	2.0E-05	mg/kg/day	3.E-04
				Aroclor-1268	0.31379	mg/kg	5.9E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-07	8.0E-08	mg/kg/day	2.0E-05	mg/kg/day	4.E-03
				Dieldrin	0.0044	mg/kg	8.3E-10	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-08	1.1E-09	mg/kg/day	5.0E-05	mg/kg/day	2.E-05
				Endosulfan II	0.005	mg/kg	NC		NC			1.3E-09	mg/kg/day	6.0E-03	mg/kg/day	2.E-07
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			7.4E-10	mg/kg/day	6.0E-03	mg/kg/day	1.E-07
				gamma-Chlordane	0.015	mg/kg	2.8E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-09	3.8E-09	mg/kg/day	5.0E-04	mg/kg/day	8.E-06
				Technical Chlordane	2.21273	mg/kg	4.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	5.6E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Antimony	3.1	mg/kg	NC		NC			7.9E-07	mg/kg/day	4.0E-04	mg/kg/day	2.E-03
				Arsenic	6.4	mg/kg	1.2E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-06	1.6E-06	mg/kg/day	3.0E-04	mg/kg/day	5.E-03
				Cadmium	2.1	mg/kg	NC		NC			5.3E-07	mg/kg/day	1.0E-03	mg/kg/day	5.E-04
				Chromium	200	mg/kg	NC		NC			5.1E-05	mg/kg/day	3.0E-03	mg/kg/day	2.E-02
				Lead	375	mg/kg	7.1E-05	mg/kg/day	--			9.5E-05	mg/kg/day			
				Manganese	843	mg/kg	NC		NC			2.1E-04	mg/kg/day	7.1E-02	mg/kg/day	3.E-03
				Mercury	0.62	mg/kg	NC		NC			1.6E-07	mg/kg/day	3.0E-04	mg/kg/day	5.E-04
				Nickel	69.2	mg/kg	NC		NC			1.8E-05	mg/kg/day	2.0E-02	mg/kg/day	9.E-04
				Thallium	0.58	mg/kg	NC		NC			1.5E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Vanadium	42.4	mg/kg	NC		NC			1.1E-05	mg/kg/day	7.0E-03	mg/kg/day	2.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.00806	mg/kg	1.5E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	2.1E-09	mg/kg/day			
				Toxicity Equivalency (PCB Congeners	0.0000649	mg/kg	1.2E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-06	1.7E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-04					4.E-02
			DERMAL	2-Methylnaphthalene	0.1	mg/kg	NC		NC			2.3E-08	mg/kg/day	2.0E-02	mg/kg/day	1.E-06
				4-Chloro-3-methylphenol	1.3	mg/kg	NC		NC			2.3E-07	mg/kg/day	5.0E-03	mg/kg/day	5.E-05
				4-Nitrophenol	2.2	mg/kg	NC		NC			3.8E-07	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			9.6E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				Benzo(a)anthracene	2.8	mg/kg	4.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	2.9	mg/kg	4.8E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-06	6.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	4.5	mg/kg	7.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-07	1.0E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			6.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(k)fluoranthene	2.1	mg/kg	3.5E-07	mg/kg/day	7.3E-02	(mg/kg/day)-1	3.E-08	4.7E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	6.7E-07	mg/kg/day	1.4E-02	(mg/kg/day)-1	9.E-09	9.0E-07	mg/kg/day	2.0E-02	mg/kg/day	5.E-05
				Dibenzo(a,h)anthracene	1.0694	mg/kg	1.8E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	2.4E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	4.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	6.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				N-Nitroso-di-n-propylamine	1.3	mg/kg	1.7E-07	mg/kg/day	7.0E+00	(mg/kg/day)-1	1.E-06	2.3E-07	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	4.5E-07	mg/kg/day	1.2E-01	(mg/kg/day)-1	5.E-08	6.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	2.8	mg/kg	NC		NC			6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				alpha-Chlordane	0.032	mg/kg	1.6E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-10	2.2E-09	mg/kg/day	5.0E-04	mg/kg/day	4.E-06
				Aroclor-1254	0.49	mg/kg	8.8E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-07	1.2E-07	mg/kg/day	2.0E-05	mg/kg/day	6.E-03
				Aroclor-1260	0.027	mg/kg	4.9E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-08	6.5E-09	mg/kg/day	2.0E-05	mg/kg/day	3.E-04
				Aroclor-1268	0.31379	mg/kg	5.6E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-07	7.6E-08	mg/kg/day	2.0E-05	mg/kg/day	4.E-03
				Dieldrin	0.0044	mg/kg	5.7E-10	mg/kg/day	1.6E+01	(mg/kg/day)-1	9.E-09	7.6E-10	mg/kg/day	5.0E-05	mg/kg/day	2.E-05
				Endosulfan II	0.005	mg/kg	NC		NC			8.7E-10	mg/kg/day	6.0E-03	mg/kg/day	1.E-07
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			5.0E-10	mg/kg/day	6.0E-03	mg/kg/day	8.E-08
				gamma-Chlordane	0.015	mg/kg	7.7E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-10	1.0E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Technical Chlordane	2.21273	mg/kg	1.1E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-08	1.5E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04

US EPA ARCHIVE DOCUMENT

TABLE F.7.40.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Antimony	3.1	mg/kg	NC		NC					6.0E-05	mg/kg/day	
				Arsenic	6.4	mg/kg	2.5E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-07	3.3E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Cadmium	2.1	mg/kg	NC		NC			3.6E-09	mg/kg/day	2.5E-05	mg/kg/day	1.E-04
				Chromium	200	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	375	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	843	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Mercury	0.62	mg/kg	NC		NC					2.1E-05	mg/kg/day	
				Nickel	69.2	mg/kg	NC		NC					8.0E-04	mg/kg/day	
				Thallium	0.58	mg/kg	NC		NC					8.0E-05	mg/kg/day	
				Vanadium	42.4	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00806	mg/kg	3.1E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-05	4.2E-10	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000649	mg/kg	2.5E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-07	3.4E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-05					1.E-02
		EXPOSURE POINT TOTAL									3.E-04					6.E-02
	EXPOSURE MEDIUM TOTAL										3.E-04					6.E-02
SEDIMENT TOTAL											3.E-04					6.E-02
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00000132	mg/l	NC		NC			6.7E-11	mg/kg/day	6.0E-02	mg/kg/day	1.E-09
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	6.4E-07	mg/kg/day	1.4E-02	mg/kg/day	9.E-09	8.6E-07	mg/kg/day	2.0E-02	mg/kg/day	4.E-05
				Aldrin	0.000023	mg/l	8.7E-10	mg/kg/day	1.7E+01	mg/kg/day	1.E-08	1.2E-09	mg/kg/day	3.0E-05	mg/kg/day	4.E-05
				alpha-Chlordane	0.000019	mg/l	7.2E-10	mg/kg/day	3.5E-01	mg/kg/day	3.E-10	9.7E-10	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			1.6E-10	mg/kg/day	6.0E-03	mg/kg/day	3.E-08
				Endrin Aldehyde	0.000005	mg/l	NC		NC			2.5E-10	mg/kg/day	3.0E-04	mg/kg/day	8.E-07
				gamma-Chlordane	0.000021	mg/l	7.9E-10	mg/kg/day	3.5E-01	mg/kg/day	3.E-10	1.1E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Arsenic	0.0046	mg/l	1.7E-07	mg/kg/day	1.5E+00	mg/kg/day	3.E-07	2.3E-07	mg/kg/day	3.0E-04	mg/kg/day	8.E-04
				Barium	0.021	mg/l	NC		NC			1.1E-06	mg/kg/day	7.0E-02	mg/kg/day	2.E-05
				Chromium	0.0023	mg/l	NC		NC			1.2E-07	mg/kg/day	3.0E-03	mg/kg/day	4.E-05
				Lead	0.0044	mg/l	1.7E-07	mg/kg/day	--			2.2E-07	mg/kg/day			
				Manganese	0.13	mg/l	NC		NC			6.6E-06	mg/kg/day	2.4E-02	mg/kg/day	3.E-04
				Mercury	0.00000394	mg/l	NC		NC			2.0E-10	mg/kg/day	3.0E-04	mg/kg/day	7.E-07
				Thallium	0.0022	mg/l	NC		NC			1.1E-07	mg/kg/day	8.0E-05	mg/kg/day	1.E-03
				Nitrate	0.765	mg/l	NC		NC			3.9E-05	mg/kg/day	1.6E+00	mg/kg/day	2.E-05
				Nitrite-N	0.0865	mg/l	NC		NC			4.4E-06	mg/kg/day	1.0E-01	mg/kg/day	4.E-05
				Toxicity Equivalency (Dioxins/Furans)	0.000000861	mg/l	3.3E-11	mg/kg/day	1.5E+05	mg/kg/day	5.E-06	4.4E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-06					3.E-03
			DERMAL	Acenaphthylene	0.00000132	mg/l	NC		NC			--		6.0E-02	mg/kg/day	
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	1.9E-04	mg/kg/day	1.4E-02	mg/kg/day	3.E-06	2.6E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				Aldrin	0.000023	mg/l	1.5E-08	mg/kg/day	1.7E+01	mg/kg/day	3.E-07	2.0E-08	mg/kg/day	3.0E-05	mg/kg/day	7.E-04
				alpha-Chlordane	0.000019	mg/l	2.9E-07	mg/kg/day	3.5E-01	mg/kg/day	1.E-07	3.9E-07	mg/kg/day	5.0E-04	mg/kg/day	8.E-04
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.000005	mg/l	NC		NC			3.5E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				gamma-Chlordane	0.000021	mg/l	3.2E-07	mg/kg/day	3.5E-01	mg/kg/day	1.E-07	4.3E-07	mg/kg/day	5.0E-04	mg/kg/day	9.E-04
				Arsenic	0.0046	mg/l	3.0E-07	mg/kg/day	1.5E+00	mg/kg/day	5.E-07	4.1E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Barium	0.021	mg/l	NC		NC			1.9E-06	mg/kg/day	4.9E-03	mg/kg/day	4.E-04
				Chromium	0.0023	mg/l	NC		NC			4.1E-07	mg/kg/day	7.5E-05	mg/kg/day	5.E-03
				Lead	0.0044	mg/l	--		--			--				
				Manganese	0.13	mg/l	NC		NC			1.2E-05	mg/kg/day	9.6E-04	mg/kg/day	1.E-02
				Mercury	0.00000394	mg/l	NC		NC			3.5E-10	mg/kg/day	2.1E-05	mg/kg/day	2.E-05
				Thallium	0.0022	mg/l	NC		NC			1.9E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Nitrate	0.765	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.0865	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000000861	mg/l	1.3E-07	mg/kg/day	1.5E+05	mg/kg/day	2.E-02	1.7E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-02					4.E-02
		EXPOSURE POINT TOTAL									2.E-02					4.E-02
	EXPOSURE MEDIUM TOTAL										2.E-02					4.E-02
SURFACE WATER TOTAL											2.E-02					4.E-02

US EPA ARCHIVE DOCUMENT

TABLE F.7.40.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00355	mg/kg	NC		NC			7.2E-06	mg/kg/day	6.0E-02	mg/kg/day	1.E-04
				Benzo(a)anthracene	0.00946	mg/kg	1.4E-05	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-05	1.9E-05	mg/kg/day	3.0E-02	mg/kg/day	6.E-04
				Benzo(a)pyrene	0.01469	mg/kg	2.2E-05	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-04	3.0E-05	mg/kg/day	3.0E-02	mg/kg/day	1.E-03
				Benzo(b)fluoranthene	0.0067	mg/kg	1.0E-05	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-06	1.4E-05	mg/kg/day	3.0E-02	mg/kg/day	5.E-04
				Benzo(g,h,i)perylene	0.01143	mg/kg	NC		NC			2.3E-05	mg/kg/day	3.0E-02	mg/kg/day	8.E-04
				Dibenzo(a,h)anthracene	0.0027	mg/kg	4.1E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-05	5.5E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Indeno(1,2,3-cd)pyrene	0.01347	mg/kg	2.0E-05	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-05	2.7E-05	mg/kg/day	3.0E-02	mg/kg/day	9.E-04
				Phenanthrene	0.0212	mg/kg	NC		NC			4.3E-05	mg/kg/day	3.0E-02	mg/kg/day	1.E-03
				4,4'-DDD	0.06351	mg/kg	9.6E-05	mg/kg/day	2.4E-01	(mg/kg/day)-1	2.E-05	1.3E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				4,4'-DDE	0.2134	mg/kg	3.2E-04	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-04	4.3E-04	mg/kg/day	5.0E-04	mg/kg/day	9.E-01
				4,4'-DDT	0.0052	mg/kg	7.8E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-06	1.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.0469	mg/kg	7.1E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-05	9.5E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Aroclor-1254	5.21365	mg/kg	7.9E-03	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-02	1.1E-02	mg/kg/day	2.0E-05	mg/kg/day	5.E+02
				Aroclor-1268	0.0437	mg/kg	6.6E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-04	8.9E-05	mg/kg/day	2.0E-05	mg/kg/day	4.E+00
				Dieldrin	0.00862	mg/kg	1.3E-05	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-04	1.7E-05	mg/kg/day	5.0E-05	mg/kg/day	3.E-01
				gamma-Chlordane	0.02921	mg/kg	4.4E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-05	5.9E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Heptachlor Epoxide	0.0017	mg/kg	2.6E-06	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-05	3.4E-06	mg/kg/day	1.3E-05	mg/kg/day	3.E-01
				Technical Chlordane	2.5751	mg/kg	3.9E-03	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-03	5.2E-03	mg/kg/day	5.0E-04	mg/kg/day	1.E+01
				Arsenic	0.0276	mg/kg	4.2E-05	mg/kg/day	1.5E+00	(mg/kg/day)-1	6.E-05	5.6E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Chromium	0.378	mg/kg	NC		NC			7.7E-04	mg/kg/day	3.0E-03	mg/kg/day	3.E-01
				Lead	0.594	mg/kg	8.9E-04	mg/kg/day	--			1.2E-03	mg/kg/day			
				Mercury	0.118	mg/kg	NC		NC			2.4E-04	mg/kg/day	3.0E-04	mg/kg/day	8.E-01
				Mercury (methyl)	0.109	mg/kg	NC		NC			2.2E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000898	mg/kg	1.4E-06	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-01	1.8E-06	mg/kg/day			
				Toxicity Equivalency (PCB Congoners)	0.0000503	mg/kg	7.6E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-02	1.0E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-01					5.5.E+02
		EXPOSURE POINT TOTAL									2.E-01					5.5.E+02
	EXPOSURE MEDIUM TOTAL										2.E-01					5.5.E+02
WHOLE BODY TOTAL											2.E-01					5.5.E+02
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											3.E-01					5.5.E+02

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availaliable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.41.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	LYMAN MILL POND	INGESTION	2-Methylnaphthalene	0.1	mg/kg	NC		NC			4.0E-08	mg/kg/day	2.0E-02	mg/kg/day	2.E-06
				4-Chloro-3-methylphenol	1.3	mg/kg	NC		NC			5.1E-07	mg/kg/day	5.0E-03	mg/kg/day	1.E-04
				4-Nitrophenol	2.2	mg/kg	NC		NC			8.7E-07	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			1.7E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Benzo(a)anthracene	2.8	mg/kg	1.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(a)pyrene	2.9	mg/kg	2.0E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(b)fluoranthene	4.5	mg/kg	3.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.8E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(k)fluoranthene	2.1	mg/kg	1.4E-07	mg/kg/day	7.3E-02	(mg/kg/day)-1	1.E-08	8.3E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	3.5E-07	mg/kg/day	1.4E-02	(mg/kg/day)-1	5.E-09	2.1E-06	mg/kg/day	2.0E-02	mg/kg/day	1.E-04
				Dibenzo(a,h)anthracene	1.0694	mg/kg	7.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-07	4.2E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	1.8E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				N-Nitroso-di-n-propylamine	1.3	mg/kg	8.8E-08	mg/kg/day	7.0E+00	(mg/kg/day)-1	6.E-07	5.1E-07	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	9.5E-08	mg/kg/day	1.2E-01	(mg/kg/day)-1	1.E-08	5.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	2.8	mg/kg	NC		NC			1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				alpha-Chlordane	0.032	mg/kg	2.2E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-10	1.3E-08	mg/kg/day	5.0E-04	mg/kg/day	3.E-05
				Aroclor-1254	0.49	mg/kg	3.3E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-08	1.9E-07	mg/kg/day	2.0E-05	mg/kg/day	1.E-02
				Aroclor-1260	0.027	mg/kg	1.8E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-09	1.1E-08	mg/kg/day	2.0E-05	mg/kg/day	5.E-04
				Aroclor-1268	0.31379	mg/kg	2.1E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-08	1.2E-07	mg/kg/day	2.0E-05	mg/kg/day	6.E-03
				Dieldrin	0.0044	mg/kg	3.0E-10	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.E-09	1.7E-09	mg/kg/day	5.0E-05	mg/kg/day	3.E-05
				Endosulfan II	0.005	mg/kg	NC		NC			2.0E-09	mg/kg/day	6.0E-03	mg/kg/day	3.E-07
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			1.1E-09	mg/kg/day	6.0E-03	mg/kg/day	2.E-07
				gamma-Chlordane	0.015	mg/kg	1.0E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-10	5.9E-09	mg/kg/day	5.0E-04	mg/kg/day	1.E-05
				Technical Chlordane	2.21273	mg/kg	1.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-08	8.8E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Antimony	3.1	mg/kg	NC		NC			1.2E-06	mg/kg/day	4.0E-04	mg/kg/day	3.E-03
				Arsenic	6.4	mg/kg	4.3E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	7.E-07	2.5E-06	mg/kg/day	3.0E-04	mg/kg/day	8.E-03
				Cadmium	2.1	mg/kg	NC		NC			8.3E-07	mg/kg/day	1.0E-03	mg/kg/day	8.E-04
				Chromium	200	mg/kg	NC		NC			7.9E-05	mg/kg/day	3.0E-03	mg/kg/day	3.E-02
				Lead	375	mg/kg	2.5E-05	mg/kg/day	--			1.5E-04	mg/kg/day			
				Manganese	843	mg/kg	NC		NC			3.3E-04	mg/kg/day	7.1E-02	mg/kg/day	5.E-03
				Mercury	0.62	mg/kg	NC		NC			2.5E-07	mg/kg/day	3.0E-04	mg/kg/day	8.E-04
				Nickel	69.2	mg/kg	NC		NC			2.7E-05	mg/kg/day	2.0E-02	mg/kg/day	1.E-03
				Thallium	0.58	mg/kg	NC		NC			2.3E-07	mg/kg/day	8.0E-05	mg/kg/day	3.E-03
				Vanadium	42.4	mg/kg	NC		NC			1.7E-05	mg/kg/day	7.0E-03	mg/kg/day	2.E-03
				Toxicity Equivalency (Dioxins/Furans	0.00806	mg/kg	5.5E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-05	3.2E-09	mg/kg/day			
				Toxicity Equivalency (PCB Congeners	0.0000649	mg/kg	4.4E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-07	2.6E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								9.E-05					7.E-02
			DERMAL	2-Methylnaphthalene	0.1	mg/kg	NC		NC			7.4E-08	mg/kg/day	2.0E-02	mg/kg/day	4.E-06
				4-Chloro-3-methylphenol	1.3	mg/kg	NC		NC			7.4E-07	mg/kg/day	5.0E-03	mg/kg/day	1.E-04
				4-Nitrophenol	2.2	mg/kg	NC		NC			1.2E-06	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			3.2E-07	mg/kg/day	6.0E-02	mg/kg/day	5.E-06
				Benzo(a)anthracene	2.8	mg/kg	3.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.1E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(a)pyrene	2.9	mg/kg	3.7E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	2.1E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(b)fluoranthene	4.5	mg/kg	5.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	3.3E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			2.2E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(k)fluoranthene	2.1	mg/kg	2.6E-07	mg/kg/day	7.3E-02	(mg/kg/day)-1	2.E-08	1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	5.0E-07	mg/kg/day	1.4E-02	(mg/kg/day)-1	7.E-09	2.9E-06	mg/kg/day	2.0E-02	mg/kg/day	1.E-04
				Dibenzo(a,h)anthracene	1.0694	mg/kg	1.3E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	7.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	3.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	2.0E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				N-Nitroso-di-n-propylamine	1.3	mg/kg	1.3E-07	mg/kg/day	7.0E+00	(mg/kg/day)-1	9.E-07	7.4E-07	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	3.4E-07	mg/kg/day	1.2E-01	(mg/kg/day)-1	4.E-08	2.0E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Phenanthrene	2.8	mg/kg	NC		NC			2.1E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				alpha-Chlordane	0.032	mg/kg	1.2E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-10	7.2E-09	mg/kg/day	5.0E-04	mg/kg/day	1.E-05
				Aroclor-1254	0.49	mg/kg	6.7E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-07	3.9E-07	mg/kg/day	2.0E-05	mg/kg/day	2.E-02
				Aroclor-1260	0.027	mg/kg	3.7E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-09	2.1E-08	mg/kg/day	2.0E-05	mg/kg/day	1.E-03
				Aroclor-1268	0.31379	mg/kg	4.3E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-08	2.5E-07	mg/kg/day	2.0E-05	mg/kg/day	1.E-02
				Dieldrin	0.0044	mg/kg	4.3E-10	mg/kg/day	1.6E+01	(mg/kg/day)-1	7.E-09	2.5E-09	mg/kg/day	5.0E-05	mg/kg/day	5.E-05
				Endosulfan II	0.005	mg/kg	NC		NC			2.8E-09	mg/kg/day	6.0E-03	mg/kg/day	5.E-07
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			1.6E-09	mg/kg/day	6.0E-03	mg/kg/day	3.E-07
				gamma-Chlordane	0.015	mg/kg	5.8E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-10	3.4E-09	mg/kg/day	5.0E-04	mg/kg/day	7.E-06
				Technical Chlordane	2.21273	mg/kg	8.6E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	5.0E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03

US EPA ARCHIVE DOCUMENT

TABLE F.7.41.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	CSF/UNIT RISK VALUE	CSF UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	RfD/RfC (1) VALUE	RfD/RfC UNITS	HAZARD QUOTIENT
				Antimony	3.1	mg/kg	NC		NC					6.0E-05	mg/kg/day	
				Arsenic	6.4	mg/kg	1.9E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-07	1.1E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				Cadmium	2.1	mg/kg	NC		NC			1.2E-08	mg/kg/day	2.5E-05	mg/kg/day	5.E-04
				Chromium	200	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	375	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	843	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Mercury	0.62	mg/kg	NC		NC					2.1E-05	mg/kg/day	
				Nickel	69.2	mg/kg	NC		NC					8.0E-04	mg/kg/day	
				Thallium	0.58	mg/kg	NC		NC					8.0E-05	mg/kg/day	
				Vanadium	42.4	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans	0.00806	mg/kg	2.3E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-05	1.4E-09	mg/kg/day			
				Toxicity Equivalency (PCB Congeners	0.0000649	mg/kg	1.9E-12	mg/kg/day	1.5E+03	(mg/kg/day)-1	3.E-07	1.1E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-05					4.E-02
		EXPOSURE POINT TOTAL									1.E-04					1.E-01
	EXPOSURE MEDIUM TOTAL										1.E-04					1.E-01
SEDIMENT TOTAL											1.E-04					1.E-01
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00000132	mg/l	NC		NC			1.0E-10	mg/kg/day	6.0E-02	mg/kg/day	2.E-09
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	2.3E-07	mg/kg/day	1.4E-02	mg/kg/day	3.E-09	1.3E-06	mg/kg/day	2.0E-02	mg/kg/day	7.E-05
				Aldrin	0.000023	mg/l	3.1E-10	mg/kg/day	1.7E+01	mg/kg/day	5.E-09	1.8E-09	mg/kg/day	3.0E-05	mg/kg/day	6.E-05
				alpha-Chlordane	0.000019	mg/l	2.6E-10	mg/kg/day	3.5E-01	mg/kg/day	9.E-11	1.5E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			2.5E-10	mg/kg/day	6.0E-03	mg/kg/day	4.E-08
				Endrin Aldehyde	0.000005	mg/l	NC		NC			4.0E-10	mg/kg/day	3.0E-04	mg/kg/day	1.E-06
				gamma-Chlordane	0.000021	mg/l	2.8E-10	mg/kg/day	3.5E-01	mg/kg/day	1.E-10	1.7E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Arsenic	0.0046	mg/l	6.2E-08	mg/kg/day	1.5E+00	mg/kg/day	9.E-08	3.6E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Barium	0.021	mg/l	NC		NC			1.7E-06	mg/kg/day	7.0E-02	mg/kg/day	2.E-05
				Chromium	0.0023	mg/l	NC		NC			1.8E-07	mg/kg/day	3.0E-03	mg/kg/day	6.E-05
				Lead	0.0044	mg/l	6.0E-08	mg/kg/day	--			3.5E-07	mg/kg/day			
				Manganese	0.13	mg/l	NC		NC			1.0E-05	mg/kg/day	2.4E-02	mg/kg/day	4.E-04
				Mercury	0.00000394	mg/l	NC		NC			3.1E-10	mg/kg/day	3.0E-04	mg/kg/day	1.E-06
				Thallium	0.0022	mg/l	NC		NC			1.7E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Nitrate	0.765	mg/l	NC		NC			6.1E-05	mg/kg/day	1.6E+00	mg/kg/day	4.E-05
				Nitrite-N	0.0865	mg/l	NC		NC			6.8E-06	mg/kg/day	1.0E-01	mg/kg/day	7.E-05
				Toxicity Equivalency (Dioxins/Furans	0.000000861	mg/l	1.2E-11	mg/kg/day	1.5E+05	mg/kg/day	2.E-06	6.8E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-06					4.E-03
			DERMAL	Acenaphthylene	0.00000132	mg/l	NC		NC			--		6.0E-02	mg/kg/day	
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	4.9E-05	mg/kg/day	1.4E-02	mg/kg/day	7.E-07	2.9E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				Aldrin	0.000023	mg/l	3.9E-09	mg/kg/day	1.7E+01	mg/kg/day	7.E-08	2.3E-08	mg/kg/day	3.0E-05	mg/kg/day	8.E-04
				alpha-Chlordane	0.000019	mg/l	7.5E-08	mg/kg/day	3.5E-01	mg/kg/day	3.E-08	4.4E-07	mg/kg/day	5.0E-04	mg/kg/day	9.E-04
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.000005	mg/l	NC		NC			3.9E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				gamma-Chlordane	0.000021	mg/l	8.2E-08	mg/kg/day	3.5E-01	mg/kg/day	3.E-08	4.8E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Arsenic	0.0046	mg/l	7.8E-08	mg/kg/day	1.5E+00	mg/kg/day	1.E-07	4.6E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Barium	0.021	mg/l	NC		NC			2.1E-06	mg/kg/day	4.9E-03	mg/kg/day	4.E-04
				Chromium	0.0023	mg/l	NC		NC			4.6E-07	mg/kg/day	7.5E-05	mg/kg/day	6.E-03
				Lead	0.0044	mg/l	--		--			--				
				Manganese	0.13	mg/l	NC		NC			1.3E-05	mg/kg/day	9.6E-04	mg/kg/day	1.E-02
				Mercury	0.00000394	mg/l	NC		NC			3.9E-10	mg/kg/day	2.1E-05	mg/kg/day	2.E-05
				Thallium	0.0022	mg/l	NC		NC			2.2E-07	mg/kg/day	8.0E-05	mg/kg/day	3.E-03
				Nitrate	0.765	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.0865	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans	0.000000861	mg/l	3.3E-08	mg/kg/day	1.5E+05	mg/kg/day	5.E-03	1.9E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-03					4.E-02
		EXPOSURE POINT TOTAL									5.E-03					5.E-02
	EXPOSURE MEDIUM TOTAL										5.E-03					5.E-02
SURFACE WATER TOTAL											5.E-03					5.E-02

US EPA ARCHIVE DOCUMENT

TABLE F.7.41.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00355	mg/kg	NC		NC			7.5E-06	mg/kg/day	6.0E-02	mg/kg/day	1 E-04
				Benzo(a)anthracene	0.00946	mg/kg	3.4E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-06	2.0E-05	mg/kg/day	3.0E-02	mg/kg/day	7.E-04
				Benzo(a)pyrene	0.01469	mg/kg	5.3E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	4 E-05	3.1E-05	mg/kg/day	3.0E-02	mg/kg/day	1 E-03
				Benzo(b)fluoranthene	0.0067	mg/kg	2.4E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-06	1.4E-05	mg/kg/day	3.0E-02	mg/kg/day	5 E-04
				Benzo(g,h,i)perylene	0.01143	mg/kg	NC		NC			2.4E-05	mg/kg/day	3.0E-02	mg/kg/day	8.E-04
				Dibenzo(a,h)anthracene	0.0027	mg/kg	9.7E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-06	5.7E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Indeno(1,2,3-cd)pyrene	0.01347	mg/kg	4.9E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-06	2.8E-05	mg/kg/day	3.0E-02	mg/kg/day	9.E-04
				Phenanthrene	0.0212	mg/kg	NC		NC			4.5E-05	mg/kg/day	3.0E-02	mg/kg/day	1.E-03
				4,4'-DDD	0.06351	mg/kg	2.3E-05	mg/kg/day	2.4E-01	(mg/kg/day)-1	5.E-06	1.3E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				4,4'-DDE	0.2134	mg/kg	7.7E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-05	4.5E-04	mg/kg/day	5.0E-04	mg/kg/day	9.E-01
				4,4'-DDT	0.0052	mg/kg	1.9E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	6.E-07	1.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.0469	mg/kg	1.7E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-06	9.9E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Aroclor-1254	5.21365	mg/kg	1.9E-03	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-03	1.1E-02	mg/kg/day	2.0E-05	mg/kg/day	5.E+02
				Aroclor-1268	0.0437	mg/kg	1.6E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-05	9.2E-05	mg/kg/day	2.0E-05	mg/kg/day	5.E+00
				Dieldrin	0.00862	mg/kg	3.1E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.E-05	1.8E-05	mg/kg/day	5.0E-05	mg/kg/day	4.E-01
				gamma-Chlordane	0.02921	mg/kg	1.1E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-06	6.1E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Heptachlor Epoxide	0.0017	mg/kg	6.1E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	6.E-06	3.6E-06	mg/kg/day	1.3E-05	mg/kg/day	3.E-01
				Technical Chlordane	2.5751	mg/kg	9.3E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-04	5.4E-03	mg/kg/day	5.0E-04	mg/kg/day	1.E+01
				Arsenic	0.0276	mg/kg	9.9E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-05	5.8E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Chromium	0.378	mg/kg	NC		NC			7.9E-04	mg/kg/day	3.0E-03	mg/kg/day	3.E-01
				Lead	0.594	mg/kg	2.1E-04	mg/kg/day	--			1.2E-03	mg/kg/day			
				Mercury	0.118	mg/kg	NC		NC			2.5E-04	mg/kg/day	3.0E-04	mg/kg/day	8.E-01
				Mercury (methyl)	0.109	mg/kg	NC		NC			2.3E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Toxicity Equivalency (Dioxins/Furans	0.000898	mg/kg	3.2E-07	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-02	1.9E-06	mg/kg/day			
				Toxicity Equivalency (PCB Congeners	0.0000503	mg/kg	1.8E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-03	1.1E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-02					5.7.E+02
		EXPOSURE POINT TOTAL									6.E-02					5.7.E+02
	EXPOSURE MEDIUM TOTAL										6.E-02					5.7.E+02
WHOLE BODY TOTAL											6.E-02					5.7.E+02
TOTAL RECEPTOR RISK ACROSS ALL MEDIA											6.E-02	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				5.7.E+02

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.42.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00355	mg/kg	NC		NC			1.2E-05	mg/kg/day	6.0E-02	mg/kg/day	2.E-04
				Benzo(a)anthracene	0.00946	mg/kg	2.8E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-06	3.2E-05	mg/kg/day	3.0E-02	mg/kg/day	1.E-03
				Benzo(a)pyrene	0.01469	mg/kg	4.3E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-05	5.0E-05	mg/kg/day	3.0E-02	mg/kg/day	2.E-03
				Benzo(b)fluoranthene	0.0067	mg/kg	2.0E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-06	2.3E-05	mg/kg/day	3.0E-02	mg/kg/day	8.E-04
				Benzo(g,h,i)perylene	0.01143	mg/kg	NC		NC			3.9E-05	mg/kg/day	3.0E-02	mg/kg/day	1.E-03
				Dibenzo(a,h)anthracene	0.0027	mg/kg	7.9E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-06	9.2E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				Indeno(1,2,3-cd)pyrene	0.01347	mg/kg	3.9E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-06	4.6E-05	mg/kg/day	3.0E-02	mg/kg/day	2.E-03
				Phenanthrene	0.0212	mg/kg	NC		NC			7.3E-05	mg/kg/day	3.0E-02	mg/kg/day	2.E-03
				4,4'-DDD	0.06351	mg/kg	1.9E-05	mg/kg/day	2.4E-01	(mg/kg/day)-1	4.E-06	2.2E-04	mg/kg/day	5.0E-04	mg/kg/day	4.E-01
				4,4'-DDE	0.2134	mg/kg	6.3E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-05	7.3E-04	mg/kg/day	5.0E-04	mg/kg/day	1.E+00
				4,4'-DDT	0.0052	mg/kg	1.5E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-07	1.8E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				alpha-Chlordane	0.0469	mg/kg	1.4E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-06	1.6E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				Aroclor-1254	5.21365	mg/kg	1.5E-03	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-03	1.8E-02	mg/kg/day	2.0E-05	mg/kg/day	9.E+02
				Aroclor-1268	0.0437	mg/kg	1.3E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-05	1.5E-04	mg/kg/day	2.0E-05	mg/kg/day	7.E+00
				Dieldrin	0.00862	mg/kg	2.5E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-05	2.9E-05	mg/kg/day	5.0E-05	mg/kg/day	6.E-01
				gamma-Chlordane	0.02921	mg/kg	8.6E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-06	1.0E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Heptachlor Epoxide	0.0017	mg/kg	5.0E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	5.E-06	5.8E-06	mg/kg/day	1.3E-05	mg/kg/day	4.E-01
				Technical Chlordane	2.5751	mg/kg	7.5E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-04	8.8E-03	mg/kg/day	5.0E-04	mg/kg/day	2.E+01
				Arsenic	0.0276	mg/kg	8.1E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-05	9.4E-05	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				Chromium	0.378	mg/kg	NC		NC			1.3E-03	mg/kg/day	3.0E-03	mg/kg/day	4.E-01
				Lead	0.594	mg/kg	1.7E-04	mg/kg/day	--			2.0E-03	mg/kg/day			
				Mercury	0.118	mg/kg	NC		NC			4.0E-04	mg/kg/day	3.0E-04	mg/kg/day	1.E+00
				Mercury (methyl)	0.109	mg/kg	NC		NC			3.7E-04	mg/kg/day	1.0E-04	mg/kg/day	4.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000898	mg/kg	2.6E-07	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-02	3.1E-06	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000503	mg/kg	1.5E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-03	1.7E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-02					9.3.E+02
		EXPOSURE POINT TOTAL									5.E-02					9.3.E+02
	EXPOSURE MEDIUM TOTAL										5.E-02					9.3.E+02
WHOLE BODY TOTAL											5.E-02					9.3.E+02
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		5.E-02	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				9.3.E+02

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.43.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	MANTON POND	INGESTION	Benzo(a)anthracene	0.3	mg/kg	5.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	7.6E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(a)pyrene	0.37	mg/kg	7.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-07	9.4E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(b)fluoranthene	0.64	mg/kg	1.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-08	1.6E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Benzo(g,h,i)perylene	0.22	mg/kg	NC		NC			5.6E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(k)fluoranthene	0.2	mg/kg	3.8E-08	mg/kg/day	7.3E-02	(mg/kg/day)-1	3.E-09	5.1E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				bis(2-Ethylhexyl)phthalate	0.43	mg/kg	8.1E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	1.E-09	1.1E-07	mg/kg/day	2.0E-02	mg/kg/day	5.E-06
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	5.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	7.4E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Phenanthrene	0.3	mg/kg	NC		NC			7.6E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				alpha-Chlordane	0.004	mg/kg	7.6E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-10	1.0E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				gamma-Chlordane	0.005	mg/kg	9.4E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-10	1.3E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Arsenic	0.97	mg/kg	1.8E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-07	2.5E-07	mg/kg/day	3.0E-04	mg/kg/day	8.E-04
				Cadmium	0.96	mg/kg	NC		NC			2.4E-07	mg/kg/day	1.0E-03	mg/kg/day	2.E-04
				Chromium	18.6	mg/kg	NC		NC			4.7E-06	mg/kg/day	3.0E-03	mg/kg/day	2.E-03
				Lead	91	mg/kg	1.7E-05	mg/kg/day	--			2.3E-05	mg/kg/day			
				Manganese	219	mg/kg	NC		NC			5.6E-05	mg/kg/day	7.1E-02	mg/kg/day	8.E-04
				Vanadium	7.1	mg/kg	NC		NC			1.8E-06	mg/kg/day	7.0E-03	mg/kg/day	3.E-04
				Toxicity Equivalency (Dioxins/Furans)	0.000999	mg/kg	1.9E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-05	2.5E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-05					4.E-03
			DERMAL	Benzo(a)anthracene	0.3	mg/kg	5.0E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	6.8E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(a)pyrene	0.37	mg/kg	6.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-07	8.3E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(b)fluoranthene	0.64	mg/kg	1.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-08	1.4E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Benzo(g,h,i)perylene	0.22	mg/kg	NC		NC			5.0E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(k)fluoranthene	0.2	mg/kg	3.3E-08	mg/kg/day	7.3E-02	(mg/kg/day)-1	2.E-09	4.5E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				bis(2-Ethylhexyl)phthalate	0.43	mg/kg	5.5E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	8.E-10	7.4E-08	mg/kg/day	2.0E-02	mg/kg/day	4.E-06
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	4.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	6.5E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Phenanthrene	0.3	mg/kg	NC		NC			6.8E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				alpha-Chlordane	0.004	mg/kg	2.1E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-11	2.8E-10	mg/kg/day	5.0E-04	mg/kg/day	6.E-07
				gamma-Chlordane	0.005	mg/kg	2.6E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-11	3.5E-10	mg/kg/day	5.0E-04	mg/kg/day	7.E-07
				Arsenic	0.97	mg/kg	3.7E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	6.E-08	5.0E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Cadmium	0.96	mg/kg	NC		NC			1.7E-09	mg/kg/day	2.5E-05	mg/kg/day	7.E-05
				Chromium	18.6	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	91	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	219	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Vanadium	7.1	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000999	mg/kg	3.9E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-06	5.2E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-06					3.E-04
		EXPOSURE POINT TOTAL									4.E-05					4.E-03
	EXPOSURE MEDIUM TOTAL										4.E-05					4.E-03
SEDIMENT TOTAL											4.E-05					4.E-03
SURFACE WATER	SURFACE WATER	MANTON POND	INGESTION	Acenaphthylene	0.00000132	mg/l	NC		NC			6.7E-11	mg/kg/day	6.0E-02	mg/kg/day	1.E-09
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	6.4E-07	mg/kg/day	1.4E-02	mg/kg/day	9.E-09	8.6E-07	mg/kg/day	2.0E-02	mg/kg/day	4.E-05
				Aldrin	0.000023	mg/l	8.7E-10	mg/kg/day	1.7E+01	mg/kg/day	1.E-08	1.2E-09	mg/kg/day	3.0E-05	mg/kg/day	4.E-05
				alpha-Chlordane	0.000019	mg/l	7.2E-10	mg/kg/day	3.5E-01	mg/kg/day	3.E-10	9.7E-10	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			1.6E-10	mg/kg/day	6.0E-03	mg/kg/day	3.E-08
				Endrin Aldehyde	0.000005	mg/l	NC		NC			2.5E-10	mg/kg/day	3.0E-04	mg/kg/day	8.E-07
				gamma-Chlordane	0.000021	mg/l	7.9E-10	mg/kg/day	3.5E-01	mg/kg/day	3.E-10	1.1E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Arsenic	0.0046	mg/l	1.7E-07	mg/kg/day	1.5E+00	mg/kg/day	3.E-07	2.3E-07	mg/kg/day	3.0E-04	mg/kg/day	8.E-04
				Barium	0.021	mg/l	NC		NC			1.1E-06	mg/kg/day	7.0E-02	mg/kg/day	2.E-05
				Chromium	0.0023	mg/l	NC		NC			1.2E-07	mg/kg/day	3.0E-03	mg/kg/day	4.E-05
				Lead	0.0044	mg/l	1.7E-07	mg/kg/day	--			2.2E-07	mg/kg/day			
				Manganese	0.13	mg/l	NC		NC			6.6E-06	mg/kg/day	2.4E-02	mg/kg/day	3.E-04
				Mercury	0.00000394	mg/l	NC		NC			2.0E-10	mg/kg/day	3.0E-04	mg/kg/day	7.E-07
				Thallium	0.0022	mg/l	NC		NC			1.1E-07	mg/kg/day	8.0E-05	mg/kg/day	1.E-03
				Nitrate	0.765	mg/l	NC		NC			3.9E-05	mg/kg/day	1.6E+00	mg/kg/day	2.E-05
				Nitrite-N	0.0865	mg/l	NC		NC			4.4E-06	mg/kg/day	1.0E-01	mg/kg/day	4.E-05

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TABLE F.7.43.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Toxicity Equivalency (Dioxins/Furans)	0.000000861	mg/l	3.3E-11	mg/kg/day	1.5E+05	mg/kg/day	5.E-06	4.4E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-06					3.E-03
			DERMAL	Acenaphthylene	0.00000132	mg/l	NC		NC			--		6.0E-02	mg/kg/day	
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	1.9E-04	mg/kg/day	1.4E-02	mg/kg/day	3.E-06	2.6E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				Aldrin	0.000023	mg/l	1.5E-08	mg/kg/day	1.7E+01	mg/kg/day	3.E-07	2.0E-08	mg/kg/day	3.0E-05	mg/kg/day	7.E-04
				alpha-Chlordane	0.000019	mg/l	2.9E-07	mg/kg/day	3.5E-01	mg/kg/day	1.E-07	3.9E-07	mg/kg/day	5.0E-04	mg/kg/day	8.E-04
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.000005	mg/l	NC		NC			3.5E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				gamma-Chlordane	0.000021	mg/l	3.2E-07	mg/kg/day	3.5E-01	mg/kg/day	1.E-07	4.3E-07	mg/kg/day	5.0E-04	mg/kg/day	9.E-04
				Arsenic	0.0046	mg/l	3.0E-07	mg/kg/day	1.5E+00	mg/kg/day	5.E-07	4.1E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Barium	0.021	mg/l	NC		NC			1.9E-06	mg/kg/day	4.9E-03	mg/kg/day	4.E-04
				Chromium	0.0023	mg/l	NC		NC			4.1E-07	mg/kg/day	7.5E-05	mg/kg/day	5.E-03
				Lead	0.0044	mg/l	--		--			--				
				Manganese	0.13	mg/l	NC		NC			1.2E-05	mg/kg/day	9.6E-04	mg/kg/day	1.E-02
				Mercury	0.00000394	mg/l	NC		NC			3.5E-10	mg/kg/day	2.1E-05	mg/kg/day	2.E-05
				Thallium	0.0022	mg/l	NC		NC			1.9E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Nitrate	0.765	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.0865	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	*0.000000861*	*mg/l*	*1.3E-07*	*mg/kg/day*	*1.5E+05*	*mg/kg/day*	*2.E-02*	*1.7E-07*	*mg/kg/day*			
			EXPOSURE ROUTE TOTAL								2.E-02					4.E-02
		EXPOSURE POINT TOTAL									2.E-02					4.E-02
	EXPOSURE MEDIUM TOTAL										2.E-02					4.E-02
SURFACE WATER TOTAL											2.E-02					4.E-02
LARGEMOUTH BASS	FILLET	MANTON POND	INGESTION	Acenaphthylene	0.00041	mg/kg	NC		NC			8.3E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.000226	mg/kg	3.4E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	4.6E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.00498	mg/kg	NC		NC			1.0E-05	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				4,4'-DDE	0.01235	mg/kg	1.9E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	6.E-06	2.5E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				alpha-Chlordane	0.00263	mg/kg	4.0E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	5.3E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Aroclor-1254	0.22052	mg/kg	3.3E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-04	4.5E-04	mg/kg/day	2.0E-05	mg/kg/day	2.E+01
				Aroclor-1268	0.06755	mg/kg	1.0E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	1.4E-04	mg/kg/day	2.0E-05	mg/kg/day	7.E+00
				Dieldrin	0.00057	mg/kg	8.6E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	1.2E-06	mg/kg/day	5.0E-05	mg/kg/day	2.E-02
				Endosulfan Sulfate	0.0019	mg/kg	NC		NC			3.9E-06	mg/kg/day	6.0E-03	mg/kg/day	6.E-04
				gamma-Chlordane	0.00096	mg/kg	1.4E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-07	1.9E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				Technical Chlordane	0.06498	mg/kg	9.8E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-05	1.3E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				Lead	0.0119	mg/kg	1.8E-05	mg/kg/day	--			2.4E-05	mg/kg/day			
				Mercury	0.259	mg/kg	NC		NC			5.3E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				Mercury (methyl)	0.278	mg/kg	NC		NC			5.6E-04	mg/kg/day	1.0E-04	mg/kg/day	6.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000031	mg/kg	4.7E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-03	6.3E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								8.E-03					4.E+01
		EXPOSURE POINT TOTAL									8.E-03					4.E+01
	EXPOSURE MEDIUM TOTAL										8.E-03					4.E+01
FILLET TOTAL											8.E-03					4.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MED
											3.E-02					3.7.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE F.7.44.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	MANTON POND	INGESTION	Benzo(a)anthracene	0.3	mg/kg	2.0E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	1.2E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Benzo(a)pyrene	0.37	mg/kg	2.5E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Benzo(b)fluoranthene	0.64	mg/kg	4.3E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.5E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Benzo(g,h,i)perylene	0.22	mg/kg	NC		NC			8.7E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(k)fluoranthene	0.2	mg/kg	1.4E-08	mg/kg/day	7.3E-02	(mg/kg/day)-1	1.E-09	7.9E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				bis(2-Ethylhexyl)phthalate	0.43	mg/kg	2.9E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	4.E-10	1.7E-07	mg/kg/day	2.0E-02	mg/kg/day	9.E-06
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	2.0E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	1.1E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Phenanthrene	0.3	mg/kg	NC		NC			1.2E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				alpha-Chlordane	0.004	mg/kg	2.7E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-11	1.6E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				gamma-Chlordane	0.005	mg/kg	3.4E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	2.0E-09	mg/kg/day	5.0E-04	mg/kg/day	4.E-06
				Arsenic	0.97	mg/kg	6.6E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-07	3.8E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Cadmium	0.96	mg/kg	NC		NC			3.8E-07	mg/kg/day	1.0E-03	mg/kg/day	4.E-04
				Chromium	18.6	mg/kg	NC		NC			7.4E-06	mg/kg/day	3.0E-03	mg/kg/day	2.E-03
				Lead	91	mg/kg	6.2E-06	mg/kg/day	--			3.6E-05	mg/kg/day			
				Manganese	219	mg/kg	NC		NC			8.7E-05	mg/kg/day	7.1E-02	mg/kg/day	1.E-03
				Vanadium	7.1	mg/kg	NC		NC			2.8E-06	mg/kg/day	7.0E-03	mg/kg/day	4.E-04
				Toxicity Equivalency (Dioxins/Furans)	0.000999	mg/kg	6.8E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-05	4.0E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					6.E-03
			DERMAL	Benzo(a)anthracene	0.3	mg/kg	3.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.2E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Benzo(a)pyrene	0.37	mg/kg	4.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	2.7E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				Benzo(b)fluoranthene	0.64	mg/kg	8.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	4.7E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	0.22	mg/kg	NC		NC			1.6E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Benzo(k)fluoranthene	0.2	mg/kg	2.5E-08	mg/kg/day	7.3E-02	(mg/kg/day)-1	2.E-09	1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				bis(2-Ethylhexyl)phthalate	0.43	mg/kg	4.2E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	6.E-10	2.4E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	3.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Phenanthrene	0.3	mg/kg	NC		NC			2.2E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				alpha-Chlordane	0.004	mg/kg	1.6E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-11	9.1E-10	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				gamma-Chlordane	0.005	mg/kg	1.9E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-11	1.1E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Arsenic	0.97	mg/kg	2.8E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-08	1.6E-07	mg/kg/day	3.0E-04	mg/kg/day	5.E-04
				Cadmium	0.96	mg/kg	NC		NC			5.4E-09	mg/kg/day	2.5E-05	mg/kg/day	2.E-04
				Chromium	18.6	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	91	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	219	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Vanadium	7.1	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000999	mg/kg	2.9E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-06	1.7E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-06					8.E-04
		EXPOSURE POINT TOTAL									2.E-05					7.E-03
	EXPOSURE MEDIUM TOTAL										2.E-05					7.E-03
SEDIMENT TOTAL											2.E-05					7.E-03
SURFACE WATER	SURFACE WATER	MANTON POND	INGESTION	Acenaphthylene	0.00000132	mg/l	NC		NC			1.0E-10	mg/kg/day	6.0E-02	mg/kg/day	2.E-09
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	2.3E-07	mg/kg/day	1.4E-02	mg/kg/day	3.E-09	1.3E-06	mg/kg/day	2.0E-02	mg/kg/day	7.E-05
				Aldrin	0.000023	mg/l	3.1E-10	mg/kg/day	1.7E+01	mg/kg/day	5.E-09	1.8E-09	mg/kg/day	3.0E-05	mg/kg/day	6.E-05
				alpha-Chlordane	0.000019	mg/l	2.6E-10	mg/kg/day	3.5E-01	mg/kg/day	9.E-11	1.5E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			2.5E-10	mg/kg/day	6.0E-03	mg/kg/day	4.E-08
				Endrin Aldehyde	0.000005	mg/l	NC		NC			4.0E-10	mg/kg/day	3.0E-04	mg/kg/day	1.E-06
				gamma-Chlordane	0.000021	mg/l	2.8E-10	mg/kg/day	3.5E-01	mg/kg/day	1.E-10	1.7E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Arsenic	0.0046	mg/l	6.2E-08	mg/kg/day	1.5E+00	mg/kg/day	9.E-08	3.6E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Barium	0.021	mg/l	NC		NC			1.7E-06	mg/kg/day	7.0E-02	mg/kg/day	2.E-05
				Chromium	0.0023	mg/l	NC		NC			1.8E-07	mg/kg/day	3.0E-03	mg/kg/day	6.E-05
				Lead	0.0044	mg/l	6.0E-08	mg/kg/day	--			3.5E-07	mg/kg/day			
				Manganese	0.13	mg/l	NC		NC			1.0E-05	mg/kg/day	2.4E-02	mg/kg/day	4.E-04
				Mercury	0.00000394	mg/l	NC		NC			3.1E-10	mg/kg/day	3.0E-04	mg/kg/day	1.E-06
				Thallium	0.0022	mg/l	NC		NC			1.7E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Nitrate	0.765	mg/l	NC		NC			6.1E-05	mg/kg/day	1.6E+00	mg/kg/day	4.E-05
				Nitrite-N	0.0865	mg/l	NC		NC			6.8E-06	mg/kg/day	1.0E-01	mg/kg/day	7.E-05
				Toxicity Equivalency (Dioxins/Furans)	0.000000861	mg/l	1.2E-11	mg/kg/day	1.5E+05	mg/kg/day	2.E-06	6.8E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-06					4.E-03

US EPA ARCHIVE DOCUMENT

TABLE F.7.44.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	CSF/UNIT RISK VALUE	CSF UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	RfD/RfC (1) VALUE	RfD/RfC UNITS	HAZARD QUOTIENT
			DERMAL	Acenaphthylene	0.00000132	mg/l	NC		NC			--		6.0E-02	mg/kg/day	
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	4.9E-05	mg/kg/day	1.4E-02	mg/kg/day	7.E-07	2.9E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				Aldrin	0.000023	mg/l	3.9E-09	mg/kg/day	1.7E+01	mg/kg/day	7.E-08	2.3E-08	mg/kg/day	3.0E-05	mg/kg/day	8.E-04
				alpha-Chlordane	0.000019	mg/l	7.5E-08	mg/kg/day	3.5E-01	mg/kg/day	3.E-08	4.4E-07	mg/kg/day	5.0E-04	mg/kg/day	9.E-04
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.000005	mg/l	NC		NC			3.9E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				gamma-Chlordane	0.000021	mg/l	8.2E-08	mg/kg/day	3.5E-01	mg/kg/day	3.E-08	4.8E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Arsenic	0.0046	mg/l	7.8E-08	mg/kg/day	1.5E+00	mg/kg/day	1.E-07	4.6E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Barium	0.021	mg/l	NC		NC			2.1E-06	mg/kg/day	4.9E-03	mg/kg/day	4.E-04
				Chromium	0.0023	mg/l	NC		NC			4.6E-07	mg/kg/day	7.5E-05	mg/kg/day	6.E-03
				Lead	0.0044	mg/l	--		--			--				
				Manganese	0.13	mg/l	NC		NC			1.3E-05	mg/kg/day	9.6E-04	mg/kg/day	1.E-02
				Mercury	0.00000394	mg/l	NC		NC			3.9E-10	mg/kg/day	2.1E-05	mg/kg/day	2.E-05
				Thallium	0.0022	mg/l	NC		NC			2.2E-07	mg/kg/day	8.0E-05	mg/kg/day	3.E-03
				Nitrate	0.765	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.0865	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalence (Dioxins/Furans)	0.000000861	mg/l	3.3E-08	mg/kg/day	1.5E+05	mg/kg/day	5.E-03	1.9E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-03					4.E-02
		EXPOSURE POINT TOTAL									5.E-03					5.E-02
	EXPOSURE MEDIUM TOTAL										5.E-03					5.E-02
SURFACE WATER TOTAL											5.E-03					5.E-02
LARGEMOUTH BASS	FILLET	MANTON POND	INGESTION	Acenaphthylene	0.00041	mg/kg	NC		NC			8.6E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.000226	mg/kg	8.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-07	4.7E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.00498	mg/kg	NC		NC			1.0E-05	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				4,4'-DDE	0.01235	mg/kg	4.4E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	2.6E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				alpha-Chlordane	0.00263	mg/kg	9.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	5.5E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Aroclor-1254	0.22052	mg/kg	7.9E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	4.6E-04	mg/kg/day	2.0E-05	mg/kg/day	2.E+01
				Aroclor-1268	0.06755	mg/kg	2.4E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-05	1.4E-04	mg/kg/day	2.0E-05	mg/kg/day	7.E+00
				Dieldrin	0.00057	mg/kg	2.1E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.E-06	1.2E-06	mg/kg/day	5.0E-05	mg/kg/day	2.E-02
				Endosulfan Sulfate	0.0019	mg/kg	NC		NC			4.0E-06	mg/kg/day	6.0E-03	mg/kg/day	7.E-04
				gamma-Chlordane	0.00096	mg/kg	3.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	2.0E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				Technical Chlordane	0.06498	mg/kg	2.3E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-06	1.4E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				Lead	0.0119	mg/kg	4.3E-06	mg/kg/day	--			2.5E-05	mg/kg/day			
				Mercury	0.259	mg/kg	NC		NC			5.4E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				Mercury (methyl)	0.278	mg/kg	NC		NC			5.8E-04	mg/kg/day	1.0E-04	mg/kg/day	6.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000031	mg/kg	1.1E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-03	6.5E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-03					4.E+01
		EXPOSURE POINT TOTAL									2.E-03					4.E+01
	EXPOSURE MEDIUM TOTAL										2.E-03					4.E+01
FILLET TOTAL											2.E-03					4.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MED
											7.E-03					3.8.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE F.7.4S.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	MANTON POND	INGESTION	Acenaphthylene	0.00041	mg/kg	NC		NC			1.4E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.000226	mg/kg	6.6E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-07	7.7E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Phenanthrene	0.00498	mg/kg	NC		NC			1.7E-05	mg/kg/day	3.0E-02	mg/kg/day	6.E-04
				4,4'-DDE	0.01235	mg/kg	3.6E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	4.2E-05	mg/kg/day	5.0E-04	mg/kg/day	8.E-02
				alpha-Chlordane	0.00263	mg/kg	7.7E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	9.0E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	0.22052	mg/kg	6.5E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-04	7.5E-04	mg/kg/day	2.0E-05	mg/kg/day	4.E+01
				Aroclor-1268	0.06755	mg/kg	2.0E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-05	2.3E-04	mg/kg/day	2.0E-05	mg/kg/day	1.E+01
				Dieldrin	0.00057	mg/kg	1.7E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.E-06	1.9E-06	mg/kg/day	5.0E-05	mg/kg/day	4.E-02
				Endosulfan Sulfate	0.0019	mg/kg	NC		NC			6.5E-06	mg/kg/day	6.0E-03	mg/kg/day	1.E-03
				gamma-Chlordane	0.00096	mg/kg	2.8E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	3.3E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				Technical Chlordane	0.06498	mg/kg	1.9E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-06	2.2E-04	mg/kg/day	5.0E-04	mg/kg/day	4.E-01
				Lead	0.0119	mg/kg	3.5E-06	mg/kg/day	--			4.1E-05	mg/kg/day			
				Mercury	0.259	mg/kg	NC		NC			8.9E-04	mg/kg/day	3.0E-04	mg/kg/day	3.E+00
				Mercury (methyl)	0.278	mg/kg	NC		NC			9.5E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+01
				Toxicity Equivalency (Dioxins/Furans)	0.000031	mg/kg	9.1E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-03	1.1E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-03					6.E+01
		EXPOSURE POINT TOTAL									2.E-03					6.E+01
	EXPOSURE MEDIUM TOTAL										2.E-03					6.E+01
FILLET TOTAL											2.E-03					6.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MED
											2.E-03					6.2.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE F.7.46.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	MANTON POND	INGESTION	Benzo(a)anthracene	0.3	mg/kg	5.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	7.6E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(a)pyrene	0.37	mg/kg	7.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-07	9.4E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(b)fluoranthene	0.64	mg/kg	1.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-08	1.6E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Benzo(g,h,i)perylene	0.22	mg/kg	NC		NC			5.6E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(k)fluoranthene	0.2	mg/kg	3.8E-08	mg/kg/day	7.3E-02	(mg/kg/day)-1	3.E-09	5.1E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				bis(2-Ethylhexyl)phthalate	0.43	mg/kg	8.1E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	1.E-09	1.1E-07	mg/kg/day	2.0E-02	mg/kg/day	5.E-06
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	5.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	7.4E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Phenanthrene	0.3	mg/kg	NC		NC			7.6E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				alpha-Chlordane	0.004	mg/kg	7.6E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-10	1.0E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				gamma-Chlordane	0.005	mg/kg	9.4E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-10	1.3E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Arsenic	0.97	mg/kg	1.8E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-07	2.5E-07	mg/kg/day	3.0E-04	mg/kg/day	8.E-04
				Cadmium	0.96	mg/kg	NC		NC			2.4E-07	mg/kg/day	1.0E-03	mg/kg/day	2.E-04
				Chromium	18.6	mg/kg	NC		NC			4.7E-06	mg/kg/day	3.0E-03	mg/kg/day	2.E-03
				Lead	91	mg/kg	1.7E-05	mg/kg/day	--			2.3E-05	mg/kg/day			
				Manganese	219	mg/kg	NC		NC			5.6E-05	mg/kg/day	7.1E-02	mg/kg/day	8.E-04
				Vanadium	7.1	mg/kg	NC		NC			1.8E-06	mg/kg/day	7.0E-03	mg/kg/day	3.E-04
				Toxicity Equivalency (Dioxins/Furans)	0.000999	mg/kg	1.9E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-05	2.5E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-05					4.E-03
			DERMAL	Benzo(a)anthracene	0.3	mg/kg	5.0E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	6.8E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(a)pyrene	0.37	mg/kg	6.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-07	8.3E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(b)fluoranthene	0.64	mg/kg	1.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-08	1.4E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Benzo(g,h,i)perylene	0.22	mg/kg	NC		NC			5.0E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(k)fluoranthene	0.2	mg/kg	3.3E-08	mg/kg/day	7.3E-02	(mg/kg/day)-1	2.E-09	4.5E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				bis(2-Ethylhexyl)phthalate	0.43	mg/kg	5.5E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	8.E-10	7.4E-08	mg/kg/day	2.0E-02	mg/kg/day	4.E-06
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	4.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	6.5E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Phenanthrene	0.3	mg/kg	NC		NC			6.8E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				alpha-Chlordane	0.004	mg/kg	2.1E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-11	2.8E-10	mg/kg/day	5.0E-04	mg/kg/day	6.E-07
				gamma-Chlordane	0.005	mg/kg	2.6E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-11	3.5E-10	mg/kg/day	5.0E-04	mg/kg/day	7.E-07
				Arsenic	0.97	mg/kg	3.7E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	6.E-08	5.0E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Cadmium	0.96	mg/kg	NC		NC			1.7E-09	mg/kg/day	2.5E-05	mg/kg/day	7.E-05
				Chromium	18.6	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	91	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	219	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Vanadium	7.1	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000999	mg/kg	3.9E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-06	5.2E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-06					3.E-04
		EXPOSURE POINT TOTAL									4.E-05					4.E-03
	EXPOSURE MEDIUM TOTAL										4.E-05					4.E-03
SEDIMENT TOTAL											4.E-05					4.E-03
SURFACE WATER	SURFACE WATER	MANTON POND	INGESTION	Acenaphthylene	0.00000132	mg/l	NC		NC			6.7E-11	mg/kg/day	6.0E-02	mg/kg/day	1.E-09
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	6.4E-07	mg/kg/day	1.4E-02	mg/kg/day	9.E-09	8.6E-07	mg/kg/day	2.0E-02	mg/kg/day	4.E-05
				Aldrin	0.000023	mg/l	8.7E-10	mg/kg/day	1.7E+01	mg/kg/day	1.E-08	1.2E-09	mg/kg/day	3.0E-05	mg/kg/day	4.E-05
				alpha-Chlordane	0.000019	mg/l	7.2E-10	mg/kg/day	3.5E-01	mg/kg/day	3.E-10	9.7E-10	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			1.6E-10	mg/kg/day	6.0E-03	mg/kg/day	3.E-08
				Endrin Aldehyde	0.000005	mg/l	NC		NC			2.5E-10	mg/kg/day	3.0E-04	mg/kg/day	8.E-07
				gamma-Chlordane	0.000021	mg/l	7.9E-10	mg/kg/day	3.5E-01	mg/kg/day	3.E-10	1.1E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Arsenic	0.0046	mg/l	1.7E-07	mg/kg/day	1.5E+00	mg/kg/day	3.E-07	2.3E-07	mg/kg/day	3.0E-04	mg/kg/day	8.E-04
				Barium	0.021	mg/l	NC		NC			1.1E-06	mg/kg/day	7.0E-02	mg/kg/day	2.E-05
				Chromium	0.0023	mg/l	NC		NC			1.2E-07	mg/kg/day	3.0E-03	mg/kg/day	4.E-05
				Lead	0.0044	mg/l	1.7E-07	mg/kg/day	--			2.2E-07	mg/kg/day			
				Manganese	0.13	mg/l	NC		NC			6.6E-06	mg/kg/day	2.4E-02	mg/kg/day	3.E-04
				Mercury	0.00000394	mg/l	NC		NC			2.0E-10	mg/kg/day	3.0E-04	mg/kg/day	7.E-07
				Thallium	0.0022	mg/l	NC		NC			1.1E-07	mg/kg/day	8.0E-05	mg/kg/day	1.E-03
				Nitrate	0.765	mg/l	NC		NC			3.9E-05	mg/kg/day	1.6E+00	mg/kg/day	2.E-05
				Nitrite-N	0.0863	mg/l	NC		NC			4.4E-06	mg/kg/day	1.0E-01	mg/kg/day	4.E-05

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TABLE F.7.46.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	CSF/UNIT RISK VALUE	CSF UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	RfD/RfC (1) VALUE	RfD/RfC UNITS	HAZARD QUOTIENT
				Toxicity Equivalency (Dioxins/Furans)	0.000000861	mg/l	3.3E-11	mg/kg/day	1.5E+05	mg/kg/day	5.E-06	4.4E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-06					3.E-03
			DERMAL	Acenaphthylene	0.00000132	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	1.9E-04	mg/kg/day	1.4E-02	mg/kg/day	3.E-06	2.6E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				Aldrin	0.000023	mg/l	1.5E-08	mg/kg/day	1.7E+01	mg/kg/day	3.E-07	2.0E-08	mg/kg/day	3.0E-05	mg/kg/day	7.E-04
				alpha-Chlordane	0.000019	mg/l	2.9E-07	mg/kg/day	3.5E-01	mg/kg/day	1.E-07	3.9E-07	mg/kg/day	5.0E-04	mg/kg/day	8.E-04
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.000005	mg/l	NC		NC			3.5E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				gamma-Chlordane	0.000021	mg/l	3.2E-07	mg/kg/day	3.5E-01	mg/kg/day	1.E-07	4.3E-07	mg/kg/day	5.0E-04	mg/kg/day	9.E-04
				Arsenic	0.0046	mg/l	3.0E-07	mg/kg/day	1.5E+00	mg/kg/day	5.E-07	4.1E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Barium	0.021	mg/l	NC		NC			1.9E-06	mg/kg/day	4.9E-03	mg/kg/day	4.E-04
				Chromium	0.0023	mg/l	NC		NC			4.1E-07	mg/kg/day	7.5E-05	mg/kg/day	5.E-03
				Lead	0.0044	mg/l	--		--			--				
				Manganese	0.13	mg/l	NC		NC			1.2E-05	mg/kg/day	9.6E-04	mg/kg/day	1.E-02
				Mercury	0.00000394	mg/l	NC		NC			3.5E-10	mg/kg/day	2.1E-05	mg/kg/day	2.E-05
				Thallium	0.0022	mg/l	NC		NC			1.9E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Nitrate	0.765	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.0865	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000000861	mg/l	1.3E-07	mg/kg/day	1.5E+05	mg/kg/day	2.E-02	1.7E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-02					4.E-02
		EXPOSURE POINT TOTAL									2.E-02					4.E-02
	EXPOSURE MEDIUM TOTAL										2.E-02					4.E-02
SURFACE WATER TOTAL											2.E-02					4.E-02
LARGEMOUTH BASS	WHOLE BODY	MANTON POND	INGESTION	Acenaphthylene	0.00098	mg/kg	NC		NC			2.0E-06	mg/kg/day	6.0E-02	mg/kg/day	3.E-05
				Benzo(a)pyrene	0.00226	mg/kg	3.4E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-05	4.6E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(b)fluoranthene	0.0031	mg/kg	4.7E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-06	6.3E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(g,h,i)perylene	0.00163	mg/kg	NC		NC			3.3E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Dibenzo(a,h)anthracene	0.0004	mg/kg	6.0E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-06	8.1E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Indeno(1,2,3-cd)pyrene	0.00174	mg/kg	2.6E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-06	3.5E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Phenanthrene	0.01609	mg/kg	NC		NC			3.3E-05	mg/kg/day	3.0E-02	mg/kg/day	1.E-03
				4,4'-DDE	0.1035	mg/kg	1.6E-04	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-05	2.1E-04	mg/kg/day	5.0E-04	mg/kg/day	4.E-01
				alpha-Chlordane	0.00943	mg/kg	1.4E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-06	1.9E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				Aroclor-1254	0.89924	mg/kg	1.4E-03	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-03	1.8E-03	mg/kg/day	2.0E-05	mg/kg/day	9.E+01
				Aroclor-1268	0.29687	mg/kg	4.5E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-04	6.0E-04	mg/kg/day	2.0E-05	mg/kg/day	3.E+01
				Dieldrin	0.0022	mg/kg	3.3E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.E-05	4.5E-06	mg/kg/day	5.0E-05	mg/kg/day	9.E-02
				gamma-Chlordane	0.0032	mg/kg	4.8E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	6.5E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Heptachlor Epoxide	0.0005	mg/kg	7.5E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	7.E-06	1.0E-06	mg/kg/day	1.3E-05	mg/kg/day	8.E-02
				Technical Chlordane	0.2354	mg/kg	3.5E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-04	4.8E-04	mg/kg/day	5.0E-04	mg/kg/day	1.E+00
				Lead	0.222	mg/kg	3.3E-04	mg/kg/day				4.5E-04	mg/kg/day			
				Mercury	0.226	mg/kg	3.4E-04	mg/kg/day	--			4.6E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				Mercury (methyl)	0.222	mg/kg	NC		NC			4.5E-04	mg/kg/day	1.0E-04	mg/kg/day	5.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000144	mg/kg	2.2E-07	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-02	2.9E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								*4.E-02*					*1.E+02*
		EXPOSURE POINT TOTAL									4.E-02					1.E+02
	EXPOSURE MEDIUM TOTAL										4.E-02					1.E+02
WHOLE BODY TOTAL											4.E-02					1.E+02
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	6.E-02				TOTAL RECEPTOR HAZARD ACROSS ALL MED	1.3.E+02

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.47.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	MANTON POND	INGESTION	Benzo(a)anthracene	0.3	mg/kg	2.0E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	1.2E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Benzo(a)pyrene	0.37	mg/kg	2.5E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Benzo(b)fluoranthene	0.64	mg/kg	4.3E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.5E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Benzo(g,h,i)perylene	0.22	mg/kg	NC		NC			8.7E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(k)fluoranthene	0.2	mg/kg	1.4E-08	mg/kg/day	7.3E-02	(mg/kg/day)-1	1.E-09	7.9E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				bis(2-Ethylhexyl)phthalate	0.43	mg/kg	2.9E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	4.E-10	1.7E-07	mg/kg/day	2.0E-02	mg/kg/day	9.E-06
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	2.0E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	1.1E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Phenanthrene	0.3	mg/kg	NC		NC			1.2E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				alpha-Chlordane	0.004	mg/kg	2.7E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-11	1.6E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				gamma-Chlordane	0.005	mg/kg	3.4E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	2.0E-09	mg/kg/day	5.0E-04	mg/kg/day	4.E-06
				Arsenic	0.97	mg/kg	6.6E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-07	3.8E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Cadmium	0.96	mg/kg	NC		NC			3.8E-07	mg/kg/day	1.0E-03	mg/kg/day	4.E-04
				Chromium	18.6	mg/kg	NC		NC			7.4E-06	mg/kg/day	3.0E-03	mg/kg/day	2.E-03
				Lead	91	mg/kg	6.2E-06	mg/kg/day	--			3.6E-05	mg/kg/day			
				Manganese	219	mg/kg	NC		NC			8.7E-05	mg/kg/day	7.1E-02	mg/kg/day	1.E-03
				Vanadium	7.1	mg/kg	NC		NC			2.8E-06	mg/kg/day	7.0E-03	mg/kg/day	4.E-04
				Toxicity Equivalency (Dioxins/Furans)	0.000999	mg/kg	6.8E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-05	4.0E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					6.E-03
			DERMAL	Benzo(a)anthracene	0.3	mg/kg	3.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.2E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Benzo(a)pyrene	0.37	mg/kg	4.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	2.7E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				Benzo(b)fluoranthene	0.64	mg/kg	8.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	4.7E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	0.22	mg/kg	NC		NC			1.6E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Benzo(k)fluoranthene	0.2	mg/kg	2.5E-08	mg/kg/day	7.3E-02	(mg/kg/day)-1	2.E-09	1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				bis(2-Ethylhexyl)phthalate	0.43	mg/kg	4.2E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	6.E-10	2.4E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	3.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Phenanthrene	0.3	mg/kg	NC		NC			2.2E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				alpha-Chlordane	0.004	mg/kg	1.6E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-11	9.1E-10	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				gamma-Chlordane	0.005	mg/kg	1.9E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-11	1.1E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Arsenic	0.97	mg/kg	2.8E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-08	1.6E-07	mg/kg/day	3.0E-04	mg/kg/day	5.E-04
				Cadmium	0.96	mg/kg	NC		NC			5.4E-09	mg/kg/day	2.5E-05	mg/kg/day	2.E-04
				Chromium	18.6	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	91	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	219	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Vanadium	7.1	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	*0.000999*	*mg/kg*	*2.9E-11*	*mg/kg/day*	*1.5E+05*	*(mg/kg/day)-1*	*4.E-06*	*1.7E-10*	*mg/kg/day*			
			EXPOSURE ROUTE TOTAL								5.E-06					8.E-04
		EXPOSURE POINT TOTAL									2.E-05					7.E-03
	EXPOSURE MEDIUM TOTAL										2.E-05					7.E-03
SEDIMENT TOTAL											2.E-05					7.E-03
SURFACE WATER	*SURFACE WATER*	*MANTON POND*	*INGESTION*	Acenaphthylene	0.00000132	mg/l	NC		NC			1.0E-10	mg/kg/day	6.0E-02	mg/kg/day	2.E-09
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	2.3E-07	mg/kg/day	1.4E-02	mg/kg/day	3.E-09	1.3E-06	mg/kg/day	2.0E-02	mg/kg/day	7.E-05
				Aldrin	0.000023	mg/l	3.1E-10	mg/kg/day	1.7E+01	mg/kg/day	5.E-09	1.8E-09	mg/kg/day	3.0E-05	mg/kg/day	6.E-05
				alpha-Chlordane	0.000019	mg/l	2.6E-10	mg/kg/day	3.5E-01	mg/kg/day	9.E-11	1.5E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			2.5E-10	mg/kg/day	6.0E-03	mg/kg/day	4.E-08
				Endrin Aldehyde	0.000005	mg/l	NC		NC			4.0E-10	mg/kg/day	3.0E-04	mg/kg/day	1.E-06
				gamma-Chlordane	0.000021	mg/l	2.8E-10	mg/kg/day	3.5E-01	mg/kg/day	1.E-10	1.7E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Arsenic	0.0046	mg/l	6.2E-08	mg/kg/day	1.5E+00	mg/kg/day	9.E-08	3.6E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Barium	0.021	mg/l	NC		NC			1.7E-06	mg/kg/day	7.0E-02	mg/kg/day	2.E-05
				Chromium	0.0023	mg/l	NC		NC			1.8E-07	mg/kg/day	3.0E-03	mg/kg/day	6.E-05
				Lead	0.0044	mg/l	6.0E-08	mg/kg/day	--			3.5E-07	mg/kg/day			
				Manganese	0.13	mg/l	NC		NC			1.0E-05	mg/kg/day	2.4E-02	mg/kg/day	4.E-04
				Mercury	0.00000394	mg/l	NC		NC			3.1E-10	mg/kg/day	3.0E-04	mg/kg/day	1.E-06
				Thallium	0.0022	mg/l	NC		NC			1.7E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Nitrate	0.765	mg/l	NC		NC			6.1E-05	mg/kg/day	1.6E+00	mg/kg/day	4.E-05
				Nitrite-N	0.0865	mg/l	NC		NC			6.8E-06	mg/kg/day	1.0E-01	mg/kg/day	7.E-05
				Toxicity Equivalency (Dioxins/Furans)	0.000000861	mg/l	1.2E-11	mg/kg/day	1.5E+05	mg/kg/day	2.E-06	6.8E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-05					4.E-03

US EPA ARCHIVE DOCUMENT

TABLE F.7.47.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
			DERMAL	Acenaphthylene	0.00000132	mg/l	NC		NC			--		6.0E-02	mg/kg/day	
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	4.9E-05	mg/kg/day	1.4E-02	mg/kg/day	7.E-07	2.9E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				Aldrin	0.000023	mg/l	3.9E-09	mg/kg/day	1.7E+01	mg/kg/day	7.E-08	2.3E-08	mg/kg/day	3.0E-05	mg/kg/day	8.E-04
				alpha-Chlordane	0.000019	mg/l	7.5E-08	mg/kg/day	3.5E-01	mg/kg/day	3.E-08	4.4E-07	mg/kg/day	5.0E-04	mg/kg/day	9.E-04
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.000005	mg/l	NC		NC			3.9E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				gamma-Chlordane	0.000021	mg/l	8.2E-08	mg/kg/day	3.5E-01	mg/kg/day	3.E-08	4.8E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Arsenic	0.0046	mg/l	7.8E-08	mg/kg/day	1.5E+00	mg/kg/day	1.E-07	4.6E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Barium	0.021	mg/l	NC		NC			2.1E-06	mg/kg/day	4.9E-03	mg/kg/day	4.E-04
				Chromium	0.0023	mg/l	NC		NC			4.6E-07	mg/kg/day	7.5E-05	mg/kg/day	6.E-03
				Lead	0.0044	mg/l	--		--			--				
				Manganese	0.13	mg/l	NC		NC			1.3E-05	mg/kg/day	9.6E-04	mg/kg/day	1.E-02
				Mercury	0.00000394	mg/l	NC		NC			3.9E-10	mg/kg/day	2.1E-05	mg/kg/day	2.E-05
				Thallium	0.0022	mg/l	NC		NC			2.2E-07	mg/kg/day	8.0E-05	mg/kg/day	3.E-03
				Nitrate	0.765	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.0865	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000000861	mg/l	3.3E-08	mg/kg/day	1.5E+05	mg/kg/day	5.E-03	1.9E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-03					4.E-02
		EXPOSURE POINT TOTAL									5.E-03					5.E-02
	EXPOSURE MEDIUM TOTAL										5.E-03					5.E-02
SURFACE WATER TOTAL											5.E-03					5.E-02
LARGEMOUTH BASS	WHOLE BODY	MANTON POND	INGESTION	Acenaphthylene	0.00098	mg/kg	NC		NC			2.1E-06	mg/kg/day	6.0E-02	mg/kg/day	3.E-05
				Benzo(a)pyrene	0.00226	mg/kg	8.1E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-06	4.7E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(b)fluoranthene	0.0031	mg/kg	1.1E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-07	6.5E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(g,h,i)perylene	0.00163	mg/kg	NC		NC			3.4E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Dibenzo(a,h)anthracene	0.0004	mg/kg	1.4E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	8.4E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Indeno(1,2,3-cd)pyrene	0.00174	mg/kg	6.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-07	3.7E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Phenanthrene	0.01609	mg/kg	NC		NC			3.4E-05	mg/kg/day	3.0E-02	mg/kg/day	1.E-03
				4,4'-DDE	0.1035	mg/kg	3.7E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-05	2.2E-04	mg/kg/day	5.0E-04	mg/kg/day	4.E-01
				alpha-Chlordane	0.00943	mg/kg	3.4E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	2.0E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				Aroclor-1254	0.89924	mg/kg	3.2E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-04	1.9E-03	mg/kg/day	2.0E-05	mg/kg/day	9.E+01
				Aroclor-1268	0.29687	mg/kg	1.1E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	6.2E-04	mg/kg/day	2.0E-05	mg/kg/day	3.E+01
				Dieldrin	0.0022	mg/kg	7.9E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	4.6E-06	mg/kg/day	5.0E-05	mg/kg/day	9.E-02
				gamma-Chlordane	0.0032	mg/kg	1.2E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-07	6.7E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Heptachlor Epoxide	0.0005	mg/kg	1.8E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-06	1.1E-06	mg/kg/day	1.3E-05	mg/kg/day	8.E-02
				Technical Chlordane	0.2354	mg/kg	8.5E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-05	4.9E-04	mg/kg/day	5.0E-04	mg/kg/day	1.E+00
				Lead	0.222	mg/kg	8.0E-05	mg/kg/day				4.7E-04	mg/kg/day			
				Mercury	0.226	mg/kg	8.1E-05	mg/kg/day	--			4.7E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				Mercury (methyl)	0.222	mg/kg	NC		NC			4.7E-04	mg/kg/day	1.0E-04	mg/kg/day	5.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000144	mg/kg	5.2E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-03	3.0E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								9.E-03					1.E+02
		EXPOSURE POINT TOTAL									9.E-03					1.E+02
	EXPOSURE MEDIUM TOTAL										9.E-03					1.E+02
WHOLE BODY TOTAL											9.E-03					1.E+02
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		1.E-02	TOTAL RECEPTOR HAZARD ACROSS ALL MED				1.3.E+02

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.48.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	WHOLE BODY	MANTON POND	INGESTION	Acenaphthylene	0.00098	mg/kg	NC		NC			3.4E-06	mg/kg/day	6.0E-02	mg/kg/day	6.E-05
				Benzo(a)pyrene	0.00226	mg/kg	6.6E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-06	7.7E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				Benzo(b)fluoranthene	0.0031	mg/kg	9.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-07	1.1E-05	mg/kg/day	3.0E-02	mg/kg/day	4.E-04
				Benzo(g,h,i)perylene	0.00163	mg/kg	NC		NC			5.6E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Dibenzo(a,h)anthracene	0.0004	mg/kg	1.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-07	1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Indeno(1,2,3-cd)pyrene	0.00174	mg/kg	5.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	6.0E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Phenanthrene	0.01609	mg/kg	NC		NC			5.5E-05	mg/kg/day	3.0E-02	mg/kg/day	2.E-03
				4,4'-DDE	0.1035	mg/kg	3.0E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-05	3.5E-04	mg/kg/day	5.0E-04	mg/kg/day	7.E-01
				alpha-Chlordane	0.00943	mg/kg	2.8E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	3.2E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				Aroclor-1254	0.89924	mg/kg	2.6E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-04	3.1E-03	mg/kg/day	2.0E-05	mg/kg/day	2.E+02
				Aroclor-1268	0.29687	mg/kg	8.7E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	1.0E-03	mg/kg/day	2.0E-05	mg/kg/day	5.E+01
				Dieldrin	0.0022	mg/kg	6.4E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	7.5E-06	mg/kg/day	5.0E-05	mg/kg/day	2.E-01
				gamma-Chlordane	0.0032	mg/kg	9.4E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	1.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Heptachlor Epoxide	0.0005	mg/kg	1.5E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	1.E-06	1.7E-06	mg/kg/day	1.3E-05	mg/kg/day	1.E-01
				Technical Chlordane	0.2354	mg/kg	6.9E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-05	8.1E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E+00
				Lead	0.222	mg/kg	6.5E-05	mg/kg/day				7.6E-04	mg/kg/day			
				Mercury	0.226	mg/kg	6.6E-05	mg/kg/day	--			7.7E-04	mg/kg/day	3.0E-04	mg/kg/day	3.E+00
				Mercury (methyl)	0.222	mg/kg	NC		NC			7.6E-04	mg/kg/day	1.0E-04	mg/kg/day	8.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000144	mg/kg	4.2E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-03	4.9E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								7.E-03					2.E+02
		EXPOSURE POINT TOTAL									7.E-03					2.E+02
	EXPOSURE MEDIUM TOTAL										7.E-03					2.E+02
WHOLE BODY TOTAL											7.E-03					2.E+02
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	7.E-03				TOTAL RECEPTOR HAZARD ACROSS ALL MED	2.2.E+02

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.49.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	DYERVILLE POND	INGESTION	2-Methylnaphthalene	0.031	mg/kg	NC		NC			7.9E-09	mg/kg/day	2.0E-02	mg/kg/day	4.E-07
				Acenaphthylene	0.27	mg/kg	NC		NC			6.9E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				Benzo(a)anthracene	2.6	mg/kg	4.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	6.6E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	2.2	mg/kg	4.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	5.6E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	4	mg/kg	7.6E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-07	1.0E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(g,h,i)perylene	1.6	mg/kg	NC		NC			4.1E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(k)fluoranthene	1.1	mg/kg	2.1E-07	mg/kg/day	7.3E-02	(mg/kg/day)-1	2.E-08	2.8E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				bis(2-Ethylhexyl)phthalate	1.6	mg/kg	3.0E-07	mg/kg/day	1.4E-02	(mg/kg/day)-1	4.E-09	4.1E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.32	mg/kg	6.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	8.1E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Indeno(1,2,3-cd)pyrene	2	mg/kg	3.8E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	5.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	2.9	mg/kg	NC		NC			7.4E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				alpha-Chlordane	0.011	mg/kg	2.1E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-10	2.8E-09	mg/kg/day	5.0E-04	mg/kg/day	6.E-06
				Aroclor-1254	1.3	mg/kg	2.5E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-07	3.3E-07	mg/kg/day	2.0E-05	mg/kg/day	2.E-02
				Dieldrin	0.03	mg/kg	5.7E-09	mg/kg/day	1.6E+01	(mg/kg/day)-1	9.E-08	7.6E-09	mg/kg/day	5.0E-05	mg/kg/day	2.E-04
				Endosulfan sulfate	0.011	mg/kg	NC		NC			2.8E-09	mg/kg/day	6.0E-03	mg/kg/day	5.E-07
				Arsenic	2.1	mg/kg	4.0E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	6.E-07	5.3E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Cadmium	4	mg/kg	NC		NC			1.0E-06	mg/kg/day	1.0E-03	mg/kg/day	1.E-03
				Chromium	385	mg/kg	NC		NC			9.8E-05	mg/kg/day	3.0E-03	mg/kg/day	3.E-02
				Lead	307	mg/kg	5.8E-05	mg/kg/day	--			7.8E-05	mg/kg/day			
				Manganese	598	mg/kg	NC		NC			1.5E-04	mg/kg/day	7.1E-02	mg/kg/day	2.E-03
				Mercury	1.06	mg/kg	NC		NC			2.7E-07	mg/kg/day	3.0E-04	mg/kg/day	9.E-04
				Nickel	35	mg/kg	NC		NC			8.9E-06	mg/kg/day	2.0E-02	mg/kg/day	4.E-04
				Vanadium	28.4	mg/kg	NC		NC			7.2E-06	mg/kg/day	7.0E-03	mg/kg/day	1.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.000152	mg/kg	2.9E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-06	3.9E-11	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	2.53E-08	mg/kg	4.8E-15	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-10	6.4E-15	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					6.E-02
			DERMAL	2-Methylnaphthalene	0.031	mg/kg	NC		NC			7.0E-09	mg/kg/day	2.0E-02	mg/kg/day	3.E-07
				Acenaphthylene	0.27	mg/kg	NC		NC			6.1E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				Benzo(a)anthracene	2.6	mg/kg	4.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	5.9E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	2.2	mg/kg	3.7E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	5.0E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	4	mg/kg	6.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-07	9.0E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(g,h,i)perylene	1.6	mg/kg	NC		NC			3.6E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(k)fluoranthene	1.1	mg/kg	1.8E-07	mg/kg/day	7.3E-02	(mg/kg/day)-1	1.E-08	2.5E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				bis(2-Ethylhexyl)phthalate	1.6	mg/kg	2.1E-07	mg/kg/day	1.4E-02	(mg/kg/day)-1	3.E-09	2.8E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.32	mg/kg	5.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	7.2E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	2	mg/kg	3.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	4.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	2.9	mg/kg	NC		NC			6.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				alpha-Chlordane	0.011	mg/kg	5.7E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-10	7.6E-10	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Aroclor-1254	1.3	mg/kg	2.3E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-07	3.2E-07	mg/kg/day	2.0E-05	mg/kg/day	2.E-02
				Dieldrin	0.03	mg/kg	3.9E-09	mg/kg/day	1.6E+01	(mg/kg/day)-1	6.E-08	5.2E-09	mg/kg/day	5.0E-05	mg/kg/day	1.E-04
				Endosulfan sulfate	0.011	mg/kg	NC		NC			1.9E-09	mg/kg/day	6.0E-03	mg/kg/day	3.E-07
				Arsenic	2.1	mg/kg	8.1E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-07	1.1E-07	mg/kg/day	3.0E-04	mg/kg/day	4.E-04
				Cadmium	4	mg/kg	NC		NC			6.9E-09	mg/kg/day	2.5E-05	mg/kg/day	3.E-04
				Chromium	385	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	307	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	598	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Mercury	1.06	mg/kg	NC		NC					2.1E-05	mg/kg/day	
				Nickel	35	mg/kg	NC		NC					8.0E-04	mg/kg/day	
				Vanadium	28.4	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000152	mg/kg	5.9E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	9.E-07	7.9E-12	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	2.53E-08	mg/kg	9.8E-16	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-10	1.3E-15	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-06					2.E-02
		EXPOSURE POINT TOTAL									2.E-05					7.E-02
	EXPOSURE MEDIUM TOTAL										2.E-05					7.E-02
SEDIMENT TOTAL											2.E-05					7.E-02
SURFACE WATER	SURFACE WATER	DYERVILLE POND	INGESTION	Acenaphthylene	0.00000132	mg/l	NC		NC			6.7E-11	mg/kg/day	6.0E-02	mg/kg/day	1.E-09
				bis(2-Ethylhexyl)phthalate	0.012	mg/l	6.4E-07	mg/kg/day	1.4E-02	mg/kg/day	9.E-09	8.6E-07	mg/kg/day	2.0E-02	mg/kg/day	4.E-05
				Aldrin	0.000023	mg/l	8.7E-10	mg/kg/day	1.7E+01	mg/kg/day	1.E-08	1.2E-09	mg/kg/day	3.0E-05	mg/kg/day	4.E-05
				alpha-Chlordane	0.0000019	mg/l	7.2E-10	mg/kg/day	3.5E-01	mg/kg/day	3.E-10	9.7E-10	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			1.6E-10	mg/kg/day	6.0E-03	mg/kg/day	3.E-08

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TABLE F.7.49.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
				Endrin Aldehyde	0.000005	mg/l	NC		NC			2.5E-10	mg/kg/day	3.0E-04	mg/kg/day	8.E-07
				gamma-Chlordane	0.000021	mg/l	7.9E-10	mg/kg/day	3.5E-01	mg/kg/day	3.E-10	1.1E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Arsenic	0.0046	mg/l	1.7E-07	mg/kg/day	1.5E+00	mg/kg/day	3.E-07	2.3E-07	mg/kg/day	3.0E-04	mg/kg/day	8.E-04
				Barium	0.021	mg/l	NC		NC			1.1E-06	mg/kg/day	7.0E-02	mg/kg/day	2.E-05
				Chromium	0.0023	mg/l	NC		NC			1.2E-07	mg/kg/day	3.0E-03	mg/kg/day	4.E-05
				Lead	0.0044	mg/l	1.7E-07	mg/kg/day	--			2.2E-07	mg/kg/day			
				Manganese	0.13	mg/l	NC		NC			6.6E-06	mg/kg/day	2.4E-02	mg/kg/day	3.E-04
				Mercury	0.00000394	mg/l	NC		NC			2.0E-10	mg/kg/day	3.0E-04	mg/kg/day	7.E-07
				Thallium	0.0022	mg/l	NC		NC			1.1E-07	mg/kg/day	8.0E-05	mg/kg/day	1.E-03
				Nitrate	0.765	mg/l	NC		NC			3.9E-05	mg/kg/day	1.6E+00	mg/kg/day	2.E-05
				Nitrite-N	0.0865	mg/l	NC		NC			4.4E-06	mg/kg/day	1.0E-01	mg/kg/day	4.E-05
				Toxicity Equivalency (Dioxins/Furans)	0.000000861	mg/l	3.3E-11	mg/kg/day	1.5E+05	mg/kg/day	5.E-06	4.4E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-06					3.E-03
			DERMAL	Acenaphthylene	0.0000132	mg/l	NC		NC			--		6.0E-02	mg/kg/day	
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	1.9E-04	mg/kg/day	1.4E-02	mg/kg/day	3.E-06	2.6E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				Aldrin	0.000023	mg/l	1.5E-08	mg/kg/day	1.7E+01	mg/kg/day	3.E-07	2.0E-08	mg/kg/day	3.0E-05	mg/kg/day	7.E-04
				alpha-Chlordane	0.000019	mg/l	2.9E-07	mg/kg/day	3.5E-01	mg/kg/day	1.E-07	3.9E-07	mg/kg/day	5.0E-04	mg/kg/day	8.E-04
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.000005	mg/l	NC		NC			3.5E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				gamma-Chlordane	0.000021	mg/l	3.2E-07	mg/kg/day	3.5E-01	mg/kg/day	1.E-07	4.3E-07	mg/kg/day	5.0E-04	mg/kg/day	9.E-04
				Arsenic	0.0046	mg/l	3.0E-07	mg/kg/day	1.5E+00	mg/kg/day	5.E-07	4.1E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Barium	0.021	mg/l	NC		NC			1.9E-06	mg/kg/day	4.9E-03	mg/kg/day	4.E-04
				Chromium	0.0023	mg/l	NC		NC			4.1E-07	mg/kg/day	7.5E-05	mg/kg/day	5.E-03
				Lead	0.0044	mg/l	--		--			--				
				Manganese	0.13	mg/l	NC		NC			1.2E-05	mg/kg/day	9.6E-04	mg/kg/day	1.E-02
				Mercury	0.00000394	mg/l	NC		NC			3.5E-10	mg/kg/day	2.1E-05	mg/kg/day	2.E-05
				Thallium	0.0022	mg/l	NC		NC			1.9E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Nitrate	0.765	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.0865	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000000861	mg/l	1.3E-07	mg/kg/day	1.5E+05	mg/kg/day	2.E-02	1.7E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-02					4.E-02
		EXPOSURE POINT TOTAL									2.E-02					4.E-02
	EXPOSURE MEDIUM TOTAL										2.E-02					4.E-02
SURFACE WATER TOTAL											2.E-02					4.E-02
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	INGESTION	Acenaphthylene	0.00094	mg/kg	NC		NC			1.9E-06	mg/kg/day	6.0E-02	mg/kg/day	3.E-05
				Dibenzo(a,h)anthracene	0.00017	mg/kg	2.6E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	3.4E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	0.00632	mg/kg	NC		NC			1.3E-05	mg/kg/day	3.0E-02	mg/kg/day	4.E-04
				4,4'-DDD	0.04068	mg/kg	6.1E-05	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-05	8.2E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				4,4'-DDE	0.01474	mg/kg	2.2E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	8.E-06	3.0E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				4,4'-DDT	0.01467	mg/kg	2.2E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	8.E-06	3.0E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				alpha-Chlordane	0.01914	mg/kg	2.9E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	3.9E-05	mg/kg/day	5.0E-04	mg/kg/day	8.E-02
				Aroclor-1254	0.4495	mg/kg	6.8E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-03	9.1E-04	mg/kg/day	2.0E-05	mg/kg/day	5.E+01
				Dieldrin	0.01086	mg/kg	1.6E-05	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.E-04	2.2E-05	mg/kg/day	5.0E-05	mg/kg/day	4.E-01
				gamma-Chlordane	0.0068	mg/kg	1.0E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-06	1.4E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Heptachlor Epoxide	0.00228	mg/kg	3.4E-06	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.E-05	4.6E-06	mg/kg/day	1.3E-05	mg/kg/day	4.E-01
				Technical Chlordane	0.38798	mg/kg	5.8E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-04	7.9E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E+00
				Cadmium	0.261	mg/kg	NC		NC			5.3E-04	mg/kg/day	1.0E-03	mg/kg/day	5.E-01
				Lead	0.562	mg/kg	8.5E-04	mg/kg/day	--			1.1E-03	mg/kg/day			
				Manganese	23	mg/kg	NC		NC			4.7E-02	mg/kg/day	1.4E-01	mg/kg/day	3.E-01
				Mercury	0.113	mg/kg	NC		NC			2.3E-04	mg/kg/day	3.0E-04	mg/kg/day	8.E-01
				Mercury (methyl)	0.122	mg/kg	NC		NC			2.5E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00

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TABLE F.7.49.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
				Toxicity Equivalency (Dioxins/Furans)	0.0000757	mg/kg	1.1E-07	mg/kg/day	1.5E+05	(mg/kg/day)-1	2 E-02	1.5E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2 E-02					5.2.E+01
		EXPOSURE POINT TOTAL									2 E-02					5.2.E+01
	EXPOSURE MEDIUM TOTAL										2 E-02					5.2.E+01
WHOLE BODY TOTAL											2.E-02					5.2.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	4.E-02			TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	5.3.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
--- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TABLE F.7.50.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	CSF/UNIT RISK VALUE	CSF UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	RfD/RfC (1) VALUE	RfD/RfC UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	DYERVILLE POND	INGESTION	2-Methylnaphthalene	0.031	mg/kg	NC		NC			1.2E-08	mg/kg/day	2.0E-02	mg/kg/day	6 E-07
				Acenaphthylene	0.27	mg/kg	NC		NC			1.1E-07	mg/kg/day	6.0E-02	mg/kg/day	2 E-06
				Benzo(a)anthracene	2.6	mg/kg	1.8E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	1.0E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(a)pyrene	2.2	mg/kg	1.5E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	8.7E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(b)fluoranthene	4	mg/kg	2.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.6E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(g,h,i)perylene	1.6	mg/kg	NC		NC			6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2 E-05
				Benzo(k)fluoranthene	1.1	mg/kg	7.5E-08	mg/kg/day	7.3E-02	(mg/kg/day)-1	5.E-09	4.4E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				bis(2-Ethylhexyl)phthalate	1.6	mg/kg	1.1E-07	mg/kg/day	1.4E-02	(mg/kg/day)-1	2.E-09	6.3E-07	mg/kg/day	2.0E-02	mg/kg/day	3.E-05
				Dibenzo(a,h)anthracene	0.32	mg/kg	2.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.3E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Indeno(1,2,3-cd)pyrene	2	mg/kg	1.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	7.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Phenanthrene	2.9	mg/kg	NC		NC			1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				alpha-Chlordane	0.011	mg/kg	7.5E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-10	4.4E-09	mg/kg/day	5.0E-04	mg/kg/day	9.E-06
				Aroclor-1254	1.3	mg/kg	8.8E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-07	5.1E-07	mg/kg/day	2.0E-05	mg/kg/day	3.E-02
				Dieldrin	0.03	mg/kg	2.0E-09	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.E-08	1.2E-08	mg/kg/day	5.0E-05	mg/kg/day	2.E-04
				Endosulfan sulfate	0.011	mg/kg	NC		NC			4.4E-09	mg/kg/day	6.0E-03	mg/kg/day	7.E-07
				Arsenic	2.1	mg/kg	1.4E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-07	8.3E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				Cadmium	4	mg/kg	NC		NC			1.6E-06	mg/kg/day	1.0E-03	mg/kg/day	2.E-03
				Chromium	385	mg/kg	NC		NC			1.5E-04	mg/kg/day	3.0E-03	mg/kg/day	5.E-02
				Lead	307	mg/kg	2.1E-05	mg/kg/day	--			1.2E-04	mg/kg/day			
				Manganese	598	mg/kg	NC		NC			2.4E-04	mg/kg/day	7.1E-02	mg/kg/day	3.E-03
				Mercury	1.06	mg/kg	NC		NC			4.2E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Nickel	35	mg/kg	NC		NC			1.4E-05	mg/kg/day	2.0E-02	mg/kg/day	7.E-04
				Vanadium	28.4	mg/kg	NC		NC			1.1E-05	mg/kg/day	7.0E-03	mg/kg/day	2.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.000152	mg/kg	1.0E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-06	6.0E-11	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	2.53E-08	mg/kg	1.7E-15	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-10	1.0E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-06					9.E-02
			DERMAL	2-Methylnaphthalene	0.031	mg/kg	NC		NC			2.3E-08	mg/kg/day	2.0E-02	mg/kg/day	1.E-06
				Acenaphthylene	0.27	mg/kg	NC		NC			2.0E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Benzo(a)anthracene	2.6	mg/kg	3.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.9E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Benzo(a)pyrene	2.2	mg/kg	2.8E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	1.6E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(b)fluoranthene	4	mg/kg	5.0E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	2.9E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(g,h,i)perylene	1.6	mg/kg	NC		NC			1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(k)fluoranthene	1.1	mg/kg	1.4E-07	mg/kg/day	7.3E-02	(mg/kg/day)-1	1.E-08	8.1E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				bis(2-Ethylhexyl)phthalate	1.6	mg/kg	1.6E-07	mg/kg/day	1.4E-02	(mg/kg/day)-1	2.E-09	9.1E-07	mg/kg/day	2.0E-02	mg/kg/day	5.E-05
				Dibenzo(a,h)anthracene	0.32	mg/kg	4.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	2.4E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Indeno(1,2,3-cd)pyrene	2	mg/kg	2.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Phenanthrene	2.9	mg/kg	NC		NC			2.1E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				alpha-Chlordane	0.011	mg/kg	4.3E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	2.5E-09	mg/kg/day	5.0E-04	mg/kg/day	5.E-06
				Aroclor-1254	1.3	mg/kg	1.8E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-07	1.0E-06	mg/kg/day	2.0E-05	mg/kg/day	5.E-02
				Dieldrin	0.03	mg/kg	2.9E-09	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.E-08	1.7E-08	mg/kg/day	5.0E-05	mg/kg/day	3.E-04
				Endosulfan sulfate	0.011	mg/kg	NC		NC			6.2E-09	mg/kg/day	6.0E-03	mg/kg/day	1.E-06
				Arsenic	2.1	mg/kg	6.1E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	9.E-08	3.6E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Cadmium	4	mg/kg	NC		NC			2.3E-08	mg/kg/day	2.5E-05	mg/kg/day	9.E-04
				Chromium	385	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	307	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	598	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Mercury	1.06	mg/kg	NC		NC					2.1E-05	mg/kg/day	
				Nickel	35	mg/kg	NC		NC					8.0E-04	mg/kg/day	
				Vanadium	28.4	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000152	mg/kg	4.4E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-07	2.6E-11	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	2.53E-08	mg/kg	7.4E-16	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-10	4.3E-15	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-06					5.E-02
		EXPOSURE POINT TOTAL									8.E-06					1.E-01
	EXPOSURE MEDIUM TOTAL										8.E-06					1.E-01
SEDIMENT TOTAL											8.E-06					1.E-01
SURFACE WATER	SURFACE WATER	DYERVILLE POND	INGESTION	Acenaphthylene	0.00000132	mg/l	NC		NC			1.0E-10	mg/kg/day	6.0E-02	mg/kg/day	2.E-09
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	2.3E-07	mg/kg/day	1.4E-02	mg/kg/day	3.E-09	1.3E-06	mg/kg/day	2.0E-02	mg/kg/day	7.E-05
				Aldrin	0.000023	mg/l	3.1E-10	mg/kg/day	1.7E+01	mg/kg/day	5.E-09	1.8E-09	mg/kg/day	3.0E-05	mg/kg/day	6.E-05
				alpha-Chlordane	0.000019	mg/l	2.6E-10	mg/kg/day	3.5E-01	mg/kg/day	9.E-11	1.5E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			2.5E-10	mg/kg/day	6.0E-03	mg/kg/day	4.E-08

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TABLE F.7.50.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
				Endrin Aldehyde	0.000005	mg/l	NC		NC			4.0E-10	mg/kg/day	3.0E-04	mg/kg/day	1.E-06
				gamma-Chlordane	0.000021	mg/l	2.8E-10	mg/kg/day	3.5E-01	mg/kg/day	1.E-10	1.7E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Arsenic	0.0046	mg/l	6.2E-08	mg/kg/day	1.5E+00	mg/kg/day	9.E-08	3.6E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Barium	0.021	mg/l	NC		NC			1.7E-06	mg/kg/day	7.0E-02	mg/kg/day	2.E-05
				Chromium	0.0023	mg/l	NC		NC			1.8E-07	mg/kg/day	3.0E-03	mg/kg/day	6.E-05
				Lead	0.0044	mg/l	6.0E-08	mg/kg/day	--			3.5E-07	mg/kg/day			
				Manganese	0.13	mg/l	NC		NC			1.0E-05	mg/kg/day	2.4E-02	mg/kg/day	4.E-04
				Mercury	0.00000394	mg/l	NC		NC			3.1E-10	mg/kg/day	3.0E-04	mg/kg/day	1.E-06
				Thallium	0.0022	mg/l	NC		NC			1.7E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Nitrate	0.765	mg/l	NC		NC			6.1E-05	mg/kg/day	1.6E+00	mg/kg/day	4.E-05
				Nitrite-N	0.0865	mg/l	NC		NC			6.8E-06	mg/kg/day	1.0E-01	mg/kg/day	7.E-05
				Toxicity Equivalency (Dioxins/Furans)	0.000000861	mg/l	1.2E-11	mg/kg/day	1.5E+05	mg/kg/day	2.E-06	6.8E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-06					4.E-03
			DERMAL	Acenaphthylene	0.00000132	mg/l	NC		NC			--		6.0E-02	mg/kg/day	
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	4.9E-05	mg/kg/day	1.4E-02	mg/kg/day	7.E-07	2.9E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				Aldrin	0.000023	mg/l	3.9E-09	mg/kg/day	1.7E+01	mg/kg/day	7.E-08	2.3E-08	mg/kg/day	3.0E-05	mg/kg/day	8.E-04
				alpha-Chlordane	0.000019	mg/l	7.5E-08	mg/kg/day	3.5E-01	mg/kg/day	3.E-08	4.4E-07	mg/kg/day	5.0E-04	mg/kg/day	9.E-04
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.000005	mg/l	NC		NC			3.9E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				gamma-Chlordane	0.000021	mg/l	8.2E-08	mg/kg/day	3.5E-01	mg/kg/day	3.E-08	4.8E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Arsenic	0.0046	mg/l	7.8E-08	mg/kg/day	1.5E+00	mg/kg/day	1.E-07	4.6E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Barium	0.021	mg/l	NC		NC			2.1E-06	mg/kg/day	4.9E-03	mg/kg/day	4.E-04
				Chromium	0.0023	mg/l	NC		NC			4.6E-07	mg/kg/day	7.5E-05	mg/kg/day	6.E-03
				Lead	0.0044	mg/l	--		--							
				Manganese	0.13	mg/l	NC		NC			1.3E-05	mg/kg/day	9.6E-04	mg/kg/day	1.E-02
				Mercury	0.00000394	mg/l	NC		NC			3.9E-10	mg/kg/day	2.1E-05	mg/kg/day	2.E-05
				Thallium	0.0022	mg/l	NC		NC			2.2E-07	mg/kg/day	8.0E-05	mg/kg/day	3.E-03
				Nitrate	0.765	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.0865	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000000861	mg/l	3.3E-08	mg/kg/day	1.5E+05	mg/kg/day	5.E-03	1.9E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-03					4.E-02
		EXPOSURE POINT TOTAL									5.E-03					5.E-02
	EXPOSURE MEDIUM TOTAL										5.E-03					5.E-02
SURFACE WATER TOTAL											5.E-03					5.E-02
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	INGESTION	Acenaphthylene	0.00094	mg/kg	NC		NC			2.0E-06	mg/kg/day	6.0E-02	mg/kg/day	3.E-05
				Dibenzo(a,h)anthracene	0.00017	mg/kg	6.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	3.6E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	0.00632	mg/kg	NC		NC			1.3E-05	mg/kg/day	3.0E-02	mg/kg/day	4.E-04
				4,4'-DDD	0.04068	mg/kg	1.5E-05	mg/kg/day	2.4E-01	(mg/kg/day)-1	4.E-06	8.5E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				4,4'-DDE	0.01474	mg/kg	5.3E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	3.1E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				4,4'-DDT	0.01467	mg/kg	5.3E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	3.1E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				alpha-Chlordane	0.01914	mg/kg	6.9E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	4.0E-05	mg/kg/day	5.0E-04	mg/kg/day	8.E-02
				Aroclor-1254	0.4495	mg/kg	1.6E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-04	9.4E-04	mg/kg/day	2.0E-05	mg/kg/day	5.E+01
				Dieldrin	0.01086	mg/kg	3.9E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	6.E-05	2.3E-05	mg/kg/day	5.0E-05	mg/kg/day	5.E-01
				gamma-Chlordane	0.0068	mg/kg	2.4E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-07	1.4E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Heptachlor Epoxide	0.00228	mg/kg	8.2E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	7.E-06	4.8E-06	mg/kg/day	1.3E-05	mg/kg/day	4.E-01
				Technical Chlordane	0.38798	mg/kg	1.4E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-05	8.2E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E+00
				Cadmium	0.261	mg/kg	NC		NC			5.5E-04	mg/kg/day	1.0E-03	mg/kg/day	5.E-01
				Lead	0.562	mg/kg	2.0E-04	mg/kg/day	--			1.2E-03	mg/kg/day			
				Manganese	23	mg/kg	NC		NC			4.8E-02	mg/kg/day	1.4E-01	mg/kg/day	3.E-01
				Mercury	0.113	mg/kg	NC		NC			2.4E-04	mg/kg/day	3.0E-04	mg/kg/day	8.E-01
				Mercury (methyl)	0.122	mg/kg	NC		NC			2.6E-04	mg/kg/day	1.0E-04	mg/kg/day	3.E+00

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TABLE F.7-50.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	RFC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
				Toxicity Equivalency (Dioxins/Furans)	0.0000757	mg/kg	2.7E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-03	1.6E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-03					5.4.E+01
		EXPOSURE POINT TOTAL									5.E-03					5.4.E+01
	EXPOSURE MEDIUM TOTAL										5.E-03					5.4.E+01
WHOLE BODY TOTAL											5.E-03					5.4.E+01
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	1.E-02			TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		5.5.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.5I.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	INGESTION	Acenaphthylene	0.00094	mg/kg	NC		NC			3.2E-06	mg/kg/day	6.0E-02	mg/kg/day	5.E-05
				Dibenzo(a,h)anthracene	0.00017	mg/kg	5.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	5.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.00632	mg/kg	NC		NC			2.2E-05	mg/kg/day	3.0E-02	mg/kg/day	7.E-04
				4,4'-DDD	0.04068	mg/kg	1.2E-05	mg/kg/day	2.4E-01	(mg/kg/day)-1	3.E-06	1.4E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				4,4'-DDE	0.01474	mg/kg	4.3E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	5.0E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				4,4'-DDT	0.01467	mg/kg	4.3E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	5.0E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				alpha-Chlordane	0.01914	mg/kg	5.6E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	6.5E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Aroclor-1254	0.4495	mg/kg	1.3E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-04	1.5E-03	mg/kg/day	2.0E-05	mg/kg/day	8.E+01
				Dieldrin	0.01086	mg/kg	3.2E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.E-05	3.7E-05	mg/kg/day	5.0E-05	mg/kg/day	7.E-01
				gamma-Chlordane	0.0068	mg/kg	2.0E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-07	2.3E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				Heptachlor Epoxide	0.00228	mg/kg	6.7E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	6.E-06	7.8E-06	mg/kg/day	1.3E-05	mg/kg/day	6.E-01
				Technical Chlordane	0.38798	mg/kg	1.1E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-05	1.3E-03	mg/kg/day	5.0E-04	mg/kg/day	3.E+00
				Cadmium	0.261	mg/kg	NC		NC			8.9E-04	mg/kg/day	1.0E-03	mg/kg/day	9.E-01
				Lead	0.562	mg/kg	1.6E-04	mg/kg/day	--			1.9E-03	mg/kg/day			
				Manganese	23	mg/kg	NC		NC			7.9E-02	mg/kg/day	1.4E-01	mg/kg/day	6.E-01
				Mercury	0.113	mg/kg	NC		NC			3.9E-04	mg/kg/day	3.0E-04	mg/kg/day	1.E+00
				Mercury (methyl)	0.122	mg/kg	NC		NC			4.2E-04	mg/kg/day	1.0E-04	mg/kg/day	4.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.0000757	mg/kg	2.2E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-03	2.6E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-03					8.8.E+01
		EXPOSURE POINT TOTAL									4.E-03					8.8.E+01
	EXPOSURE MEDIUM TOTAL										4.E-03					8.8.E+01
WHOLE BODY TOTAL											4.E-03					8.8.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	4.E-03		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		8.8.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by:

US EPA ARCHIVE DOCUMENT

TABLE F.7.1.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	INGESTION	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			1.2E-09	mg/kg/day	2.0E-02	mg/kg/day	6.E-08
				Acenaphthylene	0.0589	mg/kg	NC		NC			3.7E-09	mg/kg/day	6.0E-02	mg/kg/day	6.E-08
				Benzo(a)anthracene	0.52	mg/kg	5.7E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-09	3.3E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Benzo(a)pyrene	0.53	mg/kg	5.8E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-08	3.4E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Benzo(b)fluoranthene	0.63	mg/kg	6.9E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-09	4.0E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Benzo(g,h,i)perylene	0.4	mg/kg	NC		NC			2.5E-08	mg/kg/day	3.0E-02	mg/kg/day	8.E-07
				Dibenzo(a,h)anthracene	0.15	mg/kg	1.6E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-08	9.5E-09	mg/kg/day	3.0E-02	mg/kg/day	3.E-07
				Indeno(1,2,3-cd)pyrene	0.43	mg/kg	4.7E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-09	2.7E-08	mg/kg/day	3.0E-02	mg/kg/day	9.E-07
				Phenanthrene	0.54	mg/kg	NC		NC			3.4E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				alpha-Chlordane	0.00133	mg/kg	1.5E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-12	8.5E-11	mg/kg/day	5.0E-04	mg/kg/day	2.E-07
				Aroclor-1254	0.032	mg/kg	3.5E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-10	2.0E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				Aroclor-1268	0.023	mg/kg	2.5E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-10	1.5E-09	mg/kg/day	2.0E-05	mg/kg/day	7.E-05
				gamma-Chlordane	0.00065	mg/kg	7.1E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-12	4.1E-11	mg/kg/day	5.0E-04	mg/kg/day	8.E-08
				Technical Chlordane	0.11	mg/kg	1.2E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-10	7.0E-09	mg/kg/day	5.0E-04	mg/kg/day	1.E-05
				Aluminum	9841	mg/kg	NC		NC			6.3E-04	mg/kg/day			
				Arsenic	2.7	mg/kg	2.9E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-08	1.7E-07	mg/kg/day	3.0E-04	mg/kg/day	6.E-04
				Cadmium	0.37	mg/kg	NC		NC			2.4E-08	mg/kg/day	1.0E-03	mg/kg/day	2.E-05
				Chromium	10.4	mg/kg	NC		NC			6.6E-07	mg/kg/day	3.0E-03	mg/kg/day	2.E-04
				Copper	11.8	mg/kg	NC		NC			7.5E-07	mg/kg/day			
				Lead	40.5	mg/kg	4.4E-07	mg/kg/day				2.6E-06	mg/kg/day			
				Manganese	711	mg/kg	NC		NC			4.5E-05	mg/kg/day	7.1E-02	mg/kg/day	6.E-04
				Mercury	0.051	mg/kg	NC		NC			3.2E-09	mg/kg/day	3.0E-04	mg/kg/day	1.E-05
				Nickel	10.1	mg/kg	NC		NC			6.4E-07	mg/kg/day	2.0E-02	mg/kg/day	3.E-05
				Thallium	0.354	mg/kg	NC		NC			2.2E-08	mg/kg/day	8.0E-05	mg/kg/day	3.E-04
				Vanadium	17	mg/kg	NC		NC			1.1E-06	mg/kg/day	7.0E-03	mg/kg/day	2.E-04
				Toxicity Equivalency (Dioxins/Furans)	0.00000379	mg/kg	4.1E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-09	2.4E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-07					2.E-03
			DERMAL	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			3.0E-10	mg/kg/day	2.0E-02	mg/kg/day	1.E-08
				Acenaphthylene	0.0589	mg/kg	NC		NC			9.5E-10	mg/kg/day	6.0E-02	mg/kg/day	2.E-08
				Benzo(a)anthracene	0.52	mg/kg	1.4E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-09	8.4E-09	mg/kg/day	3.0E-02	mg/kg/day	3.E-07
				Benzo(a)pyrene	0.53	mg/kg	1.5E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-08	8.5E-09	mg/kg/day	3.0E-02	mg/kg/day	3.E-07
				Benzo(b)fluoranthene	0.63	mg/kg	1.7E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-09	1.0E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-07
				Benzo(g,h,i)perylene	0.4	mg/kg	NC		NC			6.4E-09	mg/kg/day	3.0E-02	mg/kg/day	2.E-07
				Dibenzo(a,h)anthracene	0.15	mg/kg	4.1E-10	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-09	2.4E-09	mg/kg/day	3.0E-02	mg/kg/day	8.E-08
				Indeno(1,2,3-cd)pyrene	0.43	mg/kg	1.2E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-10	6.9E-09	mg/kg/day	3.0E-02	mg/kg/day	2.E-07
				Phenanthrene	0.54	mg/kg	NC		NC			8.7E-09	mg/kg/day	3.0E-02	mg/kg/day	3.E-07
				alpha-Chlordane	0.00133	mg/kg	1.1E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-13	6.6E-12	mg/kg/day	5.0E-04	mg/kg/day	1.E-08
				Aroclor-1254	0.032	mg/kg	9.5E-11	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-10	5.5E-10	mg/kg/day	2.0E-05	mg/kg/day	3.E-05
				Aroclor-1268	0.023	mg/kg	6.8E-11	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-10	4.0E-10	mg/kg/day	2.0E-05	mg/kg/day	2.E-05
				gamma-Chlordane	0.00065	mg/kg	5.5E-13	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-13	3.2E-12	mg/kg/day	5.0E-04	mg/kg/day	6.E-09
				Technical Chlordane	0.11	mg/kg	9.3E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-11	5.4E-10	mg/kg/day	5.0E-04	mg/kg/day	1.E-06
				Aluminum	9841	mg/kg	NC		NC			--				
				Arsenic	2.7	mg/kg	1.7E-09	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-09	1.0E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-05
				Cadmium	0.37	mg/kg	NC		NC			4.6E-11	mg/kg/day	2.5E-05	mg/kg/day	2.E-06
				Chromium	10.4	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	11.8	mg/kg	NC		NC			--				
				Lead	40.5	mg/kg	--					--				
				Manganese	711	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.051	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	10.1	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.354	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	17	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00000379	mg/kg	2.4E-15	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-10	1.4E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-08					9.E-05
		EXPOSURE POINT TOTAL									1.E-07					2.E-03
	EXPOSURE MEDIUM TOTAL										1.E-07					2.E-03
SEDIMENT TOTAL											1.E-07					2.E-03

US EPA ARCHIVE DOCUMENT

TABLE F.7.1.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	INGESTION	Arsenic	0.000491	mg/l	1.1E-09	mg/kg/day	1.5E+00	mg/kg/day	2.E-09	6.2E-09	mg/kg/day	3.0E-04	mg/kg/day	2.E-05
				Manganese	0.135	mg/l	NC		NC			1.7E-06	mg/kg/day	2.4E-02	mg/kg/day	7.E-05
				Mercury	0.00000215	mg/l	NC		NC			2.7E-11	mg/kg/day	3.0E-04	mg/kg/day	9.E-08
				Nitrite-N	0.0051	mg/l	NC		NC			6.5E-08	mg/kg/day	1.0E-01	mg/kg/day	6.E-07
				Toxicity Equivalency (Dioxins/Furans)	5.34E-09	mg/l	1.2E-14	mg/kg/day	1.5E+05	mg/kg/day	2.E-09	6.8E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-09					9.E-05
			DERMAL	Arsenic	0.000491	mg/l	3.7E-09	mg/kg/day	1.5E+00	mg/kg/day	6.E-09	2.2E-08	mg/kg/day	3.0E-04	mg/kg/day	7.E-05
				Manganese	0.135	mg/l	NC		NC			6.0E-06	mg/kg/day	9.6E-04	mg/kg/day	6.E-03
				Mercury	0.00000215	mg/l	NC		NC			9.5E-11	mg/kg/day	2.1E-05	mg/kg/day	5.E-06
				Nitrite-N	0.0051	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	5.34E-09	mg/l	9.2E-11	mg/kg/day	1.5E+05	mg/kg/day	1.E-05	5.4E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					6.E-03
		EXPOSURE POINT TOTAL									1.E-05					6.E-03
	EXPOSURE MEDIUM TOTAL										1.E-05					6.E-03
SURFACE WATER TOTAL											1.E-05					6.E-03
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.000943	mg/kg	NC		NC			7.6E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Phenanthrene	0.00246	mg/kg	NC		NC			2.0E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				4,4'-DDD	0.00461	mg/kg	6.4E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	2.E-07	3.7E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				4,4'-DDE	0.0176	mg/kg	2.4E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	8.E-07	1.4E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				alpha-Chlordane	0.0025	mg/kg	3.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	2.0E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				Aroclor-1254	0.03178	mg/kg	4.4E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-06	2.6E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Dieldrin	0.0013	mg/kg	1.8E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.E-06	1.1E-06	mg/kg/day	5.0E-05	mg/kg/day	2.E-02
				gamma-Chlordane	0.00089	mg/kg	1.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-08	7.2E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Heptachlor Epoxide	0.00077	mg/kg	1.1E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	1.E-06	6.2E-07	mg/kg/day	1.3E-05	mg/kg/day	5.E-02
				Technical Chlordane	0.11622	mg/kg	1.6E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-06	9.4E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Lead	0.0466	mg/kg	6.5E-06	mg/kg/day				3.8E-05	mg/kg/day			
				Mercury	0.0926	mg/kg	NC		NC			7.5E-05	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				Mercury (methyl)	0.0889	mg/kg	NC		NC			7.2E-05	mg/kg/day	1.0E-04	mg/kg/day	7.E-01
				Zinc	16.9	mg/kg	NC		NC			1.4E-02	mg/kg/day	3.0E-01	mg/kg/day	5.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.00000056	mg/kg	7.8E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-05	4.5E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-05					2.6.E+00
		EXPOSURE POINT TOTAL									3.E-05					2.6.E+00
	EXPOSURE MEDIUM TOTAL										3.E-05					2.6.E+00
WHOLE BODY TOTAL											3.E-05					2.6.E+00
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	5.E-05			TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		2.6.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not *carcinogenic* by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.2.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	INGESTION	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			1.8E-09	mg/kg/day	2.0E-02	mg/kg/day	9.E-08
				Acenaphthylene	0.0589	mg/kg	NC		NC			5.8E-09	mg/kg/day	6.0E-02	mg/kg/day	1.E-07
				Benzo(a)anthracene	0.52	mg/kg	8.8E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-09	5.1E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(a)pyrene	0.53	mg/kg	9.0E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-08	5.2E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(b)fluoranthene	0.63	mg/kg	1.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-09	6.2E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(g,h,i)perylene	0.4	mg/kg	NC		NC			4.0E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Dibenzo(a,h)anthracene	0.15	mg/kg	2.5E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	1.5E-08	mg/kg/day	3.0E-02	mg/kg/day	5.E-07
				Indeno(1,2,3-cd)pyrene	0.43	mg/kg	7.3E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-09	4.3E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Phenanthrene	0.54	mg/kg	NC		NC			5.3E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				alpha-Chlordane	0.00133	mg/kg	2.3E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-12	1.3E-10	mg/kg/day	5.0E-04	mg/kg/day	3.E-07
				Aroclor-1254	0.032	mg/kg	5.4E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-09	3.2E-09	mg/kg/day	2.0E-05	mg/kg/day	2.E-04
				Aroclor-1268	0.023	mg/kg	3.9E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-10	2.3E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				gamma-Chlordane	0.00065	mg/kg	1.1E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-12	6.4E-11	mg/kg/day	5.0E-04	mg/kg/day	1.E-07
				Technical Chlordane	0.11	mg/kg	1.9E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-10	1.1E-08	mg/kg/day	5.0E-04	mg/kg/day	2.E-05
				Aluminum	9841	mg/kg	NC		NC			9.7E-04	mg/kg/day			
				Arsenic	2.7	mg/kg	4.6E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	7.E-08	2.7E-07	mg/kg/day	3.0E-04	mg/kg/day	9.E-04
				Cadmium	0.37	mg/kg	NC		NC			3.7E-08	mg/kg/day	1.0E-03	mg/kg/day	4.E-05
				Chromium	10.4	mg/kg	NC		NC			1.0E-06	mg/kg/day	3.0E-03	mg/kg/day	3.E-04
				Copper	11.8	mg/kg	NC		NC			1.2E-06	mg/kg/day			
				Lead	40.5	mg/kg	6.9E-07	mg/kg/day				4.0E-06	mg/kg/day			
				Manganese	711	mg/kg	NC		NC			7.0E-05	mg/kg/day	7.1E-02	mg/kg/day	1.E-03
				Mercury	0.051	mg/kg	NC		NC			5.0E-09	mg/kg/day	3.0E-04	mg/kg/day	2.E-05
				Nickel	10.1	mg/kg	NC		NC			1.0E-06	mg/kg/day	2.0E-02	mg/kg/day	5.E-05
				Thallium	0.354	mg/kg	NC		NC			3.5E-08	mg/kg/day	8.0E-05	mg/kg/day	4.E-04
				Vanadium	17	mg/kg	NC		NC			1.7E-06	mg/kg/day	7.0E-03	mg/kg/day	2.E-04
				Toxicity Equivalency (Dioxins/Furans)	0.00000379	mg/kg	6.4E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-08	3.7E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-07					3.E-03
			DERMAL	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			1.4E-09	mg/kg/day	2.0E-02	mg/kg/day	7.E-08
				Acenaphthylene	0.0589	mg/kg	NC		NC			4.3E-09	mg/kg/day	6.0E-02	mg/kg/day	7.E-08
				Benzo(a)anthracene	0.52	mg/kg	6.6E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-09	3.8E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Benzo(a)pyrene	0.53	mg/kg	6.7E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-08	3.9E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Benzo(b)fluoranthene	0.63	mg/kg	7.9E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-09	4.6E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(g,h,i)perylene	0.4	mg/kg	NC		NC			2.9E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Dibenzo(a,h)anthracene	0.15	mg/kg	1.9E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-08	1.1E-08	mg/kg/day	3.0E-02	mg/kg/day	4.E-07
				Indeno(1,2,3-cd)pyrene	0.43	mg/kg	5.4E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-09	3.2E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Phenanthrene	0.54	mg/kg	NC		NC			4.0E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				alpha-Chlordane	0.00133	mg/kg	5.2E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-12	3.0E-11	mg/kg/day	5.0E-04	mg/kg/day	6.E-08
				Aroclor-1254	0.032	mg/kg	4.3E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-10	2.5E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				Aroclor-1268	0.023	mg/kg	3.1E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-10	1.8E-09	mg/kg/day	2.0E-05	mg/kg/day	9.E-05
				gamma-Chlordane	0.00065	mg/kg	2.5E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-13	1.5E-11	mg/kg/day	5.0E-04	mg/kg/day	3.E-08
				Technical Chlordane	0.11	mg/kg	4.3E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	2.5E-09	mg/kg/day	5.0E-04	mg/kg/day	5.E-06
				Aluminum	9841	mg/kg	NC		NC			--				
				Arsenic	2.7	mg/kg	7.9E-09	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-08	4.6E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Cadmium	0.37	mg/kg	NC		NC			2.1E-10	mg/kg/day	2.5E-05	mg/kg/day	8.E-06
				Chromium	10.4	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	11.8	mg/kg	NC		NC			--				
				Lead	40.5	mg/kg	--					--				
				Manganese	711	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.051	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	10.1	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.354	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	17	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00000379	mg/kg	1.1E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-09	6.4E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								9.E-08					4.E-04
		EXPOSURE POINT TOTAL									3.E-07					4.E-03
	EXPOSURE MEDIUM TOTAL										3.E-07					4.E-03
SEDIMENT TOTAL											3.E-07					4.E-03

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TABLE F.7.2.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	CSF/UNIT RISK VALUE	CSF UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	RfD/RfC (1) VALUE	RfD/RfC UNITS	HAZARD QUOTIENT
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	INGESTION	Arsenic	0.000491	mg/l	1.7E-09	mg/kg/day	1.5E+00	mg/kg/day	2.E-09	9.7E-09	mg/kg/day	3.0E-04	mg/kg/day	3.E-05
				Manganese	0.135	mg/l	NC		NC			2.7E-06	mg/kg/day	2.4E-02	mg/kg/day	1.E-04
				Mercury	0.00000215	mg/l	NC		NC			4.3E-11	mg/kg/day	3.0E-04	mg/kg/day	1.E-07
				Nitrite-N	0.0051	mg/l	NC		NC			1.0E-07	mg/kg/day	1.0E-01	mg/kg/day	1.E-06
				Toxicity Equivalency (Dioxins/Furans)	5.34E-09	mg/l	1.8E-14	mg/kg/day	1.5E+05	mg/kg/day	3.E-09	1.1E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-09					1.E-04
			DERMAL	Arsenic	0.000491	mg/l	4.2E-09	mg/kg/day	1.5E+00	mg/kg/day	6.E-09	2.4E-08	mg/kg/day	3.0E-04	mg/kg/day	8.E-05
				Manganese	0.135	mg/l	NC		NC			6.7E-06	mg/kg/day	9.6E-04	mg/kg/day	7.E-03
				Mercury	0.00000215	mg/l	NC		NC			1.1E-10	mg/kg/day	2.1E-05	mg/kg/day	5.E-06
				Nitrite-N	0.0051	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	5.34E-09	mg/l	1.0E-10	mg/kg/day	1.5E+05	mg/kg/day	2.E-05	6.0E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-05					7.E-03
		EXPOSURE POINT TOTAL									2.E-05					7.E-03
	EXPOSURE MEDIUM TOTAL										2.E-05					7.E-03
SURFACE WATER TOTAL											2.E-05					7.E-03
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.000943	mg/kg	NC		NC			6.0E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Phenanthrene	0.00246	mg/kg	NC		NC			1.6E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				4,4'-DDD	0.00461	mg/kg	5.0E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-07	2.9E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				4,4'-DDE	0.0176	mg/kg	1.9E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	6.E-07	1.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.0025	mg/kg	2.7E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-08	1.6E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Aroclor-1254	0.03178	mg/kg	3.4E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-06	2.0E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Dieldrin	0.0013	mg/kg	1.4E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-06	8.2E-07	mg/kg/day	5.0E-05	mg/kg/day	2.E-02
				gamma-Chlordane	0.00089	mg/kg	9.7E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	5.6E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Heptachlor Epoxide	0.00077	mg/kg	8.4E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	8.E-07	4.9E-07	mg/kg/day	1.3E-05	mg/kg/day	4.E-02
				Technical Chlordane	0.11622	mg/kg	1.3E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-06	7.4E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Lead	0.0466	mg/kg	5.1E-06	mg/kg/day				2.9E-05	mg/kg/day			
				Mercury	0.0926	mg/kg	NC		NC			5.9E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.0889	mg/kg	NC		NC			5.6E-05	mg/kg/day	1.0E-04	mg/kg/day	6.E-01
				Zinc	16.9	mg/kg	NC		NC			1.1E-02	mg/kg/day	3.0E-01	mg/kg/day	4.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.00000056	mg/kg	6.1E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	9.E-06	3.5E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-05					2.0.E+00
		EXPOSURE POINT TOTAL									2.E-05					2.0.E+00
	EXPOSURE MEDIUM TOTAL										2.E-05					2.0.E+00
WHOLE BODY TOTAL											2.E-05					2.0.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	4.E-05		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		2.0.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availablable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.3.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.000943	mg/kg	NC		NC			1.3E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.00246	mg/kg	NC		NC			3.3E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDD	0.00461	mg/kg	5.3E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-07	6.2E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				4,4'-DDE	0.0176	mg/kg	2.0E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	7.E-07	2.4E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				alpha-Chlordane	0.0025	mg/kg	2.9E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	3.4E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				Aroclor-1254	0.03178	mg/kg	3.7E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-06	4.3E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Dieldrin	0.0013	mg/kg	1.5E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-06	1.8E-06	mg/kg/day	5.0E-05	mg/kg/day	4.E-02
				gamma-Chlordane	0.00089	mg/kg	1.0E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-08	1.2E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Heptachlor Epoxide	0.00077	mg/kg	8.9E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	8.E-07	1.0E-06	mg/kg/day	1.3E-05	mg/kg/day	8.E-02
				Technical Chlordane	0.11622	mg/kg	1.3E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-06	1.6E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				Lead	0.0466	mg/kg	5.4E-06	mg/kg/day				6.3E-05	mg/kg/day			
				Mercury	0.0926	mg/kg	NC		NC			1.2E-04	mg/kg/day	3.0E-04	mg/kg/day	4.E-01
				Mercury (methyl)	0.0889	mg/kg	NC		NC			1.2E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Zinc	16.9	mg/kg	NC		NC			2.3E-02	mg/kg/day	3.0E-01	mg/kg/day	8.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.00000056	mg/kg	6.5E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-05	7.6E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-05					4.3.E+00
		EXPOSURE POINT TOTAL									3.E-05					4.3.E+00
	EXPOSURE MEDIUM TOTAL										3.E-05					4.3.E+00
WHOLE BODY TOTAL											3.E-05					4.3.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											3.E-05					4.3.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
--- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.4.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	INGESTION	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			1.2E-09	mg/kg/day	2.0E-02	mg/kg/day	6.E-08
				Acenaphthylene	0.0589	mg/kg	NC		NC			3.7E-09	mg/kg/day	6.0E-02	mg/kg/day	6.E-08
				Benzo(a)anthracene	0.52	mg/kg	5.7E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-09	3.3E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Benzo(a)pyrene	0.53	mg/kg	5.8E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-08	3.4E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Benzo(b)fluoranthene	0.63	mg/kg	6.9E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-09	4.0E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Benzo(g,h,i)perylene	0.4	mg/kg	NC		NC			2.5E-08	mg/kg/day	3.0E-02	mg/kg/day	8.E-07
				Dibenzo(a,h)anthracene	0.15	mg/kg	1.6E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-08	9.5E-09	mg/kg/day	3.0E-02	mg/kg/day	3.E-07
				Indeno(1,2,3-cd)pyrene	0.43	mg/kg	4.7E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-09	2.7E-08	mg/kg/day	3.0E-02	mg/kg/day	9.E-07
				Phenanthrene	0.54	mg/kg	NC		NC			3.4E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				alpha-Chlordane	0.00133	mg/kg	1.5E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-12	8.5E-11	mg/kg/day	5.0E-04	mg/kg/day	2.E-07
				Aroclor-1254	0.032	mg/kg	3.5E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-10	2.0E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				Aroclor-1268	0.023	mg/kg	2.5E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-10	1.5E-09	mg/kg/day	2.0E-05	mg/kg/day	7.E-05
				gamma-Chlordane	0.00065	mg/kg	7.1E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-12	4.1E-11	mg/kg/day	5.0E-04	mg/kg/day	8.E-08
				Technical Chlordane	0.11	mg/kg	1.2E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-10	7.0E-09	mg/kg/day	5.0E-04	mg/kg/day	1.E-05
				Aluminum	9841	mg/kg	NC		NC			6.3E-04	mg/kg/day			
				Arsenic	2.7	mg/kg	2.9E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-08	1.7E-07	mg/kg/day	3.0E-04	mg/kg/day	6.E-04
				Cadmium	0.37	mg/kg	NC		NC			2.4E-08	mg/kg/day	1.0E-03	mg/kg/day	2.E-05
				Chromium	10.4	mg/kg	NC		NC			6.6E-07	mg/kg/day	3.0E-03	mg/kg/day	2.E-04
				Copper	11.8	mg/kg	NC		NC			7.5E-07	mg/kg/day			
				Lead	40.5	mg/kg	4.4E-07	mg/kg/day				2.6E-06	mg/kg/day			
				Manganese	711	mg/kg	NC		NC			4.5E-05	mg/kg/day	7.1E-02	mg/kg/day	6.E-04
				Mercury	0.051	mg/kg	NC		NC			3.2E-09	mg/kg/day	3.0E-04	mg/kg/day	1.E-05
				Nickel	10.1	mg/kg	NC		NC			6.4E-07	mg/kg/day	2.0E-02	mg/kg/day	3.E-05
				Thallium	0.354	mg/kg	NC		NC			2.3E-08	mg/kg/day	8.0E-05	mg/kg/day	3.E-04
				Vanadium	17	mg/kg	NC		NC			1.1E-06	mg/kg/day	7.0E-03	mg/kg/day	2.E-04
				Toxicity Equivalency (Dioxins/Furans)	0.00000379	mg/kg	4.1E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-09	2.4E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-07					2.E-03
			DERMAL	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			3.0E-10	mg/kg/day	2.0E-02	mg/kg/day	1.E-08
				Acenaphthylene	0.0589	mg/kg	NC		NC			9.5E-10	mg/kg/day	6.0E-02	mg/kg/day	2.E-08
				Benzo(a)anthracene	0.52	mg/kg	1.4E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-09	8.4E-09	mg/kg/day	3.0E-02	mg/kg/day	3.E-07
				Benzo(a)pyrene	0.53	mg/kg	1.5E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-08	8.5E-09	mg/kg/day	3.0E-02	mg/kg/day	3.E-07
				Benzo(b)fluoranthene	0.63	mg/kg	1.7E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-09	1.0E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-07
				Benzo(g,h,i)perylene	0.4	mg/kg	NC		NC			6.4E-09	mg/kg/day	3.0E-02	mg/kg/day	2.E-07
				Dibenzo(a,h)anthracene	0.15	mg/kg	4.1E-10	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-09	2.4E-09	mg/kg/day	3.0E-02	mg/kg/day	8.E-08
				Indeno(1,2,3-cd)pyrene	0.43	mg/kg	1.2E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-10	6.9E-09	mg/kg/day	3.0E-02	mg/kg/day	2.E-07
				Phenanthrene	0.54	mg/kg	NC		NC			8.7E-09	mg/kg/day	3.0E-02	mg/kg/day	3.E-07
				alpha-Chlordane	0.00133	mg/kg	1.1E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-13	6.6E-12	mg/kg/day	5.0E-04	mg/kg/day	1.E-08
				Aroclor-1254	0.032	mg/kg	9.5E-11	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-10	5.5E-10	mg/kg/day	2.0E-05	mg/kg/day	3.E-05
				Aroclor-1268	0.023	mg/kg	6.8E-11	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-10	4.0E-10	mg/kg/day	2.0E-05	mg/kg/day	2.E-05
				gamma-Chlordane	0.00065	mg/kg	5.5E-13	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-13	3.2E-12	mg/kg/day	5.0E-04	mg/kg/day	6.E-09
				Technical Chlordane	0.11	mg/kg	9.3E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-11	5.4E-10	mg/kg/day	5.0E-04	mg/kg/day	1.E-06
				Aluminum	9841	mg/kg	NC		NC			--				
				Arsenic	2.7	mg/kg	1.7E-09	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-09	1.0E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-05
				Cadmium	0.37	mg/kg	NC		NC			4.6E-11	mg/kg/day	2.5E-05	mg/kg/day	2.E-06
				Chromium	10.4	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	11.8	mg/kg	NC		NC			--				
				Lead	40.5	mg/kg	--					--				
				Manganese	711	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.051	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	10.1	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.354	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	17	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00000379	mg/kg	2.4E-15	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-10	1.4E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-08					9.E-05
		EXPOSURE POINT TOTAL									1.E-07					2.E-03
	EXPOSURE MEDIUM TOTAL										1.E-07					2.E-03
SEDIMENT TOTAL											1.E-07					2.E-03

US EPA ARCHIVE DOCUMENT

TABLE F.7.4.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	INGESTION	Arsenic	0.000491	mg/l	1.1E-09	mg/kg/day	1.5E+00	mg/kg/day	2.E-09	6.2E-09	mg/kg/day	3.0E-04	mg/kg/day	2.E-05
				Manganese	0.135	mg/l	NC		NC			1.7E-06	mg/kg/day	2.4E-02	mg/kg/day	7.E-05
				Mercury	0.00000215	mg/l	NC		NC			2.7E-11	mg/kg/day	3.0E-04	mg/kg/day	9.E-08
				Nitrite-N	0.0051	mg/l	NC		NC			6.5E-08	mg/kg/day	1.0E-01	mg/kg/day	6.E-07
				Toxicity Equivalency (Dioxins/Furans)	5.34E-09	mg/l	1.2E-14	mg/kg/day	1.5E+05	mg/kg/day	2.E-09	6.8E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-09					9.E-05
			DERMAL	Arsenic	0.000491	mg/l	3.7E-09	mg/kg/day	1.5E+00	mg/kg/day	6.E-09	2.2E-08	mg/kg/day	3.0E-04	mg/kg/day	7.E-05
				Manganese	0.135	mg/l	NC		NC			6.0E-06	mg/kg/day	9.6E-04	mg/kg/day	6.E-03
				Mercury	0.00000215	mg/l	NC		NC			9.5E-11	mg/kg/day	2.1E-05	mg/kg/day	5.E-06
				Nitrite-N	0.0051	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	5.34E-09	mg/l	9.2E-11	mg/kg/day	1.5E+05	mg/kg/day	1.E-05	5.4E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					6.E-03
		EXPOSURE POINT TOTAL									1.E-05					6.E-03
	EXPOSURE MEDIUM TOTAL										1.E-05					6.E-03
SURFACE WATER TOTAL											1.E-05					6.E-03
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.0003	mg/kg	NC		NC			2.4E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				Benzo(a)pyrene	0.000849	mg/kg	1.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-07	6.9E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.00108	mg/kg	NC		NC			8.8E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				4,4'-DDE	0.00467	mg/kg	6.5E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	3.8E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				alpha-Chlordane	0.00031	mg/kg	4.3E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	2.5E-07	mg/kg/day	5.0E-04	mg/kg/day	5.E-04
				Mercury	0.254	mg/kg	NC		NC			2.1E-04	mg/kg/day	3.0E-04	mg/kg/day	7.E-01
				Mercury (methyl)	0.3	mg/kg	NC		NC			2.4E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.00000182	mg/kg	2.5E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-05	1.5E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-05					3.E+00
		EXPOSURE POINT TOTAL									4.E-05					3.E+00
	EXPOSURE MEDIUM TOTAL										4.E-05					3.E+00
FILLET TOTAL											4.E-05					3.E+00
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		5.E-05	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				3.1.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by:	RAR
Checked by:	KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.5.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	INGESTION	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			1.8E-09	mg/kg/day	2.0E-02	mg/kg/day	9.E-08
				Acenaphthylene	0.0589	mg/kg	NC		NC			5.8E-09	mg/kg/day	6.0E-02	mg/kg/day	1.E-07
				Benzo(a)anthracene	0.52	mg/kg	8.8E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-09	5.1E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(a)pyrene	0.53	mg/kg	9.0E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-08	5.2E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(b)fluoranthene	0.63	mg/kg	1.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-09	6.2E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(g,h,i)perylene	0.4	mg/kg	NC		NC			4.0E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Dibenzo(a,h)anthracene	0.15	mg/kg	2.5E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	1.5E-08	mg/kg/day	3.0E-02	mg/kg/day	5.E-07
				Indeno(1,2,3-cd)pyrene	0.43	mg/kg	7.3E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-09	4.3E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Phenanthrene	0.54	mg/kg	NC		NC			5.3E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				alpha-Chlordane	0.00133	mg/kg	2.3E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-12	1.3E-10	mg/kg/day	5.0E-04	mg/kg/day	3.E-07
				Aroclor-1254	0.032	mg/kg	5.4E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-09	3.2E-09	mg/kg/day	2.0E-05	mg/kg/day	2.E-04
				Aroclor-1268	0.023	mg/kg	3.9E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-10	2.3E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				gamma-Chlordane	0.00065	mg/kg	1.1E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-12	6.4E-11	mg/kg/day	5.0E-04	mg/kg/day	1.E-07
				Technical Chlordane	0.11	mg/kg	1.9E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-10	1.1E-08	mg/kg/day	5.0E-04	mg/kg/day	2.E-05
				Aluminum	9841	mg/kg	NC		NC			9.7E-04	mg/kg/day			
				Arsenic	2.7	mg/kg	4.6E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	7.E-08	2.7E-07	mg/kg/day	3.0E-04	mg/kg/day	9.E-04
				Cadmium	0.37	mg/kg	NC		NC			3.7E-08	mg/kg/day	1.0E-03	mg/kg/day	4.E-05
				Chromium	10.4	mg/kg	NC		NC			1.0E-06	mg/kg/day	3.0E-03	mg/kg/day	3.E-04
				Copper	11.8	mg/kg	NC		NC			1.2E-06	mg/kg/day			
				Lead	40.5	mg/kg	6.9E-07	mg/kg/day				4.0E-06	mg/kg/day			
				Manganese	711	mg/kg	NC		NC			7.0E-05	mg/kg/day	7.1E-02	mg/kg/day	1.E-03
				Mercury	0.051	mg/kg	NC		NC			5.0E-09	mg/kg/day	3.0E-04	mg/kg/day	2.E-05
				Nickel	10.1	mg/kg	NC		NC			1.0E-06	mg/kg/day	2.0E-02	mg/kg/day	5.E-05
				Thallium	0.354	mg/kg	NC		NC			3.5E-08	mg/kg/day	8.0E-05	mg/kg/day	4.E-04
				Vanadium	17	mg/kg	NC		NC			1.7E-06	mg/kg/day	7.0E-03	mg/kg/day	2.E-04
				Toxicity Equivalency (Dioxins/Furans)	0.00000379	mg/kg	6.4E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-08	3.7E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-07					3.E-03
			DERMAL	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			1.4E-09	mg/kg/day	2.0E-02	mg/kg/day	7.E-08
				Acenaphthylene	0.0589	mg/kg	NC		NC			4.3E-09	mg/kg/day	6.0E-02	mg/kg/day	7.E-08
				Benzo(a)anthracene	0.52	mg/kg	6.6E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-09	3.8E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Benzo(a)pyrene	0.53	mg/kg	6.7E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-08	3.9E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Benzo(b)fluoranthene	0.63	mg/kg	7.9E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-09	4.6E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(g,h,i)perylene	0.4	mg/kg	NC		NC			2.9E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Dibenzo(a,h)anthracene	0.15	mg/kg	1.9E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-08	1.1E-08	mg/kg/day	3.0E-02	mg/kg/day	4.E-07
				Indeno(1,2,3-cd)pyrene	0.43	mg/kg	5.4E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-09	3.2E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Phenanthrene	0.54	mg/kg	NC		NC			4.0E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				alpha-Chlordane	0.00133	mg/kg	5.2E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-12	3.0E-11	mg/kg/day	5.0E-04	mg/kg/day	6.E-08
				Aroclor-1254	0.032	mg/kg	4.3E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-10	2.5E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				Aroclor-1268	0.023	mg/kg	3.1E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-10	1.8E-09	mg/kg/day	2.0E-05	mg/kg/day	9.E-05
				gamma-Chlordane	0.00065	mg/kg	2.5E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-13	1.5E-11	mg/kg/day	5.0E-04	mg/kg/day	3.E-08
				Technical Chlordane	0.11	mg/kg	4.3E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	2.5E-09	mg/kg/day	5.0E-04	mg/kg/day	5.E-06
				Aluminum	9841	mg/kg	NC		NC			--				
				Arsenic	2.7	mg/kg	7.9E-09	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-08	4.6E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Cadmium	0.37	mg/kg	NC		NC			2.1E-10	mg/kg/day	2.5E-05	mg/kg/day	8.E-06
				Chromium	10.4	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	11.8	mg/kg	NC		NC			--				
				Lead	40.5	mg/kg	--					--				
				Manganese	711	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.051	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	10.1	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.354	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	17	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00000379	mg/kg	1.1E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-09	6.4E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								9.E-08					4.E-04
		EXPOSURE POINT TOTAL									3.E-07					4.E-03
	EXPOSURE MEDIUM TOTAL										3.E-07					4.E-03
SEDIMENT TOTAL											3.E-07					4.E-03

US EPA ARCHIVE DOCUMENT

TABLE F.7.5.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	INGESTION	Arsenic	0.000491	mg/l	1.7E-09	mg/kg/day	1.5E+00	mg/kg/day	2.E-09	9.7E-09	mg/kg/day	3.0E-04	mg/kg/day	3.E-05
				Manganese	0.135	mg/l	NC		NC			2.7E-06	mg/kg/day	2.4E-02	mg/kg/day	1.E-04
				Mercury	0.00000215	mg/l	NC		NC			4.3E-11	mg/kg/day	3.0E-04	mg/kg/day	1.E-07
				Nitrite-N	0.0051	mg/l	NC		NC			1.0E-07	mg/kg/day	1.0E-01	mg/kg/day	1.E-06
				Toxicity Equivalency (Dioxins/Furans)	5.34E-09	mg/l	1.8E-14	mg/kg/day	1.5E+05	mg/kg/day	3.E-09	1.1E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-09					1.E-04
			DERMAL	Arsenic	0.000491	mg/l	4.2E-09	mg/kg/day	1.5E+00	mg/kg/day	6.E-09	2.4E-08	mg/kg/day	3.0E-04	mg/kg/day	8.E-05
				Manganese	0.135	mg/l	NC		NC			6.7E-06	mg/kg/day	9.6E-04	mg/kg/day	7.E-03
				Mercury	0.00000215	mg/l	NC		NC			1.1E-10	mg/kg/day	2.1E-05	mg/kg/day	5.E-06
				Nitrite-N	0.0051	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	5.34E-09	mg/l	1.0E-10	mg/kg/day	1.5E+05	mg/kg/day	2.E-05	6.0E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-05					7.E-03
		EXPOSURE POINT TOTAL									2.E-05					7.E-03
	EXPOSURE MEDIUM TOTAL										2.E-05					7.E-03
SURFACE WATER TOTAL											2.E-05					7.E-03
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.0003	mg/kg	NC		NC			1.9E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Benzo(a)pyrene	0.000849	mg/kg	9.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-07	5.4E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.00108	mg/kg	NC		NC			6.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				4,4'-DDE	0.00467	mg/kg	5.1E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	3.0E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				alpha-Chlordane	0.00031	mg/kg	3.4E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	2.0E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Mercury	0.254	mg/kg	NC		NC			1.6E-04	mg/kg/day	3.0E-04	mg/kg/day	5.E-01
				Mercury (methyl)	0.5	mg/kg	NC		NC			1.9E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.00000182	mg/kg	2.0E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-05	1.2E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-05					2.E+00
		EXPOSURE POINT TOTAL									3.E-05					2.E+00
	EXPOSURE MEDIUM TOTAL										3.E-05					2.E+00
FILLET TOTAL											3.E-05					2.E+00
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		5.E-05	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				2.5.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.6.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.0003	mg/kg	NC		NC			4.0E-07	mg/kg/day	6.0E-02	mg/kg/day	7 E-06
				Benzo(a)pyrene	0.000849	mg/kg	9.8E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-07	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Phenanthrene	0.00108	mg/kg	NC		NC			1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				4,4'-DDE	0.00467	mg/kg	5.4E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	6.3E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.00031	mg/kg	3.6E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	4.2E-07	mg/kg/day	5.0E-04	mg/kg/day	8.E-04
				Mercury	0.254	mg/kg	NC		NC			3.4E-04	mg/kg/day	3.0E-04	mg/kg/day	1.E+00
				Mercury (methyl)	0.3	mg/kg	NC		NC			4.0E-04	mg/kg/day	1.0E-04	mg/kg/day	4.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.00000182	mg/kg	2.1E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-05	2.5E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-05					5.E+00
		EXPOSURE POINT TOTAL									3.E-05					5.E+00
	EXPOSURE MEDIUM TOTAL										3.E-05					5.E+00
FILLET TOTAL											3.E-05					5.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											3.E-05					5.2.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by:	RAR
Checked by:	KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.7.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	INGESTION	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			1.2E-09	mg/kg/day	2.0E-02	mg/kg/day	6.E-08
				Acenaphthylene	0.0589	mg/kg	NC		NC			3.7E-09	mg/kg/day	6.0E-02	mg/kg/day	6.E-08
				Benzo(a)anthracene	0.52	mg/kg	5.7E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-09	3.3E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Benzo(a)pyrene	0.53	mg/kg	5.8E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-08	3.4E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Benzo(b)fluoranthene	0.63	mg/kg	6.9E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-09	4.0E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Benzo(g,h,i)perylene	0.4	mg/kg	NC		NC			2.5E-08	mg/kg/day	3.0E-02	mg/kg/day	8.E-07
				Dibenzo(a,h)anthracene	0.15	mg/kg	1.6E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-08	9.5E-09	mg/kg/day	3.0E-02	mg/kg/day	3.E-07
				Indeno(1,2,3-cd)pyrene	0.43	mg/kg	4.7E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-09	2.7E-08	mg/kg/day	3.0E-02	mg/kg/day	9.E-07
				Phenanthrene	0.54	mg/kg	NC		NC			3.4E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				alpha-Chlordane	0.00133	mg/kg	1.5E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-12	8.5E-11	mg/kg/day	5.0E-04	mg/kg/day	2.E-07
				Aroclor-1254	0.032	mg/kg	3.5E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-10	2.0E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				Aroclor-1268	0.023	mg/kg	2.5E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-10	1.5E-09	mg/kg/day	2.0E-05	mg/kg/day	7.E-05
				gamma-Chlordane	0.00065	mg/kg	7.1E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-12	4.1E-11	mg/kg/day	5.0E-04	mg/kg/day	8.E-08
				Technical Chlordane	0.11	mg/kg	1.2E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-10	7.0E-09	mg/kg/day	5.0E-04	mg/kg/day	1.E-05
				Aluminum	9841	mg/kg	NC		NC			6.3E-04	mg/kg/day			
				Arsenic	2.7	mg/kg	2.9E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-08	1.7E-07	mg/kg/day	3.0E-04	mg/kg/day	6.E-04
				Cadmium	0.37	mg/kg	NC		NC			2.4E-08	mg/kg/day	1.0E-03	mg/kg/day	2.E-05
				Chromium	10.4	mg/kg	NC		NC			6.6E-07	mg/kg/day	3.0E-03	mg/kg/day	2.E-04
				Copper	11.8	mg/kg	NC		NC			7.5E-07	mg/kg/day			
				Lead	40.5	mg/kg	4.4E-07	mg/kg/day				2.6E-06	mg/kg/day			
				Manganese	711	mg/kg	NC		NC			4.5E-05	mg/kg/day	7.1E-02	mg/kg/day	6.E-04
				Mercury	0.051	mg/kg	NC		NC			3.2E-09	mg/kg/day	3.0E-04	mg/kg/day	1.E-05
				Nickel	10.1	mg/kg	NC		NC			6.4E-07	mg/kg/day	2.0E-02	mg/kg/day	3.E-05
				Thallium	0.354	mg/kg	NC		NC			2.2E-08	mg/kg/day	8.0E-05	mg/kg/day	3.E-04
				Vanadium	17	mg/kg	NC		NC			1.1E-06	mg/kg/day	7.0E-03	mg/kg/day	2.E-04
				Toxicity Equivalency (Dioxins/Furans)	0.00000379	mg/kg	4.1E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-09	2.4E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-07					2.E-03
			DERMAL	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			3.0E-10	mg/kg/day	2.0E-02	mg/kg/day	1.E-08
				Acenaphthylene	0.0589	mg/kg	NC		NC			9.5E-10	mg/kg/day	6.0E-02	mg/kg/day	2.E-08
				Benzo(a)anthracene	0.52	mg/kg	1.4E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-09	8.4E-09	mg/kg/day	3.0E-02	mg/kg/day	3.E-07
				Benzo(a)pyrene	0.53	mg/kg	1.5E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-08	8.5E-09	mg/kg/day	3.0E-02	mg/kg/day	3.E-07
				Benzo(b)fluoranthene	0.63	mg/kg	1.7E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-09	1.0E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-07
				Benzo(g,h,i)perylene	0.4	mg/kg	NC		NC			6.4E-09	mg/kg/day	3.0E-02	mg/kg/day	2.E-07
				Dibenzo(a,h)anthracene	0.15	mg/kg	4.1E-10	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-09	2.4E-09	mg/kg/day	3.0E-02	mg/kg/day	8.E-08
				Indeno(1,2,3-cd)pyrene	0.43	mg/kg	1.2E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-10	6.9E-09	mg/kg/day	3.0E-02	mg/kg/day	2.E-07
				Phenanthrene	0.54	mg/kg	NC		NC			8.7E-09	mg/kg/day	3.0E-02	mg/kg/day	3.E-07
				alpha-Chlordane	0.00133	mg/kg	1.1E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-13	6.6E-12	mg/kg/day	5.0E-04	mg/kg/day	1.E-08
				Aroclor-1254	0.032	mg/kg	9.5E-11	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-10	5.5E-10	mg/kg/day	2.0E-05	mg/kg/day	3.E-05
				Aroclor-1268	0.023	mg/kg	6.8E-11	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-10	4.0E-10	mg/kg/day	2.0E-05	mg/kg/day	2.E-05
				gamma-Chlordane	0.00065	mg/kg	5.5E-13	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-13	3.2E-12	mg/kg/day	5.0E-04	mg/kg/day	6.E-09
				Technical Chlordane	0.11	mg/kg	9.3E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-11	5.4E-10	mg/kg/day	5.0E-04	mg/kg/day	1.E-06
				Aluminum	9841	mg/kg	NC		NC			--				
				Arsenic	2.7	mg/kg	1.7E-09	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-09	1.0E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-05
				Cadmium	0.37	mg/kg	NC		NC			4.6E-11	mg/kg/day	2.5E-05	mg/kg/day	2.E-06
				Chromium	10.4	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	11.8	mg/kg	NC		NC			--				
				Lead	40.5	mg/kg	--					--				
				Manganese	711	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.051	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	10.1	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.354	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	17	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00000379	mg/kg	2.4E-15	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-10	1.4E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-08					9.E-05
		EXPOSURE POINT TOTAL									1.E-07					2.E-03
	EXPOSURE MEDIUM TOTAL										1.E-07					2.E-03
SEDIMENT TOTAL											1.E-07					2.E-03

US EPA ARCHIVE DOCUMENT

TABLE F.7.7.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	INGESTION	Arsenic	0.000491	mg/l	1.1E-09	mg/kg/day	1.5E+00	mg/kg/day	2.E-09	6.2E-09	mg/kg/day	3.0E-04	mg/kg/day	2.E-05
				Manganese	0.135	mg/l	NC		NC			1.7E-06	mg/kg/day	2.4E-02	mg/kg/day	7.E-05
				Mercury	0.00000215	mg/l	NC		NC			2.7E-11	mg/kg/day	3.0E-04	mg/kg/day	9.E-08
				Nitrite-N	0.0051	mg/l	NC		NC			6.5E-08	mg/kg/day	1.0E-01	mg/kg/day	6.E-07
				Toxicity Equivalency (Dioxins/Furans)	5.34E-09	mg/l	1.2E-14	mg/kg/day	1.5E+05	mg/kg/day	2.E-09	6.8E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-09					9.E-05
			DERMAL	Arsenic	0.000491	mg/l	3.7E-09	mg/kg/day	1.5E+00	mg/kg/day	6.E-09	2.2E-08	mg/kg/day	3.0E-04	mg/kg/day	7.E-05
				Manganese	0.135	mg/l	NC		NC			6.0E-06	mg/kg/day	9.6E-04	mg/kg/day	6.E-03
				Mercury	0.00000215	mg/l	NC		NC			9.5E-11	mg/kg/day	2.1E-05	mg/kg/day	5.E-06
				Nitrite-N	0.0051	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	5.34E-09	mg/l	9.2E-11	mg/kg/day	1.5E+05	mg/kg/day	1.E-05	5.4E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					6.E-03
		EXPOSURE POINT TOTAL									1.E-05					6.E-03
	EXPOSURE MEDIUM TOTAL										1.E-05					6.E-03
SURFACE WATER TOTAL											1.E-05					6.E-03
LARGEMOUTH BASS	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.0009	mg/kg	NC		NC			7.3E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Phenanthrene	0.0046	mg/kg	NC		NC			3.7E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDE	0.0278	mg/kg	3.9E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	2.3E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				alpha-Chlordane	0.001	mg/kg	1.4E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-08	8.1E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Aroclor-1254	0.0785	mg/kg	1.1E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	6.4E-05	mg/kg/day	2.0E-05	mg/kg/day	3.E+00
				Aroclor-1268	0.00796	mg/kg	1.1E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-06	6.5E-06	mg/kg/day	2.0E-05	mg/kg/day	3.E-01
				Dieldrin	0.00058	mg/kg	8.1E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-06	4.7E-07	mg/kg/day	5.0E-05	mg/kg/day	9.E-03
				gamma-Chlordane	0.00036	mg/kg	5.0E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	2.9E-07	mg/kg/day	5.0E-04	mg/kg/day	6.E-04
				Technical Chlordane	0.06846	mg/kg	9.5E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-06	5.6E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Lead	0.0158	mg/kg	2.2E-06	mg/kg/day				1.3E-05	mg/kg/day			
				Mercury	0.208	mg/kg	NC		NC			1.7E-04	mg/kg/day	3.0E-04	mg/kg/day	6.E-01
				Mercury (methyl)	0.2	mg/kg	NC		NC			1.6E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Thallium	0.00557	mg/kg	NC		NC			4.5E-06	mg/kg/day	8.0E-05	mg/kg/day	6.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.00000518	mg/kg	7.2E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-04	4.2E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					6.E+00
		EXPOSURE POINT TOTAL									1.E-04					6.E+00
	EXPOSURE MEDIUM TOTAL										1.E-04					6.E+00
WHOLE BODY TOTAL											1.E-04					6.E+00
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		2.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				5.9.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.8.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	INGESTION	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			1.8E-09	mg/kg/day	2.0E-02	mg/kg/day	9.E-08
				Acenaphthylene	0.0589	mg/kg	NC		NC			5.8E-09	mg/kg/day	6.0E-02	mg/kg/day	1.E-07
				Benzo(a)anthracene	0.52	mg/kg	8.8E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-09	5.1E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(a)pyrene	0.53	mg/kg	9.0E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-08	5.2E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(b)fluoranthene	0.63	mg/kg	1.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-09	6.2E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(g,h,i)perylene	0.4	mg/kg	NC		NC			4.0E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Dibenzo(a,h)anthracene	0.15	mg/kg	2.5E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	1.5E-08	mg/kg/day	3.0E-02	mg/kg/day	5.E-07
				Indeno(1,2,3-cd)pyrene	0.43	mg/kg	7.3E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-09	4.3E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Phenanthrene	0.54	mg/kg	NC		NC			5.3E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				alpha-Chlordane	0.00133	mg/kg	2.3E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-12	1.3E-10	mg/kg/day	5.0E-04	mg/kg/day	3.E-07
				Aroclor-1254	0.032	mg/kg	5.4E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-09	3.2E-09	mg/kg/day	2.0E-05	mg/kg/day	2.E-04
				Aroclor-1268	0.023	mg/kg	3.9E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-10	2.3E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				gamma-Chlordane	0.00065	mg/kg	1.1E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-12	6.4E-11	mg/kg/day	5.0E-04	mg/kg/day	1.E-07
				Technical Chlordane	0.11	mg/kg	1.9E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-10	1.1E-08	mg/kg/day	5.0E-04	mg/kg/day	2.E-05
				Aluminum	9841	mg/kg	NC		NC			9.7E-04	mg/kg/day			
				Arsenic	2.7	mg/kg	4.6E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	7.E-08	2.7E-07	mg/kg/day	3.0E-04	mg/kg/day	9.E-04
				Cadmium	0.37	mg/kg	NC		NC			3.7E-08	mg/kg/day	1.0E-03	mg/kg/day	4.E-05
				Chromium	10.4	mg/kg	NC		NC			1.0E-06	mg/kg/day	3.0E-03	mg/kg/day	3.E-04
				Copper	11.8	mg/kg	NC		NC			1.2E-06	mg/kg/day			
				Lead	40.5	mg/kg	6.9E-07	mg/kg/day				4.0E-06	mg/kg/day			
				Manganese	711	mg/kg	NC		NC			7.0E-05	mg/kg/day	7.1E-02	mg/kg/day	1.E-03
				Mercury	0.051	mg/kg	NC		NC			5.0E-09	mg/kg/day	3.0E-04	mg/kg/day	2.E-05
				Nickel	10.1	mg/kg	NC		NC			1.0E-06	mg/kg/day	2.0E-02	mg/kg/day	5.E-05
				Thallium	0.354	mg/kg	NC		NC			3.5E-08	mg/kg/day	8.0E-05	mg/kg/day	4.E-04
				Vanadium	17	mg/kg	NC		NC			1.7E-06	mg/kg/day	7.0E-03	mg/kg/day	2.E-04
				Toxicity Equivalency (Dioxins/Furans)	0.00000379	mg/kg	6.4E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-08	3.7E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-07					3.E-03
			DERMAL	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			1.4E-09	mg/kg/day	2.0E-02	mg/kg/day	7.E-08
				Acenaphthylene	0.0589	mg/kg	NC		NC			4.3E-09	mg/kg/day	6.0E-02	mg/kg/day	7.E-08
				Benzo(a)anthracene	0.52	mg/kg	6.6E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-09	3.8E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Benzo(a)pyrene	0.53	mg/kg	6.7E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-08	3.9E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Benzo(b)fluoranthene	0.63	mg/kg	7.9E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-09	4.6E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(g,h,i)perylene	0.4	mg/kg	NC		NC			2.9E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Dibenzo(a,h)anthracene	0.15	mg/kg	1.9E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-08	1.1E-08	mg/kg/day	3.0E-02	mg/kg/day	4.E-07
				Indeno(1,2,3-cd)pyrene	0.43	mg/kg	5.4E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-09	3.2E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Phenanthrene	0.54	mg/kg	NC		NC			4.0E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				alpha-Chlordane	0.00133	mg/kg	5.2E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-12	3.0E-11	mg/kg/day	5.0E-04	mg/kg/day	6.E-08
				Aroclor-1254	0.032	mg/kg	4.3E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-10	2.5E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				Aroclor-1268	0.023	mg/kg	3.1E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-10	1.8E-09	mg/kg/day	2.0E-05	mg/kg/day	9.E-05
				gamma-Chlordane	0.00065	mg/kg	2.5E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-13	1.5E-11	mg/kg/day	5.0E-04	mg/kg/day	3.E-08
				Technical Chlordane	0.11	mg/kg	4.3E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	2.5E-09	mg/kg/day	5.0E-04	mg/kg/day	5.E-06
				Aluminum	9841	mg/kg	NC		NC			--				
				Arsenic	2.7	mg/kg	7.9E-09	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-08	4.6E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Cadmium	0.37	mg/kg	NC		NC			2.1E-10	mg/kg/day	2.5E-05	mg/kg/day	8.E-06
				Chromium	10.4	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	11.8	mg/kg	NC		NC			--				
				Lead	40.5	mg/kg	--					--				
				Manganese	711	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.051	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	10.1	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.354	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	17	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00000379	mg/kg	1.1E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-09	6.4E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								9.E-08					4.E-04
		EXPOSURE POINT TOTAL									3.E-07					4.E-03
	EXPOSURE MEDIUM TOTAL										3.E-07					4.E-03
SEDIMENT TOTAL											3.E-07					4.E-03

US EPA ARCHIVE DOCUMENT

TABLE F.7.8.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	CSF/UNIT RISK VALUE	CSF UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	RfD/RfC (1) VALUE	RfD/RfC UNITS	HAZARD QUOTIENT
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	INGESTION	Arsenic	0.000491	mg/l	1.7E-09	mg/kg/day	1.5E+00	mg/kg/day	2.E-09	9.7E-09	mg/kg/day	3.0E-04	mg/kg/day	3.E-05
				Manganese	0.135	mg/l	NC		NC			2.7E-06	mg/kg/day	2.4E-02	mg/kg/day	1.E-04
				Mercury	0.00000215	mg/l	NC		NC			4.3E-11	mg/kg/day	3.0E-04	mg/kg/day	1.E-07
				Nitrite-N	0.0051	mg/l	NC		NC			1.0E-07	mg/kg/day	1.0E-01	mg/kg/day	1.E-06
				Toxicity Equivalency (Dioxins/Furans)	5.34E-09	mg/l	1.8E-14	mg/kg/day	1.5E+05	mg/kg/day	3.E-09	1.1E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-09					1.E-04
			DERMAL	Arsenic	0.000491	mg/l	4.2E-09	mg/kg/day	1.5E+00	mg/kg/day	6.E-09	2.4E-08	mg/kg/day	3.0E-04	mg/kg/day	8.E-05
				Manganese	0.135	mg/l	NC		NC			6.7E-06	mg/kg/day	9.6E-04	mg/kg/day	7.E-03
				Mercury	0.00000215	mg/l	NC		NC			1.1E-10	mg/kg/day	2.1E-05	mg/kg/day	5.E-06
				Nitrite-N	0.0051	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	5.34E-09	mg/l	1.0E-10	mg/kg/day	1.5E+05	mg/kg/day	2.E-05	6.0E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-05					7.E-03
		EXPOSURE POINT TOTAL									2.E-05					7.E-03
	EXPOSURE MEDIUM TOTAL										2.E-05					7.E-03
SURFACE WATER TOTAL											2.E-05					7.E-03
LARGEMOUTH BASS	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.0009	mg/kg	NC		NC			5.7E-07	mg/kg/day	6.0E-02	mg/kg/day	9.E-06
				Phenanthrene	0.0046	mg/kg	NC		NC			2.9E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4' DDE	0.0278	mg/kg	3.0E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	1.8E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				alpha-Chlordane	0.001	mg/kg	1.1E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-08	6.3E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Aroclor-1254	0.0785	mg/kg	8.5E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	5.0E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Aroclor-1268	0.00796	mg/kg	8.6E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-06	5.0E-06	mg/kg/day	2.0E-05	mg/kg/day	3.E-01
				Dieldrin	0.00058	mg/kg	6.3E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-06	3.7E-07	mg/kg/day	5.0E-05	mg/kg/day	7.E-03
				gamma-Chlordane	0.00036	mg/kg	3.9E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	2.3E-07	mg/kg/day	5.0E-04	mg/kg/day	5.E-04
				Technical Chlordane	0.06846	mg/kg	7.4E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-06	4.3E-05	mg/kg/day	5.0E-04	mg/kg/day	9.E-02
				Lead	0.0158	mg/kg	1.7E-06	mg/kg/day				1.0E-05	mg/kg/day			
				Mercury	0.208	mg/kg	NC		NC			1.3E-04	mg/kg/day	3.0E-04	mg/kg/day	4.E-01
				Mercury (methyl)	0.2	mg/kg	NC		NC			1.3E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Thallium	0.00557	mg/kg	NC		NC			3.5E-06	mg/kg/day	8.0E-05	mg/kg/day	4.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.00000518	mg/kg	5.6E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-05	3.3E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					5.E+00
		EXPOSURE POINT TOTAL									1.E-04					5.E+00
	EXPOSURE MEDIUM TOTAL										1.E-04					5.E+00
WHOLE BODY TOTAL											1.E-04					5.E+00
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		1.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				4.6.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by:	RAR
Checked by:	KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.9.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.0009	mg/kg	NC		NC			1.2E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.0046	mg/kg	NC		NC			6.2E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDE	0.0278	mg/kg	3.2E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	3.7E-05	mg/kg/day	5.0E-04	mg/kg/day	7.E-02
				alpha-Chlordane	0.001	mg/kg	1.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-08	1.3E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Aroclor-1254	0.0785	mg/kg	9.1E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	1.1E-04	mg/kg/day	2.0E-05	mg/kg/day	5.E+00
				Aroclor-1268	0.00796	mg/kg	9.2E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-06	1.1E-05	mg/kg/day	2.0E-05	mg/kg/day	5.E-01
				Dieldrin	0.00058	mg/kg	6.7E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-06	7.8E-07	mg/kg/day	5.0E-05	mg/kg/day	2.E-02
				gamma-Chlordane	0.00036	mg/kg	4.2E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	4.9E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Technical Chlordane	0.06846	mg/kg	7.9E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-06	9.2E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Lead	0.0158	mg/kg	1.8E-06	mg/kg/day				2.1E-05	mg/kg/day			
				Mercury	0.208	mg/kg	NC		NC			2.8E-04	mg/kg/day	3.0E-04	mg/kg/day	9.E-01
				Mercury (methyl)	0.2	mg/kg	NC		NC			2.7E-04	mg/kg/day	1.0E-04	mg/kg/day	3.E+00
				Thallium	0.00557	mg/kg	NC		NC			7.5E-06	mg/kg/day	8.0E-05	mg/kg/day	9.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.00000518	mg/kg	6.0E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	9.E-05	7.0E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					1.E+01
		EXPOSURE POINT TOTAL									1.E-04					1.E+01
	EXPOSURE MEDIUM TOTAL										1.E-04					1.E+01
WHOLE BODY TOTAL											1.E-04					1.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											1.E-04					9.8.E+00

NOTES
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.10.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	INGESTION	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			1.2E-09	mg/kg/day	2.0E-02	mg/kg/day	6.E-08
				Acenaphthylene	0.0589	mg/kg	NC		NC			3.7E-09	mg/kg/day	6.0E-02	mg/kg/day	6.E-08
				Benzo(a)anthracene	0.52	mg/kg	5.7E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-09	3.3E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Benzo(a)pyrene	0.53	mg/kg	5.8E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-08	3.4E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Benzo(b)fluoranthene	0.63	mg/kg	6.9E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-09	4.0E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Benzo(g,h,i)perylene	0.4	mg/kg	NC		NC			2.5E-08	mg/kg/day	3.0E-02	mg/kg/day	8.E-07
				Dibenzo(a,h)anthracene	0.15	mg/kg	1.6E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-08	9.5E-09	mg/kg/day	3.0E-02	mg/kg/day	3.E-07
				Indeno(1,2,3-cd)pyrene	0.43	mg/kg	4.7E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-09	2.7E-08	mg/kg/day	3.0E-02	mg/kg/day	9.E-07
				Phenanthrene	0.54	mg/kg	NC		NC			3.4E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				alpha-Chlordane	0.00133	mg/kg	1.5E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-12	8.5E-11	mg/kg/day	5.0E-04	mg/kg/day	2.E-07
				Aroclor-1254	0.032	mg/kg	3.5E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-10	2.0E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				Aroclor-1268	0.023	mg/kg	2.5E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-10	1.5E-09	mg/kg/day	2.0E-05	mg/kg/day	7.E-05
				gamma-Chlordane	0.00065	mg/kg	7.1E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-12	4.1E-11	mg/kg/day	5.0E-04	mg/kg/day	8.E-08
				Technical Chlordane	0.11	mg/kg	1.2E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-10	7.0E-09	mg/kg/day	5.0E-04	mg/kg/day	1.E-05
				Aluminum	9841	mg/kg	NC		NC			6.3E-04	mg/kg/day			
				Arsenic	2.7	mg/kg	2.9E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-08	1.7E-07	mg/kg/day	3.0E-04	mg/kg/day	6.E-04
				Cadmium	0.37	mg/kg	NC		NC			2.4E-08	mg/kg/day	1.0E-03	mg/kg/day	2.E-05
				Chromium	10.4	mg/kg	NC		NC			6.6E-07	mg/kg/day	3.0E-03	mg/kg/day	2.E-04
				Copper	11.8	mg/kg	NC		NC			7.5E-07	mg/kg/day			
				Lead	40.5	mg/kg	4.4E-07	mg/kg/day				2.6E-06	mg/kg/day			
				Manganese	711	mg/kg	NC		NC			4.5E-05	mg/kg/day	7.1E-02	mg/kg/day	6.E-04
				Mercury	0.051	mg/kg	NC		NC			3.2E-09	mg/kg/day	3.0E-04	mg/kg/day	1.E-05
				Nickel	10.1	mg/kg	NC		NC			6.4E-07	mg/kg/day	2.0E-02	mg/kg/day	3.E-05
				Thallium	0.354	mg/kg	NC		NC			2.3E-08	mg/kg/day	8.0E-05	mg/kg/day	3.E-04
				Vanadium	17	mg/kg	NC		NC			1.1E-06	mg/kg/day	7.0E-03	mg/kg/day	2.E-04
				Toxicity Equivalency (Dioxins/Furans)	0.00000379	mg/kg	4.1E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-09	2.4E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-07					2.E-03
			DERMAL	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			3.0E-10	mg/kg/day	2.0E-02	mg/kg/day	1.E-08
				Acenaphthylene	0.0589	mg/kg	NC		NC			9.5E-10	mg/kg/day	6.0E-02	mg/kg/day	2.E-08
				Benzo(a)anthracene	0.52	mg/kg	1.4E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-09	8.4E-09	mg/kg/day	3.0E-02	mg/kg/day	3.E-07
				Benzo(a)pyrene	0.53	mg/kg	1.5E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-08	8.5E-09	mg/kg/day	3.0E-02	mg/kg/day	3.E-07
				Benzo(b)fluoranthene	0.63	mg/kg	1.7E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-09	1.0E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-07
				Benzo(g,h,i)perylene	0.4	mg/kg	NC		NC			6.4E-09	mg/kg/day	3.0E-02	mg/kg/day	2.E-07
				Dibenzo(a,h)anthracene	0.15	mg/kg	4.1E-10	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-09	2.4E-09	mg/kg/day	3.0E-02	mg/kg/day	8.E-08
				Indeno(1,2,3-cd)pyrene	0.43	mg/kg	1.2E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-10	6.9E-09	mg/kg/day	3.0E-02	mg/kg/day	2.E-07
				Phenanthrene	0.54	mg/kg	NC		NC			8.7E-09	mg/kg/day	3.0E-02	mg/kg/day	3.E-07
				alpha-Chlordane	0.00133	mg/kg	1.1E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-13	6.6E-12	mg/kg/day	5.0E-04	mg/kg/day	1.E-08
				Aroclor-1254	0.032	mg/kg	9.5E-11	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-10	5.5E-10	mg/kg/day	2.0E-05	mg/kg/day	3.E-05
				Aroclor-1268	0.023	mg/kg	6.8E-11	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-10	4.0E-10	mg/kg/day	2.0E-05	mg/kg/day	2.E-05
				gamma-Chlordane	0.00065	mg/kg	5.5E-13	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-13	3.2E-12	mg/kg/day	5.0E-04	mg/kg/day	6.E-09
				Technical Chlordane	0.11	mg/kg	9.3E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-11	5.4E-10	mg/kg/day	5.0E-04	mg/kg/day	1.E-06
				Aluminum	9841	mg/kg	NC		NC			--				
				Arsenic	2.7	mg/kg	1.7E-09	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-09	1.0E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-05
				Cadmium	0.37	mg/kg	NC		NC			4.6E-11	mg/kg/day	2.5E-05	mg/kg/day	2.E-06
				Chromium	10.4	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	11.8	mg/kg	NC		NC			--				
				Lead	40.5	mg/kg	--					--				
				Manganese	711	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.051	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	10.1	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.354	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	17	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00000379	mg/kg	2.4E-15	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-10	1.4E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-08					9.E-05
		EXPOSURE POINT TOTAL									1.E-07					2.E-03
	EXPOSURE MEDIUM TOTAL										1.E-07					2.E-03
SEDIMENT TOTAL											1.E-07					2.E-03

US EPA ARCHIVE DOCUMENT

TABLE F.7.10.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	INGESTION	Arsenic	0.000491	mg/l	1.1E-09	mg/kg/day	1.5E+00	mg/kg/day	2.E-09	6.2E-09	mg/kg/day	3.0E-04	mg/kg/day	2.E-05
				Manganese	0.166	mg/l	NC		NC			2.1E-06	mg/kg/day	2.4E-02	mg/kg/day	9.E-05
				Mercury	0.00000215	mg/l	NC		NC			2.7E-11	mg/kg/day	3.0E-04	mg/kg/day	9.E-08
				Nitrite-N	0.0051	mg/l	NC		NC			6.5E-08	mg/kg/day	1.0E-01	mg/kg/day	6.E-07
				Toxicity Equivalency (Dioxins/Furans)	5.34E-09	mg/l	1.2E-14	mg/kg/day	1.5E+05	mg/kg/day	2.E-09	6.8E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-09					1.E-04
			DERMAL	Arsenic	0.000491	mg/l	3.7E-09	mg/kg/day	1.5E+00	mg/kg/day	6.E-09	2.2E-08	mg/kg/day	3.0E-04	mg/kg/day	7.E-05
				Manganese	0.166	mg/l	NC		NC			7.3E-06	mg/kg/day	9.6E-04	mg/kg/day	8.E-03
				Mercury	0.00000215	mg/l	NC		NC			9.5E-11	mg/kg/day	2.1E-05	mg/kg/day	5.E-06
				Nitrite-N	0.0051	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	5.34E-09	mg/l	9.2E-11	mg/kg/day	1.5E+05	mg/kg/day	1.E-05	5.4E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					8.E-03
		EXPOSURE POINT TOTAL									1.E-05					8.E-03
	EXPOSURE MEDIUM TOTAL										1.E-05					8.E-03
SURFACE WATER TOTAL											1.E-05					8.E-03
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00091	mg/kg	NC		NC			7.4E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)anthracene	0.00334	mg/kg	4.6E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.7E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				Benzo(a)pyrene	0.00329	mg/kg	4.6E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	2.7E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				Benzo(b)fluoranthene	0.004177	mg/kg	5.8E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	3.4E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(g,h,i)perylene	0.00219	mg/kg	NC		NC			1.8E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Dibenzo(a,h)anthracene	0.00108	mg/kg	1.5E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	8.8E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Indeno(1,2,3-cd)pyrene	0.00283	mg/kg	3.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.3E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				Phenanthrene	0.0071	mg/kg	NC		NC			5.8E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDE	0.0127	mg/kg	1.8E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	6.E-07	1.0E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.00174	mg/kg	2.4E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-08	1.4E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				gamma-Chlordane	0.00094	mg/kg	1.3E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-08	7.6E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Lead	0.0894	mg/kg	1.2E-05	mg/kg/day				7.2E-05	mg/kg/day			
				Mercury	0.077	mg/kg	NC		NC			6.2E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.0775	mg/kg	NC		NC			6.3E-05	mg/kg/day	1.0E-04	mg/kg/day	6.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.00000216	mg/kg	3.0E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-05	1.8E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-05					6.E-01
		EXPOSURE POINT TOTAL									5.E-05					6.E-01
	EXPOSURE MEDIUM TOTAL										5.E-05					6.E-01
WHOLE BODY TOTAL											5.E-05					6.E-01
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	7.E-05				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	8.7.E-01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.11.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	INGESTION	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			1.8E-09	mg/kg/day	2.0E-02	mg/kg/day	9.E-08
				Acenaphthylene	0.0589	mg/kg	NC		NC			5.8E-09	mg/kg/day	6.0E-02	mg/kg/day	1.E-07
				Benzo(a)anthracene	0.52	mg/kg	8.8E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-09	5.1E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(a)pyrene	0.53	mg/kg	9.0E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-08	5.2E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(b)fluoranthene	0.63	mg/kg	1.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-09	6.2E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(g,h,i)perylene	0.4	mg/kg	NC		NC			4.0E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Dibenzo(a,h)anthracene	0.15	mg/kg	2.5E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	1.5E-08	mg/kg/day	3.0E-02	mg/kg/day	5.E-07
				Indeno(1,2,3-cd)pyrene	0.43	mg/kg	7.3E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-09	4.3E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Phenanthrene	0.54	mg/kg	NC		NC			5.3E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				alpha-Chlordane	0.00133	mg/kg	2.3E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-12	1.3E-10	mg/kg/day	5.0E-04	mg/kg/day	3.E-07
				Aroclor-1254	0.032	mg/kg	5.4E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-09	3.2E-09	mg/kg/day	2.0E-05	mg/kg/day	2.E-04
				Aroclor-1268	0.023	mg/kg	3.9E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-10	2.3E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				gamma-Chlordane	0.00065	mg/kg	1.1E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-12	6.4E-11	mg/kg/day	5.0E-04	mg/kg/day	1.E-07
				Technical Chlordane	0.11	mg/kg	1.9E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-10	1.1E-08	mg/kg/day	5.0E-04	mg/kg/day	2.E-05
				Aluminum	9841	mg/kg	NC		NC			9.7E-04	mg/kg/day			
				Arsenic	2.7	mg/kg	4.6E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	7.E-08	2.7E-07	mg/kg/day	3.0E-04	mg/kg/day	9.E-04
				Cadmium	0.37	mg/kg	NC		NC			3.7E-08	mg/kg/day	1.0E-03	mg/kg/day	4.E-05
				Chromium	10.4	mg/kg	NC		NC			1.0E-06	mg/kg/day	3.0E-03	mg/kg/day	3.E-04
				Copper	11.8	mg/kg	NC		NC			1.2E-06	mg/kg/day			
				Lead	40.5	mg/kg	6.9E-07	mg/kg/day				4.0E-06	mg/kg/day			
				Manganese	711	mg/kg	NC		NC			7.0E-05	mg/kg/day	7.1E-02	mg/kg/day	1.E-03
				Mercury	0.051	mg/kg	NC		NC			5.0E-09	mg/kg/day	3.0E-04	mg/kg/day	2.E-05
				Nickel	10.1	mg/kg	NC		NC			1.0E-06	mg/kg/day	2.0E-02	mg/kg/day	5.E-05
				Thallium	0.354	mg/kg	NC		NC			3.5E-08	mg/kg/day	8.0E-05	mg/kg/day	4.E-04
				Vanadium	17	mg/kg	NC		NC			1.7E-06	mg/kg/day	7.0E-03	mg/kg/day	2.E-04
				Toxicity Equivalency (Dioxins/Furans)	0.00000379	mg/kg	6.4E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-08	3.7E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-07					3.E-03
			DERMAL	2-Methylnaphthalene	0.01855	mg/kg	NC		NC			1.4E-09	mg/kg/day	2.0E-02	mg/kg/day	7.E-08
				Acenaphthylene	0.0589	mg/kg	NC		NC			4.3E-09	mg/kg/day	6.0E-02	mg/kg/day	7.E-08
				Benzo(a)anthracene	0.52	mg/kg	6.6E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-09	3.8E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Benzo(a)pyrene	0.53	mg/kg	6.7E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-08	3.9E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Benzo(b)fluoranthene	0.63	mg/kg	7.9E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-09	4.6E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(g,h,i)perylene	0.4	mg/kg	NC		NC			2.9E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Dibenzo(a,h)anthracene	0.15	mg/kg	1.9E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-08	1.1E-08	mg/kg/day	3.0E-02	mg/kg/day	4.E-07
				Indeno(1,2,3-cd)pyrene	0.43	mg/kg	5.4E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-09	3.2E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Phenanthrene	0.54	mg/kg	NC		NC			4.0E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				alpha-Chlordane	0.00133	mg/kg	5.2E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-12	3.0E-11	mg/kg/day	5.0E-04	mg/kg/day	6.E-08
				Aroclor-1254	0.032	mg/kg	4.3E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-10	2.5E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				Aroclor-1268	0.023	mg/kg	3.1E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-10	1.8E-09	mg/kg/day	2.0E-05	mg/kg/day	9.E-05
				gamma-Chlordane	0.00065	mg/kg	2.5E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-13	1.5E-11	mg/kg/day	5.0E-04	mg/kg/day	3.E-08
				Technical Chlordane	0.11	mg/kg	4.3E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	2.5E-09	mg/kg/day	5.0E-04	mg/kg/day	5.E-06
				Aluminum	9841	mg/kg	NC		NC			--				
				Arsenic	2.7	mg/kg	7.9E-09	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-08	4.6E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Cadmium	0.37	mg/kg	NC		NC			2.1E-10	mg/kg/day	2.5E-05	mg/kg/day	8.E-06
				Chromium	10.4	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	11.8	mg/kg	NC		NC			--				
				Lead	40.5	mg/kg	--					--				
				Manganese	711	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.051	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	10.1	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.354	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	17	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00000379	mg/kg	1.1E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-09	6.4E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								9.E-08					4.E-04
		EXPOSURE POINT TOTAL									3.E-07					4.E-03
	EXPOSURE MEDIUM TOTAL										3.E-07					4.E-03
SEDIMENT TOTAL											3.E-07					4.E-03

US EPA ARCHIVE DOCUMENT

TABLE F.7.11.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	CSF/UNIT RISK VALUE	CSF UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	RfD/RfC (1) VALUE	RfD/RfC UNITS	HAZARD QUOTIENT
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	INGESTION	Arsenic	0.000491	mg/l	1.7E-09	mg/kg/day	1.5E+00	mg/kg/day	2.E-09	9.7E-09	mg/kg/day	3.0E-04	mg/kg/day	3.E-05
				Manganese	0.135	mg/l	NC		NC			2.7E-06	mg/kg/day	2.4E-02	mg/kg/day	1.E-04
				Mercury	0.00000215	mg/l	NC		NC			4.3E-11	mg/kg/day	3.0E-04	mg/kg/day	1.E-07
				Nitrite-N	0.0051	mg/l	NC		NC			1.0E-07	mg/kg/day	1.0E-01	mg/kg/day	1.E-06
				Toxicity Equivalency (Dioxins/Furans)	5.34E-09	mg/l	1.8E-14	mg/kg/day	1.5E+05	mg/kg/day	3.E-09	1.1E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-09					1.E-04
			DERMAL	Arsenic	0.000491	mg/l	4.2E-09	mg/kg/day	1.5E+00	mg/kg/day	6.E-09	2.4E-08	mg/kg/day	3.0E-04	mg/kg/day	8.E-05
				Manganese	0.135	mg/l	NC		NC			6.7E-06	mg/kg/day	9.6E-04	mg/kg/day	7.E-03
				Mercury	0.00000215	mg/l	NC		NC			1.1E-10	mg/kg/day	2.1E-05	mg/kg/day	5.E-06
				Nitrite-N	0.0051	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	5.34E-09	mg/l	1.0E-10	mg/kg/day	1.5E+05	mg/kg/day	2.E-05	6.0E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-05					7.E-03
		EXPOSURE POINT TOTAL									2.E-05					7.E-03
	EXPOSURE MEDIUM TOTAL										2.E-05					7.E-03
SURFACE WATER TOTAL											2.E-05					7.E-03
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00091	mg/kg	NC		NC			5.8E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)anthracene	0.00334	mg/kg	3.6E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.1E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(a)pyrene	0.00329	mg/kg	3.6E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	2.1E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(b)fluoranthene	0.004177	mg/kg	4.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.6E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				Benzo(g,h,i)perylene	0.00219	mg/kg	NC		NC			1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Dibenzo(a,h)anthracene	0.00108	mg/kg	1.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-07	6.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Indeno(1,2,3-cd)pyrene	0.00283	mg/kg	3.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.8E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Phenanthrene	0.0071	mg/kg	NC		NC			4.5E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDE	0.0127	mg/kg	1.4E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-07	8.0E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.00174	mg/kg	1.9E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-08	1.1E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				gamma-Chlordane	0.00094	mg/kg	1.0E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-08	5.9E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Lead	0.0894	mg/kg	9.7E-06	mg/kg/day				5.7E-05	mg/kg/day			
				Mercury	0.077	mg/kg	NC		NC			4.9E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.0775	mg/kg	NC		NC			4.9E-05	mg/kg/day	1.0E-04	mg/kg/day	5.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.00000216	mg/kg	2.3E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-05	1.4E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-05					6.7.E-01
		EXPOSURE POINT TOTAL									4.E-05					6.7.E-01
	EXPOSURE MEDIUM TOTAL										4.E-05					6.7.E-01
WHOLE BODY TOTAL											4.E-05					6.7.E-01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	6.E-05				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	6.8.E-01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.12.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00091	mg/kg	NC		NC			1.2E-06	mg/kg/day	6.0E-02	mg/kg/day	2 E-05
				Benzo(a)anthracene	0.00334	mg/kg	3.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	4.5E-06	mg/kg/day	3.0E-02	mg/kg/day	2 E-04
				Benzo(a)pyrene	0.00329	mg/kg	3.8E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	4.4E-06	mg/kg/day	3.0E-02	mg/kg/day	1 E-04
				Benzo(b)fluoranthene	0.004177	mg/kg	4.8E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	5.6E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(g,h,i)perylene	0.00219	mg/kg	NC		NC			3.0E-06	mg/kg/day	3.0E-02	mg/kg/day	1 E-04
				Dibenzo(a,h)anthracene	0.00108	mg/kg	1.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-07	1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5 E-05
				Indeno(1,2,3-cd)pyrene	0.00283	mg/kg	3.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	3.8E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Phenanthrene	0.0071	mg/kg	NC		NC			9.6E-06	mg/kg/day	3.0E-02	mg/kg/day	3 E-04
				4,4'-DDE	0.0127	mg/kg	1.5E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-07	1.7E-05	mg/kg/day	5.0E-04	mg/kg/day	3 E-02
				alpha-Chlordane	0.00174	mg/kg	2.0E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	7 E-08	2.3E-06	mg/kg/day	5.0E-04	mg/kg/day	5 E-03
				gamma-Chlordane	0.00094	mg/kg	1.1E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-08	1.3E-06	mg/kg/day	5.0E-04	mg/kg/day	3 E-03
				Lead	0.0894	mg/kg	1.0E-05	mg/kg/day				1.2E-04	mg/kg/day			
				Mercury	0.077	mg/kg	NC		NC			1.0E-04	mg/kg/day	3.0E-04	mg/kg/day	3 E-01
				Mercury (methyl)	0.0775	mg/kg	NC		NC			1.0E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.00000216	mg/kg	2.5E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-05	2.9E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-05					1.4.E+00
		EXPOSURE POINT TOTAL									4.E-05					1.4.E+00
	EXPOSURE MEDIUM TOTAL										4.E-05					1.4.E+00
WHOLE BODY TOTAL											4.E-05					1.4.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											4.E-05					1.4.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by:	RAR
Checked by:	KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.13.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	GREYSTONE MILL POND	INGESTION	2-Methylnaphthalene	0.1071	mg/kg	NC		NC			1.1E-08	mg/kg/day	2.0E-02	mg/kg/day	5.E-07
				Acenaphthylene	0.31765	mg/kg	NC		NC			3.2E-08	mg/kg/day	6.0E-02	mg/kg/day	5.E-07
				Benzo(a)anthracene	3.09372	mg/kg	5.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	3.1E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(a)pyrene	3.07718	mg/kg	5.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	3.1E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(b)fluoranthene	3.45207	mg/kg	6.0E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	3.5E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	2.336	mg/kg	NC		NC			2.4E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Dibenzo(a,h)anthracene	0.61485	mg/kg	1.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-08	6.3E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	2.51886	mg/kg	4.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.6E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				Phenanthrene	3.95543	mg/kg	NC		NC			4.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				alpha-Chlordane	0.0178	mg/kg	3.1E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	1.8E-09	mg/kg/day	5.0E-04	mg/kg/day	4.E-06
				Aroclor-1254	0.51998	mg/kg	9.1E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-08	5.3E-08	mg/kg/day	2.0E-05	mg/kg/day	3.E-03
				Aroclor-1268	0.08389	mg/kg	1.5E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-09	8.5E-09	mg/kg/day	2.0E-05	mg/kg/day	4.E-04
				Endosulfan Sulfate	0.0065	mg/kg	NC		NC			6.6E-10	mg/kg/day	6.0E-03	mg/kg/day	1.E-07
				Technical Chlordane	0.4307	mg/kg	7.5E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-09	4.4E-08	mg/kg/day	5.0E-04	mg/kg/day	9.E-05
				Aluminum	15899	mg/kg	NC		NC			1.6E-03	mg/kg/day			
				Arsenic	7.72	mg/kg	1.3E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-07	7.9E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				Chromium	231	mg/kg	4.0E-06	mg/kg/day	--			2.4E-05	mg/kg/day	3.0E-03	mg/kg/day	8.E-03
				Copper	205	mg/kg	NC		NC			2.1E-05	mg/kg/day			
				Lead	450	mg/kg	7.9E-06	mg/kg/day	--			4.6E-05	mg/kg/day			
				Manganese	1841	mg/kg	NC		NC			1.9E-04	mg/kg/day	7.1E-02	mg/kg/day	3.E-03
				Mercury	0.582	mg/kg	1.0E-08	mg/kg/day	--			5.9E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Molybdenum	54	mg/kg	NC		NC			5.5E-06	mg/kg/day	5.0E-03	mg/kg/day	1.E-03
				Nickel	120	mg/kg	2.1E-06	mg/kg/day	--			1.2E-05	mg/kg/day	2.0E-02	mg/kg/day	6.E-04
				Thallium	0.461	mg/kg	NC		NC			4.7E-08	mg/kg/day	8.0E-05	mg/kg/day	6.E-04
				Vanadium	82.3	mg/kg	NC		NC			8.4E-06	mg/kg/day	7.0E-03	mg/kg/day	1.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.000055	mg/kg	9.6E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-07	5.6E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-06					2.E-02
			DERMAL	2-Methylnaphthalene	0.1071	mg/kg	NC		NC			3.2E-09	mg/kg/day	2.0E-02	mg/kg/day	2.E-07
				Acenaphthylene	0.31765	mg/kg	NC		NC			9.6E-09	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				Benzo(a)anthracene	3.09372	mg/kg	1.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	9.3E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(a)pyrene	3.07718	mg/kg	1.6E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	9.3E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(b)fluoranthene	3.45207	mg/kg	1.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	1.0E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(g,h,i)perylene	2.336	mg/kg	NC		NC			7.0E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Dibenzo(a,h)anthracene	0.61485	mg/kg	3.2E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	1.9E-08	mg/kg/day	3.0E-02	mg/kg/day	6.E-07
				Indeno(1,2,3-cd)pyrene	2.51886	mg/kg	1.3E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	7.6E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Phenanthrene	3.95543	mg/kg	NC		NC			1.2E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				alpha-Chlordane	0.0178	mg/kg	2.8E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-11	1.7E-10	mg/kg/day	5.0E-04	mg/kg/day	3.E-07
				Aroclor-1254	0.51998	mg/kg	2.9E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-09	1.7E-08	mg/kg/day	2.0E-05	mg/kg/day	8.E-04
				Aroclor-1268	0.08389	mg/kg	4.7E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-10	2.7E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				Endosulfan Sulfate	0.0065	mg/kg	NC		NC			1.5E-10	mg/kg/day	6.0E-03	mg/kg/day	3.E-08
				Technical Chlordane	0.4307	mg/kg	6.9E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-10	4.0E-09	mg/kg/day	5.0E-04	mg/kg/day	8.E-06
				Aluminum	15899	mg/kg	NC		NC			--				
				Arsenic	7.72	mg/kg	9.2E-09	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-08	5.4E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Chromium	231	mg/kg	--		--			--		7.5E-05	mg/kg/day	
				Copper	205	mg/kg	NC		NC			--				
				Lead	450	mg/kg	--		--			--				
				Manganese	1841	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.582	mg/kg	--		--			--		2.1E-05	mg/kg/day	
				Molybdenum	54	mg/kg	NC		NC			--		5.0E-03	mg/kg/day	
				Nickel	120	mg/kg	--		--			--		8.0E-04	mg/kg/day	
				Thallium	0.461	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	82.3	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000055	mg/kg	6.6E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-08	3.8E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-07					1.E-03
		EXPOSURE POINT TOTAL									1.E-06					2.E-02
	EXPOSURE MEDIUM TOTAL										1.E-06					2.E-02
SOIL TOTAL											1.E-06					2.E-02

US EPA ARCHIVE DOCUMENT

TABLE F.7.13.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	GREYSTONE MILL POND	INGESTION	2-Methylnaphthalene	0.07478	mg/kg	NC		NC			4.8E-09	mg/kg/day	2.0E-02	mg/kg/day	2.E-07
				Acenaphthylene	0.19279	mg/kg	NC		NC			1.2E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				Benzo(a)anthracene	1.5	mg/kg	1.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	9.5E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(a)pyrene	1.4	mg/kg	1.5E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	8.9E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(b)fluoranthene	1.5	mg/kg	1.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	9.5E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(g,h,i)perylene	0.86	mg/kg	NC		NC			5.5E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Dibenzo(a,h)anthracene	0.77	mg/kg	8.4E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-08	4.9E-08	mg/kg/day	2.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	1	mg/kg	1.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-09	6.4E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Phenanthrene	2.1	mg/kg	NC		NC			1.3E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				alpha-Chlordane	0.0061	mg/kg	6.7E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-11	3.9E-10	mg/kg/day	5.0E-04	mg/kg/day	8.E-07
				Aroclor-1254	0.15	mg/kg	1.6E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-09	9.5E-09	mg/kg/day	2.0E-05	mg/kg/day	5.E-04
				Aroclor-1268	0.14	mg/kg	1.5E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-09	8.9E-09	mg/kg/day	2.0E-05	mg/kg/day	4.E-04
				gamma-Chlordane	0.0048	mg/kg	5.2E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-11	3.1E-10	mg/kg/day	5.0E-04	mg/kg/day	6.E-07
				Technical Chlordane	0.4	mg/kg	4.4E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-09	2.5E-08	mg/kg/day	5.0E-04	mg/kg/day	5.E-05
				Aluminum	15554	mg/kg	NC		NC			9.9E-04	mg/kg/day			
				Antimony	0.73	mg/kg	NC		NC			4.6E-08	mg/kg/day	4.0E-04	mg/kg/day	1.E-04
				Arsenic	9.6	mg/kg	1.0E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-07	6.1E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Cadmium	0.81	mg/kg	NC		NC			5.2E-08	mg/kg/day	1.0E-03	mg/kg/day	5.E-05
				Chromium	99.3	mg/kg	NC		NC			6.3E-06	mg/kg/day	3.0E-03	mg/kg/day	2.E-03
				Copper	72.8	mg/kg	NC		NC			4.6E-06	mg/kg/day			
				Lead	179	mg/kg	2.0E-06	mg/kg/day				1.1E-05	mg/kg/day			
				Manganese	599	mg/kg	NC		NC			3.8E-05	mg/kg/day	7.1E-02	mg/kg/day	5.E-04
				Mercury	0.21	mg/kg	NC		NC			1.3E-08	mg/kg/day	3.0E-04	mg/kg/day	4.E-05
				Nickel	142	mg/kg	NC		NC			9.0E-06	mg/kg/day	2.0E-02	mg/kg/day	5.E-04
				Thallium	0.37	mg/kg	NC		NC			2.4E-08	mg/kg/day	8.0E-05	mg/kg/day	3.E-04
				Vanadium	79	mg/kg	NC		NC			5.0E-06	mg/kg/day	7.0E-03	mg/kg/day	7.E-04
				Toxicity Equivalency (Dioxins/Furans)	0.000121	mg/kg	1.3E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-07	7.7E-12	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000249	mg/kg	2.7E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-08	1.6E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-07					7.E-03
			DERMAL	2-Methylnaphthalene	0.07478	mg/kg	NC		NC			1.2E-09	mg/kg/day	2.0E-02	mg/kg/day	6.E-08
				Acenaphthylene	0.19279	mg/kg	NC		NC			3.1E-09	mg/kg/day	6.0E-02	mg/kg/day	5.E-08
				Benzo(a)anthracene	1.5	mg/kg	4.1E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-09	2.4E-08	mg/kg/day	3.0E-02	mg/kg/day	8.E-07
				Benzo(a)pyrene	1.4	mg/kg	3.9E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-08	2.3E-08	mg/kg/day	3.0E-02	mg/kg/day	8.E-07
				Benzo(b)fluoranthene	1.5	mg/kg	4.1E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-09	2.4E-08	mg/kg/day	3.0E-02	mg/kg/day	8.E-07
				Benzo(g,h,i)perylene	0.86	mg/kg	NC		NC			1.4E-08	mg/kg/day	3.0E-02	mg/kg/day	5.E-07
				Dibenzo(a,h)anthracene	0.77	mg/kg	2.1E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	1.2E-08	mg/kg/day	3.0E-02	mg/kg/day	4.E-07
				Indeno(1,2,3-cd)pyrene	1	mg/kg	2.8E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-09	1.6E-08	mg/kg/day	3.0E-02	mg/kg/day	5.E-07
				Phenanthrene	2.1	mg/kg	NC		NC			3.4E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				alpha-Chlordane	0.0061	mg/kg	5.2E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-12	3.0E-11	mg/kg/day	5.0E-04	mg/kg/day	6.E-08
				Aroclor-1254	0.15	mg/kg	4.5E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-10	2.6E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				Aroclor-1268	0.14	mg/kg	4.2E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-10	2.4E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				gamma-Chlordane	0.0048	mg/kg	4.1E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-12	2.4E-11	mg/kg/day	5.0E-04	mg/kg/day	5.E-08
				Technical Chlordane	0.4	mg/kg	3.4E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	2.0E-09	mg/kg/day	5.0E-04	mg/kg/day	4.E-06
				Aluminum	15554	mg/kg	NC		NC			--				
				Antimony	0.73	mg/kg	NC		NC			--		6.0E-05	mg/kg/day	
				Arsenic	9.6	mg/kg	6.1E-09	mg/kg/day	1.5E+00	(mg/kg/day)-1	9.E-09	3.6E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				Cadmium	0.81	mg/kg	NC		NC			1.0E-10	mg/kg/day	2.5E-05	mg/kg/day	4.E-06
				Chromium	99.3	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	72.8	mg/kg	NC		NC			--				
				Lead	179	mg/kg	--					--				
				Manganese	599	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.21	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	142	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.37	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	79	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	

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TABLE F.7.13.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Toxicity Equivalency (Dioxins/Furans)	0.000121	mg/kg	7.7E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-08	4.5E-13	mg/kg/day			
				Toxicity Equivalency (PCB Congeners	0.0000249	mg/kg	1.6E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-09	9.2E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								8.E-08					4.E-04
		EXPOSURE POINT TOTAL									7.E-07					8.E-03
	EXPOSURE MEDIUM TOTAL										7.E-07					8.E-03
SEDIMENT TOTAL											7.E-07					8.E-03
SURFACE WATER	SURFACE WATER	GREYSTONE MILL POND	INGESTION	Arsenic	0.00055	mg/l	1.2E-09	mg/kg/day	1.5E+00	mg/kg/day	2.E-09	7.0E-09	mg/kg/day	3.0E-04	mg/kg/day	2.E-05
				Manganese	0.131	mg/l	NC		NC			1.7E-06	mg/kg/day	2.4E-02	mg/kg/day	7.E-05
				Mercury	0.00000193	mg/l	NC		NC			2.5E-11	mg/kg/day	3.0E-04	mg/kg/day	8.E-08
				Nitrite-N	0.128	mg/l	NC		NC			1.6E-06	mg/kg/day	1.0E-01	mg/kg/day	2.E-05
				Toxicity Equivalency (Dioxins/Furans)	5.64E-09	mg/l	1.2E-14	mg/kg/day	1.5E+05	mg/kg/day	2.E-09	7.2E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-09					1.E-04
			DERMAL	Arsenic	0.00055	mg/l	4.2E-09	mg/kg/day	1.5E+00	mg/kg/day	6.E-09	2.4E-08	mg/kg/day	3.0E-04	mg/kg/day	8.E-05
				Manganese	0.131	mg/l	NC		NC			5.8E-06	mg/kg/day	9.6E-04	mg/kg/day	6.E-03
				Mercury	0.00000193	mg/l	NC		NC			8.5E-11	mg/kg/day	2.1E-05	mg/kg/day	4.E-06
				Nitrite-N	0.128	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	5.64E-09	mg/l	9.7E-11	mg/kg/day	1.5E+05	mg/kg/day	1.E-05	5.7E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					6.E-03
		EXPOSURE POINT TOTAL									1.E-05					6.E-03
	EXPOSURE MEDIUM TOTAL										1.E-05					6.E-03
SURFACE WATER TOTAL											1.E-05					6.E-03
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00121	mg/kg	NC		NC			9.8E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	0.00132	mg/kg	1.8E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(b)fluoranthene	0.00149	mg/kg	2.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Dibenzo(a,h)anthracene	0.000799	mg/kg	1.1E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-07	6.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Indeno(1,2,3-cd)pyrene	0.00132	mg/kg	1.8E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Phenanthrene	0.00475	mg/kg	NC		NC			3.9E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDD	0.015	mg/kg	2.1E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	5.E-07	1.2E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDE	0.03161	mg/kg	4.4E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	2.6E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				alpha-Chlordane	0.017	mg/kg	2.4E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-07	1.4E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Aroclor-1254	0.25318	mg/kg	3.5E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-05	2.1E-04	mg/kg/day	2.0E-05	mg/kg/day	1.E+01
				Aroclor-1268	0.1251	mg/kg	1.7E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-05	1.0E-04	mg/kg/day	2.0E-05	mg/kg/day	5.E+00
				Dieldrin	0.00353	mg/kg	4.9E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	8.E-06	2.9E-06	mg/kg/day	5.0E-05	mg/kg/day	6.E-02
				gamma-Chlordane	0.0069	mg/kg	9.6E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	5.6E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Heptachlor Epoxide	0.0012	mg/kg	1.7E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-06	9.7E-07	mg/kg/day	1.3E-05	mg/kg/day	7.E-02
				Technical Chlordane	0.31695	mg/kg	4.4E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-05	2.6E-04	mg/kg/day	5.0E-04	mg/kg/day	5.E-01
				Lead	0.214	mg/kg	3.0E-05	mg/kg/day				1.7E-04	mg/kg/day			
				Mercury	0.0706	mg/kg	NC		NC			5.7E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.165	mg/kg	NC		NC			1.3E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Zinc	41.5	mg/kg	NC		NC			3.4E-02	mg/kg/day	3.0E-01	mg/kg/day	1.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000000749	mg/kg	1.0E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-05	6.1E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-04					1.8.E+01
		EXPOSURE POINT TOTAL									2.E-04					1.8.E+01
	EXPOSURE MEDIUM TOTAL										2.E-04					1.8.E+01
WHOLE BODY TOTAL											2.E-04					1.8.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		2.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.8.E+01

NOTES:
(1) - *Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.*
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.14.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	GREYSTONE MIL POND	INGESTION	2-Methylnaphthalene	0.1071	mg/kg	NC		NC			1.7E-08	mg/kg/day	2.0E-02	mg/kg/day	8.E-07
				Acenaphthylene	0.31765	mg/kg	NC		NC			5.0E-08	mg/kg/day	6.0E-02	mg/kg/day	8.E-07
				Benzo(a)anthracene	3.09372	mg/kg	8.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	4.9E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	3.07718	mg/kg	8.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-07	4.9E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	3.45207	mg/kg	9.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-08	5.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	2.336	mg/kg	NC		NC			3.7E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.61485	mg/kg	1.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	9.7E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Indeno(1,2,3-cd)pyrene	2.51886	mg/kg	6.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	4.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	3.95543	mg/kg	NC		NC			6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				alpha-Chlordane	0.0178	mg/kg	4.8E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-10	2.8E-09	mg/kg/day	5.0E-04	mg/kg/day	6.E-06
				Aroclor-1254	0.51998	mg/kg	1.4E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-08	8.2E-08	mg/kg/day	2.0E-05	mg/kg/day	4.E-03
				Aroclor-1268	0.08389	mg/kg	2.3E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-09	1.3E-08	mg/kg/day	2.0E-05	mg/kg/day	7.E-04
				Endosulfan Sulfate	0.0065	mg/kg	NC		NC			1.0E-09	mg/kg/day	6.0E-03	mg/kg/day	2.E-07
				Technical Chlordane	0.4307	mg/kg	1.2E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-09	6.8E-08	mg/kg/day	5.0E-04	mg/kg/day	1.E-04
				Aluminum	15899	mg/kg	NC		NC			2.5E-03	mg/kg/day			
				Arsenic	7.72	mg/kg	2.1E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-07	1.2E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				Chromium	231	mg/kg	NC		NC			3.7E-05	mg/kg/day	3.0E-03	mg/kg/day	1.E-02
				Copper	205	mg/kg	NC		NC			3.2E-05	mg/kg/day			
				Lead	450	mg/kg	1.2E-05	mg/kg/day	--			7.1E-05	mg/kg/day			
				Manganese	1841	mg/kg	NC		NC			2.9E-04	mg/kg/day	7.1E-02	mg/kg/day	4.E-03
				Mercury	0.582	mg/kg	NC		NC			9.2E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				Molybdenum	54	mg/kg	NC		NC			8.5E-06	mg/kg/day	5.0E-03	mg/kg/day	2.E-03
				Nickel	120	mg/kg	NC		NC			1.9E-05	mg/kg/day	2.0E-02	mg/kg/day	9.E-04
				Thallium	0.461	mg/kg	NC		NC			7.3E-08	mg/kg/day	8.0E-05	mg/kg/day	9.E-04
				Vanadium	82.3	mg/kg	NC		NC			1.3E-05	mg/kg/day	7.0E-03	mg/kg/day	2.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.000055	mg/kg	1.5E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-07	8.7E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-06					3.E-02
			DERMAL	2-Methylnaphthalene	0.1071	mg/kg	NC		NC			1.7E-08	mg/kg/day	2.0E-02	mg/kg/day	8.E-07
				Acenaphthylene	0.31765	mg/kg	NC		NC			5.0E-08	mg/kg/day	6.0E-02	mg/kg/day	8.E-07
				Benzo(a)anthracene	3.09372	mg/kg	8.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	4.9E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	3.07718	mg/kg	8.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-07	4.9E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	3.45207	mg/kg	9.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-08	5.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	2.336	mg/kg	NC		NC			3.7E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.61485	mg/kg	1.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	9.7E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Indeno(1,2,3-cd)pyrene	2.51886	mg/kg	6.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	4.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	3.95543	mg/kg	NC		NC			6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				alpha-Chlordane	0.0178	mg/kg	1.5E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-11	8.7E-10	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Aroclor-1254	0.51998	mg/kg	1.5E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-08	8.9E-08	mg/kg/day	2.0E-05	mg/kg/day	4.E-03
				Aroclor-1268	0.08389	mg/kg	2.4E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-09	1.4E-08	mg/kg/day	2.0E-05	mg/kg/day	7.E-04
				Endosulfan Sulfate	0.0065	mg/kg	NC		NC			7.9E-10	mg/kg/day	6.0E-03	mg/kg/day	1.E-07
				Technical Chlordane	0.4307	mg/kg	3.6E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-09	2.1E-08	mg/kg/day	5.0E-04	mg/kg/day	4.E-05
				Aluminum	15899	mg/kg	NC		NC			--				
				Arsenic	7.72	mg/kg	4.8E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	7.E-08	2.8E-07	mg/kg/day	3.0E-04	mg/kg/day	9.E-04
				Chromium	231	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	205	mg/kg	NC		NC			--				
				Lead	450	mg/kg	--		--			--				
				Manganese	1841	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.582	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Molybdenum	54	mg/kg	NC		NC			--		5.0E-03	mg/kg/day	
				Nickel	120	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.461	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	82.3	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000055	mg/kg	3.4E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-08	2.0E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-06					6.E-03
		EXPOSURE POINT TOTAL									3.E-06					4.E-02
	EXPOSURE MEDIUM TOTAL										3.E-06					4.E-02
SOIL TOTAL											3.E-06					4.E-02

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TABLE F.7.14.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	GREYSTONE MIL POND	INGESTION	2-Methylnaphthalene	0.07478	mg/kg	NC		NC			7.4E-09	mg/kg/day	2.0E-02	mg/kg/day	4.E-07
				Acenaphthylene	0.19279	mg/kg	NC		NC			1.9E-08	mg/kg/day	6.0E-02	mg/kg/day	3.E-07
				Benzo(a)anthracene	1.5	mg/kg	2.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Benzo(a)pyrene	1.4	mg/kg	2.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.4E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Benzo(b)fluoranthene	1.5	mg/kg	2.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Benzo(g,h,i)perylene	0.86	mg/kg	NC		NC			8.5E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Dibenzo(a,h)anthracene	0.77	mg/kg	1.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	7.6E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Indeno(1,2,3-cd)pyrene	1	mg/kg	1.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	9.9E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Phenanthrene	2.1	mg/kg	NC		NC			2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				alpha-Chlordane	0.0061	mg/kg	1.0E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-11	6.0E-10	mg/kg/day	5.0E-04	mg/kg/day	1.E-06
				Aroclor-1254	0.15	mg/kg	2.5E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-09	1.5E-08	mg/kg/day	2.0E-05	mg/kg/day	7.E-04
				Aroclor-1268	0.14	mg/kg	2.4E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-09	1.4E-08	mg/kg/day	2.0E-05	mg/kg/day	7.E-04
				gamma-Chlordane	0.0048	mg/kg	8.1E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-11	4.7E-10	mg/kg/day	5.0E-04	mg/kg/day	9.E-07
				Technical Chlordane	0.4	mg/kg	6.8E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-09	4.0E-08	mg/kg/day	5.0E-04	mg/kg/day	8.E-05
				Aluminum	15554	mg/kg	NC		NC			1.5E-03	mg/kg/day			
				Antimony	0.73	mg/kg	NC		NC			7.2E-08	mg/kg/day	4.0E-04	mg/kg/day	2.E-04
				Arsenic	9.6	mg/kg	1.6E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-07	9.5E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				Cadmium	0.81	mg/kg	NC		NC			8.0E-08	mg/kg/day	1.0E-03	mg/kg/day	8.E-05
				Chromium	99.3	mg/kg	NC		NC			9.8E-06	mg/kg/day	3.0E-03	mg/kg/day	3.E-03
				Copper	72.8	mg/kg	NC		NC			7.2E-06	mg/kg/day			
				Lead	179	mg/kg	3.0E-06	mg/kg/day				1.8E-05	mg/kg/day			
				Manganese	599	mg/kg	NC		NC			5.9E-05	mg/kg/day	7.1E-02	mg/kg/day	8.E-04
				Mercury	0.21	mg/kg	NC		NC			2.1E-08	mg/kg/day	3.0E-04	mg/kg/day	7.E-05
				Nickel	142	mg/kg	NC		NC			1.4E-05	mg/kg/day	2.0E-02	mg/kg/day	7.E-04
				Thallium	0.37	mg/kg	NC		NC			3.7E-08	mg/kg/day	8.0E-05	mg/kg/day	5.E-04
				Vanadium	79	mg/kg	NC		NC			7.8E-06	mg/kg/day	7.0E-03	mg/kg/day	1.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.000121	mg/kg	2.1E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-07	1.2E-11	mg/kg/day			
				Toxicity Equivalency (PCB Congeners	0.0090249	mg/kg	4.2E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-08	2.5E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								9.E-07					1.E-02
			DERMAL	2-Methylnaphthalene	0.07478	mg/kg	NC		NC			5.5E-09	mg/kg/day	2.0E-02	mg/kg/day	3.E-07
				Acenaphthylene	0.19279	mg/kg	NC		NC			1.4E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				Benzo(a)anthracene	1.5	mg/kg	1.9E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	1.1E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Benzo(a)pyrene	1.4	mg/kg	1.8E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	1.0E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(b)fluoranthene	1.5	mg/kg	1.9E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	1.1E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Benzo(g,h,i)perylene	0.86	mg/kg	NC		NC			6.3E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Dibenzo(a,h)anthracene	0.77	mg/kg	9.7E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-08	5.7E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	1	mg/kg	1.3E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-09	7.4E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Phenanthrene	2.1	mg/kg	NC		NC			1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				alpha-Chlordane	0.0061	mg/kg	2.4E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-12	1.4E-10	mg/kg/day	5.0E-04	mg/kg/day	3.E-07
				Aroclor-1254	0.15	mg/kg	2.0E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-09	1.2E-08	mg/kg/day	2.0E-05	mg/kg/day	6.E-04
				Aroclor-1268	0.14	mg/kg	1.9E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-09	1.1E-08	mg/kg/day	2.0E-05	mg/kg/day	6.E-04
				gamma-Chlordane	0.0048	mg/kg	1.9E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-12	1.1E-10	mg/kg/day	5.0E-04	mg/kg/day	2.E-07
				Technical Chlordane	0.4	mg/kg	1.6E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-10	9.1E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-05
				Aluminum	15554	mg/kg	NC		NC			--				
				Antimony	0.73	mg/kg	NC		NC			--		6.0E-05	mg/kg/day	
				Arsenic	9.6	mg/kg	2.8E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-08	1.6E-07	mg/kg/day	3.0E-04	mg/kg/day	5.E-04
				Cadmium	0.81	mg/kg	NC		NC			4.6E-10	mg/kg/day	2.5E-05	mg/kg/day	2.E-05
				Chromium	99.3	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	72.8	mg/kg	NC		NC			--				
				Lead	179	mg/kg	--					--				
				Manganese	599	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.21	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	142	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.37	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	79	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	

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TABLE F.7.14.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Toxicity Equivalency (Dioxins/Furans)	0.000121	mg/kg	3.5E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-08	2.1E-12	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000249	mg/kg	7.2E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-08	4.2E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-07					2.E-03
		EXPOSURE POINT TOTAL									1.E-06					1.E-02
	EXPOSURE MEDIUM TOTAL										1.E-06					1.E-02
SEDIMENT TOTAL											1.E-06					1.E-02
SURFACE WATER	SURFACE WATER	GREYSTONE MIL POND	INGESTION	Arsenic	0.00055	mg/l	1.9E-09	mg/kg/day	1.5E+00	mg/kg/day	3.E-09	1.1E-08	mg/kg/day	3.0E-04	mg/kg/day	4.E-05
				Manganese	0.131	mg/l	NC		NC			2.6E-06	mg/kg/day	2.4E-02	mg/kg/day	1.E-04
				Mercury	0.00000193	mg/l	NC		NC			3.8E-11	mg/kg/day	3.0E-04	mg/kg/day	1.E-07
				Nitrite-N	0.128	mg/l	NC		NC			2.5E-06	mg/kg/day	1.0E-01	mg/kg/day	3.E-05
				Toxicity Equivalency (Dioxins/Furans)	5.64E-09	mg/l	1.9E-14	mg/kg/day	1.5E+05	mg/kg/day	3.E-09	1.1E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-09					2.E-04
			DERMAL	Arsenic	0.00055	mg/l	4.7E-09	mg/kg/day	1.5E+00	mg/kg/day	7.E-09	2.7E-08	mg/kg/day	3.0E-04	mg/kg/day	9.E-05
				Manganese	0.131	mg/l	NC		NC			6.5E-06	mg/kg/day	9.6E-04	mg/kg/day	7.E-03
				Mercury	0.00000193	mg/l	NC		NC			9.6E-11	mg/kg/day	2.1E-05	mg/kg/day	5.E-06
				Nitrite-N	0.128	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	5.64E-09	mg/l	1.1E-10	mg/kg/day	1.5E+05	mg/kg/day	2.E-05	6.3E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-05					7.E-03
		EXPOSURE POINT TOTAL									2.E-05					7.E-03
	EXPOSURE MEDIUM TOTAL										2.E-05					7.E-03
SURFACE WATER TOTAL											2.E-05					7.E-03
AMERICAN EEL	WHOLE BODY	GREYSTONE MIL POND	INGESTION	Acenaphthylene	0.00121	mg/kg	NC		NC			7.7E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)pyrene	0.00132	mg/kg	1.4E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	8.4E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(b)fluoranthene	0.00149	mg/kg	1.6E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	9.4E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Dibenzo(a,h)anthracene	0.000799	mg/kg	8.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-07	5.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Indeno(1,2,3-cd)pyrene	0.00132	mg/kg	1.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	8.4E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Phenanthrene	0.00475	mg/kg	NC		NC			3.0E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDD	0.015	mg/kg	1.6E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	4.E-07	9.5E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDE	0.03161	mg/kg	3.4E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	2.0E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				alpha-Chlordane	0.017	mg/kg	1.8E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-07	1.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	0.25318	mg/kg	2.7E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-05	1.6E-04	mg/kg/day	2.0E-05	mg/kg/day	8.E+00
				Aroclor-1268	0.1251	mg/kg	1.4E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-05	7.9E-05	mg/kg/day	2.0E-05	mg/kg/day	4.E+00
				Dieldrin	0.00353	mg/kg	3.8E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	6.E-06	2.2E-06	mg/kg/day	5.0E-05	mg/kg/day	4.E-02
				gamma-Chlordane	0.0069	mg/kg	7.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	4.4E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				Heptachlor Epoxide	0.0012	mg/kg	1.3E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	1.E-06	7.6E-07	mg/kg/day	1.3E-05	mg/kg/day	6.E-02
				Technical Chlordane	0.31695	mg/kg	3.4E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	2.0E-04	mg/kg/day	5.0E-04	mg/kg/day	4.E-01
				Lead	0.214	mg/kg	2.3E-05	mg/kg/day				1.4E-04	mg/kg/day			
				Mercury	0.0706	mg/kg	NC		NC			4.5E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Mercury (methyl)	0.165	mg/kg	NC		NC			1.0E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Zinc	41.5	mg/kg	NC		NC			2.6E-02	mg/kg/day	3.0E-01	mg/kg/day	9.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.000000749	mg/kg	8.1E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-05	4.7E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					1.4.E+01
		EXPOSURE POINT TOTAL									1.E-04					1.4.E+01
	EXPOSURE MEDIUM TOTAL										1.E-04					1.4.E+01
WHOLE BODY TOTAL											1.E-04					1.4.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		1.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.4.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.15.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	GREYSTONE MIL POND	INGESTION	Acenaphthylene	0.00121	mg/kg	NC		NC			1.6E-06	mg/kg/day	6.0E-02	mg/kg/day	3.E-05
				Benzo(a)pyrene	0.00132	mg/kg	1.5E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	1.8E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Benzo(b)fluoranthene	0.00149	mg/kg	1.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	2.0E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Dibenzo(a,h)anthracene	0.000799	mg/kg	9.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-07	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Indeno(1,2,3-cd)pyrene	0.00132	mg/kg	1.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	1.8E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Phenanthrene	0.00475	mg/kg	NC		NC			6.4E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDD	0.015	mg/kg	1.7E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	4.E-07	2.0E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				4,4'-DDE	0.03161	mg/kg	3.7E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	4.3E-05	mg/kg/day	5.0E-04	mg/kg/day	9.E-02
				alpha-Chlordane	0.017	mg/kg	2.0E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-07	2.3E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				Aroclor-1254	0.25318	mg/kg	2.9E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-05	3.4E-04	mg/kg/day	2.0E-05	mg/kg/day	2.E+01
				Aroclor-1268	0.1251	mg/kg	1.4E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-05	1.7E-04	mg/kg/day	2.0E-05	mg/kg/day	8.E+00
				Dieldrin	0.00353	mg/kg	4.1E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	7.E-06	4.8E-06	mg/kg/day	5.0E-05	mg/kg/day	1.E-01
				gamma-Chlordane	0.0069	mg/kg	8.0E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	9.3E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Heptachlor Epoxide	0.0012	mg/kg	1.4E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	1.E-06	1.6E-06	mg/kg/day	1.3E-05	mg/kg/day	1.E-01
				Technical Chlordane	0.31695	mg/kg	3.7E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	4.3E-04	mg/kg/day	5.0E-04	mg/kg/day	9.E-01
				Lead	0.214	mg/kg	2.5E-05	mg/kg/day				2.9E-04	mg/kg/day			
				Mercury	0.0706	mg/kg	NC		NC			9.5E-05	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				Mercury (methyl)	0.165	mg/kg	NC		NC			2.2E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Zinc	41.5	mg/kg	NC		NC			5.6E-02	mg/kg/day	3.0E-01	mg/kg/day	2.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000000749	mg/kg	8.7E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-05	1.0E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					3.0.E+01
		EXPOSURE POINT TOTAL									1.E-04					3.0.E+01
	EXPOSURE MEDIUM TOTAL										1.E-04					3.0.E+01
WHOLE BODY TOTAL											1.E-04					3.0.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	1.E-04		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		3.0.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE F.7.16.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SOIL	SOIL	GREYSTONE MILL POND	INGESTION	2-Methylnaphthalene	0.1071	mg/kg	NC		NC			1.1E-08	mg/kg/day	2.0E-02	mg/kg/day	5.E-07
				Acenaphthylene	0.31765	mg/kg	NC		NC			3.2E-08	mg/kg/day	6.0E-02	mg/kg/day	5.E-07
				Benzo(a)anthracene	3.09372	mg/kg	5.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	3.1E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(a)pyrene	3.07718	mg/kg	5.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	3.1E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(b)fluoranthene	3.45207	mg/kg	6.0E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	3.5E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	2.336	mg/kg	NC		NC			2.4E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Dibenzo(a,h)anthracene	0.61485	mg/kg	1.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-08	6.3E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	2.51886	mg/kg	4.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.6E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				Phenanthrene	3.95543	mg/kg	NC		NC			4.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				alpha-Chlordane	0.0178	mg/kg	3.1E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	1.8E-09	mg/kg/day	5.0E-04	mg/kg/day	4.E-06
				Aroclor-1254	0.51998	mg/kg	9.1E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-08	5.3E-08	mg/kg/day	2.0E-05	mg/kg/day	3.E-03
				Aroclor-1268	0.08389	mg/kg	1.5E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-09	8.5E-09	mg/kg/day	2.0E-05	mg/kg/day	4.E-04
				Endosulfan Sulfate	0.0065	mg/kg	NC		NC			6.6E-10	mg/kg/day	6.0E-03	mg/kg/day	1.E-07
				Technical Chlordane	0.4307	mg/kg	7.5E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-09	4.4E-08	mg/kg/day	5.0E-04	mg/kg/day	9.E-05
				Aluminum	15899	mg/kg	NC		NC			1.6E-03	mg/kg/day			
				Arsenic	7.72	mg/kg	1.3E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-07	7.9E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				Chromium	231	mg/kg	4.0E-06	mg/kg/day	--			2.4E-05	mg/kg/day	3.0E-03	mg/kg/day	8.E-03
				Copper	205	mg/kg	NC		NC			2.1E-05	mg/kg/day			
				Lead	450	mg/kg	7.9E-06	mg/kg/day	--			4.6E-05	mg/kg/day			
				Manganese	1841	mg/kg	NC		NC			1.9E-04	mg/kg/day	7.1E-02	mg/kg/day	3.E-03
				Mercury	0.582	mg/kg	1.0E-08	mg/kg/day	--			5.9E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Molybdenum	54	mg/kg	NC		NC			5.5E-06	mg/kg/day	5.0E-03	mg/kg/day	1.E-03
				Nickel	120	mg/kg	2.1E-06	mg/kg/day	--			1.2E-05	mg/kg/day	2.0E-02	mg/kg/day	6.E-04
				Thallium	0.461	mg/kg	NC		NC			4.7E-08	mg/kg/day	8.0E-05	mg/kg/day	6.E-04
				Vanadium	82.3	mg/kg	NC		NC			8.4E-06	mg/kg/day	7.0E-03	mg/kg/day	1.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.000055	mg/kg	9.6E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-07	5.6E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-06					2.E-02
			DERMAL	2-Methylnaphthalene	0.1071	mg/kg	NC		NC			3.2E-09	mg/kg/day	2.0E-02	mg/kg/day	2.E-07
				Acenaphthylene	0.31765	mg/kg	NC		NC			9.6E-09	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				Benzo(a)anthracene	3.09372	mg/kg	1.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	9.3E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(a)pyrene	3.07718	mg/kg	1.6E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	9.3E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(b)fluoranthene	3.45207	mg/kg	1.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	1.0E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(g,h,i)perylene	2.336	mg/kg	NC		NC			7.0E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Dibenzo(a,h)anthracene	0.61485	mg/kg	3.2E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	1.9E-08	mg/kg/day	3.0E-02	mg/kg/day	6.E-07
				Indeno(1,2,3-cd)pyrene	2.51886	mg/kg	1.3E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	7.6E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Phenanthrene	3.95543	mg/kg	NC		NC			1.2E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				alpha-Chlordane	0.0178	mg/kg	2.8E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-11	1.7E-10	mg/kg/day	5.0E-04	mg/kg/day	3.E-07
				Aroclor-1254	0.51998	mg/kg	2.9E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-09	1.7E-08	mg/kg/day	2.0E-05	mg/kg/day	8.E-04
				Aroclor-1268	0.08389	mg/kg	4.7E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-10	2.7E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				Endosulfan Sulfate	0.0065	mg/kg	NC		NC			1.5E-10	mg/kg/day	6.0E-03	mg/kg/day	3.E-08
				Technical Chlordane	0.4307	mg/kg	6.9E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-10	4.0E-09	mg/kg/day	5.0E-04	mg/kg/day	8.E-06
				Aluminum	15899	mg/kg	NC		NC			--				
				Arsenic	7.72	mg/kg	9.2E-09	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-08	5.4E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Chromium	231	mg/kg	--		--			--		7.5E-05	mg/kg/day	
				Copper	205	mg/kg	NC		NC			--				
				Lead	450	mg/kg	--		--			--				
				Manganese	1841	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.582	mg/kg	--		--			--		2.1E-05	mg/kg/day	
				Molybdenum	54	mg/kg	NC		NC			--		5.0E-03	mg/kg/day	
				Nickel	120	mg/kg	--		--			--		8.0E-04	mg/kg/day	
				Thallium	0.461	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	82.3	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000055	mg/kg	6.6E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-08	3.8E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-07					1.E-03
		EXPOSURE POINT TOTAL									1.E-06					2.E-02
	EXPOSURE MEDIUM TOTAL										1.E-06					2.E-02
SOIL TOTAL											1.E-06					2.E-02

US EPA ARCHIVE DOCUMENT

TABLE F.7.16.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	GREYSTONE MILL POND	INGESTION	2-Methylnaphthalene	0.07478	mg/kg	NC		NC			4.8E-09	mg/kg/day	2.0E-02	mg/kg/day	2.E-07
				Acenaphthylene	0.19279	mg/kg	NC		NC			1.2E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				Benzo(a)anthracene	1.5	mg/kg	1.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	9.5E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(a)pyrene	1.4	mg/kg	1.5E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	8.9E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(b)fluoranthene	1.5	mg/kg	1.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	9.5E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(g,h,i)perylene	0.86	mg/kg	NC		NC			5.5E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Dibenzo(a,h)anthracene	0.77	mg/kg	8.4E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-08	4.9E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	1	mg/kg	1.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-09	6.4E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Phenanthrene	2.1	mg/kg	NC		NC			1.3E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				alpha-Chlordane	0.0061	mg/kg	6.7E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-11	3.9E-10	mg/kg/day	5.0E-04	mg/kg/day	8.E-07
				Aroclor-1254	0.15	mg/kg	1.6E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-09	9.5E-09	mg/kg/day	2.0E-05	mg/kg/day	5.E-04
				Aroclor-1268	0.14	mg/kg	1.5E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-09	8.9E-09	mg/kg/day	2.0E-05	mg/kg/day	4.E-04
				gamma-Chlordane	0.0048	mg/kg	5.2E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-11	3.1E-10	mg/kg/day	5.0E-04	mg/kg/day	6.E-07
				Technical Chlordane	0.4	mg/kg	4.4E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-09	2.5E-08	mg/kg/day	5.0E-04	mg/kg/day	5.E-05
				Aluminum	15554	mg/kg	NC		NC			9.9E-04	mg/kg/day			
				Antimony	0.73	mg/kg	NC		NC			4.6E-08	mg/kg/day	4.0E-04	mg/kg/day	1.E-04
				Arsenic	9.6	mg/kg	1.0E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-07	6.1E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Cadmium	0.81	mg/kg	NC		NC			5.2E-08	mg/kg/day	1.0E-03	mg/kg/day	5.E-05
				Chromium	99.3	mg/kg	NC		NC			6.3E-06	mg/kg/day	3.0E-03	mg/kg/day	2.E-03
				Copper	72.8	mg/kg	NC		NC			4.6E-06	mg/kg/day			
				Lead	179	mg/kg	2.0E-06	mg/kg/day				1.1E-05	mg/kg/day			
				Manganese	599	mg/kg	NC		NC			3.8E-05	mg/kg/day	7.1E-02	mg/kg/day	5.E-04
				Mercury	0.21	mg/kg	NC		NC			1.3E-08	mg/kg/day	3.0E-04	mg/kg/day	4.E-05
				Nickel	142	mg/kg	NC		NC			9.0E-06	mg/kg/day	2.0E-02	mg/kg/day	5.E-04
				Thallium	0.37	mg/kg	NC		NC			2.4E-08	mg/kg/day	8.0E-05	mg/kg/day	3.E-04
				Vanadium	79	mg/kg	NC		NC			5.0E-06	mg/kg/day	7.0E-03	mg/kg/day	7.E-04
				Toxicity Equivalency (Dioxins/Furans)	0.000121	mg/kg	1.3E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-07	7.7E-12	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000249	mg/kg	2.7E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-08	1.6E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-07					7.E-03
			DERMAL	2-Methylnaphthalene	0.07478	mg/kg	NC		NC			1.2E-09	mg/kg/day	2.0E-02	mg/kg/day	6.E-08
				Acenaphthylene	0.19279	mg/kg	NC		NC			3.1E-09	mg/kg/day	6.0E-02	mg/kg/day	5.E-08
				Benzo(a)anthracene	1.5	mg/kg	4.1E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-09	2.4E-08	mg/kg/day	3.0E-02	mg/kg/day	8.E-07
				Benzo(a)pyrene	1.4	mg/kg	3.9E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-08	2.3E-08	mg/kg/day	3.0E-02	mg/kg/day	8.E-07
				Benzo(b)fluoranthene	1.5	mg/kg	4.1E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-09	2.4E-08	mg/kg/day	3.0E-02	mg/kg/day	8.E-07
				Benzo(g,h,i)perylene	0.86	mg/kg	NC		NC			1.4E-08	mg/kg/day	3.0E-02	mg/kg/day	5.E-07
				Dibenzo(a,h)anthracene	0.77	mg/kg	2.1E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	1.2E-08	mg/kg/day	3.0E-02	mg/kg/day	4.E-07
				Indeno(1,2,3-cd)pyrene	1	mg/kg	2.8E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-09	1.6E-08	mg/kg/day	3.0E-02	mg/kg/day	5.E-07
				Phenanthrene	2.1	mg/kg	NC		NC			3.4E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				alpha-Chlordane	0.0061	mg/kg	5.2E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-12	3.0E-11	mg/kg/day	5.0E-04	mg/kg/day	6.E-08
				Aroclor-1254	0.15	mg/kg	4.5E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-10	2.6E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				Aroclor-1268	0.14	mg/kg	4.2E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-10	2.4E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				gamma-Chlordane	0.0048	mg/kg	4.1E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-12	2.4E-11	mg/kg/day	5.0E-04	mg/kg/day	5.E-08
				Technical Chlordane	0.4	mg/kg	3.4E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	2.0E-09	mg/kg/day	5.0E-04	mg/kg/day	4.E-06
				Aluminum	15554	mg/kg	NC		NC			--				
				Antimony	0.73	mg/kg	NC		NC			--		6.0E-05	mg/kg/day	
				Arsenic	9.6	mg/kg	6.1E-09	mg/kg/day	1.5E+00	(mg/kg/day)-1	9.E-09	3.6E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				Cadmium	0.81	mg/kg	NC		NC			1.0E-10	mg/kg/day	2.5E-05	mg/kg/day	4.E-06
				Chromium	99.3	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	72.8	mg/kg	NC		NC			--				
				Lead	179	mg/kg	--					--				
				Manganese	599	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.21	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	142	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.37	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	79	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	

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TABLE F.7.16.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Toxicity Equivalency (Dioxins/Furans)	0.000121	mg/kg	7.7E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-08	4.5E-13	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000249	mg/kg	1.6E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-09	9.2E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								8.E-08					4.E-04
		EXPOSURE POINT TOTAL									7.E-07					8.E-03
	EXPOSURE MEDIUM TOTAL										7.E-07					8.E-03
SEDIMENT TOTAL											7.E-07					8.E-03
SURFACE WATER	SURFACE WATER	GREYSTONE MILL POND	INGESTION	Arsenic	0.00055	mg/l	1.2E-09	mg/kg/day	1.5E+00	mg/kg/day	2.E-09	7.0E-09	mg/kg/day	3.0E-04	mg/kg/day	2.E-05
				Manganese	0.131	mg/l	NC		NC			1.7E-06	mg/kg/day	2.4E-02	mg/kg/day	7.E-05
				Mercury	0.00000193	mg/l	NC		NC			2.5E-11	mg/kg/day	3.0E-04	mg/kg/day	8.E-08
				Nitrite-N	0.128	mg/l	NC		NC			1.6E-06	mg/kg/day	1.0E-01	mg/kg/day	2.E-05
				Toxicity Equivalency (Dioxins/Furans)	5.64E-09	mg/l	1.2E-14	mg/kg/day	1.5E+05	mg/kg/day	2.E-09	7.2E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-09					1.E-04
			DERMAL	Arsenic	0.00055	mg/l	4.2E-09	mg/kg/day	1.5E+00	mg/kg/day	6.E-09	2.4E-08	mg/kg/day	3.0E-04	mg/kg/day	8.E-05
				Manganese	0.131	mg/l	NC		NC			5.8E-06	mg/kg/day	9.6E-04	mg/kg/day	6.E-03
				Mercury	0.00000193	mg/l	NC		NC			8.5E-11	mg/kg/day	2.1E-05	mg/kg/day	4.E-06
				Nitrite-N	0.128	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	5.64E-09	mg/l	9.7E-11	mg/kg/day	1.5E+05	mg/kg/day	1.E-05	5.7E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					6.E-03
		EXPOSURE POINT TOTAL									1.E-05					6.E-03
	EXPOSURE MEDIUM TOTAL										1.E-05					6.E-03
SURFACE WATER TOTAL											1.E-05					6.E-03
LARGEMOUTH BASS	FILLET	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.0004	mg/kg	NC		NC			3.2E-07	mg/kg/day	6.0E-02	mg/kg/day	5.E-06
				Phenanthrene	0.001	mg/kg	NC		NC			8.1E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				4,4'-DDE	0.0157	mg/kg	2.2E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	7.E-07	1.3E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				alpha-Chlordane	0.00064	mg/kg	8.9E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	5.2E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Aroclor-1254	0.0766	mg/kg	1.1E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	6.2E-05	mg/kg/day	2.0E-05	mg/kg/day	3.E+00
				Aroclor-1268	0.075	mg/kg	1.0E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	6.1E-05	mg/kg/day	2.0E-05	mg/kg/day	3.E+00
				Dieldrin	0.00035	mg/kg	4.9E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	8.E-07	2.8E-07	mg/kg/day	5.0E-05	mg/kg/day	6.E-03
				gamma-Chlordane	0.0007	mg/kg	9.7E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	5.7E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Technical Chlordane	0.01794	mg/kg	2.5E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-07	1.5E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Mercury	0.419	mg/kg	NC		NC			3.4E-04	mg/kg/day	3.0E-04	mg/kg/day	1.E+00
				Mercury (methyl)	0.625	mg/kg	NC		NC			5.1E-04	mg/kg/day	1.0E-04	mg/kg/day	5.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000000242	mg/kg	3.4E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-06	2.0E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-05					1.E+01
		EXPOSURE POINT TOTAL									5.E-05					1.E+01
	EXPOSURE MEDIUM TOTAL										5.E-05					1.E+01
FILLET TOTAL											5.E-05					1.E+01
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	7.E-05	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.2.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by:	RAR
Checked by:	KJA

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TABLE P.7.17.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	GREYSTONE MIL POND	INGESTION	2-Methylnaphthalene	0.1071	mg/kg	NC		NC			1.7E-08	mg/kg/day	2.0E-02	mg/kg/day	8.E-07
				Acenaphthylene	0.31765	mg/kg	NC		NC			5.0E-08	mg/kg/day	6.0E-02	mg/kg/day	8.E-07
				Benzo(a)anthracene	3.09372	mg/kg	8.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	4.9E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	3.07718	mg/kg	8.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-07	4.9E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	3.45207	mg/kg	9.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-08	5.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	2.336	mg/kg	NC		NC			3.7E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.61485	mg/kg	1.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	9.7E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Indeno(1,2,3-cd)pyrene	2.51886	mg/kg	6.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	4.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	3.95543	mg/kg	NC		NC			6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				alpha-Chlordane	0.0178	mg/kg	4.8E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-10	2.8E-09	mg/kg/day	5.0E-04	mg/kg/day	6.E-06
				Aroclor-1254	0.51998	mg/kg	1.4E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-08	8.2E-08	mg/kg/day	2.0E-05	mg/kg/day	4.E-03
				Aroclor-1268	0.08389	mg/kg	2.3E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-09	1.3E-08	mg/kg/day	2.0E-05	mg/kg/day	7.E-04
				Endosulfan Sulfate	0.0065	mg/kg	NC		NC			1.0E-09	mg/kg/day	6.0E-03	mg/kg/day	2.E-07
				Technical Chlordane	0.4307	mg/kg	1.2E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-09	6.8E-08	mg/kg/day	5.0E-04	mg/kg/day	1.E-04
				Aluminum	15899	mg/kg	NC		NC			2.5E-03	mg/kg/day			
				Arsenic	7.72	mg/kg	2.1E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-07	1.2E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				Chromium	231	mg/kg	NC		NC			3.7E-05	mg/kg/day	3.0E-03	mg/kg/day	1.E-02
				Copper	205	mg/kg	NC		NC			3.2E-05	mg/kg/day			
				Lead	450	mg/kg	1.2E-05	mg/kg/day	--			7.1E-05	mg/kg/day			
				Manganese	1841	mg/kg	NC		NC			2.9E-04	mg/kg/day	7.1E-02	mg/kg/day	4.E-03
				Mercury	0.582	mg/kg	NC		NC			9.2E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				Molybdenum	54	mg/kg	NC		NC			8.5E-06	mg/kg/day	5.0E-03	mg/kg/day	2.E-03
				Nickel	120	mg/kg	NC		NC			1.9E-05	mg/kg/day	2.0E-02	mg/kg/day	9.E-04
				Thallium	0.461	mg/kg	NC		NC			7.3E-08	mg/kg/day	8.0E-05	mg/kg/day	9.E-04
				Vanadium	82.3	mg/kg	NC		NC			1.3E-05	mg/kg/day	7.0E-03	mg/kg/day	2.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.000055	mg/kg	1.5E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-07	8.7E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-06					3.E-07
			DERMAL	2-Methylnaphthalene	0.1071	mg/kg	NC		NC			1.7E-08	mg/kg/day	2.0E-02	mg/kg/day	8.E-07
				Acenaphthylene	0.31765	mg/kg	NC		NC			5.0E-08	mg/kg/day	6.0E-02	mg/kg/day	8.E-07
				Benzo(a)anthracene	3.09372	mg/kg	8.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	4.9E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	3.07718	mg/kg	8.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-07	4.9E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	3.45207	mg/kg	9.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-08	5.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	2.336	mg/kg	NC		NC			3.7E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.61485	mg/kg	1.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	9.7E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Indeno(1,2,3-cd)pyrene	2.51886	mg/kg	6.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	4.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	3.95543	mg/kg	NC		NC			6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				alpha-Chlordane	0.0178	mg/kg	1.5E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-11	8.7E-10	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Aroclor-1254	0.51998	mg/kg	1.5E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-08	8.9E-08	mg/kg/day	2.0E-05	mg/kg/day	4.E-03
				Aroclor-1268	0.08389	mg/kg	2.4E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-09	1.4E-08	mg/kg/day	2.0E-05	mg/kg/day	7.E-04
				Endosulfan Sulfate	0.0065	mg/kg	NC		NC			7.9E-10	mg/kg/day	6.0E-03	mg/kg/day	1.E-07
				Technical Chlordane	0.4307	mg/kg	3.6E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-09	2.1E-08	mg/kg/day	5.0E-04	mg/kg/day	4.E-05
				Aluminum	15899	mg/kg	NC		NC			--				
				Arsenic	7.72	mg/kg	4.8E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	7.E-08	2.8E-07	mg/kg/day	3.0E-04	mg/kg/day	9.E-04
				Chromium	231	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	205	mg/kg	NC		NC			--				
				Lead	450	mg/kg	--		--			--				
				Manganese	1841	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.582	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Molybdenum	54	mg/kg	NC		NC			--		5.0E-03	mg/kg/day	
				Nickel	120	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.461	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	82.3	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000055	mg/kg	3.4E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-08	2.0E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-06					6.E-03
		EXPOSURE POINT TOTAL									3.E-06					4.E-02
	EXPOSURE MEDIUM TOTAL										3.E-06					4.E-02
SOIL TOTAL											3.E-06					4.E-02

US EPA ARCHIVE DOCUMENT

TABLE F.7.17.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	GREYSTONE MIL POND	INGESTION	2-Methylnaphthalene	0.07478	mg/kg	NC		NC			7.4E-09	mg/kg/day	2.0E-02	mg/kg/day	4.E-07
				Acenaphthylene	0.19279	mg/kg	NC		NC			1.9E-08	mg/kg/day	6.0E-02	mg/kg/day	3.E-07
				Benzo(a)anthracene	1.5	mg/kg	2.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Benzo(a)pyrene	1.4	mg/kg	2.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.4E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Benzo(b)fluoranthene	1.5	mg/kg	2.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Benzo(g,h,i)perylene	0.86	mg/kg	NC		NC			8.5E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Dibenzo(a,h)anthracene	0.77	mg/kg	1.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	7.6E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Indeno(1,2,3-cd)pyrene	1	mg/kg	1.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	9.9E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Phenanthrene	2.1	mg/kg	NC		NC			2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				alpha-Chlordane	0.0061	mg/kg	1.0E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-11	6.0E-10	mg/kg/day	5.0E-04	mg/kg/day	1.E-06
				Aroclor-1254	0.15	mg/kg	2.5E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-09	1.5E-08	mg/kg/day	2.0E-05	mg/kg/day	7.E-04
				Aroclor-1268	0.14	mg/kg	2.4E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-09	1.4E-08	mg/kg/day	2.0E-05	mg/kg/day	7.E-04
				gamma-Chlordane	0.0048	mg/kg	8.1E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-11	4.7E-10	mg/kg/day	5.0E-04	mg/kg/day	9.E-07
				Technical Chlordane	0.4	mg/kg	6.8E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-09	4.0E-08	mg/kg/day	5.0E-04	mg/kg/day	8.E-05
				Aluminum	15554	mg/kg	NC		NC			1.5E-03	mg/kg/day			
				Antimony	0.73	mg/kg	NC		NC			7.2E-08	mg/kg/day	4.0E-04	mg/kg/day	2.E-04
				Arsenic	9.6	mg/kg	1.6E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-07	9.5E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				Cadmium	0.81	mg/kg	NC		NC			8.0E-08	mg/kg/day	1.0E-03	mg/kg/day	8.E-05
				Chromium	99.3	mg/kg	NC		NC			9.8E-06	mg/kg/day	3.0E-03	mg/kg/day	3.E-03
				Copper	72.8	mg/kg	NC		NC			7.2E-06	mg/kg/day			
				Lead	179	mg/kg	3.0E-06	mg/kg/day				1.8E-05	mg/kg/day			
				Manganese	599	mg/kg	NC		NC			5.9E-05	mg/kg/day	7.1E-02	mg/kg/day	8.E-04
				Mercury	0.21	mg/kg	NC		NC			2.1E-08	mg/kg/day	3.0E-04	mg/kg/day	7.E-05
				Nickel	142	mg/kg	NC		NC			1.4E-05	mg/kg/day	2.0E-02	mg/kg/day	7.E-04
				Thallium	0.37	mg/kg	NC		NC			3.7E-08	mg/kg/day	8.0E-05	mg/kg/day	5.E-04
				Vanadium	79	mg/kg	NC		NC			7.8E-06	mg/kg/day	7.0E-03	mg/kg/day	1.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.000121	mg/kg	2.1E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-07	1.2E-11	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000249	mg/kg	4.2E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-08	2.5E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								9.E-07					1.E-02
			DERMAL	2-Methylnaphthalene	0.07478	mg/kg	NC		NC			5.5E-09	mg/kg/day	2.0E-02	mg/kg/day	3.E-07
				Acenaphthylene	0.19279	mg/kg	NC		NC			1.4E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				Benzo(a)anthracene	1.5	mg/kg	1.9E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	1.1E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Benzo(a)pyrene	1.4	mg/kg	1.8E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	1.0E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(b)fluoranthene	1.5	mg/kg	1.9E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	1.1E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Benzo(g,h,i)perylene	0.86	mg/kg	NC		NC			6.3E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Dibenzo(a,h)anthracene	0.77	mg/kg	9.7E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-08	5.7E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	1	mg/kg	1.3E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-09	7.4E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Phenanthrene	2.1	mg/kg	NC		NC			1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				alpha-Chlordane	0.0061	mg/kg	2.4E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-12	1.4E-10	mg/kg/day	5.0E-04	mg/kg/day	3.E-07
				Aroclor-1254	0.15	mg/kg	2.0E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-09	1.2E-08	mg/kg/day	2.0E-05	mg/kg/day	6.E-04
				Aroclor-1268	0.14	mg/kg	1.9E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-09	1.1E-08	mg/kg/day	2.0E-05	mg/kg/day	6.E-04
				gamma-Chlordane	0.0048	mg/kg	3.9E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-12	1.1E-10	mg/kg/day	5.0E-04	mg/kg/day	2.E-07
				Technical Chlordane	0.4	mg/kg	1.6E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-10	9.1E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-05
				Aluminum	15554	mg/kg	NC		NC			--				
				Antimony	0.73	mg/kg	NC		NC			--		6.0E-05	mg/kg/day	
				Arsenic	9.6	mg/kg	2.8E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-08	1.6E-07	mg/kg/day	3.0E-04	mg/kg/day	5.E-04
				Cadmium	0.81	mg/kg	NC		NC			4.6E-10	mg/kg/day	2.5E-05	mg/kg/day	2.E-05
				Chromium	99.3	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	72.8	mg/kg	NC		NC			--				
				Lead	179	mg/kg	--					--				
				Manganese	599	mg/kg	NC		NC			--		2.3E-03	mg/kg/day	
				Mercury	0.21	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	142	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.37	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	79	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	

US EPA ARCHIVE DOCUMENT

TABLE F.7.17.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Toxicity Equivalency (Dioxins/Furans)	0.000121	mg/kg	3.5E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-08	2.1E-12	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000249	mg/kg	7.2E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-08	4.2E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-07					2.E-03
		EXPOSURE POINT TOTAL									1.E-06					1.E-02
	EXPOSURE MEDIUM TOTAL										1.E-06					1.E-02
SEDIMENT TOTAL											1.E-06					1.E-02
SURFACE WATER	SURFACE WATER	GREYSTONE MIL POND	INGESTION	Arsenic	0.00055	mg/l	1.9E-09	mg/kg/day	1.5E+00	mg/kg/day	3.E-09	1.1E-08	mg/kg/day	3.0E-04	mg/kg/day	4.E-05
				Manganese	0.131	mg/l	NC		NC			2.6E-06	mg/kg/day	2.4E-02	mg/kg/day	1.E-04
				Mercury	0.00000193	mg/l	NC		NC			3.8E-11	mg/kg/day	3.0E-04	mg/kg/day	1.E-07
				Nitrite-N	0.128	mg/l	NC		NC			2.5E-06	mg/kg/day	1.0E-01	mg/kg/day	3.E-05
				Toxicity Equivalency (Dioxins/Furans)	5.64E-09	mg/l	1.9E-14	mg/kg/day	1.5E+05	mg/kg/day	3.E-09	1.1E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-09					2.E-04
			DERMAL	Arsenic	0.00055	mg/l	4.7E-09	mg/kg/day	1.5E+00	mg/kg/day	7.E-09	2.7E-08	mg/kg/day	3.0E-04	mg/kg/day	9.E-05
				Manganese	0.131	mg/l	NC		NC			6.5E-06	mg/kg/day	9.6E-04	mg/kg/day	7.E-03
				Mercury	0.00000193	mg/l	NC		NC			9.6E-11	mg/kg/day	2.1E-05	mg/kg/day	5.E-06
				Nitrite-N	0.128	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	5.64E-09	mg/l	1.1E-10	mg/kg/day	1.5E+05	mg/kg/day	2.E-05	6.3E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-05					7.E-03
		EXPOSURE POINT TOTAL									2.E-05					7.E-03
	EXPOSURE MEDIUM TOTAL										2.E-05					7.E-03
SURFACE WATER TOTAL											2.E-05					7.E-03
LARGEMOUTH BASS	FILLET	GREYSTONE MIL POND	INGESTION	Acenaphthylene	0.0004	mg/kg	NC		NC			2.5E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				Phenanthrene	0.001	mg/kg	NC		NC			6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				4,4'-DDE	0.0157	mg/kg	1.7E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	6.E-07	9.9E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.00064	mg/kg	6.9E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	4.1E-07	mg/kg/day	5.0E-04	mg/kg/day	8.E-04
				Aroclor-1254	0.0766	mg/kg	8.3E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	4.8E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Aroclor-1268	0.075	mg/kg	8.1E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	4.7E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Dieldrin	0.00035	mg/kg	3.8E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	6.E-07	2.2E-07	mg/kg/day	5.0E-05	mg/kg/day	4.E-03
				gamma-Chlordane	0.0007	mg/kg	7.6E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	4.4E-07	mg/kg/day	5.0E-04	mg/kg/day	9.E-04
				Technical Chlordane	0.01794	mg/kg	1.9E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-07	1.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Mercury	0.419	mg/kg	NC		NC			2.7E-04	mg/kg/day	3.0E-04	mg/kg/day	9.E-01
				Mercury (methyl)	0.625	mg/kg	NC		NC			4.0E-04	mg/kg/day	1.0E-04	mg/kg/day	4.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000000242	mg/kg	2.6E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-06	1.5E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-05					1.E+01
		EXPOSURE POINT TOTAL									4.E-05					1.E+01
	EXPOSURE MEDIUM TOTAL										4.E-05					1.E+01
FILLET TOTAL											4.E-05					1.E+01
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	6.E-05			TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		9.7.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.18.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	GREYSTONE MIL POND	INGESTION	Acenaphthylene	0.0004	mg/kg	NC		NC			5.4E-07	mg/kg/day	6.0E-02	mg/kg/day	9.E-06
				Phenanthrene	0.001	mg/kg	NC		NC			1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				4,4'-DDE	0.0157	mg/kg	1.8E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	6.E-07	2.1E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				alpha-Chlordane	0.00064	mg/kg	7.4E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	8.6E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Aroclor-1254	0.0766	mg/kg	8.9E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	1.0E-04	mg/kg/day	2.0E-05	mg/kg/day	5.E+00
				Aroclor-1268	0.075	mg/kg	8.7E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	1.0E-04	mg/kg/day	2.0E-05	mg/kg/day	5.E+00
				Dieldrin	0.00035	mg/kg	4.0E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	6.E-07	4.7E-07	mg/kg/day	5.0E-05	mg/kg/day	9.E-03
				gamma-Chlordane	0.0007	mg/kg	8.1E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	9.4E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Technical Chlordane	0.01794	mg/kg	2.1E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-07	2.4E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				Mercury	0.419	mg/kg	NC		NC			5.7E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				Mercury (methyl)	0.625	ug/kg	NC		NC			8.4E-04	mg/kg/day	1.0E-04	mg/kg/day	8.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000000242	mg/kg	2.8E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-06	3.3E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-05					2.E+01
		EXPOSURE POINT TOTAL									4.E-05					2.E+01
	EXPOSURE MEDIUM TOTAL										4.E-05					2.E+01
FILLET TOTAL											4.E-05					2.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	4.E-05				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	2.1E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by:	RAR
Checked by:	KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.19.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SOIL	SOIL	GREYSTONE MILL POND	INGESTION	2-Methylnaphthalene	0.1071	mg/kg	NC		NC			1.1E-08	mg/kg/day	2.0E-02	mg/kg/day	5.E-07
				Acenaphthylene	0.31765	mg/kg	NC		NC			3.2E-08	mg/kg/day	6.0E-02	mg/kg/day	5.E-07
				Benzo(a)anthracene	3.09372	mg/kg	5.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	3.1E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(a)pyrene	3.07718	mg/kg	5.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	3.1E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(b)fluoranthene	3.45207	mg/kg	6.0E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	3.5E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	2.336	mg/kg	NC		NC			2.4E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Dibenzo(a,h)anthracene	0.61485	mg/kg	1.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-08	6.3E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	2.51886	mg/kg	4.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.6E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				Phenanthrene	3.95543	mg/kg	NC		NC			4.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				alpha-Chlordane	0.0178	mg/kg	3.1E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	1.8E-09	mg/kg/day	5.0E-04	mg/kg/day	4.E-06
				Aroclor-1254	0.51998	mg/kg	9.1E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-08	5.3E-08	mg/kg/day	2.0E-05	mg/kg/day	3.E-03
				Aroclor-1268	0.08389	mg/kg	1.5E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-09	8.5E-09	mg/kg/day	2.0E-05	mg/kg/day	4.E-04
				Endosulfan Sulfate	0.0065	mg/kg	NC		NC			6.6E-10	mg/kg/day	6.0E-03	mg/kg/day	1.E-07
				Technical Chlordane	0.4307	mg/kg	7.5E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-09	4.4E-08	mg/kg/day	5.0E-04	mg/kg/day	9.E-05
				Aluminum	15899	mg/kg	NC		NC			1.6E-03	mg/kg/day			
				Arsenic	7.72	mg/kg	1.3E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-07	7.9E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				Chromium	231	mg/kg	4.0E-06	mg/kg/day	--			2.4E-05	mg/kg/day	3.0E-03	mg/kg/day	8.E-03
				Copper	205	mg/kg	NC		NC			2.1E-05	mg/kg/day			
				Lead	450	mg/kg	7.9E-06	mg/kg/day	--			4.6E-05	mg/kg/day			
				Manganese	1841	mg/kg	NC		NC			1.9E-04	mg/kg/day	7.1E-02	mg/kg/day	3.E-03
				Mercury	0.582	mg/kg	1.0E-08	mg/kg/day	--			5.9E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Molybdenum	54	mg/kg	NC		NC			5.5E-06	mg/kg/day	5.0E-03	mg/kg/day	1.E-03
				Nickel	120	mg/kg	2.1E-06	mg/kg/day	--			1.2E-05	mg/kg/day	2.0E-02	mg/kg/day	6.E-04
				Thallium	0.461	mg/kg	NC		NC			4.7E-08	mg/kg/day	8.0E-05	mg/kg/day	6.E-04
				Vanadium	82.3	mg/kg	NC		NC			8.4E-06	mg/kg/day	7.0E-03	mg/kg/day	1.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.000055	mg/kg	9.6E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-07	5.6E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-06					2.E-02
			DERMAL	2-Methylnaphthalene	0.1071	mg/kg	NC		NC			3.2E-09	mg/kg/day	2.0E-02	mg/kg/day	2.E-07
				Acenaphthylene	0.31765	mg/kg	NC		NC			9.6E-09	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				Benzo(a)anthracene	3.09372	mg/kg	1.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	9.3E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(a)pyrene	3.07718	mg/kg	1.6E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	9.3E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(b)fluoranthene	3.45207	mg/kg	1.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	1.0E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(g,h,i)perylene	2.336	mg/kg	NC		NC			7.0E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Dibenzo(a,h)anthracene	0.61485	mg/kg	3.2E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	1.9E-08	mg/kg/day	3.0E-02	mg/kg/day	6.E-07
				Indeno(1,2,3-cd)pyrene	2.51886	mg/kg	1.3E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	7.6E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Phenanthrene	3.95543	mg/kg	NC		NC			1.2E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				alpha-Chlordane	0.0178	mg/kg	2.8E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-11	1.7E-10	mg/kg/day	5.0E-04	mg/kg/day	3.E-07
				Aroclor-1254	0.51998	mg/kg	2.9E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-09	1.7E-08	mg/kg/day	2.0E-05	mg/kg/day	8.E-04
				Aroclor-1268	0.08389	mg/kg	4.7E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-10	2.7E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				Endosulfan Sulfate	0.0065	mg/kg	NC		NC			1.5E-10	mg/kg/day	6.0E-03	mg/kg/day	3.E-08
				Technical Chlordane	0.4307	mg/kg	6.9E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-10	4.0E-09	mg/kg/day	5.0E-04	mg/kg/day	8.E-06
				Aluminum	15899	mg/kg	NC		NC			--				
				Arsenic	7.72	mg/kg	9.2E-09	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-08	5.4E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Chromium	231	mg/kg	--		--			--		7.5E-05	mg/kg/day	
				Copper	205	mg/kg	NC		NC			--				
				Lead	450	mg/kg	--		--			--				
				Manganese	1841	mg/kg	NC		NC			--		2.8E-05	mg/kg/day	
				Mercury	0.582	mg/kg	--		--			--		2.1E-05	mg/kg/day	
				Molybdenum	54	mg/kg	NC		NC			--		5.0E-03	mg/kg/day	
				Nickel	120	mg/kg	--		--			--		8.0E-04	mg/kg/day	
				Thallium	0.461	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	82.3	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000055	mg/kg	6.6E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-08	3.8E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-07					1.E-03
		EXPOSURE POINT TOTAL									1.E-06					2.E-02
	EXPOSURE MEDIUM TOTAL										1.E-06					2.E-02
SOIL TOTAL											1.E-06					2.E-02

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TABLE F.7.19.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	GREYSTONE MILL POND	INGESTION	2-Methylnaphthalene	0.07478	mg/kg	NC		NC			4.8E-09	mg/kg/day	2.0E-02	mg/kg/day	2.E-07
				Acenaphthylene	0.19279	mg/kg	NC		NC			1.2E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				Benzo(a)anthracene	1.5	mg/kg	1.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	9.5E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(a)pyrene	1.4	mg/kg	1.5E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	8.9E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(b)fluoranthene	1.5	mg/kg	1.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	9.5E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(g,h,i)perylene	0.86	mg/kg	NC		NC			5.5E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Dibenzo(a,h)anthracene	0.77	mg/kg	8.4E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-08	4.9E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	1	mg/kg	1.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-09	6.4E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Phenanthrene	2.1	mg/kg	NC		NC			1.3E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				alpha-Chlordane	0.0061	mg/kg	6.7E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-11	3.9E-10	mg/kg/day	5.0E-04	mg/kg/day	8.E-07
				Aroclor-1254	0.15	mg/kg	1.6E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-09	9.5E-09	mg/kg/day	2.0E-05	mg/kg/day	5.E-04
				Aroclor-1268	0.14	mg/kg	1.5E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-09	8.9E-09	mg/kg/day	2.0E-05	mg/kg/day	4.E-04
				gamma-Chlordane	0.0048	mg/kg	5.2E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-11	3.1E-10	mg/kg/day	5.0E-04	mg/kg/day	6.E-07
				Technical Chlordane	0.4	mg/kg	4.4E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-09	2.5E-08	mg/kg/day	5.0E-04	mg/kg/day	5.E-05
				Aluminum	15554	mg/kg	NC		NC			9.9E-04	mg/kg/day			
				Antimony	0.73	mg/kg	NC		NC			4.6E-08	mg/kg/day	4.0E-04	mg/kg/day	1.E-04
				Arsenic	9.6	mg/kg	1.0E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-07	6.1E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Cadmium	0.81	mg/kg	NC		NC			5.2E-08	mg/kg/day	1.0E-03	mg/kg/day	5.E-05
				Chromium	99.3	mg/kg	NC		NC			6.3E-06	mg/kg/day	3.0E-03	mg/kg/day	2.E-03
				Copper	72.8	mg/kg	NC		NC			4.6E-06	mg/kg/day			
				Lead	179	mg/kg	2.0E-06	mg/kg/day				1.1E-05	mg/kg/day			
				Manganese	599	mg/kg	NC		NC			3.8E-05	mg/kg/day	7.1E-02	mg/kg/day	5.E-04
				Mercury	0.21	mg/kg	NC		NC			1.3E-08	mg/kg/day	3.0E-04	mg/kg/day	4.E-05
				Nickel	142	mg/kg	NC		NC			9.0E-06	mg/kg/day	2.0E-02	mg/kg/day	5.E-04
				Thallium	0.37	mg/kg	NC		NC			2.4E-08	mg/kg/day	8.0E-05	mg/kg/day	3.E-04
				Vanadium	79	mg/kg	NC		NC			5.0E-06	mg/kg/day	7.0E-03	mg/kg/day	7.E-04
				Toxicity Equivalency (Dioxins/Furans)	0.000121	mg/kg	1.3E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-07	7.7E-12	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000249	mg/kg	2.7E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-08	1.6E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-07					7.E-03
			DERMAL	2-Methylnaphthalene	0.07478	mg/kg	NC		NC			1.2E-09	mg/kg/day	2.0E-02	mg/kg/day	6.E-08
				Acenaphthylene	0.19279	mg/kg	NC		NC			3.1E-09	mg/kg/day	6.0E-02	mg/kg/day	5.E-08
				Benzo(a)anthracene	1.5	mg/kg	4.1E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-09	2.4E-08	mg/kg/day	3.0E-02	mg/kg/day	8.E-07
				Benzo(a)pyrene	1.4	mg/kg	3.9E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-08	2.3E-08	mg/kg/day	3.0E-02	mg/kg/day	8.E-07
				Benzo(b)fluoranthene	1.5	mg/kg	4.1E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-09	2.4E-08	mg/kg/day	3.0E-02	mg/kg/day	8.E-07
				Benzo(g,h,i)perylene	0.86	mg/kg	NC		NC			1.4E-08	mg/kg/day	3.0E-02	mg/kg/day	5.E-07
				Dibenzo(a,h)anthracene	0.77	mg/kg	2.1E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	1.2E-08	mg/kg/day	3.0E-02	mg/kg/day	4.E-07
				Indeno(1,2,3-cd)pyrene	1	mg/kg	2.8E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-09	1.6E-08	mg/kg/day	3.0E-02	mg/kg/day	5.E-07
				Phenanthrene	2.1	mg/kg	NC		NC			3.4E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				alpha-Chlordane	0.0061	mg/kg	5.2E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-12	3.0E-11	mg/kg/day	5.0E-04	mg/kg/day	6.E-08
				Aroclor-1254	0.15	mg/kg	4.5E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-10	2.6E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				Aroclor-1268	0.14	mg/kg	4.2E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-10	2.4E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				gamma-Chlordane	0.0048	mg/kg	4.1E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-12	2.4E-11	mg/kg/day	5.0E-04	mg/kg/day	5.E-08
				Technical Chlordane	0.4	mg/kg	3.4E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	2.0E-09	mg/kg/day	5.0E-04	mg/kg/day	4.E-06
				Aluminum	15554	mg/kg	NC		NC			--				
				Antimony	0.73	mg/kg	NC		NC			--		6.0E-05	mg/kg/day	
				Arsenic	9.6	mg/kg	6.1E-09	mg/kg/day	1.5E+00	(mg/kg/day)-1	9.E-09	3.0E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				Cadmium	0.81	mg/kg	NC		NC			1.0E-10	mg/kg/day	2.5E-05	mg/kg/day	4.E-06
				Chromium	99.3	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	72.8	mg/kg	NC		NC			--				
				Lead	179	mg/kg	--					--				
				Manganese	599	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.21	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	142	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.37	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	79	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	

US EPA ARCHIVE DOCUMENT

TABLE F.7.19.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Toxicity Equivalency (Dioxins/Furans)	0.000121	mg/kg	7.7E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-08	4.5E-13	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000249	mg/kg	1.6E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-09	9.2E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								8.E-08					4.E-04
		EXPOSURE POINT TOTAL									7.E-07					8.E-03
	EXPOSURE MEDIUM TOTAL										7.E-07					8.E-03
SEDIMENT TOTAL											7.E-07					8.E-03
SURFACE WATER	SURFACE WATER	GREYSTONE MILL POND	INGESTION	Arsenic	0.00055	mg/l	1.2E-09	mg/kg/day	1.5E+00	mg/kg/day	2.E-09	7.0E-09	mg/kg/day	3.0E-04	mg/kg/day	2.E-05
				Manganese	0.131	mg/l	NC		NC			1.7E-06	mg/kg/day	2.4E-02	mg/kg/day	7.E-05
				Mercury	0.00000193	mg/l	NC		NC			2.5E-11	mg/kg/day	3.0E-04	mg/kg/day	8.E-08
				Nitrite-N	0.128	mg/l	NC		NC			1.6E-06	mg/kg/day	1.0E-01	mg/kg/day	2.E-05
				Toxicity Equivalency (Dioxins/Furans)	5.64E-09	mg/l	1.2E-14	mg/kg/day	1.5E+05	mg/kg/day	2.E-09	7.2E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-09					1.E-04
			DERMAL	Arsenic	0.00055	mg/l	4.2E-09	mg/kg/day	1.5E+00	mg/kg/day	6.E-09	2.4E-08	mg/kg/day	3.0E-04	mg/kg/day	8.E-05
				Manganese	0.131	mg/l	NC		NC			5.8E-06	mg/kg/day	9.6E-04	mg/kg/day	6.E-03
				Mercury	0.00000193	mg/l	NC		NC			8.5E-11	mg/kg/day	2.1E-05	mg/kg/day	4.E-06
				Nitrite-N	0.128	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	5.64E-09	mg/l	9.7E-11	mg/kg/day	1.5E+05	mg/kg/day	1.E-05	5.7E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					6.E-03
		EXPOSURE POINT TOTAL									1.E-05					6.E-03
	EXPOSURE MEDIUM TOTAL										1.E-05					6.E-03
SURFACE WATER TOTAL											1.E-05					6.E-03
LARGEMOUTH BASS	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.0008	mg/kg	NC		NC			6.5E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	0.00037	mg/kg	NC		NC			3.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	0.003	mg/kg	NC		NC			2.4E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				4,4'-DDE	0.0642	mg/kg	8.9E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-06	5.2E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				alpha-Chlordane	0.004	mg/kg	5.6E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	3.2E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				Aroclor-1254	0.318	mg/kg	4.4E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-05	2.6E-04	mg/kg/day	2.0E-05	mg/kg/day	1.E+01
				Aroclor-1268	0.0921	mg/kg	1.3E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-05	7.5E-05	mg/kg/day	2.0E-05	mg/kg/day	4.E+00
				Dieldrin	0.00078	mg/kg	1.1E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-06	6.3E-07	mg/kg/day	5.0E-05	mg/kg/day	1.E-02
				gamma-Chlordane	0.002	mg/kg	2.8E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	1.6E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Technical Chlordane	0.0439	mg/kg	6.1E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	3.6E-05	mg/kg/day	5.0E-04	mg/kg/day	7.E-02
				Lead	0.0556	mg/kg	7.7E-06	mg/kg/day				4.5E-05	mg/kg/day			
				Mercury	0.31	mg/kg	NC		NC			2.5E-04	mg/kg/day	3.0E-04	mg/kg/day	8.E-01
				Mercury (methyl)	0.314	mg/kg	NC		NC			2.5E-04	mg/kg/day	1.0E-04	mg/kg/day	3.E+00
				Thallium	0.00493	mg/kg	NC		NC			4.0E-06	mg/kg/day	8.0E-05	mg/kg/day	5.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.00000061	mg/kg	8.5E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-05	4.9E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					2.E+01
		EXPOSURE POINT TOTAL									1.E-04					2.E+01
	EXPOSURE MEDIUM TOTAL										1.E-04					2.E+01
WHOLE BODY TOTAL											1.E-04					2.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		2.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				2.0.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availalbie from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or derimal absorpsion values are not available.

Prepared by:	RAR
Checked by:	KJA

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TABLE F.7.20.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	GREYSTONE MIL POND	INGESTION	2-Methylnaphthalene	0.1071	mg/kg	NC		NC			1.7E-08	mg/kg/day	2.0E-02	mg/kg/day	8.E-07
				Acenaphthylene	0.31765	mg/kg	NC		NC			5.0E-08	mg/kg/day	6.0E-02	mg/kg/day	8.E-07
				Benzo(a)anthracene	3.09372	mg/kg	8.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	4.9E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	3.07718	mg/kg	8.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-07	4.9E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	3.45207	mg/kg	9.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-08	5.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	2.336	mg/kg	NC		NC			3.7E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.61485	mg/kg	1.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	9.7E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Indeno(1,2,3-cd)pyrene	2.51886	mg/kg	6.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	4.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	3.95543	mg/kg	NC		NC			6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				alpha-Chlordane	0.0178	mg/kg	4.8E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-10	2.8E-09	mg/kg/day	5.0E-04	mg/kg/day	6.E-06
				Aroclor-1254	0.51998	mg/kg	1.4E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-08	8.2E-08	mg/kg/day	2.0E-05	mg/kg/day	4.E-03
				Aroclor-1268	0.08389	mg/kg	2.3E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-09	1.3E-08	mg/kg/day	2.0E-05	mg/kg/day	7.E-04
				Endosulfan Sulfate	0.0065	mg/kg	NC		NC			1.0E-09	mg/kg/day	6.0E-03	mg/kg/day	2.E-07
				Technical Chlordane	0.4307	mg/kg	1.2E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-09	6.8E-08	mg/kg/day	5.0E-04	mg/kg/day	1.E-04
				Aluminum	15899	mg/kg	NC		NC			2.5E-03	mg/kg/day			
				Arsenic	7.72	mg/kg	2.1E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-07	1.2E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				Chromium	231	mg/kg	NC		NC			3.7E-05	mg/kg/day	3.0E-03	mg/kg/day	1.E-02
				Copper	205	mg/kg	NC		NC			3.2E-05	mg/kg/day			
				Lead	450	mg/kg	1.2E-05	mg/kg/day	--			7.1E-05	mg/kg/day			
				Manganese	1841	mg/kg	NC		NC			2.9E-04	mg/kg/day	7.1E-02	mg/kg/day	4.E-03
				Mercury	0.582	mg/kg	NC		NC			9.2E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				Molybdenum	54	mg/kg	NC		NC			8.5E-06	mg/kg/day	5.0E-03	mg/kg/day	2.E-03
				Nickel	120	mg/kg	NC		NC			1.9E-05	mg/kg/day	2.0E-02	mg/kg/day	9.E-04
				Thallium	0.461	mg/kg	NC		NC			7.3E-08	mg/kg/day	8.0E-05	mg/kg/day	9.E-04
				Vanadium	82.3	mg/kg	NC		NC			1.3E-05	mg/kg/day	7.0E-03	mg/kg/day	2.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.000055	mg/kg	1.5E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-07	8.7E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-06					3.E-02
			DERMAL	2-Methylnaphthalene	0.1071	mg/kg	NC		NC			1.7E-08	mg/kg/day	2.0E-02	mg/kg/day	8.E-07
				Acenaphthylene	0.31765	mg/kg	NC		NC			5.0E-08	mg/kg/day	6.0E-02	mg/kg/day	8.E-07
				Benzo(a)anthracene	3.09372	mg/kg	8.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	4.9E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	3.07718	mg/kg	8.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-07	4.9E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	3.45207	mg/kg	9.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-08	5.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	2.336	mg/kg	NC		NC			3.7E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.61485	mg/kg	1.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	9.7E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Indeno(1,2,3-cd)pyrene	2.51886	mg/kg	6.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	4.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	3.95543	mg/kg	NC		NC			6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				alpha-Chlordane	0.0178	mg/kg	1.5E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-11	8.7E-10	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Aroclor-1254	0.51998	mg/kg	1.5E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-08	8.9E-08	mg/kg/day	2.0E-05	mg/kg/day	4.E-03
				Aroclor-1268	0.08389	mg/kg	2.4E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-09	1.4E-08	mg/kg/day	2.0E-05	mg/kg/day	7.E-04
				Endosulfan Sulfate	0.0065	mg/kg	NC		NC			7.9E-10	mg/kg/day	6.0E-03	mg/kg/day	1.E-07
				Technical Chlordane	0.4307	mg/kg	3.6E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-09	2.1E-08	mg/kg/day	5.0E-04	mg/kg/day	4.E-05
				Aluminum	15899	mg/kg	NC		NC			--				
				Arsenic	7.72	mg/kg	4.8E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	7.E-08	2.8E-07	mg/kg/day	3.0E-04	mg/kg/day	9.E-04
				Chromium	231	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	205	mg/kg	NC		NC			--				
				Lead	450	mg/kg	--		--			--				
				Manganese	1841	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.582	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Molybdenum	54	mg/kg	NC		NC			--		5.0E-03	mg/kg/day	
				Nickel	120	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.461	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	82.3	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000055	mg/kg	3.4E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-08	2.0E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-06					6.E-03
		EXPOSURE POINT TOTAL									3.E-06					4.E-02
	EXPOSURE MEDIUM TOTAL										3.E-06					4.E-02
SOIL TOTAL											3.E-06					4.E-02

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TABLE P.7.20.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	GREYSTONE MIL POND	INGESTION	2-Methylnapithalene	0.07478	mg/kg	NC		NC			7.4E-09	mg/kg/day	2.0E-02	mg/kg/day	4.E-07
				Acenaphthylene	0.19279	mg/kg	NC		NC			1.9E-08	mg/kg/day	6.0E-02	mg/kg/day	3.E-07
				Benzo(a)anthracene	1.5	mg/kg	2.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Benzo(a)pyrene	1.4	mg/kg	2.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.4E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Benzo(b)fluoranthene	1.5	mg/kg	2.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Benzo(g,h,i)perylene	0.86	mg/kg	NC		NC			8.5E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Dibenzo(a,h)anthracene	0.77	mg/kg	1.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	7.6E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Indeno(1,2,3-cd)pyrene	1	mg/kg	1.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	9.9E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Phenanthrene	2.1	mg/kg	NC		NC			2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				alpha-Chlordane	0.0061	mg/kg	1.0E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-11	6.0E-10	mg/kg/day	5.0E-04	mg/kg/day	1.E-06
				Aroclor-1254	0.15	mg/kg	2.5E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-09	1.5E-08	mg/kg/day	2.0E-05	mg/kg/day	7.E-04
				Aroclor-1268	0.14	mg/kg	2.4E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-09	1.4E-08	mg/kg/day	2.0E-05	mg/kg/day	7.E-04
				gamma-Chlordane	0.0048	mg/kg	8.1E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-11	4.7E-10	mg/kg/day	5.0E-04	mg/kg/day	9.E-07
				Technical Chlordane	0.4	mg/kg	6.8E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-09	4.0E-08	mg/kg/day	5.0E-04	mg/kg/day	8.E-05
				Aluminum	15554	mg/kg	NC		NC			1.5E-03	mg/kg/day			
				Antimony	0.73	mg/kg	NC		NC			7.2E-08	mg/kg/day	4.0E-04	mg/kg/day	2.E-04
				Arsenic	9.6	mg/kg	1.6E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-07	9.5E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				Cadmium	0.81	mg/kg	NC		NC			8.0E-08	mg/kg/day	1.0E-03	mg/kg/day	8.E-05
				Chromium	99.3	mg/kg	NC		NC			9.8E-06	mg/kg/day	3.0E-03	mg/kg/day	3.E-03
				Copper	72.8	mg/kg	NC		NC			7.2E-06	mg/kg/day			
				Lead	179	mg/kg	3.0E-06	mg/kg/day				1.8E-05	mg/kg/day			
				Manganese	599	mg/kg	NC		NC			5.9E-05	mg/kg/day	7.1E-02	mg/kg/day	8.E-04
				Mercury	0.21	mg/kg	NC		NC			2.1E-08	mg/kg/day	3.0E-04	mg/kg/day	7.E-05
				Nickel	142	mg/kg	NC		NC			1.4E-05	mg/kg/day	2.0E-02	mg/kg/day	7.E-04
				Thallium	0.37	mg/kg	NC		NC			3.7E-08	mg/kg/day	8.0E-05	mg/kg/day	5.E-04
				Vanadium	79	mg/kg	NC		NC			7.8E-06	mg/kg/day	7.0E-03	mg/kg/day	1.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.000121	mg/kg	2.1E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-07	1.2E-11	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000249	mg/kg	4.2E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-08	2.5E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								9.E-07					1.E-02
			DERMAL	2-Methylnaphthalene	0.07478	mg/kg	NC		NC			5.5E-09	mg/kg/day	2.0E-02	mg/kg/day	3.E-07
				Acenaphthylene	0.19279	mg/kg	NC		NC			1.4E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				Benzo(a)anthracene	1.5	mg/kg	1.9E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	1.1E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Benzo(a)pyrene	1.4	mg/kg	1.8E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	1.0E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(b)fluoranthene	1.5	mg/kg	1.9E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	1.1E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Benzo(g,h,i)perylene	0.86	mg/kg	NC		NC			6.3E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Dibenzo(a,h)anthracene	0.77	mg/kg	9.7E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-08	5.7E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	1	mg/kg	1.3E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-09	7.4E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Phenanthrene	2.1	mg/kg	NC		NC			1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				alpha-Chlordane	0.0061	mg/kg	2.4E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-12	1.4E-10	mg/kg/day	5.0E-04	mg/kg/day	3.E-07
				Aroclor-1254	0.15	mg/kg	2.0E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-09	1.2E-08	mg/kg/day	2.0E-05	mg/kg/day	6.E-04
				Aroclor-1268	0.14	mg/kg	1.9E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-09	1.1E-08	mg/kg/day	2.0E-05	mg/kg/day	6.E-04
				gamma-Chlordane	0.0048	mg/kg	1.9E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-12	1.1E-10	mg/kg/day	5.0E-04	mg/kg/day	2.E-07
				Technical Chlordane	0.4	mg/kg	1.6E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-10	9.1E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-05
				Aluminum	15554	mg/kg	NC		NC			--				
				Antimony	0.73	mg/kg	NC		NC			--		6.0E-05	mg/kg/day	
				Arsenic	9.6	mg/kg	2.8E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-08	1.6E-07	mg/kg/day	3.0E-04	mg/kg/day	5.E-04
				Cadmium	0.81	mg/kg	NC		NC			4.6E-10	mg/kg/day	2.5E-05	mg/kg/day	2.E-05
				Chromium	99.3	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	72.8	mg/kg	NC		NC			--				
				Lead	179	mg/kg	--					--				
				Manganese	599	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.21	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	142	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.37	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	79	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	

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TABLE F.7.10.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Toxicity Equivalency (Dioxins/Furans)	0.000121	mg/kg	3.5E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-08	2.1E-12	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000249	mg/kg	7.2E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-08	4.2E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-07					2.E-03
		EXPOSURE POINT TOTAL									1.E-06					1.E-02
	EXPOSURE MEDIUM TOTAL										1.E-06					1.E-02
SEDIMENT TOTAL											1.E-06					1.E-02
SURFACE WATER	SURFACE WATER	GREYSTONE MIL POND	INGESTION	Arsenic	0.00055	mg/l	1.9E-09	mg/kg/day	1.5E+00	mg/kg/day	3.E-09	1.1E-08	mg/kg/day	3.0E-04	mg/kg/day	4.E-05
				Manganese	0.131	mg/l	NC		NC			2.6E-06	mg/kg/day	2.4E-02	mg/kg/day	1.E-04
				Mercury	0.00000193	mg/l	NC		NC			3.8E-11	mg/kg/day	3.0E-04	mg/kg/day	1.E-07
				Nitrite-N	0.128	mg/l	NC		NC			2.5E-06	mg/kg/day	1.0E-01	mg/kg/day	3.E-05
				Toxicity Equivalency (Dioxins/Furans)	5.64E-09	mg/l	1.9E-14	mg/kg/day	1.5E+05	mg/kg/day	3.E-09	1.1E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-09					2.E-04
			DERMAL	Arsenic	0.00055	mg/l	4.7E-09	mg/kg/day	1.5E+00	mg/kg/day	7.E-09	2.7E-08	mg/kg/day	3.0E-04	mg/kg/day	9.E-05
				Manganese	0.131	mg/l	NC		NC			6.5E-06	mg/kg/day	9.6E-04	mg/kg/day	7.E-03
				Mercury	0.00000193	mg/l	NC		NC			9.6E-11	mg/kg/day	2.1E-05	mg/kg/day	5.E-06
				Nitrite-N	0.128	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	5.64E-09	mg/l	1.1E-10	mg/kg/day	1.5E+05	mg/kg/day	2.E-05	6.3E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-05					7.E-03
		EXPOSURE POINT TOTAL									2.E-05					7.E-03
	EXPOSURE MEDIUM TOTAL										2.E-05					7.E-03
SURFACE WATER TOTAL											2.E-05					7.E-03
LARGEMOUTH BASS	WHOLE BODY	GREYSTONE MIL POND	INGESTION	Acenaphthylene	0.0008	mg/kg	NC		NC			5.1E-07	mg/kg/day	6.0E-02	mg/kg/day	8.E-06
				Benzo(g,h,i)perylene	0.00037	mg/kg	NC		NC			2.3E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Phenanthrene	0.003	mg/kg	NC		NC			1.9E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				4,4'-DDE	0.0642	mg/kg	7.0E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	4.1E-05	mg/kg/day	5.0E-04	mg/kg/day	8.E-02
				alpha-Chlordane	0.004	mg/kg	4.3E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	2.5E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				Aroclor-1254	0.318	mg/kg	3.5E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-05	2.0E-04	mg/kg/day	2.0E-05	mg/kg/day	1.E+01
				Aroclor-1268	0.0921	mg/kg	1.0E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	5.8E-05	mg/kg/day	2.0E-05	mg/kg/day	3.E+00
				Dieldrin	0.00078	mg/kg	8.5E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-06	4.9E-07	mg/kg/day	5.0E-05	mg/kg/day	1.E-02
				gamma-Chlordane	0.002	mg/kg	2.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-08	1.3E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Technical Chlordane	0.0439	mg/kg	4.8E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	2.8E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				Lead	0.0556	mg/kg	6.0E-06	mg/kg/day				3.5E-05	mg/kg/day			
				Mercury	0.31	mg/kg	NC		NC			2.0E-04	mg/kg/day	3.0E-04	mg/kg/day	7.E-01
				Mercury (methyl)	0.314	mg/kg	NC		NC			2.0E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Thallium	0.00493	mg/kg	NC		NC			3.1E-06	mg/kg/day	8.0E-05	mg/kg/day	4.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.00000061	mg/kg	6.6E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-05	3.9E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					2.E+01
		EXPOSURE POINT TOTAL									1.E-04					2.E+01
	EXPOSURE MEDIUM TOTAL										1.E-04					2.E+01
WHOLE BODY TOTAL											1.E-04					2.E+01
TOTAL RECEPTOR RISK ACROSS ALL MEDIA											1.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.6.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by:	RAR
Checked by:	KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.21.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
LARGEMOUTH BASS	WHOLE BODY	GREYSTONE MIL POND	INGESTION	Acenaphthylene	0.0008	mg/kg	NC		NC			1.1E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	0.00037	mg/kg	NC		NC			5.0E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.003	mg/kg	NC		NC			4.0E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDE	0.0642	mg/kg	7.4E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-06	8.7E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				alpha-Chlordane	0.004	mg/kg	4.6E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	5.4E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Aroclor-1254	0.318	mg/kg	3.7E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-05	4.3E-04	mg/kg/day	2.0E-05	mg/kg/day	2.E+01
				Aroclor-1268	0.0921	mg/kg	1.1E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	1.2E-04	mg/kg/day	2.0E-05	mg/kg/day	6.E+00
				Dieldrin	0.00078	mg/kg	9.0E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-06	1.1E-06	mg/kg/day	5.0E-05	mg/kg/day	2.E-02
				gamma-Chlordane	0.002	mg/kg	2.3E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-08	2.7E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				Technical Chlordane	0.0439	mg/kg	5.1E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	5.9E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Lead	0.0556	mg/kg	6.4E-06	mg/kg/day				7.5E-05	mg/kg/day			
				Mercury	0.31	mg/kg	NC		NC			4.2E-04	mg/kg/day	3.0E-04	mg/kg/day	1.E+00
				Mercury (methyl)	0.314	mg/kg	NC		NC			4.2E-04	mg/kg/day	1.0E-04	mg/kg/day	4.E+00
				Thallium	0.00493	mg/kg	NC		NC			6.6E-06	mg/kg/day	8.0E-05	mg/kg/day	8.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.00000061	mg/kg	7.1E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-05	8.2E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					3.E+01
		EXPOSURE POINT TOTAL									1.E-04					3.E+01
	EXPOSURE MEDIUM TOTAL										1.E-04					3.E+01
WHOLE BODY TOTAL											1.E-04					3.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	1.E-04				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	3.4E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.22.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	GREYSTONE MILL POND	INGESTION	2-Methylnaphthalene	0.1071	mg/kg	NC		NC			1.1E-08	mg/kg/day	2.0E-02	mg/kg/day	5.E-07
				Acenaphthylene	0.31765	mg/kg	NC		NC			3.2E-08	mg/kg/day	6.0E-02	mg/kg/day	5.E-07
				Benzo(a)anthracene	3.09372	mg/kg	5.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	3.1E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(a)pyrene	3.07718	mg/kg	5.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	3.1E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(b)fluoranthene	3.45207	mg/kg	6.0E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	3.5E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	2.336	mg/kg	NC		NC			2.4E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Dibenzo(a,h)anthracene	0.61485	mg/kg	1.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-08	6.3E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	2.51886	mg/kg	4.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.6E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				Phenanthrene	3.95543	mg/kg	NC		NC			4.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				alpha-Chlordane	0.0178	mg/kg	3.1E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	1.8E-09	mg/kg/day	5.0E-04	mg/kg/day	4.E-06
				Aroclor-1254	0.51998	mg/kg	9.1E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-08	5.3E-08	mg/kg/day	2.0E-05	mg/kg/day	3.E-03
				Aroclor-1268	0.08389	mg/kg	1.5E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-09	8.5E-09	mg/kg/day	2.0E-05	mg/kg/day	4.E-04
				Endosulfan Sulfate	0.0065	mg/kg	NC		NC			6.6E-10	mg/kg/day	6.0E-03	mg/kg/day	1.E-07
				Technical Chlordane	0.4307	mg/kg	7.5E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-09	4.4E-08	mg/kg/day	5.0E-04	mg/kg/day	9.E-05
				Aluminum	15899	mg/kg	NC		NC			1.6E-03	mg/kg/day			
				Arsenic	7.72	mg/kg	1.3E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-07	7.9E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				Chromium	231	mg/kg	4.0E-06	mg/kg/day	--			2.4E-05	mg/kg/day	3.0E-03	mg/kg/day	8.E-03
				Copper	205	mg/kg	NC		NC			2.1E-05	mg/kg/day			
				Lead	450	mg/kg	7.9E-06	mg/kg/day	--			4.6E-05	mg/kg/day			
				Manganese	1841	mg/kg	NC		NC			1.9E-04	mg/kg/day	7.1E-02	mg/kg/day	3.E-03
				Mercury	0.582	mg/kg	1.0E-08	mg/kg/day	--			5.9E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Molybdenum	54	mg/kg	NC		NC			5.5E-06	mg/kg/day	5.0E-03	mg/kg/day	1.E-03
				Nickel	120	mg/kg	2.1E-06	mg/kg/day	--			1.2E-05	mg/kg/day	2.0E-02	mg/kg/day	6.E-04
				Thallium	0.461	mg/kg	NC		NC			4.7E-08	mg/kg/day	8.0E-05	mg/kg/day	6.E-04
				Vanadium	82.3	mg/kg	NC		NC			8.4E-06	mg/kg/day	7.0E-03	mg/kg/day	1.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.000055	mg/kg	9.6E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-07	5.6E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-06					2.E-02
			DERMAL	2-Methylnaphthalene	0.1071	mg/kg	NC		NC			3.2E-09	mg/kg/day	2.0E-02	mg/kg/day	2.E-07
				Acenaphthylene	0.31765	mg/kg	NC		NC			9.6E-09	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				Benzo(a)anthracene	3.09372	mg/kg	1.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	9.3E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(a)pyrene	3.07718	mg/kg	1.6E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	9.3E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(b)fluoranthene	3.45207	mg/kg	1.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	1.0E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(g,h,i)perylene	2.336	mg/kg	NC		NC			7.0E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Dibenzo(a,h)anthracene	0.61485	mg/kg	3.2E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	1.9E-08	mg/kg/day	3.0E-02	mg/kg/day	6.E-07
				Indeno(1,2,3-cd)pyrene	2.51886	mg/kg	1.3E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	7.6E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Phenanthrene	3.95543	mg/kg	NC		NC			1.2E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				alpha-Chlordane	0.0178	mg/kg	2.8E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-11	1.7E-10	mg/kg/day	5.0E-04	mg/kg/day	3.E-07
				Aroclor-1254	0.51998	mg/kg	2.9E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-09	1.7E-08	mg/kg/day	2.0E-05	mg/kg/day	8.E-04
				Aroclor-1268	0.08389	mg/kg	4.7E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-10	2.7E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				Endosulfan Sulfate	0.0065	mg/kg	NC		NC			1.5E-10	mg/kg/day	6.0E-03	mg/kg/day	3.E-08
				Technical Chlordane	0.4307	mg/kg	6.9E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-10	4.0E-09	mg/kg/day	5.0E-04	mg/kg/day	8.E-06
				Aluminum	15899	mg/kg	NC		NC			--				
				Arsenic	7.72	mg/kg	9.2E-09	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-08	5.4E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Chromium	231	mg/kg	--		--			--		7.5E-05	mg/kg/day	
				Copper	205	mg/kg	NC		NC			--				
				Lead	450	mg/kg	--		--			--				
				Manganese	1841	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.582	mg/kg	--		--			--		2.1E-05	mg/kg/day	
				Molybdenum	54	mg/kg	NC		NC			--		5.0E-03	mg/kg/day	
				Nickel	120	mg/kg	--		--			--		8.0E-04	mg/kg/day	
				Thallium	0.461	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	82.3	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000055	mg/kg	6.6E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-08	3.8E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-07					1.E-03
		EXPOSURE POINT TOTAL									1.E-06					2.E-02
	EXPOSURE MEDIUM TOTAL										1.E-06					2.E-02
SOIL TOTAL											1.E-06					2.E-02

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TABLE F.7.23.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	GREYSTONE MILL POND	INGESTION	2-Methylnaphthalene	0.07478	mg/kg	NC		NC			4.8E-09	mg/kg/day	2.0E-02	mg/kg/day	2.E-07
				Acenaphthylene	0.19279	mg/kg	NC		NC			1.2E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				Benzo(a)anthracene	1.5	mg/kg	1.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	9.5E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(a)pyrene	1.4	mg/kg	1.5E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	8.9E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(b)fluoranthene	1.5	mg/kg	1.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	9.5E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(g,h,i)perylene	0.86	mg/kg	NC		NC			5.5E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Dibenzo(a,h)anthracene	0.77	mg/kg	8.4E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-08	4.9E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	1	mg/kg	1.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-09	6.4E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Phenanthrene	2.1	mg/kg	NC		NC			1.3E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				alpha-Chlordane	0.0061	mg/kg	6.7E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-11	3.9E-10	mg/kg/day	5.0E-04	mg/kg/day	8.E-07
				Aroclor-1254	0.15	mg/kg	1.6E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-09	9.5E-09	mg/kg/day	2.0E-05	mg/kg/day	5.E-04
				Aroclor-1268	0.14	mg/kg	1.5E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-09	8.9E-09	mg/kg/day	2.0E-05	mg/kg/day	4.E-04
				gamma-Chlordane	0.0048	mg/kg	5.2E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-11	3.1E-10	mg/kg/day	5.0E-04	mg/kg/day	6.E-07
				Technical Chlordane	0.4	mg/kg	4.4E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-09	2.5E-08	mg/kg/day	5.0E-04	mg/kg/day	5.E-05
				Aluminum	15554	mg/kg	NC		NC			9.9E-04	mg/kg/day			
				Antimony	0.73	mg/kg	NC		NC			4.6E-08	mg/kg/day	4.0E-04	mg/kg/day	1.E-04
				Arsenic	9.6	mg/kg	1.0E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-07	6.1E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Cadmium	0.81	mg/kg	NC		NC			5.2E-08	mg/kg/day	1.0E-03	mg/kg/day	5.E-05
				Chromium	99.3	mg/kg	NC		NC			6.3E-06	mg/kg/day	3.0E-03	mg/kg/day	2.E-03
				Copper	72.8	mg/kg	NC		NC			4.6E-06	mg/kg/day			
				Lead	179	mg/kg	2.0E-06	mg/kg/day				1.1E-05	mg/kg/day			
				Manganese	599	mg/kg	NC		NC			3.8E-05	mg/kg/day	7.1E-02	mg/kg/day	5.E-04
				Mercury	0.21	mg/kg	NC		NC			1.3E-08	mg/kg/day	3.0E-04	mg/kg/day	4.E-05
				Nickel	142	mg/kg	NC		NC			9.0E-06	mg/kg/day	2.0E-02	mg/kg/day	5.E-04
				Thallium	0.37	mg/kg	NC		NC			2.4E-08	mg/kg/day	8.0E-05	mg/kg/day	3.E-04
				Vanadium	79	mg/kg	NC		NC			5.0E-06	mg/kg/day	7.0E-03	mg/kg/day	7.E-04
				Toxicity Equivalency (Dioxins/Furans)	0.000121	mg/kg	1.3E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-07	7.7E-12	mg/kg/day			
				Toxicity Equivalency (PCB Congeners	0.0000249	mg/kg	2.7E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-08	1.6E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-07					7.E-03
			DERMAL	2-Methylnaphthalene	0.07478	mg/kg	NC		NC			1.2E-09	mg/kg/day	2.0E-02	mg/kg/day	6.E-08
				Acenaphthylene	0.19279	mg/kg	NC		NC			3.1E-09	mg/kg/day	6.0E-02	mg/kg/day	5.E-08
				Benzo(a)anthracene	1.5	mg/kg	4.1E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-09	2.4E-08	mg/kg/day	3.0E-02	mg/kg/day	8.E-07
				Benzo(a)pyrene	1.4	mg/kg	3.9E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-08	2.3E-08	mg/kg/day	3.0E-02	mg/kg/day	8.E-07
				Benzo(b)fluoranthene	1.5	mg/kg	4.1E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-09	2.4E-08	mg/kg/day	3.0E-02	mg/kg/day	8.E-07
				Benzo(g,h,i)perylene	0.86	mg/kg	NC		NC			1.4E-08	mg/kg/day	3.0E-02	mg/kg/day	5.E-07
				Dibenzo(a,h)anthracene	0.77	mg/kg	2.1E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	1.2E-08	mg/kg/day	3.0E-02	mg/kg/day	4.E-07
				Indeno(1,2,3-cd)pyrene	1	mg/kg	2.8E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-09	1.6E-08	mg/kg/day	3.0E-02	mg/kg/day	5.E-07
				Phenanthrene	2.1	mg/kg	NC		NC			3.4E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				alpha-Chlordane	0.0061	mg/kg	5.2E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-12	3.0E-11	mg/kg/day	5.0E-04	mg/kg/day	6.E-08
				Aroclor-1254	0.15	mg/kg	4.5E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-10	2.6E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				Aroclor-1268	0.14	mg/kg	4.2E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-10	2.4E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				gamma-Chlordane	0.0048	mg/kg	4.1E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-12	2.4E-11	mg/kg/day	5.0E-04	mg/kg/day	5.E-08
				Technical Chlordane	0.4	mg/kg	3.4E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	2.0E-09	mg/kg/day	5.0E-04	mg/kg/day	4.E-06
				Aluminum	15554	mg/kg	NC		NC			--				
				Antimony	0.73	mg/kg	NC		NC			--		6.0E-05	mg/kg/day	
				Arsenic	9.6	mg/kg	6.1E-09	mg/kg/day	1.5E+00	(mg/kg/day)-1	9.E-09	3.6E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				Cadmium	0.81	mg/kg	NC		NC			1.0E-10	mg/kg/day	2.5E-05	mg/kg/day	4.E-06
				Chromium	99.3	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	72.8	mg/kg	NC		NC			--				
				Lead	179	mg/kg	--					--				
				Manganese	599	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.21	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	142	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.37	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	79	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	

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TABLE F.7.22.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Toxicity Equivalency (Dioxins/Furans)	0.000121	mg/kg	7.7E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-08	4.5E-13	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000249	mg/kg	1.6E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-09	9.2E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								8.E-08					4.E-04
		EXPOSURE POINT TOTAL									7.E-07					8.E-03
	EXPOSURE MEDIUM TOTAL										7.E-07					8.E-03
SEDIMENT TOTAL											7.E-07					8.E-03
SURFACE WATER	SURFACE WATER	GREYSTONE MILL POND	INGESTION	Arsenic	0.00055	mg/l	1.2E-09	mg/kg/day	1.5E+00	mg/kg/day	2.E-09	7.0E-09	mg/kg/day	3.0E-04	mg/kg/day	2.E-05
				Manganese	0.131	mg/l	NC		NC			1.7E-06	mg/kg/day	2.4E-02	mg/kg/day	7.E-05
				Mercury	0.00000193	mg/l	NC		NC			2.5E-11	mg/kg/day	3.0E-04	mg/kg/day	8.E-08
				Nitrite-N	0.128	mg/l	NC		NC			1.6E-06	mg/kg/day	1.0E-01	mg/kg/day	2.E-05
				Toxicity Equivalency (Dioxins/Furans)	5.64E-09	mg/l	1.2E-14	mg/kg/day	1.5E+05	mg/kg/day	2.E-09	7.2E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-09					1.E-04
			DERMAL	Arsenic	0.00055	mg/l	4.2E-09	mg/kg/day	1.5E+00	mg/kg/day	6.E-09	2.4E-08	mg/kg/day	3.0E-04	mg/kg/day	8.E-05
				Manganese	0.131	mg/l	NC		NC			5.8E-06	mg/kg/day	9.6E-04	mg/kg/day	6.E-03
				Mercury	0.00000193	mg/l	NC		NC			8.5E-11	mg/kg/day	2.1E-05	mg/kg/day	4.E-06
				Nitrite-N	0.128	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	5.64E-09	mg/l	9.7E-11	mg/kg/day	1.5E+05	mg/kg/day	1.E-05	5.7E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					6.E-03
		EXPOSURE POINT TOTAL									1.E-05					6.E-03
	EXPOSURE MEDIUM TOTAL										1.E-05					6.E-03
SURFACE WATER TOTAL											1.E-05					6.E-03
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00482	mg/kg	NC		NC			3.9E-06	mg/kg/day	6.0E-02	mg/kg/day	7.E-05
				Benzo(a)pyrene	0.00112	mg/kg	1.6E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	9.1E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(g,h,i)perylene	0.000988	mg/kg	NC		NC			8.0E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Phenanthrene	0.0172	mg/kg	NC		NC			1.4E-05	mg/kg/day	3.0E-02	mg/kg/day	5.E-04
				4,4'-DDD	0.0218	mg/kg	3.0E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	7.E-07	1.8E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				4,4'-DDE	0.0513	mg/kg	7.1E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	4.2E-05	mg/kg/day	5.0E-04	mg/kg/day	8.E-02
				4,4'-DDT	0.00626	mg/kg	8.7E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-07	5.1E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.02431	mg/kg	3.4E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	2.0E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				Aroclor-1254	0.20236	mg/kg	2.8E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-05	1.6E-04	mg/kg/day	2.0E-05	mg/kg/day	8.E+00
				Aroclor-1268	0.05512	mg/kg	7.7E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	4.5E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Dieldrin	0.00417	mg/kg	5.8E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	9.E-06	3.4E-06	mg/kg/day	5.0E-05	mg/kg/day	7.E-02
				gamma-Chlordane	0.0112	mg/kg	1.6E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-07	9.1E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Heptachlor Epoxide	0.00081	mg/kg	1.1E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	1.E-06	6.6E-07	mg/kg/day	1.3E-05	mg/kg/day	5.E-02
				Technical Chlordane	0.282	mg/kg	3.9E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	2.3E-04	mg/kg/day	5.0E-04	mg/kg/day	5.E-01
				Lead	0.012	mg/kg	1.7E-06	mg/kg/day				9.7E-06	mg/kg/day			
				Mercury	0.19	mg/kg	NC		NC			1.5E-04	mg/kg/day	3.0E-04	mg/kg/day	5.E-01
				Mercury (methyl)	0.193	mg/kg	NC		NC			1.6E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.0000031	mg/kg	4.3E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-05	2.5E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-04					1.3.E+01
		EXPOSURE POINT TOTAL									2.E-04					1.3.E+01
	EXPOSURE MEDIUM TOTAL										2.E-04					1.3.E+01
WHOLE BODY TOTAL											2.E-04					1.3.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		2.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.3.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.23.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SOIL	SOIL	GREYSTONE MIL POND	INGESTION	2-Methylnaphthalene	0.1071	mg/kg	NC		NC			1.7E-08	mg/kg/day	2.0E-02	mg/kg/day	8.E-07
				Acenaphthylene	0.31765	mg/kg	NC		NC			5.0E-08	mg/kg/day	6.0E-02	mg/kg/day	8.E-07
				Benzo(a)anthracene	3.09372	mg/kg	8.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	4.9E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	3.07718	mg/kg	8.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-07	4.9E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	3.45207	mg/kg	9.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-08	5.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	2.336	mg/kg	NC		NC			3.7E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.61485	mg/kg	1.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	9.7E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Indeno(1,2,3-cd)pyrene	2.51886	mg/kg	6.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	4.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	3.95543	mg/kg	NC		NC			6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				alpha-Chlordane	0.0178	mg/kg	4.8E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-10	2.8E-09	mg/kg/day	5.0E-04	mg/kg/day	6.E-06
				Aroclor-1254	0.51998	mg/kg	1.4E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-08	8.2E-08	mg/kg/day	2.0E-05	mg/kg/day	4.E-03
				Aroclor-1268	0.08389	mg/kg	2.3E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-09	1.3E-08	mg/kg/day	2.0E-05	mg/kg/day	7.E-04
				Endosulfan Sulfate	0.0065	mg/kg	NC		NC			1.0E-09	mg/kg/day	6.0E-03	mg/kg/day	2.E-07
				Technical Chlordane	0.4307	mg/kg	1.2E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-09	6.8E-08	mg/kg/day	5.0E-04	mg/kg/day	1.E-04
				Aluminum	15899	mg/kg	NC		NC			2.5E-03	mg/kg/day			
				Arsenic	7.72	mg/kg	2.1E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-07	1.2E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				Chromium	231	mg/kg	NC		NC			3.7E-05	mg/kg/day	3.0E-03	mg/kg/day	1.E-02
				Copper	205	mg/kg	NC		NC			3.2E-05	mg/kg/day			
				Lead	450	mg/kg	1.2E-05	mg/kg/day	--			7.1E-05	mg/kg/day			
				Manganese	1841	mg/kg	NC		NC			2.9E-04	mg/kg/day	7.1E-02	mg/kg/day	4.E-03
				Mercury	0.582	mg/kg	NC		NC			9.2E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				Molybdenum	54	mg/kg	NC		NC			8.5E-06	mg/kg/day	5.0E-03	mg/kg/day	2.E-03
				Nickel	120	mg/kg	NC		NC			1.9E-05	mg/kg/day	2.0E-02	mg/kg/day	9.E-04
				Thallium	0.461	mg/kg	NC		NC			7.3E-08	mg/kg/day	8.0E-05	mg/kg/day	9.E-04
				Vanadium	82.3	mg/kg	NC		NC			1.3E-05	mg/kg/day	7.0E-03	mg/kg/day	2.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.000055	mg/kg	1.5E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-07	8.7E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-06					3.E-02
			DERMAL	2-Methylnaphthalene	0.1071	mg/kg	NC		NC			1.7E-08	mg/kg/day	2.0E-02	mg/kg/day	8.E-07
				Acenaphthylene	0.31765	mg/kg	NC		NC			5.0E-08	mg/kg/day	6.0E-02	mg/kg/day	8.E-07
				Benzo(a)anthracene	3.09372	mg/kg	8.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	4.9E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	3.07718	mg/kg	8.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-07	4.9E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	3.45207	mg/kg	9.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-08	5.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	2.336	mg/kg	NC		NC			3.7E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.61485	mg/kg	1.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	9.7E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Indeno(1,2,3-cd)pyrene	2.51886	mg/kg	6.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	4.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	3.95543	mg/kg	NC		NC			6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				alpha-Chlordane	0.0178	mg/kg	1.5E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-11	8.7E-10	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Aroclor-1254	0.51998	mg/kg	1.5E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-08	8.9E-08	mg/kg/day	2.0E-05	mg/kg/day	4.E-03
				Aroclor-1268	0.08389	mg/kg	2.4E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-09	1.4E-08	mg/kg/day	2.0E-05	mg/kg/day	7.E-04
				Endosulfan Sulfate	0.0065	mg/kg	NC		NC			7.9E-10	mg/kg/day	6.0E-03	mg/kg/day	1.E-07
				Technical Chlordane	0.4307	mg/kg	3.6E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-09	2.1E-08	mg/kg/day	5.0E-04	mg/kg/day	4.E-05
				Aluminum	15899	mg/kg	NC		NC			--				
				Arsenic	7.72	mg/kg	4.8E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	7.E-08	2.8E-07	mg/kg/day	3.0E-04	mg/kg/day	9.E-04
				Chromium	231	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	205	mg/kg	NC		NC			--				
				Lead	450	mg/kg	--		--			--				
				Manganese	1841	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.582	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Molybdenum	54	mg/kg	NC		NC			--		5.0E-03	mg/kg/day	
				Nickel	120	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.461	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	82.3	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000055	mg/kg	3.4E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-08	2.0E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-06					6.E-03
		EXPOSURE POINT TOTAL									3.E-06					4.E-02
	EXPOSURE MEDIUM TOTAL										3.E-06					4.E-02
SOIL TOTAL											3.E-06					4.E-02

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TABLE F.7.23.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	*SEDIMENT*	*GREYSTONE MIL POND*	*INGESTION*	2-Methylnaphthalene	*0.07478*	*mg/kg*	NC		NC			7.4E-09	mg/kg/day	2.0E-02	mg/kg/day	4.E-07
				Acenaphthylene	0.19279	mg/kg	NC		NC			1.9E-08	mg/kg/day	6.0E-02	mg/kg/day	3.E-07
				Benzo(a)anthracene	1.5	mg/kg	2.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Benzo(a)pyrene	1.4	mg/kg	2.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.4E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Benzo(b)fluoranthene	1.5	mg/kg	2.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Benzo(g,h,i)perylene	0.86	mg/kg	NC		NC			8.5E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Dibenzo(a,h)anthracene	0.77	mg/kg	1.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	7.6E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Indeno(1,2,3-cd)pyrene	1	mg/kg	1.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	9.9E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Phenanthrene	2.1	mg/kg	NC		NC			2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				alpha-Chlordane	0.0061	mg/kg	1.0E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-11	6.0E-10	mg/kg/day	5.0E-04	mg/kg/day	1.E-06
				Aroclor-1254	0.15	mg/kg	2.5E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-09	1.5E-08	mg/kg/day	2.0E-05	mg/kg/day	7.E-04
				Aroclor-1268	0.14	mg/kg	2.4E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-09	1.4E-08	mg/kg/day	2.0E-05	mg/kg/day	7.E-04
				gamma-Chlordane	0.0048	mg/kg	8.1E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-11	4.7E-10	mg/kg/day	5.0E-04	mg/kg/day	9.E-07
				Technical Chlordane	0.4	mg/kg	6.8E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-09	4.0E-08	mg/kg/day	5.0E-04	mg/kg/day	8.E-05
				Aluminum	15554	mg/kg	NC		NC			1.5E-03	mg/kg/day			
				Antimony	0.73	mg/kg	NC		NC			7.2E-08	mg/kg/day	4.0E-04	mg/kg/day	2.E-04
				Arsenic	9.6	mg/kg	1.6E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-07	9.5E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				Cadmium	0.81	mg/kg	NC		NC			8.0E-08	mg/kg/day	1.0E-03	mg/kg/day	8.E-05
				Chromium	99.3	mg/kg	NC		NC			9.8E-06	mg/kg/day	3.0E-03	mg/kg/day	3.E-03
				Copper	72.8	mg/kg	NC		NC			7.2E-06	mg/kg/day			
				Lead	179	mg/kg	3.0E-06	mg/kg/dey				1.8E-05	mg/kg/day			
				Manganese	599	mg/kg	NC		NC			5.9E-05	mg/kg/day	7.1E-02	mg/kg/day	8.E-04
				Mercury	0.21	mg/kg	NC		NC			2.1E-08	mg/kg/day	3.0E-04	mg/kg/day	7.E-05
				Nickel	142	mg/kg	NC		NC			1.4E-05	mg/kg/day	2.0E-02	mg/kg/day	7.E-04
				Thallium	0.37	mg/kg	NC		NC			3.7E-08	mg/kg/day	8.0E-05	mg/kg/day	5.E-04
				Vanadium	79	mg/kg	NC		NC			7.8E-06	mg/kg/day	7.0E-03	mg/kg/day	1.E-03
				Toxicity Equivalency (Dioxins/Furans)	0.000121	ng/kg	2.1E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-07	1.2E-11	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000249	ng/kg	4.2E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-08	2.5E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								9.E-07					1.E-02
			DERMAL	2-Methylnaphthalene	0.07478	mg/kg	NC		NC			5.5E-09	mg/kg/day	2.0E-02	mg/kg/day	3.E-07
				Acenaphthylene	0.19279	mg/kg	NC		NC			1.4E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				Benzo(a)anthracene	1.5	mg/kg	1.9E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	1.1E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Benzo(a)pyrene	1.4	mg/kg	1.8E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	1.0E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(b)fluoranthene	1.5	mg/kg	1.9E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	1.1E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Benzo(g,h,i)perylene	0.86	mg/kg	NC		NC			6.3E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Dibenzo(a,h)anthracene	0.77	mg/kg	9.7E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-08	5.7E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	1	mg/kg	1.3E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-09	7.4E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Phenanthrene	2.1	mg/kg	NC		NC			1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				alpha-Chlordane	0.0061	mg/kg	2.4E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-12	1.4E-10	mg/kg/day	5.0E-04	mg/kg/day	3.E-07
				Aroclor-1254	0.15	mg/kg	2.0E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-09	1.2E-08	mg/kg/day	2.0E-05	mg/kg/day	6.E-04
				Aroclor-1268	0.14	mg/kg	1.9E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-09	1.1E-08	mg/kg/day	2.0E-05	mg/kg/day	6.E-04
				gamma-Chlordane	0.0048	mg/kg	1.9E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-12	1.1E-10	mg/kg/day	5.0E-04	mg/kg/day	2.E-07
				Technical Chlordane	0.4	mg/kg	1.6E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-10	9.1E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-05
				Aluminum	15554	mg/kg	NC		NC			--				
				Antimony	0.73	mg/kg	NC		NC			--		6.0E-05	mg/kg/day	
				Arsenic	9.6	mg/kg	2.8E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-08	1.6E-07	mg/kg/day	3.0E-04	mg/kg/day	5.E-04
				Cadmium	0.81	mg/kg	NC		NC			4.6E-10	mg/kg/day	2.5E-05	mg/kg/day	2.E-05
				Chromium	99.3	mg/kg	NC		NC			--		7.5E-05	mg/kg/day	
				Copper	72.8	mg/kg	NC		NC			--				
				Lead	179	mg/kg	--					--				
				Manganese	599	mg/kg	NC		NC			--		2.8E-03	mg/kg/day	
				Mercury	0.21	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				Nickel	142	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				Thallium	0.37	mg/kg	NC		NC			--		8.0E-05	mg/kg/day	
				Vanadium	79	mg/kg	NC		NC			--		1.8E-04	mg/kg/day	

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BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Toxicity Equivalency (Dioxins/Furans)	0.000121	mg/kg	3.5E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-08	2.1E-12	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000249	mg/kg	7.2E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-08	4.2E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-07					2.E-03
		EXPOSURE POINT TOTAL									1.E-06					1.E-02
	EXPOSURE MEDIUM TOTAL										1.E-06					1.E-02
SEDIMENT TOTAL											1.E-06					1.E-02
SURFACE WATER	SURFACE WATER	GREYSTONE MIL POND	INGESTION	Arsenic	0.00055	mg/l	1.9E-09	mg/kg/day	1.5E+00	mg/kg/day	3.E-09	1.1E-08	mg/kg/day	3.0E-04	mg/kg/day	4.E-05
				Manganese	0.131	mg/l	NC		NC			2.6E-06	mg/kg/day	2.4E-02	mg/kg/day	1.E-04
				Mercury	0.00000193	mg/l	NC		NC			3.8E-11	mg/kg/day	3.0E-04	mg/kg/day	1.E-07
				Nitrite-N	0.128	mg/l	NC		NC			2.5E-06	mg/kg/day	1.0E-01	mg/kg/day	3.E-05
				Toxicity Equivalency (Dioxins/Furans)	5.64E-09	mg/l	1.9E-14	mg/kg/day	1.5E+05	mg/kg/day	3.E-09	1.1E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-09					2.E-04
			DERMAL	Arsenic	0.00055	mg/l	4.7E-09	mg/kg/day	1.5E+00	mg/kg/day	7.E-09	2.7E-08	mg/kg/day	3.0E-04	mg/kg/day	9.E-05
				Manganese	0.131	mg/l	NC		NC			6.5E-06	mg/kg/day	9.6E-04	mg/kg/day	7.E-03
				Mercury	0.00000193	mg/l	NC		NC			9.6E-11	mg/kg/day	2.1E-05	mg/kg/day	5.E-06
				Nitrite-N	0.128	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	5.64E-09	mg/l	1.1E-10	mg/kg/day	1.5E+05	mg/kg/day	2.E-05	6.3E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-05					7.E-03
		EXPOSURE POINT TOTAL									2.E-05					7.E-03
	EXPOSURE MEDIUM TOTAL										2.E-05					7.E-03
SURFACE WATER TOTAL											2.E-05					7.E-03
WHITE SUCKER	WHOLE BODY	GREYSTONE MIL POND	INGESTION	Acenaphthylene	0.00482	mg/kg	NC		NC			3.1E-06	mg/kg/day	6.0E-02	mg/kg/day	5.E-05
				Benzo(a)pyrene	0.00112	mg/kg	1.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-07	7.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	0.000988	mg/kg	NC		NC			6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.0172	mg/kg	NC		NC			1.1E-05	mg/kg/day	3.0E-02	mg/kg/day	4.E-04
				4,4'-DDD	0.0218	mg/kg	2.4E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	6.E-07	1.4E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				4,4'-DDE	0.0513	mg/kg	5.6E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	3.2E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				4,4'-DDT	0.00626	mg/kg	6.8E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	4.0E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				alpha-Chlordane	0.02431	mg/kg	2.6E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-07	1.5E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Aroclor-1254	0.20236	mg/kg	2.2E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-05	1.3E-04	mg/kg/day	2.0E-05	mg/kg/day	6.E+00
				Aroclor-1268	0.05512	mg/kg	6.0E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	3.5E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Dieldrin	0.00417	mg/kg	4.5E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	7.E-06	2.6E-06	mg/kg/day	5.0E-05	mg/kg/day	5.E-02
				gamma-Chlordane	0.0112	mg/kg	1.2E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-07	7.1E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Heptachlor Epoxide	0.00081	mg/kg	8.8E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	8.E-07	5.1E-07	mg/kg/day	1.3E-05	mg/kg/day	4.E-02
				Technical Chlordane	0.282	mg/kg	3.1E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	1.8E-04	mg/kg/day	5.0E-04	mg/kg/day	4.E-01
				Lead	0.012	mg/kg	1.3E-06	mg/kg/day				7.6E-06	mg/kg/day			
				Mercury	0.19	mg/kg	NC		NC			1.2E-04	mg/kg/day	3.0E-04	mg/kg/day	4.E-01
				Mercury (methyl)	0.193	mg/kg	NC		NC			1.2E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.0000031	mg/kg	3.4E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-05	2.0E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					1.0E+01
		EXPOSURE POINT TOTAL									1.E-04					1.0E+01
	EXPOSURE MEDIUM TOTAL										1.E-04					1.0E+01
WHOLE BODY TOTAL											1.E-04					1.0E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		2.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.0E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.14.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	GREYSTONE MIL POND	INGESTION	Acenaphthylene	0.00482	mg/kg	NC		NC			6.5E-06	mg/kg/day	6.0E-02	mg/kg/day	1.E-04
				Benzo(a)pyrene	0.00112	mg/kg	1.3E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-07	1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(g,h,i)perylene	0.000988	mg/kg	NC		NC			1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Phenanthrene	0.0172	mg/kg	NC		NC			2.3E-05	mg/kg/day	3.0E-02	mg/kg/day	8.E-04
				4,4'-DDD	0.0218	mg/kg	2.5E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	6.E-07	2.9E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				4,4'-DDE	0.0513	mg/kg	5.9E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	6.9E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				4,4'-DDT	0.00626	mg/kg	7.2E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	8.4E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.02431	mg/kg	2.8E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	3.3E-05	mg/kg/day	5.0E-04	mg/kg/day	7.E-02
				Aroclor-1254	0.20236	mg/kg	2.3E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-05	2.7E-04	mg/kg/day	2.0E-05	mg/kg/day	1.E+01
				Aroclor-1268	0.05512	mg/kg	6.4E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	7.4E-05	mg/kg/day	2.0E-05	mg/kg/day	4.E+00
				Dieldrin	0.00417	mg/kg	4.8E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	8.E-06	5.6E-06	mg/kg/day	5.0E-05	mg/kg/day	1.E-01
				gamma-Chlordane	0.0112	mg/kg	1.3E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-07	1.5E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Heptachlor Epoxide	0.00081	mg/kg	9.4E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	9.E-07	1.1E-06	mg/kg/day	1.3E-05	mg/kg/day	8.E-02
				Technical Chlordane	0.282	mg/kg	3.3E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	3.8E-04	mg/kg/day	5.0E-04	mg/kg/day	8.E-01
				Lead	0.012	mg/kg	1.4E-06	mg/kg/day				1.6E-05	mg/kg/day			
				Mercury	0.19	mg/kg	NC		NC			2.6E-04	mg/kg/day	3.0E-04	mg/kg/day	9.E-01
				Mercury (methyl)	0.193	mg/kg	NC		NC			2.6E-04	mg/kg/day	1.0E-04	mg/kg/day	3.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.0000031	mg/kg	3.6E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-05	4.2E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					2.2.E+01
		EXPOSURE POINT TOTAL									1.E-04					2.2.E+01
	EXPOSURE MEDIUM TOTAL										1.E-04					2.2.E+01
WHOLE BODY TOTAL											1.E-04					2.2.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	1.E-04		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		2.2.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.25.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SOIL	SOIL	ALLENDALE POND	INGESTION	2,3,7,8-TCDD	0.00027	mg/kg	4.7E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-07	2.7E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								7.E-07					--
			DERMAL	2,3,7,8-TCDD	0.00027	mg/kg	3.2E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-08	1.9E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-08					--
		EXPOSURE POINT TOTAL									8.E-07					0.E+00
	EXPOSURE MEDIUM TOTAL										8.E-07					0.E+00
SOIL TOTAL											8.E-07					0.E+00
SEDIMENT	SEDIMENT	ALLENDALE POND	INGESTION	2-Methylnaphthalene	0.13608	mg/kg	NC		NC			8.7E-09	mg/kg/day	2.0E-02	mg/kg/day	4.E-07
				Acenaphthylene	0.97	mg/kg	NC		NC			6.2E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				Benzo(a)anthracene	3.4	mg/kg	3.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.2E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Benzo(a)pyrene	4	mg/kg	4.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	2.5E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Benzo(b)fluoranthene	4.4	mg/kg	4.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	2.8E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				Benzo(g,h,i)perylene	2	mg/kg	NC		NC			1.3E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Benzo(k)fluoranthene	3.9	mg/kg	4.3E-08	mg/kg/day	7.3E-02	(mg/kg/day)-1	3.E-09	2.5E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				bis(2-Ethylhexyl)phthalate	3.2	mg/kg	3.5E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	5.E-10	2.0E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	2	mg/kg	2.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.3E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Indeno(1,2,3-cd)pyrene	3.2	mg/kg	3.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.0E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Pentachlorophenol	6.5	mg/kg	7.1E-08	mg/kg/day	1.2E-01	(mg/kg/day)-1	9.E-09	4.1E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	4.8	mg/kg	NC		NC			3.1E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				alpha-Chlordane	0.0113	mg/kg	1.2E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-11	7.2E-10	mg/kg/day	5.0E-04	mg/kg/day	1.E-06
				Aroclor-1254	2.4	mg/kg	2.6E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-08	1.5E-07	mg/kg/day	2.0E-05	mg/kg/day	8.E-03
				Aroclor-1260	0.2	mg/kg	2.2E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-09	1.3E-08	mg/kg/day	2.0E-05	mg/kg/day	6.E-04
				Aroclor-1268	0.079	mg/kg	8.6E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-09	5.0E-09	mg/kg/day	2.0E-05	mg/kg/day	3.E-04
				delta-BHC	0.0014	mg/kg	NC		NC			8.9E-11	mg/kg/day	3.0E-04	mg/kg/day	3.E-07
				Dieldrin	0.009	mg/kg	9.8E-11	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-09	5.7E-10	mg/kg/day	5.0E-05	mg/kg/day	1.E-05
				Endosulfan II	0.037	mg/kg	NC		NC			2.4E-09	mg/kg/day	6.0E-03	mg/kg/day	4.E-07
				Endosulfan sulfate	0.0027	mg/kg	NC		NC			1.7E-10	mg/kg/day	6.0E-03	mg/kg/day	3.E-08
				Endrin aldehyde	0.0029	mg/kg	NC		NC			1.8E-10	mg/kg/day	3.0E-04	mg/kg/day	6.E-07
				Endrin Ketone	0.0038	mg/kg	NC		NC			2.4E-10	mg/kg/day	3.0E-04	mg/kg/day	8.E-07
				gamma-Chlordane	0.017	mg/kg	1.9E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-11	1.1E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Technical Chlordane	0.65	mg/kg	7.1E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-09	4.1E-08	mg/kg/day	5.0E-04	mg/kg/day	8.E-05
				Antimony	4.8	mg/kg	NC		NC			3.1E-07	mg/kg/day	4.0E-04	mg/kg/day	8.E-04
				Arsenic	5.8	mg/kg	6.3E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	9.E-08	3.7E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Cadmium	1.2	mg/kg	NC		NC			7.6E-08	mg/kg/day	1.0E-03	mg/kg/day	8.E-05
				Chromium	238	mg/kg	NC		NC			1.5E-05	mg/kg/day	3.0E-03	mg/kg/day	5.E-03
				Lead	488	mg/kg	5.3E-06	mg/kg/day	--			3.1E-05	mg/kg/day			
				Manganese	531	mg/kg	NC		NC			3.4E-05	mg/kg/day	7.1E-02	mg/kg/day	5.E-04
				Mercury	0.97	mg/kg	NC		NC			6.2E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Nickel	26.7	mg/kg	NC		NC			1.7E-06	mg/kg/day	2.0E-02	mg/kg/day	8.E-05
				Thallium	6.8	mg/kg	NC		NC			4.3E-07	mg/kg/day	8.0E-05	mg/kg/day	5.E-03
				Vanadium	45.9	mg/kg	NC		NC			2.9E-06	mg/kg/day	7.0E-03	mg/kg/day	4.E-04
				Toxicity Equivalency (Dioxins/Furans)	0.0057	mg/kg	6.2E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	9.E-06	3.6E-10	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000000112	mg/kg	1.2E-15	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-10	7.1E-15	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					2.E-02
			DERMAL	2-Methylnaphthalene	0.13608	mg/kg	NC		NC			2.2E-09	mg/kg/day	2.0E-02	mg/kg/day	1.E-07
				Acenaphthylene	0.97	mg/kg	NC		NC			1.6E-08	mg/kg/day	6.0E-02	mg/kg/day	3.E-07
				Benzo(a)anthracene	3.4	mg/kg	9.4E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-09	5.5E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(a)pyrene	4	mg/kg	1.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-08	6.4E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(b)fluoranthene	4.4	mg/kg	1.2E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-09	7.1E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(g,h,i)perylene	2	mg/kg	NC		NC			3.2E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Benzo(k)fluoranthene	3.9	mg/kg	1.1E-08	mg/kg/day	7.3E-02	(mg/kg/day)-1	8.E-10	6.3E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				bis(2-Ethylhexyl)phthalate	3.2	mg/kg	6.8E-09	mg/kg/day	1.4E-02	(mg/kg/day)-1	9.E-11	4.0E-08	mg/kg/day	2.0E-02	mg/kg/day	2.E-06
				Dibenzo(a,h)anthracene	2	mg/kg	5.5E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-08	3.2E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Indeno(1,2,3-cd)pyrene	3.2	mg/kg	8.8E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-09	5.1E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Pentachlorophenol	6.5	mg/kg	3.4E-08	mg/kg/day	1.2E-01	(mg/kg/day)-1	4.E-09	2.0E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Phenanthrene	4.8	mg/kg	NC		NC			7.7E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06

US EPA ARCHIVE DOCUMENT

TABLE F.7.25.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				alpha-Chlordane	0.0113	mg/kg	9.6E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-12	5.6E-11	mg/kg/day	5.0E-04	mg/kg/day	1.E-07
				Aroclor-1254	2.4	mg/kg	7.1E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-08	4.2E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				Aroclor-1260	0.2	mg/kg	5.9E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-09	3.5E-09	mg/kg/day	2.0E-05	mg/kg/day	2.E-04
				Aroclor-1268	0.079	mg/kg	2.3E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-10	1.4E-09	mg/kg/day	2.0E-05	mg/kg/day	7.E-05
				delta-BHC	0.0014	mg/kg	NC		NC			1.7E-11	mg/kg/day	3.0E-04	mg/kg/day	6.E-08
				Dieldrin	0.009	mg/kg	1.9E-11	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.E-10	1.1E-10	mg/kg/day	5.0E-05	mg/kg/day	2.E-06
				Endosulfan II	0.037	mg/kg	NC		NC			4.6E-10	mg/kg/day	6.0E-03	mg/kg/day	8.E-08
				Endosulfan sulfate	0.0027	mg/kg	NC		NC			3.3E-11	mg/kg/day	6.0E-03	mg/kg/day	6.E-09
				Endrin aldehyde	0.0029	mg/kg	NC		NC			3.6E-11	mg/kg/day	3.0E-04	mg/kg/day	1.E-07
				Endrin Ketone	0.0038	mg/kg	NC		NC			4.7E-11	mg/kg/day	3.0E-04	mg/kg/day	2.E-07
				gamma-Chlordane	0.017	mg/kg	1.4E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-12	8.4E-11	mg/kg/day	5.0E-04	mg/kg/day	2.E-07
				Technical Chlordane	0.65	mg/kg	5.5E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-10	3.2E-09	mg/kg/day	5.0E-04	mg/kg/day	6.E-06
				Antimony	4.8	mg/kg	NC		NC					6.0E-05	mg/kg/day	
				Arsenic	5.8	mg/kg	3.7E-09	mg/kg/day	1.5E+00	(mg/kg/day)-1	6.E-09	2.2E-08	mg/kg/day	3.0E-04	mg/kg/day	7.E-05
				Cadmium	1.2	mg/kg	NC		NC			1.5E-10	mg/kg/day	2.5E-05	mg/kg/day	6.E-06
				Chromium	238	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	488	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	531	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Mercury	0.97	mg/kg	NC		NC					2.1E-05	mg/kg/day	
				Nickel	26.7	mg/kg	NC		NC					8.0E-04	mg/kg/day	
				Thallium	6.8	mg/kg	NC		NC					8.0E-05	mg/kg/day	
				Vanadium	45.9	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.0057	mg/kg	3.6E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-07	2.1E-11	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.00000112	mg/kg	7.1E-17	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-11	4.2E-16	mg/kg/day			
			EXPOSURE ROUTE TOTAL								7.E-07					2.E-03
		EXPOSURE POINT TOTAL									1.E-05					2.E-02
	EXPOSURE MEDIUM TOTAL										1.E-05					2.E-02
SEDIMENT TOTAL											1.E-05					2.E-02
SURFACE WATER	SURFACE WATER	ALLENDALE POND	INGESTION	Tetrachloroethene	0.00055	mg/l	1.2E-09	mg/kg/day	5.4E-01	mg/kg/day	6.E-10	7.0E-09	mg/kg/day	1.0E-02	mg/kg/day	7.E-07
				bis(2-Ethylhexyl)phthalate	0.001	mg/l	2.2E-09	mg/kg/day	1.4E-02	mg/kg/day	3.E-11	1.3E-08	mg/kg/day	2.0E-02	mg/kg/day	6.E-07
				Aldrin	0.000011	mg/l	2.4E-11	mg/kg/day	1.7E+01	mg/kg/day	4.E-10	1.4E-10	mg/kg/day	3.0E-05	mg/kg/day	5.E-06
				alpha-Chlordane	0.00000069	mg/l	1.5E-12	mg/kg/day	3.5E-01	mg/kg/day	5.E-13	8.8E-12	mg/kg/day	5.0E-04	mg/kg/day	2.E-08
				Aroclor-1254	0.0006	mg/l	1.3E-09	mg/kg/day	2.0E+00	mg/kg/day	3.E-09	7.6E-09	mg/kg/day	2.0E-05	mg/kg/day	4.E-04
				delta-BHC	0.0000096	mg/l	NC		NC			1.2E-10	mg/kg/day	3.0E-04	mg/kg/day	4.E-07
				Endosulfan Sulfate	0.00043	mg/l	NC		NC			5.5E-09	mg/kg/day	6.0E-03	mg/kg/day	9.E-07
				Endrin Aldehyde	0.0000028	mg/l	NC		NC			3.6E-11	mg/kg/day	3.0E-04	mg/kg/day	1.E-07
				gamma-Chlordane	0.000025	mg/l	5.5E-11	mg/kg/day	3.5E-01	mg/kg/day	2.E-11	3.2E-10	mg/kg/day	5.0E-04	mg/kg/day	6.E-07
				Arsenic	0.0044	mg/l	9.6E-09	mg/kg/day	1.5E+00	mg/kg/day	1.E-08	5.6E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Barium	0.044	mg/l	NC		NC			5.6E-07	mg/kg/day	7.0E-02	mg/kg/day	8.E-06
				Chromium	0.018	mg/l	NC		NC			2.3E-07	mg/kg/day	3.0E-03	mg/kg/day	8.E-05
				Lead	0.021	mg/l	4.6E-08	mg/kg/day	--			2.7E-07	mg/kg/day			
				Manganese	0.98	mg/l	NC		NC			1.2E-05	mg/kg/day	2.4E-02	mg/kg/day	5.E-04
				Mercury	0.00000319	mg/l	NC		NC			4.1E-11	mg/kg/day	3.0E-04	mg/kg/day	1.E-07
				Thallium	0.0037	mg/l	NC		NC			4.7E-08	mg/kg/day	8.0E-05	mg/kg/day	6.E-04
				Nitrate	0.76	mg/l	NC		NC			9.7E-06	mg/kg/day	1.6E+00	mg/kg/day	6.E-06
				Nitrite-N	0.12	mg/l	NC		NC			1.5E-06	mg/kg/day	1.0E-01	mg/kg/day	2.E-05
				Toxicity Equivalency (Dioxins/Furans)	0.0000011	mg/l	2.4E-12	mg/kg/day	1.5E+05	mg/kg/day	4.E-07	1.4E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-07					2.E-03
			DERMAL	Tetrachloroethene	0.00055	mg/l	2.7E-07	mg/kg/day	5.4E-01	mg/kg/day	1.E-07	1.6E-06	mg/kg/day	1.0E-02	mg/kg/day	2.E-04
				bis(2-Ethylhexyl)phthalate	0.001	mg/l	1.3E-06	mg/kg/day	1.4E-02	mg/kg/day	2.E-08	7.6E-06	mg/kg/day	2.0E-02	mg/kg/day	4.E-04
				Aldrin	0.000011	mg/l	8.3E-10	mg/kg/day	1.7E+01	mg/kg/day	1.E-08	4.8E-09	mg/kg/day	3.0E-05	mg/kg/day	2.E-04
				alpha-Chlordane	0.00000069	mg/l	1.2E-09	mg/kg/day	3.5E-01	mg/kg/day	4.E-10	7.1E-09	mg/kg/day	5.0E-04	mg/kg/day	1.E-05
				Aroclor-1254	0.0006	mg/l	--		2.0E+00	mg/kg/day		--		2.0E-05	mg/kg/day	
				delta-BHC	0.0000096	mg/l	NC		NC			1.8E-08	mg/kg/day	3.0E-04	mg/kg/day	6.E-05

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TABLE F.7.25.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Endosulfan Sulfate	0.00043	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.0000028	mg/l	NC		NC			9.7E-09	mg/kg/day	3.0E-04	mg/kg/day	3.E-05
				gamma-Chlordane	0.000025	mg/l	4.4E-08	mg/kg/day	3.5E-01	mg/kg/day	2.E-08	2.6E-07	mg/kg/day	5.0E-04	mg/kg/day	5.E-04
				Arsenic	0.0044	mg/l	3.3E-08	mg/kg/day	1.5E+00	mg/kg/day	5.E-08	1.9E-07	mg/kg/day	3.0E-04	mg/kg/day	6.E-04
				Barium	0.044	mg/l	NC		NC			1.9E-06	mg/kg/day	4.9E-03	mg/kg/day	4.E-04
				Chromium	0.018	mg/l	NC		NC			1.6E-06	mg/kg/day	7.5E-05	mg/kg/day	2.E-02
				Lead	0.021	mg/l	--		--			--				
				Manganese	0.98	mg/l	NC		NC			4.3E-05	mg/kg/day	9.6E-04	mg/kg/day	5.E-02
				Mercury	0.00000319	mg/l	NC		NC			1.4E-10	mg/kg/day	2.1E-05	mg/kg/day	7.E-06
				Thallium	0.0037	mg/l	NC		NC			1.6E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Nitrate	0.76	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.12	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.0000011	mg/l	1.9E-08	mg/kg/day	1.5E+05	mg/kg/day	3.E-03	1.1E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-03					7.E-02
		EXPOSURE POINT TOTAL									3.E-03					7.E-02
	EXPOSURE MEDIUM TOTAL										3.E-03					7.E-02
SURFACE WATER TOTAL											3.E-03					7.E-02
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.0013	mg/kg	NC		NC			1.1E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.00807	mg/kg	NC		NC			6.5E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDD	0.0131	mg/kg	1.8E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	4.E-07	1.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDE	0.021	mg/kg	2.9E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	1.7E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				4,4'-DDT	0.00892	mg/kg	1.2E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-07	7.2E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.0192	mg/kg	2.7E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-07	1.6E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Aroclor-1254	0.58187	mg/kg	1.2E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	7.2E-04	mg/kg/day	2.0E-05	mg/kg/day	4.E+01
				Aroclor-1268	0.01504	mg/kg	2.1E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-06	1.2E-05	mg/kg/day	2.0E-05	mg/kg/day	6.E-01
				beta-BHC	0.00062	mg/kg	8.6E-08	mg/kg/day	1.8E+00	(mg/kg/day)-1	2.E-07	5.0E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Dieldrin	0.00912	mg/kg	1.3E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-05	7.4E-06	mg/kg/day	5.0E-05	mg/kg/day	1.E-01
				Endosulfan Sulfate	0.00158	mg/kg	NC		NC			1.3E-06	mg/kg/day	6.0E-03	mg/kg/day	2.E-04
				Endrin Aldehyde	0.001	mg/kg	NC		NC			8.1E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				gamma-Chlordane	0.00712	mg/kg	9.9E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	5.8E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Heptachlor	0.000678	mg/kg	9.4E-08	mg/kg/day	4.5E+00	(mg/kg/day)-1	4.E-07	5.5E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Heptachlor Epoxide	0.0015	mg/kg	2.1E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-06	1.2E-06	mg/kg/day	1.3E-05	mg/kg/day	9.E-02
				Technical Chlordane	0.2615	mg/kg	3.6E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	2.1E-04	mg/kg/day	5.0E-04	mg/kg/day	4.E-01
				Cadmium	0.0971	mg/kg	NC		NC			7.9E-05	mg/kg/day	1.0E-03	mg/kg/day	8.E-02
				Lead	0.58	mg/kg	8.1E-05	mg/kg/day	--			4.7E-04	mg/kg/day			
				Manganese	5.04	mg/kg	NC		NC			4.1E-03	mg/kg/day	1.4E-01	mg/kg/day	3.E-02
				Mercury	0.153	mg/kg	NC		NC			1.2E-04	mg/kg/day	3.0E-04	mg/kg/day	4.E-01
				Mercury (methyl)	0.269	mg/kg	NC		NC			2.2E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000111	mg/kg	1.5E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-03	9.0E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000356	mg/kg	4.9E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-04	2.9E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-03					4.0 E+01
		EXPOSURE POINT TOTAL									3.E-03					4.0 E+01
	EXPOSURE MEDIUM TOTAL										3.E-03					4.0 E+01
WHOLE BODY TOTAL											3.E-03					4.0 E+01
TOTAL RECEPTOR RISK ACROSS ALL MEDIA											6.E-03	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				4.0 E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

US EPA ARCHIVE DOCUMENT

TABLE F.7.26.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SOIL	SOIL	ALLENDALE POND	INGESTION	2,3,7,8-TCDD	0.00027	mg/kg	7.3E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-06	4.3E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-06					--
			DERMAL	2,3,7,8-TCDD	0.00027	mg/kg	1.7E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-07	9.8E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-07					--
		EXPOSURE POINT TOTAL									1.E-06					0.E+00
	EXPOSURE MEDIUM TOTAL										1.E-06					0.E+00
SOIL TOTAL											1.E-06					0.E+00
SEDIMENT	SEDIMENT	ALLENDALE POND	INGESTION	2-Methylnaphthalene	0.13608	mg/kg	NC		NC			1.3E-08	mg/kg/day	2.0E-02	mg/kg/day	7.E-07
				Acenaphthylene	0.97	mg/kg	NC		NC			9.6E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				Benzo(a)anthracene	3.4	mg/kg	5.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	3.4E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(a)pyrene	4	mg/kg	6.8E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-07	4.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(b)fluoranthene	4.4	mg/kg	7.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	4.4E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	2	mg/kg	NC		NC			2.0E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Benzo(k)fluoranthene	3.9	mg/kg	6.6E-08	mg/kg/day	7.3E-02	(mg/kg/day)-1	5.E-09	3.9E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				bis(2-Ethylhexyl)phthalate	3.2	mg/kg	5.4E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	8.E-10	3.2E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	2	mg/kg	3.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	2.0E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Indeno(1,2,3-cd)pyrene	3.2	mg/kg	5.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	3.2E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Pentachlorophenol	6.5	mg/kg	1.1E-07	mg/kg/day	1.2E-01	(mg/kg/day)-1	1.E-08	6.4E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	4.8	mg/kg	NC		NC			4.7E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				alpha-Chlordane	0.0113	mg/kg	1.9E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-11	1.1E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Aroclor-1254	2.4	mg/kg	4.1E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-08	2.4E-07	mg/kg/day	2.0E-05	mg/kg/day	1.E-02
				Aroclor-1260	0.2	mg/kg	3.4E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-09	2.0E-08	mg/kg/day	2.0E-05	mg/kg/day	1.E-03
				Aroclor-1268	0.079	mg/kg	1.3E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-09	7.8E-09	mg/kg/day	2.0E-05	mg/kg/day	4.E-04
				delta-BHC	0.0014	mg/kg	NC		NC			1.4E-10	mg/kg/day	3.0E-04	mg/kg/day	5.E-07
				Dieldrin	0.009	mg/kg	1.5E-10	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-09	8.9E-10	mg/kg/day	5.0E-05	mg/kg/day	2.E-05
				Endosulfan II	0.037	mg/kg	NC		NC			3.7E-09	mg/kg/day	6.0E-03	mg/kg/day	6.E-07
				Endosulfan sulfate	0.0027	mg/kg	NC		NC			2.7E-10	mg/kg/day	6.0E-03	mg/kg/day	4.E-08
				Endrin aldehyde	0.0029	mg/kg	NC		NC			2.9E-10	mg/kg/day	3.0E-04	mg/kg/day	1.E-06
				Endrin Ketone	0.0038	mg/kg	NC		NC			3.8E-10	mg/kg/day	3.0E-04	mg/kg/day	1.E-06
				gamma-Chlordane	0.017	mg/kg	2.9E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	1.7E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Technical Chlordane	0.65	mg/kg	1.1E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-09	6.4E-08	mg/kg/day	5.0E-04	mg/kg/day	1.E-04
				Antimony	4.8	mg/kg	NC		NC			4.7E-07	mg/kg/day	4.0E-04	mg/kg/day	1.E-03
				Arsenic	5.8	mg/kg	9.8E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-07	5.7E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Cadmium	1.2	mg/kg	NC		NC			1.2E-07	mg/kg/day	1.0E-03	mg/kg/day	1.E-04
				Chromium	238	mg/kg	NC		NC			2.4E-05	mg/kg/day	3.0E-03	mg/kg/day	8.E-03
				Lead	488	mg/kg	8.3E-06	mg/kg/day	--			4.8E-05	mg/kg/day			
				Manganese	531	mg/kg	NC		NC			5.3E-05	mg/kg/day	7.1E-02	mg/kg/day	7.E-04
				Mercury	0.97	mg/kg	NC		NC			9.6E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				Nickel	26.7	mg/kg	NC		NC			2.6E-06	mg/kg/day	2.0E-02	mg/kg/day	1.E-04
				Thallium	6.8	mg/kg	NC		NC			6.7E-07	mg/kg/day	8.0E-05	mg/kg/day	8.E-03
				Vanadium	45.9	mg/kg	NC		NC			4.5E-06	mg/kg/day	7.0E-03	mg/kg/day	6.E-04
				Toxicity Equivalency (Dioxins/Furans)	0.0057	mg/kg	9.7E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-05	5.6E-10	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000000112	mg/kg	1.9E-15	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-10	1.1E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-05					3.E-02
			DERMAL	2-Methylnaphthalene	0.13608	mg/kg	NC		NC			1.0E-08	mg/kg/day	2.0E-02	mg/kg/day	5.E-07
				Acenaphthylene	0.97	mg/kg	NC		NC			7.1E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				Benzo(a)anthracene	3.4	mg/kg	4.3E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.5E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Benzo(a)pyrene	4	mg/kg	5.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	2.9E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(b)fluoranthene	4.4	mg/kg	5.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	3.2E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	2	mg/kg	NC		NC			1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Benzo(k)fluoranthene	3.9	mg/kg	4.9E-08	mg/kg/day	7.3E-02	(mg/kg/day)-1	4.E-09	2.9E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				bis(2-Ethylhexyl)phthalate	3.2	mg/kg	3.1E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	4.E-10	1.8E-07	mg/kg/day	2.0E-02	mg/kg/day	9.E-06
				Dibenzo(a,h)anthracene	2	mg/kg	2.5E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Indeno(1,2,3-cd)pyrene	3.2	mg/kg	4.0E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.4E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Pentachlorophenol	6.5	mg/kg	1.6E-07	mg/kg/day	1.2E-01	(mg/kg/day)-1	2.E-08	9.2E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Phenanthrene	4.8	mg/kg	NC		NC			3.5E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05

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TABLE F.7.26.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				alpha-Chlordane	0.0113	mg/kg	4.4E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-11	2.6E-10	mg/kg/day	5.0E-04	mg/kg/day	5.E-07
				Aroclor-1254	2.4	mg/kg	3.3E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-08	1.9E-07	mg/kg/day	2.0E-05	mg/kg/day	1.E-02
				Aroclor-1260	0.2	mg/kg	2.7E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-09	1.6E-08	mg/kg/day	2.0E-05	mg/kg/day	8.E-04
				Aroclor-1268	0.079	mg/kg	1.1E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-09	6.3E-09	mg/kg/day	2.0E-05	mg/kg/day	3.E-04
				delta-BHC	0.0014	mg/kg	NC		NC			7.9E-11	mg/kg/day	3.0E-04	mg/kg/day	3.E-07
				Dieldrin	0.009	mg/kg	8.7E-11	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-09	5.1E-10	mg/kg/day	5.0E-05	mg/kg/day	1.E-05
				Endosulfan II	0.037	mg/kg	NC		NC			2.1E-09	mg/kg/day	6.0E-03	mg/kg/day	3.E-07
				Endosulfan sulfate	0.0027	mg/kg	NC		NC			1.5E-10	mg/kg/day	6.0E-03	mg/kg/day	3.E-08
				Endrin aldehyde	0.0039	mg/kg	NC		NC			1.6E-10	mg/kg/day	3.0E-04	mg/kg/day	5.E-07
				Endrin Ketone	0.0038	mg/kg	NC		NC			2.1E-10	mg/kg/day	3.0E-04	mg/kg/day	7.E-07
				gamma-Chlordane	0.017	mg/kg	6.6E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-11	3.8E-10	mg/kg/day	5.0E-04	mg/kg/day	8.E-07
				Technical Chlordane	0.65	mg/kg	2.5E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-10	1.5E-08	mg/kg/day	5.0E-04	mg/kg/day	3.E-05
				Antimony	4.8	mg/kg	NC		NC					6.0E-05	mg/kg/day	
				Arsenic	5.8	mg/kg	1.7E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-08	9.8E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				Cadmium	1.2	mg/kg	NC		NC			6.8E-10	mg/kg/day	2.5E-05	mg/kg/day	3.E-05
				Chromium	238	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	488	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	531	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Mercury	0.97	mg/kg	NC		NC					2.1E-05	mg/kg/day	
				Nickel	26.7	mg/kg	NC		NC					8.0E-04	mg/kg/day	
				Thallium	6.8	mg/kg	NC		NC					8.0E-05	mg/kg/day	
				Vanadium	45.9	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.0057	mg/kg	1.7E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-06	9.7E-11	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000000112	mg/kg	3.3E-16	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-11	1.9E-15	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-06					1.E-02
		EXPOSURE POINT TOTAL									2.E-05					5.E-02
	EXPOSURE MEDIUM TOTAL										2.E-05					5.E-02
SEDIMENT TOTAL											2.E-05					5.E-02
SURFACE WATER	SURFACE WATER	ALLENDALE POND	INGESTION	Tetrachloroethene	0.00055	mg/l	1.9E-09	mg/kg/day	5.4E-01	mg/kg/day	1.E-09	1.1E-08	mg/kg/day	1.0E-02	mg/kg/day	1.E-06
				bis(2-Ethylhexyl)phthalate	0.001	mg/l	3.4E-09	mg/kg/day	1.4E-02	mg/kg/day	5.E-11	2.0E-08	mg/kg/day	2.0E-02	mg/kg/day	1.E-06
				Aldrin	0.000011	mg/l	3.7E-11	mg/kg/day	1.7E+01	mg/kg/day	6.E-10	2.2E-10	mg/kg/day	3.0E-05	mg/kg/day	7.E-06
				alpha-Chlordane	0.00000069	mg/l	2.3E-12	mg/kg/day	3.5E-01	mg/kg/day	8.E-13	1.4E-11	mg/kg/day	5.0E-04	mg/kg/day	3.E-08
				Aroclor-1254	0.0006	mg/l	2.0E-09	mg/kg/day	2.0E+00	mg/kg/day	4.E-09	1.2E-08	mg/kg/day	2.0E-05	mg/kg/day	6.E-04
				delta-BHC	0.0000096	mg/l	NC		NC			1.9E-10	mg/kg/day	3.0E-04	mg/kg/day	6.E-07
				Endosulfan Sulfate	0.00043	mg/l	NC		NC			8.5E-09	mg/kg/day	6.0E-03	mg/kg/day	1.E-06
				Endrin Aldehyde	0.0000028	mg/l	NC		NC			5.5E-11	mg/kg/day	3.0E-04	mg/kg/day	2.E-07
				gamma-Chlordane	0.000025	mg/l	8.5E-11	mg/kg/day	3.5E-01	mg/kg/day	3.E-11	4.9E-10	mg/kg/day	5.0E-04	mg/kg/day	1.E-06
				Arsenic	0.0044	mg/l	1.5E-08	mg/kg/day	1.5E+00	mg/kg/day	2.E-08	8.7E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				Barium	0.044	mg/l	NC		NC			8.7E-07	mg/kg/day	7.0E-02	mg/kg/day	1.E-05
				Chromium	0.018	mg/l	NC		NC			3.6E-07	mg/kg/day	3.0E-03	mg/kg/day	1.E-04
				Lead	0.021	mg/l	7.1E-08	mg/kg/day	--			4.2E-07	mg/kg/day			
				Manganese	0.98	mg/l	NC		NC			1.9E-05	mg/kg/day	2.4E-02	mg/kg/day	8.E-04
				Mercury	0.00000319	mg/l	NC		NC			6.3E-11	mg/kg/day	3.0E-04	mg/kg/day	2.E-07
				Thallium	0.0037	mg/l	NC		NC			7.3E-08	mg/kg/day	8.0E-05	mg/kg/day	9.E-04
				Nitrate	0.76	mg/l	NC		NC			1.5E-05	mg/kg/day	1.6E+00	mg/kg/day	9.E-06
				Nitrite-N	0.12	mg/l	NC		NC			2.4E-06	mg/kg/day	1.0E-01	mg/kg/day	2.E-05
				Toxicity Equivalency (Dioxins/Furans)	0.0000011	mg/l	3.7E-12	mg/kg/day	1.5E+05	mg/kg/day	6.E-07	2.2E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-07					3.E-03
			DERMAL	Tetrachloroethene	0.00055	mg/l	3.1E-07	mg/kg/day	5.4E-01	mg/kg/day	2.E-07	1.8E-06	mg/kg/day	1.0E-02	mg/kg/day	2.E-04
				bis(2-Ethylhexyl)phthalate	0.001	mg/l	1.5E-06	mg/kg/day	1.4E-02	mg/kg/day	2.E-08	8.5E-06	mg/kg/day	2.0E-02	mg/kg/day	4.E-04
				Aldrin	0.000011	mg/l	9.3E-10	mg/kg/day	1.7E+01	mg/kg/day	2.E-08	5.4E-09	mg/kg/day	3.0E-05	mg/kg/day	2.E-04
				alpha-Chlordane	0.00000069	mg/l	1.4E-09	mg/kg/day	3.5E-01	mg/kg/day	5.E-10	7.9E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-05
				Aroclor-1254	0.0006	mg/l	--		2.0E+00	mg/kg/day		--		2.0E-05	mg/kg/day	
				delta-BHC	0.0000096	mg/l	NC		NC			2.0E-08	mg/kg/day	3.0E-04	mg/kg/day	7.E-05

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BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	CSF/UNIT RISK VALUE	CSF UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	RfD/RfC (1) VALUE	RfD/RfC UNITS	HAZARD QUOTIENT
				Endosulfan Sulfate	0.00043	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.0000028	mg/l	NC		NC			1.1E-08	mg/kg/day	3.0E-04	mg/kg/day	4.E-05
				gamma-Chlordane	0.000025	mg/l	4.9E-08	mg/kg/day	3.5E-01	mg/kg/day	2.E-08	2.9E-07	mg/kg/day	5.0E-04	mg/kg/day	6.E-04
				Arsenic	0.0044	mg/l	3.7E-08	mg/kg/day	1.5E+00	mg/kg/day	6.E-08	2.2E-07	mg/kg/day	3.0E-04	mg/kg/day	7.E-04
				Barium	0.044	mg/l	NC		NC			2.2E-06	mg/kg/day	4.9E-03	mg/kg/day	4.E-04
				Chromium	0.018	mg/l	NC		NC			1.8E-06	mg/kg/day	7.5E-05	mg/kg/day	2.E-02
				Lead	0.021	mg/l	--		--			--				
				Manganese	0.98	mg/l	NC		NC			4.9E-05	mg/kg/day	9.6E-04	mg/kg/day	5.E-02
				Mercury	0.00000319	mg/l	NC		NC			1.6E-10	mg/kg/day	2.1E-05	mg/kg/day	8.E-06
				Thallium	0.0037	mg/l	NC		NC			1.8E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Nitrate	0.76	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.12	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.0000011	mg/l	2.1E-08	mg/kg/day	1.5E+05	mg/kg/day	3.E-03	1.2E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-03					8.E-02
		EXPOSURE POINT TOTAL									3.E-03					8.E-02
	EXPOSURE MEDIUM TOTAL										3.E-03					8.E-02
SURFACE WATER TOTAL											3.E-03					8.E-02
	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.0013	mg/kg	NC		NC			8.2E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
AMERICAN EEL				Phenanthrene	0.00807	mg/kg	NC		NC			5.1E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDD	0.0131	mg/kg	1.4E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	3.E-07	8.3E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDE	0.021	mg/kg	2.3E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	8.E-07	1.3E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				4,4'-DDT	0.00892	mg/kg	9.7E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-07	5.6E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.0192	mg/kg	2.1E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-07	1.2E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	0.88167	mg/kg	9.6E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	5.6E-04	mg/kg/day	2.0E-05	mg/kg/day	3.E+01
				Aroclor-1268	0.01504	mg/kg	1.6E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-06	9.5E-06	mg/kg/day	2.0E-05	mg/kg/day	5.E-01
				beta-BHC	0.00062	mg/kg	6.7E-08	mg/kg/day	1.8E+00	(mg/kg/day)-1	1.E-07	3.9E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Dieldrin	0.00912	mg/kg	9.9E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-05	5.8E-06	mg/kg/day	5.0E-05	mg/kg/day	1.E-01
				Endosulfan Sulfate	0.00158	mg/kg	NC		NC			1.0E-06	mg/kg/day	6.0E-03	mg/kg/day	2.E-04
				Endrin Aldehyde	0.001	mg/kg	NC		NC			6.3E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				gamma-Chlordane	0.00712	mg/kg	7.7E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	4.5E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				Heptachlor	0.000678	mg/kg	7.4E-08	mg/kg/day	4.5E+00	(mg/kg/day)-1	3.E-07	4.3E-07	mg/kg/day	5.0E-04	mg/kg/day	9.E-04
				Heptachlor Epoxide	0.0015	mg/kg	1.6E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	1.E-06	9.5E-07	mg/kg/day	1.3E-05	mg/kg/day	7.E-02
				Technical Chlordane	0.2615	mg/kg	2.8E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	1.7E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				Cadmium	0.0971	mg/kg	NC		NC			6.1E-05	mg/kg/day	1.0E-03	mg/kg/day	6.E-02
				Lead	0.58	mg/kg	6.3E-05	mg/kg/day	--			3.7E-04	mg/kg/day			
				Manganese	5.04	mg/kg	NC		NC			3.2E-03	mg/kg/day	1.4E-01	mg/kg/day	2.E-02
				Mercury	0.153	mg/kg	NC		NC			9.7E-05	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				Mercury (methyl)	0.269	mg/kg	NC		NC			1.7E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000111	mg/kg	1.2E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-03	7.0E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000356	mg/kg	3.9E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-04	2.3E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-03					3.1E+01
		EXPOSURE POINT TOTAL									3.E-03					3.1E+01
	EXPOSURE MEDIUM TOTAL										3.E-03					3.1E+01
WHOLE BODY TOTAL											3.E-03					3.1E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											6.E-03					3.1E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.27.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.0013	mg/kg	NC		NC			1.8E-06	mg/kg/day	6.0E-02	mg/kg/day	3.E-05
				Phenanthrene	0.00807	mg/kg	NC		NC			1.1E-05	mg/kg/day	3.0E-02	mg/kg/day	4.E-04
				4,4'-DDD	0.0131	mg/kg	1.5E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	4.E-07	1.8E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				4,4'-DDE	0.021	mg/kg	2.4E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	8.E-07	2.8E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				4,4'-DDT	0.00892	mg/kg	1.0E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-07	1.2E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.0192	mg/kg	2.2E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-07	2.6E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				Aroclor-1254	0.88187	mg/kg	1.0E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	1.2E-03	mg/kg/day	2.0E-05	mg/kg/day	6.E+01
				Aroclor-1268	0.01504	mg/kg	1.7E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-06	2.0E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				beta-BHC	0.00062	mg/kg	7.2E-08	mg/kg/day	1.8E+00	(mg/kg/day)-1	1.E-07	8.4E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				Dieldrin	0.00912	mg/kg	1.1E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-05	1.2E-05	mg/kg/day	5.0E-05	mg/kg/day	2.E-01
				Endosulfan Sulfate	0.00158	mg/kg	NC		NC			2.1E-06	mg/kg/day	6.0E-03	mg/kg/day	4.E-04
				Endrin Aldehyde	0.001	mg/kg	NC		NC			1.3E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				gamma-Chlordane	0.00712	mg/kg	8.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	9.6E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Heptachlor	0.000678	mg/kg	7.8E-08	mg/kg/day	4.5E+00	(mg/kg/day)-1	4.E-07	9.1E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Heptachlor Epoxide	0.0015	mg/kg	1.7E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-06	2.0E-06	mg/kg/day	1.3E-05	mg/kg/day	2.E-01
				Technical Chlordane	0.2615	mg/kg	3.0E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	3.5E-04	mg/kg/day	5.0E-04	mg/kg/day	7.E-01
				Cadmium	0.0971	mg/kg	NC		NC			1.3E-04	mg/kg/day	1.0E-03	mg/kg/day	1.E-01
				Lead	0.58	mg/kg	6.7E-05	mg/kg/day	--			7.8E-04	mg/kg/day			
				Manganese	5.04	mg/kg	NC		NC			6.8E-03	mg/kg/day	1.4E-01	mg/kg/day	5.E-02
				Mercury	0.153	mg/kg	NC		NC			2.1E-04	mg/kg/day	3.0E-04	mg/kg/day	7.E-01
				Mercury (methyl)	*0.269*	mg/kg	NC		NC			*3.6E-04*	mg/kg/day	*1.0E-04*	mg/kg/day	*4.E+00*
				Toxicity Equivalency (Dioxins/Furans)	0.000111	mg/kg	1.3E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-03	1.5E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000356	mg/kg	4.1E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-04	4.8E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-03					6.6.E+01
		EXPOSURE POINT TOTAL									3.E-03					6.6.E+01
	EXPOSURE MEDIUM TOTAL										3.E-03					6.6.E+01
WHOLE BODY TOTAL											3.E-03					6.6.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA 6.6.E+01
											3.E-03					

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.28.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SOIL	SOIL	ALLENDALE POND	INGESTION	2,3,7,8-TCDD	0.00027	mg/kg	4.7E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-07	2.7E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								7.E-07					--
			DERMAL	2,3,7,8-TCDD	0.00027	mg/kg	3.2E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-08	1.9E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-08					--
		EXPOSURE POINT TOTAL									8.E-07					0.E+00
	EXPOSURE MEDIUM TOTAL										8.E-07					0.E+00
SOIL TOTAL											8.E-07					0.E+00
SEDIMENT	SEDIMENT	ALLENDALE POND	INGESTION	2-Methylnaphthalene	0.13608	mg/kg	NC		NC			8.7E-09	mg/kg/day	2.0E-02	mg/kg/day	4.E-07
				Acenaphthylene	0.97	mg/kg	NC		NC			6.2E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				Benzo(a)anthracene	3.4	mg/kg	3.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.2E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Benzo(a)pyrene	4	mg/kg	4.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	2.5E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Benzo(b)fluoranthene	4.4	mg/kg	4.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	2.8E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				Benzo(g,h,i)perylene	2	mg/kg	NC		NC			1.3E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Benzo(k)fluoranthene	3.9	mg/kg	4.3E-08	mg/kg/day	7.3E-02	(mg/kg/day)-1	3.E-09	2.5E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				bis(2-Ethylhexyl)phthalate	3.2	mg/kg	3.5E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	5.E-10	2.0E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	2	mg/kg	2.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.3E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Indeno(1,2,3-cd)pyrene	3.2	mg/kg	3.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.0E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Pentachlorophenol	6.5	mg/kg	7.1E-08	mg/kg/day	1.2E-01	(mg/kg/day)-1	9.E-09	4.1E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	4.8	mg/kg	NC		NC			3.1E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				alpha-Chlordane	0.0113	mg/kg	1.2E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-11	7.2E-10	mg/kg/day	3.0E-04	mg/kg/day	1.E-06
				Aroclor-1254	2.4	mg/kg	2.6E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-08	1.5E-07	mg/kg/day	2.0E-05	mg/kg/day	8.E-03
				Aroclor-1260	0.2	mg/kg	2.2E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-09	1.3E-08	mg/kg/day	2.0E-05	mg/kg/day	6.E-04
				Aroclor-1268	0.079	mg/kg	8.6E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-09	5.0E-09	mg/kg/day	2.0E-05	mg/kg/day	3.E-04
				delta-BHC	0.0014	mg/kg	NC		NC			8.9E-11	mg/kg/day	3.0E-04	mg/kg/day	3.E-07
				Dieldrin	0.009	mg/kg	9.8E-11	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-09	5.7E-10	mg/kg/day	5.0E-05	mg/kg/day	1.E-05
				Endosulfan II	0.037	mg/kg	NC		NC			2.4E-09	mg/kg/day	6.0E-03	mg/kg/day	4.E-07
				Endosulfan sulfate	0.0027	mg/kg	NC		NC			1.7E-10	mg/kg/day	6.0E-03	mg/kg/day	3.E-08
				Endrin aldehyde	0.0029	mg/kg	NC		NC			1.8E-10	mg/kg/day	3.0E-04	mg/kg/day	6.E-07
				Endrin Ketone	0.0038	mg/kg	NC		NC			2.4E-10	mg/kg/day	3.0E-04	mg/kg/day	8.E-07
				gamma-Chlordane	0.017	mg/kg	1.9E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-11	1.1E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Technical Chlordane	0.65	mg/kg	7.1E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-09	4.1E-08	mg/kg/day	5.0E-04	mg/kg/day	8.E-05
				Antimony	4.8	mg/kg	NC		NC			3.1E-07	mg/kg/day	4.0E-04	mg/kg/day	8.E-04
				Arsenic	5.8	mg/kg	6.3E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	9.E-08	3.7E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Cadmium	1.2	mg/kg	NC		NC			7.6E-08	mg/kg/day	1.0E-03	mg/kg/day	8.E-05
				Chromium	238	mg/kg	NC		NC			1.5E-05	mg/kg/day	3.0E-03	mg/kg/day	5.E-03
				Lead	488	mg/kg	5.3E-06	mg/kg/day	--			3.1E-05	mg/kg/day			
				Manganese	531	mg/kg	NC		NC			3.4E-05	mg/kg/day	7.1E-02	mg/kg/day	5.E-04
				Mercury	0.97	mg/kg	NC		NC			6.2E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Nickel	26.7	mg/kg	NC		NC			1.7E-06	mg/kg/day	2.0E-02	mg/kg/day	8.E-05
				Thallium	6.8	mg/kg	NC		NC			4.3E-07	mg/kg/day	8.0E-05	mg/kg/day	5.E-03
				Vanadium	45.9	mg/kg	NC		NC			2.9E-06	mg/kg/day	7.0E-03	mg/kg/day	4.E-04
				Toxicity Equivalency (Dioxins/Furans)	0.0057	mg/kg	6.2E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	9.E-06	3.6E-10	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000000112	mg/kg	1.2E-15	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-10	7.1E-15	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					2.E-02
			DERMAL	2-Methylnaphthalene	0.13608	mg/kg	NC		NC			2.2E-09	mg/kg/day	2.0E-02	mg/kg/day	1.E-07
				Acenaphthylene	0.97	mg/kg	NC		NC			1.6E-08	mg/kg/day	6.0E-02	mg/kg/day	3.E-07
				Benzo(a)anthracene	3.4	mg/kg	9.4E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-09	5.5E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(a)pyrene	4	mg/kg	1.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-08	6.4E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(b)fluoranthene	4.4	mg/kg	1.2E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-09	7.1E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(g,h,i)perylene	2	mg/kg	NC		NC			3.2E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Benzo(k)fluoranthene	3.9	mg/kg	1.1E-08	mg/kg/day	7.3E-02	(mg/kg/day)-1	8.E-10	6.3E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				bis(2-Ethylhexyl)phthalate	3.2	mg/kg	8.8E-09	mg/kg/day	1.4E-02	(mg/kg/day)-1	9.E-11	4.0E-08	mg/kg/day	2.0E-02	mg/kg/day	2.E-06
				Dibenzo(a,h)anthracene	2	mg/kg	5.5E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-08	3.2E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Indeno(1,2,3-cd)pyrene	3.2	mg/kg	8.8E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-09	5.1E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Pentachlorophenol	6.5	mg/kg	3.4E-08	mg/kg/day	1.2E-01	(mg/kg/day)-1	4.E-09	2.0E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Phenanthrene	4.8	mg/kg	NC		NC			7.7E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				alpha-Chlordane	0.0113	mg/kg	9.6E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-12	5.6E-11	mg/kg/day	3.0E-04	mg/kg/day	1.E-07
				Aroclor-1254	2.4	mg/kg	7.1E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-08	4.2E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03

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TABLE F.7.28.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
				Aroclor-1260	0.2	mg/kg	5.9E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-09	3.5E-09	mg/kg/day	2.0E-05	mg/kg/day	2.E-04
				Aroclor-1268	0.079	mg/kg	2.3E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-10	1.4E-09	mg/kg/day	2.0E-05	mg/kg/day	7.E-05
				delta-BHC	0.0014	mg/kg	NC		NC			1.7E-11	mg/kg/day	3.0E-04	mg/kg/day	6.E-08
				Dieldrin	0.009	mg/kg	1.9E-11	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.E-10	1.1E-10	mg/kg/day	5.0E-05	mg/kg/day	2.E-06
				Endosulfan II	0.037	mg/kg	NC		NC			4.6E-10	mg/kg/day	6.0E-03	mg/kg/day	8.E-08
				Endosulfan sulfate	0.0027	mg/kg	NC		NC			3.3E-11	mg/kg/day	6.0E-03	mg/kg/day	6.E-09
				Endrin aldehyde	0.0029	mg/kg	NC		NC			3.6E-11	mg/kg/day	3.0E-04	mg/kg/day	1.E-07
				Endrin Ketone	0.0038	mg/kg	NC		NC			4.7E-11	mg/kg/day	3.0E-04	mg/kg/day	2.E-07
				gamma-Chlordane	0.017	mg/kg	1.4E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-12	8.4E-11	mg/kg/day	5.0E-04	mg/kg/day	2.E-07
				Technical Chlordane	0.65	mg/kg	5.5E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-10	3.2E-09	mg/kg/day	5.0E-04	mg/kg/day	6.E-06
				Antimony	4.8	mg/kg	NC		NC					6.0E-05	mg/kg/day	
				Arsenic	5.8	mg/kg	3.7E-09	mg/kg/day	1.5E+00	(mg/kg/day)-1	6.E-09	2.2E-08	mg/kg/day	3.0E-04	mg/kg/day	7.E-05
				Cadmium	1.2	mg/kg	NC		NC			1.5E-10	mg/kg/day	2.5E-05	mg/kg/day	6.E-06
				Chromium	238	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	488	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	531	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Mercury	0.97	mg/kg	NC		NC					2.1E-05	mg/kg/day	
				Nickel	26.7	mg/kg	NC		NC					8.0E-04	mg/kg/day	
				Thallium	6.8	mg/kg	NC		NC					8.0E-05	mg/kg/day	
				Vanadium	45.9	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.0057	mg/kg	3.6E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-07	2.1E-11	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000000112	mg/kg	7.1E-17	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-11	4.2E-16	mg/kg/day			
			EXPOSURE ROUTE TOTAL								7.E-07					2.E-03
		EXPOSURE POINT TOTAL									1.E-05					2.E-02
	EXPOSURE MEDIUM TOTAL										1.E-05					2.E-02
SEDIMENT TOTAL											1.E-05					2.E-02
SURFACE WATER	SURFACE WATER	ALLENDALE POND	INGESTION	Tetrachloroethene	0.00055	mg/l	1.2E-09	mg/kg/day	5.4E-01	mg/kg/day	6.E-10	7.0E-09	mg/kg/day	1.0E-02	mg/kg/day	7.E-07
				bis(2-Ethylhexyl)phthalate	0.001	mg/l	2.2E-09	mg/kg/day	1.4E-02	mg/kg/day	3.E-11	1.3E-08	mg/kg/day	2.0E-02	mg/kg/day	6.E-07
				Aldrin	0.000011	mg/l	2.4E-11	mg/kg/day	1.7E+01	mg/kg/day	4.E-10	1.4E-10	mg/kg/day	3.0E-05	mg/kg/day	5.E-06
				alpha-Chlordane	0.00000069	mg/l	1.5E-12	mg/kg/day	3.5E-01	mg/kg/day	5.E-13	8.8E-12	mg/kg/day	5.0E-04	mg/kg/day	2.E-08
				Aroclor-1254	0.0006	mg/l	1.3E-09	mg/kg/day	2.0E+00	mg/kg/day	3.E-09	7.6E-09	mg/kg/day	2.0E-05	mg/kg/day	4.E-04
				delta-BHC	0.0000096	mg/l	NC		NC			1.2E-10	mg/kg/day	3.0E-04	mg/kg/day	4.E-07
				Endosulfan Sulfate	0.00043	mg/l	NC		NC			5.5E-09	mg/kg/day	6.0E-03	mg/kg/day	9.E-07
				Endrin Aldehyde	0.0000028	mg/l	NC		NC			3.6E-11	mg/kg/day	3.0E-04	mg/kg/day	1.E-07
				gamma-Chlordane	0.000025	mg/l	5.5E-11	mg/kg/day	3.5E-01	mg/kg/day	2.E-11	3.2E-10	mg/kg/day	5.0E-04	mg/kg/day	6.E-07
				Arsenic	0.0044	mg/l	9.0E-09	mg/kg/day	1.5E+00	mg/kg/day	1.E-08	5.8E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Barium	0.044	mg/l	NC		NC			5.8E-07	mg/kg/day	7.0E-02	mg/kg/day	8.E-06
				Chromium	0.018	mg/l	NC		NC			2.3E-07	mg/kg/day	3.0E-03	mg/kg/day	8.E-05
				Lead	0.021	mg/l	4.6E-08	mg/kg/day	--			2.7E-07	mg/kg/day			
				Manganese	0.98	mg/l	NC		NC			1.2E-05	mg/kg/day	2.4E-02	mg/kg/day	5.E-04
				Mercury	0.00000319	mg/l	NC		NC			4.1E-11	mg/kg/day	3.0E-04	mg/kg/day	1.E-07
				Thallium	0.0037	mg/l	NC		NC			4.7E-08	mg/kg/day	8.0E-05	mg/kg/day	6.E-04
				Nitrate	0.76	mg/l	NC		NC			9.7E-06	mg/kg/day	1.6E+00	mg/kg/day	6.E-06
				Nitrite-N	0.12	mg/l	NC		NC			1.5E-06	mg/kg/day	1.0E-01	mg/kg/day	2.E-05
				Toxicity Equivalency (Dioxins/Furans)	0.0000011	mg/l	2.4E-12	mg/kg/day	1.5E+05	mg/kg/day	4.E-07	1.4E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-07					2.E-03
			DERMAL	Tetrachloroethene	0.00055	mg/l	2.7E-07	mg/kg/day	5.4E-01	mg/kg/day	1.E-07	1.6E-06	mg/kg/day	1.0E-02	mg/kg/day	2.E-04
				bis(2-Ethylhexyl)phthalate	0.001	mg/l	1.3E-06	mg/kg/day	1.4E-02	mg/kg/day	2.E-08	7.6E-06	mg/kg/day	2.0E-02	mg/kg/day	4.E-04
				Aldrin	0.000011	mg/l	8.3E-10	mg/kg/day	1.7E+01	mg/kg/day	1.E-08	4.8E-09	mg/kg/day	3.0E-05	mg/kg/day	2.E-04
				alpha-Chlordane	0.00000069	mg/l	1.2E-09	mg/kg/day	3.5E-01	mg/kg/day	4.E-10	7.1E-09	mg/kg/day	5.0E-04	mg/kg/day	1.E-05
				Aroclor-1254	0.0006	mg/l	--		2.0E+00	mg/kg/day		--		2.0E-05	mg/kg/day	
				delta-BHC	0.0000096	mg/l	NC		NC			1.8E-08	mg/kg/day	3.0E-04	mg/kg/day	6.E-05
				Endosulfan Sulfate	0.00043	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.0000028	mg/l	NC		NC			9.7E-09	mg/kg/day	3.0E-04	mg/kg/day	3.E-05
				gamma-Chlordane	0.000025	mg/l	4.4E-08	mg/kg/day	3.5E-01	mg/kg/day	2.E-08	2.6E-07	mg/kg/day	5.0E-04	mg/kg/day	5.E-04
				Arsenic	0.0044	mg/l	3.3E-08	mg/kg/day	1.5E+00	mg/kg/day	5.E-08	1.9E-07	mg/kg/day	3.0E-04	mg/kg/day	6.E-04
				Barium	0.044	mg/l	NC		NC			1.9E-06	mg/kg/day	4.9E-03	mg/kg/day	4.E-04
				Chromium	0.018	mg/l	NC		NC			1.6E-06	mg/kg/day	7.5E-05	mg/kg/day	2.E-02
				Lead	0.021	mg/l	--		--			--				
				Manganese	0.98	mg/l	NC		NC			4.3E-05	mg/kg/day	9.6E-04	mg/kg/day	5.E-02

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TABLE F.7.28.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Mercury	0.00000319	mg/l	NC		NC			1.4E-10	mg/kg/day	2.1E-05	mg/kg/day	7.E-06
				Thallium	0.0037	mg/l	NC		NC			1.6E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Nitrate	0.76	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.12	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.0000011	mg/l	1.9E-08	mg/kg/day	1.5E+05	mg/kg/day	3.E-03	1.1E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-03					7.E-02
		EXPOSURE POINT TOTAL									3.E-03					7.E-02
	EXPOSURE MEDIUM TOTAL										3.E-03					7.E-02
SURFACE WATER TOTAL											3.E-03					7.E-02
	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.00268	mg/kg	NC		NC			2.2E-06	mg/kg/day	6.0E-02	mg/kg/day	4.E-05
WHITE SUCKER				Benzo(a)anthracene	0.0022	mg/kg	3.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.8E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Benzo(a)pyrene	0.0024	mg/kg	3.3E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	1.9E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Benzo(b)fluoranthene	0.0025	mg/kg	3.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.0E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(g,h,i)perylene	0.000632	mg/kg	NC		NC			5.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.0004	mg/kg	5.6E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	3.2E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Indeno(1,2,3-cd)pyrene	0.00079	mg/kg	1.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-08	6.4E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.01143	mg/kg	NC		NC			9.3E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				4,4'-DDD	0.0126	mg/kg	1.8E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	4.E-07	1.0E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDE	0.02869	mg/kg	4.0E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	2.3E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				4,4'-DDT	0.00686	mg/kg	9.5E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-07	5.6E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.0236	mg/kg	3.3E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	1.9E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				Aroclor-1254	2.8888	mg/kg	4.0E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-04	2.3E-03	mg/kg/day	2.0E-05	mg/kg/day	1.E+02
				Aroclor-1268	0.03843	mg/kg	5.3E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	3.1E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Dieldrin	0.00866	mg/kg	1.2E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-05	7.0E-06	mg/kg/day	5.0E-05	mg/kg/day	1.E-01
				gamma-Chlordane	0.0089	mg/kg	1.2E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-07	7.2E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Heptachlor Epoxide	0.0007	mg/kg	9.7E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	9.E-07	5.7E-07	mg/kg/day	1.3E-05	mg/kg/day	4.E-02
				Technical Chlordane	0.674	mg/kg	9.4E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-05	5.5E-04	mg/kg/day	5.0E-04	mg/kg/day	1.E+00
				Chromium	0.112	mg/kg	NC		NC			9.1E-05	mg/kg/day	3.0E-03	mg/kg/day	3.E-02
				Lead	0.16	mg/kg	2.2E-05	mg/kg/day	--			1.3E-04	mg/kg/day			
				Mercury	0.136	mg/kg	NC		NC			1.1E-04	mg/kg/day	3.0E-04	mg/kg/day	4.E-01
				Mercury (methyl)	0.147	mg/kg	NC		NC			1.2E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000492	mg/kg	6.8E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-02	4.0E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000195	mg/kg	2.7E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-04	1.6E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-02					1.2.E+02
		EXPOSURE POINT TOTAL									1.E-02					1.2.E+02
	EXPOSURE MEDIUM TOTAL										1.E-02					1.2.E+02
WHOLE BODY TOTAL											1.E-02					1.2.E+02
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											1.E-02					1.2.E+02

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availalable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TABLE F-7.29-CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	ALLENDALE POND	INGESTION	2,3,7,8-TCDD	0.00027	mg/kg	7.3E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	1 E-06	4.3E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1 E-06					--
			DERMAL	2,3,7,8-TCDD	0.00027	mg/kg	1.7E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	3 E-07	9.8E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3 E-07					--
		EXPOSURE POINT TOTAL									1 E-06					0 E+00
	EXPOSURE MEDIUM TOTAL										1 E-06					0 E+00
SOIL TOTAL											1 E-06					0 E+00
SEDIMENT	SEDIMENT	ALLENDALE POND	INGESTION	2-Methylnaphthalene	0.13608	mg/kg	NC		NC			1.3E-08	mg/kg/day	2.0E-02	mg/kg/day	7 E-07
				Acenaphthylene	0.97	mg/kg	NC		NC			9.6E-08	mg/kg/day	6.0E-02	mg/kg/day	2 E-06
				Benzo(a)anthracene	3.4	mg/kg	5.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4 E-08	3.4E-07	mg/kg/day	3.0E-02	mg/kg/day	1 E-05
				Benzo(a)pyrene	4	mg/kg	6.8E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	5 E-07	4.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1 E-05
				Benzo(b)fluoranthene	4.4	mg/kg	7.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5 E-08	4.4E-07	mg/kg/day	3.0E-02	mg/kg/day	1 E-05
				Benzo(g,h,i)perylene	2	mg/kg	NC		NC			2.0E-07	mg/kg/day	3.0E-02	mg/kg/day	7 E-06
				Benzo(k)fluoranthene	3.9	mg/kg	6.6E-08	mg/kg/day	7.3E-02	(mg/kg/day)-1	5 E-09	3.9E-07	mg/kg/day	3.0E-02	mg/kg/day	1 E-05
				bis(2-Ethylhexyl)phthalate	3.2	mg/kg	5.4E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	8 E-10	3.2E-07	mg/kg/day	2.0E-02	mg/kg/day	2 E-05
				Dibenzo(a,h)anthracene	2	mg/kg	3.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2 E-07	2.0E-07	mg/kg/day	3.0E-02	mg/kg/day	7 E-06
				Indeno(1,2,3-cd)pyrene	3.2	mg/kg	5.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4 E-08	3.2E-07	mg/kg/day	3.0E-02	mg/kg/day	1 E-05
				Pentachlorophenol	6.5	mg/kg	1.1E-07	mg/kg/day	1.2E-01	(mg/kg/day)-1	1 E-08	6.4E-07	mg/kg/day	3.0E-02	mg/kg/day	2 E-05
				Phenanthrene	4.8	mg/kg	NC		NC			4.7E-07	mg/kg/day	3.0E-02	mg/kg/day	2 E-05
				alpha-Chlordane	0.0113	mg/kg	1.9E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	7 E-11	1.1E-09	mg/kg/day	5.0E-04	mg/kg/day	2 E-06
				Aroclor-1254	2.4	mg/kg	4.1E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	8 E-08	2.4E-07	mg/kg/day	2.0E-05	mg/kg/day	1 E-02
				Aroclor-1260	0.2	mg/kg	3.4E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	7 E-09	2.0E-08	mg/kg/day	2.0E-05	mg/kg/day	1 E-03
				Aroclor-1268	0.079	mg/kg	1.3E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	3 E-09	7.8E-09	mg/kg/day	2.0E-05	mg/kg/day	4 E-04
				delta-BHC	0.0014	mg/kg	NC		NC			1.4E-10	mg/kg/day	3.0E-04	mg/kg/day	5 E-07
				Dieldrin	0.009	mg/kg	1.5E-10	mg/kg/day	1.6E+01	(mg/kg/day)-1	2 E-09	8.9E-10	mg/kg/day	5.0E-05	mg/kg/day	2 E-05
				Endosulfan II	0.037	mg/kg	NC		NC			3.7E-09	mg/kg/day	6.0E-03	mg/kg/day	6 E-07
				Endosulfan sulfate	0.0027	mg/kg	NC		NC			2.7E-10	mg/kg/day	6.0E-03	mg/kg/day	4 E-08
				Endrin aldehyde	0.0029	mg/kg	NC		NC			2.9E-10	mg/kg/day	3.0E-04	mg/kg/day	1 E-06
				Endrin Ketone	0.0038	mg/kg	NC		NC			3.8E-10	mg/kg/day	3.0E-04	mg/kg/day	1 E-06
				gamma-Chlordane	0.017	mg/kg	2.9E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1 E-10	1.7E-09	mg/kg/day	5.0E-04	mg/kg/day	3 E-06
				Technical Chlordane	0.65	mg/kg	1.1E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	4 E-09	6.4E-08	mg/kg/day	5.0E-04	mg/kg/day	1 E-04
				Antimony	4.8	mg/kg	NC		NC			4.7E-07	mg/kg/day	4.0E-04	mg/kg/day	1 E-03
				Arsenic	5.8	mg/kg	9.8E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	1 E-07	5.7E-07	mg/kg/day	3.0E-04	mg/kg/day	2 E-03
				Cadmium	1.2	mg/kg	NC		NC			1.2E-07	mg/kg/day	1.0E-03	mg/kg/day	1 E-04
				Chromium	238	mg/kg	NC		NC			2.4E-05	mg/kg/day	3.0E-03	mg/kg/day	8 E-03
				Lead	488	mg/kg	8.3E-06	mg/kg/day	--			4.8E-05	mg/kg/day			
				Manganese	531	mg/kg	NC		NC			5.3E-05	mg/kg/day	7.1E-02	mg/kg/day	7 E-04
				Mercury	0.97	mg/kg	NC		NC			9.6E-08	mg/kg/day	3.0E-04	mg/kg/day	3 E-04
				Nickel	26.7	mg/kg	NC		NC			2.6E-06	mg/kg/day	2.0E-02	mg/kg/day	1 E-04
				Thallium	6.8	mg/kg	NC		NC			6.7E-07	mg/kg/day	8.0E-05	mg/kg/day	8 E-03
				Vanadium	45.9	mg/kg	NC		NC			4.5E-06	mg/kg/day	7.0E-03	mg/kg/day	6 E-04
				Toxicity Equivalency (Dioxins/Furans)	0.0057	mg/kg	9.7E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	1 E-05	5.6E-10	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000000112	mg/kg	1.9E-15	mg/kg/day	1.5E+05	(mg/kg/day)-1	3 E-10	1.1E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2 E-05					3 E-02
			DERMAL	2-Methylnaphthalene	0.13608	mg/kg	NC		NC			1.0E-08	mg/kg/day	2.0E-02	mg/kg/day	5 E-07
				Acenaphthylene	0.97	mg/kg	NC		NC			7.1E-08	mg/kg/day	6.0E-02	mg/kg/day	1 E-06
				Benzo(a)anthracene	3.4	mg/kg	4.3E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3 E-08	2.5E-07	mg/kg/day	3.0E-02	mg/kg/day	8 E-06
				Benzo(a)pyrene	4	mg/kg	5.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4 E-07	2.9E-07	mg/kg/day	3.0E-02	mg/kg/day	1 E-05
				Benzo(b)fluoranthene	4.4	mg/kg	5.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4 E-08	3.2E-07	mg/kg/day	3.0E-02	mg/kg/day	1 E-05
				Benzo(g,h,i)perylene	2	mg/kg	NC		NC			1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5 E-06
				Benzo(k)fluoranthene	3.9	mg/kg	4.9E-08	mg/kg/day	7.3E-02	(mg/kg/day)-1	4 E-09	2.9E-07	mg/kg/day	3.0E-02	mg/kg/day	1 E-05
				bis(2-Ethylhexyl)phthalate	3.2	mg/kg	3.1E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	4 E-10	1.8E-07	mg/kg/day	2.0E-02	mg/kg/day	9 E-06
				Dibenzo(a,h)anthracene	2	mg/kg	2.5E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2 E-07	1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5 E-06
				Indeno(1,2,3-cd)pyrene	3.2	mg/kg	4.0E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3 E-08	2.4E-07	mg/kg/day	3.0E-02	mg/kg/day	8 E-06
				Pentachlorophenol	6.5	mg/kg	1.6E-07	mg/kg/day	1.2E-01	(mg/kg/day)-1	2 E-08	9.2E-07	mg/kg/day	3.0E-02	mg/kg/day	3 E-05
				Phenanthrene	4.8	mg/kg	NC		NC			3.5E-07	mg/kg/day	3.0E-02	mg/kg/day	1 E-05
				alpha-Chlordane	0.0113	mg/kg	4.4E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	2 E-11	2.6E-10	mg/kg/day	5.0E-04	mg/kg/day	5 E-07
				Aroclor-1254	2.4	mg/kg	3.3E-08	mg/kg/day	2.0E+00	(mg/kg/day)-1	7 E-08	1.9E-07	mg/kg/day	2.0E-05	mg/kg/day	1 E-02

US EPA ARCHIVE DOCUMENT

TABLE F.7.29.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Aroclor-1260	0.2	mg/kg	2.7E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-09	1.6E-08	mg/kg/day	2.0E-05	mg/kg/day	8.E-04
				Aroclor-1268	0.079	mg/kg	1.1E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-09	6.3E-09	mg/kg/day	2.0E-05	mg/kg/day	3.E-04
				delta-BHC	0.0014	mg/kg	NC		NC			7.9E-11	mg/kg/day	3.0E-04	mg/kg/day	3.E-07
				Dieldrin	0.009	mg/kg	8.7E-11	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-09	5.1E-10	mg/kg/day	5.0E-05	mg/kg/day	1.E-05
				Endosulfan II	0.037	mg/kg	NC		NC			2.1E-09	mg/kg/day	6.0E-03	mg/kg/day	3.E-07
				Endosulfan sulfate	0.0027	mg/kg	NC		NC			1.5E-10	mg/kg/day	6.0E-03	mg/kg/day	3.E-08
				Endrin aldehyde	0.0029	mg/kg	NC		NC			1.6E-10	mg/kg/day	3.0E-04	mg/kg/day	5.E-07
				Endrin Ketone	0.0038	mg/kg	NC		NC			2.1E-10	mg/kg/day	3.0E-04	mg/kg/day	7.E-07
				gamma-Chlordane	0.017	mg/kg	6.6E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-11	3.8E-10	mg/kg/day	5.0E-04	mg/kg/day	8.E-07
				Technical Chlordane	0.65	mg/kg	2.5E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-10	1.5E-08	mg/kg/day	5.0E-04	mg/kg/day	3.E-05
				Antimony	4.8	mg/kg	NC		NC					6.0E-05	mg/kg/day	
				Arsenic	5.8	mg/kg	1.7E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-08	9.8E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				Cadmium	1.2	mg/kg	NC		NC			6.8E-10	mg/kg/day	2.5E-05	mg/kg/day	3.E-05
				Chromium	238	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	488	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	531	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Mercury	0.97	mg/kg	NC		NC					2.1E-05	mg/kg/day	
				Nickel	26.7	mg/kg	NC		NC					8.0E-04	mg/kg/day	
				Thallium	6.8	mg/kg	NC		NC					8.0E-05	mg/kg/day	
				Vanadium	45.9	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans	0.0057	mg/kg	1.7E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-06	9.7E-11	mg/kg/day			
				Toxicity Equivalency (PCB Congeners	0.000000112	mg/kg	3.3E-16	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-11	1.9E-15	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-06					1.E-02
		EXPOSURE POINT TOTAL									2.E-05					5.E-02
	EXPOSURE MEDIUM TOTAL										2.E-05					5.E-02
SEDIMENT TOTAL											2.E-05					5.E-02
SURFACE WATER	SURFACE WATER	ALLENDALE POND	INGESTION	Tetrachloroethene	0.00055	mg/l	1.9E-09	mg/kg/day	5.4E-01	mg/kg/day	1.E-09	1.1E-08	mg/kg/day	1.0E-02	mg/kg/day	1.E-06
				bis(2-Ethylhexyl)phthalate	0.001	mg/l	3.4E-09	mg/kg/day	1.4E-02	mg/kg/day	5.E-11	2.0E-08	mg/kg/day	2.0E-02	mg/kg/day	1.E-06
				Aldrin	0.000011	mg/l	3.7E-11	mg/kg/day	1.7E+01	mg/kg/day	6.E-10	2.2E-10	mg/kg/day	3.0E-05	mg/kg/day	7.E-06
				alpha-Chlordane	0.00000069	mg/l	2.3E-12	mg/kg/day	3.5E-01	mg/kg/day	8.E-13	1.4E-11	mg/kg/day	5.0E-04	mg/kg/day	3.E-08
				Aroclor-1254	0.0006	mg/l	2.0E-09	mg/kg/day	2.0E+00	mg/kg/day	4.E-09	1.2E-08	mg/kg/day	2.0E-05	mg/kg/day	6.E-04
				delta-BHC	0.0000096	mg/l	NC		NC			1.9E-10	mg/kg/day	3.0E-04	mg/kg/day	6.E-07
				Endosulfan Sulfate	0.00043	mg/l	NC		NC			8.5E-09	mg/kg/day	6.0E-03	mg/kg/day	1.E-06
				Endrin Aldehyde	0.0000028	mg/l	NC		NC			5.5E-11	mg/kg/day	3.0E-04	mg/kg/day	2.E-07
				gamma-Chlordane	0.000025	mg/l	8.5E-11	mg/kg/day	3.5E-01	mg/kg/day	3.E-11	4.9E-10	mg/kg/day	5.0E-04	mg/kg/day	1.E-06
				Arsenic	0.0044	mg/l	1.5E-08	mg/kg/day	1.5E+00	mg/kg/day	2.E-08	8.7E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				Barium	0.044	mg/l	NC		NC			8.7E-07	mg/kg/day	7.0E-02	mg/kg/day	1.E-05
				Chromium	0.018	mg/l	NC		NC			3.6E-07	mg/kg/day	3.0E-03	mg/kg/day	1.E-04
				Lead	0.021	mg/l	7.1E-08	mg/kg/day	--			4.2E-07	mg/kg/day			
				Manganese	0.98	mg/l	NC		NC			1.9E-05	mg/kg/day	2.4E-02	mg/kg/day	8.E-04
				Mercury	0.00000319	mg/l	NC		NC			6.3E-11	mg/kg/day	3.0E-04	mg/kg/day	2.E-07
				Thallium	0.0037	mg/l	NC		NC			7.3E-08	mg/kg/day	8.0E-05	mg/kg/day	9.E-04
				Nitrate	0.76	mg/l	NC		NC			1.5E-05	mg/kg/day	1.6E+00	mg/kg/day	9.E-06
				Nitrite-N	0.12	mg/l	NC		NC			2.4E-06	mg/kg/day	1.0E-01	mg/kg/day	2.E-05
				Toxicity Equivalency (Dioxins/Furans	0.0000011	mg/l	3.7E-12	mg/kg/day	1.5E+05	mg/kg/day	6.E-07	2.2E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-07					2.E-03
			DERMAL	Tetrachloroethene	0.00055	mg/l	3.1E-07	mg/kg/day	5.4E-01	mg/kg/day	2.E-07	1.8E-06	mg/kg/day	1.0E-02	mg/kg/day	2.E-04
				bis(2-Ethylhexyl)phthalate	0.001	mg/l	1.5E-06	mg/kg/day	1.4E-02	mg/kg/day	2.E-08	8.5E-06	mg/kg/day	2.0E-02	mg/kg/day	4.E-04
				Aldrin	0.000011	mg/l	9.3E-10	mg/kg/day	1.7E+01	mg/kg/day	2.E-08	5.4E-09	mg/kg/day	3.0E-05	mg/kg/day	2.E-04
				alpha-Chlordane	0.00000069	mg/l	1.4E-09	mg/kg/day	3.5E-01	mg/kg/day	5.E-10	7.9E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-05
				Aroclor-1254	0.0006	mg/l	--		2.0E+00	mg/kg/day		--		2.0E-05	mg/kg/day	
				delta-BHC	0.0000096	mg/l	NC		NC			2.0E-08	mg/kg/day	3.0E-04	mg/kg/day	7.E-05
				Endosulfan Sulfate	0.00043	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.0000028	mg/l	NC		NC			1.1E-08	mg/kg/day	3.0E-04	mg/kg/day	4.E-05
				gamma-Chlordane	0.000025	mg/l	4.9E-08	mg/kg/day	3.5E-01	mg/kg/day	2.E-08	2.9E-07	mg/kg/day	5.0E-04	mg/kg/day	6.E-04
				Arsenic	0.0044	mg/l	3.7E-08	mg/kg/day	1.5E+00	mg/kg/day	6.E-08	2.2E-07	mg/kg/day	3.0E-04	mg/kg/day	7.E-04
				Barium	0.044	mg/l	NC		NC			2.2E-06	mg/kg/day	4.9E-03	mg/kg/day	4.E-04
				Chromium	0.018	mg/l	NC		NC			1.8E-06	mg/kg/day	7.5E-05	mg/kg/day	2.E-02
				Lead	0.021	mg/l	--		--			--				
				Manganese	0.98	mg/l	NC		NC			4.9E-05	mg/kg/day	9.6E-04	mg/kg/day	5.E-02
				Mercury	0.00000319	mg/l	NC		NC			1.6E-10	mg/kg/day	2.1E-05	mg/kg/day	8.E-06

US EPA ARCHIVE DOCUMENT

TABLE F.7.29.CT
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BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Thallium	0.0037	mg/l	NC		NC			1.8E-07	mg/kg/day	8.0E-05	mg/kg/day	2.E-03
				Nitrate	0.76	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.12	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.0000011	mg/l	2.1E-08	mg/kg/day	1.5E+05	mg/kg/day	3.E-03	1.2E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-03					8.E-02
		EXPOSURE POINT TOTAL									3.E-03					8.E-02
	EXPOSURE MEDIUM TOTAL										3.E-03					8.E-02
SURFACE WATER TOTAL											3.E-03					8.E-02
	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.00268	mg/kg	NC		NC			1.7E-06	mg/kg/day	6.0E-02	mg/kg/day	3.E-05
WHITE SUCKER				Benzo(a)anthracene	0.0022	mg/kg	2.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(a)pyrene	0.0024	mg/kg	2.6E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(b)fluoranthene	0.0025	mg/kg	2.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.6E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(g,h,i)perylene	0.000632	mg/kg	NC		NC			4.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.0004	mg/kg	4.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	2.5E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Indeno(1,2,3-cd)pyrene	0.00079	mg/kg	8.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	5.0E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.01143	mg/kg	NC		NC			7.2E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDD	0.0126	mg/kg	1.4E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	3.E-07	8.0E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDE	0.02869	mg/kg	3.1E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	1.8E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				4,4'-DDT	0.00686	mg/kg	7.4E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-07	4.3E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				alpha-Chlordane	0.0236	mg/kg	2.6E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-07	1.5E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Aroclor-1254	2.8888	mg/kg	3.1E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-04	1.8E-03	mg/kg/day	2.0E-05	mg/kg/day	9.E+01
				Aroclor-1268	0.03843	mg/kg	4.2E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-06	2.4E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Dieldrin	0.00866	mg/kg	9.4E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-05	5.5E-06	mg/kg/day	5.0E-05	mg/kg/day	1.E-01
				gamma-Chlordane	0.0089	mg/kg	9.7E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	5.6E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Heptachlor Epoxide	0.0007	mg/kg	7.6E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	7.E-07	4.4E-07	mg/kg/day	1.3E-05	mg/kg/day	3.E-02
				Technical Chlordane	0.674	mg/kg	7.3E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-05	4.3E-04	mg/kg/day	5.0E-04	mg/kg/day	9.E-01
				Chromium	0.112	mg/kg	NC		NC			7.1E-05	mg/kg/day	3.0E-03	mg/kg/day	2.E-02
				Lead	0.16	mg/kg	1.7E-05	mg/kg/day	--			1.0E-04	mg/kg/day			
				Mercury	0.136	mg/kg	NC		NC			8.6E-05	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				Mercury (methyl)	0.147	mg/kg	NC		NC			9.3E-05	mg/kg/day	1.0E-04	mg/kg/day	9.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000492	mg/kg	5.3E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-03	3.1E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000195	mg/kg	2.1E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-04	1.2E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								9.E-03					9.5.E+01
		EXPOSURE POINT TOTAL									9.E-03					9.5.E+01
	EXPOSURE MEDIUM TOTAL										9.E-03					9.5.E+01
WHOLE BODY TOTAL											9.E-03					9.5.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		1.E-02	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				9.5.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.30.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.00268	mg/kg	NC		NC			3.6E-06	mg/kg/day	6.0E-02	mg/kg/day	6.E-05
WHITE SUCKER				Benzo(a)anthracene	0.0022	mg/kg	2.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	3.0E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(a)pyrene	0.0024	mg/kg	2.8E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	3.2E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(b)fluoranthene	0.0025	mg/kg	2.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	3.4E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(g,h,i)perylene	0.000632	mg/kg	NC		NC			8.5E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Dibenzo(a,h)anthracene	0.0004	mg/kg	4.6E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	5.4E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Indeno(1,2,3-cd)pyrene	0.00079	mg/kg	9.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-08	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Phenanthrene	0.01143	mg/kg	NC		NC			1.5E-05	mg/kg/day	3.0E-02	mg/kg/day	5.E-04
				4,4'-DDD	0.0126	mg/kg	1.5E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	3.E-07	1.7E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				4,4'-DDE	0.02569	mg/kg	3.3E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	3.9E-05	mg/kg/day	5.0E-04	mg/kg/day	8.E-02
				4,4'-DDT	0.00686	mg/kg	7.9E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-07	9.3E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.0236	mg/kg	2.7E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	3.2E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				Aroclor-1254	2.8888	mg/kg	3.3E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-04	3.9E-03	mg/kg/day	2.0E-05	mg/kg/day	2.E+02
				Aroclor-1268	0.03843	mg/kg	4.4E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-06	5.2E-05	mg/kg/day	2.0E-05	mg/kg/day	3.E+00
				Dieldrin	0.00866	mg/kg	1.0E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-05	1.2E-05	mg/kg/day	5.0E-05	mg/kg/day	2.E-01
				gamma-Chlordane	0.0089	mg/kg	1.0E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-07	1.2E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Heptachlor Epoxide	0.0007	mg/kg	8.1E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	7.E-07	9.4E-07	mg/kg/day	1.3E-05	mg/kg/day	7.E-02
				Technical Chlordane	0.674	mg/kg	7.8E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-05	9.1E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E+00
				Chromium	0.112	mg/kg	NC		NC			1.5E-04	mg/kg/day	3.0E-03	mg/kg/day	5.E-02
				Lead	0.16	mg/kg	1.8E-05	mg/kg/day	--			2.2E-04	mg/kg/day			
				Mercury	0.136	mg/kg	NC		NC			1.8E-04	mg/kg/day	3.0E-04	mg/kg/day	6.E-01
				Mercury (methyl)	0.147	mg/kg	NC		NC			2.0E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000492	mg/kg	5.7E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	9.E-03	6.6E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000195	mg/kg	2.3E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-04	2.6E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-02					2.0.E+02
		EXPOSURE POINT TOTAL									1.E-02					2.0.E+02
	EXPOSURE MEDIUM TOTAL										1.E-02					2.0.E+02
WHOLE BODY TOTAL											1.E-02					2.0.E+02
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		1.E-02	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				2.0.E+02

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.31.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	LYMAN MILL POND	INGESTION	2-Methylnaphthalene	0.1	mg/kg	NC		NC			6.4E-09	mg/kg/day	2.0E-02	mg/kg/day	3.E-07
				4-Chloro-3-methylphenol	1.4	mg/kg	NC		NC			8.9E-08	mg/kg/day	5.0E-03	mg/kg/day	2.E-05
				4-Nitrophenol	2.2	mg/kg	NC		NC			1.4E-07	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			2.7E-08	mg/kg/day	6.0E-02	mg/kg/day	5.E-07
				Benzo(a)anthracene	2.8	mg/kg	3.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	1.8E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Benzo(a)pyrene	2.9	mg/kg	3.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.8E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Benzo(b)fluoranthene	4.5	mg/kg	4.9E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	2.9E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			1.9E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Benzo(k)fluoranthene	2.1	mg/kg	2.3E-08	mg/kg/day	7.3E-02	(mg/kg/day)-1	2.E-09	1.3E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	5.7E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	8.E-10	3.3E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.77	mg/kg	8.4E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-08	4.9E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	2.9E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	1.7E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				N-Nitroso-di-n-propylamine	1.3	mg/kg	1.4E-08	mg/kg/day	7.0E+00	(mg/kg/day)-1	1.E-07	8.3E-08	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	1.5E-08	mg/kg/day	1.2E-01	(mg/kg/day)-1	2.E-09	8.9E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Phenanthrene	2.8	mg/kg	NC		NC			1.8E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				alpha-Chlordane	0.032	mg/kg	3.5E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	2.0E-09	mg/kg/day	5.0E-04	mg/kg/day	4.E-06
				Aroclor-1254	0.49	mg/kg	5.3E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-08	3.1E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				Aroclor-1260	0.027	mg/kg	2.9E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-10	1.7E-09	mg/kg/day	2.0E-05	mg/kg/day	9.E-05
				Aroclor-1268	0.12	mg/kg	1.3E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-09	7.6E-09	mg/kg/day	2.0E-05	mg/kg/day	4.E-04
				Dieldrin	0.0044	mg/kg	4.8E-11	mg/kg/day	1.6E+01	(mg/kg/day)-1	8.E-10	2.8E-10	mg/kg/day	5.0E-05	mg/kg/day	6.E-06
				Endosulfan II	0.005	mg/kg	NC		NC			3.2E-10	mg/kg/day	6.0E-03	mg/kg/day	5.E-08
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			1.8E-10	mg/kg/day	6.0E-03	mg/kg/day	3.E-08
				gamma-Chlordane	0.015	mg/kg	1.6E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-11	9.5E-10	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Technical Chlordane	1.29	mg/kg	1.4E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-09	8.2E-08	mg/kg/day	5.0E-04	mg/kg/day	2.E-04
				Antimony	3.1	mg/kg	NC		NC			2.0E-07	mg/kg/day	4.0E-04	mg/kg/day	5.E-04
				Arsenic	6.4	mg/kg	7.0E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-07	4.1E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Cadmium	2.1	mg/kg	NC		NC			1.3E-07	mg/kg/day	1.0E-03	mg/kg/day	1.E-04
				Chromium	200	mg/kg	NC		NC			1.3E-05	mg/kg/day	3.0E-03	mg/kg/day	4.E-03
				Lead	375	mg/kg	4.1E-06	mg/kg/day	--			2.4E-05	mg/kg/day			
				Manganese	843	mg/kg	NC		NC			5.4E-05	mg/kg/day	7.1E-02	mg/kg/day	8.E-04
				Mercury	0.62	mg/kg	NC		NC			3.9E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				Nickel	69.2	mg/kg	NC		NC			4.4E-06	mg/kg/day	2.0E-02	mg/kg/day	2.E-04
				Thallium	0.58	mg/kg	NC		NC			3.7E-08	mg/kg/day	8.0E-05	mg/kg/day	5.E-04
				Vanadium	42.4	mg/kg	NC		NC			2.7E-06	mg/kg/day	7.0E-03	mg/kg/day	4.E-04
				Toxicity Equivalency (Dioxins/Furans)	0.0018	mg/kg	2.0E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-06	1.1E-10	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000033	mg/kg	3.6E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-08	2.1E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-06					1.E-02
			DERMAL	2-Methylnaphthalene	0.1	mg/kg	NC		NC			1.6E-09	mg/kg/day	2.0E-02	mg/kg/day	8.E-08
				4-Chloro-3-methylphenol	1.4	mg/kg	NC		NC			1.7E-08	mg/kg/day	5.0E-03	mg/kg/day	3.E-06
				4-Nitrophenol	2.2	mg/kg	NC		NC			2.7E-08	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			5.5E-09	mg/kg/day	6.0E-02	mg/kg/day	1.E-07
				Benzo(a)anthracene	2.8	mg/kg	7.7E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-09	4.5E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(a)pyrene	2.9	mg/kg	8.0E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-08	4.7E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(b)fluoranthene	4.5	mg/kg	1.2E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-09	7.2E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			4.8E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(k)fluoranthene	2.1	mg/kg	5.8E-09	mg/kg/day	7.3E-02	(mg/kg/day)-1	4.E-10	3.4E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	1.1E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	2.E-10	6.4E-08	mg/kg/day	2.0E-02	mg/kg/day	3.E-06
				Dibenzo(a,h)anthracene	0.77	mg/kg	2.1E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	1.2E-08	mg/kg/day	3.0E-02	mg/kg/day	4.E-07
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	7.4E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-09	4.3E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				N-Nitroso-di-n-propylamine	1.3	mg/kg	2.8E-09	mg/kg/day	7.0E+00	(mg/kg/day)-1	2.E-08	1.6E-08	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	7.4E-09	mg/kg/day	1.2E-01	(mg/kg/day)-1	9.E-10	4.3E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Phenanthrene	2.8	mg/kg	NC		NC			4.5E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				alpha-Chlordane	0.032	mg/kg	2.7E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-12	1.6E-10	mg/kg/day	5.0E-04	mg/kg/day	3.E-07
				Aroclor-1254	0.49	mg/kg	1.5E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-09	8.5E-09	mg/kg/day	2.0E-05	mg/kg/day	4.E-04
				Aroclor-1260	0.027	mg/kg	8.0E-11	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-10	4.7E-10	mg/kg/day	2.0E-05	mg/kg/day	2.E-05
				Aroclor-1268	0.12	mg/kg	3.6E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-10	2.1E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				Dieldrin	0.0044	mg/kg	9.3E-12	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-10	5.4E-11	mg/kg/day	5.0E-05	mg/kg/day	1.E-06
				Endosulfan II	0.005	mg/kg	NC		NC			6.2E-11	mg/kg/day	6.0E-03	mg/kg/day	1.E-08
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			3.6E-11	mg/kg/day	6.0E-03	mg/kg/day	6.E-09
				gamma-Chlordane	0.015	mg/kg	1.3E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-12	7.4E-11	mg/kg/day	5.0E-04	mg/kg/day	1.E-07
				Technical Chlordane	1.29	mg/kg	1.1E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-10	6.4E-09	mg/kg/day	5.0E-04	mg/kg/day	1.E-05
				Antimony	3.1	mg/kg	NC		NC					6.0E-05	mg/kg/day	

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TABLE F.7.31.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	CSF/UNIT RISK VALUE	CSF UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	RfD/RfC (1) VALUE	RfD/RfC UNITS	HAZARD QUOTIENT
				Arsenic	6.4	mg/kg	4.1E-09	mg/kg/day	1.5E+00	(mg/kg/day)-1	6 E-09	2.4E-08	mg/kg/day	3.0E-04	mg/kg/day	8.E-05
				Cadmium	2.1	mg/kg	NC		NC			2.6E-10	mg/kg/day	2.5E-05	mg/kg/day	1 E-05
				Chromium	200	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	375	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	843	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Mercury	0.62	mg/kg	NC		NC					2.1E-05	mg/kg/day	
				Nickel	69.2	mg/kg	NC		NC					8.0E-04	mg/kg/day	
				Thallium	0.58	mg/kg	NC		NC					8.0E-05	mg/kg/day	
				Vanadium	42.4	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.0018	mg/kg	1.1E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	2 E-07	6.7E-12	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000033	mg/kg	2.1E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	3 E-09	1.2E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-07					7.E-04
		EXPOSURE POINT TOTAL									4.E-06					1.E-02
	EXPOSURE MEDIUM TOTAL										4.E-06					1.E-02
SEDIMENT TOTAL											4.E-06					1.E-02
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00000132	mg/l	NC		NC			1.7E-11	mg/kg/day	6.0E-02	mg/kg/day	3.E-10
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	3.7E-08	mg/kg/day	1.4E-02	mg/kg/day	5.E-10	2.2E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				Aldrin	0.000023	mg/l	5.0E-11	mg/kg/day	1.7E+01	mg/kg/day	9.E-10	2.9E-10	mg/kg/day	3.0E-05	mg/kg/day	1.E-05
				alpha-Chlordane	0.000019	mg/l	4.1E-11	mg/kg/day	3.5E-01	mg/kg/day	1.E-11	2.4E-10	mg/kg/day	5.0E-04	mg/kg/day	5.E-07
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			4.1E-11	mg/kg/day	6.0E-03	mg/kg/day	7.E-09
				Endrin Aldehyde	0.000005	mg/l	NC		NC			6.4E-11	mg/kg/day	3.0E-04	mg/kg/day	2.E-07
				gamma-Chlordane	0.000021	mg/l	4.6E-11	mg/kg/day	3.5E-01	mg/kg/day	2.E-11	2.7E-10	mg/kg/day	5.0E-04	mg/kg/day	5.E-07
				Arsenic	0.0046	mg/l	1.0E-08	mg/kg/day	1.5E+00	mg/kg/day	2.E-08	5.9E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Barium	0.021	mg/l	NC		NC			2.7E-07	mg/kg/day	7.0E-02	mg/kg/day	4.E-06
				Chromium	0.0023	mg/l	NC		NC			2.9E-08	mg/kg/day	3.0E-03	mg/kg/day	1.E-05
				Lead	0.0044	mg/l	9.6E-09	mg/kg/day	--			5.6E-08	mg/kg/day			
				Manganese	0.13	mg/l	NC		NC			1.7E-06	mg/kg/day	2.4E-02	mg/kg/day	7.E-05
				Mercury	0.00000394	mg/l	NC		NC			5.0E-11	mg/kg/day	3.0E-04	mg/kg/day	2.E-07
				Thallium	0.0022	mg/l	NC		NC			2.8E-08	mg/kg/day	8.0E-05	mg/kg/day	3.E-04
				Nitrate	0.76	mg/l	NC		NC			9.7E-06	mg/kg/day	1.6E+00	mg/kg/day	6.E-06
				Nitrite-N	0.084	mg/l	NC		NC			1.1E-06	mg/kg/day	1.0E-01	mg/kg/day	1.E-05
				Toxicity Equivalency (Dioxins/Furans)	0.00000013	mg/l	2.8E-13	mg/kg/day	1.5E+05	mg/kg/day	4 E-08	1.7E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-08					7.E-04
			DERMAL	Acenaphthylene	0.00000132	mg/l	NC		NC			--		6.0E-02	mg/kg/day	
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	2.2E-05	mg/kg/day	1.4E-02	mg/kg/day	3.E-07	1.3E-04	mg/kg/day	2.0E-02	mg/kg/day	6.E-03
				Aldrin	0.000023	mg/l	1.7E-09	mg/kg/day	1.7E+01	mg/kg/day	3.E-08	1.0E-08	mg/kg/day	3.0E-05	mg/kg/day	3.E-04
				alpha-Chlordane	0.000019	mg/l	3.3E-08	mg/kg/day	3.5E-01	mg/kg/day	1.E-08	1.9E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.000005	mg/l	NC		NC			1.7E-08	mg/kg/day	3.0E-04	mg/kg/day	6.E-05
				gamma-Chlordane	0.000021	mg/l	3.7E-08	mg/kg/day	3.5E-01	mg/kg/day	1.E-08	2.1E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Arsenic	0.0046	mg/l	3.5E-08	mg/kg/day	1.5E+00	mg/kg/day	5.E-08	2.0E-07	mg/kg/day	3.0E-04	mg/kg/day	7.E-04
				Barium	0.021	mg/l	NC		NC			9.3E-07	mg/kg/day	4.9E-03	mg/kg/day	2.E-04
				Chromium	0.0023	mg/l	NC		NC			2.0E-07	mg/kg/day	7.5E-05	mg/kg/day	3.E-03
				Lead	0.0044	mg/l	--		--			--				
				Manganese	0.13	mg/l	NC		NC			5.8E-06	mg/kg/day	9.6E-04	mg/kg/day	6.E-03
				Mercury	0.00000394	mg/l	NC		NC			1.7E-10	mg/kg/day	2.1E-05	mg/kg/day	8.E-06
				Thallium	0.0022	mg/l	NC		NC			9.7E-08	mg/kg/day	8.0E-05	mg/kg/day	1.E-03
				Nitrate	0.76	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.084	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00000013	mg/l	2.2E-09	mg/kg/day	1.5E+05	mg/kg/day	3.E-04	1.3E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-04					2.E-02
		EXPOSURE POINT TOTAL									3.E-04					2.E-02
	EXPOSURE MEDIUM TOTAL										3.E-04					2.E-02
SURFACE WATER TOTAL											3.E-04					2.E-02

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TABLE F.7.31.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00193	mg/kg	NC		NC			1.6E-06	mg/kg/day	6.0E-02	mg/kg/day	3.E-05
				Benzo(a)pyrene	0.000962	mg/kg	1.3E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	7.8E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(b)fluoranthene	0.00119	mg/kg	1.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	9.7E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Dibenzo(a,h)anthracene	0.00065	mg/kg	9.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-07	5.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.02012	mg/kg	NC		NC			1.6E-05	mg/kg/day	3.0E-02	mg/kg/day	5.E-04
				4,4'-DDD	0.01469	mg/kg	2.0E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	5.E-07	1.2E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDE	0.04451	mg/kg	6.2E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	3.6E-05	mg/kg/day	5.0E-04	mg/kg/day	7.E-02
				4,4'-DDT	0.00337	mg/kg	4.7E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	2.7E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				alpha-Chlordane	0.02007	mg/kg	2.8E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	1.6E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Aroclor-1254	0.95861	mg/kg	1.3E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-04	7.8E-04	mg/kg/day	2.0E-05	mg/kg/day	4.E+01
				beta-BHC	0.0018	mg/kg	2.5E-07	mg/kg/day	1.8E+00	(mg/kg/day)-1	5.E-07	1.5E-06	mg/kg/day	3.0E-04	mg/kg/day	5.E-03
				Dieldrin	0.00789	mg/kg	1.1E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-05	6.4E-06	mg/kg/day	5.0E-05	mg/kg/day	1.E-01
				gamma-Chlordane	0.00859	mg/kg	1.2E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-07	7.0E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Heptachlor Epoxide	0.00227	mg/kg	3.2E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.E-06	1.8E-06	mg/kg/day	1.3E-05	mg/kg/day	1.E-01
				Technical Chlordane	0.44722	mg/kg	6.2E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-05	3.6E-04	mg/kg/day	5.0E-04	mg/kg/day	7.E-01
				Cadmium	0.026	mg/kg	NC		NC			2.1E-05	mg/kg/day	1.0E-03	mg/kg/day	2.E-02
				Lead	0.38	mg/kg	5.3E-05	mg/kg/day	--			3.1E-04	mg/kg/day			
				Manganese	4.98	mg/kg	NC		NC			4.0E-03	mg/kg/day	1.4E-01	mg/kg/day	3.E-02
				Mercury	0.0349	mg/kg	NC		NC			2.8E-05	mg/kg/day	3.0E-04	mg/kg/day	9.E-02
				Mercury (methyl)	0.0367	mg/kg	NC		NC			3.0E-05	mg/kg/day	1.0E-04	mg/kg/day	3.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000181	mg/kg	2.5E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-03	1.5E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000323	mg/kg	4.5E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-04	2.6E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-03					4.0.E+01
		EXPOSURE POINT TOTAL									5.E-03					4.0.E+01
	EXPOSURE MEDIUM TOTAL										5.E-03					4.0.E+01
WHOLE BODY TOTAL											5.E-03					4.0.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	5.E-03		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		4.0.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.31.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00193	mg/kg	NC		NC			2.6E-06	mg/kg/day	6.0E-02	mg/kg/day	4.E-05
				Benzo(a)pyrene	0.000962	mg/kg	1.1E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-07	1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(b)fluoranthene	0.00119	mg/kg	1.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	1.6E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Dibenzo(a,h)anthracene	0.00065	mg/kg	7.5E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-07	8.8E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Phenanthrene	0.02012	mg/kg	NC		NC			2.7E-05	mg/kg/day	3.0E-02	mg/kg/day	9.E-04
				4,4'-DDD	0.01469	mg/kg	1.7E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	4.E-07	2.0E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				4,4'-DDE	0.04451	mg/kg	5.1E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	6.0E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				4,4'-DDT	0.00337	mg/kg	3.9E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-07	4.5E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				alpha-Chlordane	0.02007	mg/kg	2.3E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-07	2.7E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				Aroclor-1254	0.95861	mg/kg	1.1E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	1.3E-03	mg/kg/day	2.0E-05	mg/kg/day	6.E+01
				beta-BHC	0.0018	mg/kg	2.1E-07	mg/kg/day	1.8E+00	(mg/kg/day)-1	4.E-07	2.4E-06	mg/kg/day	3.0E-04	mg/kg/day	8.E-03
				Dieldrin	0.00789	mg/kg	9.1E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	1.1E-05	mg/kg/day	5.0E-05	mg/kg/day	2.E-01
				gamma-Chlordane	0.00859	mg/kg	9.9E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	1.2E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Heptachlor Epoxide	0.00227	mg/kg	2.6E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-06	3.1E-06	mg/kg/day	1.3E-05	mg/kg/day	2.E-01
				Technical Chlordane	0.44722	mg/kg	5.2E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-05	6.0E-04	mg/kg/day	5.0E-04	mg/kg/day	1.E+00
				Cadmium	0.026	mg/kg	NC		NC			3.5E-05	mg/kg/day	1.0E-03	mg/kg/day	4.E-02
				Lead	0.38	mg/kg	4.4E-05	mg/kg/day	--			5.1E-04	mg/kg/day			
				Manganese	4.98	mg/kg	NC		NC			6.7E-03	mg/kg/day	1.4E-01	mg/kg/day	5.E-02
				Mercury	0.0349	mg/kg	NC		NC			4.7E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.0367	mg/kg	NC		NC			5.0E-05	mg/kg/day	1.0E-04	mg/kg/day	5.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000181	mg/kg	2.1E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-03	2.4E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000323	mg/kg	3.7E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-04	4.4E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-03					6.7.E+01
		EXPOSURE POINT TOTAL									4.E-03					6.7.E+01
	EXPOSURE MEDIUM TOTAL										4.E-03					6.7.E+01
WHOLE BODY TOTAL											4.E-03					6.7.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	4.E-03		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		6.7.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.33.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	LYMAN MILL POND	INGESTION	2-Methylnaphthalene	0.1	mg/kg	NC		NC			9.9E-09	mg/kg/day	2.0E-02	mg/kg/day	5.E-07
				4-Chloro-3-methylphenol	1.4	mg/kg	NC		NC			1.4E-07	mg/kg/day	5.0E-03	mg/kg/day	3.E-05
				4-Nitrophenol	2.2	mg/kg	NC		NC			2.2E-07	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			4.2E-08	mg/kg/day	6.0E-02	mg/kg/day	7.E-07
				Benzo(a)anthracene	2.8	mg/kg	4.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.8E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				Benzo(a)pyrene	2.9	mg/kg	4.9E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	2.9E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(b)fluoranthene	4.5	mg/kg	7.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	4.5E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			3.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(k)fluoranthene	2.1	mg/kg	3.6E-08	mg/kg/day	7.3E-02	(mg/kg/day)-1	3.E-09	2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	8.8E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	1.E-09	5.1E-07	mg/kg/day	2.0E-02	mg/kg/day	3.E-05
				Dibenzo(a,h)anthracene	0.77	mg/kg	1.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	7.6E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	4.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.7E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				N-Nitroso-di-n-propylamine	1.3	mg/kg	2.2E-08	mg/kg/day	7.0E+00	(mg/kg/day)-1	2.E-07	1.3E-07	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	2.4E-08	mg/kg/day	1.2E-01	(mg/kg/day)-1	3.E-09	1.4E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Phenanthrene	2.8	mg/kg	NC		NC			2.8E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				alpha-Chlordane	0.032	mg/kg	5.4E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-10	3.2E-09	mg/kg/day	5.0E-04	mg/kg/day	6.E-06
				Aroclor-1254	0.49	mg/kg	8.3E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-08	4.8E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				Aroclor-1260	0.027	mg/kg	4.6E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-10	2.7E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				Aroclor-1268	0.12	mg/kg	2.0E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-09	1.2E-08	mg/kg/day	2.0E-05	mg/kg/day	6.E-04
				Dieldrin	0.0044	mg/kg	7.5E-11	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-09	4.4E-10	mg/kg/day	5.0E-05	mg/kg/day	9.E-06
				Endosulfan II	0.005	mg/kg	NC		NC			4.9E-10	mg/kg/day	6.0E-03	mg/kg/day	8.E-08
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			2.9E-10	mg/kg/day	6.0E-03	mg/kg/day	5.E-08
				gamma-Chlordane	0.015	mg/kg	2.5E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-11	1.5E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Technical Chlordane	1.29	mg/kg	2.2E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-09	1.3E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Antimony	3.1	mg/kg	NC		NC			3.1E-07	mg/kg/day	4.0E-04	mg/kg/day	8.E-04
				Arsenic	6.4	mg/kg	1.1E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-07	6.3E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Cadmium	2.1	mg/kg	NC		NC			2.1E-07	mg/kg/day	1.0E-03	mg/kg/day	2.E-04
				Chromium	200	mg/kg	NC		NC			2.0E-05	mg/kg/day	3.0E-03	mg/kg/day	7.E-03
				Lead	375	mg/kg	6.4E-06	mg/kg/day	--			3.7E-05	mg/kg/day			
				Manganese	843	mg/kg	NC		NC			8.3E-05	mg/kg/day	7.1E-02	mg/kg/day	1.E-03
				Mercury	0.62	mg/kg	NC		NC			6.1E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Nickel	69.2	mg/kg	NC		NC			6.8E-06	mg/kg/day	2.0E-02	mg/kg/day	3.E-04
				Thallium	0.58	mg/kg	NC		NC			5.7E-08	mg/kg/day	8.0E-05	mg/kg/day	7.E-04
				Vanadium	42.4	mg/kg	NC		NC			4.2E-06	mg/kg/day	7.0E-03	mg/kg/day	6.E-04
				Toxicity Equivalency (Dioxins/Furans)	0.0018	mg/kg	3.1E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-06	1.8E-10	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000033	mg/kg	5.6E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-08	3.3E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-06					2.E-02
			DERMAL	2-Methylnaphthalene	0.1	mg/kg	NC		NC			7.4E-09	mg/kg/day	2.0E-02	mg/kg/day	4.E-07
				4-Chloro-3-methylphenol	1.4	mg/kg	NC		NC			7.9E-08	mg/kg/day	5.0E-03	mg/kg/day	2.E-05
				4-Nitrophenol	2.2	mg/kg	NC		NC			1.2E-07	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			3.2E-08	mg/kg/day	6.0E-02	mg/kg/day	5.E-07
				Benzo(a)anthracene	2.8	mg/kg	3.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Benzo(a)pyrene	2.9	mg/kg	3.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Benzo(b)fluoranthene	4.5	mg/kg	5.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	3.3E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			2.2E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Benzo(k)fluoranthene	2.1	mg/kg	2.6E-08	mg/kg/day	7.3E-02	(mg/kg/day)-1	2.E-09	1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	5.0E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	7.E-10	2.9E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.77	mg/kg	9.7E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-08	5.7E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	3.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	2.0E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				N-Nitroso-di-n-propylamine	1.3	mg/kg	1.3E-08	mg/kg/day	7.0E+00	(mg/kg/day)-1	9.E-08	7.4E-08	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	3.4E-08	mg/kg/day	1.2E-01	(mg/kg/day)-1	4.E-09	2.0E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Phenanthrene	2.8	mg/kg	NC		NC			2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				alpha-Chlordane	0.032	mg/kg	1.2E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-11	7.2E-10	mg/kg/day	5.0E-04	mg/kg/day	1.E-06
				Aroclor-1254	0.49	mg/kg	6.7E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-08	3.9E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				Aroclor-1260	0.027	mg/kg	3.7E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-10	2.1E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				Aroclor-1268	0.12	mg/kg	1.6E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-09	9.5E-09	mg/kg/day	2.0E-05	mg/kg/day	5.E-04
				Dieldrin	0.0044	mg/kg	4.3E-11	mg/kg/day	1.6E+01	(mg/kg/day)-1	7.E-10	2.5E-10	mg/kg/day	5.0E-05	mg/kg/day	5.E-06
				Endosulfan II	0.005	mg/kg	NC		NC			2.8E-10	mg/kg/day	6.0E-03	mg/kg/day	5.E-08
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			1.6E-10	mg/kg/day	6.0E-03	mg/kg/day	3.E-08
				gamma-Chlordane	0.015	mg/kg	5.8E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-11	3.4E-10	mg/kg/day	5.0E-04	mg/kg/day	7.E-07
				Technical Chlordane	1.29	mg/kg	5.0E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-09	2.9E-08	mg/kg/day	5.0E-04	mg/kg/day	6.E-05
				Antimony	3.1	mg/kg	NC		NC					6.0E-05	mg/kg/day	

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TABLE F.7.33.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Arsenic	6.4	mg/kg	1.9E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-08	1.1E-07	mg/kg/day	3.0E-04	mg/kg/day	4.E-04
				Cadmium	2.1	mg/kg	NC		NC			1.2E-09	mg/kg/day	2.5E-05	mg/kg/day	5.E-05
				Chromium	200	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	375	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	843	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Mercury	0.62	mg/kg	NC		NC					2.1E-05	mg/kg/day	
				Nickel	69.2	mg/kg	NC		NC					8.0E-04	mg/kg/day	
				Thallium	0.58	mg/kg	NC		NC					8.0E-05	mg/kg/day	
				Vanadium	42.4	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.0018	mg/kg	5.2E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-07	3.1E-11	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000033	mg/kg	9.6E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-08	5.6E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-06					3.E-03
		EXPOSURE POINT TOTAL									7.E-06					2.E-02
	EXPOSURE MEDIUM TOTAL										7.E-06					2.E-02
SEDIMENT TOTAL											7.E-06					2.E-02
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00000132	mg/l	NC		NC			2.6E-11	mg/kg/day	6.0E-02	mg/kg/day	4.E-10
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	5.8E-08	mg/kg/day	1.4E-02	mg/kg/day	8.E-10	3.4E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				Aldrin	0.000023	mg/l	7.8E-11	mg/kg/day	1.7E+01	mg/kg/day	1.E-09	4.6E-10	mg/kg/day	3.0E-05	mg/kg/day	2.E-05
				alpha-Chlordane	0.000019	mg/l	6.4E-11	mg/kg/day	3.5E-01	mg/kg/day	2.E-11	3.8E-10	mg/kg/day	5.0E-04	mg/kg/day	8.E-07
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			6.3E-11	mg/kg/day	6.0E-03	mg/kg/day	1.E-08
				Endrin Aldehyde	0.000005	mg/l	NC		NC			9.9E-11	mg/kg/day	3.0E-04	mg/kg/day	3.E-07
				gamma-Chlordane	0.000021	mg/l	7.1E-11	mg/kg/day	3.5E-01	mg/kg/day	2.E-11	4.2E-10	mg/kg/day	5.0E-04	mg/kg/day	8.E-07
				Arsenic	0.0046	mg/l	1.6E-08	mg/kg/day	1.5E+00	mg/kg/day	2.E-08	9.1E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				Barium	0.021	mg/l	NC		NC			4.2E-07	mg/kg/day	7.0E-02	mg/kg/day	6.E-06
				Chromium	0.0023	mg/l	NC		NC			4.6E-08	mg/kg/day	3.0E-03	mg/kg/day	2.E-05
				Lead	0.0044	mg/l	1.5E-08	mg/kg/day	--			8.7E-08	mg/kg/day			
				Manganese	0.13	mg/l	NC		NC			2.6E-06	mg/kg/day	2.4E-02	mg/kg/day	1.E-04
				Mercury	0.00000394	mg/l	NC		NC			7.8E-11	mg/kg/day	3.0E-04	mg/kg/day	3.E-07
				Thallium	0.0022	mg/l	NC		NC			4.4E-08	mg/kg/day	8.0E-05	mg/kg/day	5.E-04
				Nitrate	0.76	mg/l	NC		NC			1.5E-05	mg/kg/day	1.6E+00	mg/kg/day	9.E-06
				Nitrite-N	0.084	mg/l	NC		NC			1.7E-06	mg/kg/day	1.0E-01	mg/kg/day	2.E-05
				Toxicity Equivalency (Dioxins/Furans)	0.00000013	mg/l	4.4E-13	mg/kg/day	1.5E+05	mg/kg/day	7.E-08	2.6E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								9.E-08					1.E-03
			DERMAL	Acenaphthylene	0.00000132	mg/l	NC		NC			--		6.0E-02	mg/kg/day	
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	2.5E-05	mg/kg/day	1.4E-02	mg/kg/day	3.E-07	1.4E-04	mg/kg/day	2.0E-02	mg/kg/day	7.E-03
				Aldrin	0.000023	mg/l	1.9E-09	mg/kg/day	1.7E+01	mg/kg/day	3.E-08	1.1E-08	mg/kg/day	3.0E-05	mg/kg/day	4.E-04
				alpha-Chlordane	0.000019	mg/l	3.7E-08	mg/kg/day	3.5E-01	mg/kg/day	1.E-08	2.2E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.000005	mg/l	NC		NC			1.9E-08	mg/kg/day	3.0E-04	mg/kg/day	6.E-05
				gamma-Chlordane	0.000021	mg/l	4.1E-08	mg/kg/day	3.5E-01	mg/kg/day	1.E-08	2.4E-07	mg/kg/day	5.0E-04	mg/kg/day	5.E-04
				Arsenic	0.0046	mg/l	3.9E-08	mg/kg/day	1.5E+00	mg/kg/day	6.E-08	2.3E-07	mg/kg/day	3.0E-04	mg/kg/day	8.E-04
				Barium	0.021	mg/l	NC		NC			1.0E-06	mg/kg/day	4.9E-03	mg/kg/day	2.E-04
				Chromium	0.0023	mg/l	NC		NC			2.3E-07	mg/kg/day	7.5E-05	mg/kg/day	3.E-03
				Lead	0.0044	mg/l	--		--			--				
				Manganese	0.13	mg/l	NC		NC			6.4E-06	mg/kg/day	9.6E-04	mg/kg/day	7.E-03
				Mercury	0.00000394	mg/l	NC		NC			2.0E-10	mg/kg/day	2.1E-05	mg/kg/day	9.E-06
				Thallium	0.0022	mg/l	NC		NC			1.1E-07	mg/kg/day	8.0E-05	mg/kg/day	1.E-03
				Nitrate	0.76	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.084	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00000013	mg/l	2.5E-09	mg/kg/day	1.5E+05	mg/kg/day	4.E-04	1.5E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-04					2.E-02
		EXPOSURE POINT TOTAL									4.E-04					2.E-02
	EXPOSURE MEDIUM TOTAL										4.E-04					2.E-02
SURFACE WATER TOTAL											4.E-04					2.E-02
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00193	mg/kg	NC		NC			1.2E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	0.000962	mg/kg	1.0E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-07	6.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	0.00119	mg/kg	1.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-08	7.5E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Dibenzo(a,h)anthracene	0.00065	mg/kg	7.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-07	4.1E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05

US EPA ARCHIVE DOCUMENT

TABLE F.7.33.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
				Phenanthrene	0.02012	mg/kg	NC		NC			1.3E-05	mg/kg/day	3.0E-02	mg/kg/day	4.E-04
				4,4'-DDD	0.01469	mg/kg	1.6E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	4.E-07	9.3E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDE	0.04451	mg/kg	4.8E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	2.8E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				4,4'-DDT	0.00337	mg/kg	3.7E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-07	2.1E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				alpha-Chlordane	0.02007	mg/kg	2.2E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-07	1.3E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Aroclor-1254	0.95861	mg/kg	1.0E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	6.1E-04	mg/kg/day	2.0E-05	mg/kg/day	3.E+01
				beta-BHC	0.0018	mg/kg	2.0E-07	mg/kg/day	1.8E+00	(mg/kg/day)-1	4.E-07	1.1E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				Dieldrin	0.00789	mg/kg	8.6E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	5.0E-06	mg/kg/day	5.0E-05	mg/kg/day	1.E-01
				gamma-Chlordane	0.00859	mg/kg	9.3E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	5.4E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Heptachlor Epoxide	0.00227	mg/kg	2.5E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-06	1.4E-06	mg/kg/day	1.3E-05	mg/kg/day	1.E-01
				Technical Chlordane	0.44722	mg/kg	4.9E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-05	2.8E-04	mg/kg/day	5.0E-04	mg/kg/day	6.E-01
				Cadmium	0.026	mg/kg	NC		NC			1.6E-05	mg/kg/day	1.0E-03	mg/kg/day	2.E-02
				Lead	0.38	mg/kg	4.1E-05	mg/kg/day	--			2.4E-04	mg/kg/day			
				Manganese	4.98	mg/kg	NC		NC			3.2E-03	mg/kg/day	1.4E-01	mg/kg/day	2.E-02
				Mercury	0.0349	mg/kg	NC		NC			2.2E-05	mg/kg/day	3.0E-04	mg/kg/day	7.E-02
				Mercury (methyl)	0.0367	mg/kg	NC		NC			2.3E-05	mg/kg/day	1.0E-04	mg/kg/day	2.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000181	mg/kg	2.0E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-03	1.1E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000323	mg/kg	3.5E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-04	2.0E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-03					3.2.E+01
		EXPOSURE POINT TOTAL									4.E-03					3.2.E+01
	EXPOSURE MEDIUM TOTAL										4.E-03					3.2.E+01
WHOLE BODY TOTAL											4.E-03					3.2.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											4.E-03					3.2.E+01

NOTES.
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.34.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	LYMAN MILL POND	INGESTION	2-Methylnaphthalene	0.1	mg/kg	NC		NC			6.4E-09	mg/kg/day	2.0E-02	mg/kg/day	3.E-07
				4-Chloro-3-methylphenol	1.4	mg/kg	NC		NC			8.9E-08	mg/kg/day	5.0E-03	mg/kg/day	2.E-05
				4-Nitrophenol	2.2	mg/kg	NC		NC			1.4E-07	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			2.7E-08	mg/kg/day	6.0E-02	mg/kg/day	5.E-07
				Benzo(a)anthracene	2.8	mg/kg	3.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	1.8E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Benzo(a)pyrene	2.9	mg/kg	3.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.8E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Benzo(b)fluoranthene	4.5	mg/kg	4.9E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	2.9E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			1.9E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Benzo(k)fluoranthene	2.1	mg/kg	2.3E-08	mg/kg/day	7.3E-02	(mg/kg/day)-1	2.E-09	1.3E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	5.7E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	8.E-10	3.3E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.77	mg/kg	8.4E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-08	4.9E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	2.9E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	1.7E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				N-Nitroso-di-n-propylamine	1.3	mg/kg	1.4E-08	mg/kg/day	7.0E+00	(mg/kg/day)-1	1.E-07	8.3E-08	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	1.5E-08	mg/kg/day	1.2E-01	(mg/kg/day)-1	2.E-09	8.9E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Phenanthrene	2.8	mg/kg	NC		NC			1.8E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				alpha-Chlordane	0.032	mg/kg	3.5E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	2.0E-09	mg/kg/day	5.0E-04	mg/kg/day	4.E-06
				Aroclor-1254	0.49	mg/kg	5.3E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-08	3.1E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				Aroclor-1260	0.027	mg/kg	2.9E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-10	1.7E-09	mg/kg/day	2.0E-05	mg/kg/day	9.E-05
				Aroclor-1268	0.12	mg/kg	1.3E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-09	7.6E-09	mg/kg/day	2.0E-05	mg/kg/day	4.E-04
				Dieldrin	0.0044	mg/kg	4.8E-11	mg/kg/day	1.6E+01	(mg/kg/day)-1	8.E-10	2.8E-10	mg/kg/day	5.0E-05	mg/kg/day	6.E-06
				Endosulfan II	0.005	mg/kg	NC		NC			3.2E-10	mg/kg/day	6.0E-03	mg/kg/day	5.E-08
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			1.8E-10	mg/kg/day	6.0E-03	mg/kg/day	3.E-08
				gamma-Chlordane	0.015	mg/kg	1.6E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-11	9.5E-10	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Technical Chlordane	1.29	mg/kg	1.4E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-09	8.2E-08	mg/kg/day	5.0E-04	mg/kg/day	2.E-04
				Antimony	3.1	mg/kg	NC		NC			2.0E-07	mg/kg/day	4.0E-04	mg/kg/day	5.E-04
				Arsenic	6.4	mg/kg	7.0E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-07	4.1E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Cadmium	2.1	mg/kg	NC		NC			1.3E-07	mg/kg/day	1.0E-03	mg/kg/day	1.E-04
				Chromium	200	mg/kg	NC		NC			1.3E-05	mg/kg/day	3.0E-03	mg/kg/day	4.E-03
				Lead	375	mg/kg	4.1E-06	mg/kg/day	--			2.4E-05	mg/kg/day			
				Manganese	843	mg/kg	NC		NC			5.4E-05	mg/kg/day	7.1E-02	mg/kg/day	8.E-04
				Mercury	0.62	mg/kg	NC		NC			3.9E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				Nickel	69.2	mg/kg	NC		NC			4.4E-06	mg/kg/day	2.0E-02	mg/kg/day	2.E-04
				Thallium	0.58	mg/kg	NC		NC			3.7E-08	mg/kg/day	8.0E-05	mg/kg/day	5.E-04
				Vanadium	42.4	mg/kg	NC		NC			2.7E-06	mg/kg/day	7.0E-03	mg/kg/day	4.E-04
				Toxicity Equivalency (Dioxins/Furans)	*0.0018*	*mg/kg*	*2.0E-11*	*mg/kg/day*	*1.5E+05*	*(mg/kg/day)-1*	*3.E-06*	*1.1E-10*	*mg/kg/day*			
				Toxicity Equivalency (PCB Congeners)	0.000033	mg/kg	3.6E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-08	2.1E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-06					1.E-02
			DERMAL	2-Methylnaphthalene	0.1	mg/kg	NC		NC			1.6E-09	mg/kg/day	2.0E-02	mg/kg/day	8.E-08
				4-Chloro-3-methylphenol	1.4	mg/kg	NC		NC			1.7E-08	mg/kg/day	5.0E-03	mg/kg/day	3.E-06
				4-Nitrophenol	2.2	mg/kg	NC		NC			2.7E-08	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			6.9E-09	mg/kg/day	6.0E-02	mg/kg/day	1.E-07
				Benzo(a)anthracene	2.8	mg/kg	7.7E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-09	4.5E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(a)pyrene	2.9	mg/kg	8.0E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-08	4.7E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(b)fluoranthene	4.5	mg/kg	1.2E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-09	7.2E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(g,h,i)perylene	*3*	*mg/kg*	NC		NC			4.8E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(k)fluoranthene	2.1	mg/kg	5.8E-09	mg/kg/day	7.3E-02	(mg/kg/day)-1	4.E-10	3.4E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	1.1E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	2.E-10	6.4E-08	mg/kg/day	2.0E-02	mg/kg/day	3.E-06
				Dibenzo(a,h)anthracene	0.77	mg/kg	2.1E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	1.2E-08	mg/kg/day	3.0E-02	mg/kg/day	4.E-07
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	7.4E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-09	4.3E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				N-Nitroso-di-n-propylamine	1.3	mg/kg	2.8E-09	mg/kg/day	7.0E+00	(mg/kg/day)-1	2.E-08	1.6E-08	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	7.4E-09	mg/kg/day	1.2E-01	(mg/kg/day)-1	9.E-10	4.3E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Phenanthrene	2.8	mg/kg	NC		NC			4.5E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				alpha-Chlordane	0.032	mg/kg	2.7E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-12	1.6E-10	mg/kg/day	5.0E-04	mg/kg/day	3.E-07
				Aroclor-1254	0.49	mg/kg	1.5E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-09	8.5E-09	mg/kg/day	2.0E-05	mg/kg/day	4.E-04
				Aroclor-1260	0.027	mg/kg	8.0E-11	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-10	4.7E-10	mg/kg/day	2.0E-05	mg/kg/day	2.E-05
				Aroclor-1268	0.12	mg/kg	3.6E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-10	2.1E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				Dieldrin	0.0044	mg/kg	9.3E-12	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-10	5.4E-11	mg/kg/day	5.0E-05	mg/kg/day	1.E-06
				Endosulfan II	0.005	mg/kg	NC		NC			6.2E-11	mg/kg/day	6.0E-03	mg/kg/day	1.E-08
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			3.6E-11	mg/kg/day	6.0E-03	mg/kg/day	6.E-09

US EPA ARCHIVE DOCUMENT

TABLE F.7.34.CT
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BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				gamma-Chlordane	0.015	mg/kg	1.3E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-12	7.4E-11	mg/kg/day	5.0E-04	mg/kg/day	1.E-07
				Technical Chlordane	1.29	mg/kg	1.1E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-10	6.4E-09	mg/kg/day	5.0E-04	mg/kg/day	1.E-05
				Antimony	3.1	mg/kg	NC		NC					6.0E-05	mg/kg/day	
				Arsenic	6.4	mg/kg	4.1E-09	mg/kg/day	1.5E+00	(mg/kg/day)-1	6.E-09	2.4E-08	mg/kg/day	3.0E-04	mg/kg/day	8.E-05
				Cadmium	2.1	mg/kg	NC		NC			2.0E-10	mg/kg/day	2.5E-05	mg/kg/day	1.E-05
				Chromium	200	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	375	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	843	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Mercury	0.62	mg/kg	NC		NC					2.1E-05	mg/kg/day	
				Nickel	59.2	mg/kg	NC		NC					8.0E-04	mg/kg/day	
				Thallium	0.58	mg/kg	NC		NC					8.0E-05	mg/kg/day	
				Vanadium	42.4	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.0018	mg/kg	1.1E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-07	6.7E-12	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000033	mg/kg	2.1E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-09	1.2E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-07					7.E-04
		EXPOSURE POINT TOTAL									4.E-06					1.E-02
	EXPOSURE MEDIUM TOTAL										4.E-06					1.E-02
SEDIMENT TOTAL											4.E-06					1.E-02
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00000132	mg/l	NC		NC			1.7E-11	mg/kg/day	6.0E-02	mg/kg/day	3.E-10
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	3.7E-08	mg/kg/day	1.4E-02	mg/kg/day	5.E-10	2.2E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				Aldrin	0.000023	mg/l	5.0E-11	mg/kg/day	1.7E+01	mg/kg/day	9.E-10	2.9E-10	mg/kg/day	3.0E-05	mg/kg/day	1.E-05
				alpha-Chlordane	0.000019	mg/l	4.1E-11	mg/kg/day	3.5E-01	mg/kg/day	1.E-11	2.4E-10	mg/kg/day	5.0E-04	mg/kg/day	5.E-07
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			4.1E-11	mg/kg/day	6.0E-03	mg/kg/day	7.E-09
				Endrin Aldehyde	0.000005	mg/l	NC		NC			6.4E-11	mg/kg/day	3.0E-04	mg/kg/day	2.E-07
				gamma-Chlordane	0.000021	mg/l	4.6E-11	mg/kg/day	3.5E-01	mg/kg/day	2.E-11	2.7E-10	mg/kg/day	5.0E-04	mg/kg/day	5.E-07
				Arsenic	0.0046	mg/l	1.0E-08	mg/kg/day	1.5E+00	mg/kg/day	2.E-08	5.9E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Barium	0.021	mg/l	NC		NC			2.7E-07	mg/kg/day	7.0E-02	mg/kg/day	4.E-06
				Chromium	0.0023	mg/l	NC		NC			2.9E-08	mg/kg/day	3.0E-03	mg/kg/day	1.E-05
				Lead	0.0044	mg/l	9.6E-09	mg/kg/day	--			5.6E-08	mg/kg/day			
				Manganese	0.13	mg/l	NC		NC			1.7E-06	mg/kg/day	2.4E-02	mg/kg/day	7.E-05
				Mercury	0.00000394	mg/l	NC		NC			5.0E-11	mg/kg/day	3.0E-04	mg/kg/day	2.E-07
				Thallium	0.0022	mg/l	NC		NC			2.8E-08	mg/kg/day	8.0E-05	mg/kg/day	3.E-04
				Nitrate	0.76	mg/l	NC		NC			9.7E-06	mg/kg/day	1.6E+00	mg/kg/day	6.E-06
				Nitrite-N	0.084	mg/l	NC		NC			1.1E-06	mg/kg/day	1.0E-01	mg/kg/day	1.E-05
				Toxicity Equivalency (Dioxins/Furans)	0.00000013	mg/l	2.8E-13	mg/kg/day	1.5E+05	mg/kg/day	4.E-08	1.7E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-08					7.E-04
			DERMAL	Acenaphthylene	0.00000132	mg/l	NC		NC			--		6.0E-02	mg/kg/day	
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	2.2E-05	mg/kg/day	1.4E-02	mg/kg/day	3.E-07	1.3E-04	mg/kg/day	2.0E-02	mg/kg/day	6.E-03
				Aldrin	0.000023	mg/l	1.7E-09	mg/kg/day	1.7E+01	mg/kg/day	3.E-08	1.0E-08	mg/kg/day	3.0E-05	mg/kg/day	3.E-04
				alpha-Chlordane	0.000019	mg/l	3.3E-08	mg/kg/day	3.5E-01	mg/kg/day	1.E-08	1.9E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.000005	mg/l	NC		NC			1.7E-08	mg/kg/day	3.0E-04	mg/kg/day	6.E-05
				gamma-Chlordane	0.000021	mg/l	3.7E-08	mg/kg/day	3.5E-01	mg/kg/day	1.E-08	2.1E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Arsenic	0.0046	mg/l	3.5E-08	mg/kg/day	1.5E+00	mg/kg/day	5.E-08	2.0E-07	mg/kg/day	3.0E-04	mg/kg/day	7.E-04
				Barium	0.021	mg/l	NC		NC			9.3E-07	mg/kg/day	4.9E-03	mg/kg/day	2.E-04
				Chromium	0.0023	mg/l	NC		NC			2.0E-07	mg/kg/day	7.5E-05	mg/kg/day	3.E-03
				Lead	0.0044	mg/l	--		--			--				
				Manganese	0.13	mg/l	NC		NC			5.8E-06	mg/kg/day	9.6E-04	mg/kg/day	6.E-03
				Mercury	0.00000394	mg/l	NC		NC			1.7E-10	mg/kg/day	2.1E-05	mg/kg/day	8.E-06
				Thallium	0.0022	mg/l	NC		NC			9.7E-08	mg/kg/day	8.0E-05	mg/kg/day	1.E-03
				Nitrate	0.76	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.084	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00000013	mg/l	2.2E-09	mg/kg/day	1.5E+05	mg/kg/day	3.E-04	1.3E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-04					2.E-02
		EXPOSURE POINT TOTAL									3.E-04					2.E-02
	EXPOSURE MEDIUM TOTAL										3.E-04					2.E-02
SURFACE WATER TOTAL											3.E-04					2.E-02

US EPA ARCHIVE DOCUMENT

TABLE F.7.34.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	INGESTION	Acenaphthylene	0.0004	mg/kg	NC		NC			3.2E-07	mg/kg/day	6.0E-02	mg/kg/day	5.E-06
				Benzo(a)pyrene	0.000704	mg/kg	9.8E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	7 E-07	5.7E-07	mg/kg/day	3.0E-02	mg/kg/day	2 E-05
				Benzo(b)fluoranthene	0.0008	mg/kg	1.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-08	6.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2 E-05
				Benzo(g,h,i)perylene	0.000703	mg/kg	NC		NC			5.7E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.00038	mg/kg	5.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4 E-07	3.1E-07	mg/kg/day	3.0E-02	mg/kg/day	1 E-05
				Phenanthrene	0.0014	mg/kg	NC		NC			1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				4,4'-DDE	0.0104	mg/kg	1.4E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-07	8.4E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.002	mg/kg	2.8E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	1.6E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Aroclor-1254	0.2166	mg/kg	3.0E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-05	1.8E-04	mg/kg/day	2.0E-05	mg/kg/day	9.E+00
				Aroclor-1268	0.0127	mg/kg	1.8E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-06	1.0E-05	mg/kg/day	2.0E-05	mg/kg/day	5.E-01
				Dieldrin	0.00061	mg/kg	8.5E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-06	4.9E-07	mg/kg/day	5.0E-05	mg/kg/day	1.E-02
				gamma-Chlordane	0.00086	mg/kg	1.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-08	7.0E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Technical Chlordane	0.03671	mg/kg	5.1E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	3.0E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				Lead	0.009	mg/kg	1.3E-06	mg/kg/day	--			7.3E-06	mg/kg/day			
				Mercury	0.269	mg/kg	NC		NC			2.2E-04	mg/kg/day	3.0E-04	mg/kg/day	7.E-01
				Mercury (methyl)	0.236	mg/kg	NC		NC			1.9E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.0000315	mg/kg	4.4E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-04	2.6E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.00000453	mg/kg	6.3E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	9.E-05	3.7E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								8.E-04					1.E+01
		EXPOSURE POINT TOTAL									8.E-04					1.E+01
	EXPOSURE MEDIUM TOTAL										8.E-04					1.E+01
FILLET TOTAL											8.E-04					1.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	1.E-03		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA			1.2.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.35.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	LYMAN MILL POND	INGESTION	2-Methylnaphthalene	0.1	mg/kg	NC		NC			9.9E-09	mg/kg/day	2.0E-02	mg/kg/day	5.E-07
				4-Chloro-3-methylphenol	1.4	mg/kg	NC		NC			1.4E-07	mg/kg/day	5.0E-03	mg/kg/day	3.E-05
				4-Nitrophenol	2.2	mg/kg	NC		NC			2.2E-07	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			4.2E-08	mg/kg/day	6.0E-02	mg/kg/day	7.E-07
				Benzo(a)anthracene	2.8	mg/kg	4.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.8E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				Benzo(a)pyrene	2.9	mg/kg	4.9E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	2.9E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(b)fluoranthene	4.5	mg/kg	7.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	4.5E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			3.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(k)fluoranthene	2.1	mg/kg	3.6E-08	mg/kg/day	7.3E-02	(mg/kg/day)-1	3.E-09	2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	8.8E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	1.E-09	5.1E-07	mg/kg/day	2.0E-02	mg/kg/day	3.E-05
				Dibenzo(a,h)anthracene	0.77	mg/kg	1.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	7.6E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	4.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.7E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				N-Nitroso-di-n-propylamine	1.3	mg/kg	2.2E-08	mg/kg/day	7.0E+00	(mg/kg/day)-1	2.E-07	1.3E-07	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	2.4E-08	mg/kg/day	1.2E-01	(mg/kg/day)-1	3.E-09	1.4E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Phenanthrene	2.8	mg/kg	NC		NC			2.8E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				alpha-Chlordane	0.032	mg/kg	5.4E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-10	3.2E-09	mg/kg/day	5.0E-04	mg/kg/day	6.E-06
				Aroclor-1254	0.49	mg/kg	8.3E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-08	4.8E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				Aroclor-1260	0.027	mg/kg	4.6E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-10	2.7E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				Aroclor-1268	0.12	mg/kg	2.0E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-09	1.2E-08	mg/kg/day	2.0E-05	mg/kg/day	6.E-04
				Dieldrin	0.0044	mg/kg	7.5E-11	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-09	4.4E-10	mg/kg/day	5.0E-05	mg/kg/day	9.E-06
				Endosulfan II	0.005	mg/kg	NC		NC			4.9E-10	mg/kg/day	6.0E-03	mg/kg/day	8.E-08
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			2.9E-10	mg/kg/day	6.0E-03	mg/kg/day	5.E-08
				gamma-Chlordane	0.015	mg/kg	2.5E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-11	1.5E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Technical Chlordane	1.29	mg/kg	2.2E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-09	1.3E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Antimony	3.1	mg/kg	NC		NC			3.1E-07	mg/kg/day	4.0E-04	mg/kg/day	8.E-04
				Arsenic	6.4	mg/kg	1.1E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-07	6.3E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Cadmium	2.1	mg/kg	NC		NC			2.1E-07	mg/kg/day	1.0E-03	mg/kg/day	2.E-04
				Chromium	200	mg/kg	NC		NC			2.0E-05	mg/kg/day	3.0E-03	mg/kg/day	7.E-03
				Lead	375	mg/kg	6.4E-06	mg/kg/day	--			3.7E-05	mg/kg/day			
				Manganese	843	mg/kg	NC		NC			8.3E-05	mg/kg/day	7.1E-02	mg/kg/day	1.E-03
				Mercury	0.62	mg/kg	NC		NC			6.1E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Nickel	69.2	mg/kg	NC		NC			6.8E-06	mg/kg/day	2.0E-02	mg/kg/day	3.E-04
				Thallium	0.58	mg/kg	NC		NC			5.7E-08	mg/kg/day	8.0E-05	mg/kg/day	7.E-04
				Vanadium	42.4	mg/kg	NC		NC			4.2E-06	mg/kg/day	7.0E-03	mg/kg/day	6.E-04
				Toxicity Equivalency (Dioxins/Furans)	0.0018	ug/kg	3.1E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-06	1.8E-10	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000033	mg/kg	5.6E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-08	3.3E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-06					2.E-02
			DERMAL	2-Methylnaphthalene	0.1	mg/kg	NC		NC			7.4E-09	mg/kg/day	2.0E-02	mg/kg/day	4.E-07
				4-Chloro-3-methylphenol	1.4	mg/kg	NC		NC			7.9E-08	mg/kg/day	5.0E-03	mg/kg/day	2.E-05
				4-Nitrophenol	2.2	mg/kg	NC		NC			1.2E-07	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			3.2E-08	mg/kg/day	6.0E-02	mg/kg/day	5.E-07
				Benzo(a)anthracene	2.8	mg/kg	3.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Benzo(a)pyrene	2.9	mg/kg	3.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Benzo(b)fluoranthene	4.5	mg/kg	5.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	3.3E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			2.2E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Benzo(k)fluoranthene	2.1	mg/kg	2.6E-08	mg/kg/day	7.3E-02	(mg/kg/day)-1	2.E-09	1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	5.0E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	7.E-10	2.9E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.77	mg/kg	9.7E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-08	5.7E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	3.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	2.0E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				N-Nitroso-di-n-propylamine	1.3	mg/kg	1.3E-08	mg/kg/day	7.0E+00	(mg/kg/day)-1	9.E-08	7.4E-08	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	3.4E-08	mg/kg/day	1.2E-01	(mg/kg/day)-1	4.E-09	2.0E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Phenanthrene	2.8	mg/kg	NC		NC			2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				alpha-Chlordane	0.032	mg/kg	1.2E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-11	7.2E-10	mg/kg/day	5.0E-04	mg/kg/day	1.E-06
				Aroclor-1254	0.49	mg/kg	6.7E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-08	3.9E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				Aroclor-1260	0.027	mg/kg	3.7E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-10	2.1E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				Aroclor-1268	0.12	mg/kg	1.6E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-09	9.5E-09	mg/kg/day	2.0E-05	mg/kg/day	5.E-04
				Dieldrin	0.0044	mg/kg	4.3E-11	mg/kg/day	1.6E+01	(mg/kg/day)-1	7.E-10	2.5E-10	mg/kg/day	5.0E-05	mg/kg/day	5.E-06
				Endosulfan II	0.005	mg/kg	NC		NC			2.8E-10	mg/kg/day	6.0E-03	mg/kg/day	5.E-08
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			1.6E-10	mg/kg/day	6.0E-03	mg/kg/day	3.E-08
				gamma-Chlordane	0.015	mg/kg	5.8E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-11	3.4E-10	mg/kg/day	5.0E-04	mg/kg/day	7.E-07
				Technical Chlordane	1.29	mg/kg	5.0E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-09	2.9E-08	mg/kg/day	5.0E-04	mg/kg/day	6.E-05
				Antimony	3.1	mg/kg	NC		NC					6.0E-05	mg/kg/day	
				Arsenic	6.4	mg/kg	1.9E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-08	1.1E-07	mg/kg/day	3.0E-04	mg/kg/day	4.E-04
				Cadmium	2.1	mg/kg	NC		NC			1.2E-09	mg/kg/day	2.5E-05	mg/kg/day	5.E-05

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TABLE F.7.35.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Chromium	200	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	375	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	843	mg/kg	NC		NC					7.8E-03	mg/kg/day	
				Mercury	0.62	mg/kg	NC		NC					2.1E-05	mg/kg/day	
				Nickel	69.2	mg/kg	NC		NC					8.0E-04	mg/kg/day	
				Thallium	0.58	mg/kg	NC		NC					8.0E-05	mg/kg/day	
				Vanadium	42.4	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.0018	mg/kg	5.2E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-07	3.1E-11	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000033	mg/kg	9.6E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-08	5.6E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-06					3.E-03
		EXPOSURE POINT TOTAL									7.E-06					2.E-02
	EXPOSURE MEDIUM TOTAL										7.E-06					2.E-02
SEDIMENT TOTAL											7.E-06					2.E-02
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00000132	mg/l	NC		NC			2.6E-11	mg/kg/day	6.0E-02	mg/kg/day	4.E-10
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	5.8E-08	mg/kg/day	1.4E-02	mg/kg/day	8.E-10	3.4E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				Aldrin	0.000023	mg/l	7.8E-11	mg/kg/day	1.7E+01	mg/kg/day	1.E-09	4.6E-10	mg/kg/day	3.0E-05	mg/kg/day	2.E-05
				alpha-Chlordane	0.000019	mg/l	6.4E-11	mg/kg/day	3.5E-01	mg/kg/day	2.E-11	3.8E-10	mg/kg/day	5.0E-04	mg/kg/day	8.E-07
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			6.3E-11	mg/kg/day	6.0E-03	mg/kg/day	1.E-08
				Endrin Aldehyde	0.000005	mg/l	NC		NC			9.9E-11	mg/kg/day	3.0E-04	mg/kg/day	3.E-07
				gamma-Chlordane	0.000021	mg/l	7.1E-11	mg/kg/day	3.5E-01	mg/kg/day	2.E-11	4.2E-10	mg/kg/day	5.0E-04	mg/kg/day	8.E-07
				Arsenic	0.0046	mg/l	1.6E-08	mg/kg/day	1.5E+00	mg/kg/day	2.E-08	9.1E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				Barium	0.021	mg/l	NC		NC			4.2E-07	mg/kg/day	7.0E-02	mg/kg/day	6.E-06
				Chromium	0.0023	mg/l	NC		NC			4.6E-08	mg/kg/day	3.0E-03	mg/kg/day	2.E-05
				Lead	0.0044	mg/l	1.5E-08	mg/kg/day	--			8.7E-08	mg/kg/day			
				Manganese	0.13	mg/l	NC		NC			2.6E-06	mg/kg/day	2.4E-02	mg/kg/day	1.E-04
				Mercury	0.00000394	mg/l	NC		NC			7.8E-11	mg/kg/day	3.0E-04	mg/kg/day	3.E-07
				Thallium	0.0022	mg/l	NC		NC			4.4E-08	mg/kg/day	8.0E-05	mg/kg/day	5.E-04
				Nitrate	0.76	mg/l	NC		NC			1.5E-05	mg/kg/day	1.6E+00	mg/kg/day	9.E-06
				Nitrite-N	0.084	mg/l	NC		NC			1.7E-06	mg/kg/day	1.0E-01	mg/kg/day	2.E-05
				Toxicity Equivalency (Dioxins/Furans)	0.00000013	mg/l	4.4E-13	mg/kg/day	1.5E+05	mg/kg/day	7.E-08	2.6E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								9.E-08					1.E-03
			DERMAL	Acenaphthylene	0.00000132	mg/l	NC		NC			--		6.0E-02	mg/kg/day	
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	2.5E-05	mg/kg/day	1.4E-02	mg/kg/day	3.E-07	1.4E-04	mg/kg/day	2.0E-02	mg/kg/day	7.E-03
				Aldrin	0.000023	mg/l	1.9E-09	mg/kg/day	1.7E+01	mg/kg/day	3.E-08	1.1E-08	mg/kg/day	3.0E-05	mg/kg/day	4.E-04
				alpha-Chlordane	0.000019	mg/l	3.7E-08	mg/kg/day	3.5E-01	mg/kg/day	1.E-08	2.2E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.000005	mg/l	NC		NC			1.9E-08	mg/kg/day	3.0E-04	mg/kg/day	6.E-05
				gamma-Chlordane	0.000021	mg/l	4.1E-08	mg/kg/day	3.5E-01	mg/kg/day	1.E-08	2.4E-07	mg/kg/day	5.0E-04	mg/kg/day	5.E-04
				Arsenic	0.0046	mg/l	3.9E-08	mg/kg/day	1.5E+00	mg/kg/day	6.E-08	2.3E-07	mg/kg/day	3.0E-04	mg/kg/day	8.E-04
				Barium	0.021	mg/l	NC		NC			1.0E-06	mg/kg/day	4.9E-03	mg/kg/day	2.E-04
				Chromium	0.0023	mg/l	NC		NC			2.3E-07	mg/kg/day	7.5E-05	mg/kg/day	3.E-03
				Lead	0.0044	mg/l	--		--			--				
				Manganese	0.13	mg/l	NC		NC			6.4E-06	mg/kg/day	9.6E-04	mg/kg/day	7.E-03
				Mercury	0.00000394	mg/l	NC		NC			2.0E-10	mg/kg/day	2.1E-05	mg/kg/day	9.E-06
				Thallium	0.0022	mg/l	NC		NC			1.1E-07	mg/kg/day	8.0E-05	mg/kg/day	1.E-03
				Nitrate	0.76	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.084	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00000013	mg/l	2.5E-09	mg/kg/day	1.5E+05	mg/kg/day	4.E-04	1.5E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-04					2.E-02
		EXPOSURE POINT TOTAL									4.E-04					2.E-02
	EXPOSURE MEDIUM TOTAL										4.E-04					2.E-02
SURFACE WATER TOTAL											4.E-04					2.E-02

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TABLE F.7.35.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	INGESTION	Acenaphthylene	0.0004	mg/kg	NC		NC			2.5E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				Benzo(a)pyrene	0.000704	mg/kg	7.6E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-07	4.5E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(b)fluoranthene	0.0008	mg/kg	8.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	5.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	0.000703	mg/kg	NC		NC			4.4E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.00038	mg/kg	4.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	2.4E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Phenanthrene	0.0014	mg/kg	NC		NC			8.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				4,4'-DDD	0.0054	mg/kg	5.9E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-07	3.4E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				4,4'-DDE	0.00652	mg/kg	7.1E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	4.1E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				alpha-Chlordane	0.002	mg/kg	2.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-08	1.3E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Aroclor-1254	0.2166	mg/kg	2.3E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-05	1.4E-04	mg/kg/day	2.0E-05	mg/kg/day	7.E+00
				Aroclor-1268	0.0127	mg/kg	1.4E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-06	8.0E-06	mg/kg/day	2.0E-05	mg/kg/day	4.E-01
				Dieldrin	0.00061	mg/kg	6.6E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-06	3.9E-07	mg/kg/day	5.0E-05	mg/kg/day	8.E-03
				gamma-Chlordane	0.00086	mg/kg	9.3E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	5.4E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Technical Chlordane	0.03671	mg/kg	4.0E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	2.3E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				Lead	0.009	mg/kg	9.8E-07	mg/kg/day	--			5.7E-06	mg/kg/day			
				Mercury	0.269	mg/kg	NC		NC			1.7E-04	mg/kg/day	3.0E-04	mg/kg/day	6.E-01
				Mercury (methyl)	0.236	mg/kg	NC		NC			1.5E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.0000315	mg/kg	3.4E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-04	2.0E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.00000453	mg/kg	4.9E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-05	2.9E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-04					9.E+00
		EXPOSURE POINT TOTAL									6.E-04					9.E+00
	EXPOSURE MEDIUM TOTAL										6.E-04					9.E+00
FILLET TOTAL											6.E-04					9.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	1.E-03				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	9.4.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE P.7.36.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	INGESTION	Acenaphthylene	0.0004	mg/kg	NC		NC			5.4E-07	mg/kg/day	6.0E-02	mg/kg/day	9.E-06
				Benzo(a)pyrene	0.000704	mg/kg	8.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-07	9.5E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(b)fluoranthene	0.0008	mg/kg	9.2E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-08	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(g,h,i)perylene	0.000703	mg/kg	NC		NC			9.5E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Dibenzo(a,h)anthracene	0.00038	mg/kg	4.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	5.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.0014	mg/kg	NC		NC			1.9E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				4,4'-DDE	0.0104	mg/kg	1.2E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-07	1.4E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				alpha-Chlordane	0.002	mg/kg	2.3E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-08	2.7E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				Aroclor-1254	0.2166	mg/kg	2.5E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-05	2.9E-04	mg/kg/day	2.0E-05	mg/kg/day	1.E+01
				Aroclor-1268	0.0127	mg/kg	1.5E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-06	1.7E-05	mg/kg/day	2.0E-05	mg/kg/day	9.E-01
				Dieldrin	0.00061	mg/kg	7.1E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-06	8.2E-07	mg/kg/day	5.0E-05	mg/kg/day	2.E-02
				gamma-Chlordane	0.00086	mg/kg	9.9E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	1.2E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Technical Chlordane	0.03671	mg/kg	4.2E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	5.0E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Lead	0.009	mg/kg	1.0E-06	mg/kg/day	--			1.2E-05	mg/kg/day			
				Mercury	0.259	mg/kg	NC		NC			3.6E-04	mg/kg/day	3.0E-04	mg/kg/day	1.E+00
				Mercury (methyl)	0.236	mg/kg	NC		NC			3.2E-04	mg/kg/day	1.0E-04	mg/kg/day	3.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.0000315	mg/kg	3.6E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-04	4.2E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.00000453	mg/kg	5.2E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-05	6.1E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								7.E-04					2.E+01
		EXPOSURE POINT TOTAL									7.E-04					2.E+01
	EXPOSURE MEDIUM TOTAL										7.E-04					2.E+01
FILLET TOTAL											7.E-04					2.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	7.E-04		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		2.0.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.37.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	LYMAN MILL POND	INGESTION	2-Methylnaphthalene	0.1	mg/kg	NC		NC			6.4E-09	mg/kg/day	2.0E-02	mg/kg/day	3.E-07
				4-Chloro-3-methylphenol	1.4	mg/kg	NC		NC			8.9E-08	mg/kg/day	5.0E-03	mg/kg/day	2.E-05
				4-Nitrophenol	2.2	mg/kg	NC		NC			1.4E-07	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			2.7E-08	mg/kg/day	6.0E-02	mg/kg/day	5.E-07
				Benzo(a)anthracene	2.8	mg/kg	3.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	1.8E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Benzo(a)pyrene	2.9	mg/kg	3.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.8E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Benzo(b)fluoranthene	4.5	mg/kg	4.9E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	2.9E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			1.9E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Benzo(k)fluoranthene	2.1	mg/kg	2.3E-08	mg/kg/day	7.3E-02	(mg/kg/day)-1	2.E-09	1.3E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	5.7E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	8.E-10	3.3E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.77	mg/kg	8.4E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-08	4.9E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	2.9E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	1.7E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				N-Nitroso-di-n-propylamine	1.3	mg/kg	1.4E-08	mg/kg/day	7.0E+00	(mg/kg/day)-1	1.E-07	8.3E-08	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	1.5E-08	mg/kg/day	1.2E-01	(mg/kg/day)-1	2.E-09	8.9E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Phenanthrene	2.8	mg/kg	NC		NC			1.8E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				alpha-Chlordane	0.032	mg/kg	3.5E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	2.0E-09	mg/kg/day	5.0E-04	mg/kg/day	4.E-06
				Aroclor-1254	0.49	mg/kg	5.3E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-08	3.1E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				Aroclor-1260	0.027	mg/kg	2.9E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-10	1.7E-09	mg/kg/day	2.0E-05	mg/kg/day	9.E-05
				Aroclor-1268	0.12	mg/kg	1.3E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-09	7.6E-09	mg/kg/day	2.0E-05	mg/kg/day	4.E-04
				Dieldrin	0.0044	mg/kg	4.8E-11	mg/kg/day	1.6E+01	(mg/kg/day)-1	8.E-10	2.8E-10	mg/kg/day	5.0E-05	mg/kg/day	6.E-06
				Endosulfan II	0.005	mg/kg	NC		NC			3.2E-10	mg/kg/day	6.0E-03	mg/kg/day	5.E-08
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			1.8E-10	mg/kg/day	6.0E-03	mg/kg/day	3.E-08
				gamma-Chlordane	0.015	mg/kg	1.6E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-11	9.5E-10	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Technical Chlordane	1.29	mg/kg	1.4E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-09	8.2E-08	mg/kg/day	5.0E-04	mg/kg/day	2.E-04
				Antimony	3.1	mg/kg	NC		NC			2.0E-07	mg/kg/day	4.0E-04	mg/kg/day	5.E-04
				Arsenic	6.4	mg/kg	7.0E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-07	4.1E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Cadmium	2.1	mg/kg	NC		NC			1.3E-07	mg/kg/day	1.0E-03	mg/kg/day	1.E-04
				Chromium	200	mg/kg	NC		NC			1.3E-05	mg/kg/day	3.0E-03	mg/kg/day	4.E-03
				Lead	375	mg/kg	4.1E-06	mg/kg/day	--			2.4E-05	mg/kg/day			
				Manganese	843	mg/kg	NC		NC			5.4E-05	mg/kg/day	7.1E-02	mg/kg/day	8.E-04
				Mercury	0.62	mg/kg	NC		NC			3.9E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				Nickel	69.2	mg/kg	NC		NC			4.4E-06	mg/kg/day	2.0E-02	mg/kg/day	2.E-04
				Thallium	0.58	mg/kg	NC		NC			3.7E-08	mg/kg/day	8.0E-05	mg/kg/day	5.E-04
				Vanadium	42.4	mg/kg	NC		NC			2.7E-06	mg/kg/day	7.0E-03	mg/kg/day	4.E-04
				Toxicity Equivalency (Dioxins/Furans)	0.0018	mg/kg	2.0E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-06	1.1E-10	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000033	mg/kg	3.6E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-08	2.1E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-06					1.E-02
			DERMAL	2-Methylnaphthalene	0.1	mg/kg	NC		NC			1.6E-09	mg/kg/day	2.0E-02	mg/kg/day	8.E-08
				4-Chloro-3-methylphenol	1.4	mg/kg	NC		NC			1.7E-08	mg/kg/day	5.0E-03	mg/kg/day	3.E-06
				4-Nitrophenol	2.2	mg/kg	NC		NC			2.7E-08	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			6.9E-09	mg/kg/day	6.0E-02	mg/kg/day	1.E-07
				Benzo(a)anthracene	2.8	mg/kg	7.7E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-09	4.5E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(a)pyrene	2.9	mg/kg	8.0E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-08	4.7E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(b)fluoranthene	4.5	mg/kg	1.2E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-09	7.2E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			4.8E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(k)fluoranthene	2.1	mg/kg	5.8E-09	mg/kg/day	7.3E-02	(mg/kg/day)-1	4.E-10	3.4E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	1.1E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	2.E-10	6.4E-08	mg/kg/day	2.0E-02	mg/kg/day	3.E-06
				Dibenzo(a,h)anthracene	0.77	mg/kg	2.1E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	1.2E-08	mg/kg/day	3.0E-02	mg/kg/day	4.E-07
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	7.4E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-09	4.3E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				N-Nitroso-di-n-propylamine	1.3	mg/kg	2.8E-09	mg/kg/day	7.0E+00	(mg/kg/day)-1	2.E-08	1.6E-08	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	7.4E-09	mg/kg/day	1.2E-01	(mg/kg/day)-1	9.E-10	4.3E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Phenanthrene	2.8	mg/kg	NC		NC			4.5E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				alpha-Chlordane	0.032	mg/kg	2.7E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-12	1.6E-10	mg/kg/day	5.0E-04	mg/kg/day	3.E-07
				Aroclor-1254	0.49	mg/kg	1.5E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-09	8.5E-09	mg/kg/day	2.0E-05	mg/kg/day	4.E-04
				Aroclor-1260	0.027	mg/kg	8.0E-11	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-10	4.7E-10	mg/kg/day	2.0E-05	mg/kg/day	2.E-05
				Aroclor-1268	0.12	mg/kg	3.6E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-10	2.1E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				Dieldrin	0.0044	mg/kg	9.3E-12	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-10	5.4E-11	mg/kg/day	5.0E-05	mg/kg/day	1.E-06
				Endosulfan II	0.005	mg/kg	NC		NC			6.2E-11	mg/kg/day	6.0E-03	mg/kg/day	1.E-08
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			3.6E-11	mg/kg/day	6.0E-03	mg/kg/day	6.E-09

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TABLE F.7.37.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	CSF/UNIT RISK VALUE	CSF UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	RfD/RfC (1) VALUE	RfD/RfC UNITS	HAZARD QUOTIENT
				gamma-Chlordane	0.015	mg/kg	1.3E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-12	7.4E-11	mg/kg/day	5.0E-04	mg/kg/day	1.E-07
				Technical Chlordane	1.29	mg/kg	1.1E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-10	6.4E-09	mg/kg/day	5.0E-04	mg/kg/day	1.E-05
				Antimony	3.1	mg/kg	NC		NC					6.0E-05	mg/kg/day	
				Arsenic	6.4	mg/kg	4.1E-09	mg/kg/day	1.5E+00	(mg/kg/day)-1	6.E-09	2.4E-08	mg/kg/day	3.0E-04	mg/kg/day	8.E-05
				Cadmium	2.1	mg/kg	NC		NC			2.6E-10	mg/kg/day	2.5E-05	mg/kg/day	1.E-05
				Chromium	200	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	375	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	843	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Mercury	0.62	mg/kg	NC		NC					2.1E-05	mg/kg/day	
				Nickel	69.2	mg/kg	NC		NC					8.0E-04	mg/kg/day	
				Thallium	0.58	mg/kg	NC		NC					8.0E-05	mg/kg/day	
				Vanadium	42.4	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.0018	mg/kg	1.1E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-07	6.7E-12	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	*0.000033*	*mg/kg*	*2.1E-14*	*mg/kg/day*	*1.5E+05*	*(mg/kg/day)-1*	*3.E-09*	*1.2E-13*	*mg/kg/day*			
			EXPOSURE ROUTE TOTAL								3.E-07					7.E-04
		EXPOSURE POINT TOTAL									4.E-06					1.E-02
	EXPOSURE MEDIUM TOTAL										4.E-06					1.E-02
SEDIMENT TOTAL											4.E-06					1.E-02
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00000132	mg/l	NC		NC			1.7E-11	mg/kg/day	6.0E-02	mg/kg/day	3.E-10
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	3.7E-08	mg/kg/day	1.4E-02	mg/kg/day	5.E-10	2.2E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				Aldrin	0.000023	mg/l	5.0E-11	mg/kg/day	1.7E+01	mg/kg/day	9.E-10	2.9E-10	mg/kg/day	3.0E-05	mg/kg/day	1.E-05
				alpha-Chlordane	0.000019	mg/l	4.1E-11	mg/kg/day	3.5E-01	mg/kg/day	1.E-11	2.4E-10	mg/kg/day	5.0E-04	mg/kg/day	5.E-07
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			4.1E-11	mg/kg/day	6.0E-03	mg/kg/day	7.E-09
				Endrin Aldehyde	0.000005	mg/l	NC		NC			6.4E-11	mg/kg/day	3.0E-04	mg/kg/day	2.E-07
				gamma-Chlordane	0.000021	mg/l	4.6E-11	mg/kg/day	3.5E-01	mg/kg/day	2.E-11	2.7E-10	mg/kg/day	5.0E-04	mg/kg/day	5.E-07
				Arsenic	0.0046	mg/l	1.0E-08	mg/kg/day	1.5E+00	mg/kg/day	2.E-08	5.9E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Barium	*0.021*	*mg/l*	NC		NC			2.7E-07	mg/kg/day	7.0E-02	mg/kg/day	4.E-06
				Chromium	0.0023	mg/l	NC		NC			2.9E-08	mg/kg/day	3.0E-03	mg/kg/day	1.E-05
				Lead	0.0044	mg/l	9.6E-09	mg/kg/day	--			5.6E-08	mg/kg/day			
				Manganese	0.13	mg/l	NC		NC			1.7E-06	mg/kg/day	2.4E-02	mg/kg/day	7.E-05
				Mercury	0.00000394	mg/l	NC		NC			5.0E-11	mg/kg/day	3.0E-04	mg/kg/day	2.E-07
				Thallium	0.0022	mg/l	NC		NC			2.8E-08	mg/kg/day	8.0E-05	mg/kg/day	3.E-04
				Nitrate	0.76	mg/l	NC		NC			9.7E-06	mg/kg/day	1.6E+00	mg/kg/day	6.E-06
				Nitrite-N	0.084	mg/l	NC		NC			1.1E-06	mg/kg/day	1.0E-01	mg/kg/day	1.E-05
				Toxicity Equivalency (Dioxins/Furans)	0.00000013	mg/l	2.8E-13	mg/kg/day	1.5E+05	mg/kg/day	4.E-08	1.7E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-08					7.E-04
			DERMAL	Acenaphthylene	0.00000132	mg/l	NC		NC			--		6.0E-02	mg/kg/day	
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	2.2E-05	mg/kg/day	1.4E-02	mg/kg/day	3.E-07	1.3E-04	mg/kg/day	2.0E-02	mg/kg/day	6.E-03
				Aldrin	0.000023	mg/l	1.7E-09	mg/kg/day	1.7E+01	mg/kg/day	3.E-08	1.0E-08	mg/kg/day	3.0E-05	mg/kg/day	3.E-04
				alpha-Chlordane	0.000019	mg/l	3.3E-08	mg/kg/day	3.5E-01	mg/kg/day	1.E-08	1.9E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.000005	mg/l	NC		NC			1.7E-08	mg/kg/day	3.0E-04	mg/kg/day	6.E-05
				gamma-Chlordane	0.000021	mg/l	3.7E-08	mg/kg/day	3.5E-01	mg/kg/day	1.E-08	2.1E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Arsenic	0.0046	mg/l	3.5E-08	mg/kg/day	1.5E+00	mg/kg/day	5.E-08	2.0E-07	mg/kg/day	3.0E-04	mg/kg/day	7.E-04
				Barium	0.021	mg/l	NC		NC			9.3E-07	mg/kg/day	4.9E-03	mg/kg/day	2.E-04
				Chromium	0.0023	mg/l	NC		NC			2.0E-07	mg/kg/day	7.5E-05	mg/kg/day	3.E-03
				Lead	0.0044	mg/l	--		--			--				
				Manganese	0.13	mg/l	NC		NC			5.8E-06	mg/kg/day	9.6E-04	mg/kg/day	6.E-03
				Mercury	0.00000394	mg/l	NC		NC			1.7E-10	mg/kg/day	2.1E-05	mg/kg/day	8.E-06
				Thallium	0.0022	mg/l	NC		NC			9.7E-08	mg/kg/day	8.0E-05	mg/kg/day	1.E-03
				Nitrate	0.76	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.084	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00000013	mg/l	2.2E-09	mg/kg/day	1.5E+05	mg/kg/day	3.E-04	1.3E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-04					2.E-02
		EXPOSURE POINT TOTAL									3.E-04					2.E-02
	EXPOSURE MEDIUM TOTAL										3.E-04					2.E-02
SURFACE WATER TOTAL											3.E-04					2.E-02

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TABLE F.7.37.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00046	mg/kg	NC		NC			3.7E-07	mg/kg/day	6.0E-02	mg/kg/day	6.E-06
				Benzo(a)pyrene	0.000782	mg/kg	1.1E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-07	6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	0.001	mg/kg	1.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	8.1E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(g,h,i)perylene	0.001	mg/kg	NC		NC			8.1E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Dibenzo(a,h)anthracene	0.000382	mg/kg	5.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	3.1E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Indeno(1,2,3-cd)pyrene	0.001	mg/kg	1.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	8.1E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Phenanthrene	0.004254	mg/kg	NC		NC			3.4E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDE	0.05885	mg/kg	8.2E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-06	4.8E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				alpha-Chlordane	0.0064	mg/kg	8.9E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	5.2E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Aroclor-1254	1.34366	mg/kg	1.9E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-04	1.1E-03	mg/kg/day	2.0E-05	mg/kg/day	5.E+01
				Aroclor-1268	0.025937	mg/kg	3.6E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-06	2.1E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Dieldrin	0.0016	mg/kg	2.2E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	1.3E-06	mg/kg/day	5.0E-05	mg/kg/day	3.E-02
				gamma-Chlordane	0.0025	mg/kg	3.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	2.0E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				Technical Chlordane	0.1154	mg/kg	1.6E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-06	9.4E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Lead	0.0879	mg/kg	1.2E-05	mg/kg/day				7.1E-05	mg/kg/day			
				Mercury	0.139	mg/kg	NC		NC			1.1E-04	mg/kg/day	3.0E-04	mg/kg/day	4.E-01
				Mercury (methyl)	0.185	mg/kg	NC		NC			1.5E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000191	mg/kg	2.7E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-03	1.5E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000193	mg/kg	2.7E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-04	1.6E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-03					6.E+01
		EXPOSURE POINT TOTAL									5.E-03					6.E+01
	EXPOSURE MEDIUM TOTAL										5.E-03					6.E+01
WHOLE BODY TOTAL											5.E-03					6.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		5.E-03	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				5.8.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
--- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.38.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	LYMAN MILL POND	INGESTION	2-Methylnaphthalene	0.1	mg/kg	NC		NC			9.9E-09	mg/kg/day	2.0E-02	mg/kg/day	5.E-07
				4-Chloro-3-methylphenol	1.4	mg/kg	NC		NC			1.4E-07	mg/kg/day	5.0E-03	mg/kg/day	3.E-05
				4-Nitrophenol	2.2	mg/kg	NC		NC			2.2E-07	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			4.2E-08	mg/kg/day	6.0E-02	mg/kg/day	7.E-07
				Benzo(a)anthracene	2.8	mg/kg	4.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.8E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				Benzo(a)pyrene	2.9	mg/kg	4.9E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	2.9E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(b)fluoranthene	4.5	mg/kg	7.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	4.5E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			3.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(k)fluoranthene	2.1	mg/kg	3.6E-08	mg/kg/day	7.3E-02	(mg/kg/day)-1	3.E-09	2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	8.8E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	1.E-09	5.1E-07	mg/kg/day	2.0E-02	mg/kg/day	3.E-05
				Dibenzo(a,h)anthracene	0.77	mg/kg	1.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	7.6E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	4.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.7E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				N-Nitroso-di-n-propylamine	1.3	mg/kg	2.2E-08	mg/kg/day	7.0E+00	(mg/kg/day)-1	2.E-07	1.3E-07	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	2.4E-08	mg/kg/day	1.2E-01	(mg/kg/day)-1	3.E-09	1.4E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Phenanthrene	2.8	mg/kg	NC		NC			2.8E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				alpha-Chlordane	0.032	mg/kg	5.4E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-10	3.2E-09	mg/kg/day	5.0E-04	mg/kg/day	6.E-06
				Aroclor-1254	0.49	mg/kg	8.3E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-08	4.8E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				Aroclor-1260	0.027	mg/kg	4.6E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-10	2.7E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				Aroclor-1268	0.12	mg/kg	2.0E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-09	1.2E-08	mg/kg/day	2.0E-05	mg/kg/day	6.E-04
				Dieldrin	0.0044	mg/kg	7.5E-11	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-09	4.4E-10	mg/kg/day	5.0E-05	mg/kg/day	9.E-06
				Endosulfan II	0.005	mg/kg	NC		NC			4.9E-10	mg/kg/day	6.0E-03	mg/kg/day	8.E-08
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			2.9E-10	mg/kg/day	6.0E-03	mg/kg/day	5.E-08
				gamma-Chlordane	0.015	mg/kg	2.5E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-11	1.5E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Technical Chlordane	1.29	mg/kg	2.2E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-09	1.3E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Antimony	3.1	mg/kg	NC		NC			3.1E-07	mg/kg/day	4.0E-04	mg/kg/day	8.E-04
				Arsenic	6.4	mg/kg	1.1E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-07	6.3E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Cadmium	2.1	mg/kg	NC		NC			2.1E-07	mg/kg/day	1.0E-03	mg/kg/day	2.E-04
				Chromium	200	mg/kg	NC		NC			2.0E-05	mg/kg/day	3.0E-03	mg/kg/day	7.E-03
				Lead	375	mg/kg	6.4E-06	mg/kg/day	--			3.7E-05	mg/kg/day			
				Manganese	843	mg/kg	NC		NC			8.3E-05	mg/kg/day	7.1E-02	mg/kg/day	1.E-03
				Mercury	0.62	mg/kg	NC		NC			6.1E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Nickel	69.2	mg/kg	NC		NC			6.8E-06	mg/kg/day	2.0E-02	mg/kg/day	3.E-04
				Thallium	0.58	mg/kg	NC		NC			5.7E-08	mg/kg/day	8.0E-05	mg/kg/day	7.E-04
				Vanadium	42.4	mg/kg	NC		NC			4.2E-06	mg/kg/day	7.0E-03	mg/kg/day	6.E-04
				Toxicity Equivalency (Dioxins/Furans)	0.0018	mg/kg	3.1E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-06	1.8E-10	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.00003	mg/kg	5.6E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-08	3.3E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-06					2.E-02
			DERMAL	2-Methylnaphthalene	0.1	mg/kg	NC		NC			7.4E-09	mg/kg/day	2.0E-02	mg/kg/day	4.E-07
				4-Chloro-3-methylphenol	1.4	mg/kg	NC		NC			7.9E-08	mg/kg/day	5.0E-03	mg/kg/day	2.E-05
				4-Nitrophenol	2.2	mg/kg	NC		NC			1.2E-07	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			3.2E-08	mg/kg/day	6.0E-02	mg/kg/day	5.E-07
				Benzo(a)anthracene	2.8	mg/kg	3.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Benzo(a)pyrene	2.9	mg/kg	3.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Benzo(b)fluoranthene	4.5	mg/kg	5.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	3.3E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			2.2E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Benzo(k)fluoranthene	2.1	mg/kg	2.6E-08	mg/kg/day	7.3E-02	(mg/kg/day)-1	2.E-09	1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	5.0E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	7.E-10	2.9E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.77	mg/kg	9.7E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-08	5.7E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	3.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	2.0E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				N-Nitroso-di-n-propylamine	1.3	mg/kg	1.3E-08	mg/kg/day	7.0E+00	(mg/kg/day)-1	9.E-08	7.4E-08	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	3.4E-08	mg/kg/day	1.2E-01	(mg/kg/day)-1	4.E-09	2.0E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Phenanthrene	2.8	mg/kg	NC		NC			2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				alpha-Chlordane	0.032	mg/kg	1.2E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-11	7.2E-10	mg/kg/day	5.0E-04	mg/kg/day	1.E-06
				Aroclor-1254	0.49	mg/kg	6.7E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-08	3.9E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				Aroclor-1260	0.027	mg/kg	3.7E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-10	2.1E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				Aroclor-1268	0.12	mg/kg	1.6E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-09	9.5E-09	mg/kg/day	2.0E-05	mg/kg/day	5.E-04
				Dieldrin	0.0044	mg/kg	4.3E-11	mg/kg/day	1.6E+01	(mg/kg/day)-1	7.E-10	2.5E-10	mg/kg/day	5.0E-05	mg/kg/day	5.E-06
				Endosulfan II	0.005	mg/kg	NC		NC			2.8E-10	mg/kg/day	6.0E-03	mg/kg/day	5.E-08
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			1.6E-10	mg/kg/day	6.0E-03	mg/kg/day	3.E-08
				gamma-Chlordane	0.015	mg/kg	5.8E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-11	3.4E-10	mg/kg/day	5.0E-04	mg/kg/day	7.E-07
				Technical Chlordane	1.29	mg/kg	5.0E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-09	2.9E-08	mg/kg/day	5.0E-04	mg/kg/day	6.E-05
				Antimony	3.1	mg/kg	NC		NC					6.0E-05	mg/kg/day	
				Arsenic	6.4	mg/kg	1.9E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-08	1.1E-07	mg/kg/day	3.0E-04	mg/kg/day	4.E-04
				Cadmium	2.1	mg/kg	NC		NC			1.2E-09	mg/kg/day	2.5E-05	mg/kg/day	5.E-05

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TABLE F.7.3B.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
				Chromium	200	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	375	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	843	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Mercury	0.62	mg/kg	NC		NC					2.1E-05	mg/kg/day	
				Nickel	69.2	mg/kg	NC		NC					8.0E-04	mg/kg/day	
				Thallium	0.58	mg/kg	NC		NC					8.0E-05	mg/kg/day	
				Vanadium	42.4	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.0018	mg/kg	5.2E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-07	3.1E-11	mg/kg/day			
				Toxicity Equivalency (PCB Congeners	0.000033	*mg/kg*	9.6E-14	*mg/kg/day*	1.5E+05	*(mg/kg/day)-1*	*1.E-08*	5.6E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-06					3.E-03
		EXPOSURE POINT TOTAL									7.E-06					2.E-02
	EXPOSURE MEDIUM TOTAL										7.E-06					2.E-02
SEDIMENT TOTAL											7.E-06					2.E-02
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00000132	mg/l	NC		NC			2.6E-11	mg/kg/day	6.0E-02	mg/kg/day	4.E-10
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	5.8E-08	mg/kg/day	1.4E-02	mg/kg/day	8.E-10	3.4E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				Aldrin	0.000023	mg/l	7.8E-11	mg/kg/day	1.7E+01	mg/kg/day	1.E-09	4.6E-10	mg/kg/day	3.0E-05	mg/kg/day	2.E-05
				alpha-Chlordane	0.000019	mg/l	6.4E-11	mg/kg/day	3.5E-01	mg/kg/day	2.E-11	3.8E-10	mg/kg/day	5.0E-04	mg/kg/day	8.E-07
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			6.3E-11	mg/kg/day	6.0E-03	mg/kg/day	1.E-08
				Endrin Aldehyde	0.000005	mg/l	NC		NC			9.9E-11	mg/kg/day	3.0E-04	mg/kg/day	3.E-07
				gamma-Chlordane	0.000021	mg/l	7.1E-11	mg/kg/day	3.5E-01	mg/kg/day	2.E-11	4.2E-10	mg/kg/day	5.0E-04	mg/kg/day	8.E-07
				Arsenic	0.0046	mg/l	1.6E-08	mg/kg/day	1.5E+00	mg/kg/day	2.E-08	9.1E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				Barium	0.021	mg/l	NC		NC			4.2E-07	mg/kg/day	7.0E-02	mg/kg/day	6.E-06
				Chromium	0.0023	mg/l	NC		NC			4.6E-08	mg/kg/day	3.0E-03	mg/kg/day	2.E-05
				Lead	0.0044	mg/l	1.5E-08	mg/kg/day	--			8.7E-08	mg/kg/day			
				Manganese	0.13	mg/l	NC		NC			2.6E-06	mg/kg/day	2.4E-02	mg/kg/day	1.E-04
				Mercury	0.00000394	mg/l	NC		NC			7.8E-11	mg/kg/day	3.0E-04	mg/kg/day	3.E-07
				Thallium	0.0022	mg/l	NC		NC			4.4E-08	mg/kg/day	8.0E-05	mg/kg/day	5.E-04
				Nitrate	0.76	mg/l	NC		NC			1.5E-05	mg/kg/day	1.6E+00	mg/kg/day	9.E-06
				Nitrite-N	0.084	mg/l	NC		NC			1.7E-06	mg/kg/day	1.0E-01	mg/kg/day	2.E-05
				Toxicity Equivalency (Dioxins/Furans)	0.00000013	mg/l	4.4E-13	mg/kg/day	1.5E+05	mg/kg/day	7.E-08	2.6E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								9.E-08					1.E-03
			DERMAL	Acenaphthylene	0.00000132	mg/l	NC		NC			--		6.0E-02	mg/kg/day	
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	2.5E-05	mg/kg/day	1.4E-02	mg/kg/day	3.E-07	1.4E-04	mg/kg/day	2.0E-02	mg/kg/day	7.E-03
				Aldrin	0.000023	mg/l	1.9E-09	mg/kg/day	1.7E+01	mg/kg/day	3.E-08	1.1E-08	mg/kg/day	3.0E-05	mg/kg/day	4.E-04
				alpha-Chlordane	0.000019	mg/l	3.7E-08	mg/kg/day	3.5E-01	mg/kg/day	1.E-08	2.2E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.000005	mg/l	NC		NC			1.9E-08	mg/kg/day	3.0E-04	mg/kg/day	6.E-05
				gamma-Chlordane	0.000021	mg/l	4.1E-08	mg/kg/day	3.5E-01	mg/kg/day	1.E-08	2.4E-07	mg/kg/day	5.0E-04	mg/kg/day	5.E-04
				Arsenic	0.0046	mg/l	3.9E-08	mg/kg/day	1.5E+00	mg/kg/day	6.E-08	2.3E-07	mg/kg/day	3.0E-04	mg/kg/day	8.E-04
				Barium	0.021	mg/l	NC		NC			1.0E-06	mg/kg/day	4.9E-03	mg/kg/day	2.E-04
				Chromium	0.0023	mg/l	NC		NC			2.3E-07	mg/kg/day	7.5E-05	mg/kg/day	3.E-03
				Lead	0.0044	mg/l	--		--			--				
				Manganese	0.13	mg/l	NC		NC			6.4E-06	mg/kg/day	9.6E-04	mg/kg/day	7.E-03
				Mercury	0.00000394	mg/l	NC		NC			2.0E-10	mg/kg/day	2.1E-05	mg/kg/day	9.E-06
				Thallium	0.0022	mg/l	NC		NC			1.1E-07	mg/kg/day	8.0E-05	mg/kg/day	1.E-03
				Nitrate	0.76	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.084	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00000013	mg/l	2.5E-09	mg/kg/day	1.5E+05	mg/kg/day	4.E-04	1.5E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-04					2.E-02
		EXPOSURE POINT TOTAL									4.E-04					2.E-02
	EXPOSURE MEDIUM TOTAL										4.E-04					2.E-02
SURFACE WATER TOTAL											4.E-04					2.E-02

US EPA ARCHIVE DOCUMENT

TABLE 9.7.38.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00046	mg/kg	NC		NC			2.9E-07	mg/kg/day	6.0E-02	mg/kg/day	5.E-06
				Benzo(a)pyrene	0.000782	mg/kg	8.5E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-07	4.9E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	0.001	mg/kg	1.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-08	6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	0.001	mg/kg	NC		NC			6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.000382	mg/kg	4.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	2.4E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Indeno(1,2,3-cd)pyrene	0.001	mg/kg	1.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-08	6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.004254	mg/kg	NC		NC			2.7E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				4,4'-DDE	0.05885	mg/kg	6.4E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	3.7E-05	mg/kg/day	5.0E-04	mg/kg/day	7.E-02
				alpha-Chlordane	0.0064	mg/kg	6.9E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	4.1E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				Aroclor-1254	1.34366	mg/kg	1.5E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-04	8.5E-04	mg/kg/day	2.0E-05	mg/kg/day	4.E+01
				Aroclor-1268	0.025937	mg/kg	2.8E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-06	1.6E-05	mg/kg/day	2.0E-05	mg/kg/day	8.E-01
				Dieldrin	0.0016	mg/kg	1.7E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.E-06	1.0E-06	mg/kg/day	5.0E-05	mg/kg/day	2.E-02
				gamma-Chlordane	0.0025	mg/kg	2.7E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-08	1.6E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Technical Chlordane	0.1154	mg/kg	1.3E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-06	7.3E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Lead	0.0879	mg/kg	9.5E-06	mg/kg/day				5.6E-05	mg/kg/day			
				Mercury	0.139	mg/kg	NC		NC			8.8E-05	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				Mercury (methyl)	0.185	mg/kg	NC		NC			1.2E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000191	mg/kg	2.1E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-03	1.2E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000193	mg/kg	2.1E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-04	1.2E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-03					5.E+01
		EXPOSURE POINT TOTAL									4.E-03					5.E+01
	EXPOSURE MEDIUM TOTAL										4.E-03					5.E+01
WHOLE BODY TOTAL											4.E-03					5.E+01
TOTAL RECEPTOR RISK ACROSS ALL MEDIA											4.E-03	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				4.5.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availalilable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.39.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00046	mg/kg	NC		NC			6.2E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)pyrene	0.000782	mg/kg	9.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-07	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(b)fluoranthene	0.001	mg/kg	1.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-08	1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(g,h,i)perylene	0.001	mg/kg	NC		NC			1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Dibenzo(a,h)anthracene	0.000382	mg/kg	4.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	5.2E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Indeno(1,2,3-cd)pyrene	0.001	mg/kg	1.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-08	1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Phenanthrene	0.004254	mg/kg	NC		NC			5.7E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDE	0.05885	mg/kg	6.8E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	7.9E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				alpha-Chlordane	0.0064	mg/kg	7.4E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	8.6E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	1.34366	mg/kg	1.6E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-04	1.8E-03	mg/kg/day	2.0E-05	mg/kg/day	9.E+01
				Aroclor-1268	0.025937	mg/kg	3.0E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-06	3.5E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Dieldrin	0.0016	mg/kg	1.8E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.E-06	2.2E-06	mg/kg/day	5.0E-05	mg/kg/day	4.E-02
				gamma-Chlordane	0.0025	mg/kg	2.9E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	3.4E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				Technical Chlordane	0.1154	mg/kg	1.3E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-06	1.6E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				Lead	0.0879	mg/kg	1.0E-05	mg/kg/day				1.2E-04	mg/kg/day			
				Mercury	0.139	mg/kg	NC		NC			1.9E-04	mg/kg/day	3.0E-04	mg/kg/day	6.E-01
				Mercury (methyl)	0.185	mg/kg	NC		NC			2.5E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000191	mg/kg	2.2E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-03	2.6E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000193	mg/kg	2.2E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-04	2.6E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-03					1.E+02
		EXPOSURE POINT TOTAL									4.E-03					1.E+02
	EXPOSURE MEDIUM TOTAL										4.E-03					1.E+02
WHOLE BODY TOTAL											4.E-03					1.E+02
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											4.E-03					9.6.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.40.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	LYMAN MILL POND	INGESTION	2-Methylnaphthalene	0.1	mg/kg	NC		NC			6.4E-09	mg/kg/day	2.0E-02	mg/kg/day	3.E-07
				4-Chloro-3-methylphenol	1.4	mg/kg	NC		NC			8.9E-08	mg/kg/day	5.0E-03	mg/kg/day	2.E-05
				4-Nitrophenol	2.2	mg/kg	NC		NC			1.4E-07	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			2.7E-08	mg/kg/day	6.0E-02	mg/kg/day	5.E-07
				Benzo(a)anthracene	2.8	mg/kg	3.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	1.8E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Benzo(a)pyrene	2.9	mg/kg	3.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.8E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Benzo(b)fluoranthene	4.5	mg/kg	4.9E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	2.9E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			1.9E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Benzo(k)fluoranthene	2.1	mg/kg	2.3E-08	mg/kg/day	7.3E-02	(mg/kg/day)-1	2.E-09	1.3E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	5.7E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	8.E-10	3.3E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.77	mg/kg	8.4E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-08	4.9E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	2.9E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	1.7E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				N-Nitroso-di-n-propylamine	1.3	mg/kg	1.4E-08	mg/kg/day	7.0E+00	(mg/kg/day)-1	1.E-07	8.3E-08	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	1.5E-08	mg/kg/day	1.2E-01	(mg/kg/day)-1	2.E-09	8.9E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Phenanthrene	2.8	mg/kg	NC		NC			1.8E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				alpha-Chlordane	0.032	mg/kg	3.5E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-10	2.0E-09	mg/kg/day	5.0E-04	mg/kg/day	4.E-06
				Aroclor-1254	0.49	mg/kg	5.3E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-08	3.1E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				Aroclor-1260	0.027	mg/kg	2.9E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-10	1.7E-09	mg/kg/day	2.0E-05	mg/kg/day	9.E-05
				Aroclor-1268	0.12	mg/kg	1.3E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-09	7.6E-09	mg/kg/day	2.0E-05	mg/kg/day	4.E-04
				Dieldrin	0.0044	mg/kg	4.8E-11	mg/kg/day	1.6E+01	(mg/kg/day)-1	8.E-10	2.8E-10	mg/kg/day	5.0E-05	mg/kg/day	6.E-06
				Endosulfan II	0.005	mg/kg	NC		NC			3.2E-10	mg/kg/day	6.0E-03	mg/kg/day	5.E-08
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			1.8E-10	mg/kg/day	6.0E-03	mg/kg/day	3.E-08
				gamma-Chlordane	0.015	mg/kg	1.6E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-11	9.5E-10	mg/kg/day	5.0E-04	mg/kg/day	2.E-06
				Technical Chlordane	1.29	mg/kg	1.4E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-09	8.2E-08	mg/kg/day	5.0E-04	mg/kg/day	2.E-04
				Antimony	3.1	mg/kg	NC		NC			2.0E-07	mg/kg/day	4.0E-04	mg/kg/day	5.E-04
				Arsenic	6.4	mg/kg	7.0E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-07	4.1E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Cadmium	2.1	mg/kg	NC		NC			1.3E-07	mg/kg/day	1.0E-03	mg/kg/day	1.E-04
				Chromium	200	mg/kg	NC		NC			1.3E-05	mg/kg/day	3.0E-03	mg/kg/day	4.E-03
				Lead	375	mg/kg	4.1E-06	mg/kg/day	--			2.4E-05	mg/kg/day			
				Manganese	843	mg/kg	NC		NC			5.4E-05	mg/kg/day	7.1E-02	mg/kg/day	8.E-04
				Mercury	0.62	mg/kg	NC		NC			3.9E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				Nickel	69.2	mg/kg	NC		NC			4.4E-06	mg/kg/day	2.0E-02	mg/kg/day	2.E-04
				Thallium	0.58	mg/kg	NC		NC			3.7E-08	mg/kg/day	8.0E-05	mg/kg/day	5.E-04
				Vanadium	42.4	mg/kg	NC		NC			2.7E-06	mg/kg/day	7.0E-03	mg/kg/day	4.E-04
				Toxicity Equivalency (Dioxins/Furans)	0.0018	mg/kg	2.0E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-06	1.1E-10	mg/kg/day			
				Toxicity Equivalency (PCB Congeners	0.000033	mg/kg	3.6E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-08	2.1E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-06					1.E-02
			DERMAL	2-Methylnaphthalene	0.1	mg/kg	NC		NC			1.6E-09	mg/kg/day	2.0E-02	mg/kg/day	8.E-08
				4-Chloro-3-methylphenol	1.4	mg/kg	NC		NC			1.7E-08	mg/kg/day	5.0E-03	mg/kg/day	3.E-06
				4-Nitrophenol	2.2	mg/kg	NC		NC			2.7E-08	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			6.9E-09	mg/kg/day	6.0E-02	mg/kg/day	1.E-07
				Benzo(a)anthracene	2.8	mg/kg	7.7E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-09	4.5E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(a)pyrene	2.9	mg/kg	8.0E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-08	4.7E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(b)fluoranthene	4.5	mg/kg	1.2E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-09	7.2E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			4.8E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(k)fluoranthene	2.1	mg/kg	5.8E-09	mg/kg/day	7.3E-02	(mg/kg/day)-1	4.E-10	3.4E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	1.1E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	2.E-10	6.4E-08	mg/kg/day	2.0E-02	mg/kg/day	3.E-06
				Dibenzo(a,h)anthracene	0.77	mg/kg	2.1E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	1.2E-08	mg/kg/day	3.0E-02	mg/kg/day	4.E-07
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	7.4E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-09	4.3E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				N-Nitroso-di-n-propylamine	1.3	mg/kg	2.8E-09	mg/kg/day	7.0E+00	(mg/kg/day)-1	2.E-08	1.6E-08	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	7.4E-09	mg/kg/day	1.2E-01	(mg/kg/day)-1	9.E-10	4.3E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Phenanthrene	2.8	mg/kg	NC		NC			4.5E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				alpha-Chlordane	0.032	mg/kg	2.7E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-12	1.6E-10	mg/kg/day	5.0E-04	mg/kg/day	3.E-07
				Aroclor-1254	0.49	mg/kg	1.5E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-09	8.5E-09	mg/kg/day	2.0E-05	mg/kg/day	4.E-04
				Aroclor-1260	0.027	mg/kg	8.0E-11	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-10	4.7E-10	mg/kg/day	2.0E-05	mg/kg/day	2.E-05
				Aroclor-1268	0.12	mg/kg	3.6E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-10	2.1E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				Dieldrin	0.0044	mg/kg	9.3E-12	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-10	5.4E-11	mg/kg/day	5.0E-05	mg/kg/day	1.E-06
				Endosulfan II	0.005	mg/kg	NC		NC			6.2E-11	mg/kg/day	6.0E-03	mg/kg/day	1.E-08
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			3.6E-11	mg/kg/day	6.0E-03	mg/kg/day	6.E-09
				gamma-Chlordane	0.015	mg/kg	1.3E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-12	7.4E-11	mg/kg/day	5.0E-04	mg/kg/day	1.E-07
				Technical Chlordane	1.29	mg/kg	1.1E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-10	6.4E-09	mg/kg/day	5.0E-04	mg/kg/day	1.E-05

US EPA ARCHIVE DOCUMENT

TABLE F.7.40.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Antimony	3.1	mg/kg	NC		NC					6.0E-05	mg/kg/day	
				Arsenic	6.4	mg/kg	4.1E-09	mg/kg/day	1.5E+00	(mg/kg/day)-1	6.E-09	2.4E-08	mg/kg/day	3.0E-04	mg/kg/day	8.E-05
				Cadmium	2.1	mg/kg	NC		NC			2.6E-10	mg/kg/day	2.5E-05	mg/kg/day	1.E-05
				Chromium	200	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	375	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	843	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Mercury	0.62	mg/kg	NC		NC					2.1E-05	mg/kg/day	
				Nickel	69.2	mg/kg	NC		NC					8.0E-04	mg/kg/day	
				Thallium	0.58	mg/kg	NC		NC					8.0E-05	mg/kg/day	
				Vanadium	42.4	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.0018	mg/kg	1.1E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-07	6.7E-12	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000033	mg/kg	2.1E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-09	1.2E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-07					7.E-04
		EXPOSURE POINT TOTAL									4.E-06					1.E-02
	EXPOSURE MEDIUM TOTAL										4.E-06					1.E-02
SEDIMENT TOTAL											4.E-06					1.E-02
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00000132	mg/l	NC		NC			1.7E-11	mg/kg/day	6.0E-02	mg/kg/day	3.E-10
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	3.7E-08	mg/kg/day	1.4E-02	mg/kg/day	5.E-10	2.2E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				Aldrin	0.000023	mg/l	5.0E-11	mg/kg/day	1.7E+01	mg/kg/day	9.E-10	2.9E-10	mg/kg/day	3.0E-05	mg/kg/day	1.E-05
				alpha-Chlordane	0.000019	mg/l	4.1E-11	mg/kg/day	3.5E-01	mg/kg/day	1.E-11	2.4E-10	mg/kg/day	5.0E-04	mg/kg/day	5.E-07
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			4.1E-11	mg/kg/day	6.0E-03	mg/kg/day	7.E-09
				Endrin Aldehyde	0.000005	mg/l	NC		NC			6.4E-11	mg/kg/day	3.0E-04	mg/kg/day	2.E-07
				gamma-Chlordane	0.000021	mg/l	4.6E-11	mg/kg/day	3.5E-01	mg/kg/day	2.E-11	2.7E-10	mg/kg/day	5.0E-04	mg/kg/day	5.E-07
				Arsenic	0.0046	mg/l	1.0E-08	mg/kg/day	1.5E+00	mg/kg/day	2.E-08	5.9E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Barium	0.021	mg/l	NC		NC			2.7E-07	mg/kg/day	7.0E-02	mg/kg/day	4.E-06
				Chromium	0.0023	mg/l	NC		NC			2.9E-08	mg/kg/day	3.0E-03	mg/kg/day	1.E-05
				Lead	0.0044	mg/l	9.6E-09	mg/kg/day	--			5.6E-08	mg/kg/day			
				Manganese	0.13	mg/l	NC		NC			1.7E-06	mg/kg/day	2.4E-02	mg/kg/day	7.E-05
				Mercury	0.00000394	mg/l	NC		NC			5.0E-11	mg/kg/day	3.0E-04	mg/kg/day	2.E-07
				Thallium	0.0022	mg/l	NC		NC			2.8E-08	mg/kg/day	8.0E-05	mg/kg/day	3.E-04
				Nitrate	0.76	mg/l	NC		NC			9.7E-06	mg/kg/day	1.6E+00	mg/kg/day	6.E-06
				Nitrite-N	0.084	mg/l	NC		NC			1.1E-06	mg/kg/day	1.0E-01	mg/kg/day	1.E-05
				Toxicity Equivalency (Dioxins/Furans)	0.00000013	mg/l	2.8E-13	mg/kg/day	1.5E+05	mg/kg/day	4.E-08	1.7E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-08					7.E-04
			DERMAL	Acenaphthylene	0.00000132	mg/l	NC		NC			--		6.0E-02	mg/kg/day	
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	2.2E-05	mg/kg/day	1.4E-02	mg/kg/day	3.E-07	1.3E-04	mg/kg/day	2.0E-02	mg/kg/day	6.E-03
				Aldrin	0.000023	mg/l	1.7E-09	mg/kg/day	1.7E+01	mg/kg/day	3.E-08	1.0E-08	mg/kg/day	3.0E-05	mg/kg/day	3.E-04
				alpha-Chlordane	0.000019	mg/l	3.3E-08	mg/kg/day	3.5E-01	mg/kg/day	1.E-08	1.9E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.000005	mg/l	NC		NC			1.7E-08	mg/kg/day	3.0E-04	mg/kg/day	6.E-05
				gamma-Chlordane	0.000021	mg/l	3.7E-08	mg/kg/day	3.5E-01	mg/kg/day	1.E-08	2.1E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Arsenic	0.0046	mg/l	3.5E-08	mg/kg/day	1.5E+00	mg/kg/day	5.E-08	2.0E-07	mg/kg/day	3.0E-04	mg/kg/day	7.E-04
				Barium	0.021	mg/l	NC		NC			9.3E-07	mg/kg/day	4.9E-03	mg/kg/day	2.E-04
				Chromium	0.0023	mg/l	NC		NC			2.0E-07	mg/kg/day	7.5E-05	mg/kg/day	3.E-03
				Lead	0.0044	mg/l	--		--			--				
				Manganese	0.13	mg/l	NC		NC			5.8E-06	mg/kg/day	9.6E-04	mg/kg/day	6.E-03
				Mercury	0.00000394	mg/l	NC		NC			1.7E-10	mg/kg/day	2.1E-05	mg/kg/day	8.E-06
				Thallium	0.0022	mg/l	NC		NC			9.7E-08	mg/kg/day	8.0E-05	mg/kg/day	1.E-03
				Nitrate	0.76	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.084	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00000013	mg/l	2.2E-09	mg/kg/day	1.5E+05	mg/kg/day	3.E-04	1.3E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-04					2.E-02
		EXPOSURE POINT TOTAL									3.E-04					2.E-02
	EXPOSURE MEDIUM TOTAL										3.E-04					2.E-02
SURFACE WATER TOTAL											3.E-04					2.E-02

US EPA ARCHIVE DOCUMENT

TABLE F.7.40.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00355	mg/kg	NC		NC			2.9E-06	mg/kg/day	6.0E-02	mg/kg/day	5.E-05
WHITE SUCKER				Benzo(a)anthracene	0.00946	mg/kg	1.3E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-06	7.7E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				Benzo(a)pyrene	0.0049	mg/kg	6.8E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-06	4.0E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(b)fluoranthene	0.0067	mg/kg	9.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-07	5.4E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(g,h,i)perylene	0.00376	mg/kg	NC		NC			3.0E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Dibenzo(a,h)anthracene	0.0027	mg/kg	3.8E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	2.2E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Indeno(1,2,3-cd)pyrene	0.0043	mg/kg	6.0E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	3.5E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Phenanthrene	0.0212	mg/kg	NC		NC			1.7E-05	mg/kg/day	3.0E-02	mg/kg/day	6.E-04
				4,4'-DDD	0.06351	mg/kg	8.8E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	2.E-06	5.2E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				4,4'-DDE	0.2134	mg/kg	3.0E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-05	1.7E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				4,4'-DDT	0.0052	mg/kg	7.2E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	4.2E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				alpha-Chlordane	0.0469	mg/kg	6.5E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	3.8E-05	mg/kg/day	5.0E-04	mg/kg/day	8.E-02
				Aroclor-1254	5.21365	mg/kg	7.2E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-03	4.2E-03	mg/kg/day	2.0E-05	mg/kg/day	2.E+02
				Aroclor-1268	0.0437	mg/kg	6.1E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	3.5E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Dieldrin	0.00862	mg/kg	1.2E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-05	7.0E-06	mg/kg/day	5.0E-05	mg/kg/day	1.E-01
				gamma-Chlordane	0.02921	mg/kg	4.1E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	2.4E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				Heptachlor Epoxide	0.0017	mg/kg	2.4E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-06	1.4E-06	mg/kg/day	1.3E-05	mg/kg/day	1.E-01
				Technical Chlordane	2.5751	mg/kg	3.6E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-04	2.1E-03	mg/kg/day	5.0E-04	mg/kg/day	4.E+00
				Arsenic	0.0276	mg/kg	3.8E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	6.E-06	2.2E-05	mg/kg/day	3.0E-04	mg/kg/day	7.E-02
				Chromium	0.378	mg/kg	NC		NC			3.1E-04	mg/kg/day	3.0E-03	mg/kg/day	1.E-01
				Lead	0.594	mg/kg	8.3E-05	mg/kg/day	--			4.8E-04	mg/kg/day			
				Mercury	0.1175	mg/kg	NC		NC			9.5E-05	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				Mercury (methyl)	0.1087	mg/kg	NC		NC			8.8E-05	mg/kg/day	1.0E-04	mg/kg/day	9.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000898	mg/kg	1.2E-07	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-02	7.3E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000401	mg/kg	5.6E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-04	3.3E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-02					2.2 E+02
		EXPOSURE POINT TOTAL									2.E-02					2.2 E+02
	EXPOSURE MEDIUM TOTAL										2.E-02					2.2 E+02
WHOLE BODY TOTAL											2.E-02					2.2.E+02
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		2.E-02	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				2.2.E+02

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availablable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.41.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	LYMAN MILL POND	INGESTION	2-Methylnaphthalene	0.1	mg/kg	NC		NC			9.9E-09	mg/kg/day	2.0E-02	mg/kg/day	5.E-07
				4-Chloro-3-methylphenol	1.4	mg/kg	NC		NC			1.4E-07	mg/kg/day	5.0E-03	mg/kg/day	3.E-05
				4-Nitrophenol	2.2	mg/kg	NC		NC			2.2E-07	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			4.2E-08	mg/kg/day	6.0E-02	mg/kg/day	7.E-07
				Benzo(a)anthracene	2.8	mg/kg	4.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.8E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				Benzo(a)pyrene	2.9	mg/kg	4.9E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	2.9E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(b)fluoranthene	4.5	mg/kg	7.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	4.5E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			3.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(k)fluoranthene	2.1	mg/kg	3.6E-08	mg/kg/day	7.3E-02	(mg/kg/day)-1	3.E-09	2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	8.8E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	1.E-09	5.1E-07	mg/kg/day	2.0E-02	mg/kg/day	3.E-05
				Dibenzo(a,h)anthracene	0.77	mg/kg	1.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	7.6E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	4.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.7E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				N-Nitroso-di-n-propylamine	1.3	mg/kg	2.2E-08	mg/kg/day	7.0E+00	(mg/kg/day)-1	2.E-07	1.3E-07	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	2.4E-08	mg/kg/day	1.2E-01	(mg/kg/day)-1	3.E-09	1.4E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Phenanthrene	2.8	mg/kg	NC		NC			2.8E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				alpha-Chlordane	0.032	mg/kg	5.4E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-10	3.2E-09	mg/kg/day	5.0E-04	mg/kg/day	6.E-06
				Aroclor-1254	0.49	mg/kg	8.3E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-08	4.8E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				Aroclor-1260	0.027	mg/kg	4.6E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-10	2.7E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				Aroclor-1268	0.12	mg/kg	2.0E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-09	1.2E-08	mg/kg/day	2.0E-05	mg/kg/day	6.E-04
				Dieldrin	0.0044	mg/kg	7.5E-11	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-09	4.4E-10	mg/kg/day	5.0E-05	mg/kg/day	9.E-06
				Endosulfan II	0.005	mg/kg	NC		NC			4.9E-10	mg/kg/day	6.0E-03	mg/kg/day	8.E-08
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			2.9E-10	mg/kg/day	6.0E-03	mg/kg/day	5.E-08
				gamma-Chlordane	0.015	mg/kg	2.5E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-11	1.5E-09	mg/kg/day	5.0E-04	mg/kg/day	3.E-06
				Technical Chlordane	1.29	mg/kg	2.2E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-09	1.3E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				Antimony	3.1	mg/kg	NC		NC			3.1E-07	mg/kg/day	4.0E-04	mg/kg/day	8.E-04
				Arsenic	6.4	mg/kg	1.1E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-07	6.3E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Cadmium	2.1	mg/kg	NC		NC			2.1E-07	mg/kg/day	1.0E-03	mg/kg/day	2.E-04
				Chromium	200	mg/kg	NC		NC			2.0E-05	mg/kg/day	3.0E-03	mg/kg/day	7.E-03
				Lead	375	mg/kg	6.4E-06	mg/kg/day	--			3.7E-05	mg/kg/day			
				Manganese	843	mg/kg	NC		NC			8.3E-05	mg/kg/day	7.1E-02	mg/kg/day	1.E-03
				Mercury	0.62	mg/kg	NC		NC			6.1E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Nickel	69.2	mg/kg	NC		NC			6.8E-06	mg/kg/day	2.0E-02	mg/kg/day	3.E-04
				Thallium	0.58	mg/kg	NC		NC			5.7E-08	mg/kg/day	8.0E-05	mg/kg/day	7.E-04
				Vanadium	42.4	mg/kg	NC		NC			4.2E-06	mg/kg/day	7.0E-03	mg/kg/day	6.E-04
				Toxicity Equivalency (Dioxins/Furans)	0.0018	mg/kg	3.1E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-06	1.8E-10	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000033	mg/kg	5.6E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-08	3.3E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-06					2.E-02
			DERMAL	2-Methylnaphthalene	0.1	mg/kg	NC		NC			7.4E-09	mg/kg/day	2.0E-02	mg/kg/day	4.E-07
				4-Chloro-3-methylphenol	1.4	mg/kg	NC		NC			7.9E-08	mg/kg/day	5.0E-03	mg/kg/day	2.E-05
				4-Nitrophenol	2.2	mg/kg	NC		NC			1.2E-07	mg/kg/day			
				Acenaphthylene	0.42856	mg/kg	NC		NC			3.2E-08	mg/kg/day	6.0E-02	mg/kg/day	5.E-07
				Benzo(a)anthracene	2.8	mg/kg	3.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Benzo(a)pyrene	2.9	mg/kg	3.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Benzo(b)fluoranthene	4.5	mg/kg	5.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	3.3E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	3	mg/kg	NC		NC			2.2E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Benzo(k)fluoranthene	2.1	mg/kg	2.6E-08	mg/kg/day	7.3E-02	(mg/kg/day)-1	2.E-09	1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				bis(2-Ethylhexyl)phthalate	5.2	mg/kg	5.0E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	7.E-10	2.9E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.77	mg/kg	9.7E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-08	5.7E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	2.7	mg/kg	3.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	2.0E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				N-Nitroso-di-n-propylamine	1.3	mg/kg	1.3E-08	mg/kg/day	7.0E+00	(mg/kg/day)-1	9.E-08	7.4E-08	mg/kg/day			
				Pentachlorophenol	1.4	mg/kg	3.4E-08	mg/kg/day	1.2E-01	(mg/kg/day)-1	4.E-09	2.0E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Phenanthrene	2.8	mg/kg	NC		NC			2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				alpha-Chlordane	0.032	mg/kg	1.2E-10	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-11	7.2E-10	mg/kg/day	5.0E-04	mg/kg/day	1.E-06
				Aroclor-1254	0.49	mg/kg	6.7E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-08	3.9E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				Aroclor-1260	0.027	mg/kg	3.7E-10	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-10	2.1E-09	mg/kg/day	2.0E-05	mg/kg/day	1.E-04
				Aroclor-1268	0.12	mg/kg	1.6E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-09	9.5E-09	mg/kg/day	2.0E-05	mg/kg/day	5.E-04
				Dieldrin	0.0044	mg/kg	4.3E-11	mg/kg/day	1.6E+01	(mg/kg/day)-1	7.E-10	2.5E-10	mg/kg/day	5.0E-05	mg/kg/day	5.E-06
				Endosulfan II	0.005	mg/kg	NC		NC			2.8E-10	mg/kg/day	6.0E-03	mg/kg/day	5.E-08
				Endosulfan sulfate	0.0029	mg/kg	NC		NC			1.6E-10	mg/kg/day	6.0E-03	mg/kg/day	3.E-08
				gamma-Chlordane	0.015	mg/kg	5.8E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-11	3.4E-10	mg/kg/day	5.0E-04	mg/kg/day	7.E-07
				Technical Chlordane	1.29	mg/kg	5.0E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-09	2.9E-08	mg/kg/day	5.0E-04	mg/kg/day	6.E-05
				Antimony	3.1	mg/kg	NC		NC					6.0E-05	mg/kg/day	
				Arsenic	6.4	mg/kg	1.9E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-08	1.1E-07	mg/kg/day	3.0E-04	mg/kg/day	4.E-04
				Cadmium	2.1	mg/kg	NC		NC			1.2E-09	mg/kg/day	2.5E-05	mg/kg/day	5.E-05

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TABLE F.5.41.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Chromium	200	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	375	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	843	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Mercury	0.62	mg/kg	NC		NC					2.1E-05	mg/kg/day	
				Nickel	69.2	mg/kg	NC		NC					8.0E-04	mg/kg/day	
				Thallium	0.58	mg/kg	NC		NC					8.0E-05	mg/kg/day	
				Vanadium	42.4	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.0018	mg/kg	5.2E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-07	3.1E-11	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000033	mg/kg	9.6E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-08	5.6E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-06					3.E-03
		EXPOSURE POINT TOTAL									7.E-06					2.E-02
	EXPOSURE MEDIUM TOTAL										7.E-06					2.E-02
SEDIMENT TOTAL											7.E-06					2.E-02
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00000132	mg/l	NC		NC			2.6E-11	mg/kg/day	6.0E-02	mg/kg/day	4.E-10
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	5.8E-08	mg/kg/day	1.4E-02	mg/kg/day	8.E-10	3.4E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				Aldrin	0.000023	mg/l	7.8E-11	mg/kg/day	1.7E+01	mg/kg/day	1.E-09	4.6E-10	mg/kg/day	3.0E-05	mg/kg/day	2.E-05
				alpha-Chlordane	0.000019	mg/l	6.4E-11	mg/kg/day	3.5E-01	mg/kg/day	2.E-11	3.8E-10	mg/kg/day	5.0E-04	mg/kg/day	8.E-07
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			6.3E-11	mg/kg/day	6.0E-03	mg/kg/day	1.E-08
				Endrin Aldehyde	0.000005	mg/l	NC		NC			9.9E-11	mg/kg/day	3.0E-04	mg/kg/day	3.E-07
				gamma-Chlordane	0.000021	mg/l	7.1E-11	mg/kg/day	3.5E-01	mg/kg/day	2.E-11	4.2E-10	mg/kg/day	5.0E-04	mg/kg/day	8.E-07
				Arsenic	0.0046	mg/l	1.6E-08	mg/kg/day	1.5E+00	mg/kg/day	2.E-08	9.1E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				Barium	0.021	mg/l	NC		NC			4.2E-07	mg/kg/day	7.0E-02	mg/kg/day	6.E-06
				Chromium	0.0023	mg/l	NC		NC			4.6E-08	mg/kg/day	3.0E-03	mg/kg/day	2.E-05
				Lead	0.0044	mg/l	1.5E-08	mg/kg/day	--			8.7E-08	mg/kg/day			
				Manganese	0.13	mg/l	NC		NC			2.6E-06	mg/kg/day	2.4E-02	mg/kg/day	1.E-04
				Mercury	0.00000394	mg/l	NC		NC			7.8E-11	mg/kg/day	3.0E-04	mg/kg/day	3.E-07
				Thallium	0.0022	mg/l	NC		NC			4.4E-08	mg/kg/day	8.0E-05	mg/kg/day	5.E-04
				Nitrate	0.76	mg/l	NC		NC			1.5E-05	mg/kg/day	1.6E+00	mg/kg/day	9.E-06
				Nitrite-N	0.084	mg/l	NC		NC			1.7E-06	mg/kg/day	1.0E-01	mg/kg/day	2.E-05
				Toxicity Equivalency (Dioxins/Furans)	0.00000013	mg/l	4.4E-13	mg/kg/day	1.5E+05	mg/kg/day	7.E-08	2.6E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								9.E-08					1.E-03
			DERMAL	Acenaphthylene	0.00000132	mg/l	NC		NC			--		6.0E-02	mg/kg/day	
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	2.5E-05	mg/kg/day	1.4E-02	mg/kg/day	3.E-07	1.4E-04	mg/kg/day	2.0E-02	mg/kg/day	7.E-03
				Aldrin	0.000023	mg/l	1.9E-09	mg/kg/day	1.7E+01	mg/kg/day	3.E-08	1.1E-08	mg/kg/day	3.0E-05	mg/kg/day	4.E-04
				alpha-Chlordane	0.000019	mg/l	3.7E-08	mg/kg/day	3.5E-01	mg/kg/day	1.E-08	2.2E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.000005	mg/l	NC		NC			1.9E-08	mg/kg/day	3.0E-04	mg/kg/day	6.E-05
				gamma-Chlordane	0.000021	mg/l	4.1E-08	mg/kg/day	3.5E-01	mg/kg/day	1.E-08	2.4E-07	mg/kg/day	5.0E-04	mg/kg/day	5.E-04
				Arsenic	0.0046	mg/l	3.9E-08	mg/kg/day	1.5E+00	mg/kg/day	6.E-08	2.3E-07	mg/kg/day	3.0E-04	mg/kg/day	8.E-04
				Barium	0.021	mg/l	NC		NC			1.0E-06	mg/kg/day	4.9E-03	mg/kg/day	2.E-04
				Chromium	0.0023	mg/l	NC		NC			2.3E-07	mg/kg/day	7.5E-05	mg/kg/day	3.E-03
				Lead	0.0044	mg/l	--		--			--				
				Manganese	0.13	mg/l	NC		NC			6.4E-06	mg/kg/day	9.6E-04	mg/kg/day	7.E-03
				Mercury	0.00000394	mg/l	NC		NC			2.0E-10	mg/kg/day	2.1E-05	mg/kg/day	9.E-06
				Thallium	0.0022	mg/l	NC		NC			1.1E-07	mg/kg/day	8.0E-05	mg/kg/day	1.E-03
				Nitrate	0.76	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.084	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00000013	mg/l	2.5E-09	mg/kg/day	1.5E+05	mg/kg/day	4.E-04	1.5E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-04					2.E-02
		EXPOSURE POINT TOTAL									4.E-04					2.E-02
	EXPOSURE MEDIUM TOTAL										4.E-04					2.E-02
SURFACE WATER TOTAL											4.E-04					2.E-02
	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00355	mg/kg	NC		NC			2.2E-06	mg/kg/day	6.0E-02	mg/kg/day	4.E-05
WHITE SUCKER				Benzo(a)anthracene	0.00946	mg/kg	1.0E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-07	6.0E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(a)pyrene	0.0049	mg/kg	5.3E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-06	3.1E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(b)fluoranthene	0.0067	mg/kg	7.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-07	4.2E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(g,h,i)perylene	0.00376	mg/kg	NC		NC			2.4E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				Dibenzo(a,h)anthracene	0.0027	mg/kg	2.9E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	1.7E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Indeno(1,2,3-cd)pyrene	0.0043	mg/kg	4.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.7E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05

US EPA ARCHIVE DOCUMENT

TABLE F.7.41.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Phenanthrene	0.0212	mg/kg	NC		NC			1.3E-05	mg/kg/day	3.0E-02	mg/kg/day	4.E-04
				4,4'-DDD	0.06351	mg/kg	6.9E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	2.E-06	4.0E-05	mg/kg/day	5.0E-04	mg/kg/day	8.E-02
				4,4'-DDE	0.2134	mg/kg	2.3E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	8.E-06	1.4E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				4,4'-DDT	0.0052	mg/kg	5.6E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	3.3E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				alpha-Chlordane	0.0469	mg/kg	5.1E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	3.0E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				Aroclor-1254	5.21365	mg/kg	5.7E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-03	3.3E-03	mg/kg/day	2.0E-05	mg/kg/day	2.E+02
				Aroclor-1268	0.0437	mg/kg	4.7E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-06	2.8E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Dieldrin	0.00862	mg/kg	9.4E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	5.5E-06	mg/kg/day	5.0E-05	mg/kg/day	1.E-01
				gamma-Chlordane	0.02921	mg/kg	3.2E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	1.8E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				Heptachlor Epoxide	0.0017	mg/kg	1.8E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-06	1.1E-06	mg/kg/day	1.3E-05	mg/kg/day	8.E-02
				Technical Chlordane	2.5751	mg/kg	2.8E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-04	1.6E-03	mg/kg/day	5.0E-04	mg/kg/day	3.E+00
				Arsenic	0.0276	mg/kg	3.0E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-06	1.7E-05	mg/kg/day	3.0E-04	mg/kg/day	6.E-02
				Chromium	0.378	mg/kg	NC		NC			2.4E-04	mg/kg/day	3.0E-03	mg/kg/day	8.E-02
				Lead	0.594	mg/kg	6.4E-05	mg/kg/day	--			3.8E-04	mg/kg/day			
				Mercury	0.1175	mg/kg	NC		NC			7.4E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.1087	mg/kg	NC		NC			6.9E-05	mg/kg/day	1.0E-04	mg/kg/day	7.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000898	mg/kg	9.7E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-02	5.7E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000401	mg/kg	4.4E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-04	2.5E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-02					1.7.E+02
		EXPOSURE POINT TOTAL									2.E-02					1.7.E+02
	EXPOSURE MEDIUM TOTAL										2.E-02					1.7.E+02
WHOLE BODY TOTAL											2.E-02					1.7.E+02
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	2.E-02		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		1.7.E+02

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
--- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.42.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenapthylene	0.00355	mg/kg	NC		NC			4.8E-06	mg/kg/day	6.0E-02	mg/kg/day	8.E-05
				Benzo(a)anthracene	0.00946	mg/kg	1.1E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-07	1.3E-05	mg/kg/day	3.0E-02	mg/kg/day	4.E-04
				Benzo(a)pyrene	0.0049	mg/kg	5.7E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-06	6.6E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(b)fluoranthene	0.0067	mg/kg	7.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-07	9.0E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				Benzo(g,h,i)perylene	0.00376	mg/kg	NC		NC			5.1E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Dibenzo(a,h)anthracene	0.0027	mg/kg	3.1E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	3.6E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Indeno(1,2,3-cd)pyrene	0.0043	mg/kg	5.0E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	5.8E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Phenanthrene	0.0212	mg/kg	NC		NC			2.9E-05	mg/kg/day	3.0E-02	mg/kg/day	1.E-03
				4,4'-DDD	0.06351	mg/kg	7.3E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	2.E-06	8.6E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				4,4'-DDE	0.2134	mg/kg	2.5E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	8.E-06	2.9E-04	mg/kg/day	5.0E-04	mg/kg/day	6.E-01
				4,4'-DDT	0.0052	mg/kg	6.0E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	7.0E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.0469	mg/kg	5.4E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	6.3E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Aroclor-1254	5.21365	mg/kg	6.0E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-03	7.0E-03	mg/kg/day	2.0E-05	mg/kg/day	4.E+02
				Aroclor-1268	0.0437	mg/kg	5.1E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	5.9E-05	mg/kg/day	2.0E-05	mg/kg/day	3.E+00
				Dieldrin	0.00862	mg/kg	1.0E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-05	1.2E-05	mg/kg/day	5.0E-05	mg/kg/day	2.E-01
				gamma-Chlordane	0.02921	mg/kg	3.4E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	3.9E-05	mg/kg/day	5.0E-04	mg/kg/day	8.E-02
				Heptachlor Epoxide	0.0017	mg/kg	2.0E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-06	2.3E-06	mg/kg/day	1.3E-05	mg/kg/day	2.E-01
				Technical Chlordane	2.5751	mg/kg	3.0E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-04	3.5E-03	mg/kg/day	5.0E-04	mg/kg/day	7.E+00
				Arsenic	0.0276	mg/kg	3.2E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	5.E-06	3.7E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Chromium	0.378	mg/kg	NC		NC			5.1E-04	mg/kg/day	3.0E-03	mg/kg/day	2.E-01
				Lead	0.594	mg/kg	6.9E-05	mg/kg/day	--			8.0E-04	mg/kg/day			
				Mercury	0.1175	mg/kg	NC		NC			1.6E-04	mg/kg/day	3.0E-04	mg/kg/day	5.E-01
				Mercury (methyl)	0.1087	mg/kg	NC		NC			1.5E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000898	mg/kg	1.0E-07	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-02	1.2E-06	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000401	mg/kg	4.6E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-04	5.4E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-02					3.7.E+02
		EXPOSURE POINT TOTAL									2.E-02					3.7.E+02
	EXPOSURE MEDIUM TOTAL										2.E-02					3.7.E+02
WHOLE BODY TOTAL											2.E-02					3.7.E+02
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											2.E-02					3.7.E+02

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.43.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SEDIMENT	SEDIMENT	MANTON POND	INGESTION	Benzo(a)anthracene	0.15	mg/kg	1.6E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-09	9.5E-09	mg/kg/day	3.0E-02	mg/kg/day	3.E-07
				Benzo(a)pyrene	0.18	mg/kg	2.0E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-08	1.1E-08	mg/kg/day	3.0E-02	mg/kg/day	4.E-07
				Benzo(b)fluoranthene	0.31	mg/kg	3.4E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-09	2.0E-08	mg/kg/day	3.0E-02	mg/kg/day	7.E-07
				Benzo(g,h,i)perylene	0.11	mg/kg	NC		NC			7.0E-09	mg/kg/day	3.0E-02	mg/kg/day	2.E-07
				Benzo(k)fluoranthene	0.18	mg/kg	2.0E-09	mg/kg/day	7.3E-02	(mg/kg/day)-1	1.E-10	1.1E-08	mg/kg/day	3.0E-02	mg/kg/day	4.E-07
				bis(2-Ethylhexyl)phthalate	0.31	mg/kg	3.4E-09	mg/kg/day	1.4E-02	(mg/kg/day)-1	5.E-11	2.0E-08	mg/kg/day	2.0E-02	mg/kg/day	1.E-06
				Indeno(1,2,3-cd)pyrene	0.15	mg/kg	1.6E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-09	9.5E-09	mg/kg/day	3.0E-02	mg/kg/day	3.E-07
				Phenanthrene	0.14	mg/kg	NC		NC			8.9E-09	mg/kg/day	3.0E-02	mg/kg/day	3.E-07
				alpha-Chlordane	0.0022	mg/kg	2.4E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-12	1.4E-10	mg/kg/day	5.0E-04	mg/kg/day	3.E-07
				gamma-Chlordane	0.0025	mg/kg	2.7E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-11	1.6E-10	mg/kg/day	5.0E-04	mg/kg/day	3.E-07
				Arsenic	0.77	mg/kg	8.4E-09	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-08	4.9E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Cadmium	0.68	mg/kg	NC		NC			4.3E-08	mg/kg/day	1.0E-03	mg/kg/day	4.E-05
				Chromium	13.4	mg/kg	NC		NC			8.5E-07	mg/kg/day	3.0E-03	mg/kg/day	3.E-04
				Lead	45.9	mg/kg	5.0E-07	mg/kg/day	--			2.9E-06	mg/kg/day			
				Manganese	128	mg/kg	NC		NC			8.1E-06	mg/kg/day	7.1E-02	mg/kg/day	1.E-04
				Vanadium	5.7	mg/kg	NC		NC			3.6E-07	mg/kg/day	7.0E-03	mg/kg/day	5.E-05
				Toxicity Equivalency (Dioxins/Furans)	0.00043	mg/kg	4.7E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-07	2.7E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								7.E-07					7.E-04
			DERMAL	Benzo(a)anthracene	0.15	mg/kg	4.1E-10	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-10	2.4E-09	mg/kg/day	3.0E-02	mg/kg/day	8.E-08
				Benzo(a)pyrene	0.18	mg/kg	5.0E-10	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-09	2.9E-09	mg/kg/day	3.0E-02	mg/kg/day	1.E-07
				Benzo(b)fluoranthene	0.31	mg/kg	8.5E-10	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-10	5.0E-09	mg/kg/day	3.0E-02	mg/kg/day	2.E-07
				Benzo(g,h,i)perylene	0.11	mg/kg	NC		NC			1.8E-09	mg/kg/day	3.0E-02	mg/kg/day	6.E-08
				Benzo(k)fluoranthene	0.18	mg/kg	5.0E-10	mg/kg/day	7.3E-02	(mg/kg/day)-1	4.E-11	2.9E-09	mg/kg/day	3.0E-02	mg/kg/day	1.E-07
				bis(2-Ethylhexyl)phthalate	0.31	mg/kg	6.6E-10	mg/kg/day	1.4E-02	(mg/kg/day)-1	9.E-12	3.8E-09	mg/kg/day	2.0E-02	mg/kg/day	2.E-07
				Indeno(1,2,3-cd)pyrene	0.15	mg/kg	4.1E-10	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-10	2.4E-09	mg/kg/day	3.0E-02	mg/kg/day	8.E-08
				Phenanthrene	0.14	mg/kg	NC		NC			2.3E-09	mg/kg/day	3.0E-02	mg/kg/day	8.E-08
				alpha-Chlordane	0.0022	mg/kg	1.9E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-13	1.1E-11	mg/kg/day	5.0E-04	mg/kg/day	2.E-08
				gamma-Chlordane	0.0025	mg/kg	2.1E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-13	1.2E-11	mg/kg/day	5.0E-04	mg/kg/day	2.E-08
				Arsenic	0.77	mg/kg	4.9E-10	mg/kg/day	1.5E+00	(mg/kg/day)-1	7.E-10	2.9E-09	mg/kg/day	3.0E-04	mg/kg/day	1.E-05
				Cadmium	0.68	mg/kg	NC		NC			8.4E-11	mg/kg/day	2.5E-05	mg/kg/day	3.E-06
				Chromium	13.4	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	45.9	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	128	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Vanadium	5.7	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00043	mg/kg	2.7E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-08	1.6E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-08					1.E-05
		EXPOSURE POINT TOTAL									8.E-07					7.E-04
	EXPOSURE MEDIUM TOTAL										8.E-07					7.E-04
SEDIMENT TOTAL											8.E-07					7.E-04
SURFACE WATER	SURFACE WATER	MANTON POND	INGESTION	Acenaphthylene	0.00000132	mg/l	NC		NC			1.7E-11	mg/kg/day	6.0E-02	mg/kg/day	3.E-10
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	3.7E-08	mg/kg/day	1.4E-02	mg/kg/day	5.E-10	2.2E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				Aldrin	0.000023	mg/l	5.0E-11	mg/kg/day	1.7E+01	mg/kg/day	9.E-10	2.9E-10	mg/kg/day	3.0E-05	mg/kg/day	1.E-05
				alpha-Chlordane	0.000019	mg/l	4.1E-11	mg/kg/day	3.5E-01	mg/kg/day	1.E-11	2.4E-10	mg/kg/day	5.0E-04	mg/kg/day	5.E-07
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			4.1E-11	mg/kg/day	6.0E-03	mg/kg/day	7.E-09
				Endrin Aldehyde	0.000005	mg/l	NC		NC			6.4E-11	mg/kg/day	3.0E-04	mg/kg/day	2.E-07
				gamma-Chlordane	0.000021	mg/l	4.6E-11	mg/kg/day	3.5E-01	mg/kg/day	2.E-11	2.7E-10	mg/kg/day	5.0E-04	mg/kg/day	5.E-07
				Arsenic	0.0046	mg/l	1.0E-08	mg/kg/day	1.5E+00	mg/kg/day	2.E-08	5.9E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Barium	0.021	mg/l	NC		NC			2.7E-07	mg/kg/day	7.0E-02	mg/kg/day	4.E-06
				Chromium	0.0023	mg/l	NC		NC			2.9E-08	mg/kg/day	3.0E-03	mg/kg/day	1.E-05
				Lead	0.0044	mg/l	9.6E-09	mg/kg/day	--			5.6E-08	mg/kg/day			
				Manganese	0.13	mg/l	NC		NC			1.7E-06	mg/kg/day	2.4E-02	mg/kg/day	7.E-05
				Mercury	0.00000394	mg/l	NC		NC			5.0E-11	mg/kg/day	3.0E-04	mg/kg/day	2.E-07
				Thallium	0.0022	mg/l	NC		NC			2.8E-08	mg/kg/day	8.0E-05	mg/kg/day	3.E-04
				Nitrate	0.76	mg/l	NC		NC			9.7E-06	mg/kg/day	1.6E+00	mg/kg/day	6.E-06
				Nitrite-N	0.084	mg/l	NC		NC			1.1E-06	mg/kg/day	1.0E-01	mg/kg/day	1.E-05

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TABLE F.7.43.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Toxicity Equivalency (Dioxins/Furans)	0.00000013	mg/l	2.8E-13	mg/kg/day	1.5E+05	mg/kg/day	4.E-08	1.7E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-08					7.E-04
			DERMAL	Acenaphthylene	0.00000132	mg/l	NC		NC			--		6.0E-02	mg/kg/day	
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	2.2E-05	mg/kg/day	1.4E-02	mg/kg/day	3.E-07	1.3E-04	mg/kg/day	2.0E-02	mg/kg/day	6.E-03
				Aldrin	0.000023	mg/l	1.7E-09	mg/kg/day	1.7E+01	mg/kg/day	3.E-08	1.0E-08	mg/kg/day	3.0E-05	mg/kg/day	3.E-04
				alpha-Chlordane	0.000019	mg/l	1.4E-08	mg/kg/day	3.5E-01	mg/kg/day	5.E-09	1.9E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.000005	mg/l	NC		NC			1.7E-08	mg/kg/day	3.0E-04	mg/kg/day	6.E-05
				gamma-Chlordane	0.000021	mg/l	3.7E-08	mg/kg/day	3.5E-01	mg/kg/day	1.E-08	2.1E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Arsenic	0.0046	mg/l	3.5E-08	mg/kg/day	1.5E+00	mg/kg/day	5.E-08	2.0E-07	mg/kg/day	3.0E-04	mg/kg/day	7.E-04
				Barium	0.021	mg/l	NC		NC			9.3E-07	mg/kg/day	4.9E-03	mg/kg/day	2.E-04
				Chromium	0.0023	mg/l	NC		NC			2.0E-07	mg/kg/day	7.5E-05	mg/kg/day	3.E-03
				Lead	0.0044	mg/l	--		--			--				
				Manganese	0.13	mg/l	NC		NC			5.8E-06	mg/kg/day	9.6E-04	mg/kg/day	6.E-03
				Mercury	0.00000394	mg/l	NC		NC			1.7E-10	mg/kg/day	2.1E-05	mg/kg/day	8.E-06
				Thallium	0.0022	mg/l	NC		NC			9.7E-08	mg/kg/day	8.0E-05	mg/kg/day	1.E-03
				Nitrate	0.76	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.084	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00000013	mg/l	2.2E-09	mg/kg/day	1.5E+05	mg/kg/day	3.E-04	1.3E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-04					7.E-02
		EXPOSURE POINT TOTAL									3.E-04					2.E-02
	EXPOSURE MEDIUM TOTAL										3.E-04					2.E-02
SURFACE WATER TOTAL											3.E-04					2.E-02
LARGEMOUTH BASS	FILLET	MANTON POND	INGESTION	Acenaphthylene	0.0003	mg/kg	NC		NC			2.4E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				Dibenzo(a,h)anthracene	0.00022	mg/kg	3.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.8E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Phenanthrene	0.00293	mg/kg	NC		NC			2.4E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				4,4'-DDE	0.00886	mg/kg	1.2E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-07	7.2E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.0014	mg/kg	1.9E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-08	1.1E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Aroclor-1254	0.1247	mg/kg	1.7E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-05	1.0E-04	mg/kg/day	2.0E-05	mg/kg/day	5.E+00
				Aroclor-1268	0.03292	mg/kg	4.6E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-06	2.7E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Dieldrin	0.00052	mg/kg	7.2E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-06	4.2E-07	mg/kg/day	5.0E-05	mg/kg/day	8.E-03
				Endosulfan Sulfate	0.00096	mg/kg	NC		NC			7.8E-07	mg/kg/day	6.0E-03	mg/kg/day	1.E-04
				gamma-Chlordane	0.00052	mg/kg	7.2E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	4.2E-07	mg/kg/day	5.0E-04	mg/kg/day	8.E-04
				Technical Chlordane	0.04062	mg/kg	5.6E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	3.3E-05	mg/kg/day	5.0E-04	mg/kg/day	7.E-02
				Lead	0.0113	mg/kg	1.6E-06	mg/kg/day	--			9.2E-06	mg/kg/day			
				Mercury	0.185	mg/kg	NC		NC			1.5E-04	mg/kg/day	3.0E-04	mg/kg/day	5.E-01
				Mercury (methyl)	0.149	mg/kg	NC		NC			1.2E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.0000186	mg/kg	2.6E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-04	1.5E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-04					8.E+00
		EXPOSURE POINT TOTAL									4.E-04					8.E+00
	EXPOSURE MEDIUM TOTAL										4.E-04					8.E+00
FILLET TOTAL											4.E-04					8.E+00
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		8.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				8.2.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.44.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	CSF/UNIT RISK VALUE	CSF UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	RfD/RfC (1) VALUE	RfD/RfC UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	MANTON POND	INGESTION	Benzo(a)anthracene	0.15	mg/kg	2.5E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-09	1.5E-08	mg/kg/day	3.0E-02	mg/kg/day	5.E-07
				Benzo(a)pyrene	0.18	mg/kg	3.1E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	1.8E-08	mg/kg/day	3.0E-02	mg/kg/day	6.E-07
				Benzo(b)fluoranthene	0.31	mg/kg	5.3E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-09	3.1E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Benzo(g,h,i)perylene	0.11	mg/kg	NC		NC			1.1E-08	mg/kg/day	3.0E-02	mg/kg/day	4.E-07
				Benzo(k)fluoranthene	0.18	mg/kg	3.1E-09	mg/kg/day	7.3E-02	(mg/kg/day)-1	2.E-10	1.8E-08	mg/kg/day	3.0E-02	mg/kg/day	6.E-07
				bis(2-Ethylhexyl)phthalate	0.31	mg/kg	5.3E-09	mg/kg/day	1.4E-02	(mg/kg/day)-1	7.E-11	3.1E-08	mg/kg/day	2.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	0.15	mg/kg	2.5E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-09	1.5E-08	mg/kg/day	3.0E-02	mg/kg/day	5.E-07
				Phenanthrene	0.14	mg/kg	NC		NC			1.4E-08	mg/kg/day	3.0E-02	mg/kg/day	5.E-07
				alpha-Chlordane	0.0022	mg/kg	3.7E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-11	2.2E-10	mg/kg/day	5.0E-04	mg/kg/day	4.E-07
				gamma-Chlordane	0.0025	mg/kg	4.2E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-11	2.5E-10	mg/kg/day	5.0E-04	mg/kg/day	5.E-07
				Arsenic	0.77	mg/kg	1.3E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-08	7.6E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				Cadmium	0.68	mg/kg	NC		NC			6.7E-08	mg/kg/day	1.0E-03	mg/kg/day	7.E-05
				Chromium	13.4	mg/kg	NC		NC			1.3E-06	mg/kg/day	3.0E-03	mg/kg/day	4.E-04
				Lead	45.9	mg/kg	7.8E-07	mg/kg/day	--			4.5E-06	mg/kg/day			
				Manganese	128	mg/kg	NC		NC			1.3E-05	mg/kg/day	7.1E-02	mg/kg/day	2.E-04
				Vanadium	5.7	mg/kg	NC		NC			5.6E-07	mg/kg/day	7.0E-03	mg/kg/day	8.E-05
				Toxicity Equivalency (Dioxins/Furans)	0.00043	mg/kg	7.3E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-06	4.3E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-06					1.E-03
			DERMAL	Benzo(a)anthracene	0.15	mg/kg	1.9E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-09	1.1E-08	mg/kg/day	3.0E-02	mg/kg/day	4.E-07
				Benzo(a)pyrene	0.18	mg/kg	2.3E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	1.3E-08	mg/kg/day	3.0E-02	mg/kg/day	4.E-07
				Benzo(b)fluoranthene	0.31	mg/kg	3.9E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-09	2.3E-08	mg/kg/day	3.0E-02	mg/kg/day	8.E-07
				Benzo(g,h,i)perylene	0.11	mg/kg	NC		NC			8.1E-09	mg/kg/day	3.0E-02	mg/kg/day	3.E-07
				Benzo(k)fluoranthene	0.18	mg/kg	2.3E-09	mg/kg/day	7.3E-02	(mg/kg/day)-1	2.E-10	1.3E-08	mg/kg/day	3.0E-02	mg/kg/day	4.E-07
				bis(2-Ethylhexyl)phthalate	0.31	mg/kg	3.9E-09	mg/kg/day	1.4E-02	(mg/kg/day)-1	4.E-11	1.8E-08	mg/kg/day	2.0E-02	mg/kg/day	9.E-07
				Indeno(1,2,3-cd)pyrene	0.15	mg/kg	1.9E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-09	1.1E-08	mg/kg/day	3.0E-02	mg/kg/day	4.E-07
				Phenanthrene	0.14	mg/kg	NC		NC			1.0E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-07
				alpha-Chlordane	0.0022	mg/kg	8.5E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-12	5.0E-11	mg/kg/day	5.0E-04	mg/kg/day	1.E-07
				gamma-Chlordane	0.0025	mg/kg	9.7E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-12	5.7E-11	mg/kg/day	5.0E-04	mg/kg/day	1.E-07
				Arsenic	0.77	mg/kg	2.2E-09	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-09	1.3E-08	mg/kg/day	3.0E-04	mg/kg/day	4.E-05
				Cadmium	0.68	mg/kg	NC		NC			3.8E-10	mg/kg/day	2.5E-05	mg/kg/day	2.E-05
				Chromium	13.4	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	45.9	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	128	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Vanadium	5.7	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00043	mg/kg	1.3E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-07	7.3E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-07					6.E-05
		EXPOSURE POINT TOTAL									1.E-06					1.E-03
	EXPOSURE MEDIUM TOTAL										1.E-06					1.E-03
SEDIMENT TOTAL											1.E-06					1.E-03
SURFACE WATER	SURFACE WATER	MANTON POND	INGESTION	Acenaphthylene	0.00000132	mg/l	NC		NC			2.6E-11	mg/kg/day	6.0E-02	mg/kg/day	4.E-10
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	5.8E-08	mg/kg/day	1.4E-02	mg/kg/day	8.E-10	3.4E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				Aldrin	0.000023	mg/l	7.8E-11	mg/kg/day	1.7E+01	mg/kg/day	1.E-09	4.6E-10	mg/kg/day	3.0E-05	mg/kg/day	2.E-05
				alpha-Chlordane	0.000019	mg/l	6.4E-11	mg/kg/day	3.5E-01	mg/kg/day	2.E-11	3.8E-10	mg/kg/day	5.0E-04	mg/kg/day	8.E-07
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			6.3E-11	mg/kg/day	6.0E-03	mg/kg/day	1.E-08
				Endrin Aldehyde	0.000005	mg/l	NC		NC			9.9E-11	mg/kg/day	3.0E-04	mg/kg/day	3.E-07
				gamma-Chlordane	0.000021	mg/l	7.1E-11	mg/kg/day	3.5E-01	mg/kg/day	2.E-11	4.2E-10	mg/kg/day	5.0E-04	mg/kg/day	8.E-07
				Arsenic	0.0046	mg/l	1.6E-08	mg/kg/day	1.5E+00	mg/kg/day	2.E-08	9.1E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				Barium	0.021	mg/l	NC		NC			4.2E-07	mg/kg/day	7.0E-02	mg/kg/day	6.E-06
				Chromium	0.0023	mg/l	NC		NC			4.6E-08	mg/kg/day	3.0E-03	mg/kg/day	2.E-05
				Lead	0.0044	mg/l	1.5E-08	mg/kg/day	--			8.7E-08	mg/kg/day			
				Manganese	0.13	mg/l	NC		NC			2.6E-06	mg/kg/day	2.4E-02	mg/kg/day	1.E-04
				Mercury	0.00000394	mg/l	NC		NC			7.8E-11	mg/kg/day	3.0E-04	mg/kg/day	3.E-07
				Thallium	0.0022	mg/l	NC		NC			4.4E-08	mg/kg/day	8.0E-05	mg/kg/day	5.E-04
				Nitrate	0.76	mg/l	NC		NC			1.5E-05	mg/kg/day	1.6E+00	mg/kg/day	9.E-06
				Nitrite-N	0.084	mg/l	NC		NC			1.7E-06	mg/kg/day	1.0E-01	mg/kg/day	2.E-05

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TABLE F.7.44.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Toxicity Equivalency (Dioxins/Furans)	0.00000013	mg/l	4.4E-13	mg/kg/day	1.5E+05	mg/kg/day	7.E-08	2.6E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								9.E-08					1.E-03
			DERMAL	Acenaphthylene	0.00000132	mg/l	NC		NC			--		6.0E-02	mg/kg/day	
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	2.5E-05	mg/kg/day	1.4E-02	mg/kg/day	3.E-07	1.4E-04	mg/kg/day	2.0E-02	mg/kg/day	7.E-03
				Aldrin	0.000023	mg/l	1.9E-09	mg/kg/day	1.7E+01	mg/kg/day	3.E-08	1.1E-08	mg/kg/day	3.0E-05	mg/kg/day	4.E-04
				alpha-Chlordane	0.000019	mg/l	3.7E-08	mg/kg/day	3.5E-01	mg/kg/day	1.E-08	2.2E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.000003	mg/l	NC		NC			1.9E-08	mg/kg/day	3.0E-04	mg/kg/day	6.E-05
				gamma-Chlordane	0.00002	mg/l	4.1E-08	mg/kg/day	3.5E-01	mg/kg/day	1.E-08	2.4E-07	mg/kg/day	5.0E-04	mg/kg/day	5.E-04
				Arsenic	0.0046	mg/l	3.9E-08	mg/kg/day	1.5E+00	mg/kg/day	6.E-08	2.3E-07	mg/kg/day	3.0E-04	mg/kg/day	8.E-04
				Barium	0.021	mg/l	NC		NC			1.0E-06	mg/kg/day	4.9E-03	mg/kg/day	2.E-04
				Chromium	0.0023	mg/l	NC		NC			2.3E-07	mg/kg/day	7.5E-05	mg/kg/day	3.E-03
				Lead	0.0044	mg/l	--		--			--				
				Manganese	0.13	mg/l	NC		NC			6.4E-06	mg/kg/day	9.6E-04	mg/kg/day	7.E-03
				Mercury	0.00000394	mg/l	NC		NC			2.0E-10	mg/kg/day	2.1E-05	mg/kg/day	9.E-06
				Thallium	0.0022	mg/l	NC		NC			1.1E-07	mg/kg/day	8.0E-05	mg/kg/day	1.E-03
				Nitrate	0.76	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.684	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00000013	mg/l	2.5E-09	mg/kg/day	1.5E+05	mg/kg/day	4.E-04	1.5E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-04					2.E-02
		EXPOSURE POINT TOTAL									4.E-04					2.E-02
	EXPOSURE MEDIUM TOTAL										4.E-04					2.E-02
SURFACE WATER TOTAL											4.E-04					2.E-02
LARGEMOUTH BASS	FILLET	MANTON POND	INGESTION	Acenaphthylene	0.0003	mg/kg	NC		NC			1.9E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Dibenzo(a,h)anthracene	0.00022	mg/kg	2.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.4E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Phenanthrene	0.00293	mg/kg	NC		NC			1.9E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				4,4'-DDE	0.00886	mg/kg	9.6E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-07	5.6E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.0014	mg/kg	1.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-08	8.9E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Aroclor-1254	0.1247	mg/kg	1.4E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-05	7.9E-05	mg/kg/day	2.0E-05	mg/kg/day	4.E+00
				Aroclor-1268	0.03292	mg/kg	3.6E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-06	2.1E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Dieldrin	0.00052	mg/kg	5.6E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	9.E-07	3.3E-07	mg/kg/day	5.0E-05	mg/kg/day	7.E-03
				Endosulfan Sulfate	0.00096	mg/kg	NC		NC			6.1E-07	mg/kg/day	6.0E-03	mg/kg/day	1.E-04
				gamma-Chlordane	0.00052	mg/kg	5.6E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	3.3E-07	mg/kg/day	5.0E-04	mg/kg/day	7.E-04
				Technical Chlordane	0.04062	mg/kg	4.4E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	2.6E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				Lead	0.0113	mg/kg	1.2E-06	mg/kg/day	--			7.2E-06	mg/kg/day			
				Mercury	0.185	mg/kg	NC		NC			1.2E-04	mg/kg/day	3.0E-04	mg/kg/day	4.E-01
				Mercury (methyl)	0.149	mg/kg	NC		NC			9.4E-05	mg/kg/day	1.0E-04	mg/kg/day	9.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0000186	mg/kg	2.0E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-04	1.2E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-04					6.E+00
		EXPOSURE POINT TOTAL									3.E-04					6.E+00
	EXPOSURE MEDIUM TOTAL										3.E-04					6.E+00
FILLET TOTAL											3.E-04					6.E+00
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	7.E-04			TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		6.4.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.45.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	MANTON POND	INGESTION	Acenaphthylene	0.00041	mg/kg	NC		NC			5.5E-07	mg/kg/day			
				Dibenzo(a,h)anthracene	0.000226	mg/kg	2.6E-08	mg/kg/day	2.2E-04	(mg/kg/day)-1	6.E-12	3.0E-07	mg/kg/day	7.3E+00	mg/kg/day	4.E-08
				Phenanthrene	0.00498	mg/kg	NC		NC			6.7E-06	mg/kg/day			
				4,4'-DDE	0.0124	mg/kg	1.4E-06	mg/kg/day	8.9E-03	(mg/kg/day)-1	1.E-08	1.7E-05	mg/kg/day	3.4E-01	mg/kg/day	5.E-05
				alpha-Chlordane	0.00263	mg/kg	3.0E-07	mg/kg/day	1.4E-03	(mg/kg/day)-1	4.E-10	3.5E-06	mg/kg/day	3.5E-01	mg/kg/day	1.E-05
				Aroclor-1254	0.22052	mg/kg	2.5E-05	mg/kg/day	1.2E-01	(mg/kg/day)-1	3.E-06	3.0E-04	mg/kg/day	2.0E+00	mg/kg/day	1.E-04
				Aroclor-1268	0.06755	mg/kg	7.8E-06	mg/kg/day	3.3E-02	(mg/kg/day)-1	3.E-07	9.1E-05	mg/kg/day	2.0E+00	mg/kg/day	5.E-05
				Dieldrin	0.00037	mg/kg	6.6E-08	mg/kg/day	5.2E-04	(mg/kg/day)-1	3.E-11	7.7E-07	mg/kg/day	1.6E+01	mg/kg/day	5.E-08
				Endosulfan Sulfate	0.0019	mg/kg	NC		NC			2.6E-06	mg/kg/day			
				gamma-Chlordane	0.00096	mg/kg	1.1E-07	mg/kg/day	5.2E-04	(mg/kg/day)-1	6.E-11	1.3E-06	mg/kg/day	3.5E-01	mg/kg/day	4.E-06
				Technical Chlordane	0.06498	mg/kg	7.5E-06	mg/kg/day	4.1E-02	(mg/kg/day)-1	3.E-07	8.8E-05	mg/kg/day	3.5E-01	mg/kg/day	3.E-04
				Lead	0.0119	mg/kg	1.4E-06	mg/kg/day	1.1E-02	(mg/kg/day)-1	2.E-08	1.6E-05	mg/kg/day			
				Mercury	0.259	mg/kg	NC		NC			3.5E-04	mg/kg/day			
				Mercury (methyl)	0.278	mg/kg	NC		NC			3.7E-04	mg/kg/day			
				Toxicity Equivalency (Dioxins/Furans)	0.000031	mg/kg	3.6E-09	mg/kg/day	1.9E-05	(mg/kg/day)-1	7.E-14	4.2E-08	mg/kg/day	1.5E+05	mg/kg/day	3.E-13
			EXPOSURE ROUTE TOTAL								4.E-06					5.E-04
		EXPOSURE POINT TOTAL									4.E-06					5.E-04
	EXPOSURE MEDIUM TOTAL										4.E-06					5.E-04
FILLET TOTAL											4.E-06					5.E-04
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											4.E-06					5.E-04

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.46.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	MANTON POND	INGESTION	Benzo(a)anthracene	0.15	mg/kg	1.6E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-09	9.5E-09	mg/kg/day	3.0E-02	mg/kg/day	3.E-07
				Benzo(a)pyrene	0.18	mg/kg	2.0E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-08	1.1E-08	mg/kg/day	3.0E-02	mg/kg/day	4.E-07
				Benzo(b)fluoranthene	0.31	mg/kg	3.4E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-09	2.0E-08	mg/kg/day	3.0E-02	mg/kg/day	7.E-07
				Benzo(g,h,i)perylene	0.11	mg/kg	NC		NC			7.0E-09	mg/kg/day	3.0E-02	mg/kg/day	2.E-07
				Benzo(k)fluoranthene	0.18	mg/kg	2.0E-09	mg/kg/day	7.3E-02	(mg/kg/day)-1	1.E-10	1.1E-08	mg/kg/day	3.0E-02	mg/kg/day	4.E-07
				bis(2-Ethylhexyl)phthalate	0.31	mg/kg	3.4E-09	mg/kg/day	1.4E-02	(mg/kg/day)-1	5.E-11	2.0E-08	mg/kg/day	2.0E-02	mg/kg/day	1.E-06
				Indeno(1,2,3-cd)pyrene	0.15	mg/kg	1.6E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-09	9.5E-09	mg/kg/day	3.0E-02	mg/kg/day	3.E-07
				Phenanthrene	0.14	mg/kg	NC		NC			8.9E-09	mg/kg/day	3.0E-02	mg/kg/day	3.E-07
				alpha-Chlordane	0.0022	mg/kg	2.4E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-12	1.4E-10	mg/kg/day	5.0E-04	mg/kg/day	3.E-07
				gamma-Chlordane	0.0025	mg/kg	2.7E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-11	1.6E-10	mg/kg/day	5.0E-04	mg/kg/day	3.E-07
				Arsenic	0.77	mg/kg	8.4E-09	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-08	4.9E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Cadmium	0.68	mg/kg	NC		NC			4.3E-08	mg/kg/day	1.0E-03	mg/kg/day	4.E-05
				Chromium	13.4	mg/kg	NC		NC			8.5E-07	mg/kg/day	3.0E-03	mg/kg/day	3.E-04
				Lead	45.9	mg/kg	5.0E-07	mg/kg/day	--			2.9E-06	mg/kg/day			
				Manganese	128	mg/kg	NC		NC			8.1E-06	mg/kg/day	7.1E-02	mg/kg/day	1.E-04
				Vanadium	5.7	mg/kg	NC		NC			3.6E-07	mg/kg/day	7.0E-03	mg/kg/day	5.E-05
				Toxicity Equivalency (Dioxins/Furans)	0.00043	mg/kg	4.7E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-07	2.7E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								7.E-07					7.E-04
			DERMAL	Benzo(a)anthracene	0.15	mg/kg	4.1E-10	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-10	2.4E-09	mg/kg/day	3.0E-02	mg/kg/day	8.E-08
				Benzo(a)pyrene	0.18	mg/kg	5.0E-10	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-09	2.9E-09	mg/kg/day	3.0E-02	mg/kg/day	1.E-07
				Benzo(b)fluoranthene	0.31	mg/kg	8.5E-10	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-10	5.0E-09	mg/kg/day	3.0E-02	mg/kg/day	2.E-07
				Benzo(g,h,i)perylene	0.11	mg/kg	NC		NC			1.8E-09	mg/kg/day	3.0E-02	mg/kg/day	6.E-08
				Benzo(k)fluoranthene	0.18	mg/kg	5.0E-10	mg/kg/day	7.3E-02	(mg/kg/day)-1	4.E-11	2.9E-09	mg/kg/day	3.0E-02	mg/kg/day	1.E-07
				bis(2-Ethylhexyl)phthalate	0.31	mg/kg	6.6E-10	mg/kg/day	1.4E-02	(mg/kg/day)-1	9.E-12	3.8E-09	mg/kg/day	2.0E-02	mg/kg/day	2.E-07
				Indeno(1,2,3-cd)pyrene	0.15	mg/kg	4.1E-10	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-10	2.4E-09	mg/kg/day	3.0E-02	mg/kg/day	8.E-08
				Phenanthrene	0.14	mg/kg	NC		NC			2.3E-09	mg/kg/day	3.0E-02	mg/kg/day	8.E-08
				alpha-Chlordane	0.0022	mg/kg	1.9E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-13	1.1E-11	mg/kg/day	5.0E-04	mg/kg/day	2.E-08
				gamma-Chlordane	0.0025	mg/kg	2.1E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-13	1.2E-11	mg/kg/day	5.0E-04	mg/kg/day	2.E-08
				Arsenic	0.77	mg/kg	4.9E-10	mg/kg/day	1.5E+00	(mg/kg/day)-1	7.E-10	2.9E-09	mg/kg/day	3.0E-04	mg/kg/day	1.E-05
				Cadmium	0.68	mg/kg	NC		NC			8.4E-11	mg/kg/day	2.5E-05	mg/kg/day	3.E-06
				Chromium	13.4	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	45.9	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	128	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Vanadium	5.7	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00043	mg/kg	2.7E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-08	1.6E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-08					1.E-05
		EXPOSURE POINT TOTAL									8.E-07					7.E-04
	EXPOSURE MEDIUM TOTAL										8.E-07					7.E-04
SEDIMENT TOTAL											8.E-07					7.E-04
SURFACE WATER	SURFACE WATER	MANTON POND	INGESTION	Acenaphthylene	0.00000132	mg/l	NC		NC			1.7E-11	mg/kg/day	6.0E-02	mg/kg/day	3.E-10
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	3.7E-08	mg/kg/day	1.4E-02	mg/kg/day	5.E-10	2.2E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				Aldrin	0.000023	mg/l	5.0E-11	mg/kg/day	1.7E+01	mg/kg/day	9.E-10	2.9E-10	mg/kg/day	3.0E-05	mg/kg/day	1.E-05
				alpha-Chlordane	0.000019	mg/l	4.1E-11	mg/kg/day	3.5E-01	mg/kg/day	1.E-11	2.4E-10	mg/kg/day	5.0E-04	mg/kg/day	5.E-07
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			4.1E-11	mg/kg/day	6.0E-03	mg/kg/day	7.E-09
				Endrin Aldehyde	0.000005	mg/l	NC		NC			6.4E-11	mg/kg/day	3.0E-04	mg/kg/day	2.E-07
				gamma-Chlordane	0.000021	mg/l	4.6E-11	mg/kg/day	3.5E-01	mg/kg/day	2.E-11	2.7E-10	mg/kg/day	5.0E-04	mg/kg/day	5.E-07
				Arsenic	0.0046	mg/l	1.0E-08	mg/kg/day	1.5E+00	mg/kg/day	2.E-08	5.9E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Barium	0.021	mg/l	NC		NC			2.7E-07	mg/kg/day	7.0E-02	mg/kg/day	4.E-06
				Chromium	0.0023	mg/l	NC		NC			2.9E-08	mg/kg/day	3.0E-03	mg/kg/day	1.E-05
				Lead	0.0044	mg/l	9.6E-09	mg/kg/day	--			5.6E-08	mg/kg/day			
				Manganese	0.13	mg/l	NC		NC			1.7E-06	mg/kg/day	2.4E-02	mg/kg/day	7.E-05
				Mercury	0.00000394	mg/l	NC		NC			5.0E-11	mg/kg/day	3.0E-04	mg/kg/day	2.E-07
				Thallium	0.0022	mg/l	NC		NC			2.8E-08	mg/kg/day	8.0E-05	mg/kg/day	3.E-04
				Nitrate	0.76	mg/l	NC		NC			9.7E-06	mg/kg/day	1.6E+00	mg/kg/day	6.E-06
				Nitrite-N	0.084	mg/l	NC		NC			1.1E-06	mg/kg/day	1.0E-01	mg/kg/day	1.E-05

US EPA ARCHIVE DOCUMENT

TABLE F.7.46.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Toxicity Equivalency (Dioxins/Furans)	0.00000013	mg/l	2.8E-13	mg/kg/day	1.5E+05	mg/kg/day	4.E-08	1.7E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-08					7.E-04
			DERMAL	Acenaphthylene	0.00000132	mg/l	NC		NC			--		6.0E-02	mg/kg/day	
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	2.2E-05	mg/kg/day	1.4E-02	mg/kg/day	3.E-07	1.3E-04	mg/kg/day	2.0E-02	mg/kg/day	6.E-03
				Aldrin	0.000023	mg/l	1.7E-09	mg/kg/day	1.7E+01	mg/kg/day	3.E-08	1.0E-08	mg/kg/day	3.0E-05	mg/kg/day	3.E-04
				alpha-Chlordane	0.000019	mg/l	3.3E-08	mg/kg/day	3.5E-01	mg/kg/day	1.E-08	1.9E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.000005	mg/l	NC		NC			1.7E-08	mg/kg/day	3.0E-04	mg/kg/day	6.E-05
				gamma-Chlordane	0.000021	mg/l	3.7E-08	mg/kg/day	3.5E-01	mg/kg/day	1.E-08	2.1E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Arsenic	0.0046	mg/l	3.5E-08	mg/kg/day	1.5E+00	mg/kg/day	5.E-08	2.0E-07	mg/kg/day	3.0E-04	mg/kg/day	7.E-04
				Barium	0.021	mg/l	NC		NC			9.3E-07	mg/kg/day	4.9E-03	mg/kg/day	2.E-04
				Chromium	0.0023	mg/l	NC		NC			2.0E-07	mg/kg/day	7.5E-05	mg/kg/day	3.E-03
				Lead	0.0044	mg/l	--		--			--				
				Manganese	0.13	mg/l	NC		NC			5.8E-06	mg/kg/day	9.6E-04	mg/kg/day	6.E-03
				Mercury	0.00000394	mg/l	NC		NC			1.7E-10	mg/kg/day	2.1E-05	mg/kg/day	8.E-06
				Thallium	0.0022	mg/l	NC		NC			9.7E-08	mg/kg/day	8.0E-05	mg/kg/day	1.E-03
				Nitrate	0.76	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.084	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00000013	mg/l	2.2E-09	mg/kg/day	1.5E+05	mg/kg/day	3.E-04	1.3E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-04					2.E-02
		EXPOSURE POINT TOTAL									3.E-04					2.E-02
	EXPOSURE MEDIUM TOTAL										3.E-04					2.E-02
SURFACE WATER TOTAL											3.E-04					2.E-02
LARGEMOUTH BASS	WHOLE BODY	MANTON POND	INGESTION	Acenaphthylene	0.00067	mg/kg	NC		NC			5.4E-07	mg/kg/day	6.0E-02	mg/kg/day	9.E-06
				Benzo(a)pyrene	0.001112	mg/kg	1.5E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	9.0E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(b)fluoranthene	0.0016	mg/kg	2.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(g,h,i)perylene	0.0013	mg/kg	NC		NC			1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Dibenzo(a,h)anthracene	0.00019	mg/kg	2.6E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Indeno(1,2,3-cd)pyrene	0.00105	mg/kg	1.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	8.5E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Phenanthrene	0.009043	mg/kg	NC		NC			7.3E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDE	0.0546	mg/kg	7.6E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-06	4.4E-05	mg/kg/day	5.0E-04	mg/kg/day	9.E-02
				alpha-Chlordane	0.00537	mg/kg	7.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	4.4E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				Aroclor-1254	0.51244	mg/kg	7.1E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-04	4.2E-04	mg/kg/day	2.0E-05	mg/kg/day	2.E+01
				Aroclor-1268	0.12666	mg/kg	1.8E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-05	1.0E-04	mg/kg/day	2.0E-05	mg/kg/day	5.E+00
				Dieldrin	0.0013	mg/kg	1.8E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.E-06	1.1E-06	mg/kg/day	5.0E-05	mg/kg/day	2.E-02
				gamma-Chlordane	0.0019	mg/kg	2.6E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-08	1.5E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Heptachlor Epoxide	0.0003	mg/kg	4.2E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	4.E-07	2.4E-07	mg/kg/day	1.3E-05	mg/kg/day	2.E-02
				Technical Chlordane	0.144	mg/kg	2.0E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-06	1.2E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Lead	0.15	mg/kg	2.1E-05	mg/kg/day				1.2E-04	mg/kg/day			
				Mercury	0.153	mg/kg	2.1E-05	mg/kg/day	--			1.2E-04	mg/kg/day	3.0E-04	mg/kg/day	4.E-01
				Mercury (methyl)	0.12	mg/kg	NC		NC			9.7E-05	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.0000873	mg/kg	1.2E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-03	7.1E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-03					3.E+01
		EXPOSURE POINT TOTAL									2.E-03					3.E+01
	EXPOSURE MEDIUM TOTAL										2.E-03					3.E+01
WHOLE BODY TOTAL											2.E-03					3.E+01
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	2.E-03				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	2.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.47.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	MANTON POND	INGESTION	Benzo(a)anthracene	0.15	mg/kg	2.5E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-09	1.5E-08	mg/kg/day	3.0E-02	mg/kg/day	5.E-07
				Benzo(a)pyrene	0.18	mg/kg	3.1E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	1.8E-08	mg/kg/day	3.0E-02	mg/kg/day	6.E-07
				Benzo(b)fluoranthene	0.31	mg/kg	5.3E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-09	3.1E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Benzo(g,h,i)perylene	0.11	mg/kg	NC		NC			1.1E-08	mg/kg/day	3.0E-02	mg/kg/day	4.E-07
				Benzo(k)fluoranthene	0.18	mg/kg	3.1E-09	mg/kg/day	7.3E-02	(mg/kg/day)-1	2.E-10	1.8E-08	mg/kg/day	3.0E-02	mg/kg/day	6.E-07
				bis(2-Ethylhexyl)phthalate	0.31	mg/kg	5.3E-09	mg/kg/day	1.4E-02	(mg/kg/day)-1	7.E-11	3.1E-08	mg/kg/day	2.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	0.15	mg/kg	2.5E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-09	1.5E-08	mg/kg/day	3.0E-02	mg/kg/day	5.E-07
				Phenanthrene	0.14	mg/kg	NC		NC			1.4E-08	mg/kg/day	3.0E-02	mg/kg/day	5.E-07
				alpha-Chlordane	0.0022	mg/kg	3.7E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-11	2.2E-10	mg/kg/day	5.0E-04	mg/kg/day	4.E-07
				gamma-Chlordane	0.0025	mg/kg	4.2E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-11	2.5E-10	mg/kg/day	5.0E-04	mg/kg/day	5.E-07
				Arsenic	0.77	mg/kg	1.3E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-08	7.6E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				Cadmium	0.68	mg/kg	NC		NC			6.7E-08	mg/kg/day	1.0E-03	mg/kg/day	7.E-05
				Chromium	13.4	mg/kg	NC		NC			1.3E-06	mg/kg/day	3.0E-03	mg/kg/day	4.E-04
				Lead	45.9	mg/kg	7.8E-07	mg/kg/day	--			4.5E-06	mg/kg/day			
				Manganese	128	mg/kg	NC		NC			1.3E-05	mg/kg/day	7.1E-02	mg/kg/day	2.E-04
				Vanadium	5.7	mg/kg	NC		NC			5.6E-07	mg/kg/day	7.0E-03	mg/kg/day	8.E-05
				Toxicity Equivalency (Dioxins/Furans)	0.00043	mg/kg	7.3E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-06	4.3E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-06					1.E-03
			DERMAL	Benzo(a)anthracene	0.15	mg/kg	1.9E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-09	1.1E-08	mg/kg/day	3.0E-02	mg/kg/day	4.E-07
				Benzo(a)pyrene	0.18	mg/kg	2.3E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	1.3E-08	mg/kg/day	3.0E-02	mg/kg/day	4.E-07
				Benzo(b)fluoranthene	0.31	mg/kg	3.9E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-09	2.3E-08	mg/kg/day	3.0E-02	mg/kg/day	8.E-07
				Benzo(g,h,i)perylene	0.11	mg/kg	NC		NC			8.1E-09	mg/kg/day	3.0E-02	mg/kg/day	3.E-07
				Benzo(k)fluoranthene	0.18	mg/kg	2.3E-09	mg/kg/day	7.3E-02	(mg/kg/day)-1	2.E-10	1.3E-08	mg/kg/day	3.0E-02	mg/kg/day	4.E-07
				bis(2-Ethylhexyl)phthalate	0.31	mg/kg	3.9E-09	mg/kg/day	1.4E-02	(mg/kg/day)-1	4.E-11	1.8E-08	mg/kg/day	2.0E-02	mg/kg/day	9.E-07
				Indeno(1,2,3-cd)pyrene	0.15	mg/kg	1.9E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-09	1.1E-08	mg/kg/day	3.0E-02	mg/kg/day	4.E-07
				Phenanthrene	0.14	mg/kg	NC		NC			1.0E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-07
				alpha-Chlordane	0.0022	mg/kg	8.5E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-12	5.0E-11	mg/kg/day	5.0E-04	mg/kg/day	1.E-07
				gamma-Chlordane	0.0025	mg/kg	9.7E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-12	5.7E-11	mg/kg/day	5.0E-04	mg/kg/day	1.E-07
				Arsenic	0.77	mg/kg	2.2E-09	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-09	1.3E-08	mg/kg/day	3.0E-04	mg/kg/day	4.E-05
				Cadmium	0.68	mg/kg	NC		NC			3.8E-10	mg/kg/day	2.5E-05	mg/kg/day	2.E-05
				Chromium	13.4	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	45.9	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	128	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Vanadium	5.7	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00043	mg/kg	1.3E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-07	7.3E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-07					6.E-05
		EXPOSURE POINT TOTAL									1.E-06					1.E-03
	EXPOSURE MEDIUM TOTAL										1.E-06					1.E-03
SEDIMENT TOTAL											1.E-06					1.E-03
SURFACE WATER	SURFACE WATER	MANTON POND	INGESTION	Acenaphthylene	0.00000132	mg/l	NC		NC			2.6E-11	mg/kg/day	6.0E-02	mg/kg/day	4.E-10
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	5.8E-08	mg/kg/day	1.4E-02	mg/kg/day	8.E-10	3.4E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				Aldrin	0.000023	mg/l	7.8E-11	mg/kg/day	1.7E+01	mg/kg/day	1.E-09	4.6E-10	mg/kg/day	3.0E-05	mg/kg/day	2.E-05
				alpha-Chlordane	0.000019	mg/l	6.4E-11	mg/kg/day	3.5E-01	mg/kg/day	2.E-11	3.8E-10	mg/kg/day	5.0E-04	mg/kg/day	8.E-07
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			6.3E-11	mg/kg/day	6.0E-03	mg/kg/day	1.E-08
				Endrin Aldehyde	0.000005	mg/l	NC		NC			9.9E-11	mg/kg/day	3.0E-04	mg/kg/day	3.E-07
				gamma-Chlordane	0.000021	mg/l	7.1E-11	mg/kg/day	3.5E-01	mg/kg/day	2.E-11	4.2E-10	mg/kg/day	5.0E-04	mg/kg/day	8.E-07
				Arsenic	0.0046	mg/l	1.6E-08	mg/kg/day	1.5E+00	mg/kg/day	2.E-08	9.1E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				Barium	0.021	mg/l	NC		NC			4.2E-07	mg/kg/day	7.0E-02	mg/kg/day	6.E-06
				Chromium	0.0023	mg/l	NC		NC			4.6E-08	mg/kg/day	3.0E-03	mg/kg/day	2.E-05
				Lead	0.0044	mg/l	1.5E-08	mg/kg/day	--			8.7E-08	mg/kg/day			
				Manganese	0.13	mg/l	NC		NC			2.6E-06	mg/kg/day	2.4E-02	mg/kg/day	1.E-04
				Mercury	0.00000394	mg/l	NC		NC			7.8E-11	mg/kg/day	3.0E-04	mg/kg/day	3.E-07
				Thallium	0.0022	mg/l	NC		NC			4.4E-08	mg/kg/day	8.0E-05	mg/kg/day	5.E-04
				Nitrate	0.76	mg/l	NC		NC			1.5E-05	mg/kg/day	1.6E+00	mg/kg/day	9.E-06
				Nitrite-N	0.084	mg/l	NC		NC			1.7E-06	mg/kg/day	1.0E-01	mg/kg/day	2.E-05

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TABLE F.7.47.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: *CURRENT/FUTURE*
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: *OLDER CHILD*

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Toxicity Equivalency (Dioxins/Furans)	0.00000013	mg/l	4.4E-13	mg/kg/day	1.5E+05	mg/kg/day	7.E-08	2.6E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								9.E-08					1.E-03
			DERMAL	Acenaphthylene	0.00000132	mg/l	NC		NC			--		6.0E-02	mg/kg/day	
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	2.5E-05	mg/kg/day	1.4E-02	mg/kg/day	3.E-07	1.4E-04	mg/kg/day	2.0E-02	mg/kg/day	7.E-03
				Aldrin	0.000023	mg/l	1.9E-09	mg/kg/day	1.7E+01	mg/kg/day	3.E-08	1.1E-08	mg/kg/day	3.0E-05	mg/kg/day	4.E-04
				alpha-Chlordane	0.000019	mg/l	3.7E-08	mg/kg/day	3.5E-01	mg/kg/day	1.E-08	2.2E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.000005	mg/l	NC		NC			1.9E-08	mg/kg/day	3.0E-04	mg/kg/day	6.E-05
				gamma-Chlordane	0.000021	mg/l	4.1E-08	mg/kg/day	3.5E-01	mg/kg/day	1.E-08	2.4E-07	mg/kg/day	5.0E-04	mg/kg/day	5.E-04
				Arsenic	0.0046	mg/l	3.9E-08	mg/kg/day	1.5E+00	mg/kg/day	6.E-08	2.3E-07	mg/kg/day	3.0E-04	mg/kg/day	8.E-04
				Barium	0.021	mg/l	NC		NC			1.0E-06	mg/kg/day	4.9E-03	mg/kg/day	2.E-04
				Chromium	0.0023	mg/l	NC		NC			2.3E-07	mg/kg/day	7.5E-05	mg/kg/day	3.E-03
				Lead	0.0044	mg/l	--		--			--				
				Manganese	0.13	mg/l	NC		NC			6.4E-06	mg/kg/day	9.0E-04	mg/kg/day	7.E-03
				Mercury	0.00000394	mg/l	NC		NC			2.0E-10	mg/kg/day	2.1E-05	mg/kg/day	9.E-06
				Thallium	0.0022	mg/l	NC		NC			1.1E-07	mg/kg/day	8.0E-05	mg/kg/day	1.E-03
				Nitrate	0.76	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.054	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00000013	mg/l	2.5E-09	mg/kg/day	1.5E+05	mg/kg/day	4.E-04	1.5E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-04					2.E-02
		EXPOSURE POINT TOTAL									4.E-04					2.E-02
	EXPOSURE MEDIUM TOTAL										4.E-04					2.E-02
SURFACE WATER TOTAL											4.E-04					2.E-02
LARGEMOUTH BASS	FILLET	MANTON POND	INGESTION	Acenaphthylene	0.00067	mg/kg	NC		NC			4.2E-07	mg/kg/day	6.0E-02	mg/kg/day	7.E-06
				Benzo(a)pyrene	0.001112	mg/kg	1.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-07	7.0E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	0.0016	mg/kg	1.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	1.0E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(g,h,i)perylene	0.0013	mg/kg	NC		NC			8.2E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Dibenzo(a,h)anthracene	0.00019	mg/kg	2.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.2E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Indeno(1,2,3-cd)pyrene	0.00105	mg/kg	1.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-08	6.6E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.009043	mg/kg	NC		NC			5.7E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDE	0.0546	mg/kg	5.9E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	3.5E-05	mg/kg/day	5.0E-04	mg/kg/day	7.E-02
				alpha-Chlordane	0.00537	mg/kg	5.8E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	3.4E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				Aroclor-1254	0.51244	mg/kg	5.6E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-04	3.2E-04	mg/kg/day	2.0E-05	mg/kg/day	2.E+01
				Aroclor-1268	0.12666	mg/kg	1.4E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-05	8.0E-05	mg/kg/day	2.0E-05	mg/kg/day	4.E+00
				Dieldrin	0.0013	mg/kg	1.4E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-06	8.2E-07	mg/kg/day	5.0E-05	mg/kg/day	2.E-02
				gamma-Chlordane	0.0019	mg/kg	2.1E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-08	1.2E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Heptachlor Epoxide	0.0003	mg/kg	3.3E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.E-07	1.9E-07	mg/kg/day	1.3E-05	mg/kg/day	1.E-02
				Technical Chlordane	0.144	mg/kg	1.6E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-06	9.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Lead	0.15	mg/kg	1.6E-05	mg/kg/day				9.5E-05	mg/kg/day			
				Mercury	0.153	mg/kg	1.7E-05	mg/kg/day	--			9.7E-05	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				Mercury (methyl)	0.12	mg/kg	NC		NC			7.6E-05	mg/kg/day	1.0E-04	mg/kg/day	8.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0000873	mg/kg	9.5E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-03	5.5E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-03					2.E+01
		EXPOSURE POINT TOTAL									2.E-03					2.E+01
	EXPOSURE MEDIUM TOTAL										2.E-03					2.E+01
FILLET TOTAL											2.E-03					2.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											2.E-03					2.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.48.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
LARGEMOUTH BASS	WHOLE BODY	MANTON POND	INGESTION	Acenaphthylene	0.00067	mg/kg	NC		NC			9.0E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	0.001112	mg/kg	1.3E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-07	1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(b)fluoranthene	0.0016	mg/kg	1.8E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	2.2E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(g,h,i)perylene	0.0013	mg/kg	NC		NC			1.8E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Dibenzo(a,h)anthracene	0.00019	mg/kg	2.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	2.6E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				Indeno(1,2,3-cd)pyrene	0.00105	mg/kg	1.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-08	1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Phenanthrene	0.009043	mg/kg	NC		NC			1.2E-05	mg/kg/day	3.0E-02	mg/kg/day	4.E-04
				4,4'-DDE	0.0546	mg/kg	6.3E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	7.4E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				alpha-Chlordane	0.00537	mg/kg	6.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	7.2E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Aroclor-1254	0.51244	mg/kg	5.9E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-04	6.9E-04	mg/kg/day	2.0E-05	mg/kg/day	3.E+01
				Aroclor-1268	0.12666	mg/kg	1.5E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-05	1.7E-04	mg/kg/day	2.0E-05	mg/kg/day	9.E+00
				Dieldrin	0.0013	mg/kg	1.5E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-06	1.8E-06	mg/kg/day	5.0E-05	mg/kg/day	4.E-02
				gamma-Chlordane	0.0019	mg/kg	2.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-08	2.6E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				Heptachlor Epoxide	0.0003	mg/kg	3.5E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.E-07	4.0E-07	mg/kg/day	1.3E-05	mg/kg/day	3.E-02
				Technical Chlordane	0.144	mg/kg	1.7E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-06	1.9E-04	mg/kg/day	5.0E-04	mg/kg/day	4.E-01
				Lead	0.15	mg/kg	1.7E-05	mg/kg/day				2.0E-04	mg/kg/day			
				Mercury	0.153	mg/kg	1.8E-05	mg/kg/day	--			2.1E-04	mg/kg/day	3.0E-04	mg/kg/day	7.E-01
				Mercury (methyl)	0.12	mg/kg	NC		NC			1.6E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.0000873	mg/kg	1.0E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-03	1.2E-07	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-03					5.E+01
		EXPOSURE POINT TOTAL									2.E-03					5.E+01
	EXPOSURE MEDIUM TOTAL										2.E-03					5.E+01
WHOLE BODY TOTAL											2.E-03					5.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	2.E-03				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	4.6.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.7.49.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	CSF/UNIT RISK VALUE	CSF UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	RfD/RfC (1) VALUE	RfD/RfC UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	DYERVILLE POND	INGESTION	2-Methylnaphthalene	0.031	mg/kg	NC		NC			2.0E-09	mg/kg/day	2.0E-02	mg/kg/day	1.E-07
				Acenaphthylene	0.16	mg/kg	NC		NC			1.0E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				Benzo(a)anthracene	1.4	mg/kg	1.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	8.9E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(a)pyrene	1.4	mg/kg	1.5E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	8.9E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(b)fluoranthene	2.5	mg/kg	2.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	1.6E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Benzo(g,h,i)perylene	1.1	mg/kg	NC		NC			7.0E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Benzo(k)fluoranthene	0.71	mg/kg	7.7E-09	mg/kg/day	7.3E-02	(mg/kg/day)-1	6.E-10	4.5E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				bis(2-Ethylhexyl)phthalate	1.1	mg/kg	1.2E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	2.E-10	7.0E-08	mg/kg/day	2.0E-02	mg/kg/day	3.E-06
				Dibenzo(a,h)anthracene	0.2	mg/kg	2.2E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	1.3E-08	mg/kg/day	3.0E-02	mg/kg/day	4.E-07
				Indeno(1,2,3-cd)pyrene	1.4	mg/kg	1.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	8.9E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Phenanthrene	1.4	mg/kg	NC		NC			8.9E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				alpha-Chlordane	0.0043	mg/kg	4.7E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-11	2.7E-10	mg/kg/day	5.0E-04	mg/kg/day	5.E-07
				Aroclor-1254	0.49	mg/kg	5.3E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-08	3.1E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				Dieldrin	0.012	mg/kg	1.3E-10	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-09	7.6E-10	mg/kg/day	5.0E-05	mg/kg/day	2.E-05
				Endosulfan sulfate	0.0052	mg/kg	NC		NC			3.3E-10	mg/kg/day	6.0E-03	mg/kg/day	6.E-08
				Arsenic	2.1	mg/kg	2.3E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-08	1.3E-07	mg/kg/day	3.0E-04	mg/kg/day	4.E-04
				Cadmium	1.7	mg/kg	NC		NC			1.1E-07	mg/kg/day	1.0E-03	mg/kg/day	1.E-04
				Chromium	156	mg/kg	NC		NC			9.9E-06	mg/kg/day	3.0E-03	mg/kg/day	3.E-03
				Lead	160	mg/kg	1.7E-06	mg/kg/day	--			1.0E-05	mg/kg/day			
				Manganese	332	mg/kg	NC		NC			2.1E-05	mg/kg/day	7.1E-02	mg/kg/day	3.E-04
				Mercury	0.4	mg/kg	NC		NC			2.5E-08	mg/kg/day	3.0E-04	mg/kg/day	8.E-05
				Nickel	19	mg/kg	NC		NC			1.2E-06	mg/kg/day	2.0E-02	mg/kg/day	6.E-05
				Vanadium	16	mg/kg	NC		NC			1.0E-06	mg/kg/day	7.0E-03	mg/kg/day	1.E-04
				Toxicity Equivalency (Dioxins/Furans)	0.000083	mg/kg	9.0E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-07	5.3E-12	mg/kg/day			
				Toxicity Equivalency (PCB Congeners	2.53E-08	mg/kg	2.8E-16	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-11	1.6E-15	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-07					6.E-03
			DERMAL	2-Methylnaphthalene	0.031	mg/kg	NC		NC			5.0E-10	mg/kg/day	2.0E-02	mg/kg/day	2.E-08
				Acenaphthylene	0.16	mg/kg	NC		NC			2.6E-09	mg/kg/day	6.0E-02	mg/kg/day	4.E-08
				Benzo(a)anthracene	1.4	mg/kg	3.9E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-09	2.3E-08	mg/kg/day	3.0E-02	mg/kg/day	8.E-07
				Benzo(a)pyrene	1.4	mg/kg	3.9E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-08	2.3E-08	mg/kg/day	3.0E-02	mg/kg/day	8.E-07
				Benzo(b)fluoranthene	2.5	mg/kg	6.9E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-09	4.0E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Benzo(g,h,i)perylene	1.1	mg/kg	NC		NC			1.8E-08	mg/kg/day	3.0E-02	mg/kg/day	6.E-07
				Benzo(k)fluoranthene	0.71	mg/kg	2.0E-09	mg/kg/day	7.3E-02	(mg/kg/day)-1	1.E-10	1.1E-08	mg/kg/day	3.0E-02	mg/kg/day	4.E-07
				bis(2-Ethylhexyl)phthalate	1.1	mg/kg	2.3E-09	mg/kg/day	1.4E-02	(mg/kg/day)-1	3.E-11	1.4E-08	mg/kg/day	2.0E-02	mg/kg/day	7.E-07
				Dibenzo(a,h)anthracene	0.2	mg/kg	5.5E-10	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-09	3.2E-09	mg/kg/day	3.0E-02	mg/kg/day	1.E-07
				Indeno(1,2,3-cd)pyrene	1.4	mg/kg	3.9E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-09	2.3E-08	mg/kg/day	3.0E-02	mg/kg/day	8.E-07
				Phenanthrene	1.4	mg/kg	NC		NC			2.3E-08	mg/kg/day	3.0E-02	mg/kg/day	8.E-07
				alpha-Chlordane	0.0043	mg/kg	3.6E-12	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-12	2.1E-11	mg/kg/day	5.0E-04	mg/kg/day	4.E-08
				Aroclor-1254	0.49	mg/kg	1.5E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-09	8.5E-09	mg/kg/day	2.0E-05	mg/kg/day	4.E-04
				Dieldrin	0.012	mg/kg	2.5E-11	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-10	1.5E-10	mg/kg/day	5.0E-05	mg/kg/day	3.E-06
				Endosulfan sulfate	0.0052	mg/kg	NC		NC			6.4E-11	mg/kg/day	6.0E-03	mg/kg/day	1.E-08
				Arsenic	2.1	mg/kg	1.3E-09	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-09	7.8E-09	mg/kg/day	3.0E-04	mg/kg/day	3.E-05
				Cadmium	1.7	mg/kg	NC		NC			2.1E-10	mg/kg/day	2.5E-05	mg/kg/day	8.E-06
				Chromium	156	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	160	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	332	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Mercury	0.4	mg/kg	NC		NC					2.1E-05	mg/kg/day	
				Nickel	19	mg/kg	NC		NC					8.0E-04	mg/kg/day	
				Vanadium	16	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000083	mg/kg	5.3E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-09	3.1E-13	mg/kg/day			
				Toxicity Equivalency (PCB Congeners	2.53E-08	mg/kg	1.6E-17	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-12	9.4E-17	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-08					5.E-04
		EXPOSURE POINT TOTAL									4.E-07					7.E-03
	EXPOSURE MEDIUM TOTAL										4.E-07					7.E-03
SEDIMENT TOTAL											4.E-07					7.E-03

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TABLE F.7.49.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	CSF/UNIT RISK VALUE	CSF UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE UNITS	RfD/RfC (1) VALUE	RfD/RfC UNITS	HAZARD QUOTIENT
SURFACE WATER	SURFACE WATER	DYERVILLE POND	INGESTION	Acenaphthylene	0.00000132	mg/l	NC		NC			1.7E-11	mg/kg/day	6.0E-02	mg/kg/day	3.E-10
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	3.7E-08	mg/kg/day	1.4E-02	mg/kg/day	5.E-10	2.2E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				Aldrin	0.000023	mg/l	5.0E-11	mg/kg/day	1.7E+01	mg/kg/day	9.E-10	2.9E-10	mg/kg/day	3.0E-05	mg/kg/day	1.E-05
				alpha-Chlordane	0.000019	mg/l	4.1E-11	mg/kg/day	3.5E-01	mg/kg/day	1.E-11	2.4E-10	mg/kg/day	5.0E-04	mg/kg/day	5.E-07
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			4.1E-11	mg/kg/day	6.0E-03	mg/kg/day	7.E-09
				Endrin Aldehyde	0.000005	mg/l	NC		NC			6.4E-11	mg/kg/day	3.0E-04	mg/kg/day	2.E-07
				gamma-Chlordane	0.000021	mg/l	4.6E-11	mg/kg/day	3.5E-01	mg/kg/day	2.E-11	2.7E-10	mg/kg/day	5.0E-04	mg/kg/day	5.E-07
				Arsenic	0.0046	mg/l	1.0E-08	mg/kg/day	1.5E+00	mg/kg/day	2.E-08	5.9E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Barium	0.021	mg/l	NC		NC			2.7E-07	mg/kg/day	7.0E-02	mg/kg/day	4.E-06
				Chromium	0.0023	mg/l	NC		NC			2.9E-08	mg/kg/day	3.0E-03	mg/kg/day	1.E-05
				Lead	0.0044	mg/l	9.6E-09	mg/kg/day	--			5.6E-08	mg/kg/day			
				Manganese	0.13	mg/l	NC		NC			1.7E-06	mg/kg/day	2.4E-02	mg/kg/day	7.E-05
				Mercury	0.00000394	mg/l	NC		NC			5.0E-11	mg/kg/day	3.0E-04	mg/kg/day	2.E-07
				Thallium	0.0022	mg/l	NC		NC			2.8E-08	mg/kg/day	8.0E-05	mg/kg/day	3.E-04
				Nitrate	0.76	mg/l	NC		NC			9.7E-06	mg/kg/day	1.6E+00	mg/kg/day	6.E-06
				Nitrite-N	0.084	mg/l	NC		NC			1.1E-06	mg/kg/day	1.0E-01	mg/kg/day	1.E-05
				Toxicity Equivalency (Dioxins/Furans)	0.00000013	mg/l	2.8E-13	mg/kg/day	1.5E+05	mg/kg/day	4.E-08	1.7E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-08					7.E-04
			DERMAL	Acenaphthylene	0.00000132	mg/l	NC		NC			--		6.0E-02	mg/kg/day	
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	2.2E-05	mg/kg/day	1.4E-02	mg/kg/day	3.E-07	1.3E-04	mg/kg/day	2.0E-02	mg/kg/day	6.E-03
				Aldrin	0.000023	mg/l	1.7E-09	mg/kg/day	1.7E+01	mg/kg/day	3.E-08	1.0E-08	mg/kg/day	3.0E-05	mg/kg/day	3.E-04
				alpha-Chlordane	0.000019	mg/l	3.3E-08	mg/kg/day	3.5E-01	mg/kg/day	1.E-08	1.9E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.000005	mg/l	NC		NC			1.7E-08	mg/kg/day	3.0E-04	mg/kg/day	6.E-05
				gamma-Chlordane	0.000021	mg/l	3.7E-08	mg/kg/day	3.5E-01	mg/kg/day	1.E-08	2.1E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Arsenic	0.0046	mg/l	3.5E-08	mg/kg/day	1.5E+00	mg/kg/day	5.E-08	2.0E-07	mg/kg/day	3.0E-04	mg/kg/day	7.E-04
				Barium	0.021	mg/l	NC		NC			9.3E-07	mg/kg/day	4.9E-03	mg/kg/day	2.E-04
				Chromium	0.0023	mg/l	NC		NC			2.0E-07	mg/kg/day	7.5E-05	mg/kg/day	3.E-03
				Lead	0.0044	mg/l	--		--			--				
				Manganese	0.13	mg/l	NC		NC			5.8E-06	mg/kg/day	9.6E-04	mg/kg/day	6.E-03
				Mercury	0.00000394	mg/l	NC		NC			1.7E-10	mg/kg/day	2.1E-05	mg/kg/day	8.E-06
				Thallium	0.0022	mg/l	NC		NC			9.7E-08	mg/kg/day	8.0E-05	mg/kg/day	1.E-03
				Nitrate	0.76	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.084	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00000013	mg/l	2.2E-09	mg/kg/day	1.5E+05	mg/kg/day	3.E-04	1.3E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-04					2.E-02
		EXPOSURE POINT TOTAL									3.E-04					2.E-02
	EXPOSURE MEDIUM TOTAL										3.E-04					2.E-02
SURFACE WATER TOTAL											3.E-04					2.E-02
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	INGESTION	Acenaphthylene	0.00076	mg/kg	NC		NC			6.2E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.00017	mg/kg	2.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.4E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Phenanthrene	0.0049	mg/kg	NC		NC			4.0E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDD	0.03543	mg/kg	4.9E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-06	2.9E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				4,4'-DDE	0.011	mg/kg	1.5E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-07	8.9E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDT	0.0119	mg/kg	1.7E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	6.E-07	9.7E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.0144	mg/kg	2.0E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-07	1.2E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	0.37026	mg/kg	5.1E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-04	3.0E-04	mg/kg/day	2.0E-05	mg/kg/day	2.E+01
				Dieldrin	0.00852	mg/kg	1.2E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-05	6.9E-06	mg/kg/day	5.0E-05	mg/kg/day	1.E-01
				gamma-Chlordane	0.00574	mg/kg	8.0E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	4.7E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				Heptachlor Epoxide	0.0018	mg/kg	2.5E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-06	1.5E-06	mg/kg/day	1.3E-05	mg/kg/day	1.E-01
				Technical Chlordane	0.31006	mg/kg	4.3E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-05	2.5E-04	mg/kg/day	5.0E-04	mg/kg/day	5.E-01
				Cadmium	0.157	mg/kg	NC		NC			1.3E-04	mg/kg/day	1.0E-03	mg/kg/day	1.E-01
				Lead	0.341	mg/kg	4.7E-05	mg/kg/day	--			2.8E-04	mg/kg/day			
				Manganese	12.6	mg/kg	NC		NC			1.0E-02	mg/kg/day	1.4E-01	mg/kg/day	7.E-02
				Mercury	0.102	mg/kg	NC		NC			8.3E-05	mg/kg/day	1.0E-04	mg/kg/day	3.E-01

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TABLE F.7.49.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
				Mercury (methyl)	0.117	mg/kg	NC	mg/kg/day	NC	(mg/kg/day)-1	1.E-03	9.5E-05	mg/kg/day	1.0E-04	mg/kg/day	9.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0000522	mg/kg	7.3E-09	mg/kg/day	1.5E+05			4.2E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-03					1.7.E+01
		EXPOSURE POINT TOTAL									1.E-03					1.7.E+01
	EXPOSURE MEDIUM TOTAL										1.E-03					1.7.E+01
WHOLE BODY TOTAL											1.E-03					1.7.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	2.E-03		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		1.7.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TABLE F.7.50.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	DYERVILLE POND	INGESTION	2-Methylnaphthalene	0.031	mg/kg	NC		NC			3.1E-09	mg/kg/day	2.0E-02	mg/kg/day	2.E-07
				Acenaphthylene	0.16	mg/kg	NC		NC			1.6E-08	mg/kg/day	6.0E-02	mg/kg/day	3.E-07
				Benzo(a)anthracene	1.4	mg/kg	2.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	1.4E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Benzo(a)pyrene	1.4	mg/kg	2.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.4E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Benzo(b)fluoranthene	2.5	mg/kg	4.2E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.5E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Benzo(g,h,i)perylene	1.1	mg/kg	NC		NC			1.1E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Benzo(k)fluoranthene	0.71	mg/kg	1.2E-08	mg/kg/day	7.3E-02	(mg/kg/day)-1	9.E-10	7.0E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				bis(2-Ethylhexyl)phthalate	1.1	mg/kg	1.9E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	3.E-10	1.1E-07	mg/kg/day	2.0E-02	mg/kg/day	5.E-06
				Dibenzo(a,h)anthracene	0.2	mg/kg	3.4E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	2.0E-08	mg/kg/day	3.0E-02	mg/kg/day	7.E-07
				Indeno(1,2,3-cd)pyrene	1.4	mg/kg	2.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	1.4E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Phenanthrene	1.4	mg/kg	NC		NC			1.4E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				alpha-Chlordane	0.0043	mg/kg	7.3E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-11	4.3E-10	mg/kg/day	5.0E-04	mg/kg/day	9.E-07
				Aroclor-1254	0.49	mg/kg	8.3E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-08	4.8E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				Dieldrin	0.012	mg/kg	2.0E-10	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.E-09	1.2E-09	mg/kg/day	5.0E-05	mg/kg/day	2.E-05
				Endosulfan sulfate	0.0052	mg/kg	NC		NC			5.1E-10	mg/kg/day	6.0E-03	mg/kg/day	9.E-08
				Arsenic	2.1	mg/kg	3.6E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	5.E-08	2.1E-07	mg/kg/day	3.0E-04	mg/kg/day	7.E-04
				Cadmium	1.7	mg/kg	NC		NC			1.7E-07	mg/kg/day	1.0E-03	mg/kg/day	2.E-04
				Chromium	156	mg/kg	NC		NC			1.5E-05	mg/kg/day	3.0E-03	mg/kg/day	5.E-03
				Lead	160	mg/kg	2.7E-06	mg/kg/day	--			1.6E-05	mg/kg/day			
				Manganese	332	mg/kg	NC		NC			3.3E-05	mg/kg/day	7.1E-02	mg/kg/day	5.E-04
				Mercury	0.4	mg/kg	NC		NC			4.0E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				Nickel	19	mg/kg	NC		NC			1.9E-06	mg/kg/day	2.0E-02	mg/kg/day	9.E-05
				Vanadium	16	mg/kg	NC		NC			1.6E-06	mg/kg/day	7.0E-03	mg/kg/day	2.E-04
				Toxicity Equivalency (Dioxins/Furans)	0.000083	mg/kg	1.4E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-07	8.2E-12	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	2.53E-08	mg/kg	4.3E-16	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-11	2.5E-15	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-07					9.E-03
			DERMAL	2-Methylnaphthalene	0.031	mg/kg	NC		NC			2.3E-09	mg/kg/day	2.0E-02	mg/kg/day	1.E-07
				Acenaphthylene	0.16	mg/kg	NC		NC			1.2E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				Benzo(a)anthracene	1.4	mg/kg	1.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	1.0E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(a)pyrene	1.4	mg/kg	1.8E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	1.0E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(b)fluoranthene	2.5	mg/kg	3.2E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	1.8E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Benzo(g,h,i)perylene	1.1	mg/kg	NC		NC			8.1E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Benzo(k)fluoranthene	0.71	mg/kg	9.0E-09	mg/kg/day	7.3E-02	(mg/kg/day)-1	7.E-10	5.2E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				bis(2-Ethylhexyl)phthalate	1.1	mg/kg	1.1E-08	mg/kg/day	1.4E-02	(mg/kg/day)-1	1.E-10	6.2E-08	mg/kg/day	2.0E-02	mg/kg/day	3.E-06
				Dibenzo(a,h)anthracene	0.2	mg/kg	2.5E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	1.5E-08	mg/kg/day	3.0E-02	mg/kg/day	5.E-07
				Indeno(1,2,3-cd)pyrene	1.4	mg/kg	1.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	1.0E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Phenanthrene	1.4	mg/kg	NC		NC			1.0E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				alpha-Chlordane	0.0043	mg/kg	1.7E-11	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-12	9.7E-11	mg/kg/day	5.0E-04	mg/kg/day	2.E-07
				Aroclor-1254	0.49	mg/kg	6.7E-09	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-08	3.9E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				Dieldrin	0.012	mg/kg	1.2E-10	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-09	6.8E-10	mg/kg/day	5.0E-05	mg/kg/day	1.E-05
				Endosulfan sulfate	0.0052	mg/kg	NC		NC			2.9E-10	mg/kg/day	6.0E-03	mg/kg/day	5.E-08
				Arsenic	2.1	mg/kg	6.1E-09	mg/kg/day	1.5E+00	(mg/kg/day)-1	9.E-09	3.6E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				Cadmium	1.7	mg/kg	NC		NC			9.6E-10	mg/kg/day	2.5E-05	mg/kg/day	4.E-05
				Chromium	156	mg/kg	NC		NC					7.5E-05	mg/kg/day	
				Lead	160	mg/kg	0.0E+00	mg/kg/day	--							
				Manganese	332	mg/kg	NC		NC					2.8E-03	mg/kg/day	
				Mercury	0.4	mg/kg	NC		NC					2.1E-05	mg/kg/day	
				Nickel	19	mg/kg	NC		NC					8.0E-04	mg/kg/day	
				Vanadium	16	mg/kg	NC		NC					1.8E-04	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.000083	mg/kg	2.4E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-08	1.4E-12	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	2.53E-08	mg/kg	7.4E-17	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-11	4.3E-16	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-07					2.E-03
		EXPOSURE POINT TOTAL									8.E-07					1.E-02
	EXPOSURE MEDIUM TOTAL										8.E-07					1.E-02
SEDIMENT TOTAL											8.E-07					1.E-02

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TABLE F.7.50.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SURFACE WATER	SURFACE WATER	DYERVILLE POND	INGESTION	Acenaphthylene	0.00000132	mg/l	NC		NC			2.6E-11	mg/kg/day	6.0E-02	mg/kg/day	4.E-10
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	5.8E-08	mg/kg/day	1.4E-02	mg/kg/day	8.E-10	3.4E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				Aldrin	0.000023	mg/l	7.8E-11	mg/kg/day	1.7E+01	mg/kg/day	1.E-09	4.6E-10	mg/kg/day	3.0E-05	mg/kg/day	2.E-05
				alpha-Chlordane	0.000019	mg/l	6.4E-11	mg/kg/day	3.5E-01	mg/kg/day	2.E-11	3.8E-10	mg/kg/day	5.0E-04	mg/kg/day	8.E-07
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			6.3E-11	mg/kg/day	6.0E-03	mg/kg/day	1.E-08
				Endrin Aldehyde	0.000005	mg/l	NC		NC			9.9E-11	mg/kg/day	3.0E-04	mg/kg/day	3.E-07
				gamma-Chlordane	0.000021	mg/l	7.1E-11	mg/kg/day	3.5E-01	mg/kg/day	2.E-11	4.2E-10	mg/kg/day	5.0E-04	mg/kg/day	8.E-07
				Arsenic	0.0046	mg/l	1.6E-08	mg/kg/day	1.5E+00	mg/kg/day	2.E-08	9.1E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				Barium	0.021	mg/l	NC		NC			4.2E-07	mg/kg/day	7.0E-02	mg/kg/day	6.E-06
				Chromium	0.0023	mg/l	NC		NC			4.6E-08	mg/kg/day	3.0E-03	mg/kg/day	2.E-05
				Lead	0.0044	mg/l	1.5E-08	mg/kg/day	--			8.7E-08	mg/kg/day			
				Manganese	0.13	mg/l	NC		NC			2.6E-06	mg/kg/day	2.4E-02	mg/kg/day	1.E-04
				Mercury	0.00000394	mg/l	NC		NC			7.8E-11	mg/kg/day	3.0E-04	mg/kg/day	3.E-07
				Thallium	0.0022	mg/l	NC		NC			4.4E-08	mg/kg/day	8.0E-05	mg/kg/day	5.E-04
				Nitrate	0.76	mg/l	NC		NC			1.5E-05	mg/kg/day	1.6E+00	mg/kg/day	9.E-06
				Nitrite-N	0.084	mg/l	NC		NC			1.7E-06	mg/kg/day	1.0E-01	mg/kg/day	2.E-05
				Toxicity Equivalency (Dioxins/Furans)	0.00000013	mg/l	4.4E-13	mg/kg/day	1.5E+05	mg/kg/day	7.E-08	2.6E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								9.E-08					1.E-03
			DERMAL	Acenaphthylene	0.00000132	mg/l	NC		NC			--		6.0E-02	mg/kg/day	
				bis(2-Ethylhexyl)phthalate	0.017	mg/l	2.5E-05	mg/kg/day	1.4E-02	mg/kg/day	3.E-07	1.4E-04	mg/kg/day	2.0E-02	mg/kg/day	7.E-03
				Aldrin	0.000023	mg/l	1.9E-09	mg/kg/day	1.7E+01	mg/kg/day	3.E-08	1.1E-08	mg/kg/day	3.0E-05	mg/kg/day	4.E-04
				alpha-Chlordane	0.000019	mg/l	1.7E-08	mg/kg/day	3.5E-01	mg/kg/day	1.E-08	2.2E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Endosulfan Sulfate	0.0000032	mg/l	NC		NC			--		6.0E-03	mg/kg/day	
				Endrin Aldehyde	0.000005	mg/l	NC		NC			1.9E-08	mg/kg/day	3.0E-04	mg/kg/day	6.E-05
				gamma-Chlordane	0.000021	mg/l	4.1E-08	mg/kg/day	3.5E-01	mg/kg/day	1.E-08	2.4E-07	mg/kg/day	5.0E-04	mg/kg/day	5.E-04
				Arsenic	0.0046	mg/l	3.9E-08	mg/kg/day	1.5E+00	mg/kg/day	6.E-08	2.3E-07	mg/kg/day	3.0E-04	mg/kg/day	8.E-04
				Barium	0.021	mg/l	NC		NC			1.0E-06	mg/kg/day	4.9E-03	mg/kg/day	2.E-04
				Chromium	0.0023	mg/l	NC		NC			2.3E-07	mg/kg/day	7.5E-05	mg/kg/day	3.E-03
				Lead	0.0044	mg/l	--		--			--				
				Manganese	0.13	mg/l	NC		NC			6.4E-06	mg/kg/day	9.6E-04	mg/kg/day	7.E-03
				Mercury	0.00000394	mg/l	NC		NC			2.0E-10	mg/kg/day	2.1E-05	mg/kg/day	9.E-06
				Thallium	0.0022	mg/l	NC		NC			1.1E-07	mg/kg/day	8.0E-05	mg/kg/day	1.E-03
				Nitrate	0.76	mg/l	NC		NC			--		1.6E+00	mg/kg/day	
				Nitrite-N	0.084	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				Toxicity Equivalency (Dioxins/Furans)	0.00000013	mg/l	2.5E-09	mg/kg/day	1.5E+05	mg/kg/day	4.E-04	1.5E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-04					2.E-02
		EXPOSURE POINT TOTAL									4.E-04					2.E-02
	EXPOSURE MEDIUM TOTAL										4.E-04					2.E-02
SURFACE WATER TOTAL											4.E-04					2.E-02
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	INGESTION	Acenaphthylene	0.00076	mg/kg	NC		NC			4.8E-07	mg/kg/day	6.0E-02	mg/kg/day	8.E-06
				Dibenzo(a,h)anthracene	0.00017	mg/kg	1.8E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	1.1E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Phenanthrene	0.0049	mg/kg	NC		NC			3.1E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDD	0.03543	mg/kg	3.8E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	9.E-07	2.2E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				4,4'-DDE	0.011	mg/kg	1.2E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-07	7.0E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				4,4'-DDT	0.0119	mg/kg	1.3E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-07	7.5E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.0144	mg/kg	1.6E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-07	9.1E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	0.37026	mg/kg	4.0E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-05	2.3E-04	mg/kg/day	2.0E-03	mg/kg/day	1.E+01
				Dieldrin	0.00852	mg/kg	9.2E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	5.4E-06	mg/kg/day	5.0E-03	mg/kg/day	1.E-01
				gamma-Chlordane	0.00574	mg/kg	6.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	3.6E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				Heptachlor Epoxide	0.0018	mg/kg	2.0E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-06	1.1E-06	mg/kg/day	1.3E-05	mg/kg/day	9.E-02
				Technical Chlordane	0.31006	mg/kg	3.4E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	2.0E-04	mg/kg/day	5.0E-04	mg/kg/day	4.E-01
				Cadmium	0.157	mg/kg	NC		NC			9.9E-05	mg/kg/day	1.0E-03	mg/kg/day	1.E-01
				Lead	0.341	mg/kg	3.7E-05	mg/kg/day	--			2.2E-04	mg/kg/day			
				Manganese	12.6	mg/kg	NC		NC			8.0E-03	mg/kg/day	1.4E-01	mg/kg/day	6.E-02
				Mercury	0.102	mg/kg	NC		NC			6.5E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.117	mg/kg	NC		NC			7.4E-05	mg/kg/day	1.0E-04	mg/kg/day	7.E-01

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TABLE F.7.50.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
				Toxicity Equivalency (Dioxins/Furans)	0.0000522	mg/kg	5.7E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-04	3.3E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-03					1.4.E+01
		EXPOSURE POINT TOTAL									1.E-03					1.4.E+01
	EXPOSURE MEDIUM TOTAL										1.E-03					1.4.E+01
WHOLE BODY TOTAL											1.E-03					1.4.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	1.E-03		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		1.4.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TABLE F.7.51.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SURFACE WATER TOTAL											0.E+00					0.E+00
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	INGESTION	Acenaphthylene	0.00076	mg/kg	NC		NC			1.0E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.00017	mg/kg	2.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	2.3E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Phenanthrene	0.0049	mg/kg	NC		NC			6.6E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDD	0.0543	mg/kg	4.1E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-06	4.8E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				4,4'-DDE	0.011	mg/kg	1.3E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-07	1.5E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				4,4'-DDT	0.0119	mg/kg	1.4E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-07	1.6E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				alpha-Chlordane	0.0144	mg/kg	1.7E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-07	1.9E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				Aroclor-1254	0.37026	mg/kg	4.3E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-05	5.0E-04	mg/kg/day	2.0E-05	mg/kg/day	2.E+01
				Dieldrin	0.00852	mg/kg	9.9E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-05	1.1E-05	mg/kg/day	5.0E-05	mg/kg/day	2.E-01
				gamma-Chlordane	0.00574	mg/kg	6.6E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	7.7E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Heptachlor Epoxide	0.0018	mg/kg	2.1E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-06	2.4E-06	mg/kg/day	1.3E-05	mg/kg/day	2.E-01
				Technical Chlordane	0.31006	mg/kg	3.6E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	4.2E-04	mg/kg/day	5.0E-04	mg/kg/day	8.E-01
				Cadmium	0.157	mg/kg	NC		NC			2.1E-04	mg/kg/day	1.0E-03	mg/kg/day	2.E-01
				Lead	0.341	mg/kg	3.9E-05	mg/kg/day	--			4.6E-04	mg/kg/day			
				Manganese	12.6	mg/kg	NC		NC			1.7E-02	mg/kg/day	1.4E-01	mg/kg/day	1.E-01
				Mercury	0.102	mg/kg	NC		NC			1.4E-04	mg/kg/day	3.0E-04	mg/kg/day	5.E-01
				Mercury (methyl)	0.117	mg/kg	NC		NC			1.6E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.0000522	mg/kg	6.0E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	9.E-04	7.0E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-03					2.9.E+01
		EXPOSURE POINT TOTAL									1.E-03					2.9.E+01
	EXPOSURE MEDIUM TOTAL										1.E-03					2.9.E+01
WHOLE BODY TOTAL											1.E-03					2.9.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA 1.E-03					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA 2.9.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	2.4E-07	NA	2.1E-07	4.4E-07
			Acenaphthylene	NC	NA	NC	NA		Liver	2.5E-07	NA	2.2E-07	4.7E-07
			Benzo(a)anthracene	1.4E-07	NA	1.2E-07	NA	2.6E-07	Kidney	8.5E-06	NA	7.5E-06	1.6E-05
			Benzo(a)pyrene	1.2E-06	NA	1.0E-06	NA	2.2E-06	Kidney	7.1E-06	NA	6.3E-06	1.3E-05
			Benzo(b)fluoranthene	1.9E-07	NA	1.7E-07	NA	3.6E-07	Kidney	1.2E-05	NA	1.1E-05	2.2E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	5.0E-06	NA	4.5E-06	9.5E-06
			Dibenzo(a,h)anthracene	2.5E-07	NA	2.2E-07	NA	4.7E-07	Kidney	1.5E-06	NA	1.3E-06	2.9E-06
			Indeno(1,2,3-cd)pyrene	9.0E-08	NA	7.9E-08	NA	1.7E-07	Kidney	5.5E-06	NA	4.9E-06	1.0E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	6.7E-06	NA	6.0E-06	1.3E-05
			alpha-Chlordane	8.8E-11	NA	2.4E-11	NA	1.1E-10	Liver	6.8E-07	NA	1.8E-07	8.6E-07
			Aroclor-1254	2.2E-08	NA	2.1E-08	NA	4.2E-08	Immune system	7.3E-04	NA	7.0E-04	1.4E-03
			Aroclor-1268	1.6E-08	NA	1.5E-08	NA	3.1E-08	Immune system	5.3E-04	NA	5.0E-04	1.0E-03
			gamma-Chlordane	4.3E-11	NA	1.2E-11	NA	5.5E-11	Liver	3.3E-07	NA	9.0E-08	4.2E-07
			Technical Chlordane	1.0E-08	NA	2.7E-09	NA	1.3E-08	Liver	7.8E-05	NA	2.1E-05	9.9E-05
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	1.5E-06	NA	3.0E-07	NA	1.8E-06	Skin	4.4E-03	NA	9.0E-04	5.3E-03
			Cadmium	NC	NA	NC	NA		Kidney	2.2E-04	NA	5.9E-05	2.8E-04
			Chromium	NC	NA	NC	NA		NOAEL	1.5E-03	NA	--	1.5E-03
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	5.7E-03	NA	--	5.7E-03
			Mercury	NC	NA	NC	NA		Immune system	9.7E-05	NA	--	9.7E-05
			Nickel	NC	NA	NC	NA		Developmental toxicity	2.5E-04	NA	--	2.5E-04
			Thallium	NC	NA	NC	NA		NOAEL	1.1E-03	NA	--	1.1E-03
			Vanadium	NC	NA	NC	NA		NOAEL	1.2E-03	NA	--	1.2E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.2E-07	NA	4.5E-08	NA	2.6E-07		--	NA	--	
			CHEMICAL TOTAL	3.6E-06	--	2.0E-06	--	6E-06		1.6E-02	0.0E+00	2.2E-03	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-06					2E-02
	EXPOSURE MEDIUM TOTAL							6E-06					2E-02
SEDIMENT TOTAL								6E-06					2E-02
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	Arsenic	2.8E-08	NA	4.8E-08	NA	7.6E-08	Skin	3.3E-05	NA	1.4E-04	2.3E-04
			Manganese	NC	NA	NC	NA		NOAEL	3.5E-04	NA	1.5E-02	1.6E-02
			Mercury	NC	NA	NC	NA		Immune system	3.6E-07	NA	9.1E-06	9.4E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	2.6E-06	NA	--	2.6E-06
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.0E-08	NA	1.2E-04	NA	1.2E-04		--	NA	--	
			CHEMICAL TOTAL	5.8E-08	--	1.2E-04	--	1E-04		4.4E-04	0.0E+00	1.5E-02	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					2E-02
	EXPOSURE MEDIUM TOTAL							1E-04					2E-02
SURFACE WATER TOTAL								1E-04					2E-02
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	6.0E-05	NA	NA	6.0E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	5.9E-04	NA	NA	5.9E-04
			4,4'-DDD	3.0E-06	NA	NA	NA	3.0E-06	Liver	3.4E-02	NA	NA	3.4E-02
			4,4'-DDE	1.9E-05	NA	NA	NA	1.9E-05	Liver	1.5E-01	NA	NA	1.5E-01
			alpha-Chlordane	2.6E-06	NA	NA	NA	2.6E-06	Liver	2.0E-02	NA	NA	2.0E-02
			Aroclor-1254	3.1E-04	NA	NA	NA	3.1E-04	Immune system	1.0E+01	NA	NA	1.0E+01

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TABLE F.9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Dieldrin	5.9E-05	NA	NA	NA	5.9E-05	Liver	1.0E-01	NA	NA	1.0E-01
			gamma-Chlordane	9.8E-07	NA	NA	NA	9.8E-07	Liver	7.5E-03	NA	NA	7.5E-03
			Heptachlor Epoxide	1.9E-05	NA	NA	NA	1.9E-05	Liver	2.2E-01	NA	NA	2.2E-01
			Technical Chlordane	8.5E-05	NA	NA	NA	8.5E-05	Liver	6.5E-01	NA	NA	6.5E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	9.5E-01	NA	NA	9.5E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.8E+00	NA	NA	2.8E+00
			Zinc	NC	NA	NA	NA		Hematological system	1.8E-01	NA	NA	1.8E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.0E-04	NA	NA	NA	4.0E-04		--	NA	NA	
			CHEMICAL TOTAL	9.0E-04	--	--	--	9E-04		1.5E+01	0.0E+00	--	1.5E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						9E-04					1.5E+01
	EXPOSURE MEDIUM TOTAL							9E-04					1.5E+01
WHOLE BODY TOTAL								9E-04					1.5E+01
RECEPTOR TOTAL								1E-03					1.6E+01
			TOTAL RISK ACROSS ALL MEDIA					1E-03	TOTAL HAZARD ACROSS ALL MEDIA				1.6E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

	--
TOTAL CARDIOVASCULAR SYSTEM HI =	4.4E-07
TOTAL DEVELOPMENTAL TOXICITY HI =	2.8E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	1.8E-01
TOTAL IMMUNE SYSTEM HI =	1.1E+01
TOTAL KIDNEY HI =	9.6E-04
TOTAL LIVER HI =	1.2E+00
	--
	--
TOTAL NOAEL HI =	2.5E-02
	--
TOTAL SKIN HI =	5.5E-03
	--

Prepared by: RAR
Checked by: KJA

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TABLE F.9.2.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	3.7E-07	NA	6.8E-07	1.0E-06
			Acenaphthylene	NC	NA	NC	NA		Liver	3.9E-07	NA	7.2E-07	1.1E-06
			Benzo(a)anthracene	5.0E-08	NA	9.2E-08	NA	1.4E-07	Kidney	1.3E-05	NA	2.5E-05	3.8E-05
			Benzo(a)pyrene	4.2E-07	NA	7.7E-07	NA	1.2E-06	Kidney	1.1E-05	NA	2.1E-05	3.2E-05
			Benzo(b)fluoranthene	6.9E-08	NA	1.3E-07	NA	2.0E-07	Kidney	1.8E-05	NA	3.4E-05	5.3E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	7.8E-06	NA	1.5E-05	2.2E-05
			Dibenzo(a,h)anthracene	8.9E-08	NA	1.6E-07	NA	2.5E-07	Kidney	2.4E-06	NA	4.4E-06	6.7E-06
			Indeno(1,2,3-cd)pyrene	3.2E-08	NA	6.0E-08	NA	9.2E-08	Kidney	8.6E-06	NA	1.6E-05	2.5E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	1.0E-05	NA	1.9E-05	3.0E-05
			alpha-Chlordane	3.2E-11	NA	1.8E-11	NA	5.0E-11	Liver	1.1E-06	NA	6.0E-07	1.7E-06
			Aroclor-1254	7.8E-09	NA	1.6E-08	NA	2.3E-08	Immune system	1.1E-03	NA	2.3E-03	3.4E-03
			Aroclor-1268	5.7E-09	NA	1.1E-08	NA	1.7E-08	Immune system	8.2E-04	NA	1.6E-03	2.5E-03
			gamma-Chlordane	1.5E-11	NA	8.8E-12	NA	2.4E-11	Liver	5.1E-07	NA	2.9E-07	8.1E-07
			Technical Chlordane	3.6E-09	NA	2.1E-09	NA	5.7E-09	Liver	1.2E-04	NA	6.9E-05	1.9E-04
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	5.3E-07	NA	2.3E-07	NA	7.6E-07	Skin	6.9E-03	NA	2.9E-03	9.8E-03
			Cadmium	NC	NA	NC	NA		Kidney	3.4E-04	NA	1.9E-04	5.3E-04
			Chromium	NC	NA	NC	NA		NOAEL	2.3E-03	NA	--	2.3E-03
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	8.9E-03	NA	--	8.9E-03
			Mercury	NC	NA	NC	NA		Immune system	1.5E-04	NA	--	1.5E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	4.0E-04	NA	--	4.0E-04
			Thallium	NC	NA	NC	NA		NOAEL	1.8E-03	NA	--	1.8E-03
			Vanadium	NC	NA	NC	NA		NOAEL	1.8E-03	NA	--	1.8E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	7.9E-08	NA	3.4E-08	NA	1.1E-07		--	NA	--	
			CHEMICAL TOTAL	1.3E-06	--	1.5E-06	--	3E-06		2.5E-02	0.0E+00	7.3E-03	3E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-06					3E-02
	EXPOSURE MEDIUM TOTAL							3E-06					3E-02
SEDIMENT TOTAL								3E-06					3E-02
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	Arsenic	1.0E-08	NA	1.3E-08	NA	2.3E-08	Skin	1.3E-04	NA	1.6E-04	2.9E-04
			Manganese	NC	NA	NC	NA		NOAEL	5.5E-04	NA	1.7E-02	1.8E-02
			Mercury	NC	NA	NC	NA		Immune system	5.7E-07	NA	1.0E-05	1.1E-05
			Nitrite-N	NC	NA	NC	NA		Hematological system	4.0E-06	NA	--	4.0E-06
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.1E-08	NA	3.1E-05	NA	3.1E-05		--	NA	--	
			CHEMICAL TOTAL	2.1E-08	--	3.1E-05	--	3E-05		6.8E-04	0.0E+00	1.7E-02	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-05					2E-02
	EXPOSURE MEDIUM TOTAL							3E-05					2E-02
SURFACE WATER TOTAL								3E-05					2E-02

US EPA ARCHIVE DOCUMENT

TABLE F.9.2.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	6.3E-05	NA	NA	6.3E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	6.1E-04	NA	NA	6.1E-04
			4,4'-DDD	7.2E-07	NA	NA	NA	7.2E-07	Liver	3.5E-02	NA	NA	3.5E-02
			4,4'-DDE	4.6E-06	NA	NA	NA	4.6E-06	Liver	1.6E-01	NA	NA	1.6E-01
			alpha-Chlordane	6.1E-07	NA	NA	NA	6.1E-07	Liver	2.0E-02	NA	NA	2.0E-02
			Aroclor-1254	7.4E-05	NA	NA	NA	7.4E-05	Immune system	1.1E+01	NA	NA	1.1E+01
			Dieldrin	1.4E-05	NA	NA	NA	1.4E-05	Liver	1.0E-01	NA	NA	1.0E-01
			gamma-Chlordane	2.3E-07	NA	NA	NA	2.3E-07	Liver	7.8E-03	NA	NA	7.8E-03
			Heptachlor Epoxide	4.5E-06	NA	NA	NA	4.5E-06	Liver	2.2E-01	NA	NA	2.2E-01
			Technical Chlordane	2.0E-05	NA	NA	NA	2.0E-05	Liver	6.8E-01	NA	NA	6.8E-01
			Lead	--	NA	NA	NA		--	NA	NA		
			Mercury	NC	NA	NA	NA		Immune system	9.8E-01	NA	NA	9.8E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.9E+00	NA	NA	2.9E+00
			Zinc	NC	NA	NA	NA		Hematological system	1.8E-01	NA	NA	1.8E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	9.6E-05	NA	NA	NA	9.6E-05		--	NA	NA	
			CHEMICAL TOTAL	2.2E-04	--	--	--	2E-04		1.6E+01	0.0E+00	--	1.6E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-04					1.6E+01
	EXPOSURE MEDIUM TOTAL							2E-04					1.6E+01
WHOLE BODY TOTAL								2E-04					1.6E+01
RECEPTOR TOTAL								2E-04					1.6E+01
			TOTAL RISK ACROSS ALL MEDIA					2E-04	TOTAL HAZARD ACROSS ALL MEDIA				1.6E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

	--
TOTAL CARDIOVASCULAR SYSTEM HI =	1.0E-06
TOTAL DEVELOPMENTAL TOXICITY HI =	2.9E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	1.8E-01
TOTAL IMMUNE SYSTEM HI =	1.2E+01
TOTAL KIDNEY HI =	1.4E-03
TOTAL LIVER HI =	1.2E+00
	--
	--
TOTAL NOAEL HI =	3.2E-02
	--
TOTAL SKIN HI =	1.0E-02
	--

US EPA ARCHIVE DOCUMENT

TABLE F.9.3.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.0E-04	NA	NA	1.0E-04
			Phenanthrene	NC	NA	NA	NA		Kidney	1.0E-03	NA	NA	1.0E-03
			4,4'-DDD	5.8E-07	NA	NA	NA	5.8E-07	Liver	5.7E-02	NA	NA	5.7E-02
			4,4'-DDE	3.7E-06	NA	NA	NA	3.7E-06	Liver	2.6E-01	NA	NA	2.6E-01
			alpha-Chlordane	5.0E-07	NA	NA	NA	5.0E-07	Liver	3.3E-02	NA	NA	3.3E-02
			Aroclor-1254	6.0E-05	NA	NA	NA	6.0E-05	Immune system	1.8E+01	NA	NA	1.8E+01
			Dieldrin	1.2E-05	NA	NA	NA	1.2E-05	Liver	1.7E-01	NA	NA	1.7E-01
			gamma-Chlordane	1.9E-07	NA	NA	NA	1.9E-07	Liver	1.3E-02	NA	NA	1.3E-02
			Heptachlor Epoxide	3.7E-06	NA	NA	NA	3.7E-06	Liver	3.6E-01	NA	NA	3.6E-01
			Technical Chlordane	1.7E-05	NA	NA	NA	1.7E-05	Liver	1.1E+00	NA	NA	1.1E+00
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.6E+00	NA	NA	1.6E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	4.7E+00	NA	NA	4.7E+00
			Zinc	NC	NA	NA	NA		Hematological system	3.0E-01	NA	NA	3.0E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	7.8E-05	NA	NA	NA	7.8E-05		--	NA	NA	
			CHEMICAL TOTAL	1.8E-04	--	--	--	2E-04		2.6E+01	0.0E+00	--	2.6E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-04					2.6E+01
	EXPOSURE MEDIUM TOTAL							2E-04					2.6E+01
WHOLE BODY TOTAL								2E-04					2.6E+01
RECEPTOR TOTAL								2E-04					2.6E+01
			TOTAL RISK ACROSS ALL MEDIA					2E-04	TOTAL HAZARD ACROSS ALL MEDIA				2.6E+01

NOTES
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
--- Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	4.7E+00
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TOTAL HEMATOLOGICAL SYSTEM HI =	3.0E-01
TOTAL IMMUNE SYSTEM HI =	1.9E+01
TOTAL KIDNEY HI =	1.0E-03
TOTAL LIVER HI =	2.0E+00
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US EPA ARCHIVE DOCUMENT

TABLE F.9.4.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	2.4E-07	NA	2.1E-07	4.4E-07
			Acenaphthylene	NC	NA	NC	NA		Liver	2.5E-07	NA	2.2E-07	4.7E-07
			Benzo(a)anthracene	1.4E-07	NA	1.2E-07	NA	2.6E-07	Kidney	8.5E-06	NA	7.5E-06	1.6E-05
			Benzo(a)pyrene	1.2E-06	NA	1.0E-06	NA	2.2E-06	Kidney	7.1E-06	NA	6.3E-06	1.3E-05
			Benzo(b)fluoranthene	1.9E-07	NA	1.7E-07	NA	3.6E-07	Kidney	1.2E-05	NA	1.1E-05	2.2E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	5.0E-06	NA	4.5E-06	9.5E-06
			Dibenzo(a,h)anthracene	2.5E-07	NA	2.2E-07	NA	4.7E-07	Kidney	1.5E-06	NA	1.3E-06	2.9E-06
			Indeno(1,2,3-cd)pyrene	9.0E-08	NA	7.9E-08	NA	1.7E-07	Kidney	5.5E-06	NA	4.9E-06	1.0E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	6.7E-06	NA	6.0E-06	1.3E-05
			alpha-Chlordane	8.8E-11	NA	2.4E-11	NA	1.1E-10	Liver	6.8E-07	NA	1.8E-07	8.6E-07
			Aroclor-1254	2.2E-08	NA	2.1E-08	NA	4.2E-08	Immune system	7.3E-04	NA	7.0E-04	1.4E-03
			Aroclor-1268	1.6E-08	NA	1.5E-08	NA	3.1E-08	Immune system	5.3E-04	NA	5.0E-04	1.0E-03
			gamma-Chlordane	4.3E-11	NA	1.2E-11	NA	5.5E-11	Liver	3.3E-07	NA	9.0E-08	4.2E-07
			Technical Chlordane	1.0E-08	NA	2.7E-09	NA	1.3E-08	Liver	7.8E-05	NA	2.1E-05	9.9E-05
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	1.5E-06	NA	3.0E-07	NA	1.8E-06	Skin	4.4E-03	NA	9.0E-04	5.3E-03
			Cadmium	NC	NA	NC	NA		Kidney	2.2E-04	NA	5.9E-05	2.8E-04
			Chromium	NC	NA	NC	NA		NOAEL	1.5E-03	NA	--	1.5E-03
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	5.7E-03	NA	--	5.7E-03
			Mercury	NC	NA	NC	NA		Immune system	9.7E-05	NA	--	9.7E-05
			Nickel	NC	NA	NC	NA		Developmental toxicity	2.5E-04	NA	--	2.5E-04
			Thallium	NC	NA	NC	NA		NOAEL	1.1E-03	NA	--	1.1E-03
			Vanadium	NC	NA	NC	NA		NOAEL	1.2E-03	NA	--	1.2E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.2E-07	NA	4.5E-08	NA	2.6E-07		--	NA	--	
			CHEMICAL TOTAL	3.6E-06	--	2.0E-06	--	6E-06		1.6E-02	0.0E+00	2.2E-03	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-06					2E-02
	EXPOSURE MEDIUM TOTAL							6E-06					2E-02
SEDIMENT TOTAL								6E-06					2E-02
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	Arsenic	2.8E-08	NA	4.8E-08	NA	7.6E-08	Skin	8.3E-05	NA	1.4E-04	2.3E-04
			Manganese	NC	NA	NC	NA		NOAEL	3.5E-04	NA	1.5E-02	1.6E-02
			Mercury	NC	NA	NC	NA		Immune system	3.6E-07	NA	9.1E-06	9.4E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	2.6E-06	NA	--	2.6E-06
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.0E-08	NA	1.2E-04	NA	1.2E-04		--	NA	--	
			CHEMICAL TOTAL	5.8E-08	--	1.2E-04	--	1E-04		4.4E-04	0.0E+00	1.5E-02	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					2E-02
	EXPOSURE MEDIUM TOTAL							1E-04					2E-02
SURFACE WATER TOTAL								1E-04					2E-02
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.1E-05	NA	NA	1.1E-05
			Benzo(a)pyrene	1.4E-05	NA	NA	NA	1.4E-05	Kidney	8.7E-05	NA	NA	8.7E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	8.0E-05	NA	NA	8.0E-05
			4,4'-DDE	4.8E-06	NA	NA	NA	4.8E-06	Liver	3.8E-02	NA	NA	3.8E-02
			alpha-Chlordane	1.6E-07	NA	NA	NA	1.6E-07	Liver	1.3E-03	NA	NA	1.3E-03
			Mercury	NC	NA	NA	NA		Immune system	2.1E+00	NA	NA	2.1E+00

US EPA ARCHIVE DOCUMENT

TABLE F.9.4.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	7.7E+00	NA	NA	7.7E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	6.3E-04	NA	NA	NA	6.3E-04		--	NA	NA	
			CHEMICAL TOTAL	6.5E-04	--	--	--	6E-04		9.9E+00	0.0E+00	--	1E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-04					1E+01
	EXPOSURE MEDIUM TOTAL							6E-04					1E+01
FILLET TOTAL								6E-04					1E+01
RECEPTOR TOTAL								8E-04					9.9E+00
			TOTAL RISK ACROSS ALL MEDIA					8E-04	TOTAL HAZARD ACROSS ALL MEDIA				9.9E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

	--
TOTAL CARDIOVASCULAR SYSTEM HI =	4.4E-07
TOTAL DEVELOPMENTAL TOXICITY HI =	7.7E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	2.6E-06
TOTAL IMMUNE SYSTEM HI =	2.1E+00
TOTAL KIDNEY HI =	5.3E-04
TOTAL LIVER HI =	3.9E-02
	--
	--
TOTAL NOAEL HI =	2.5E-02
	--
TOTAL SKIN HI =	5.5E-03
	--

US EPA ARCHIVE DOCUMENT

TABLE F.9.S.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	3.7E-07	NA	6.8E-07	1.0E-06
			Acenaphthylene	NC	NA	NC	NA		Liver	3.9E-07	NA	7.2E-07	1.1E-06
			Benzo(a)anthracene	5.0E-08	NA	9.2E-08	NA	1.4E-07	Kidney	1.3E-05	NA	2.5E-05	3.8E-05
			Benzo(a)pyrene	4.2E-07	NA	7.7E-07	NA	1.2E-06	Kidney	1.1E-05	NA	2.1E-05	3.2E-05
			Benzo(b)fluoranthene	6.9E-08	NA	1.3E-07	NA	2.0E-07	Kidney	1.8E-05	NA	3.4E-05	5.3E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	7.8E-06	NA	1.5E-05	2.2E-05
			Dibenzo(a,h)anthracene	8.9E-08	NA	1.6E-07	NA	2.5E-07	Kidney	2.4E-06	NA	4.4E-06	6.7E-06
			Indeno(1,2,3-cd)pyrene	3.2E-08	NA	6.0E-08	NA	9.2E-08	Kidney	8.6E-06	NA	1.6E-05	2.5E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	1.0E-05	NA	1.9E-05	3.0E-05
			alpha-Chlordane	3.2E-11	NA	1.8E-11	NA	5.0E-11	Liver	1.1E-06	NA	6.0E-07	1.7E-06
			Aroclor-1254	7.8E-09	NA	1.6E-08	NA	2.3E-08	Immune system	1.1E-03	NA	2.3E-03	3.4E-03
			Aroclor-1268	5.7E-09	NA	1.1E-08	NA	1.7E-08	Immune system	8.2E-04	NA	1.6E-03	2.5E-03
			gamma-Chlordane	1.5E-11	NA	8.8E-12	NA	2.4E-11	Liver	5.1E-07	NA	2.9E-07	8.1E-07
			Technical Chlordane	3.6E-09	NA	2.1E-09	NA	5.7E-09	Liver	1.2E-04	NA	6.9E-05	1.9E-04
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	5.3E-07	NA	2.3E-07	NA	7.6E-07	Skin	6.9E-03	NA	2.9E-03	9.8E-03
			Cadmium	NC	NA	NC	NA		Kidney	3.4E-04	NA	1.9E-04	5.3E-04
			Chromium	NC	NA	NC	NA		NOAEL	2.3E-03	NA	--	2.3E-03
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	8.9E-03	NA	--	8.9E-03
			Mercury	NC	NA	NC	NA		Immune system	1.5E-04	NA	--	1.5E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	4.0E-04	NA	--	4.0E-04
			Thallium	NC	NA	NC	NA		NOAEL	1.8E-03	NA	--	1.8E-03
			Vanadium	NC	NA	NC	NA		NOAEL	1.8E-03	NA	--	1.8E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	7.9E-08	NA	3.4E-08	NA	1.1E-07		--	NA	--	
			CHEMICAL TOTAL	1.3E-06	--	1.5E-06	--	3E-06		2.5E-02	0.0E+00	7.3E-03	3E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-06					3E-02
	EXPOSURE MEDIUM TOTAL							3E-06					3E-02
SEDIMENT TOTAL								3E-06					3E-02
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	Arsenic	1.0E-08	NA	1.3E-08	NA	2.3E-08	Skin	1.3E-04	NA	1.6E-04	2.9E-04
			Manganese	NC	NA	NC	NA		NOAEL	5.5E-04	NA	1.7E-02	1.8E-02
			Mercury	NC	NA	NC	NA		Immune system	5.7E-07	NA	1.0E-05	1.1E-05
			Nitrite-N	NC	NA	NC	NA		Hematological system	4.0E-06	NA	--	4.0E-06
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.1E-08	NA	3.1E-05	NA	3.1E-05		--	NA	--	
			CHEMICAL TOTAL	2.1E-08	--	3.1E-05	--	3E-05		6.8E-04	0.0E+00	1.7E-02	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-05					2E-02
	EXPOSURE MEDIUM TOTAL							3E-05					2E-02
SURFACE WATER TOTAL								3E-05					2E-02
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.1E-05	NA	NA	1.1E-05
			Benzo(a)pyrene	3.4E-06	NA	NA	NA	3.4E-06	Kidney	9.0E-05	NA	NA	9.0E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	8.3E-05	NA	NA	8.3E-05
			4,4'-DDE	1.1E-06	NA	NA	NA	1.1E-06	Liver	3.9E-02	NA	NA	3.9E-02
			alpha-Chlordane	3.9E-08	NA	NA	NA	3.9E-08	Liver	1.3E-03	NA	NA	1.3E-03
			Mercury	NC	NA	NA	NA		Immune system	2.2E+00	NA	NA	2.2E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	8.0E+00	NA	NA	8.0E+00

US EPA ARCHIVE DOCUMENT

TABLE F.9.5.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.5E-04	NA	NA	NA	1.5E-04		--	NA	NA	
			CHEMICAL TOTAL	1.6E-04	--	--	--	2E-04		1.0E+01	0.0E+00	--	1E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-04					1E+01
	EXPOSURE MEDIUM TOTAL							2E-04					1E+01
FILLET TOTAL								2E-04					1E+01
RECEPTOR TOTAL								2E-04					1.0E+01
							TOTAL RISK ACROSS ALL MEDIA	2E-04	TOTAL HAZARD ACROSS ALL MEDIA				1.0E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL CARDIOVASCULAR SYSTEM HI =	1.0E-06
TOTAL DEVELOPMENTAL TOXICITY HI =	8.0E+00
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	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	4.0E-06
TOTAL IMMUNE SYSTEM HI =	2.2E+00
TOTAL KIDNEY HI =	9.1E-04
TOTAL LIVER HI =	4.1E-02
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	--
TOTAL NOAEL HI =	3.2E-02
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TOTAL SKIN HI =	1.0E-02
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US EPA ARCHIVE DOCUMENT

TABLE F.9.6.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.8E-05	NA	NA	1.8E-05
			Benzo(a)pyrene	2.7E-06	NA	NA	NA	2.7E-06	Kidney	1.5E-04	NA	NA	1.5E-04
			Phenanthrene	NC	NA	NA	NA		Kidney	1.4E-04	NA	NA	1.4E-04
			4,4'-DDE	9.3E-07	NA	NA	NA	9.3E-07	Liver	6.4E-02	NA	NA	6.4E-02
			alpha-Chlordane	3.2E-08	NA	NA	NA	3.2E-08	Liver	2.1E-03	NA	NA	2.1E-03
			Mercury	NC	NA	NA	NA		Immune system	3.6E+00	NA	NA	3.6E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.3E+01	NA	NA	1.3E+01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.2E-04	NA	NA	NA	1.2E-04		--	NA	NA	
			CHEMICAL TOTAL	1.3E-04	--	--	--	1E-04		1.7E+01	0.0E+00	--	2E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					2E+01
	EXPOSURE MEDIUM TOTAL							1E-04					2E+01
FILLET TOTAL								1E-04					2E+01
RECEPTOR TOTAL								1E-04					1.7E+01
							TOTAL RISK ACROSS ALL MEDIA	1E-04	TOTAL HAZARD ACROSS ALL MEDIA				1.7E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.3E+01
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TOTAL IMMUNE SYSTEM HI =	3.6E+00
TOTAL KIDNEY HI =	2.8E-04
TOTAL LIVER HI =	6.6E-02
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US EPA ARCHIVE DOCUMENT

TABLE F.9.7.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	2.4E-07	NA	2.1E-07	4.4E-07
			Acenaphthylene	NC	NA	NC	NA		Liver	2.5E-07	NA	2.2E-07	4.7E-07
			Benzo(a)anthracene	1.4E-07	NA	1.2E-07	NA	2.6E-07	Kidney	8.5E-06	NA	7.5E-06	1.6E-05
			Benzo(a)pyrene	1.2E-06	NA	1.0E-06	NA	2.2E-06	Kidney	7.1E-06	NA	6.3E-06	1.3E-05
			Benzo(b)fluoranthene	1.9E-07	NA	1.7E-07	NA	3.6E-07	Kidney	1.2E-05	NA	1.1E-05	2.2E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	5.0E-06	NA	4.5E-06	9.5E-06
			Dibenzo(a,h)anthracene	2.5E-07	NA	2.2E-07	NA	4.7E-07	Kidney	1.5E-06	NA	1.3E-06	2.9E-06
			Indeno(1,2,3-cd)pyrene	9.0E-08	NA	7.9E-08	NA	1.7E-07	Kidney	5.5E-06	NA	4.9E-06	1.0E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	6.7E-06	NA	6.0E-06	1.3E-05
			alpha-Chlordane	*8.8E-11*	NA	*2.4E-11*	NA	*1.1E-10*	Liver	6.8E-07	NA	1.8E-07	8.6E-07
			Aroclor-1254	2.2E-08	NA	2.1E-08	NA	4.2E-08	Immune system	7.3E-04	NA	7.0E-04	1.4E-03
			Aroclor-1268	1.6E-08	NA	1.5E-08	NA	3.1E-08	Immune system	5.3E-04	NA	5.0E-04	1.0E-03
			gamma-Chlordane	4.3E-11	NA	1.2E-11	NA	5.5E-11	Liver	3.3E-07	NA	9.0E-08	4.2E-07
			Technical Chlordane	1.0E-08	NA	2.7E-09	NA	1.3E-08	Liver	7.8E-05	NA	2.1E-05	9.9E-05
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	1.5E-06	NA	3.0E-07	NA	1.8E-06	Skin	4.4E-03	NA	9.0E-04	5.3E-03
			Cadmium	NC	NA	NC	NA		Kidney	2.2E-04	NA	5.9E-05	2.8E-04
			Chromium	NC	NA	NC	NA		NOAEL	1.5E-03	NA	--	1.5E-03
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	5.7E-03	NA	--	5.7E-03
			Mercury	NC	NA	NC	NA		Immune system	9.7E-05	NA	--	9.7E-05
			Nickel	NC	NA	NC	NA		Developmental toxicity	2.5E-04	NA	--	2.5E-04
			Thallium	NC	NA	NC	NA		NOAEL	1.1E-03	NA	--	1.1E-03
			Vanadium	NC	NA	NC	NA		NOAEL	1.2E-03	NA	--	1.2E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.2E-07	NA	4.5E-08	NA	2.6E-07		--	NA	--	
			CHEMICAL TOTAL	3.6E-06	--	2.0E-06	--	6E-06		1.6E-02	0.0E+00	2.2E-03	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-06					2E-02
	EXPOSURE MEDIUM TOTAL							6E-06					2E-02
SEDIMENT TOTAL								6E-06					2E-02
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	Arsenic	2.8E-08	NA	4.8E-08	NA	7.6E-08	Skin	8.3E-05	NA	1.4E-04	2.3E-04
			Manganese	NC	NA	NC	NA		NOAEL	3.5E-04	NA	1.5E-02	1.6E-02
			Mercury	NC	NA	NC	NA		Immune system	3.6E-07	NA	9.1E-06	9.4E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	2.6E-06	NA	--	2.6E-06
			Toxicity Equivalency (Dioxins/Furans) - Mam	*3.0E-08*	NA	*1.2E-04*	NA	*1.2E-04*		--	NA	--	
			CHEMICAL TOTAL	5.8E-08	--	1.2E-04	--	1E-04		4.4E-04	0.0E+00	1.5E-02	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					2E-02
	EXPOSURE MEDIUM TOTAL							1E-04					2E-02
SURFACE WATER TOTAL								1E-04					2E-02
LARGEMOUTH BASS	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.5E-05	NA	NA	4.5E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	3.9E-04	NA	NA	3.9E-04
			4,4'-DDE	3.0E-05	NA	NA	NA	3.0E-05	Liver	2.4E-01	NA	NA	2.4E-01
			alpha-Chlordane	9.8E-07	NA	NA	NA	9.8E-07	Liver	7.5E-03	NA	NA	7.5E-03
			Aroclor-1254	4.2E-04	NA	NA	NA	4.2E-04	Immune system	1.4E+01	NA	NA	1.4E+01
			Aroclor-1268	4.2E-05	NA	NA	NA	4.2E-05	Immune system	1.4E+00	NA	NA	1.4E+00

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TABLE F.9.7.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Dieldrin	2.0E-05	NA	NA	NA	2.0E-05	Liver	3.3E-02	NA	NA	3.3E-02
			gamma-Chlordane	2.7E-07	NA	NA	NA	2.7E-07	Liver	2.1E-03	NA	NA	2.1E-03
			Technical Chlordane	6.3E-05	NA	NA	NA	6.3E-05	Liver	4.9E-01	NA	NA	4.9E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.8E+00	NA	NA	1.8E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.0E+00	NA	NA	5.0E+00
			Thallium	NC	NA	NA	NA		NOAEL	2.8E-01	NA	NA	2.8E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.6E-03	NA	NA	NA	3.6E-03		--	NA	NA	
			CHEMICAL TOTAL	4.2E-03	--	--	--	4E-03		2.3E+01	0.0E+00	--	2E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-03					2E+01
	EXPOSURE MEDIUM TOTAL							4E-03					2E+01
WHOLE BODY TOTAL								4E-03					2E+01
RECEPTOR TOTAL								4E-03					2.3E+01
							TOTAL RISK ACROSS ALL MEDIA	4E-03	TOTAL HAZARD ACROSS ALL MEDIA				2.3E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

	--
TOTAL CARDIOVASCULAR SYSTEM HI =	4.4E-07
TOTAL DEVELOPMENTAL TOXICITY HI =	5.0E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	2.6E-06
TOTAL IMMUNE SYSTEM HI =	1.7E+01
TOTAL KIDNEY HI =	7.5E-04
TOTAL LIVER HI =	7.7E-01
	--
	--
TOTAL NOAEL HI =	3.1E-01
	--
TOTAL SKIN HI =	5.5E-03
	--

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.9.8.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	3.7E-07	NA	6.8E-07	1.0E-06
			Acenaphthylene	NC	NA	NC	NA		Liver	3.9E-07	NA	7.2E-07	1.1E-06
			Benzo(a)anthracene	5.0E-08	NA	9.2E-08	NA	1.4E-07	Kidney	1.3E-05	NA	2.5E-05	3.8E-05
			Benzo(a)pyrene	4.2E-07	NA	7.7E-07	NA	1.2E-05	Kidney	1.1E-05	NA	2.1E-05	3.2E-05
			Benzo(b)fluoranthene	6.9E-08	NA	1.3E-07	NA	2.0E-07	Kidney	1.8E-05	NA	3.4E-05	5.3E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	7.8E-06	NA	1.5E-05	2.2E-05
			Dibenzo(a,h)anthracene	8.9E-08	NA	1.6E-07	NA	2.5E-07	Kidney	2.4E-06	NA	4.4E-06	6.7E-06
			Indeno(1,2,3-cd)pyrene	3.2E-08	NA	6.0E-08	NA	9.2E-08	Kidney	8.6E-06	NA	1.6E-05	2.5E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	1.0E-05	NA	1.9E-05	3.0E-05
			alpha-Chlordane	3.2E-11	NA	1.8E-11	NA	5.0E-11	Liver	1.1E-06	NA	6.0E-07	1.7E-06
			Aroclor-1254	7.8E-09	NA	1.6E-08	NA	2.3E-08	Immune system	1.1E-03	NA	2.3E-03	3.4E-03
			Aroclor-1268	5.7E-09	NA	1.1E-08	NA	1.7E-08	Immune system	8.2E-04	NA	1.6E-03	2.5E-03
			gamma-Chlordane	1.5E-11	NA	8.8E-12	NA	2.4E-11	Liver	5.1E-07	NA	2.9E-07	8.1E-07
			Technical Chlordane	3.6E-09	NA	2.1E-09	NA	5.7E-09	Liver	1.2E-04	NA	6.9E-05	1.9E-04
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	5.3E-07	NA	2.3E-07	NA	7.6E-07	Skin	6.9E-03	NA	2.9E-03	9.8E-03
			Cadmium	NC	NA	NC	NA		Kidney	3.4E-04	NA	1.9E-04	5.3E-04
			Chromium	NC	NA	NC	NA		NOAEL	2.3E-03	NA	--	2.3E-03
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	8.9E-03	NA	--	8.9E-03
			Mercury	NC	NA	NC	NA		Immune system	1.5E-04	NA	--	1.5E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	4.0E-04	NA	--	4.0E-04
			Thallium	NC	NA	NC	NA		NOAEL	1.8E-03	NA	--	1.8E-03
			Vanadium	NC	NA	NC	NA		NOAEL	1.8E-03	NA	--	1.8E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	7.9E-08	NA	3.4E-08	NA	1.1E-07		--	NA	--	
			CHEMICAL TOTAL	1.3E-06	--	1.5E-06	--	3E-06		2.5E-02	0.0E+00	7.3E-03	3E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-06					3E-02
	EXPOSURE MEDIUM TOTAL							3E-06					3E-02
SEDIMENT TOTAL								3E-06					3E-02
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	Arsenic	1.0E-08	NA	1.3E-08	NA	2.3E-08	Skin	1.3E-04	NA	1.6E-04	2.9E-04
			Manganese	NC	NA	NC	NA		NOAEL	5.5E-04	NA	1.7E-02	1.8E-02
			Mercury	NC	NA	NC	NA		Immune system	5.7E-07	NA	1.0E-05	1.1E-05
			Nitrite-N	NC	NA	NC	NA		Hematological system	4.0E-06	NA	--	4.0E-06
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.1E-08	NA	3.1E-05	NA	3.1E-05		--	NA	--	
			CHEMICAL TOTAL	2.1E-08	--	3.1E-05	--	3E-05		6.8E-04	0.0E+00	1.7E-02	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-05					2E-02
	EXPOSURE MEDIUM TOTAL							3E-05					2E-02
SURFACE WATER TOTAL								3E-05					2E-02

US EPA ARCHIVE DOCUMENT

TABLE F.9.8.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.6E-05	NA	NA	4.6E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	4.0E-04	NA	NA	4.0E-04
			4,4'-DDE	7.1E-06	NA	NA	NA	7.1E-06	Liver	2.4E-01	NA	NA	2.4E-01
			alpha-Chlordane	2.3E-07	NA	NA	NA	2.3E-07	Liver	7.8E-03	NA	NA	7.8E-03
			Aroclor-1254	1.0E-04	NA	NA	NA	1.0E-04	Immune system	1.5E+01	NA	NA	1.5E+01
			Aroclor-1268	1.0E-05	NA	NA	NA	1.0E-05	Immune system	1.5E+00	NA	NA	1.5E+00
			Dieldrin	4.7E-06	NA	NA	NA	4.7E-06	Liver	3.4E-02	NA	NA	3.4E-02
			gamma-Chlordane	6.4E-08	NA	NA	NA	6.4E-08	Liver	2.1E-03	NA	NA	2.1E-03
			Technical Chlordane	1.5E-05	NA	NA	NA	1.5E-05	Liver	5.1E-01	NA	NA	5.1E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.9E+00	NA	NA	1.9E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.2E+00	NA	NA	5.2E+00
			Thallium	NC	NA	NA	NA		NOAEL	2.9E-01	NA	NA	2.9E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	8.6E-04	NA	NA	NA	8.6E-04		--	NA	NA	
			CHEMICAL TOTAL	1.0E-03	--	--	--	1E-03		2.4E+01	0.0E+00	--	2E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-03					2E+01
	EXPOSURE MEDIUM TOTAL							*1E-03*					*2E+01*
WHOLE BODY TOTAL								1E-03					2E+01
RECEPTOR TOTAL								1E-03					2.4E+01
							TOTAL RISK ACROSS ALL MEDIA	1E-03	TOTAL HAZARD ACROSS ALL MEDIA				2.4E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

	--
TOTAL CARDIOVASCULAR SYSTEM HI =	1.0E-06
TOTAL DEVELOPMENTAL TOXICITY HI =	5.2E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	4.0E-06
TOTAL IMMUNE SYSTEM HI =	*1.8E+01*
TOTAL KIDNEY HI =	1.1E-03
TOTAL LIVER HI =	7.9E-01
	--
	--
TOTAL NOAEL HI =	3.3E-01
	--
TOTAL SKIN HI =	1.0E-02
	--

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.9.9.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	7.5E-05	NA	NA	7.5E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	6.5E-04	NA	NA	6.5E-04
			4,4'-DDE	5.8E-06	NA	NA	NA	5.8E-06	Liver	4.0E-01	NA	NA	4.0E-01
			alpha-Chlordane	1.9E-07	NA	NA	NA	1.9E-07	Liver	1.3E-02	NA	NA	1.3E-02
			Aroclor-1254	8.1E-05	NA	NA	NA	8.1E-05	Immune system	2.4E+01	NA	NA	2.4E+01
			Aroclor-1268	8.2E-06	NA	NA	NA	8.2E-06	Immune system	2.4E+00	NA	NA	2.4E+00
			Dieldrin	3.8E-06	NA	NA	NA	3.8E-06	Liver	5.5E-02	NA	NA	5.5E-02
			gamma-Chlordane	5.2E-08	NA	NA	NA	5.2E-08	Liver	3.5E-03	NA	NA	3.5E-03
			Technical Chlordane	1.2E-05	NA	NA	NA	1.2E-05	Liver	8.2E-01	NA	NA	8.2E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	3.0E+00	NA	NA	3.0E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	8.4E+00	NA	NA	8.4E+00
			Thallium	NC	NA	NA	NA		NOAEL	4.8E-01	NA	NA	4.8E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	7.0E-04	NA	NA	NA	7.0E-04		--	NA	NA	
			CHEMICAL TOTAL	8.2E-04	--	--	--	8E-04		3.9E+01	0.0E+00	--	4E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						8E-04					4E+01
	EXPOSURE MEDIUM TOTAL							8E-04					4E+01
WHOLE BODY TOTAL								8E-04					4E+01
RECEPTOR TOTAL								8E-04					3.9E+01
			TOTAL RISK ACROSS ALL MEDIA					8E-04	TOTAL HAZARD ACROSS ALL MEDIA				3.9E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	8.4E+00
	--
	--
	--
	--
TOTAL IMMUNE SYSTEM HI =	2.9E+01
TOTAL KIDNEY HI =	6.5E-04
TOTAL LIVER HI =	1.3E+00
	--
	--
TOTAL NOAEL HI =	4.8E-01
	--
	--
	--

US EPA ARCHIVE DOCUMENT

TABLE F.9.10.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	2.4E-07	NA	2.1E-07	4.4E-07
			Acenaphthylene	NC	NA	NC	NA		Liver	2.5E-07	NA	2.2E-07	4.7E-07
			Benzo(a)anthracene	1.4E-07	NA	1.2E-07	NA	2.6E-07	Kidney	8.5E-06	NA	7.5E-06	1.6E-05
			Benzo(a)pyrene	1.2E-06	NA	1.0E-06	NA	2.2E-06	Kidney	7.1E-06	NA	6.3E-06	1.3E-05
			Benzo(b)fluoranthene	1.9E-07	NA	1.7E-07	NA	3.6E-07	Kidney	1.2E-05	NA	1.1E-05	2.2E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	5.0E-06	NA	4.5E-06	9.5E-06
			Dibenzo(a,h)anthracene	2.5E-07	NA	2.2E-07	NA	4.7E-07	Kidney	1.5E-06	NA	1.3E-06	2.9E-06
			Indeno(1,2,3-cd)pyrene	9.0E-08	NA	7.9E-08	NA	1.7E-07	Kidney	5.5E-06	NA	4.9E-06	1.0E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	6.7E-06	NA	6.0E-06	1.3E-05
			alpha-Chlordane	8.8E-11	NA	2.4E-11	NA	1.1E-10	Liver	6.8E-07	NA	1.8E-07	8.6E-07
			Aroclor-1254	2.2E-08	NA	2.1E-08	NA	4.2E-08	Immune system	7.3E-04	NA	7.0E-04	1.4E-03
			Aroclor-1268	1.6E-08	NA	1.5E-08	NA	3.1E-08	Immune system	5.3E-04	NA	5.0E-04	1.0E-03
			gamma-Chlordane	4.3E-11	NA	1.2E-11	NA	5.5E-11	Liver	3.3E-07	NA	9.0E-08	4.2E-07
			Technical Chlordane	1.0E-08	NA	2.7E-09	NA	1.3E-08	Liver	7.8E-05	NA	2.1E-05	9.9E-05
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	1.5E-06	NA	3.0E-07	NA	1.8E-06	Skin	4.4E-03	NA	9.0E-04	5.3E-03
			Cadmium	NC	NA	NC	NA		Kidney	2.2E-04	NA	5.9E-05	2.8E-04
			Chromium	NC	NA	NC	NA		NOAEL	1.5E-03	NA	--	1.5E-03
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	5.7E-03	NA	--	5.7E-03
			Mercury	NC	NA	NC	NA		Immune system	9.7E-05	NA	--	9.7E-05
			Nickel	NC	NA	NC	NA		Developmental toxicity	2.5E-04	NA	--	2.5E-04
			Thallium	NC	NA	NC	NA		NOAEL	1.1E-03	NA	--	1.1E-03
			Vanadium	NC	NA	NC	NA		NOAEL	1.2E-03	NA	--	1.2E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.2E-07	NA	4.5E-08	NA	2.6E-07		--	NA	--	
			CHEMICAL TOTAL	3.6E-06	--	2.0E-06	--	6E-06		1.6E-02	0.0E+00	2.2E-03	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-06					2E-02
	EXPOSURE MEDIUM TOTAL							6E-06					2E-02
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	Arsenic	2.8E-08	NA	4.8E-08	NA	7.6E-08	Skin	8.3E-05	NA	1.4E-04	2.3E-04
			Manganese	NC	NA	NC	NA		NOAEL	3.5E-04	NA	1.5E-02	1.6E-02
			Mercury	NC	NA	NC	NA		Immune system	3.6E-07	NA	9.1E-06	9.4E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	2.6E-06	NA	--	2.6E-06
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.0E-08	NA	1.2E-04	NA	1.2E-04		--	NA	--	
			CHEMICAL TOTAL	5.8E-08	--	1.2E-04	--	1E-04		4.4E-04	0.0E+00	1.5E-02	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					2E-02
	EXPOSURE MEDIUM TOTAL							1E-04					2E-02
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.1E-05	NA	NA	4.1E-05
			Benzo(a)anthracene	8.9E-06	NA	NA	NA	8.9E-06	Kidney	5.5E-04	NA	NA	5.5E-04
			Benzo(a)pyrene	8.7E-05	NA	NA	NA	8.7E-05	Kidney	5.3E-04	NA	NA	5.3E-04
			Benzo(b)fluoranthene	1.2E-05	NA	NA	NA	1.2E-05	Kidney	7.1E-04	NA	NA	7.1E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	3.1E-04	NA	NA	3.1E-04
			Dibenzo(a,h)anthracene	1.4E-05	NA	NA	NA	1.4E-05	Kidney	8.7E-05	NA	NA	8.7E-05
			Indeno(1,2,3-cd)pyrene	7.2E-06	NA	NA	NA	7.2E-06	Kidney	4.4E-04	NA	NA	4.4E-04

US EPA ARCHIVE DOCUMENT

TABLE F.9.10.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Phenanthrene	NC	NA	NA	NA		Kidney	5.2E-04	NA	NA	5.2E-04
			4,4'-DDE	1.2E-05	NA	NA	NA	1.2E-05	Liver	9.6E-02	NA	NA	9.6E-02
			alpha-Chlordane	1.5E-06	NA	NA	NA	1.5E-06	Liver	1.2E-02	NA	NA	1.2E-02
			gamma-Chlordane	6.9E-07	NA	NA	NA	6.9E-07	Liver	5.3E-03	NA	NA	5.3E-03
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	9.3E-01	NA	NA	9.3E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.9E+00	NA	NA	2.9E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	5.8E-04	NA	NA	NA	5.8E-04		--	NA	NA	
			CHEMICAL TOTAL	7.3E-04	--	--	--	7E-04		4.0E+00	0.0E+00	--	4.0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-04					4.0E+00
	EXPOSURE MEDIUM TOTAL							7E-04					4.0E+00
WHOLE BODY TOTAL								7E-04					4.0E+00
RECEPTOR TOTAL								9E-04					4.0E+00
							TOTAL RISK ACROSS ALL MEDIA	9E-04	TOTAL HAZARD ACROSS ALL MEDIA				4.0E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL CARDIOVASCULAR SYSTEM HI =	4.4E-07
TOTAL DEVELOPMENTAL TOXICITY HI =	2.9E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	2.6E-06
TOTAL IMMUNE SYSTEM HI =	9.3E-01
TOTAL KIDNEY HI =	3.5E-03
TOTAL LIVER HI =	1.1E-01
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	--
TOTAL NOAEL HI =	2.5E-02
	--
TOTAL SKIN HI =	5.5E-03
	--

US EPA ARCHIVE DOCUMENT

TABLE F.9.11.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	3.7E-07	NA	6.8E-07	1.0E-06
			Acenaphthylene	NC	NA	NC	NA		Liver	3.9E-07	NA	7.2E-07	1.1E-06
			Benzo(a)anthracene	5.0E-08	NA	9.2E-08	NA	1.4E-07	Kidney	1.3E-05	NA	2.5E-05	3.8E-05
			Benzo(a)pyrene	4.2E-07	NA	7.7E-07	NA	1.2E-06	Kidney	1.1E-05	NA	2.1E-05	3.2E-05
			Benzo(b)fluoranthene	6.9E-08	NA	1.3E-07	NA	2.0E-07	Kidney	1.8E-05	NA	3.4E-05	5.3E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	7.8E-06	NA	1.5E-05	2.2E-05
			Dibenzo(a,h)anthracene	8.9E-08	NA	1.6E-07	NA	2.5E-07	Kidney	2.4E-06	NA	4.4E-06	6.7E-06
			Indeno(1,2,3-cd)pyrene	3.2E-08	NA	6.0E-08	NA	9.2E-08	Kidney	8.6E-06	NA	1.6E-05	2.5E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	1.0E-05	NA	1.9E-05	3.0E-05
			alpha-Chlordane	3.2E-11	NA	1.8E-11	NA	5.0E-11	Liver	1.1E-06	NA	6.0E-07	1.7E-06
			Aroclor-1254	7.8E-09	NA	1.6E-08	NA	2.3E-08	Immune system	1.1E-03	NA	2.3E-03	3.4E-03
			Aroclor-1268	5.7E-09	NA	1.1E-08	NA	1.7E-08	Immune system	8.2E-04	NA	1.6E-03	2.5E-03
			gamma-Chlordane	1.5E-11	NA	8.8E-12	NA	2.4E-11	Liver	5.1E-07	NA	2.9E-07	8.1E-07
			Technical Chlordane	3.6E-09	NA	2.1E-09	NA	5.7E-09	Liver	1.2E-04	NA	6.9E-05	1.9E-04
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	5.3E-07	NA	2.3E-07	NA	7.6E-07	Skin	6.9E-03	NA	2.9E-03	9.8E-03
			Cadmium	NC	NA	NC	NA		Kidney	3.4E-04	NA	1.9E-04	5.3E-04
			Chromium	NC	NA	NC	NA		NOAEL	2.3E-03	NA	--	2.3E-03
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	8.9E-03	NA	--	8.9E-03
			Mercury	NC	NA	NC	NA		Immune system	1.5E-04	NA	--	1.5E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	4.0E-04	NA	--	4.0E-04
			Thallium	NC	NA	NC	NA		NOAEL	1.8E-03	NA	--	1.8E-03
			Vanadium	NC	NA	NC	NA		NOAEL	1.8E-03	NA	--	1.8E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	7.9E-08	NA	3.4E-08	NA	1.1E-07		--	NA	--	
			CHEMICAL TOTAL	1.3E-06	--	1.5E-06	--	3E-06		2.5E-02	0.0E+00	7.3E-03	3E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-06					3E-02
	EXPOSURE MEDIUM TOTAL							3E-06					3E-02
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	Arsenic	1.0E-08	NA	1.3E-08	NA	2.3E-08	Skin	1.3E-04	NA	1.6E-04	2.9E-04
			Manganese	NC	NA	NC	NA		NOAEL	5.5E-04	NA	1.7E-02	1.8E-02
			Mercury	NC	NA	NC	NA		Immune system	5.7E-07	NA	1.0E-05	1.1E-05
			Nitrite-N	NC	NA	NC	NA		Hematological system	4.0E-06	NA	--	4.0E-06
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.1E-08	NA	3.1E-05	NA	3.1E-05		--	NA	--	
			CHEMICAL TOTAL	2.1E-08	--	3.1E-05	--	3E-05		6.8E-04	0.0E+00	1.7E-02	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-05					2E-02
	EXPOSURE MEDIUM TOTAL							3E-05					2E-02
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.3E-05	NA	NA	4.3E-05
			Benzo(a)anthracene	2.1E-06	NA	NA	NA	2.1E-06	Kidney	5.7E-04	NA	NA	5.7E-04
			Benzo(a)pyrene	2.1E-05	NA	NA	NA	2.1E-05	Kidney	5.5E-04	NA	NA	5.5E-04
			Benzo(b)fluoranthene	2.8E-06	NA	NA	NA	2.8E-06	Kidney	7.4E-04	NA	NA	7.4E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	3.2E-04	NA	NA	3.2E-04
			Dibenzo(a,h)anthracene	3.4E-06	NA	NA	NA	3.4E-06	Kidney	9.0E-05	NA	NA	9.0E-05
			Indeno(1,2,3-cd)pyrene	1.7E-06	NA	NA	NA	1.7E-06	Kidney	4.6E-04	NA	NA	4.6E-04

US EPA ARCHIVE DOCUMENT

TABLE F.9.11.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK: INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	NON-CARCINOGENIC HAZARD QUOTIENT: PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Phenanthrene	NC	NA	NA	NA		Kidney	5.4E-04	NA	NA	5.4E-04
			4,4'-DDE	2.9E-06	NA	NA	NA	2.9E-06	Liver	1.0E-01	NA	NA	1.0E-01
			alpha-Chlordane	3.6E-07	NA	NA	NA	3.6E-07	Liver	1.2E-02	NA	NA	1.2E-02
			gamma-Chlordane	1.6E-07	NA	NA	NA	1.6E-07	Liver	5.5E-03	NA	NA	5.5E-03
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	9.6E-01	NA	NA	9.6E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	3.0E+00	NA	NA	3.0E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.4E-04	NA	NA	NA	1.4E-04		--	NA	NA	
			CHEMICAL TOTAL	1.7E-04	--	--	--	2E-04		4.1E+00	0.0E+00	--	4.1E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-04					4.1E+00
	EXPOSURE MEDIUM TOTAL							2E-04					4.1E+00
WHOLE BODY TOTAL								2E-04					4.1E+00
RECEPTOR TOTAL								2E-04					4.2E+00
							TOTAL RISK ACROSS ALL MEDIA	2E-04	TOTAL HAZARD ACROSS ALL MEDIA				4.2E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL CARDIOVASCULAR SYSTEM HI =	1.0E-06
TOTAL DEVELOPMENTAL TOXICITY HI =	3.0E+00
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TOTAL HEMATOLOGICAL SYSTEM HI =	4.0E-06
TOTAL IMMUNE SYSTEM HI =	9.7E-01
TOTAL KIDNEY HI =	4.0E-03
TOTAL LIVER HI =	1.2E-01
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TOTAL NOAEL HI =	3.2E-02
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TOTAL SKIN HI =	1.0E-02
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US EPA ARCHIVE DOCUMENT

TABLE F.9.12.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE-CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	7.0E-05	NA	NA	7.0E-05
			Benzo(a)anthracene	1.7E-06	NA	NA	NA	1.7E-06	Kidney	9.2E-04	NA	NA	9.2E-04
			Benzo(a)pyrene	1.7E-05	NA	NA	NA	1.7E-05	Kidney	9.0E-04	NA	NA	9.0E-04
			Benzo(b)fluoranthene	2.3E-06	NA	NA	NA	2.3E-06	Kidney	1.2E-03	NA	NA	1.2E-03
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	5.3E-04	NA	NA	5.3E-04
			Dibenzo(a,h)anthracene	2.8E-06	NA	NA	NA	2.8E-06	Kidney	1.5E-04	NA	NA	1.5E-04
			Indeno(1,2,3-cd)pyrene	1.4E-06	NA	NA	NA	1.4E-06	Kidney	7.4E-04	NA	NA	7.4E-04
			Phenanthrene	NC	NA	NA	NA		Kidney	8.8E-04	NA	NA	8.8E-04
			4,4'-DDE	2.4E-06	NA	NA	NA	2.4E-06	Liver	1.6E-01	NA	NA	1.6E-01
			alpha-Chlordane	3.0E-07	NA	NA	NA	3.0E-07	Liver	2.0E-02	NA	NA	2.0E-02
			gamma-Chlordane	1.3E-07	NA	NA	NA	1.3E-07	Liver	8.9E-03	NA	NA	8.9E-03
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.6E+00	NA	NA	1.6E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.0E+00	NA	NA	5.0E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.1E-04	NA	NA	NA	1.1E-04		--	NA	NA	
			CHEMICAL TOTAL	1.4E-04	--	--	--	1E-04		6.7E+00	0.0E+00	--	6.7E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					6.7E+00
	EXPOSURE MEDIUM TOTAL							1E-04					6.7E+00
WHOLE BODY TOTAL								1E-04					6.7E+00
RECEPTOR TOTAL								1E-04					6.7E+00
			TOTAL RISK ACROSS ALL MEDIA					1E-04	TOTAL HAZARD ACROSS ALL MEDIA				6.7E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	5.0E+00
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TOTAL IMMUNE SYSTEM HI =	1.6E+00
TOTAL KIDNEY HI =	5.3E-03
TOTAL LIVER HI =	1.9E-01
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US EPA ARCHIVE DOCUMENT

TABLE F.9.13.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	GREYSTONE MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	3.5E-06	NA	3.6E-06	7.1E-06
			Acenaphthylene	NC	NA	NC	NA		Liver	3.4E-06	NA	3.5E-06	6.9E-06
			Benzo(a)anthracene	7.5E-07	NA	7.8E-07	NA	1.5E-06	Kidney	4.6E-05	NA	4.8E-05	9.4E-05
			Benzo(a)pyrene	7.5E-06	NA	7.8E-06	NA	1.5E-05	Kidney	4.6E-05	NA	4.8E-05	9.4E-05
			Benzo(b)fluoranthene	9.5E-07	NA	9.8E-07	NA	1.9E-06	Kidney	5.8E-05	NA	6.0E-05	1.2E-04
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	3.9E-05	NA	4.0E-05	7.9E-05
			Dibenzo(a,h)anthracene	1.6E-06	NA	1.7E-06	NA	3.3E-06	Kidney	9.9E-06	NA	1.0E-05	2.0E-05
			Indeno(1,2,3-cd)pyrene	6.8E-07	NA	7.1E-07	NA	1.4E-06	Kidney	4.2E-05	NA	4.4E-05	8.5E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	7.2E-05	NA	7.5E-05	1.5E-04
			alpha-Chlordane	3.8E-09	NA	1.2E-09	NA	5.0E-09	Liver	2.9E-05	NA	9.3E-06	3.9E-05
			Aroclor-1254	5.1E-07	NA	5.7E-07	NA	1.1E-06	Immune system	1.7E-02	NA	1.9E-02	3.6E-02
			Aroclor-1268	8.4E-08	NA	9.4E-08	NA	1.8E-07	Immune system	2.8E-03	NA	3.2E-03	6.0E-03
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	8.6E-07	NA	6.9E-07	1.5E-06
			Technical Chlordane	7.8E-08	NA	2.5E-08	NA	1.0E-07	Liver	6.0E-04	NA	1.9E-04	7.9E-04
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	5.5E-06	NA	1.3E-06	NA	6.9E-06	Skin	1.7E-02	NA	4.0E-03	2.1E-02
			Chromium	NC	NA	NC	NA		NOAEL	3.9E-02	NA	--	3.9E-02
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	2.4E-02	NA	--	2.4E-02
			Mercury	NC	NA	NC	NA		Immune system	1.1E-03	NA	--	1.1E-03
			Molybdenum	NC	NA	NC	NA		Kidney	7.1E-03	NA	--	7.1E-03
			Nickel	NC	NA	NC	NA		Developmental toxicity	7.9E-03	NA	--	7.9E-03
			Thallium	NC	NA	NC	NA		NOAEL	3.0E-03	NA	--	3.0E-03
			Vanadium	NC	NA	NC	NA		NOAEL	6.0E-03	NA	--	6.0E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.9E-06	NA	1.2E-06	NA	6.1E-06		--	NA	--	
			CHEMICAL TOTAL	2.3E-05	--	1.5E-05	--	4E-05		1.3E-01	0.0E+00	2.7E-02	2E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-05					2E-01
	EXPOSURE MEDIUM TOTAL							4E-05					2E-01
SOIL TOTAL								4E-05					2E-01
SEDIMENT	SEDIMENT	GREYSTONE MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	9.5E-07	NA	8.4E-07	1.8E-06
			Acenaphthylene	NC	NA	NC	NA		Liver	8.2E-07	NA	7.2E-07	1.5E-06
			Benzo(a)anthracene	4.8E-07	NA	4.3E-07	NA	9.1E-07	Kidney	3.0E-05	NA	2.6E-05	5.6E-05
			Benzo(a)pyrene	4.3E-06	NA	3.8E-06	NA	8.1E-06	Kidney	2.6E-05	NA	2.3E-05	5.0E-05
			Benzo(b)fluoranthene	4.3E-07	NA	3.8E-07	NA	8.1E-07	Kidney	2.6E-05	NA	2.3E-05	5.0E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	1.8E-05	NA	1.6E-05	3.3E-05
			Dibenzo(a,h)anthracene	1.1E-06	NA	9.4E-07	NA	2.0E-06	Kidney	6.5E-06	NA	5.8E-06	1.2E-05
			Indeno(1,2,3-cd)pyrene	3.0E-07	NA	2.7E-07	NA	5.7E-07	Kidney	1.9E-05	NA	1.6E-05	3.5E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	4.1E-05	NA	3.6E-05	7.7E-05
			alpha-Chlordane	4.0E-10	NA	1.1E-10	NA	5.1E-10	Liver	3.1E-06	NA	8.4E-07	3.9E-06
			Aroclor-1254	1.4E-07	NA	1.4E-07	NA	2.8E-07	Immune system	4.8E-03	NA	4.6E-03	9.4E-03
			Aroclor-1268	9.3E-08	NA	8.9E-08	NA	1.8E-07	Immune system	3.1E-03	NA	3.0E-03	6.1E-03
			gamma-Chlordane	3.3E-10	NA	9.0E-11	NA	4.2E-10	Liver	2.5E-06	NA	6.9E-07	3.2E-06
			Technical Chlordane	4.1E-08	NA	1.1E-08	NA	5.3E-08	Liver	3.2E-04	NA	8.7E-05	4.1E-04
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Antimony	NC	NA	NC	NA		Adverse clinical signs	2.7E-03	NA	--	2.7E-03
			Arsenic	2.7E-06	NA	5.6E-07	NA	3.3E-06	Skin	8.1E-03	NA	1.7E-03	9.8E-03
			Cadmium	NC	NA	NC	NA		Kidney	1.1E-03	NA	3.0E-04	1.4E-03

US EPA ARCHIVE DOCUMENT

TABLE F.9.13.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Chromium	NC	NA	NC	NA		NOAEL	2.3E-02	NA	--	2.3E-02
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	2.1E-03	NA	--	2.1E-03
			Mercury	NC	NA	NC	NA		Immune system	6.4E-04	NA	--	6.4E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	1.8E-03	NA	--	1.8E-03
			Thallium	NC	NA	NC	NA		NOAEL	1.2E-03	NA	--	1.2E-03
			Vanadium	NC	NA	NC	NA		NOAEL	2.9E-03	NA	--	2.9E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.4E-06	NA	6.9E-07	NA	4.1E-06		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	7.1E-07	NA	1.4E-07	NA	8.5E-07		--	NA	--	
			CHEMICAL TOTAL	1.4E-05	--	7.4E-06	--	2E-05		5.2E-02	0.0E+00	9.8E-03	6E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-05					6E-02
	EXPOSURE MEDIUM TOTAL							2E-05					6E-02
SEDIMENT TOTAL								2E-05					6E-02
SURFACE WATER	SURFACE WATER	GREYSTONE MILL POND	Arsenic	3.1E-08	NA	5.4E-08	NA	8.5E-08	Skin	9.3E-05	NA	1.6E-04	2.6E-04
			Manganese	NC	NA	NC	NA		NOAEL	3.1E-04	NA	1.3E-02	1.4E-02
			Mercury	NC	NA	NC	NA		Immune system	3.3E-07	NA	8.1E-06	8.5E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	6.6E-05	NA	--	6.6E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.2E-08	NA	1.3E-04	NA	1.3E-04		--	NA	--	
			CHEMICAL TOTAL	6.3E-08	--	1.3E-04	--	1E-04		4.7E-04	0.0E+00	1.3E-02	1E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					1E-02
	EXPOSURE MEDIUM TOTAL							1E-04					1E-02
SURFACE WATER TOTAL								1E-04					1E-02
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.1E-05	NA	NA	4.1E-05
			Benzo(a)pyrene	1.5E-05	NA	NA	NA	1.5E-05	Kidney	8.9E-05	NA	NA	8.9E-05
			Benzo(b)fluoranthene	1.6E-06	NA	NA	NA	1.6E-06	Kidney	1.0E-04	NA	NA	1.0E-04
			Dibenzo(a,h)anthracene	8.8E-06	NA	NA	NA	8.8E-06	Kidney	5.4E-05	NA	NA	5.4E-05
			Indeno(1,2,3-cd)pyrene	1.5E-06	NA	NA	NA	1.5E-06	Kidney	8.9E-05	NA	NA	8.9E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	3.2E-04	NA	NA	3.2E-04
			4,4'-DDD	5.4E-06	NA	NA	NA	5.4E-06	Liver	6.1E-02	NA	NA	6.1E-02
			4,4'-DDE	1.6E-05	NA	NA	NA	1.6E-05	Liver	1.3E-01	NA	NA	1.3E-01
			alpha-Chlordane	9.0E-06	NA	NA	NA	9.0E-06	Liver	6.9E-02	NA	NA	6.9E-02
			Aroclor-1254	7.6E-04	NA	NA	NA	7.6E-04	Immune system	2.6E+01	NA	NA	2.6E+01
			Aroclor-1268	3.8E-04	NA	NA	NA	3.8E-04	Immune system	1.3E+01	NA	NA	1.3E+01
			Dieldrin	8.5E-05	NA	NA	NA	8.5E-05	Liver	1.4E-01	NA	NA	1.4E-01
			gamma-Chlordane	3.6E-06	NA	NA	NA	3.6E-06	Liver	2.8E-02	NA	NA	2.8E-02
			Heptachlor Epoxide	1.6E-05	NA	NA	NA	1.6E-05	Liver	1.9E-01	NA	NA	1.9E-01
			Technical Chlordane	1.7E-04	NA	NA	NA	1.7E-04	Liver	1.3E+00	NA	NA	1.3E+00
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	4.8E-01	NA	NA	4.8E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	3.3E+00	NA	NA	3.3E+00

US EPA ARCHIVE DOCUMENT

TABLE F.9.13.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Zinc	NC	NA	NA	NA		Hematological system	2.8E-01	NA	NA	2.8E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.7E-04	NA	NA	NA	1.7E-04		--	NA	NA	
			CHEMICAL TOTAL	1.6E-03	--	--	--	2E-03		4.4E+01	0.0E+00	--	4.4E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-03					4.4E+01
	EXPOSURE MEDIUM TOTAL							2E-03					4.4E+01
WHOLE BODY TOTAL								2E-03					4.4E+01
RECEPTOR TOTAL								2E-03					4.5E+01
			TOTAL RISK ACROSS ALL MEDIA					2E-03	TOTAL HAZARD ACROSS ALL MEDIA				4.5E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL ADVERSE CLINICAL SIGNS HI =	2.7E-03
TOTAL CARDIOVASCULAR SYSTEM HI =	8.9E-06
TOTAL DEVELOPMENTAL TOXICITY HI =	3.4E+00
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TOTAL HEMATOLOGICAL SYSTEM HI =	2.8E-01
TOTAL IMMUNE SYSTEM HI =	3.9E+01
TOTAL KIDNEY HI =	1.0E-02
TOTAL LIVER HI =	1.9E+00
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TOTAL NOAEL HI =	1.1E-01
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TOTAL SKIN HI =	3.1E-02
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Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.9.14.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	GREYSTONE MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	5.4E-06	NA	1.3E-05	1.9E-05
			Acenaphthylene	NC	NA	NC	NA		Liver	5.3E-06	NA	1.3E-05	1.8E-05
			Benzo(a)anthracene	2.7E-07	NA	6.7E-07	NA	9.4E-07	Kidney	7.2E-05	NA	1.8E-04	2.5E-04
			Benzo(a)pyrene	2.7E-06	NA	6.8E-06	NA	9.5E-06	Kidney	7.2E-05	NA	1.8E-04	2.5E-04
			Benzo(b)fluoranthene	3.4E-07	NA	8.5E-07	NA	1.2E-06	Kidney	9.1E-05	NA	2.3E-04	3.2E-04
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	6.1E-05	NA	1.5E-04	2.1E-04
			Dibenzo(a,h)anthracene	5.8E-07	NA	1.4E-06	NA	2.0E-06	Kidney	1.5E-05	NA	3.8E-05	5.4E-05
			Indeno(1,2,3-cd)pyrene	2.5E-07	NA	6.1E-07	NA	8.6E-07	Kidney	6.5E-05	NA	1.6E-04	2.3E-04
			Phenanthrene	NC	NA	NC	NA		Kidney	1.1E-04	NA	2.8E-04	3.9E-04
			alpha-Chlordane	1.4E-09	NA	1.0E-09	NA	2.4E-09	Liver	4.5E-05	NA	3.5E-05	8.0E-05
			Aroclor-1254	1.8E-07	NA	4.9E-07	NA	6.7E-07	Immune system	2.7E-02	NA	7.1E-02	9.8E-02
			Aroclor-1268	3.0E-08	NA	8.1E-08	NA	1.1E-07	Immune system	4.4E-03	NA	1.2E-02	1.6E-02
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	1.3E-06	NA	2.6E-06	3.9E-06
			Technical Chlordane	2.8E-08	NA	2.1E-08	NA	4.9E-08	Liver	9.3E-04	NA	7.2E-04	1.6E-03
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	2.0E-06	NA	1.1E-06	NA	3.1E-06	Skin	2.6E-02	NA	1.5E-02	4.1E-02
			Chromium	NC	NA	NC	NA		NOAEL	6.1E-02	NA	--	6.1E-02
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	3.7E-02	NA	--	3.7E-02
			Mercury	NC	NA	NC	NA		Immune system	1.7E-03	NA	--	1.7E-03
			Molybdenum	NC	NA	NC	NA		Kidney	1.1E-02	NA	--	1.1E-02
			Nickel	NC	NA	NC	NA		Developmental toxicity	1.2E-02	NA	--	1.2E-02
			Thallium	NC	NA	NC	NA		NOAEL	4.6E-03	NA	--	4.6E-03
			Vanadium	NC	NA	NC	NA		NOAEL	9.3E-03	NA	--	9.3E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.8E-06	NA	1.0E-06	NA	2.8E-06		--	NA	--	
			CHEMICAL TOTAL	8.1E-06	--	1.3E-05	--	2E-05		2.0E-01	0.0E+00	1.0E-01	3E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-05					3E-01
	EXPOSURE MEDIUM TOTAL							2E-05					3E-01
SOIL TOTAL								2E-05					3E-01
SEDIMENT	SEDIMENT	GREYSTONE MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	1.5E-06	NA	2.7E-06	4.2E-06
			Acenaphthylene	NC	NA	NC	NA		Liver	1.3E-06	NA	2.4E-06	3.6E-06
			Benzo(a)anthracene	1.7E-07	NA	3.2E-07	NA	5.0E-07	Kidney	4.6E-05	NA	8.6E-05	1.3E-04
			Benzo(a)pyrene	1.5E-06	NA	2.9E-06	NA	4.4E-06	Kidney	4.1E-05	NA	7.6E-05	1.2E-04
			Benzo(b)fluoranthene	1.5E-07	NA	2.9E-07	NA	4.4E-07	Kidney	4.1E-05	NA	7.6E-05	1.2E-04
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	2.7E-05	NA	5.1E-05	7.8E-05
			Dibenzo(a,h)anthracene	3.8E-07	NA	7.1E-07	NA	1.1E-06	Kidney	1.0E-05	NA	1.9E-05	2.9E-05
			Indeno(1,2,3-cd)pyrene	1.1E-07	NA	2.0E-07	NA	3.1E-07	Kidney	2.9E-05	NA	5.4E-05	8.2E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	6.3E-05	NA	1.2E-04	1.8E-04
			alpha-Chlordane	1.4E-10	NA	8.3E-11	NA	2.3E-10	Liver	4.8E-06	NA	2.8E-06	7.6E-06
			Aroclor-1254	5.2E-08	NA	1.0E-07	NA	1.5E-07	Immune system	7.5E-03	NA	1.5E-02	2.3E-02
			Aroclor-1268	3.3E-08	NA	6.7E-08	NA	1.0E-07	Immune system	4.9E-03	NA	9.8E-03	1.5E-02
			gamma-Chlordane	1.2E-10	NA	6.8E-11	NA	1.9E-10	Liver	4.0E-06	NA	2.3E-06	6.2E-06
			Technical Chlordane	1.5E-08	NA	8.5E-09	NA	2.3E-08	Liver	5.0E-04	NA	2.8E-04	7.8E-04
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Antimony	NC	NA	NC	NA		Adverse clinical signs	4.3E-03	NA	--	4.3E-03
			Arsenic	9.8E-07	NA	4.2E-07	NA	1.4E-06	Skin	1.3E-02	NA	5.4E-03	1.8E-02
			Cadmium	NC	NA	NC	NA		Kidney	1.7E-03	NA	9.8E-04	2.7E-03

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TABLE F.9.14.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Chromium	NC	NA	NC	NA		NOAEL	3.6E-02	NA	--	3.6E-02
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	3.3E-03	NA	--	3.3E-03
			Mercury	NC	NA	NC	NA		Immune system	1.0E-03	NA	--	1.0E-03
			Nickel	NC	NA	NC	NA		Developmental toxicity	2.8E-03	NA	--	2.8E-03
			Thallium	NC	NA	NC	NA		NOAEL	1.8E-03	NA	--	1.8E-03
			Vanadium	NC	NA	NC	NA		NOAEL	4.5E-03	NA	--	4.5E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.2E-06	NA	5.2E-07	NA	1.7E-06		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	2.5E-07	NA	1.1E-07	NA	3.6E-07		--	NA	--	
			CHEMICAL TOTAL	4.9E-06	--	5.6E-06	--	1E-05		8.1E-02	0.0E+00	3.2E-02	1E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-05					1E-01
	EXPOSURE MEDIUM TOTAL							1E-05					1E-01
SEDIMENT TOTAL								1E-05					1E-01
SURFACE WATER	SURFACE WATER	GREYSTONE MILL POND	Arsenic	1.1E-08	NA	1.4E-08	NA	2.5E-08	Skin	1.5E-04	NA	1.8E-04	3.3E-04
			Manganese	NC	NA	NC	NA		NOAEL	4.7E-04	NA	1.5E-02	1.5E-02
			Mercury	NC	NA	NC	NA		Immune system	5.1E-07	NA	9.1E-06	9.6E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	1.0E-04	NA	--	1.0E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.1E-08	NA	3.3E-05	NA	3.3E-05		--	NA	--	
			CHEMICAL TOTAL	2.3E-08	--	3.3E-05	--	3E-05		7.2E-04	0.0E+00	1.5E-02	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-05					2E-02
	EXPOSURE MEDIUM TOTAL							3E-05					2E-02
SURFACE WATER TOTAL								3E-05					2E-02
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.2E-05	NA	NA	4.2E-05
			Benzo(a)pyrene	3.5E-06	NA	NA	NA	3.5E-06	Kidney	9.2E-05	NA	NA	9.2E-05
			Benzo(b)fluoranthene	3.9E-07	NA	NA	NA	3.9E-07	Kidney	1.0E-04	NA	NA	1.0E-04
			Dibenzo(a,h)anthracene	2.1E-06	NA	NA	NA	2.1E-06	Kidney	5.6E-05	NA	NA	5.6E-05
			Indeno(1,2,3-cd)pyrene	3.5E-07	NA	NA	NA	3.5E-07	Kidney	9.2E-05	NA	NA	9.2E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	3.3E-04	NA	NA	3.3E-04
			4,4'-DDD	1.3E-06	NA	NA	NA	1.3E-06	Liver	6.3E-02	NA	NA	6.3E-02
			4,4'-DDE	3.9E-06	NA	NA	NA	3.9E-06	Liver	1.3E-01	NA	NA	1.3E-01
			alpha-Chlordane	2.1E-06	NA	NA	NA	2.1E-06	Liver	7.1E-02	NA	NA	7.1E-02
			Aroclor-1254	1.8E-04	NA	NA	NA	1.8E-04	Immune system	2.7E+01	NA	NA	2.7E+01
			Aroclor-1268	9.0E-05	NA	NA	NA	9.0E-05	Immune system	1.3E+01	NA	NA	1.3E+01
			Dieldrin	2.0E-05	NA	NA	NA	2.0E-05	Liver	1.5E-01	NA	NA	1.5E-01
			gamma-Chlordane	8.7E-07	NA	NA	NA	8.7E-07	Liver	2.9E-02	NA	NA	2.9E-02
			Heptachlor Epoxide	3.9E-06	NA	NA	NA	3.9E-06	Liver	1.9E-01	NA	NA	1.9E-01
			Technical Chlordane	4.0E-05	NA	NA	NA	4.0E-05	Liver	1.3E+00	NA	NA	1.3E+00
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	4.9E-01	NA	NA	4.9E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	3.5E+00	NA	NA	3.5E+00

US EPA ARCHIVE DOCUMENT

TABLE F.9.14.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Zinc	NC	NA	NA	NA		Hematological system	2.9E-01	NA	NA	2.9E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.0E-05	NA	NA	NA	4.0E-05		--	NA	NA	
			CHEMICAL TOTAL	3.9E-04	--	--	--	4E-04		4.6E+01	0.0E+00	--	4.6E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-04					4.6E+01
	EXPOSURE MEDIUM TOTAL							4E-04					4.6E+01
WHOLE BODY TOTAL								4E-04					4.6E+01
RECEPTOR TOTAL								5E-04					4.6E+01
							TOTAL RISK ACROSS ALL MEDIA	5E-04	TOTAL HAZARD ACROSS ALL MEDIA				4.6E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL ADVERSE CLINICAL SIGNS HI =	4.3E-03
TOTAL CARDIOVASCULAR SYSTEM HI =	2.3E-05
TOTAL DEVELOPMENTAL TOXICITY HI =	3.5E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	2.9E-01
TOTAL IMMUNE SYSTEM HI =	4.0E+01
TOTAL KIDNEY HI =	1.7E-02
TOTAL LIVER HI =	2.0E+00
	--
	--
TOTAL NOAEL HI =	1.7E-01
	--
TOTAL SKIN HI =	5.9E-02
	--

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.9.15.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	6.9E-05	NA	NA	6.9E-05
			Benzo(a)pyrene	2.8E-06	NA	NA	NA	2.8E-06	Kidney	1.5E-04	NA	NA	1.5E-04
			Benzo(b)fluoranthene	3.2E-07	NA	NA	NA	3.2E-07	Kidney	1.7E-04	NA	NA	1.7E-04
			Dibenzo(a,h)anthrucene	1.7E-06	NA	NA	NA	1.7E-06	Kidney	9.1E-05	NA	NA	9.1E-05
			Indeno(1,2,3-cd)pyrene	2.8E-07	NA	NA	NA	2.8E-07	Kidney	1.5E-04	NA	NA	1.5E-04
			Phenanthrene	NC	NA	NA	NA		Kidney	5.4E-04	NA	NA	5.4E-04
			4,4'-DDD	1.1E-06	NA	NA	NA	1.1E-06	Liver	1.0E-01	NA	NA	1.0E-01
			4,4'-DDE	3.2E-06	NA	NA	NA	3.2E-06	Liver	2.2E-01	NA	NA	2.2E-01
			alpha-Chlordane	1.7E-06	NA	NA	NA	1.7E-06	Liver	1.2E-01	NA	NA	1.2E-01
			Arocior-1254	1.5E-04	NA	NA	NA	1.5E-04	Immune system	4.3E+01	NA	NA	4.3E+01
			Arocior-1268	7.3E-05	NA	NA	NA	7.3E-05	Immune system	2.1E+01	NA	NA	2.1E+01
			Dieldrin	1.7E-05	NA	NA	NA	1.7E-05	Liver	2.4E-01	NA	NA	2.4E-01
			gamma-Chlordane	7.1E-07	NA	NA	NA	7.1E-07	Liver	4.7E-02	NA	NA	4.7E-02
			Heptachlor Epoxide	3.2E-06	NA	NA	NA	3.2E-06	Liver	3.2E-01	NA	NA	3.2E-01
			Technical Chlordane	3.3E-05	NA	NA	NA	3.3E-05	Liver	2.2E+00	NA	NA	2.2E+00
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	8.0E-01	NA	NA	8.0E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.6E+00	NA	NA	5.6E+00
			Zinc	NC	NA	NA	NA		Hematological system	4.7E-01	NA	NA	4.7E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.3E-05	NA	NA	NA	3.3E-05		--	NA	NA	
			CHEMICAL TOTAL	3.2E-04	--	--	--	3E-04		7.5E+01	0.0E+00	--	7.5E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-04					7.5E+01
	EXPOSURE MEDIUM TOTAL							3E-04					7.5E+01
WHOLE BODY TOTAL								3E-04					7.5E+01
RECEPTOR TOTAL								3E-04					7.5E+01
							TOTAL RISK ACROSS ALL MEDIA	3E-04	TOTAL HAZARD ACROSS ALL MEDIA				7.5E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; *exposure route not applicable for this chemical/exposure medium.*
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	5.6E+00
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	--
TOTAL HEMATOLOGICAL SYSTEM HI =	4.7E-01
TOTAL IMMUNE SYSTEM HI =	6.5E+01
TOTAL KIDNEY HI =	1.1E-03
TOTAL LIVER HI =	3.2E+00
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Prepared by: RAR
Checked by: KJA

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TABLE F.9.16.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	GREYSTONE MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	3.5E-06	NA	3.6E-06	7.1E-06
			Acenaphthylene	NC	NA	NC	NA		Liver	3.4E-06	NA	3.5E-06	6.9E-06
			Benzo(a)anthracene	7.5E-07	NA	7.8E-07	NA	1.5E-06	Kidney	4.6E-05	NA	4.8E-05	9.4E-05
			Benzo(a)pyrene	7.5E-06	NA	7.8E-06	NA	1.5E-05	Kidney	4.6E-05	NA	4.8E-05	9.4E-05
			Benzo(b)fluoranthene	9.5E-07	NA	9.8E-07	NA	1.9E-06	Kidney	5.8E-05	NA	6.0E-05	1.2E-04
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	3.9E-05	NA	4.0E-05	7.9E-05
			Dibenzo(a,h)anthracene	1.6E-06	NA	1.7E-06	NA	3.3E-06	Kidney	9.9E-06	NA	1.0E-05	2.0E-05
			Indeno(1,2,3-cd)pyrene	6.8E-07	NA	7.1E-07	NA	1.4E-06	Kidney	4.2E-05	NA	4.4E-05	8.5E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	7.2E-05	NA	7.5E-05	1.5E-04
			alpha-Chlordane	3.8E-09	NA	1.2E-09	NA	5.0E-09	Liver	2.9E-05	NA	9.3E-06	3.9E-05
			Aroclor-1254	5.1E-07	NA	5.7E-07	NA	1.1E-06	Immune system	1.7E-02	NA	1.9E-02	3.6E-02
			Aroclor-1268	8.4E-08	NA	9.4E-08	NA	1.8E-07	Immune system	2.8E-03	NA	3.2E-03	6.0E-03
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	8.6E-07	NA	6.9E-07	1.5E-06
			Technical Chlordane	7.8E-08	NA	2.5E-08	NA	1.0E-07	Liver	6.0E-04	NA	1.9E-04	7.9E-04
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	5.5E-06	NA	1.3E-06	NA	6.9E-06	Skin	1.7E-02	NA	4.0E-03	2.1E-02
			Chromium	NC	NA	NC	NA		NOAEL	3.9E-02	NA	--	3.9E-02
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	2.4E-02	NA	--	2.4E-02
			Mercury	NC	NA	NC	NA		Immune system	1.1E-03	NA	--	1.1E-03
			Molybdenum	NC	NA	NC	NA		Kidney	7.1E-03	NA	--	7.1E-03
			Nickel	NC	NA	NC	NA		Developmental toxicity	7.9E-03	NA	--	7.9E-03
			Thallium	NC	NA	NC	NA		NOAEL	3.0E-03	NA	--	3.0E-03
			Vanadium	NC	NA	NC	NA		NOAEL	6.0E-03	NA	--	6.0E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.9E-06	NA	1.2E-06	NA	6.1E-06		--	NA	--	
			CHEMICAL TOTAL	2.3E-05	--	1.5E-05	--	4E-05		1.3E-01	0.0E+00	2.7E-02	2E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-05					2E-01
	EXPOSURE MEDIUM TOTAL							4E-05					2E-01
SOIL TOTAL								4E-05					2E-01
SEDIMENT	SEDIMENT	GREYSTONE MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	9.5E-07	NA	8.4E-07	1.8E-06
			Acenaphthylene	NC	NA	NC	NA		Liver	8.2E-07	NA	7.2E-07	1.5E-06
			Benzo(a)anthracene	4.8E-07	NA	4.3E-07	NA	9.1E-07	Kidney	3.0E-05	NA	2.6E-05	5.6E-05
			Benzo(a)pyrene	4.3E-06	NA	3.8E-06	NA	8.1E-06	Kidney	2.6E-05	NA	2.3E-05	5.0E-05
			Benzo(b)fluoranthene	4.3E-07	NA	3.8E-07	NA	8.1E-07	Kidney	2.6E-05	NA	2.3E-05	5.0E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	1.8E-05	NA	1.6E-05	3.3E-05
			Dibenzo(a,h)anthracene	1.1E-06	NA	9.4E-07	NA	2.0E-06	Kidney	6.5E-06	NA	5.8E-06	1.2E-05
			Indeno(1,2,3-cd)pyrene	3.0E-07	NA	2.7E-07	NA	5.7E-07	Kidney	1.9E-05	NA	1.6E-05	3.5E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	4.1E-05	NA	3.6E-05	7.7E-05
			alpha-Chlordane	4.0E-10	NA	1.1E-10	NA	5.1E-10	Liver	3.1E-06	NA	8.4E-07	3.9E-06
			Aroclor-1254	1.4E-07	NA	1.4E-07	NA	2.8E-07	Immune system	4.8E-03	NA	4.6E-03	9.4E-03
			Aroclor-1268	9.3E-08	NA	8.9E-08	NA	1.8E-07	Immune system	3.1E-03	NA	3.0E-03	6.1E-03
			gamma-Chlordane	3.3E-10	NA	9.0E-11	NA	4.2E-10	Liver	2.5E-06	NA	6.9E-07	3.2E-06
			Technical Chlordane	4.1E-08	NA	1.1E-08	NA	5.3E-08	Liver	3.2E-04	NA	8.7E-05	4.1E-04
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Antimony	NC	NA	NC	NA		Adverse clinical signs	2.7E-03	NA	--	2.7E-03
			Arsenic	2.7E-06	NA	5.6E-07	NA	3.3E-06	Skin	8.1E-03	NA	1.7E-03	9.8E-03
			Cadmium	NC	NA	NC	NA		Kidney	1.1E-03	NA	3.0E-04	1.4E-03
			Chromium	NC	NA	NC	NA		NOAEL	2.3E-02	NA	--	2.3E-02
			Copper	NC	NA	NC	NA			--	NA	--	

US EPA ARCHIVE DOCUMENT

TABLE F.9.16.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	2.1E-03	NA	--	2.1E-03
			Mercury	NC	NA	NC	NA		Immune system	6.4E-04	NA	--	6.4E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	1.8E-03	NA	--	1.8E-03
			Thallium	NC	NA	NC	NA		NOAEL	1.2E-03	NA	--	1.2E-03
			Vanadium	NC	NA	NC	NA		NOAEL	2.9E-03	NA	--	2.9E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.4E-06	NA	6.9E-07	NA	4.1E-06		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	7.1E-07	NA	1.4E-07	NA	8.5E-07		--	NA	--	
			CHEMICAL TOTAL	1.4E-05	--	7.4E-06	--	2E-05		5.2E-02	0.0E+00	9.8E-03	6E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-05					6E-02
	EXPOSURE MEDIUM TOTAL							2E-05					6E-02
SEDIMENT TOTAL								2E-05					6E-02
SURFACE WATER	SURFACE WATER	GREYSTONE MILL POND	Arsenic	3.1E-08	NA	5.4E-08	NA	8.5E-08	Skin	9.3E-05	NA	1.6E-04	2.6E-04
			Manganese	NC	NA	NC	NA		NOAEL	3.1E-04	NA	1.3E-02	1.4E-02
			Mercury	NC	NA	NC	NA		Immune system	3.3E-07	NA	8.1E-06	8.5E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	6.6E-05	NA	--	6.6E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.2E-08	NA	1.3E-04	NA	1.3E-04		--	NA	--	
			CHEMICAL TOTAL	6.3E-08	--	1.3E-04	--	1E-04		4.7E-04	0.0E+00	1.3E-02	1E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					1E-02
	EXPOSURE MEDIUM TOTAL							1E-04					1E-02
SURFACE WATER TOTAL								1E-04					1E-02
LARGEMOUTH BASS	FILLET	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.6E-05	NA	NA	1.6E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	6.8E-05	NA	NA	6.8E-05
			4,4'-DDE	8.0E-06	NA	NA	NA	8.0E-06	Liver	6.4E-02	NA	NA	6.4E-02
			alpha-Chlordane	3.4E-07	NA	NA	NA	3.4E-07	Liver	2.6E-03	NA	NA	2.6E-03
			Aroclor-1254	2.3E-04	NA	NA	NA	2.3E-04	Immune system	7.8E+00	NA	NA	7.8E+00
			Aroclor-1268	2.3E-04	NA	NA	NA	2.3E-04	Immune system	7.6E+00	NA	NA	7.6E+00
			Dieldrin	8.4E-06	NA	NA	NA	8.4E-06	Liver	1.4E-02	NA	NA	1.4E-02
			gamma-Chlordane	3.7E-07	NA	NA	NA	3.7E-07	Liver	2.8E-03	NA	NA	2.8E-03
			Technical Chlordane	9.5E-06	NA	NA	NA	9.5E-06	Liver	7.3E-02	NA	NA	7.3E-02
			Mercury	NC	NA	NA	NA		Immune system	2.8E+00	NA	NA	2.8E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.3E+01	NA	NA	1.3E+01
			Toxicity Equivalency (Dioxins/Furans) - Mam	5.5E-05	NA	NA	NA	5.5E-05		--	NA	NA	
			CHEMICAL TOTAL	5.4E-04	--	--	--	5E-04		3.1E+01	0.0E+00	--	3E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-04					3E+01
	EXPOSURE MEDIUM TOTAL							5E-04					3E+01
FILLET TOTAL								5E-04					3E+01

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TABLE F.9.16.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
RECEPTOR TOTAL								7E-04					3.1E+01
			TOTAL RISK ACROSS ALL MEDIA					7E-04	TOTAL HAZARD ACROSS ALL MEDIA				3.1E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
--- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

TOTAL ADVERSE CLINICAL SIGNS HI =	2.7E-03
TOTAL CARDIOVASCULAR SYSTEM HI =	8.9E-06
TOTAL DEVELOPMENTAL TOXICITY HI =	1.3E+01
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	6.6E-05
TOTAL IMMUNE SYSTEM HI =	1.8E+01
TOTAL KIDNEY HI =	9.6E-03
TOTAL LIVER HI =	1.6E-01
	--
	--
TOTAL NOAEL HI =	1.1E-01
	--
TOTAL SKIN HI =	3.1E-02
	--

US EPA ARCHIVE DOCUMENT

TABLE F.9.17.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	GREYSTONE POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	5.4E-06	NA	1.3E-05	1.9E-05
			Acenaphthylene	NC	NA	NC	NA		Liver	5.3E-06	NA	1.3E-05	1.8E-05
			Benzo(a)anthracene	2.7E-07	NA	6.7E-07	NA	9.4E-07	Kidney	7.2E-05	NA	1.8E-04	2.5E-04
			Benzo(a)pyrene	2.7E-06	NA	6.8E-06	NA	9.5E-06	Kidney	7.2E-05	NA	1.8E-04	2.5E-04
			Benzo(b)fluoranthene	3.4E-07	NA	8.5E-07	NA	1.2E-06	Kidney	9.1E-05	NA	2.3E-04	3.2E-04
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	6.1E-05	NA	1.5E-04	2.1E-04
			Dibenzo(a,h)anthracene	5.8E-07	NA	1.4E-06	NA	2.0E-06	Kidney	1.5E-05	NA	3.8E-05	5.4E-05
			Indeno(1,2,3-cd)pyrene	2.5E-07	NA	6.1E-07	NA	8.6E-07	Kidney	6.5E-05	NA	1.6E-04	2.3E-04
			Phenanthrene	NC	NA	NC	NA		Kidney	1.1E-04	NA	2.8E-04	3.9E-04
			alpha-Chlordane	1.4E-09	NA	1.0E-09	NA	2.4E-09	Liver	4.5E-05	NA	3.5E-05	8.0E-05
			Aroclor-1254	1.8E-07	NA	4.9E-07	NA	6.7E-07	Immune system	2.7E-02	NA	7.1E-02	9.8E-02
			Aroclor-1268	3.0E-08	NA	8.1E-08	NA	1.1E-07	Immune system	4.4E-03	NA	1.2E-02	1.6E-02
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	1.3E-06	NA	2.6E-06	3.9E-06
			Technical Chlordane	2.8E-08	NA	2.1E-08	NA	4.9E-08	Liver	9.3E-04	NA	7.2E-04	1.6E-03
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	2.0E-06	NA	1.1E-06	NA	3.1E-06	Skin	2.6E-02	NA	1.5E-02	4.1E-02
			Chromium	NC	NA	NC	NA		NOAEL	6.1E-02	NA	--	6.1E-02
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	3.7E-02	NA	--	3.7E-02
			Mercury	NC	NA	NC	NA		Immune system	1.7E-03	NA	--	1.7E-03
			Molybdenum	NC	NA	NC	NA		Kidney	1.1E-02	NA	--	1.1E-02
			Nickel	NC	NA	NC	NA		Developmental toxicity	1.2E-02	NA	--	1.2E-02
			Thallium	NC	NA	NC	NA		NOAEL	4.6E-03	NA	--	4.6E-03
			Vanadium	NC	NA	NC	NA		NOAEL	9.3E-03	NA	--	9.3E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.8E-06	NA	1.0E-06	NA	2.8E-06		--	NA	--	
			CHEMICAL TOTAL	8.1E-06	--	1.3E-05	--	2E-05		2.0E-01	0.0E+00	1.0E-01	3E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-05					3E-01
	EXPOSURE MEDIUM TOTAL							2E-05					3E-01
SOIL TOTAL								2E-05					3E-01
SEDIMENT	SEDIMENT	GREYSTONE POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	1.5E-06	NA	2.7E-06	4.2E-06
			Acenaphthylene	NC	NA	NC	NA		Liver	1.3E-06	NA	2.4E-06	3.6E-06
			Benzo(a)anthracene	1.7E-07	NA	3.2E-07	NA	5.0E-07	Kidney	4.6E-05	NA	8.6E-05	1.3E-04
			Benzo(a)pyrene	1.5E-06	NA	2.9E-06	NA	4.4E-06	Kidney	4.1E-05	NA	7.6E-05	1.2E-04
			Benzo(b)fluoranthene	1.5E-07	NA	2.9E-07	NA	4.4E-07	Kidney	4.1E-05	NA	7.6E-05	1.2E-04
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	2.7E-05	NA	5.1E-05	7.8E-05
			Dibenzo(a,h)anthracene	3.8E-07	NA	7.1E-07	NA	1.1E-06	Kidney	1.0E-05	NA	1.9E-05	2.9E-05
			Indeno(1,2,3-cd)pyrene	1.1E-07	NA	2.0E-07	NA	3.1E-07	Kidney	2.9E-05	NA	5.4E-05	8.2E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	6.3E-05	NA	1.2E-04	1.8E-04
			alpha-Chlordane	1.4E-10	NA	8.3E-11	NA	2.3E-10	Liver	4.8E-06	NA	2.8E-06	7.6E-06
			Aroclor-1254	5.2E-08	NA	1.0E-07	NA	1.5E-07	Immune system	7.5E-03	NA	1.5E-02	2.3E-02
			Aroclor-1268	3.3E-08	NA	6.7E-08	NA	1.0E-07	Immune system	4.9E-03	NA	9.8E-03	1.5E-02
			gamma-Chlordane	1.2E-10	NA	6.8E-11	NA	1.9E-10	Liver	4.0E-06	NA	2.3E-06	6.2E-06
			Technical Chlordane	1.5E-08	NA	8.5E-09	NA	2.3E-08	Liver	5.0E-04	NA	2.8E-04	7.8E-04
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Antimony	NC	NA	NC	NA		Adverse clinical signs	4.3E-03	NA	--	4.3E-03
			Arsenic	9.8E-07	NA	4.2E-07	NA	1.4E-06	Skin	1.3E-02	NA	5.4E-03	1.8E-02
			Cadmium	NC	NA	NC	NA		Kidney	1.7E-03	NA	9.8E-04	2.7E-03
			Chromium	NC	NA	NC	NA		NOAEL	3.6E-02	NA	--	3.6E-02
			Copper	NC	NA	NC	NA			--	NA	--	

US EPA ARCHIVE DOCUMENT

TABLE F.9.17.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	3.3E-03	NA	--	3.3E-03
			Mercury	NC	NA	NC	NA		Immune system	1.0E-03	NA	--	1.0E-03
			Nickel	NC	NA	NC	NA		Developmental toxicity	2.8E-03	NA	--	2.8E-03
			Thallium	NC	NA	NC	NA		NOAEL	1.8E-03	NA	--	1.8E-03
			Vanadium	NC	NA	NC	NA		NOAEL	4.5E-03	NA	--	4.5E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.2E-06	NA	5.2E-07	NA	1.7E-06		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	2.5E-07	NA	1.1E-07	NA	3.6E-07		--	NA	--	
			CHEMICAL TOTAL	4.9E-06	--	5.6E-06	--	1E-05		8.1E-02	0.0E+00	3.2E-02	1E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-05					1E-01
	EXPOSURE MEDIUM TOTAL							1E-05					1E-01
SEDIMENT TOTAL								1E-05					1E-01
SURFACE WATER	SURFACE WATER	GREYSTONE POND	Arsenic	1.1E-08	NA	1.4E-08	NA	2.5E-08	Skin	1.5E-04	NA	1.8E-04	3.3E-04
			Manganese	NC	NA	NC	NA		NOAEL	4.7E-04	NA	1.5E-02	1.5E-02
			Mercury	NC	NA	NC	NA		Immune system	5.1E-07	NA	9.1E-06	9.6E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	1.0E-04	NA	--	1.0E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.1E-08	NA	3.3E-05	NA	3.3E-05		--	NA	--	
			CHEMICAL TOTAL	2.3E-08	--	3.3E-05	--	3E-05		7.2E-04	0.0E+00	1.5E-02	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-05					2E-02
	EXPOSURE MEDIUM TOTAL							3E-05					2E-02
SURFACE WATER TOTAL								3E-05					2E-02
LARGEMOUTH BASS	FILLET	GREYSTONE POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.6E-05	NA	NA	1.6E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	7.0E-05	NA	NA	7.0E-05
			4,4'-DDE	1.9E-06	NA	NA	NA	1.9E-06	Liver	6.6E-02	NA	NA	6.6E-02
			alpha-Chlordane	8.1E-08	NA	NA	NA	8.1E-08	Liver	2.7E-03	NA	NA	2.7E-03
			Aroclor-1254	5.5E-05	NA	NA	NA	5.5E-05	Immune system	8.0E+00	NA	NA	8.0E+00
			Aroclor-1268	5.4E-05	NA	NA	NA	5.4E-05	Immune system	7.9E+00	NA	NA	7.9E+00
			Dieldrin	2.0E-06	NA	NA	NA	2.0E-06	Liver	1.5E-02	NA	NA	1.5E-02
			gamma-Chlordane	8.8E-08	NA	NA	NA	8.8E-08	Liver	2.9E-03	NA	NA	2.9E-03
			Technical Chlordane	2.3E-06	NA	NA	NA	2.3E-06	Liver	7.5E-02	NA	NA	7.5E-02
			Mercury	NC	NA	NA	NA		Immune system	2.9E+00	NA	NA	2.9E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.3E+01	NA	NA	1.3E+01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.3E-05	NA	NA	NA	1.3E-05		--	NA	NA	
			CHEMICAL TOTAL	1.3E-04	--	--	--	1E-04		3.2E+01	0.0E+00	--	3E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					3E+01
	EXPOSURE MEDIUM TOTAL							1E-04					3E+01
FILLET TOTAL								1E-04					3E+01

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TABLE F.9.17.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
RECEPTOR TOTAL								2E-04					3.3E+01
			TOTAL RISK ACROSS ALL MEDIA					2E-04	TOTAL HAZARD ACROSS ALL MEDIA				3.3E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

TOTAL ADVERSE CLINICAL SIGNS HI =	4.3E-03
TOTAL CARDIOVASCULAR SYSTEM HI =	2.3E-05
TOTAL DEVELOPMENTAL TOXICITY HI =	1.3E+01
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	--
TOTAL HEMATOLOGICAL SYSTEM HI =	1.0E-04
TOTAL IMMUNE SYSTEM HI =	1.9E+01
TOTAL KIDNEY HI =	1.6E-02
TOTAL LIVER HI =	1.6E-01
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	--
TOTAL NOAEL HI =	1.7E-01
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TOTAL SKIN HI =	5.9E-02
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TABLE F.9.18.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.7E-05	NA	NA	2.7E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.1E-04	NA	NA	1.1E-04
			4,4'-DDE	1.6E-06	NA	NA	NA	1.6E-06	Liver	1.1E-01	NA	NA	1.1E-01
			alpha-Chlordane	6.6E-08	NA	NA	NA	6.6E-08	Liver	4.4E-03	NA	NA	4.4E-03
			Aroclor-1254	4.5E-05	NA	NA	NA	4.5E-05	Immune system	1.3E+01	NA	NA	1.3E+01
			Aroclor-1268	4.4E-05	NA	NA	NA	4.4E-05	Immune system	1.3E+01	NA	NA	1.3E+01
			Dieldrin	1.6E-06	NA	NA	NA	1.6E-06	Liver	2.4E-02	NA	NA	2.4E-02
			gamma-Chlordane	7.2E-08	NA	NA	NA	7.2E-08	Liver	4.8E-03	NA	NA	4.8E-03
			Technical Chlordane	1.8E-06	NA	NA	NA	1.8E-06	Liver	1.2E-01	NA	NA	1.2E-01
			Mercury	NC	NA	NA	NA		Immune system	4.8E+00	NA	NA	4.8E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.1E+01	NA	NA	2.1E+01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.1E-05	NA	NA	NA	1.1E-05		--	NA	NA	
			CHEMICAL TOTAL	1.0E-04	--	--	--	1E-04		5.2E+01	0.0E+00	--	5E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					5E+01
	EXPOSURE MEDIUM TOTAL							1E-04					5E+01
FILLET TOTAL								1E-04					5E+01
RECEPTOR TOTAL								1E-04					5.2E+01
							TOTAL RISK ACROSS ALL MEDIA	1E-04	TOTAL HAZARD ACROSS ALL MEDIA				5.2E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	2.1E+01
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	--
TOTAL IMMUNE SYSTEM HI =	3.1E+01
TOTAL KIDNEY HI =	1.1E-04
TOTAL LIVER HI =	2.6E-01
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TABLE F.9.19.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	GREYSTONE MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	3.5E-06	NA	3.6E-06	7.1E-06
			Acenaphthylene	NC	NA	NC	NA		Liver	3.4E-06	NA	3.5E-06	6.9E-06
			Benzo(a)anthracene	7.5E-07	NA	7.8E-07	NA	1.5E-06	Kidney	4.6E-05	NA	4.8E-05	9.4E-05
			Benzo(a)pyrene	7.5E-06	NA	7.8E-06	NA	1.5E-05	Kidney	4.6E-05	NA	4.8E-05	9.4E-05
			Benzo(b)fluoranthene	9.5E-07	NA	9.8E-07	NA	1.9E-06	Kidney	5.8E-05	NA	6.0E-05	1.2E-04
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	3.9E-05	NA	4.0E-05	7.9E-05
			Dibenzo(a,h)anthracene	1.6E-06	NA	1.7E-06	NA	3.3E-06	Kidney	9.9E-06	NA	1.0E-05	2.0E-05
			Indeno(1,2,3-cd)pyrene	6.8E-07	NA	7.1E-07	NA	1.4E-06	Kidney	4.2E-05	NA	4.4E-05	8.5E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	7.2E-05	NA	7.5E-05	1.5E-04
			alpha-Chlordane	3.8E-09	NA	1.2E-09	NA	5.0E-09	Liver	2.9E-05	NA	9.3E-06	3.9E-05
			Aroclor-1254	5.1E-07	NA	5.7E-07	NA	1.1E-06	Immune system	1.7E-02	NA	1.9E-02	3.6E-02
			Aroclor-1268	8.4E-08	NA	9.4E-08	NA	1.8E-07	Immune system	2.8E-03	NA	3.2E-03	6.0E-03
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	8.6E-07	NA	6.9E-07	1.5E-06
			Technical Chlordane	7.8E-08	NA	2.5E-08	NA	1.0E-07	Liver	6.0E-04	NA	1.9E-04	7.9E-04
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	5.5E-06	NA	1.3E-06	NA	6.9E-06	Skin	1.7E-02	NA	4.0E-03	2.1E-02
			Chromium	NC	NA	NC	NA		NOAEL	3.9E-02	NA	--	3.9E-02
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	2.4E-02	NA	--	2.4E-02
			Mercury	NC	NA	NC	NA		Immune system	1.1E-03	NA	--	1.1E-03
			Molybdenum	NC	NA	NC	NA		Kidney	7.1E-03	NA	--	7.1E-03
			Nickel	NC	NA	NC	NA		Developmental toxicity	7.9E-03	NA	--	7.9E-03
			Thallium	NC	NA	NC	NA		NOAEL	3.0E-03	NA	--	3.0E-03
			Vanadium	NC	NA	NC	NA		NOAEL	6.0E-03	NA	--	6.0E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.9E-06	NA	1.2E-06	NA	6.1E-06		--	NA	--	
			CHEMICAL TOTAL	2.3E-05	--	1.5E-05	--	4E-05		1.3E-01	0.0E+00	2.7E-02	2E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-05					2E-01
	EXPOSURE MEDIUM TOTAL							4E-05					2E-01
SOIL TOTAL								4E-05					2E-01
SEDIMENT	SEDIMENT	GREYSTONE MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	9.5E-07	NA	8.4E-07	1.8E-06
			Acenaphthylene	NC	NA	NC	NA		Liver	8.2E-07	NA	7.2E-07	1.5E-06
			Benzo(a)anthracene	4.8E-07	NA	4.3E-07	NA	9.1E-07	Kidney	3.0E-05	NA	2.6E-05	5.6E-05
			Benzo(a)pyrene	4.3E-06	NA	3.8E-06	NA	8.1E-06	Kidney	2.6E-05	NA	2.3E-05	5.0E-05
			Benzo(b)fluoranthene	4.3E-07	NA	3.8E-07	NA	8.1E-07	Kidney	2.6E-05	NA	2.3E-05	5.0E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	1.8E-05	NA	1.6E-05	3.3E-05
			Dibenzo(a,h)anthracene	1.1E-06	NA	9.4E-07	NA	2.0E-06	Kidney	6.5E-06	NA	5.8E-06	1.2E-05
			Indeno(1,2,3-cd)pyrene	3.0E-07	NA	2.7E-07	NA	5.7E-07	Kidney	1.9E-05	NA	1.6E-05	3.5E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	4.1E-05	NA	3.6E-05	7.7E-05
			alpha-Chlordane	4.0E-10	NA	1.1E-10	NA	5.1E-10	Liver	3.1E-06	NA	8.4E-07	3.9E-06
			Aroclor-1254	1.4E-07	NA	1.4E-07	NA	2.8E-07	Immune system	4.8E-03	NA	4.6E-03	9.4E-03
			Aroclor-1268	9.3E-08	NA	8.9E-08	NA	1.8E-07	Immune system	3.1E-03	NA	3.0E-03	6.1E-03
			gamma-Chlordane	3.3E-10	NA	9.0E-11	NA	4.2E-10	Liver	2.5E-06	NA	6.9E-07	3.2E-06
			Technical Chlordane	4.1E-08	NA	1.1E-08	NA	5.3E-08	Liver	3.2E-04	NA	8.7E-05	4.1E-04
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Antimony	NC	NA	NC	NA		Adverse clinical signs	2.7E-03	NA	--	2.7E-03
			Arsenic	2.7E-06	NA	5.6E-07	NA	3.3E-06	Skin	8.1E-03	NA	1.7E-03	9.8E-03
			Cadmium	NC	NA	NC	NA		Kidney	1.1E-03	NA	3.0E-04	1.4E-03
			Chromium	NC	NA	NC	NA		NOAEL	2.3E-02	NA	--	2.3E-02
			Copper	NC	NA	NC	NA			--	NA	--	

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BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	2.1E-03	NA	--	2.1E-03
			Mercury	NC	NA	NC	NA		Immune system	6.4E-04	NA	--	6.4E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	1.8E-03	NA	--	1.8E-03
			Thallium	NC	NA	NC	NA		NOAEL	1.2E-03	NA	--	1.2E-03
			Vanadium	NC	NA	NC	NA		NOAEL	2.9E-03	NA	--	2.9E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.4E-06	NA	6.9E-07	NA	4.1E-06		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	7.1E-07	NA	1.4E-07	NA	8.5E-07		--	NA	--	
			CHEMICAL TOTAL	1.4E-05	--	7.4E-06	--	2E-05		5.2E-02	0.0E+00	9.8E-03	6E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-05					6E-02
	EXPOSURE MEDIUM TOTAL							2E-05					6E-02
SEDIMENT TOTAL								2E-05					6E-02
SURFACE WATER	SURFACE WATER	GREYSTONE MILL POND	Arsenic	3.1E-08	NA	5.4E-08	NA	8.5E-08	Skin	9.3E-05	NA	1.6E-04	2.6E-04
			Manganese	NC	NA	NC	NA		NOAEL	3.1E-04	NA	1.3E-02	1.4E-02
			Mercury	NC	NA	NC	NA		Immune system	3.3E-07	NA	8.1E-06	8.5E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	6.6E-05	NA	--	6.6E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.2E-08	NA	1.3E-04	NA	1.3E-04		--	NA	--	
			CHEMICAL TOTAL	6.3E-08	--	1.3E-04	--	1E-04		4.7E-04	0.0E+00	1.3E-02	1E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					1E-02
	EXPOSURE MEDIUM TOTAL							1E-04					1E-02
SURFACE WATER TOTAL								1E-04					1E-02
LARGEMOUTH BASS	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.7E-05	NA	NA	2.7E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	2.6E-05	NA	NA	2.6E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	2.0E-04	NA	NA	2.0E-04
			4,4'-DDE	3.3E-05	NA	NA	NA	3.3E-05	Liver	2.6E-01	NA	NA	2.6E-01
			alpha-Chlordane	2.1E-06	NA	NA	NA	2.1E-06	Liver	1.6E-02	NA	NA	1.6E-02
			Aroclor-1254	9.6E-04	NA	NA	NA	9.6E-04	Immune system	3.2E+01	NA	NA	3.2E+01
			Aroclor-1268	2.8E-04	NA	NA	NA	2.8E-04	Immune system	9.3E+00	NA	NA	9.3E+00
			Dieldrin	1.9E-05	NA	NA	NA	1.9E-05	Liver	3.2E-02	NA	NA	3.2E-02
			gamma-Chlordane	1.1E-06	NA	NA	NA	1.1E-06	Liver	8.1E-03	NA	NA	8.1E-03
			Technical Chlordane	2.3E-05	NA	NA	NA	2.3E-05	Liver	1.8E-01	NA	NA	1.8E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.1E+00	NA	NA	2.1E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	6.4E+00	NA	NA	6.4E+00
			Thallium	NC	NA	NA	NA		NOAEL	1.2E-01	NA	NA	1.2E-01

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BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.4E-04	NA	NA	NA	1.4E-04		--	NA	NA	
			CHEMICAL TOTAL	1.5E-03	--	--	--	1E-03		5.1E+01	0.0E+00	--	5E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-03					5E+01
	EXPOSURE MEDIUM TOTAL							1E-03					5E+01
WHOLE BODY TOTAL								1E-03					5E+01
RECEPTOR TOTAL								2E-03					5.1E+01
			TOTAL RISK ACROSS ALL MEDIA					2E-03	TOTAL HAZARD ACROSS ALL MEDIA				5.1E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL ADVERSE CLINICAL SIGNS HI =	2.7E-03
TOTAL CARDIOVASCULAR SYSTEM HI =	8.9E-06
TOTAL DEVELOPMENTAL TOXICITY HI =	6.4E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	6.6E-05
TOTAL IMMUNE SYSTEM HI =	4.4E+01
TOTAL KIDNEY HI =	9.7E-03
TOTAL LIVER HI =	5.0E-01
	--
	--
TOTAL NOAEL HI =	2.4E-01
	--
TOTAL SKIN HI =	3.1E-02
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Prepared by: RAR
Checked by: KJA

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TABLE F.9.20.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	GREYSTONE MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	5.4E-06	NA	1.3E-05	1.9E-05
			Acenaphthylene	NC	NA	NC	NA		Liver	5.3E-06	NA	1.3E-05	1.8E-05
			Benzo(a)anthracene	2.7E-07	NA	6.7E-07	NA	9.4E-07	Kidney	7.2E-05	NA	1.8E-04	2.5E-04
			Benzo(a)pyrene	2.7E-06	NA	6.8E-06	NA	9.5E-06	Kidney	7.2E-05	NA	1.8E-04	2.5E-04
			Benzo(b)fluoranthene	3.4E-07	NA	8.5E-07	NA	1.2E-06	Kidney	9.1E-05	NA	2.3E-04	3.2E-04
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	6.1E-05	NA	1.5E-04	2.1E-04
			Dibenzo(a,h)anthracene	5.8E-07	NA	1.4E-06	NA	2.0E-06	Kidney	1.5E-05	NA	3.8E-05	5.4E-05
			Indeno(1,2,3-cd)pyrene	2.5E-07	NA	6.1E-07	NA	8.6E-07	Kidney	6.5E-05	NA	1.6E-04	2.3E-04
			Phenanthrene	NC	NA	NC	NA		Kidney	1.1E-04	NA	2.8E-04	3.9E-04
			alpha-Chlordane	1.4E-09	NA	1.0E-09	NA	2.4E-09	Liver	4.5E-05	NA	3.5E-05	8.0E-05
			Aroclor-1254	1.8E-07	NA	4.9E-07	NA	6.7E-07	Immune system	2.7E-02	NA	7.1E-02	9.8E-02
			Aroclor-1268	3.0E-08	NA	8.1E-08	NA	1.1E-07	Immune system	4.4E-03	NA	1.2E-02	1.6E-02
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	1.3E-06	NA	2.6E-06	3.9E-06
			Technical Chlordane	2.8E-08	NA	2.1E-08	NA	4.9E-08	Liver	9.3E-04	NA	7.2E-04	1.6E-03
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	2.0E-06	NA	1.1E-06	NA	3.1E-06	Skin	2.6E-02	NA	1.5E-02	4.1E-02
			Chromium	NC	NA	NC	NA		NOAEL	6.1E-02	NA	--	6.1E-02
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	3.7E-02	NA	--	3.7E-02
			Mercury	NC	NA	NC	NA		Immune system	1.7E-03	NA	--	1.7E-03
			Molybdenum	NC	NA	NC	NA		Kidney	1.1E-02	NA	--	1.1E-02
			Nickel	NC	NA	NC	NA		Developmental toxicity	1.2E-02	NA	--	1.2E-02
			Thallium	NC	NA	NC	NA		NOAEL	4.6E-03	NA	--	4.6E-03
			Vanadium	NC	NA	NC	NA		NOAEL	9.3E-03	NA	--	9.3E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.8E-06	NA	1.0E-06	NA	2.8E-06		--	NA	--	
			CHEMICAL TOTAL	8.1E-06	--	1.3E-05	--	2E-05		2.0E-01	0.0E+00	1.0E-01	3E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-05					3E-01
	EXPOSURE MEDIUM TOTAL							2E-05					3E-01
SOIL TOTAL								2E-05					3E-01
SEDIMENT	SEDIMENT	GREYSTONE MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	1.5E-06	NA	2.7E-06	4.2E-06
			Acenaphthylene	NC	NA	NC	NA		Liver	1.3E-06	NA	2.4E-06	3.6E-06
			Benzo(a)anthracene	1.7E-07	NA	3.2E-07	NA	5.0E-07	Kidney	4.6E-05	NA	8.6E-05	1.3E-04
			Benzo(a)pyrene	1.5E-06	NA	2.9E-06	NA	4.4E-06	Kidney	4.1E-05	NA	7.6E-05	1.2E-04
			Benzo(b)fluoranthene	1.5E-07	NA	2.9E-07	NA	4.4E-07	Kidney	4.1E-05	NA	7.6E-05	1.2E-04
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	2.7E-05	NA	5.1E-05	7.8E-05
			Dibenzo(a,h)anthracene	3.8E-07	NA	7.1E-07	NA	1.1E-06	Kidney	1.0E-05	NA	1.9E-05	2.9E-05
			Indeno(1,2,3-cd)pyrene	1.1E-07	NA	2.0E-07	NA	3.1E-07	Kidney	2.9E-05	NA	5.4E-05	8.2E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	6.3E-05	NA	1.2E-04	1.8E-04
			alpha-Chlordane	1.4E-10	NA	8.3E-11	NA	2.3E-10	Liver	4.8E-06	NA	2.8E-06	7.6E-06
			Aroclor-1254	5.2E-08	NA	1.0E-07	NA	1.5E-07	Immune system	7.5E-03	NA	1.5E-02	2.3E-02
			Aroclor-1268	3.3E-08	NA	6.7E-08	NA	1.0E-07	Immune system	4.9E-03	NA	9.8E-03	1.5E-02
			gamma-Chlordane	1.2E-10	NA	6.8E-11	NA	1.9E-10	Liver	4.0E-06	NA	2.3E-06	6.2E-06
			Technical Chlordane	1.5E-08	NA	8.5E-09	NA	2.3E-08	Liver	5.0E-04	NA	2.8E-04	7.8E-04
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Antimony	NC	NA	NC	NA		Adverse clinical signs	4.3E-03	NA	--	4.3E-03
			Arsenic	9.8E-07	NA	4.2E-07	NA	1.4E-06	Skin	1.3E-02	NA	5.4E-03	1.8E-02
			Cadmium	NC	NA	NC	NA		Kidney	1.7E-03	NA	9.8E-04	2.7E-03
			Chromium	NC	NA	NC	NA		NOAEL	3.6E-02	NA	--	3.6E-02
			Copper	NC	NA	NC	NA			--	NA	--	

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SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	3.3E-03	NA	--	3.3E-03
			Mercury	NC	NA	NC	NA		Immune system	1.0E-03	NA	--	1.0E-03
			Nickel	NC	NA	NC	NA		Developmental toxicity	2.8E-03	NA	--	2.8E-03
			Thallium	NC	NA	NC	NA		NOAEL	1.8E-03	NA	--	1.8E-03
			Vanadium	NC	NA	NC	NA		NOAEL	4.5E-03	NA	--	4.5E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.2E-06	NA	5.2E-07	NA	1.7E-06		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	2.5E-07	NA	1.1E-07	NA	3.6E-07		--	NA	--	
			CHEMICAL TOTAL	4.9E-06	--	5.6E-06	--	1E-05		8.1E-02	0.0E+00	3.2E-02	1E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-05					1E-01
	EXPOSURE MEDIUM TOTAL							1E-05					1E-01
SEDIMENT TOTAL								1E-05					1E-01
SURFACE WATER	*SURFACE WATER*	*GREYSTONE MILL POND*	*Arsenic*	1.1E-08	NA	1.4E-08	NA	2.5E-08	*Skin*	1.5E-04	NA	1.8E-04	3.3E-04
			Manganese	NC	NA	NC	NA		NOAEL	4.7E-04	NA	1.5E-02	1.5E-02
			Mercury	NC	NA	NC	NA		Immune system	5.1E-07	NA	9.1E-06	9.6E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	1.0E-04	NA	--	1.0E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.1E-08	NA	3.3E-05	NA	3.3E-05		--	NA	--	
			CHEMICAL TOTAL	2.3E-08	--	3.3E-05	--	3E-05		7.2E-04	0.0E+00	1.5E-02	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-05					2E-02
	EXPOSURE MEDIUM TOTAL							3E-05					2E-02
SURFACE WATER TOTAL								3E-05					2E-02
LARGEMOUTH BASS	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.8E-05	NA	NA	2.8E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	2.7E-05	NA	NA	2.7E-05
			Phenanthrene	NC	NA	NA	NA		*Kidney*	2.1E-04	NA	NA	2.1E-04
			4,4'-DDE	7.9E-06	NA	NA	NA	7.9E-06	Liver	2.7E-01	NA	NA	2.7E-01
			alpha-Chlordane	5.0E-07	NA	NA	NA	5.0E-07	Liver	1.7E-02	NA	NA	1.7E-02
			Aroclor-1254	2.3E-04	NA	NA	NA	2.3E-04	*Immune system*	3.3E+01	NA	NA	3.3E+01
			Aroclor-1268	6.6E-05	NA	NA	NA	6.6E-05	Immune system	9.7E+00	NA	NA	9.7E+00
			Dieldrin	4.5E-06	NA	NA	NA	4.5E-06	Liver	3.3E-02	NA	NA	3.3E-02
			gamma-Chlordane	2.5E-07	NA	NA	NA	2.5E-07	Liver	8.4E-03	NA	NA	8.4E-03
			Technical Chlordane	5.5E-06	NA	NA	NA	5.5E-06	Liver	1.8E-01	NA	NA	1.8E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.2E+00	NA	NA	2.2E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	6.6E+00	NA	NA	6.6E+00
			Thallium	NC	NA	NA	NA		NOAEL	1.3E-01	NA	NA	1.3E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.3E-05	NA	NA	NA	3.3E-05		--	NA	NA	
			CHEMICAL TOTAL	3.5E-04	--	--	--	3E-04		5.2E+01	0.0E+00	--	5E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-04					5E+01
	EXPOSURE MEDIUM TOTAL							3E-04					5E+01
WHOLE BODY TOTAL								3E-04					5E+01

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TABLE F.9.20.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
RECEPTOR TOTAL								4E-04					5.3E+01
							TOTAL RISK ACROSS ALL MEDIA	4E-04	TOTAL HAZARD ACROSS ALL MEDIA				5.3E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

TOTAL ADVERSE CLINICAL SIGNS HI =	4.3E-03
TOTAL CARDIOVASCULAR SYSTEM HI =	2.3E-05
TOTAL DEVELOPMENTAL TOXICITY HI =	6.6E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	1.0E-04
TOTAL IMMUNE SYSTEM HI =	4.5E+01
TOTAL KIDNEY HI =	1.6E-02
TOTAL LIVER HI =	5.1E-01
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	--
TOTAL NOAEL HI =	3.0E-01
	--
TOTAL SKIN HI =	5.9E-02
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US EPA ARCHIVE DOCUMENT

TABLE F.9.21.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.6E-05	NA	NA	4.6E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	4.4E-05	NA	NA	4.4E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	3.4E-04	NA	NA	3.4E-04
			4,4'-DDE	6.4E-06	NA	NA	NA	6.4E-06	Liver	4.4E-01	NA	NA	4.4E-01
			alpha-Chlordane	4.1E-07	NA	NA	NA	4.1E-07	Liver	2.7E-02	NA	NA	2.7E-02
			Aroclor-1254	1.9E-04	NA	NA	NA	1.9E-04	Immune system	5.4E+01	NA	NA	5.4E+01
			Aroclor-1268	5.4E-05	NA	NA	NA	5.4E-05	Immune system	1.6E+01	NA	NA	1.6E+01
			Dieldrin	3.7E-06	NA	NA	NA	3.7E-06	Liver	5.3E-02	NA	NA	5.3E-02
			gamma-Chlordane	2.1E-07	NA	NA	NA	2.1E-07	Liver	1.4E-02	NA	NA	1.4E-02
			Technical Chlordane	4.5E-06	NA	NA	NA	4.5E-06	Liver	3.0E-01	NA	NA	3.0E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	3.5E+00	NA	NA	3.5E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.1E+01	NA	NA	1.1E+01
			Thallium	NC	NA	NA	NA		NOAEL	2.1E-01	NA	NA	2.1E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.7E-05	NA	NA	NA	2.7E-05		--	NA	NA	
			CHEMICAL TOTAL	2.8E-04	--	--	--	3E-04		8.5E+01	0.0E+00	--	9E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-04					9E+01
	EXPOSURE MEDIUM TOTAL							3E-04					9E+01
WHOLE BODY TOTAL								3E-04					9E+01
RECEPTOR TOTAL								3E-04					8.5E+01
			TOTAL RISK ACROSS ALL MEDIA					3E-04	TOTAL HAZARD ACROSS ALL MEDIA				8.5E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.1E+01
	--
	--
	--
	--
TOTAL IMMUNE SYSTEM HI =	7.4E+01
TOTAL KIDNEY HI =	3.9E-04
TOTAL LIVER HI =	8.3E-01
	--
	--
TOTAL NOAEL HI =	2.1E-01
	--
	--
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US EPA ARCHIVE DOCUMENT

TABLE F.9.22.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	GREYSTONE MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	3.5E-06	NA	3.6E-06	7.1E-06
			Acenaphthylene	NC	NA	NC	NA		Liver	3.4E-06	NA	3.5E-06	6.9E-06
			Benzo(a)anthracene	7.5E-07	NA	7.8E-07	NA	1.5E-06	Kidney	4.6E-05	NA	4.8E-05	9.4E-05
			Benzo(a)pyrene	7.5E-06	NA	7.8E-06	NA	1.5E-05	Kidney	4.6E-05	NA	4.8E-05	9.4E-05
			Benzo(b)fluoranthene	9.5E-07	NA	9.8E-07	NA	1.9E-06	Kidney	5.8E-05	NA	6.0E-05	1.2E-04
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	3.9E-05	NA	4.0E-05	7.9E-05
			Dibenzo(a,h)anthracene	1.6E-06	NA	1.7E-06	NA	3.3E-06	Kidney	9.9E-06	NA	1.0E-05	2.0E-05
			Indeno(1,2,3-cd)pyrene	6.8E-07	NA	7.1E-07	NA	1.4E-06	Kidney	4.2E-05	NA	4.4E-05	8.5E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	7.2E-05	NA	7.5E-05	1.5E-04
			alpha-Chlordane	3.8E-09	NA	1.2E-09	NA	5.0E-09	Liver	2.9E-05	NA	9.3E-06	3.9E-05
			Aroclor-1254	5.1E-07	NA	5.7E-07	NA	1.1E-06	Immune system	1.7E-02	NA	1.9E-02	3.6E-02
			Aroclor-1268	8.4E-08	NA	9.4E-08	NA	1.8E-07	Immune system	2.8E-03	NA	3.2E-03	6.0E-03
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	8.6E-07	NA	6.9E-07	1.5E-06
			Technical Chlordane	7.8E-08	NA	2.5E-08	NA	1.0E-07	Liver	6.0E-04	NA	1.9E-04	7.9E-04
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	5.5E-06	NA	1.3E-06	NA	6.9E-06	Skin	1.7E-02	NA	4.0E-03	2.1E-02
			Chromium	NC	NA	NC	NA		NOAEL	3.9E-02	NA	--	3.9E-02
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	2.4E-02	NA	--	2.4E-02
			Mercury	NC	NA	NC	NA		Immune system	1.1E-03	NA	--	1.1E-03
			Molybdenum	NC	NA	NC	NA		Kidney	7.1E-03	NA	--	7.1E-03
			Nickel	NC	NA	NC	NA		Developmental toxicity	7.9E-03	NA	--	7.9E-03
			Thallium	NC	NA	NC	NA		NOAEL	3.0E-03	NA	--	3.0E-03
			Vanadium	NC	NA	NC	NA		NOAEL	6.0E-03	NA	--	6.0E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.9E-06	NA	1.2E-06	NA	6.1E-06		--	NA	--	
			CHEMICAL TOTAL	2.3E-05	--	1.5E-05	--	4E-05		1.3E-01	0.0E+00	2.7E-02	2E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-05					2E-01
	EXPOSURE MEDIUM TOTAL							4E-05					2E-01
SOIL TOTAL								4E-05					2E-01
SEDIMENT	SEDIMENT	GREYSTONE MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	9.5E-07	NA	8.4E-07	1.8E-06
			Acenaphthylene	NC	NA	NC	NA		Liver	8.2E-07	NA	7.2E-07	1.5E-06
			Benzo(a)anthracene	4.8E-07	NA	4.3E-07	NA	9.1E-07	Kidney	3.0E-05	NA	2.6E-05	5.6E-05
			Benzo(a)pyrene	4.3E-06	NA	3.8E-06	NA	8.1E-06	Kidney	2.6E-05	NA	2.3E-05	5.0E-05
			Benzo(b)fluoranthene	4.3E-07	NA	3.8E-07	NA	8.1E-07	Kidney	2.6E-05	NA	2.3E-05	5.0E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	1.8E-05	NA	1.6E-05	3.3E-05
			Dibenzo(a,h)anthracene	1.1E-06	NA	9.4E-07	NA	2.0E-06	Kidney	6.5E-06	NA	5.8E-06	1.2E-05
			Indeno(1,2,3-cd)pyrene	3.0E-07	NA	2.7E-07	NA	5.7E-07	Kidney	1.9E-05	NA	1.6E-05	3.5E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	4.1E-05	NA	3.6E-05	7.7E-05
			alpha-Chlordane	4.0E-10	NA	1.1E-10	NA	5.1E-10	Liver	3.1E-06	NA	8.4E-07	3.9E-06
			Aroclor-1254	1.4E-07	NA	1.4E-07	NA	2.8E-07	Immune system	4.8E-03	NA	4.6E-03	9.4E-03
			Aroclor-1268	9.3E-08	NA	8.9E-08	NA	1.8E-07	Immune system	3.1E-03	NA	3.0E-03	6.1E-03
			gamma-Chlordane	3.3E-10	NA	9.0E-11	NA	4.2E-10	Liver	2.5E-06	NA	6.9E-07	3.2E-06
			Technical Chlordane	4.1E-08	NA	1.1E-08	NA	5.3E-08	Liver	3.2E-04	NA	8.7E-05	4.1E-04
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Antimony	NC	NA	NC	NA		Adverse clinical signs	2.7E-03	NA	--	2.7E-03
			Arsenic	2.7E-06	NA	5.6E-07	NA	3.3E-06	Skin	8.1E-03	NA	1.7E-03	9.8E-03
			Cadmium	NC	NA	NC	NA		Kidney	1.1E-03	NA	3.0E-04	1.4E-03
			Chromium	NC	NA	NC	NA		NOAEL	2.3E-02	NA	--	2.3E-02
			Copper	NC	NA	NC	NA			--	NA	--	

US EPA ARCHIVE DOCUMENT

TABLE F.9.22.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1) INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	NON-CARCINOGENIC HAZARD QUOTIENT (1) PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	2.1E-03	NA	--	2.1E-03
			Mercury	NC	NA	NC	NA		Immune system	6.4E-04	NA	--	6.4E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	1.8E-03	NA	--	1.8E-03
			Thallium	NC	NA	NC	NA		NOAEL	1.2E-03	NA	--	1.2E-03
			Vanadium	NC	NA	NC	NA		NOAEL	2.9E-03	NA	--	2.9E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.4E-06	NA	6.9E-07	NA	4.1E-06		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	7.1E-07	NA	1.4E-07	NA	8.5E-07		--	NA	--	
			CHEMICAL TOTAL	1.4E-05	--	7.4E-06	--	2E-05		5.2E-02	0.0E+00	9.8E-03	6E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-05					6E-02
	EXPOSURE MEDIUM TOTAL							2E-05					6E-02
SEDIMENT TOTAL								2E-05					6E-02
SURFACE WATER	SURFACE WATER	GREYSTONE MILL POND	Arsenic	3.1E-08	NA	5.4E-08	NA	8.5E-08	Skin	9.3E-05	NA	1.6E-04	2.6E-04
			Manganese	NC	NA	NC	NA		NOAEL	3.1E-04	NA	1.3E-02	1.4E-02
			Mercury	NC	NA	NC	NA		Immune system	3.3E-07	NA	8.1E-06	8.5E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	6.6E-05	NA	--	6.6E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.2E-08	NA	1.3E-04	NA	1.3E-04		--	NA	--	
			CHEMICAL TOTAL	6.3E-08	--	1.3E-04	--	1E-04		4.7E-04	0.0E+00	1.3E-02	1E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					1E-02
	EXPOSURE MEDIUM TOTAL							1E-04					1E-02
SURFACE WATER TOTAL								1E-04					1E-02
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.6E-04	NA	NA	1.6E-04
			Benzo(a)pyrene	1.2E-05	NA	NA	NA	1.2E-05	Kidney	7.6E-05	NA	NA	7.6E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	6.7E-05	NA	NA	6.7E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.2E-03	NA	NA	1.2E-03
			4,4'-DDD	7.9E-06	NA	NA	NA	7.9E-06	Liver	8.8E-02	NA	NA	8.8E-02
			4,4'-DDE	2.6E-05	NA	NA	NA	2.6E-05	Liver	2.1E-01	NA	NA	2.1E-01
			4,4'-DDT	3.2E-06	NA	NA	NA	3.2E-06	Liver	2.5E-02	NA	NA	2.5E-02
			alpha-Chlordane	1.3E-05	NA	NA	NA	1.3E-05	Liver	9.9E-02	NA	NA	9.9E-02
			Aroclor-1254	6.1E-04	NA	NA	NA	6.1E-04	Immune system	2.1E+01	NA	NA	2.1E+01
			Aroclor-1268	1.7E-04	NA	NA	NA	1.7E-04	Immune system	5.6E+00	NA	NA	5.6E+00
			Dieldrin	1.0E-04	NA	NA	NA	1.0E-04	Liver	1.7E-01	NA	NA	1.7E-01
			gamma-Chlordane	5.9E-06	NA	NA	NA	5.9E-06	Liver	4.5E-02	NA	NA	4.5E-02
			Heptachlor Epoxide	1.1E-05	NA	NA	NA	1.1E-05	Liver	1.3E-01	NA	NA	1.3E-01
			Technical Chlordane	1.5E-04	NA	NA	NA	1.5E-04	Liver	1.1E+00	NA	NA	1.1E+00
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.3E+00	NA	NA	1.3E+00

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TABLE F.9.22.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	3.9E+00	NA	NA	3.9E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	7.0E-04	NA	NA	NA	7.0E-04		--	NA	NA	
			CHEMICAL TOTAL	1.8E-03	--	--	--	2E-03		3.3E+01	0.0E+00	--	3.3E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-03					3.3E+01
	EXPOSURE MEDIUM TOTAL							2E-03					3.3E+01
WHOLE BODY TOTAL								2E-03					3.3E+01
RECEPTOR TOTAL								2E-03					3.3E+01
							TOTAL RISK ACROSS ALL MEDIA	2E-03	TOTAL HAZARD ACROSS ALL MEDIA				3.3E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL ADVERSE CLINICAL SIGNS HI =	2.7E-03
TOTAL CARDIOVASCULAR SYSTEM HI =	8.9E-06
TOTAL DEVELOPMENTAL TOXICITY HI =	3.9E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	6.6E-05
TOTAL IMMUNE SYSTEM HI =	2.7E+01
TOTAL KIDNEY HI =	1.1E-02
TOTAL LIVER HI =	1.9E+00
	--
	--
TOTAL NOAEL HI =	1.1E-01
	--
TOTAL SKIN HI =	3.1E-02
	--

Prepared by: RAR
Checked by: KJA

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TABLE F.9.23.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	GREYSTONE MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	5.4E-06	NA	1.3E-05	1.9E-05
			Acenaphthylene	NC	NA	NC	NA		Liver	5.3E-06	NA	1.3E-05	1.8E-05
			Benzo(a)anthracene	2.7E-07	NA	6.7E-07	NA	9.4E-07	Kidney	7.2E-05	NA	1.8E-04	2.5E-04
			Benzo(a)pyrene	2.7E-06	NA	6.8E-06	NA	9.5E-06	Kidney	7.2E-05	NA	1.8E-04	2.5E-04
			Benzo(b)fluoranthene	3.4E-07	NA	8.5E-07	NA	1.2E-06	Kidney	9.1E-05	NA	2.3E-04	3.2E-04
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	6.1E-05	NA	1.5E-04	2.1E-04
			Dibenzo(a,h)anthracene	5.8E-07	NA	1.4E-06	NA	2.0E-06	Kidney	1.5E-05	NA	3.8E-05	5.4E-05
			Indeno(1,2,3-cd)pyrene	2.5E-07	NA	6.1E-07	NA	8.6E-07	Kidney	6.5E-05	NA	1.6E-04	2.3E-04
			Phenanthrene	NC	NA	NC	NA		Kidney	1.1E-04	NA	2.8E-04	3.9E-04
			alpha-Chlordane	1.4E-09	NA	1.0E-09	NA	2.4E-09	Liver	4.5E-05	NA	3.5E-05	8.0E-05
			Aroclor-1254	1.8E-07	NA	4.9E-07	NA	6.7E-07	Immune system	2.7E-02	NA	7.1E-02	9.8E-02
			Aroclor-1268	3.0E-08	NA	8.1E-08	NA	1.1E-07	Immune system	4.4E-03	NA	1.2E-02	1.6E-02
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	1.3E-06	NA	2.6E-06	3.9E-06
			Technical Chlordane	2.8E-08	NA	2.1E-08	NA	4.9E-08	Liver	9.3E-04	NA	7.2E-04	1.6E-03
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	2.0E-06	NA	1.1E-06	NA	3.1E-06	Skin	2.6E-02	NA	1.5E-02	4.1E-02
			Chromium	NC	NA	NC	NA		NOAEL	6.1E-02	NA	--	6.1E-02
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	3.7E-02	NA	--	3.7E-02
			Mercury	NC	NA	NC	NA		Immune system	1.7E-03	NA	--	1.7E-03
			Molybdenum	NC	NA	NC	NA		Kidney	1.1E-02	NA	--	1.1E-02
			Nickel	NC	NA	NC	NA		Developmental toxicity	1.2E-02	NA	--	1.2E-02
			Thallium	NC	NA	NC	NA		NOAEL	4.6E-03	NA	--	4.6E-03
			Vanadium	NC	NA	NC	NA		NOAEL	9.3E-03	NA	--	9.3E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.8E-06	NA	1.0E-06	NA	2.8E-06		--	NA	--	
			CHEMICAL TOTAL	8.1E-06	--	1.3E-05	--	2E-05		2.0E-01	0.0E+00	1.0E-01	3E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-05					3E-01
	EXPOSURE MEDIUM TOTAL							2E-05					3E-01
SOIL TOTAL								2E-05					3E-01
SEDIMENT	SEDIMENT	GREYSTONE MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	1.5E-06	NA	2.7E-06	4.2E-06
			Acenaphthylene	NC	NA	NC	NA		Liver	1.3E-06	NA	2.4E-06	3.6E-06
			Benzo(a)anthracene	1.7E-07	NA	3.2E-07	NA	5.0E-07	Kidney	4.6E-05	NA	8.6E-05	1.3E-04
			Benzo(a)pyrene	1.5E-06	NA	2.9E-06	NA	4.4E-06	Kidney	4.1E-05	NA	7.6E-05	1.2E-04
			Benzo(b)fluoranthene	1.5E-07	NA	2.9E-07	NA	4.4E-07	Kidney	4.1E-05	NA	7.6E-05	1.2E-04
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	2.7E-05	NA	5.1E-05	7.8E-05
			Dibenzo(a,h)anthracene	3.8E-07	NA	7.1E-07	NA	1.1E-06	Kidney	1.0E-05	NA	1.9E-05	2.9E-05
			Indeno(1,2,3-cd)pyrene	1.1E-07	NA	2.0E-07	NA	3.1E-07	Kidney	2.9E-05	NA	5.4E-05	8.2E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	6.3E-05	NA	1.2E-04	1.8E-04
			alpha-Chlordane	1.4E-10	NA	8.3E-11	NA	2.3E-10	Liver	4.8E-06	NA	2.8E-06	7.6E-06
			Aroclor-1254	5.2E-08	NA	1.0E-07	NA	1.5E-07	Immune system	7.5E-03	NA	1.5E-02	2.3E-02
			Aroclor-1268	3.3E-08	NA	6.7E-08	NA	1.0E-07	Immune system	4.9E-03	NA	9.8E-03	1.5E-02
			gamma-Chlordane	1.2E-10	NA	6.8E-11	NA	1.9E-10	Liver	4.0E-06	NA	2.3E-06	6.2E-06
			Technical Chlordane	1.5E-08	NA	8.5E-09	NA	2.3E-08	Liver	5.0E-04	NA	2.8E-04	7.8E-04
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Antimony	NC	NA	NC	NA		Adverse clinical signs	4.3E-03	NA	--	4.3E-03
			Arsenic	9.8E-07	NA	4.2E-07	NA	1.4E-06	Skin	1.3E-02	NA	5.4E-03	1.8E-02
			Cadmium	NC	NA	NC	NA		Kidney	1.7E-03	NA	9.8E-04	2.7E-03
			Chromium	NC	NA	NC	NA		NOAEL	3.6E-02	NA	--	3.6E-02
			Copper	NC	NA	NC	NA			--	NA	--	

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TABLE F.9.23.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	3.3E-03	NA	--	3.3E-03
			Mercury	NC	NA	NC	NA		Immune system	1.0E-03	NA	--	1.0E-03
			Nickel	NC	NA	NC	NA		Developmental toxicity	2.8E-03	NA	--	2.8E-03
			Thallium	NC	NA	NC	NA		NOAEL	1.8E-03	NA	--	1.8E-03
			Vanadium	NC	NA	NC	NA		NOAEL	4.5E-03	NA	--	4.5E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.2E-06	NA	5.2E-07	NA	1.7E-06		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	2.5E-07	NA	1.1E-07	NA	3.6E-07		--	NA	--	
			CHEMICAL TOTAL	4.9E-06	--	5.6E-06	--	1E-05		8.1E-02	0.0E+00	3.2E-02	1E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-05					1E-01
	EXPOSURE MEDIUM TOTAL							1E-05					1E-01
SEDIMENT TOTAL								1E-05					1E-01
SURFACE WATER	SURFACE WATER	GREYSTONE MILL POND	Arsenic	1.1E-08	NA	1.4E-08	NA	2.5E-08	Skin	1.5E-04	NA	1.8E-04	3.3E-04
			Manganese	NC	NA	NC	NA		NOAEL	4.7E-04	NA	1.5E-02	1.5E-02
			Mercury	NC	NA	NC	NA		Immune system	5.1E-07	NA	9.1E-06	9.6E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	1.0E-04	NA	--	1.0E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.1E-08	NA	3.3E-05	NA	3.3E-05		--	NA	--	
			CHEMICAL TOTAL	2.3E-08	--	3.3E-05	--	3E-05		7.2E-04	0.0E+00	1.5E-02	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-05					2E-02
	EXPOSURE MEDIUM TOTAL							3E-05					2E-02
SURFACE WATER TOTAL								3E-05					2E-02
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.7E-04	NA	NA	1.7E-04
			Benzo(a)pyrene	2.9E-06	NA	NA	NA	2.9E-06	Kidney	7.8E-05	NA	NA	7.8E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	6.9E-05	NA	NA	6.9E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.2E-03	NA	NA	1.2E-03
			4,4'-DDD	1.9E-06	NA	NA	NA	1.9E-06	Liver	9.2E-02	NA	NA	9.2E-02
			4,4'-DDE	6.3E-06	NA	NA	NA	6.3E-06	Liver	2.2E-01	NA	NA	2.2E-01
			4,4'-DDT	7.7E-07	NA	NA	NA	7.7E-07	Liver	2.6E-02	NA	NA	2.6E-02
			alpha-Chlordane	3.1E-06	NA	NA	NA	3.1E-06	Liver	1.0E-01	NA	NA	1.0E-01
			Aroclor-1254	1.5E-04	NA	NA	NA	1.5E-04	Immune system	2.1E+01	NA	NA	2.1E+01
			Aroclor-1268	4.0E-05	NA	NA	NA	4.0E-05	Immune system	5.8E+00	NA	NA	5.8E+00
			Dieldrin	2.4E-05	NA	NA	NA	2.4E-05	Liver	1.8E-01	NA	NA	1.8E-01
			gamma-Chlordane	1.4E-06	NA	NA	NA	1.4E-06	Liver	4.7E-02	NA	NA	4.7E-02
			Heptachlor Epoxide	2.7E-06	NA	NA	NA	2.7E-06	Liver	1.3E-01	NA	NA	1.3E-01
			Technical Chlordane	3.6E-05	NA	NA	NA	3.6E-05	Liver	1.2E+00	NA	NA	1.2E+00
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.3E+00	NA	NA	1.3E+00

US EPA ARCHIVE DOCUMENT

TABLE F.9.23.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	4.1E+00	NA	NA	4.1E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.7E-04	NA	NA	NA	1.7E-04		--	NA	NA	
			CHEMICAL TOTAL	4.3E-04	--	--	--	4E-04		3.4E+01	0.0E+00	--	3.4E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-04					3.4E+01
	EXPOSURE MEDIUM TOTAL							4E-04					3.4E+01
WHOLE BODY TOTAL								4E-04					3.4E+01
RECEPTOR TOTAL								5E-04					3.5E+01
			TOTAL RISK ACROSS ALL MEDIA					5E-04	TOTAL HAZARD ACROSS ALL MEDIA				3.5E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL ADVERSE CLINICAL SIGNS HI =	4.3E-03
TOTAL CARDIOVASCULAR SYSTEM HI =	2.3E-05
TOTAL DEVELOPMENTAL TOXICITY HI =	4.1E+00
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	--
TOTAL HEMATOLOGICAL SYSTEM HI =	1.0E-04
TOTAL IMMUNE SYSTEM HI =	2.9E+01
TOTAL KIDNEY HI =	1.8E-02
TOTAL LIVER HI =	2.0E+00
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	--
TOTAL NOAEL HI =	1.7E-01
	--
TOTAL SKIN HI =	5.9E-02
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Prepared by: RAR
Checked by: KJA

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TABLE F.9.24.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.7E-04	NA	NA	2.7E-04
			Benzo(a)pyrene	2.4E-06	NA	NA	NA	2.4E-06	Kidney	1.3E-04	NA	NA	1.3E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.1E-04	NA	NA	1.1E-04
			Phenanthrene	NC	NA	NA	NA		Kidney	2.0E-03	NA	NA	2.0E-03
			4,4'-DDD	1.5E-06	NA	NA	NA	1.5E-06	Liver	1.5E-01	NA	NA	1.5E-01
			4,4'-DDE	5.1E-06	NA	NA	NA	5.1E-06	Liver	3.5E-01	NA	NA	3.5E-01
			4,4'-DDT	6.2E-07	NA	NA	NA	6.2E-07	Liver	4.3E-02	NA	NA	4.3E-02
			alpha-Chlordane	2.5E-06	NA	NA	NA	2.5E-06	Liver	1.7E-01	NA	NA	1.7E-01
			Aroclor-1254	1.2E-04	NA	NA	NA	1.2E-04	Immune system	3.5E+01	NA	NA	3.5E+01
			Aroclor-1268	3.2E-05	NA	NA	NA	3.2E-05	Immune system	9.4E+00	NA	NA	9.4E+00
			Dieldrin	2.0E-05	NA	NA	NA	2.0E-05	Liver	2.9E-01	NA	NA	2.9E-01
			gamma-Chlordane	1.1E-06	NA	NA	NA	1.1E-06	Liver	7.7E-02	NA	NA	7.7E-02
			Heptachlor Epoxide	2.2E-06	NA	NA	NA	2.2E-06	Liver	2.1E-01	NA	NA	2.1E-01
			Technical Chlordane	2.9E-05	NA	NA	NA	2.9E-05	Liver	1.9E+00	NA	NA	1.9E+00
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.2E+00	NA	NA	2.2E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	6.6E+00	NA	NA	6.6E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.4E-04	NA	NA	NA	1.4E-04		--	NA	NA	
			CHEMICAL TOTAL	3.5E-04	--	--	--	4E-04		5.6E+01	0.0E+00	--	5.6E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-04					5.6E+01
	EXPOSURE MEDIUM TOTAL							4E-04					5.6E+01
WHOLE BODY TOTAL								4E-04					5.6E+01
RECEPTOR TOTAL								4E-04					5.6E+01
							TOTAL RISK ACROSS ALL MEDIA	4E-04	TOTAL HAZARD ACROSS ALL MEDIA				5.6E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	6.6E+00
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TOTAL IMMUNE SYSTEM HI =	4.6E+01
TOTAL KIDNEY HI =	2.2E-03
TOTAL LIVER HI =	3.2E+00
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TABLE F.9.25.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	ALLENDALE POND	2,3,7,8-TCDD	1.2E-05	NA	2.9E-06	NA	1.5E-05		--	NA	--	
			CHEMICAL TOTAL	1.2E-05	--	2.9E-06	--	2E-05		--	0.0E+00	--	0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-05					0E+00
	EXPOSURE MEDIUM TOTAL							2E-05					0E+00
SOIL TOTAL								2E-05					0E+00
SEDIMENT	*SEDIMENT*	*ALLENDALE POND*	2-Methylnaphthalene	NC	NA	NC	NA		Lung	1.7E-06	NA	1.5E-06	3.3E-06
			Acenaphthylene	NC	NA	NC	NA		Liver	4.1E-06	NA	3.6E-06	7.8E-06
			Benzo(a)anthracene	4.7E-07	NA	4.1E-07	NA	8.8E-07	Kidney	2.9E-05	NA	2.6E-05	5.4E-05
			Benzo(a)pyrene	5.5E-06	NA	4.9E-06	NA	1.0E-05	Kidney	3.4E-05	NA	3.0E-05	6.4E-05
			Benzo(b)fluoranthene	6.1E-07	NA	5.4E-07	NA	1.1E-06	Kidney	3.7E-05	NA	3.3E-05	7.0E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	1.7E-05	NA	1.5E-05	3.2E-05
			Benzo(k)fluoranthene	5.4E-08	NA	4.8E-08	NA	1.0E-07	Kidney	3.3E-05	NA	2.9E-05	6.2E-05
			bis(2-Ethylhexyl)phthalate	8.5E-09	NA	5.8E-09	NA	1.4E-08	Liver	4.1E-05	NA	2.8E-05	6.8E-05
			Dibenzo(a,h)anthracene	2.8E-06	NA	2.4E-06	NA	5.2E-06	Kidney	1.7E-05	NA	1.5E-05	3.2E-05
			Indeno(1,2,3-cd)pyrene	4.4E-07	NA	3.9E-07	NA	8.3E-07	Kidney	2.7E-05	NA	2.4E-05	5.1E-05
			Pentachlorophenol	1.5E-07	NA	2.5E-07	NA	4.0E-07	Liver / Kidney	5.5E-05	NA	9.4E-05	1.5E-04
			Phenanthrene	NC	NA	NC	NA		Kidney	4.1E-05	NA	3.6E-05	7.7E-05
			alpha-Chlordane	7.5E-10	NA	2.0E-10	NA	9.5E-10	Liver	5.7E-06	NA	1.6E-06	7.3E-06
			Aroclor-1254	9.1E-07	NA	8.6E-07	NA	1.8E-06	Immune system	3.1E-02	NA	2.9E-02	6.0E-02
			Aroclor-1260	7.6E-08	NA	7.2E-08	NA	1.5E-07	Immune system	2.5E-03	NA	2.4E-03	5.0E-03
			Aroclor-1268	3.0E-08	NA	2.8E-08	NA	5.8E-08	Immune system	1.0E-03	NA	9.6E-04	2.0E-03
			delta-BHC	NC	NA	NC	NA		Liver / Kidney	1.2E-06	NA	8.1E-07	2.0E-06
			Dieldrin	2.7E-08	NA	1.9E-08	NA	4.6E-08	Liver	4.6E-05	NA	3.1E-05	7.7E-05
			Endosulfan II	NC	NA	NC	NA		Kidney	1.6E-06	NA	1.1E-06	2.6E-06
			Endosulfan sulfate	NC	NA	NC	NA		Kidney	1.1E-07	NA	7.8E-08	1.9E-07
			Endrin aldehyde	NC	NA	NC	NA		Nervous system	2.5E-06	NA	1.7E-06	4.1E-06
			Endrin Ketone	NC	NA	NC	NA		Nervous system	3.2E-06	NA	2.2E-06	5.4E-06
			gamma-Chlordane	1.1E-09	NA	3.1E-10	NA	1.4E-09	Liver	8.6E-06	NA	2.4E-06	1.1E-05
			Technical Chlordane	4.3E-08	NA	1.2E-08	NA	5.5E-08	Liver	3.3E-04	NA	9.0E-05	4.2E-04
			Antimony	NC	NA	NC	NA		Adverse clinical signs	3.1E-03	NA		3.1E-03
			Arsenic	1.6E-06	NA	3.4E-07	NA	2.0E-06	Skin	4.9E-03	NA	1.0E-03	5.9E-03
			Cadmium	NC	NA	NC	NA		Kidney	3.1E-04	NA	8.3E-05	3.9E-04
			Chromium	NC	NA	NC	NA		NOAEL	2.0E-02	NA		2.0E-02
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	1.9E-03	NA		1.9E-03
			Mercury	NC	NA	NC	NA		Immune system	8.2E-04	NA		8.2E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	3.4E-04	NA		3.4E-04
			Thallium	NC	NA	NC	NA		NOAEL	2.2E-02	NA		2.2E-02
			Vanadium	NC	NA	NC	NA		NOAEL	1.7E-03	NA		1.7E-03

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TABLE F9.25.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.6E-04	NA	3.3E-05	NA	1.9E-04		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	3.2E-09	NA	6.5E-10	NA	3.8E-09		--	NA	--	
			CHEMICAL TOTAL	1.7E-04	--	4.3E-05	--	2E-04		9.0E-02	0.0E+00	3.4E-02	1E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-04					1E-01
	EXPOSURE MEDIUM TOTAL							2E-04					1E-01
SEDIMENT TOTAL								2E-04					1E-01
SURFACE WATER	SURFACE WATER	ALLENDALE POND	Tetrachloroethene	1.4E-08	NA	1.5E-06	NA	1.6E-06	Liver	3.6E-06	NA	4.1E-04	4.1E-04
			bis(2-Ethylhexyl)phthalate	5.3E-10	NA	1.6E-07	NA	1.6E-07	Liver	2.5E-06	NA	7.6E-04	7.6E-04
			Aldrin	7.1E-09	NA	1.2E-07	NA	1.3E-07	Liver	1.9E-05	NA	3.2E-04	3.4E-04
			alpha-Chlordane	9.1E-12	NA	3.7E-09	NA	3.7E-09	Liver	7.0E-08	NA	2.8E-05	2.8E-05
			Aroclor-1254	4.5E-08	NA	--	NA	4.5E-08	Immune system	1.5E-03	NA	--	1.5E-03
			delta-BHC	NC	NA	NC	NA		Liver / Kidney	1.6E-06	NA	1.2E-04	1.2E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	3.6E-06	NA	--	3.6E-06
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	4.7E-07	NA	6.5E-05	6.5E-05
			gamma-Chlordane	3.3E-10	NA	1.3E-07	NA	1.3E-07	Liver	2.5E-06	NA	1.0E-03	1.0E-03
			Arsenic	2.5E-07	NA	4.3E-07	NA	6.8E-07	Skin	7.5E-04	NA	1.3E-03	2.0E-03
			Barium	NC	NA	NC	NA		Cardiovascular system	3.2E-05	NA	7.9E-04	8.3E-04
			Chromium	NC	NA	NC	NA		NOAEL	3.1E-04	NA	4.2E-02	4.3E-02
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	2.1E-03	NA	9.0E-02	9.2E-02
			Mercury	NC	NA	NC	NA		Immune system	5.4E-07	NA	1.3E-05	1.4E-05
			Thallium	NC	NA	NC	NA		NOAEL	2.4E-03	NA	4.1E-03	6.4E-03
			Nitrate	NC	NA	NC	NA		Hematological system	2.5E-05	NA	--	2.5E-05
			Nitrite-N	NC	NA	NC	NA		Hematological system	7.1E-05	NA	--	7.1E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	6.2E-06	NA	2.5E-02	NA	2.5E-02		--	NA	--	
			CHEMICAL TOTAL	6.6E-06	--	2.5E-02	--	2E-02		7.2E-03	0.0E+00	1.4E-01	1E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-02					1E-01
	EXPOSURE MEDIUM TOTAL							2E-02					1E-01
SURFACE WATER TOTAL								2E-02					1E-01
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.4E-05	NA	NA	4.4E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	5.5E-04	NA	NA	5.5E-04
			4,4'-DDD	4.7E-06	NA	NA	NA	4.7E-06	Liver	5.3E-02	NA	NA	5.3E-02
			4,4'-DDE	1.1E-05	NA	NA	NA	1.1E-05	Liver	8.5E-02	NA	NA	8.5E-02
			4,4'-DDT	4.6E-06	NA	NA	NA	4.6E-06	Liver	3.6E-02	NA	NA	3.6E-02
			alpha-Chlordane	1.0E-05	NA	NA	NA	1.0E-05	Liver	7.8E-02	NA	NA	7.8E-02
			Aroclor-1254	2.7E-03	NA	NA	NA	2.7E-03	Immune system	8.9E+01	NA	NA	8.9E+01
			Aroclor-1268	4.5E-05	NA	NA	NA	4.5E-05	Immune system	1.5E+00	NA	NA	1.5E+00

US EPA ARCHIVE DOCUMENT

TABLE F.9.25.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			beta-BHC	1.7E-06	NA	NA	NA	1.7E-06	Liver / Kidney	4.2E-03	NA	NA	4.2E-03
			Dieldrin	2.2E-04	NA	NA	NA	2.2E-04	Liver	3.7E-01	NA	NA	3.7E-01
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	5.3E-04	NA	NA	5.3E-04
			Endrin Aldehyde	NC	NA	NA	NA		Nervous system	6.8E-03	NA	NA	6.8E-03
			gamma-Chlordane	3.8E-06	NA	NA	NA	3.8E-06	Liver	2.9E-02	NA	NA	2.9E-02
			Heptachlor	4.6E-06	NA	NA	NA	4.6E-06	Liver	2.7E-03	NA	NA	2.7E-03
			Heptachlor Epoxide	2.1E-05	NA	NA	NA	2.1E-05	Liver	2.3E-01	NA	NA	2.3E-01
			Technical Chlordane	1.4E-04	NA	NA	NA	1.4E-04	Liver	1.1E+00	NA	NA	1.1E+00
			Cadmium	NC	NA	NA	NA		Kidney	2.0E-01	NA	NA	2.0E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	7.3E-02	NA	NA	7.3E-02
			Mercury	NC	NA	NA	NA		Immune system	1.0E+00	NA	NA	1.0E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.5E+00	NA	NA	5.5E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.5E-02	NA	NA	NA	2.5E-02		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	9.5E-03	NA	NA	NA	9.5E-03		--	NA	NA	
			CHEMICAL TOTAL	3.8E-02	--	--	--	4E-02		1.0E+02	0.0E+00	--	1.0E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-02					1.0E+02
	EXPOSURE MEDIUM TOTAL							4E-02					1.0E+02
WHOLE BODY TOTAL								4E-02					1.0E+02
RECEPTOR TOTAL								6E-02					1.0E+02
							TOTAL RISK ACROSS ALL MEDIA	6E-02	TOTAL HAZARD ACROSS ALL MEDIA				1.0E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL ADVERSE CLINICAL SIGNS HI =	3.1E-03
TOTAL CARDIOVASCULAR SYSTEM HI =	8.3E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	5.5E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	9.5E-05
TOTAL IMMUNE SYSTEM HI =	9.2E-01
TOTAL KIDNEY HI =	2.0E-01
TOTAL LIVER HI =	2.0E+00
	--
TOTAL NERVOUS SYSTEM HI =	6.8E-03
TOTAL NOAEL HI =	2.6E-01
	--
TOTAL SKIN HI =	8.0E-03
	--

Prepared by: RAR
Checked by: KJA

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TABLE F.9.26.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	ALLENDALE POND	2,3,7,8-TCDD	4.4E-06	NA	2.5E-06	NA	6.9E-06		--	NA	--	
			CHEMICAL TOTAL	4.4E-06	--	2.5E-06	--	7E-06		--	0.0E+00	--	0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-06					0E+00
	EXPOSURE MEDIUM TOTAL							7E-06					0E+00
SOIL TOTAL								7E-06					0E+00
SEDIMENT	SEDIMENT	ALLENDALE POND	2-Methylnaphthalene	NC	NA	NC	NA		Lung	2.7E-06	NA	5.0E-06	7.7E-06
			Acenaphthylene	NC	NA	NC	NA		Liver	6.4E-06	NA	1.2E-05	1.8E-05
			Benzo(a)anthracene	1.7E-07	NA	3.1E-07	NA	4.8E-07	Kidney	4.5E-05	NA	8.3E-05	1.3E-04
			Benzo(a)pyrene	2.0E-06	NA	3.7E-06	NA	5.7E-06	Kidney	5.3E-05	NA	9.8E-05	1.5E-04
			Benzo(b)fluoranthene	2.2E-07	NA	4.0E-07	NA	6.2E-07	Kidney	5.8E-05	NA	1.1E-04	1.7E-04
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	2.6E-05	NA	4.9E-05	7.5E-05
			Benzo(k)fluoranthene	1.9E-08	NA	3.6E-08	NA	5.5E-08	Kidney	5.1E-05	NA	9.6E-05	1.5E-04
			bis(2-Ethylhexyl)phthalate	3.0E-09	NA	4.3E-09	NA	7.4E-09	Liver	6.3E-05	NA	9.1E-05	1.5E-04
			Dibenzo(a,h)anthracene	9.9E-07	NA	1.8E-06	NA	2.8E-06	Kidney	2.6E-05	NA	4.9E-05	7.5E-05
			Indeno(1,2,3-cd)pyrene	1.6E-07	NA	2.9E-07	NA	4.5E-07	Kidney	4.2E-05	NA	7.8E-05	1.2E-04
			Pentachlorophenol	5.3E-08	NA	1.9E-07	NA	2.4E-07	Liver / Kidney	8.6E-05	NA	3.1E-04	3.9E-04
			Phenanthrene	NC	NA	NC	NA		Kidney	6.3E-05	NA	1.2E-04	1.8E-04
			alpha-Chlordane	2.7E-10	NA	1.5E-10	NA	4.2E-10	Liver	8.9E-06	NA	5.1E-06	1.4E-05
			Aroclor-1254	3.3E-07	NA	6.5E-07	NA	9.8E-07	Immune system	4.7E-02	NA	9.5E-02	1.4E-01
			Aroclor-1260	2.7E-08	NA	5.4E-08	NA	8.1E-08	Immune system	4.0E-03	NA	7.9E-03	1.2E-02
			Aroclor-1268	1.1E-08	NA	2.1E-08	NA	3.2E-08	Immune system	1.6E-03	NA	3.1E-03	4.7E-03
			delta-BHC	NC	NA	NC	NA		Liver / Kidney	1.8E-06	NA	2.6E-06	4.5E-06
			Dieldrin	9.8E-09	NA	1.4E-08	NA	2.4E-08	Liver	7.1E-05	NA	1.0E-04	1.7E-04
			Endosulfan II	NC	NA	NC	NA		Kidney	2.4E-06	NA	3.5E-06	5.9E-06
			Endosulfan sulfate	NC	NA	NC	NA		Kidney	1.8E-07	NA	2.5E-07	4.3E-07
			Endrin aldehyde	NC	NA	NC	NA		Nervous system	3.8E-06	NA	5.5E-06	9.3E-06
			Endrin Ketone	NC	NA	NC	NA		Nervous system	5.0E-06	NA	7.2E-06	1.2E-05
			gamma-Chlordane	4.0E-10	NA	2.3E-10	NA	6.3E-10	Liver	1.3E-05	NA	7.7E-06	2.1E-05
			Technical Chlordane	1.5E-08	NA	8.8E-09	NA	2.4E-08	Liver	5.1E-04	NA	2.9E-04	8.1E-04
			Antimony	NC	NA	NC	NA		Adverse clinical signs	4.7E-03	NA		4.7E-03
			Arsenic	5.9E-07	NA	2.5E-07	NA	8.4E-07	Skin	7.7E-03	NA	3.3E-03	1.1E-02
			Cadmium	NC	NA	NC	NA		Kidney	4.7E-04	NA	2.7E-04	7.5E-04
			Chromium	NC	NA	NC	NA		NOAEL	3.1E-02	NA		3.1E-02
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	3.0E-03	NA		3.0E-03
			Mercury	NC	NA	NC	NA		Immune system	1.3E-03	NA		1.3E-03
			Nickel	NC	NA	NC	NA		Developmental toxicity	5.3E-04	NA		5.3E-04
			Thallium	NC	NA	NC	NA		NOAEL	3.4E-02	NA		3.4E-02
			Vanadium	NC	NA	NC	NA		NOAEL	2.6E-03	NA		2.6E-03

US EPA ARCHIVE DOCUMENT

TABLE F.9.26.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Toxicity Equivalency (Dioxins/Furans) - Mam	5.8E-05	NA	2.5E-05	NA	8.3E-05		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	1.1E-09	NA	4.9E-10	NA	1.6E-09		--	NA	--	
			CHEMICAL TOTAL	6.3E-05	--	3.3E-05	--	1E-04		1.4E-01	0.0E+00	1.1E-01	3E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					3E-01
	EXPOSURE MEDIUM TOTAL							1E-04					3E-01
SEDIMENT TOTAL								1E-04					3E-01
SURFACE WATER	SURFACE WATER	ALLENDALE POND	Tetrachloroethene	5.1E-09	NA	4.2E-07	NA	4.3E-07	Liver	5.5E-06	NA	4.5E-04	4.6E-04
			bis(2-Ethylhexyl)phthalate	1.9E-10	NA	4.1E-08	NA	4.1E-08	Liver	4.0E-06	NA	8.5E-04	8.5E-04
			Aldrin	2.5E-09	NA	3.2E-08	NA	3.4E-08	Liver	2.9E-05	NA	3.6E-04	3.9E-04
			alpha-Chlordane	3.3E-12	NA	9.5E-10	NA	9.5E-10	Liver	1.1E-07	NA	3.2E-05	3.2E-05
			Aroclor-1254	1.6E-08	NA	--	NA	1.6E-08	Immune system	2.4E-03	NA	--	2.4E-03
			delta-BHC	NC	NA	NC	NA		Liver / Kidney	2.5E-06	NA	1.4E-04	1.4E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	5.7E-06	NA	--	5.7E-06
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	7.4E-07	NA	7.2E-05	7.3E-05
			gamma-Chlordane	1.2E-10	NA	3.4E-08	NA	3.4E-08	Liver	4.0E-06	NA	1.1E-03	1.1E-03
			Arsenic	9.0E-08	NA	1.1E-07	NA	2.0E-07	Skin	1.2E-03	NA	1.5E-03	2.6E-03
			Barium	NC	NA	NC	NA		Cardiovascular system	5.0E-05	NA	8.9E-04	9.4E-04
			Chromium	NC	NA	NC	NA		NOAEL	4.7E-04	NA	4.8E-02	4.8E-02
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	3.2E-03	NA	1.0E-01	1.0E-01
			Mercury	NC	NA	NC	NA		Immune system	8.4E-07	NA	1.5E-05	1.6E-05
			Thallium	NC	NA	NC	NA		NOAEL	3.7E-03	NA	4.6E-03	8.2E-03
			Nitrate	NC	NA	NC	NA		Hematological system	3.8E-05	NA	--	3.8E-05
			Nitrite-N	NC	NA	NC	NA		Hematological system	1.1E-04	NA	--	1.1E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.2E-06	NA	6.4E-03	NA	6.4E-03		--	NA	--	
			CHEMICAL TOTAL	2.4E-06	--	6.4E-03	--	6E-03		1.1E-02	0.0E+00	1.6E-01	2E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-03					2E-01
	EXPOSURE MEDIUM TOTAL							6E-03					2E-01
SURFACE WATER TOTAL								6E-03					2E-01
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.6E-05	NA	NA	4.6E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	5.7E-04	NA	NA	5.7E-04
			4,4'-DDD	1.1E-06	NA	NA	NA	1.1E-06	Liver	5.5E-02	NA	NA	5.5E-02
			4,4'-DDE	2.6E-06	NA	NA	NA	2.6E-06	Liver	8.8E-02	NA	NA	8.8E-02
			4,4'-DDT	1.1E-06	NA	NA	NA	1.1E-06	Liver	3.7E-02	NA	NA	3.7E-02
			alpha-Chlordane	2.4E-06	NA	NA	NA	2.4E-06	Liver	8.1E-02	NA	NA	8.1E-02
			Aroclor-1254	6.4E-04	NA	NA	NA	6.4E-04	Immune system	9.3E+01	NA	NA	9.3E+01
			Aroclor-1268	1.1E-05	NA	NA	NA	1.1E-05	Immune system	1.6E+00	NA	NA	1.6E+00

US EPA ARCHIVE DOCUMENT

TABLE F.9.26.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			beta-BHC	4.0E-07	NA	NA	NA	4.0E-07	Liver / Kidney	4.3E-03	NA	NA	4.3E-03
			Dieldrin	5.3E-05	NA	NA	NA	5.3E-05	Liver	3.8E-01	NA	NA	3.8E-01
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	5.5E-04	NA	NA	5.5E-04
			Endrin Aldehyde	NC	NA	NA	NA		Nervous system	7.0E-03	NA	NA	7.0E-03
			gamma-Chlordane	9.0E-07	NA	NA	NA	9.0E-07	Liver	3.0E-02	NA	NA	3.0E-02
			Heptachlor	1.1E-06	NA	NA	NA	1.1E-06	Liver	2.8E-03	NA	NA	2.8E-03
			Heptachlor Epoxide	4.9E-06	NA	NA	NA	4.9E-06	Liver	2.4E-01	NA	NA	2.4E-01
			Technical Chlordane	3.3E-05	NA	NA	NA	3.3E-05	Liver	1.1E+00	NA	NA	1.1E+00
			Cadmium	NC	NA	NA	NA		Kidney	2.0E-01	NA	NA	2.0E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	7.6E-02	NA	NA	7.6E-02
			Mercury	NC	NA	NA	NA		Immune system	1.1E+00	NA	NA	1.1E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.7E+00	NA	NA	5.7E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	6.0E-03	NA	NA	NA	6.0E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	2.3E-03	NA	NA	NA	2.3E-03		--	NA	NA	
			CHEMICAL TOTAL	9.0E-03	--	--	--	9E-03		1.0E+02	0.0E+00	--	1.0E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						9E-03					1.0E+02
	EXPOSURE MEDIUM TOTAL							9E-03					1.0E+02
WHOLE BODY TOTAL								9E-03					1.0E+02
RECEPTOR TOTAL								2E-02					1.0E+02
			TOTAL RISK ACROSS ALL MEDIA					2E-02	TOTAL HAZARD ACROSS ALL MEDIA				1.0E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL ADVERSE CLINICAL SIGNS HI =	4.7E-03
TOTAL CARDIOVASCULAR SYSTEM HI =	9.4E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	5.7E+00
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	--
TOTAL HEMATOLOGICAL SYSTEM HI =	1.5E-04
TOTAL IMMUNE SYSTEM HI =	9.5E+01
TOTAL KIDNEY HI =	2.1E-01
TOTAL LIVER HI =	2.0E+00
	--
TOTAL NERVOUS SYSTEM HI =	7.1E-03
TOTAL NOAEL HI =	3.1E-01
	--
TOTAL SKIN HI =	1.4E-02
	--

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.9.27.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	7.4E-05	NA	NA	7.4E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	9.2E-04	NA	NA	9.2E-04
			4,4'-DDD	9.2E-07	NA	NA	NA	9.2E-07	Liver	9.0E-02	NA	NA	9.0E-02
			4,4'-DDE	2.1E-06	NA	NA	NA	2.1E-06	Liver	1.4E-01	NA	NA	1.4E-01
			4,4'-DDT	8.9E-07	NA	NA	NA	8.9E-07	Liver	6.1E-02	NA	NA	6.1E-02
			alpha-Chlordane	2.0E-06	NA	NA	NA	2.0E-06	Liver	1.3E-01	NA	NA	1.3E-01
			Aroclor-1254	5.2E-04	NA	NA	NA	5.2E-04	Immune system	1.5E+02	NA	NA	1.5E+02
			Aroclor-1268	8.8E-06	NA	NA	NA	8.8E-06	Immune system	2.6E+00	NA	NA	2.6E+00
			beta-BHC	3.3E-07	NA	NA	NA	3.3E-07	Liver / Kidney	7.1E-03	NA	NA	7.1E-03
			Dieldrin	4.3E-05	NA	NA	NA	4.3E-05	Liver	6.2E-01	NA	NA	6.2E-01
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	9.0E-04	NA	NA	9.0E-04
			Endrin Aldehyde	NC	NA	NA	NA		Nervous system	1.1E-02	NA	NA	1.1E-02
			gamma-Chlordane	7.3E-07	NA	NA	NA	7.3E-07	Liver	4.9E-02	NA	NA	4.9E-02
			Heptachlor	8.9E-07	NA	NA	NA	8.9E-07	Liver	4.6E-03	NA	NA	4.6E-03
			Heptachlor Epoxide	4.0E-06	NA	NA	NA	4.0E-06	Liver	3.9E-01	NA	NA	3.9E-01
			Technical Chlordane	2.7E-05	NA	NA	NA	2.7E-05	Liver	1.8E+00	NA	NA	1.8E+00
			Cadmium	NC	NA	NA	NA		Kidney	3.3E-01	NA	NA	3.3E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	1.2E-01	NA	NA	1.2E-01
			Mercury	NC	NA	NA	NA		Immune system	1.7E+00	NA	NA	1.7E+00
			Mercury (methyl)	NC	NA	NA	NA		*Developmental toxicity*	9.2E+00	NA	NA	9.2E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.9E-03	NA	NA	NA	4.9E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	1.8E-03	NA	NA	NA	1.8E-03		--	NA	NA	
			CHEMICAL TOTAL	7.3E-03	--	--	--	7E-03		1.7E+02	0.0E+00	--	1.7E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-03					1.7E+02
	EXPOSURE MEDIUM TOTAL							7E-03					1.7E+02
WHOLE BODY TOTAL								7E-03					1.7E+02
RECEPTOR TOTAL								7E-03					1.7E+02
			TOTAL RISK ACROSS ALL MEDIA					7E-03	TOTAL HAZARD ACROSS ALL MEDIA				1.7E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	9.2E+00
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	--
	--
TOTAL IMMUNE SYSTEM HI =	1.6E+02
TOTAL KIDNEY HI =	3.4E-01
TOTAL LIVER HI =	3.3E+00
	--
TOTAL NERVOUS SYSTEM HI =	1.1E-02
TOTAL NOAEL HI =	1.2E-01
	--
	--
	--

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.9.28.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	ALLENDALE POND	2,3,7,8-TCDD	1.2E-05	NA	2.9E-06	NA	1.5E-05		--	NA	--	
			CHEMICAL TOTAL	1.2E-05	--	2.9E-06	--	2E-05		--	0.0E+00	--	0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-05					0E+00
	EXPOSURE MEDIUM TOTAL							2E-05					0E+00
SOIL TOTAL								2E-05					0E+00
SEDIMENT	SEDIMENT	ALLENDALE POND	2-Methylnaphthalene	NC	NA	NC	NA		Lung	1.7E-06	NA	1.5E-06	3.3E-06
			Acenaphthylene	NC	NA	NC	NA		Liver	4.1E-06	NA	3.6E-06	7.8E-06
			Benzo(a)anthracene	4.7E-07	NA	4.1E-07	NA	8.8E-07	Kidney	2.9E-05	NA	2.6E-05	5.4E-05
			Benzo(a)pyrene	5.5E-06	NA	4.9E-06	NA	1.0E-05	Kidney	3.4E-05	NA	3.0E-05	6.4E-05
			Benzo(b)fluoranthene	6.1E-07	NA	5.4E-07	NA	1.1E-06	Kidney	3.7E-05	NA	3.3E-05	7.0E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	1.7E-05	NA	1.5E-05	3.2E-05
			Benzo(k)fluoranthene	5.4E-08	NA	4.8E-08	NA	1.0E-07	Kidney	3.3E-05	NA	2.9E-05	6.2E-05
			bis(2-Ethylhexyl)phthalate	8.5E-09	NA	5.8E-09	NA	1.4E-08	Liver	4.1E-05	NA	2.8E-05	6.8E-05
			Dibenzo(a,h)anthracene	2.8E-06	NA	2.4E-06	NA	5.2E-06	Kidney	1.7E-05	NA	1.5E-05	3.2E-05
			Indeno(1,2,3-cd)pyrene	4.4E-07	NA	3.9E-07	NA	8.3E-07	Kidney	2.7E-05	NA	2.4E-05	5.1E-05
			Pentachlorophenol	1.5E-07	NA	2.5E-07	NA	4.0E-07	Liver / Kidney	5.5E-05	NA	9.4E-05	1.5E-04
			Phenanthrene	NC	NA	NC	NA		Kidney	4.1E-05	NA	3.6E-05	7.7E-05
			alpha-Chlordane	7.5E-10	NA	2.0E-10	NA	9.5E-10	Liver	5.7E-06	NA	1.6E-06	7.3E-06
			Aroclor-1254	9.1E-07	NA	8.6E-07	NA	1.8E-06	Immune system	3.1E-02	NA	2.9E-02	6.0E-02
			Aroclor-1260	7.6E-08	NA	7.2E-08	NA	1.5E-07	Immune system	2.5E-03	NA	2.4E-03	5.0E-03
			Aroclor-1268	3.0E-08	NA	2.8E-08	NA	5.8E-08	Immune system	1.0E-03	NA	9.6E-04	2.0E-03
			delta-BHC	NC	NA	NC	NA		Liver / Kidney	1.2E-06	NA	8.1E-07	2.0E-06
			Dieldrin	2.7E-08	NA	1.9E-08	NA	4.6E-08	Liver	4.6E-05	NA	3.1E-05	7.7E-05
			Endosulfan II	NC	NA	NC	NA		Kidney	1.6E-06	NA	1.1E-06	2.6E-06
			Endosulfan sulfate	NC	NA	NC	NA		Kidney	1.1E-07	NA	7.8E-08	1.9E-07
			Endrin aldehyde	NC	NA	NC	NA		Nervous system	2.5E-06	NA	1.7E-06	4.1E-06
			Endrin Ketone	NC	NA	NC	NA		Nervous system	3.2E-06	NA	2.2E-06	5.4E-06
			gamma-Chlordane	1.1E-09	NA	3.1E-10	NA	1.4E-09	Liver	8.6E-06	NA	2.4E-06	1.1E-05
			Technical Chlordane	4.3E-08	NA	1.2E-08	NA	5.5E-08	Liver	3.3E-04	NA	9.0E-05	4.2E-04
			Antimony	NC	NA	NC	NA		Adverse clinical signs	3.1E-03	NA		3.1E-03
			Arsenic	1.6E-06	NA	3.4E-07	NA	2.0E-06	Skin	4.9E-03	NA	1.0E-03	5.9E-03
			Cadmium	NC	NA	NC	NA		Kidney	3.1E-04	NA	8.3E-05	3.9E-04
			Chromium	NC	NA	NC	NA		NOAEL	2.0E-02	NA		2.0E-02
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	1.9E-03	NA		1.9E-03
			Mercury	NC	NA	NC	NA		Immune system	8.2E-04	NA		8.2E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	3.4E-04	NA		3.4E-04
			Thallium	NC	NA	NC	NA		NOAEL	2.2E-02	NA		2.2E-02
			Vanadium	NC	NA	NC	NA		NOAEL	1.7E-03	NA		1.7E-03

US EPA ARCHIVE DOCUMENT

TABLE F.9.28.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.6E-04	NA	3.3E-05	NA	1.9E-04		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	3.2E-09	NA	6.5E-10	NA	3.8E-09		--	NA	--	
			CHEMICAL TOTAL	1.7E-04	--	4.3E-05	--	2E-04		9.0E-02	0.0E+00	3.4E-02	1E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-04					1E-01
	EXPOSURE MEDIUM TOTAL							2E-04					1E-01
SEDIMENT TOTAL								2E-04					1E-01
SURFACE WATER	SURFACE WATER	ALLENDALE POND	Tetrachloroethene	1.4E-08	NA	1.6E-06	NA	1.6E-06	Liver	3.6E-06	NA	4.1E-04	4.1E-04
			bis(2-Ethylhexyl)phthalate	5.3E-10	NA	1.6E-07	NA	1.6E-07	Liver	2.5E-06	NA	7.6E-04	7.6E-04
			Aldrin	7.1E-09	NA	1.2E-07	NA	1.3E-07	Liver	1.9E-05	NA	3.2E-04	3.4E-04
			alpha-Chlordane	9.1E-12	NA	3.7E-09	NA	3.7E-09	Liver	7.0E-08	NA	2.8E-05	2.8E-05
			Aroclor-1254	4.5E-08	NA	--	NA	4.5E-08	Immune system	1.5E-03	NA	--	1.5E-03
			delta-BHC	NC	NA	NC	NA		Liver / Kidney	1.6E-06	NA	1.2E-04	1.2E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	3.6E-06	NA	--	3.6E-06
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	4.7E-07	NA	6.5E-05	6.5E-05
			gamma-Chlordane	3.3E-10	NA	1.3E-07	NA	1.3E-07	Liver	2.5E-06	NA	1.0E-03	1.0E-03
			Arsenic	2.5E-07	NA	4.3E-07	NA	6.8E-07	Skin	7.5E-04	NA	1.3E-03	2.0E-03
			Barium	NC	NA	NC	NA		Cardiovascular system	3.2E-05	NA	7.9E-04	8.3E-04
			Chromium	NC	NA	NC	NA		NOAEL	3.1E-04	NA	4.2E-02	4.3E-02
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	2.1E-03	NA	9.0E-02	9.2E-02
			Mercury	NC	NA	NC	NA		Immune system	5.4E-07	NA	1.3E-05	1.4E-05
			Thallium	NC	NA	NC	NA		NOAEL	2.4E-03	NA	4.1E-03	6.4E-03
			Nitrate	NC	NA	NC	NA		Hematological system	2.5E-05	NA	--	2.5E-05
			Nitrite-N	NC	NA	NC	NA		Hematological system	7.1E-05	NA	--	7.1E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	6.2E-06	NA	2.5E-02	NA	2.5E-02		--	NA	--	
			CHEMICAL TOTAL	6.6E-06	--	2.5E-02	--	2E-02		7.2E-03	0.0E+00	1.4E-01	1E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-02					1E-01
	EXPOSURE MEDIUM TOTAL							2E-02					1E-01
SURFACE WATER TOTAL								2E-02					1E-01
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	9.1E-05	NA	NA	9.1E-05
			Benzo(a)anthracene	2.4E-06	NA	NA	NA	2.4E-06	Kidney	1.5E-04	NA	NA	1.5E-04
			Benzo(a)pyrene	2.6E-05	NA	NA	NA	2.6E-05	Kidney	1.6E-04	NA	NA	1.6E-04
			Benzo(b)fluoranthene	2.7E-06	NA	NA	NA	2.7E-06	Kidney	1.7E-04	NA	NA	1.7E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	4.3E-05	NA	NA	4.3E-05
			Dibenzo(a,h)anthracene	4.4E-06	NA	NA	NA	4.4E-06	Kidney	2.7E-05	NA	NA	2.7E-05
			Indeno(1,2,3-cd)pyrene	8.7E-07	NA	NA	NA	8.7E-07	Kidney	5.3E-05	NA	NA	5.3E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	7.7E-04	NA	NA	7.7E-04
			4,4'-DDD	4.6E-06	NA	NA	NA	4.6E-06	Liver	5.1E-02	NA	NA	5.1E-02
			4,4'-DDE	1.5E-05	NA	NA	NA	1.5E-05	Liver	1.2E-01	NA	NA	1.2E-01

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TABLE F.9.28.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			4,4'-DDT	3.5E-06	NA	NA	NA	3.5E-06	Liver	2.8E-02	NA	NA	2.8E-02
			alpha-Chlordane	1.2E-05	NA	NA	NA	1.2E-05	Liver	9.6E-02	NA	NA	9.6E-02
			Aroclor-1254	8.7E-03	NA	NA	NA	8.7E-03	Immune system	2.9E+02	NA	NA	2.9E+02
			Aroclor-1268	1.2E-04	NA	NA	NA	1.2E-04	Immune system	3.9E+00	NA	NA	3.9E+00
			Dieldrin	2.1E-04	NA	NA	NA	2.1E-04	Liver	3.5E-01	NA	NA	3.5E-01
			gamma-Chlordane	4.7E-06	NA	NA	NA	4.7E-06	Liver	3.6E-02	NA	NA	3.6E-02
			Heptachlor Epoxide	9.6E-06	NA	NA	NA	9.6E-06	Liver	1.1E-01	NA	NA	1.1E-01
			Technical Chlordane	3.6E-04	NA	NA	NA	3.6E-04	Liver	2.7E+00	NA	NA	2.7E+00
			Chromium	NC	NA	NA	NA		NOAEL	7.6E-02	NA	NA	7.6E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	9.2E-01	NA	NA	9.2E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	3.0E+00	NA	NA	3.0E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.1E-01	NA	NA	NA	1.1E-01		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	4.9E-03	NA	NA	NA	4.9E-03		--	NA	NA	
			CHEMICAL TOTAL	1.3E-01	--	--	--	1E-01		3.0E+02	0.0E+00	--	3.0E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-01					3.0E+02
	EXPOSURE MEDIUM TOTAL							1E-01					3.0E+02
WHOLE BODY TOTAL								1E-01					3.0E+02
RECEPTOR TOTAL								2E-01					3.0E+02
			TOTAL RISK ACROSS ALL MEDIA					2E-01	TOTAL HAZARD ACROSS ALL MEDIA				3.0E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL ADVERSE CLINICAL SIGNS HI =	3.1E-03
TOTAL CARDIOVASCULAR SYSTEM HI =	8.3E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	3.0E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	9.5E-05
TOTAL IMMUNE SYSTEM HI =	3.0E+02
TOTAL KIDNEY HI =	2.5E-03
TOTAL LIVER HI =	3.5E+00
	--
TOTAL NERVOUS SYSTEM HI =	7.5E-05
TOTAL NOAEL HI =	2.6E-01
	--
TOTAL SKIN HI =	8.0E-03
	--

Prepared by: RAR
Checked by: KJA

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TABLE F.9.29.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	ALLENDALE POND	2,3,7,8-TCDD	4.4E-06	NA	2.5E-06	NA	6.9E-06		--	NA	--	
			CHEMICAL TOTAL	4.4E-06	--	2.5E-06	--	7E-06		--	0.0E+00	--	0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-06					0E+00
	EXPOSURE MEDIUM TOTAL							7E-06					0E+00
SOIL TOTAL								7E-06					0E+00
SEDIMENT	SEDIMENT	ALLENDALE POND	2-Methylnaphthalene	NC	NA	NC	NA		Lung	2.7E-06	NA	5.0E-06	7.7E-06
			Acenaphthylene	NC	NA	NC	NA		Liver	6.4E-06	NA	1.2E-05	1.8E-05
			Benzo(a)anthracene	1.7E-07	NA	3.1E-07	NA	4.8E-07	Kidney	4.5E-05	NA	8.3E-05	1.3E-04
			Benzo(a)pyrene	2.0E-06	NA	3.7E-06	NA	5.7E-06	Kidney	5.3E-05	NA	9.8E-05	1.5E-04
			Benzo(b)fluoranthene	2.2E-07	NA	4.0E-07	NA	6.2E-07	Kidney	5.8E-05	NA	1.1E-04	1.7E-04
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	2.6E-05	NA	4.9E-05	7.5E-05
			Benzo(k)fluoranthene	1.9E-08	NA	3.6E-08	NA	5.5E-08	Kidney	5.1E-05	NA	9.6E-05	1.5E-04
			bis(2-Ethylhexyl)phthalate	3.0E-09	NA	4.3E-09	NA	7.4E-09	Liver	6.3E-05	NA	9.1E-05	1.5E-04
			Dibenzo(a,h)anthracene	9.9E-07	NA	1.8E-06	NA	2.8E-06	Kidney	2.6E-05	NA	4.9E-05	7.5E-05
			Indeno(1,2,3-cd)pyrene	1.6E-07	NA	2.9E-07	NA	4.5E-07	Kidney	4.2E-05	NA	7.8E-05	1.2E-04
			Pentachlorophenol	5.3E-08	NA	1.9E-07	NA	2.4E-07	Liver / Kidney	8.6E-05	NA	3.1E-04	3.9E-04
			Phenanthrene	NC	NA	NC	NA		Kidney	6.3E-05	NA	1.2E-04	1.8E-04
			alpha-Chlordane	2.7E-10	NA	1.5E-10	NA	4.2E-10	Liver	8.9E-06	NA	5.1E-06	1.4E-05
			Aroclor-1254	3.3E-07	NA	6.5E-07	NA	9.8E-07	Immune system	4.7E-02	NA	9.5E-02	1.4E-01
			Aroclor-1260	2.7E-08	NA	5.4E-08	NA	8.1E-08	Immune system	4.0E-03	NA	7.9E-03	1.2E-02
			Aroclor-1268	1.1E-08	NA	2.1E-08	NA	3.2E-08	Immune system	1.6E-03	NA	3.1E-03	4.7E-03
			delta-BHC	NC	NA	NC	NA		Liver / Kidney	1.8E-06	NA	2.6E-06	4.5E-06
			Dieldrin	9.8E-09	NA	1.4E-08	NA	2.4E-08	Liver	7.1E-05	NA	1.0E-04	1.7E-04
			Endosulfan II	NC	NA	NC	NA		Kidney	2.4E-06	NA	3.5E-06	5.9E-06
			Endosulfan sulfate	NC	NA	NC	NA		Kidney	1.8E-07	NA	2.5E-07	4.3E-07
			Endrin aldehyde	NC	NA	NC	NA		Nervous system	3.8E-06	NA	5.5E-06	9.3E-06
			Endrin Ketone	NC	NA	NC	NA		Nervous system	5.0E-06	NA	7.2E-06	1.2E-05
			gamma-Chlordane	4.0E-10	NA	2.3E-10	NA	6.3E-10	Liver	1.3E-05	NA	7.7E-06	2.1E-05
			Technical Chlordane	1.5E-08	NA	8.8E-09	NA	2.4E-08	Liver	5.1E-04	NA	2.9E-04	8.1E-04
			Antimony	NC	NA	NC	NA		Adverse clinical signs	4.7E-03	NA		4.7E-03
			Arsenic	5.9E-07	NA	2.5E-07	NA	8.4E-07	Skin	7.7E-03	NA	3.3E-03	1.1E-02
			Cadmium	NC	NA	NC	NA		Kidney	4.7E-04	NA	2.7E-04	7.5E-04
			Chromium	NC	NA	NC	NA		NOAEL	3.1E-02	NA		3.1E-02
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	3.0E-03	NA		3.0E-03
			Mercury	NC	NA	NC	NA		Immune system	1.3E-03	NA		1.3E-03
			Nickel	NC	NA	NC	NA		Developmental toxicity	5.3E-04	NA		5.3E-04
			Thallium	NC	NA	NC	NA		NOAEL	3.4E-02	NA		3.4E-02
			Vanadium	NC	NA	NC	NA		NOAEL	2.6E-03	NA		2.6E-03

US EPA ARCHIVE DOCUMENT

TABLE F.9.29.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Toxicity Equivalency (Dioxins/Furans) - Mam	5.8E-05	NA	2.5E-05	NA	8.3E-05		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	1.1E-09	NA	4.9E-10	NA	1.6E-09		--	NA	--	
			CHEMICAL TOTAL	6.3E-05	--	3.3E-05	--	1E-04		1.4E-01	0.0E+00	1.1E-01	3E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					3E-01
	EXPOSURE MEDIUM TOTAL							1E-04					3E-01
SEDIMENT TOTAL								1E-04					3E-01
SURFACE WATER	SURFACE WATER	ALLENDALE POND	Tetrachloroethene	5.1E-09	NA	4.2E-07	NA	4.3E-07	Liver	5.5E-06	NA	4.5E-04	4.6E-04
			bis(2-Ethylhexyl)phthalate	1.9E-10	NA	4.1E-08	NA	4.1E-08	Liver	4.0E-06	NA	8.5E-04	8.5E-04
			Aldrin	2.5E-09	NA	3.2E-08	NA	3.4E-08	Liver	2.9E-05	NA	3.6E-04	3.9E-04
			alpha-Chlordane	3.3E-12	NA	9.5E-10	NA	9.5E-10	Liver	1.1E-07	NA	3.2E-05	3.2E-05
			Aroclor-1254	1.6E-08	NA	--	NA	1.6E-08	Immune system	2.4E-03	NA	--	2.4E-03
			delta-BHC	NC	NA	NC	NA		Liver / Kidney	2.5E-06	NA	1.4E-04	1.4E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	5.7E-06	NA	--	5.7E-06
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	7.4E-07	NA	7.2E-05	7.3E-05
			gamma-Chlordane	1.2E-10	NA	3.4E-08	NA	3.4E-08	Liver	4.0E-06	NA	1.1E-03	1.1E-03
			Arsenic	9.0E-08	NA	1.1E-07	NA	2.0E-07	Skin	1.2E-03	NA	1.5E-03	2.6E-03
			Barium	NC	NA	NC	NA		Cardiovascular system	5.0E-05	NA	8.9E-04	9.4E-04
			Chromium	NC	NA	NC	NA		NOAEL	4.7E-04	NA	4.8E-02	4.8E-02
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	3.2E-03	NA	1.0E-01	1.0E-01
			Mercury	NC	NA	NC	NA		Immune system	8.4E-07	NA	1.5E-05	1.6E-05
			Thallium	NC	NA	NC	NA		NOAEL	3.7E-03	NA	4.6E-03	8.2E-03
			Nitrate	NC	NA	NC	NA		Hematological system	3.8E-05	NA	--	3.8E-05
			Nitrite-N	NC	NA	NC	NA		Hematological system	1.1E-04	NA	--	1.1E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.2E-06	NA	6.4E-03	NA	6.4E-03		--	NA	--	
			CHEMICAL TOTAL	2.4E-06	--	6.4E-03	--	6E-03		1.1E-02	0.0E+00	1.6E-01	2E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-03					2E-01
	EXPOSURE MEDIUM TOTAL							6E-03					2E-01
SURFACE WATER TOTAL								6E-03					2E-01
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	9.4E-05	NA	NA	9.4E-05
			Benzo(a)anthracene	5.8E-07	NA	NA	NA	5.8E-07	Kidney	1.5E-04	NA	NA	1.5E-04
			Benzo(a)pyrene	6.3E-06	NA	NA	NA	6.3E-06	Kidney	1.7E-04	NA	NA	1.7E-04
			Benzo(b)fluoranthene	6.6E-07	NA	NA	NA	6.6E-07	Kidney	1.8E-04	NA	NA	1.8E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	4.4E-05	NA	NA	4.4E-05
			Dibenzo(a,h)anthracene	1.1E-06	NA	NA	NA	1.1E-06	Kidney	2.8E-05	NA	NA	2.8E-05
			Indeno(1,2,3-cd)pyrene	2.1E-07	NA	NA	NA	2.1E-07	Kidney	5.5E-05	NA	NA	5.5E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	8.0E-04	NA	NA	8.0E-04
			4,4'-DDD	1.1E-06	NA	NA	NA	1.1E-06	Liver	5.3E-02	NA	NA	5.3E-02
			4,4'-DDE	3.5E-06	NA	NA	NA	3.5E-06	Liver	1.2E-01	NA	NA	1.2E-01

US EPA ARCHIVE DOCUMENT

TABLE F.9.29.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			4,4'-DDT	8.4E-07	NA	NA	NA	8.4E-07	Liver	2.9E-02	NA	NA	2.9E-02
			alpha-Chlordane	3.0E-06	NA	NA	NA	3.0E-06	Liver	9.9E-02	NA	NA	9.9E-02
			Aroclor-1254	2.1E-03	NA	NA	NA	2.1E-03	Immune system	3.0E+02	NA	NA	3.0E+02
			Aroclor-1268	2.8E-05	NA	NA	NA	2.8E-05	Immune system	4.0E+00	NA	NA	4.0E+00
			Dieldrin	5.0E-05	NA	NA	NA	5.0E-05	Liver	3.6E-01	NA	NA	3.6E-01
			gamma-Chlordane	1.1E-06	NA	NA	NA	1.1E-06	Liver	3.7E-02	NA	NA	3.7E-02
			Heptachlor Epoxide	2.3E-06	NA	NA	NA	2.3E-06	Liver	1.1E-01	NA	NA	1.1E-01
			Technical Chlordane	8.5E-05	NA	NA	NA	8.5E-05	Liver	2.8E+00	NA	NA	2.8E+00
			Chromium	NC	NA	NA	NA		NOAEL	7.8E-02	NA	NA	7.8E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	9.5E-01	NA	NA	9.5E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	3.1E+00	NA	NA	3.1E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.7E-02	NA	NA	NA	2.7E-02		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	1.2E-03	NA	NA	NA	1.2E-03		--	NA	NA	
			CHEMICAL TOTAL	3.0E-02	--	--	--	3E-02		3.2E+02	0.0E+00	--	3.2E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-02					3.2E+02
	EXPOSURE MEDIUM TOTAL							3E-02					3.2E+02
WHOLE BODY TOTAL								3E-02					3.2E+02
RECEPTOR TOTAL								4E-02					3.2E+02
			TOTAL RISK ACROSS ALL MEDIA					4E-02	TOTAL HAZARD ACROSS ALL MEDIA				3.2E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL ADVERSE CLINICAL SIGNS HI =	4.7E-03
TOTAL CARDIOVASCULAR SYSTEM HI =	9.4E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	3.1E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	1.5E-04
TOTAL IMMUNE SYSTEM HI =	3.1E+02
TOTAL KIDNEY HI =	3.8E-03
TOTAL LIVER HI =	3.7E+00
	--
TOTAL NERVOUS SYSTEM HI =	9.5E-05
TOTAL NOAEL HI =	3.1E-01
	--
TOTAL SKIN HI =	1.4E-02
	--

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.9.30.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.5E-04	NA	NA	1.5E-04
			Benzo(a)anthracene	4.7E-07	NA	NA	NA	4.7E-07	Kidney	2.5E-04	NA	NA	2.5E-04
			Benzo(a)pyrene	5.1E-06	NA	NA	NA	5.1E-06	Kidney	2.7E-04	NA	NA	2.7E-04
			Benzo(b)fluoranthene	5.4E-07	NA	NA	NA	5.4E-07	Kidney	2.9E-04	NA	NA	2.9E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	7.2E-05	NA	NA	7.2E-05
			Dibenzo(a,h)anthracene	8.6E-07	NA	NA	NA	8.6E-07	Kidney	4.6E-05	NA	NA	4.6E-05
			Indeno(1,2,3-cd)pyrene	1.7E-07	NA	NA	NA	1.7E-07	Kidney	9.0E-05	NA	NA	9.0E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.3E-03	NA	NA	1.3E-03
			4,4'-DDD	8.9E-07	NA	NA	NA	8.9E-07	Liver	8.6E-02	NA	NA	8.6E-02
			4,4'-DDE	2.9E-06	NA	NA	NA	2.9E-06	Liver	2.0E-01	NA	NA	2.0E-01
			4,4'-DDT	6.8E-07	NA	NA	NA	6.8E-07	Liver	4.7E-02	NA	NA	4.7E-02
			alpha-Chlordane	2.4E-06	NA	NA	NA	2.4E-06	Liver	1.6E-01	NA	NA	1.6E-01
			Aroclor-1254	1.7E-03	NA	NA	NA	1.7E-03	Immune system	4.9E+02	NA	NA	4.9E+02
			Aroclor-1268	2.3E-05	NA	NA	NA	2.3E-05	Immune system	6.6E+00	NA	NA	6.6E+00
			Dieldrin	4.1E-05	NA	NA	NA	4.1E-05	Liver	5.9E-01	NA	NA	5.9E-01
			gamma-Chlordane	9.1E-07	NA	NA	NA	9.1E-07	Liver	6.1E-02	NA	NA	6.1E-02
			Heptachlor Epoxide	1.9E-06	NA	NA	NA	1.9E-06	Liver	1.8E-01	NA	NA	1.8E-01
			Technical Chlordane	6.9E-05	NA	NA	NA	6.9E-05	Liver	4.6E+00	NA	NA	4.6E+00
			Chromium	NC	NA	NA	NA		NOAEL	1.3E-01	NA	NA	1.3E-01
			Lead	--	NA	NA	NA		--	--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.6E+00	NA	NA	1.6E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.0E+00	NA	NA	5.0E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.2E-02	NA	NA	NA	2.2E-02		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	9.5E-04	NA	NA	NA	9.5E-04		--	NA	NA	
			CHEMICAL TOTAL	2.4E-02	--	--	--	2E-02		5.1E+02	0.0E+00	--	5.1E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-02					5.1E+02
	EXPOSURE MEDIUM TOTAL							2E-02					5.1E+02
WHOLE BODY TOTAL								2E-02					5.1E+02
RECEPTOR TOTAL								2E-02					5.1E+02
			TOTAL RISK ACROSS ALL MEDIA					2E-02	TOTAL HAZARD ACROSS ALL MEDIA				5.1E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	5.0E+00
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	--
TOTAL IMMUNE SYSTEM HI =	5.0E+02
TOTAL KIDNEY HI =	2.3E-03
TOTAL LIVER HI =	5.9E+00
	--
	--
TOTAL NOAEL HI =	1.3E-01
	--
	--
	--

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.9.3I.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	LYMAN MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	1.3E-06	NA	1.1E-06	2.4E-06
			4-Chloro-3-methylphenol	NC	NA	NC	NA		Reproductive system	6.6E-05	NA	4.5E-05	1.1E-04
			4-Nitrophenol	NC	NA	NC	NA			--	NA	--	
			Acenaphthylene	NC	NA	NC	NA		Liver	1.8E-06	NA	1.6E-06	3.4E-06
			Benzo(a)anthracene	3.9E-07	NA	3.4E-07	NA	7.3E-07	Kidney	2.4E-05	NA	2.1E-05	4.5E-05
			Benzo(a)pyrene	4.0E-06	NA	3.5E-06	NA	7.5E-06	Kidney	2.5E-05	NA	2.2E-05	4.6E-05
			Benzo(b)fluoranthene	6.2E-07	NA	5.5E-07	NA	1.2E-06	Kidney	3.8E-05	NA	3.4E-05	7.2E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	2.5E-05	NA	2.3E-05	4.8E-05
			Benzo(k)fluoranthene	2.9E-08	NA	2.6E-08	NA	5.5E-08	Kidney	1.8E-05	NA	1.6E-05	3.4E-05
			bis(2-Ethylhexyl)phthalate	1.4E-08	NA	9.4E-09	NA	2.3E-08	Liver	6.6E-05	NA	4.5E-05	1.1E-04
			Dibenzo(a,h)anthracene	1.5E-06	NA	1.3E-06	NA	2.8E-06	Kidney	9.1E-06	NA	8.0E-06	1.7E-05
			Indeno(1,2,3-cd)pyrene	3.7E-07	NA	3.3E-07	NA	7.0E-07	Kidney	2.3E-05	NA	2.0E-05	4.3E-05
			N-Nitroso-di-n-propylamine	1.7E-06	NA	1.2E-06	NA	2.9E-06		--	NA	--	
			Pentachlorophenol	3.2E-08	NA	5.4E-08	NA	8.6E-08	Liver / Kidney	1.2E-05	NA	2.0E-05	3.2E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	2.4E-05	NA	2.1E-05	4.5E-05
			alpha-Chlordane	2.1E-09	NA	5.8E-10	NA	2.7E-09	Liver	1.6E-05	NA	4.4E-06	2.1E-05
			Aroclor-1254	1.9E-07	NA	1.8E-07	NA	3.6E-07	Immune system	6.2E-03	NA	5.9E-03	1.2E-02
			Aroclor-1260	1.0E-08	NA	9.7E-09	NA	2.0E-08	Immune system	3.4E-04	NA	3.3E-04	6.7E-04
			Aroclor-1268	1.2E-07	NA	1.1E-07	NA	2.3E-07	Immune system	4.0E-03	NA	3.8E-03	7.8E-03
			Dieldrin	1.3E-08	NA	9.1E-09	NA	2.2E-08	Liver	2.2E-05	NA	1.5E-05	3.8E-05
			Endosulfan II	NC	NA	NC	NA		Kidney	2.1E-07	NA	1.4E-07	3.6E-07
			Endosulfan sulfate	NC	NA	NC	NA		Kidney	1.2E-07	NA	8.4E-08	2.1E-07
			gamma-Chlordane	9.9E-10	NA	2.7E-10	NA	1.3E-09	Liver	7.6E-06	NA	2.1E-06	9.7E-06
			Technical Chlordane	1.5E-07	NA	4.0E-08	NA	1.9E-07	Liver	1.1E-03	NA	3.1E-04	1.4E-03
			Antimony	NC	NA	NC	NA		Adverse clinical signs	2.0E-03	NA		2.0E-03
			Arsenic	1.8E-06	NA	3.7E-07	NA	2.2E-06	Skin	5.4E-03	NA	1.1E-03	6.5E-03
			Cadmium	NC	NA	NC	NA		Kidney	5.3E-04	NA	1.5E-04	6.8E-04
			Chromium	NC	NA	NC	NA		NOAEL	1.7E-02	NA		1.7E-02
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	3.0E-03	NA		3.0E-03
			Mercury	NC	NA	NC	NA		Immune system	5.3E-04	NA		5.3E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	8.8E-04	NA		8.8E-04
			Thallium	NC	NA	NC	NA		NOAEL	1.8E-03	NA		1.8E-03
			Vanadium	NC	NA	NC	NA		NOAEL	1.5E-03	NA		1.5E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.3E-04	NA	4.7E-05	NA	2.8E-04		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	1.8E-06	NA	3.8E-07	NA	2.2E-06		--	NA	--	
			CHEMICAL TOTAL	2.4E-04	--	5.5E-05	--	3E-04		4.5E-02	0.0E+00	1.2E-02	6E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-04					6E-02
	EXPOSURE MEDIUM TOTAL							3E-04					6E-02
SEDIMENT TOTAL								3E-04					6E-02
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	Acenaphthylene	NC	NA	NC	NA		Liver	1.1E-09	NA	--	1.1E-09
			bis(2-Ethylhexyl)phthalate	9.0E-09	NA	2.7E-06	NA	2.7E-06	Liver	4.3E-05	NA	1.3E-02	1.3E-02
			Aldrin	1.5E-08	NA	2.6E-07	NA	2.7E-07	Liver	3.9E-05	NA	6.7E-04	7.1E-04
			alpha-Chlordane	2.5E-10	NA	1.0E-07	NA	1.0E-07	Liver	1.9E-06	NA	7.8E-04	7.8E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	2.7E-08	NA	--	2.7E-08
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	8.5E-07	NA	1.2E-04	1.2E-04
			gamma-Chlordane	2.8E-10	NA	1.1E-07	NA	1.1E-07	Liver	2.1E-06	NA	8.6E-04	8.6E-04
			Arsenic	2.6E-07	NA	4.5E-07	NA	7.1E-07	Skin	7.8E-04	NA	1.4E-03	2.1E-03
			Barium	NC	NA	NC	NA		Cardiovascular system	1.5E-05	NA	3.8E-04	3.9E-04

US EPA ARCHIVE DOCUMENT

TABLE F.9.31.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Chromium	NC	NA	NC	NA		NOAEL	3.9E-05	NA	5.4E-03	5.5E-03
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	2.8E-04	NA	1.2E-02	1.2E-02
			Mercury	NC	NA	NC	NA		Immune system	6.7E-07	NA	1.7E-05	1.7E-05
			Thallium	NC	NA	NC	NA		NOAEL	1.4E-03	NA	2.4E-03	3.8E-03
			Nitrate	NC	NA	NC	NA		Hematological system	2.4E-05	NA	--	2.4E-05
			Nitrite-N	NC	NA	NC	NA		Hematological system	4.4E-05	NA	--	4.4E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.9E-06	NA	1.9E-02	NA	1.9E-02		--	NA	--	
			CHEMICAL TOTAL	5.2E-06	--	1.9E-02	--	2E-02		2.7E-03	0.0E+00	3.7E-02	4E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-02					4E-02
	EXPOSURE MEDIUM TOTAL							2E-02					4E-02
SURFACE WATER TOTAL								2E-02					4E-02
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	6.5E-05	NA	NA	6.5E-05
			Benzo(a)pyrene	1.1E-05	NA	NA	NA	1.1E-05	Kidney	6.5E-05	NA	NA	6.5E-05
			Benzo(b)fluoranthene	1.3E-06	NA	NA	NA	1.3E-06	Kidney	8.0E-05	NA	NA	8.0E-05
			Dibenzo(a,h)anthracene	7.1E-06	NA	NA	NA	7.1E-06	Kidney	4.4E-05	NA	NA	4.4E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.4E-03	NA	NA	1.4E-03
			4,4'-DDD	5.3E-06	NA	NA	NA	5.3E-06	Liver	6.0E-02	NA	NA	6.0E-02
			4,4'-DDE	2.3E-05	NA	NA	NA	2.3E-05	Liver	1.8E-01	NA	NA	1.8E-01
			4,4'-DDT	1.7E-06	NA	NA	NA	1.7E-06	Liver	1.4E-02	NA	NA	1.4E-02
			alpha-Chlordane	1.1E-05	NA	NA	NA	1.1E-05	Liver	8.1E-02	NA	NA	8.1E-02
			Aroclor-1254	2.9E-03	NA	NA	NA	2.9E-03	Immune system	9.7E+01	NA	NA	9.7E+01
			beta-BHC	4.9E-06	NA	NA	NA	4.9E-06	Liver / Kidney	1.2E-02	NA	NA	1.2E-02
			Dieldrin	1.9E-04	NA	NA	NA	1.9E-04	Liver	3.2E-01	NA	NA	3.2E-01
			gamma-Chlordane	4.5E-06	NA	NA	NA	4.5E-06	Liver	3.5E-02	NA	NA	3.5E-02
			Heptachlor Epoxide	3.1E-05	NA	NA	NA	3.1E-05	Liver	3.5E-01	NA	NA	3.5E-01
			Technical Chlordane	2.4E-04	NA	NA	NA	2.4E-04	Liver	1.8E+00	NA	NA	1.8E+00
			Cadmium	NC	NA	NA	NA		Kidney	5.3E-02	NA	NA	5.3E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	7.2E-02	NA	NA	7.2E-02
			Mercury	NC	NA	NA	NA		Immune system	2.4E-01	NA	NA	2.4E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	7.4E-01	NA	NA	7.4E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.1E-02	NA	NA	NA	4.1E-02		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	1.4E-02	NA	NA	NA	1.4E-02		--	NA	NA	
			CHEMICAL TOTAL	5.8E-02	--	--	--	6E-02		1.0E+02	0.0E+00	--	1.0E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-02					1.0E+02
	EXPOSURE MEDIUM TOTAL							6E-02					1.0E+02
WHOLE BODY TOTAL								6E-02					1.0E+02
RECEPTOR TOTAL								8E-02					1.0E+02
							TOTAL RISK ACROSS ALL MEDIA	8E-02	TOTAL HAZARD ACROSS ALL MEDIA				1.0E+02

US EPA ARCHIVE DOCUMENT

TABLE F.9.31.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

TOTAL ADVERSE CLINICAL SIGNS HI =	2.0E-03
TOTAL CARDIOVASCULAR SYSTEM HI =	4.0E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	7.4E-01
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TOTAL HEMATOLOGICAL SYSTEM HI =	6.8E-05
TOTAL IMMUNE SYSTEM HI =	9.7E+01
TOTAL KIDNEY HI =	6.7E-02
TOTAL LIVER HI =	2.9E+00
	--
TOTAL NERVOUS SYSTEM HI =	1.2E-04
TOTAL NOAEL HI =	1.2E-01
TOTAL REPRODUCTIVE SYSTEM HI =	1.1E-04
TOTAL SKIN HI =	8.7E-03
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US EPA ARCHIVE DOCUMENT

TABLE 9.32.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	LYMAN MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	2.0E-06	NA	3.7E-06	5.7E-06
			4-Chloro-3-methylphenol	NC	NA	NC	NA		Reproductive system	1.0E-04	NA	1.5E-04	2.5E-04
			4-Nitrophenol	NC	NA	NC	NA			--	NA	--	
			Acenaphthylene	NC	NA	NC	NA		Liver	2.8E-06	NA	5.3E-06	8.1E-06
			Benzo(a)anthracene	1.4E-07	NA	2.6E-07	NA	4.0E-07	Kidney	3.7E-05	NA	6.9E-05	1.1E-04
			Benzo(a)pyrene	1.4E-06	NA	2.7E-06	NA	4.1E-06	Kidney	3.8E-05	NA	7.1E-05	1.1E-04
			Benzo(b)fluoranthene	2.2E-07	NA	4.1E-07	NA	6.4E-07	Kidney	5.9E-05	NA	1.1E-04	1.7E-04
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	4.0E-05	NA	7.4E-05	1.1E-04
			Benzo(k)fluoranthene	1.0E-08	NA	1.9E-08	NA	3.0E-08	Kidney	2.8E-05	NA	5.1E-05	7.9E-05
			bis(2-Ethylhexyl)phthalate	4.9E-09	NA	7.1E-09	NA	1.2E-08	Liver	1.0E-04	NA	1.5E-04	2.5E-04
			Dibenzo(a,h)anthracene	5.3E-07	NA	9.8E-07	NA	1.5E-06	Kidney	1.4E-05	NA	2.6E-05	4.0E-05
			Indeno(1,2,3-cd)pyrene	1.3E-07	NA	2.5E-07	NA	3.8E-07	Kidney	3.6E-05	NA	6.6E-05	1.0E-04
			N-Nitroso-di-n-propylamine	6.2E-07	NA	8.8E-07	NA	1.5E-06		--	NA	--	
			Pentachlorophenol	1.1E-08	NA	4.1E-08	NA	5.2E-08	Liver / Kidney	1.8E-05	NA	6.6E-05	8.4E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	3.7E-05	NA	6.9E-05	1.1E-04
			alpha-Chlordane	7.6E-10	NA	4.3E-10	NA	1.2E-09	Liver	2.5E-05	NA	1.4E-05	4.0E-05
			Aroclor-1254	6.6E-08	NA	1.3E-07	NA	2.0E-07	*Immune system*	9.7E-03	NA	1.9E-02	2.9E-02
			Aroclor-1260	3.7E-09	NA	7.3E-09	NA	1.1E-08	Immune system	5.3E-04	NA	1.1E-03	1.6E-03
			Aroclor-1268	4.3E-08	NA	8.5E-08	NA	1.3E-07	Immune system	6.2E-03	NA	1.2E-02	1.9E-02
			Dieldrin	4.8E-09	NA	6.8E-09	NA	1.2E-08	Liver	3.5E-05	NA	5.0E-05	8.5E-05
			Endosulfan II	NC	NA	NC	NA		Kidney	3.3E-07	NA	4.7E-07	8.0E-07
			Endosulfan sulfate	NC	NA	NC	NA		Kidney	1.9E-07	NA	2.7E-07	4.6E-07
			gamma-Chlordane	3.6E-10	NA	2.0E-10	NA	5.6E-10	Liver	1.2E-05	NA	6.8E-06	1.9E-05
			Technical Chlordane	5.3E-08	NA	3.0E-08	NA	8.3E-08	Liver	1.8E-03	NA	1.0E-03	2.8E-03
			Antimony	NC	NA	NC	NA		Adverse clinical signs	3.1E-03	NA		3.1E-03
			Arsenic	6.5E-07	NA	2.8E-07	NA	9.3E-07	Skin	8.4E-03	NA	3.6E-03	1.2E-02
			Cadmium	NC	NA	NC	NA		Kidney	8.3E-04	NA	4.8E-04	1.3E-03
			Chromium	NC	NA	NC	NA		NOAEL	2.6E-02	NA		2.6E-02
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	4.7E-03	NA		4.7E-03
			Mercury	NC	NA	NC	NA		Immune system	8.2E-04	NA		8.2E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	1.4E-03	NA		1.4E-03
			Thallium	NC	NA	NC	NA		NOAEL	2.9E-03	NA		2.9E-03
			Vanadium	NC	NA	NC	NA		NOAEL	2.4E-03	NA		2.4E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	8.2E-05	NA	3.5E-05	NA	1.2E-04		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	6.6E-07	NA	2.8E-07	NA	9.4E-07		--	NA	--	
			CHEMICAL TOTAL	8.7E-05	--	4.2E-05	--	1E-04		7.0E-02	0.0E+00	3.9E-02	1E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					1E-01
	EXPOSURE MEDIUM TOTAL							1E-04					1E-01
SEDIMENT TOTAL								1E-04					1E-01
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	Acenaphthylene	NC	NA	NC	NA		Liver	1.7E-09	NA	--	1.7E-09
			bis(2-Ethylhexyl)phthalate	3.2E-09	NA	6.9E-07	NA	7.0E-07	Liver	6.7E-05	NA	1.4E-02	1.5E-02
			Aldrin	5.3E-09	NA	6.6E-08	NA	7.1E-08	Liver	6.1E-05	NA	7.5E-04	8.1E-04
			alpha-Chlordane	9.0E-11	NA	2.6E-08	NA	2.6E-08	Liver	3.0E-06	NA	8.7E-04	8.7E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	4.2E-08	NA	--	4.2E-08
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	1.3E-06	NA	1.3E-04	1.3E-04
			gamma-Chlordane	1.0E-10	NA	2.9E-08	NA	2.9E-08	Liver	3.3E-06	NA	9.6E-04	9.7E-04
			Arsenic	9.4E-08	NA	1.2E-07	NA	2.1E-07	Skin	1.2E-03	NA	1.5E-03	2.7E-03
			Barium	NC	NA	NC	NA		Cardiovascular system	2.4E-05	NA	4.2E-04	4.5E-04

US EPA ARCHIVE DOCUMENT

TABLE 9.32.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Chromium	NC	NA	NC	NA		NOAEL	6.1E-05	NA	6.1E-03	6.1E-03
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	4.3E-04	NA	1.3E-02	1.4E-02
			Mercury	NC	NA	NC	NA		Immune system	1.0E-06	NA	1.9E-05	2.0E-05
			Thallium	NC	NA	NC	NA		NOAEL	2.2E-03	NA	2.7E-03	4.9E-03
			Nitrate	NC	NA	NC	NA		Hematological system	3.8E-05	NA	--	3.8E-05
			Nitrite-N	NC	NA	NC	NA		Hematological system	6.8E-05	NA	--	6.8E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.8E-06	NA	5.0E-03	NA	5.0E-03		--	NA	--	
			CHEMICAL TOTAL	1.9E-06	--	5.0E-03	--	5E-03		4.1E-03	0.0E+00	4.1E-02	5E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-03					5E-02
	EXPOSURE MEDIUM TOTAL							5E-03					5E-02
SURFACE WATER TOTAL								5E-03					5E-02
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.4E-05	NA	NA	1.4E-05
			Benzo(a)pyrene	1.9E-06	NA	NA	NA	1.9E-06	Kidney	4.9E-05	NA	NA	4.9E-05
			Benzo(b)fluoranthene	2.1E-07	NA	NA	NA	2.1E-07	Kidney	5.6E-05	NA	NA	5.6E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	4.9E-05	NA	NA	4.9E-05
			Dibenzo(a,h)anthracene	1.0E-06	NA	NA	NA	1.0E-06	Kidney	2.7E-05	NA	NA	2.7E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	9.8E-05	NA	NA	9.8E-05
			4,4'-DDE	1.3E-06	NA	NA	NA	1.3E-06	Liver	4.4E-02	NA	NA	4.4E-02
			alpha-Chlordane	2.5E-07	NA	NA	NA	2.5E-07	Liver	8.4E-03	NA	NA	8.4E-03
			Aroclor-1254	1.6E-04	NA	NA	NA	1.6E-04	Immune system	2.3E+01	NA	NA	2.3E+01
			Aroclor-1268	9.1E-06	NA	NA	NA	9.1E-06	Immune system	1.3E+00	NA	NA	1.3E+00
			Dieldrin	3.5E-06	NA	NA	NA	3.5E-06	Liver	2.6E-02	NA	NA	2.6E-02
			gamma-Chlordane	1.1E-07	NA	NA	NA	1.1E-07	Liver	3.6E-03	NA	NA	3.6E-03
			Technical Chlordane	4.6E-06	NA	NA	NA	4.6E-06	Liver	1.5E-01	NA	NA	1.5E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.9E+00	NA	NA	1.9E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.0E+00	NA	NA	5.0E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.7E-03	NA	NA	NA	1.7E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	5.9E-04	NA	NA	NA	5.9E-04		--	NA	NA	
			CHEMICAL TOTAL	2.5E-03	--	--	--	2E-03		3.1E+01	0.0E+00	--	3E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-03					3E+01
	EXPOSURE MEDIUM TOTAL							2E-03					3E+01
FILLET TOTAL								2E-03					3E+01
RECEPTOR TOTAL								8E-03					3.1E+01
							TOTAL RISK ACROSS ALL MEDIA	8E-03	TOTAL HAZARD ACROSS ALL MEDIA				3.1E+01

US EPA ARCHIVE DOCUMENT

TABLE 9.32.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

TOTAL ADVERSE CLINICAL SIGNS HI =	3.1E-03
TOTAL CARDIOVASCULAR SYSTEM HI =	4.5E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	5.0E+00
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	--
TOTAL HEMATOLOGICAL SYSTEM HI =	1.1E-04
TOTAL IMMUNE SYSTEM HI =	2.6E+01
TOTAL KIDNEY HI =	2.5E-03
TOTAL LIVER HI =	2.6E-01
	--
TOTAL NERVOUS SYSTEM HI =	1.3E-04
TOTAL NOAEL HI =	6.1E-02
TOTAL REPRODUCTIVE SYSTEM HI =	2.5E-04
TOTAL SKIN HI =	1.5E-02
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US EPA ARCHIVE DOCUMENT

TABLE F.9.33.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.1E-04	NA	NA	1.1E-04
			Benzo(a)pyrene	2.1E-06	NA	NA	NA	2.1E-06	Kidney	1.1E-04	NA	NA	1.1E-04
			Benzo(b)fluoranthene	2.5E-07	NA	NA	NA	2.5E-07	Kidney	1.4E-04	NA	NA	1.4E-04
			Dibenzo(a,h)anthracene	1.4E-06	NA	NA	NA	1.4E-06	Kidney	7.4E-05	NA	NA	7.4E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	2.3E-03	NA	NA	2.3E-03
			4,4'-DDD	1.0E-06	NA	NA	NA	1.0E-06	Liver	1.0E-01	NA	NA	1.0E-01
			4,4'-DDE	4.4E-06	NA	NA	NA	4.4E-06	Liver	3.0E-01	NA	NA	3.0E-01
			4,4'-DDT	3.4E-07	NA	NA	NA	3.4E-07	Liver	2.3E-02	NA	NA	2.3E-02
			alpha-Chlordane	2.1E-06	NA	NA	NA	2.1E-06	Liver	1.4E-01	NA	NA	1.4E-01
			Aroclor-1254	5.6E-04	NA	NA	NA	5.6E-04	Immune system	1.6E+02	NA	NA	1.6E+02
			beta-BHC	9.5E-07	NA	NA	NA	9.5E-07	Liver / Kidney	2.1E-02	NA	NA	2.1E-02
			Dieldrin	3.7E-05	NA	NA	NA	3.7E-05	Liver	5.4E-01	NA	NA	5.4E-01
			gamma-Chlordane	8.8E-07	NA	NA	NA	8.8E-07	Liver	5.9E-02	NA	NA	5.9E-02
			Heptachlor Epoxide	6.1E-06	NA	NA	NA	6.1E-06	Liver	6.0E-01	NA	NA	6.0E-01
			Technical Chlordane	4.6E-05	NA	NA	NA	4.6E-05	Liver	3.1E+00	NA	NA	3.1E+00
			Cadmium	NC	NA	NA	NA		Kidney	8.9E-02	NA	NA	8.9E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	1.2E-01	NA	NA	1.2E-01
			Mercury	NC	NA	NA	NA		Immune system	4.0E-01	NA	NA	4.0E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.3E+00	NA	NA	1.3E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	8.0E-03	NA	NA	NA	8.0E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	2.7E-03	NA	NA	NA	2.7E-03		--	NA	NA	
			CHEMICAL TOTAL	1.1E-02	--	--	--	1E-02		1.7E+02	0.0E+00	--	1.7E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-02					1.7E+02
	EXPOSURE MEDIUM TOTAL							1E-02					1.7E+02
WHOLE BODY TOTAL								1E-02					1.7E+02
RECEPTOR TOTAL								1E-02					1.7E+02
							TOTAL RISK ACROSS ALL MEDIA	1E-02	TOTAL HAZARD ACROSS ALL MEDIA				1.7E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.3E+00
	--
	--
	--
	--
TOTAL IMMUNE SYSTEM HI =	1.6E+02
TOTAL KIDNEY HI =	1.1E-01
TOTAL LIVER HI =	4.8E+00
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	--
TOTAL NOAEL HI =	1.2E-01
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	--
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US EPA ARCHIVE DOCUMENT

TABLE F.9.34.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	LYMAN MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	1.3E-06	NA	1.1E-06	2.4E-06
			4-Chloro-3-methylphenol	NC	NA	NC	NA		Reproductive system	6.6E-05	NA	4.5E-05	1.1E-04
			4-Nitrophenol	NC	NA	NC	NA			--	NA	--	
			Acenaphthylene	NC	NA	NC	NA		Liver	1.8E-06	NA	1.6E-06	3.4E-06
			Benzo(a)anthracene	3.9E-07	NA	3.4E-07	NA	7.3E-07	Kidney	2.4E-05	NA	2.1E-05	4.5E-05
			Benzo(a)pyrene	4.0E-06	NA	3.5E-06	NA	7.5E-06	Kidney	2.5E-05	NA	2.2E-05	4.6E-05
			Benzo(b)fluoranthene	6.2E-07	NA	5.5E-07	NA	1.2E-06	Kidney	3.8E-05	NA	3.4E-05	7.2E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	2.5E-05	NA	2.3E-05	4.8E-05
			Benzo(k)fluoranthene	2.9E-08	NA	2.6E-08	NA	5.5E-08	Kidney	1.8E-05	NA	1.6E-05	3.4E-05
			bis(2-Ethylhexyl)phthalate	1.4E-08	NA	9.4E-09	NA	2.3E-08	Liver	6.6E-05	NA	4.5E-05	1.1E-04
			Dibenzo(a,h)anthracene	1.5E-06	NA	1.3E-06	NA	2.8E-06	Kidney	9.1E-06	NA	8.0E-06	1.7E-05
			Indeno(1,2,3-cd)pyrene	3.7E-07	NA	3.3E-07	NA	7.0E-07	Kidney	2.3E-05	NA	2.0E-05	4.3E-05
			N-Nitroso-di-n-propylamine	1.7E-06	NA	1.2E-06	NA	2.9E-06		--	NA	--	
			Pentachlorophenol	3.2E-08	NA	5.4E-08	NA	8.6E-08	Liver / Kidney	1.2E-05	NA	2.0E-05	3.2E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	2.4E-05	NA	2.1E-05	4.5E-05
			alpha-Chlordane	2.1E-09	NA	5.8E-10	NA	2.7E-09	Liver	1.6E-05	NA	4.4E-06	2.1E-05
			Aroclor-1254	1.9E-07	NA	1.8E-07	NA	3.6E-07	Immune system	6.2E-03	NA	5.9E-03	1.2E-02
			Aroclor-1260	1.0E-08	NA	9.7E-09	NA	2.0E-08	Immune system	3.4E-04	NA	3.3E-04	6.7E-04
			Aroclor-1268	1.2E-07	NA	1.1E-07	NA	2.3E-07	Immune system	4.6E-03	NA	3.8E-03	7.8E-03
			Dieldrin	1.3E-08	NA	9.1E-09	NA	2.2E-08	Liver	2.2E-05	NA	1.5E-05	3.8E-05
			Endosulfan II	NC	NA	NC	NA		Kidney	2.1E-07	NA	1.4E-07	3.6E-07
			Endosulfan sulfate	NC	NA	NC	NA		Kidney	1.2E-07	NA	8.4E-08	2.1E-07
			gamma-Chlordane	9.9E-10	NA	2.7E-10	NA	1.3E-09	Liver	7.6E-06	NA	2.1E-06	9.7E-06
			Technical Chlordane	1.5E-07	NA	4.0E-08	NA	1.9E-07	Liver	1.1E-03	NA	3.1E-04	1.4E-03
			Antimony	NC	NA	NC	NA		Adverse clinical signs	2.0E-03	NA		2.0E-03
			Arsenic	1.8E-06	NA	3.7E-07	NA	2.2E-06	Skin	5.4E-03	NA	1.1E-03	6.5E-03
			Cadmium	NC	NA	NC	NA		Kidney	5.3E-04	NA	1.5E-04	6.8E-04
			Chromium	NC	NA	NC	NA		NOAEL	1.7E-02	NA		1.7E-02
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	3.0E-03	NA		3.0E-03
			Mercury	NC	NA	NC	NA		Immune system	5.3E-04	NA		5.3E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	8.8E-04	NA		8.8E-04
			Thallium	NC	NA	NC	NA		NOAEL	1.8E-03	NA		1.8E-03
			Vanadium	NC	NA	NC	NA		NOAEL	1.5E-03	NA		1.5E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.3E-04	NA	4.7E-05	NA	2.8E-04		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	1.8E-06	NA	3.8E-07	NA	2.2E-06		--	NA	--	
			CHEMICAL TOTAL	2.4E-04	--	5.5E-05	--	3E-04		4.5E-02	0.0E+00	1.2E-02	6E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-04					6E-02
	EXPOSURE MEDIUM TOTAL							3E-04					6E-02
SEDIMENT TOTAL								3E-04					6E-02
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	Acenaphthylene	NC	NA	NC	NA		Liver	1.1E-09	NA	--	1.1E-09
			bis(2-Ethylhexyl)phthalate	9.0E-09	NA	2.7E-06	NA	2.7E-06	Liver	4.3E-05	NA	1.3E-02	1.3E-02
			Aldrin	1.5E-08	NA	2.6E-07	NA	2.7E-07	Liver	3.9E-05	NA	6.7E-04	7.1E-04
			alpha-Chlordane	2.5E-10	NA	1.0E-07	NA	1.0E-07	Liver	1.9E-06	NA	7.8E-04	7.8E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	2.7E-08	NA	--	2.7E-08
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	8.5E-07	NA	1.2E-04	1.2E-04
			gamma-Chlordane	2.8E-10	NA	1.1E-07	NA	1.1E-07	Liver	2.1E-06	NA	8.6E-04	8.6E-04
			Arsenic	2.6E-07	NA	4.5E-07	NA	7.1E-07	Skin	7.8E-04	NA	1.4E-03	2.1E-03
			Barium	NC	NA	NC	NA		Cardiovascular system	1.5E-05	NA	3.8E-04	3.9E-04
			Chromium	NC	NA	NC	NA		NOAEL	3.9E-05	NA	5.4E-03	5.5E-03
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	2.8E-04	NA	1.2E-02	1.2E-02
			Mercury	NC	NA	NC	NA		Immune system	6.7E-07	NA	1.7E-05	1.7E-05
			Thallium	NC	NA	NC	NA		NOAEL	1.4E-03	NA	2.4E-03	3.8E-03
			Nitrate	NC	NA	NC	NA		Hematological system	2.4E-05	NA	--	2.4E-05
			Nitrite-N	NC	NA	NC	NA		Hematological system	4.4E-05	NA	--	4.4E-05

US EPA ARCHIVE DOCUMENT

TABLE F.9.34.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK: INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	NON-CARCINOGENIC HAZARD QUOTIENT: PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.9E-06	NA	1.9E-02	NA	1.9E-02		--	NA	--	
			CHEMICAL TOTAL	5.2E-06	--	1.9E-02	--	2E-02		2.7E-03	0.0E+00	3.7E-02	4E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-02					4E-02
	EXPOSURE MEDIUM TOTAL							2E-02					4E-02
SURFACE WATER TOTAL								2E-02					4E-02
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.4E-05	NA	NA	1.4E-05
			Benzo(a)pyrene	7.7E-06	NA	NA	NA	7.7E-06	Kidney	4.8E-05	NA	NA	4.8E-05
			Benzo(b)fluoranthene	8.8E-07	NA	NA	NA	8.8E-07	Kidney	5.4E-05	NA	NA	5.4E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	4.8E-05	NA	NA	4.8E-05
			Dibenzo(a,h)anthracene	4.2E-06	NA	NA	NA	4.2E-06	Kidney	2.6E-05	NA	NA	2.6E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	9.5E-05	NA	NA	9.5E-05
			4,4'-DDE	5.3E-06	NA	NA	NA	5.3E-06	Liver	4.2E-02	NA	NA	4.2E-02
			alpha-Chlordane	1.1E-06	NA	NA	NA	1.1E-06	Liver	8.1E-03	NA	NA	8.1E-03
			Aroclor-1254	6.5E-04	NA	NA	NA	6.5E-04	Immune system	2.2E+01	NA	NA	2.2E+01
			Aroclor-1268	3.8E-05	NA	NA	NA	3.8E-05	Immune system	1.3E+00	NA	NA	1.3E+00
			Dieldrin	1.5E-05	NA	NA	NA	1.5E-05	Liver	2.5E-02	NA	NA	2.5E-02
			gamma-Chlordane	4.5E-07	NA	NA	NA	4.5E-07	Liver	3.5E-03	NA	NA	3.5E-03
			Technical Chlordane	1.9E-05	NA	NA	NA	1.9E-05	Liver	1.5E-01	NA	NA	1.5E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.8E+00	NA	NA	1.8E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	4.8E+00	NA	NA	4.8E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	7.1E-03	NA	NA	NA	7.1E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	2.5E-03	NA	NA	NA	2.5E-03		--	NA	NA	
			CHEMICAL TOTAL	1.0E-02	--	--	--	1E-02		3.0E+01	0.0E+00	--	3E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-02					3E+01
	EXPOSURE MEDIUM TOTAL							1E-02					3E+01
FILLET TOTAL								1E-02					3E+01
RECEPTOR TOTAL								3E-02					3.0E+01
			TOTAL RISK ACROSS ALL MEDIA					3E-02	TOTAL HAZARD ACROSS ALL MEDIA				3.0E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

TOTAL ADVERSE CLINICAL SIGNS HI =	2.0E-03
TOTAL CARDIOVASCULAR SYSTEM HI =	4.0E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	4.8E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	6.8E-05
TOTAL IMMUNE SYSTEM HI =	2.5E+01
TOTAL KIDNEY HI =	1.3E-03
TOTAL LIVER HI =	2.4E-01
	--
TOTAL NERVOUS SYSTEM HI =	1.2E-04
TOTAL NOAEL HI =	4.5E-02
TOTAL REPRODUCTIVE SYSTEM HI =	3.1E-04
TOTAL SKIN HI =	8.7E-03
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US EPA ARCHIVE DOCUMENT

TABLE F.9.35.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	LYMAN MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	2.0E-06	NA	3.7E-06	5.7E-06
			4-Chloro-3-methylphenol	NC	NA	NC	NA		Reproductive system	1.0E-04	NA	1.5E-04	2.5E-04
			4-Nitrophenol	NC	NA	NC	NA			--	NA	--	
			Acenaphthylene	NC	NA	NC	NA		Liver	2.8E-06	NA	5.3E-06	8.1E-06
			Benzo(a)anthracene	1.4E-07	NA	2.6E-07	NA	4.0E-07	Kidney	3.7E-05	NA	6.9E-05	1.1E-04
			Benzo(a)pyrene	1.4E-06	NA	2.7E-06	NA	4.1E-06	Kidney	3.8E-05	NA	7.1E-05	1.1E-04
			Benzo(b)fluoranthene	2.2E-07	NA	4.1E-07	NA	6.4E-07	Kidney	5.9E-05	NA	1.1E-04	1.7E-04
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	4.0E-05	NA	7.4E-05	1.1E-04
			Benzo(k)fluoranthene	1.0E-08	NA	1.9E-08	NA	3.0E-08	Kidney	2.8E-05	NA	5.1E-05	7.9E-05
			bis(2-Ethylhexyl)phthalate	4.9E-09	NA	7.1E-09	NA	1.2E-08	Liver	1.0E-04	NA	1.5E-04	2.5E-04
			Dibenzo(a,h)anthracene	5.3E-07	NA	9.8E-07	NA	1.5E-06	Kidney	1.4E-05	NA	2.6E-05	4.0E-05
			Indeno(1,2,3-cd)pyrene	1.3E-07	NA	2.5E-07	NA	3.8E-07	Kidney	3.6E-05	NA	6.6E-05	1.0E-04
			N-Nitroso-di-n-propylamine	6.2E-07	NA	8.8E-07	NA	1.5E-06		--	NA	--	
			Pentachlorophenol	1.1E-08	NA	4.1E-08	NA	5.2E-08	Liver / Kidney	1.8E-05	NA	6.6E-05	8.4E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	3.7E-05	NA	6.9E-05	1.1E-04
			alpha-Chlordane	7.6E-10	NA	4.3E-10	NA	1.2E-09	Liver	2.5E-05	NA	1.4E-05	4.0E-05
			Aroclor-1254	6.6E-08	NA	1.3E-07	NA	2.0E-07	Immune system	9.7E-03	NA	1.9E-02	2.9E-02
			Aroclor-1260	3.7E-09	NA	7.3E-09	NA	1.1E-08	Immune system	5.3E-04	NA	1.1E-03	1.6E-03
			Aroclor-1268	4.3E-08	NA	8.5E-08	NA	1.3E-07	Immune system	6.2E-03	NA	1.2E-02	1.9E-02
			Dieldrin	4.8E-09	NA	6.8E-09	NA	1.2E-08	Liver	3.5E-05	NA	5.0E-05	8.5E-05
			Endosulfan II	NC	NA	NC	NA		Kidney	3.3E-07	NA	4.7E-07	8.0E-07
			Endosulfan sulfate	NC	NA	NC	NA		Kidney	1.9E-07	NA	2.7E-07	4.6E-07
			gamma-Chlordane	3.6E-10	NA	2.0E-10	NA	5.6E-10	Liver	1.2E-05	NA	6.8E-06	1.9E-05
			Technical Chlordane	5.3E-08	NA	3.0E-08	NA	8.3E-08	Liver	1.8E-03	NA	1.0E-03	2.8E-03
			Antimony	NC	NA	NC	NA		Adverse clinical signs	3.1E-03	NA		3.1E-03
			Arsenic	6.5E-07	NA	2.8E-07	NA	9.3E-07	Skin	8.4E-03	NA	3.6E-03	1.2E-02
			Cadmium	NC	NA	NC	NA		Kidney	8.3E-04	NA	4.8E-04	1.3E-03
			Chromium	NC	NA	NC	NA		NOAEL	2.6E-02	NA		2.6E-02
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	4.7E-03	NA		4.7E-03
			Mercury	NC	NA	NC	NA		Immune system	8.2E-04	NA		8.2E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	1.4E-03	NA		1.4E-03
			Thallium	NC	NA	NC	NA		NOAEL	2.9E-03	NA		2.9E-03
			Vanadium	NC	NA	NC	NA		NOAEL	2.4E-03	NA		2.4E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	8.2E-05	NA	3.5E-05	NA	1.2E-04		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	6.6E-07	NA	2.8E-07	NA	9.4E-07		--	NA	--	
			CHEMICAL TOTAL	8.7E-05	--	4.2E-05	--	1E-04		7.0E-02	0.0E+00	3.9E-02	1E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					1E-01
	EXPOSURE MEDIUM TOTAL							1E-04					1E-01
SEDIMENT TOTAL								1E-04					1E-01
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	Acenaphthylene	NC	NA	NC	NA		Liver	1.7E-09	NA	--	1.7E-09
			bis(2-Ethylhexyl)phthalate	3.2E-09	NA	6.9E-07	NA	7.0E-07	Liver	6.7E-05	NA	1.4E-02	1.5E-02
			Aldrin	5.3E-09	NA	6.6E-08	NA	7.1E-08	Liver	6.1E-05	NA	7.5E-04	8.1E-04
			alpha-Chlordane	9.0E-11	NA	2.6E-08	NA	2.6E-08	Liver	3.0E-06	NA	8.7E-04	8.7E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	4.2E-08	NA	--	4.2E-08
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	1.3E-06	NA	1.3E-04	1.3E-04
			gamma-Chlordane	1.0E-10	NA	2.9E-08	NA	2.9E-08	Liver	3.3E-06	NA	9.6E-04	9.7E-04
			Arsenic	9.4E-08	NA	1.2E-07	NA	2.1E-07	Skin	1.2E-03	NA	1.5E-03	2.7E-03
			Barium	NC	NA	NC	NA		Cardiovascular system	2.4E-05	NA	4.2E-04	4.5E-04

US EPA ARCHIVE DOCUMENT

TABLE F.9.35.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK: INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	NON-CARCINOGENIC HAZARD QUOTIENT: PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Chromium	NC	NA	NC	NA		NOAEL	6.1E-05	NA	6.1E-03	6.1E-03
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	4.3E-04	NA	1.3E-02	1.4E-02
			Mercury	NC	NA	NC	NA		Immune system	1.0E-06	NA	1.9E-05	2.0E-05
			Thallium	NC	NA	NC	NA		NOAEL	2.2E-03	NA	2.7E-03	4.9E-03
			Nitrate	NC	NA	NC	NA		Hematological system	3.8E-05	NA	--	3.8E-05
			Nitrite-N	NC	NA	NC	NA		Hematological system	6.8E-05	NA	--	6.8E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.8E-06	NA	5.0E-03	NA	5.0E-03		--	NA	--	
			CHEMICAL TOTAL	1.9E-06	--	5.0E-03	--	5E-03		4.1E-03	0.0E+00	4.1E-02	5E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-03					5E-02
	EXPOSURE MEDIUM TOTAL							5E-03					5E-02
SURFACE WATER TOTAL								5E-03					5E-02
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.4E-05	NA	NA	1.4E-05
			Benzo(a)pyrene	1.9E-06	NA	NA	NA	1.9E-06	Kidney	4.9E-05	NA	NA	4.9E-05
			Benzo(b)fluoranthene	2.1E-07	NA	NA	NA	2.1E-07	Kidney	5.6E-05	NA	NA	5.6E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	4.9E-05	NA	NA	4.9E-05
			Dibenzo(a,h)anthracene	1.0E-06	NA	NA	NA	1.0E-06	Kidney	2.7E-05	NA	NA	2.7E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	9.8E-05	NA	NA	9.8E-05
			4,4'-DDE	1.3E-06	NA	NA	NA	1.3E-06	Liver	4.4E-02	NA	NA	4.4E-02
			alpha-Chlordane	2.5E-07	NA	NA	NA	2.5E-07	Liver	8.4E-03	NA	NA	8.4E-03
			Aroclor-1254	1.6E-04	NA	NA	NA	1.6E-04	Immune system	2.3E+01	NA	NA	2.3E+01
			Aroclor-1268	9.1E-06	NA	NA	NA	9.1E-06	Immune system	1.3E+00	NA	NA	1.3E+00
			Dieldrin	3.5E-06	NA	NA	NA	3.5E-06	Liver	2.6E-02	NA	NA	2.6E-02
			gamma-Chlordane	1.1E-07	NA	NA	NA	1.1E-07	Liver	3.6E-03	NA	NA	3.6E-03
			Technical Chlordane	4.6E-06	NA	NA	NA	4.6E-06	Liver	1.5E-01	NA	NA	1.5E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.9E+00	NA	NA	1.9E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.0E+00	NA	NA	5.0E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.7E-03	NA	NA	NA	1.7E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	5.9E-04	NA	NA	NA	5.9E-04		--	NA	NA	
			CHEMICAL TOTAL	2.5E-03	--	--	--	2E-03		3.1E+01	0.0E+00	--	3E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-03					3E+01
	EXPOSURE MEDIUM TOTAL							2E-03					3E+01
FILLET TOTAL								2E-03					3E+01
RECEPTOR TOTAL								8E-03					3.1E+01
							TOTAL RISK ACROSS ALL MEDIA	8E-03	TOTAL HAZARD ACROSS ALL MEDIA				3.1E+01

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TABLE F.9.35.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

TOTAL ADVERSE CLINICAL SIGNS HI =	3.1E-03
TOTAL CARDIOVASCULAR SYSTEM HI =	4.5E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	5.0E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	1.1E-04
TOTAL IMMUNE SYSTEM HI =	2.6E+01
TOTAL KIDNEY HI =	2.5E-03
TOTAL LIVER HI =	2.6E-01
	--
TOTAL NERVOUS SYSTEM HI =	1.3E-04
TOTAL NOAEL HI =	6.1E-02
TOTAL REPRODUCTIVE SYSTEM HI =	2.5E-04
TOTAL SKIN HI =	1.5E-02
	--

US EPA ARCHIVE DOCUMENT

TABLE F.9.36.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.3E-05	NA	NA	2.3E-05
			Benzo(a)pyrene	1.5E-06	NA	NA	NA	1.5E-06	Kidney	8.0E-05	NA	NA	8.0E-05
			Benzo(b)fluoranthene	1.7E-07	NA	NA	NA	1.7E-07	Kidney	9.1E-05	NA	NA	9.1E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	8.0E-05	NA	NA	8.0E-05
			Dibenzo(a,h)anthracene	8.1E-07	NA	NA	NA	8.1E-07	Kidney	4.3E-05	NA	NA	4.3E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.6E-04	NA	NA	1.6E-04
			4,4'-DDE	1.0E-06	NA	NA	NA	1.0E-06	Liver	7.1E-02	NA	NA	7.1E-02
			alpha-Chlordane	2.1E-07	NA	NA	NA	2.1E-07	Liver	1.4E-02	NA	NA	1.4E-02
			Aroclor-1254	1.3E-04	NA	NA	NA	1.3E-04	Immune system	3.7E+01	NA	NA	3.7E+01
			Aroclor-1268	7.4E-06	NA	NA	NA	7.4E-06	Immune system	2.2E+00	NA	NA	2.2E+00
			Dieldrin	2.9E-06	NA	NA	NA	2.9E-06	Liver	4.2E-02	NA	NA	4.2E-02
			gamma-Chlordane	8.8E-08	NA	NA	NA	8.8E-08	Liver	5.9E-03	NA	NA	5.9E-03
			Technical Chlordane	3.8E-06	NA	NA	NA	3.8E-06	Liver	2.5E-01	NA	NA	2.5E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	3.1E+00	NA	NA	3.1E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	8.1E+00	NA	NA	8.1E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.4E-03	NA	NA	NA	1.4E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	4.8E-04	NA	NA	NA	4.8E-04		--	NA	NA	
			CHEMICAL TOTAL	2.0E-03	--	--	--	2E-03		5.1E+01	0.0E+00	--	5E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-03					5E+01
	EXPOSURE MEDIUM TOTAL							2E-03					5E+01
FILLET TOTAL								2E-03					5E+01
RECEPTOR TOTAL								2E-03					5.1E+01
			TOTAL RISK ACROSS ALL MEDIA					2E-03	TOTAL HAZARD ACROSS ALL MEDIA				5.1E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	8.1E+00
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	--
TOTAL IMMUNE SYSTEM HI =	4.2E+01
TOTAL KIDNEY HI =	4.5E-04
TOTAL LIVER HI =	3.8E-01
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	--
	--
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Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.9.37.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	LYMAN MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	1.3E-06	NA	1.1E-06	2.4E-06
			4-Chloro-3-methylphenol	NC	NA	NC	NA		Reproductive system	6.9E-05	NA	4.5E-05	1.1E-04
			4-Nitrophenol	NC	NA	NC	NA			--	NA	--	
			Acenaphthylene	NC	NA	NC	NA		Liver	1.8E-06	NA	1.6E-06	3.4E-06
			Benzo(a)anthracene	3.9E-07	NA	3.4E-07	NA	7.3E-07	Kidney	2.4E-05	NA	2.1E-05	4.5E-05
			Benzo(a)pyrene	4.0E-06	NA	3.5E-06	NA	7.5E-06	Kidney	2.5E-05	NA	2.2E-05	4.6E-05
			Benzo(b)fluoranthene	6.2E-07	NA	5.5E-07	NA	1.2E-06	Kidney	3.8E-05	NA	3.4E-05	7.2E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	2.5E-05	NA	2.3E-05	4.8E-05
			Benzo(k)fluoranthene	2.9E-08	NA	2.6E-08	NA	5.5E-08	Kidney	1.8E-05	NA	1.6E-05	3.4E-05
			bis(2-Ethylhexyl)phthalate	1.4E-08	NA	9.4E-09	NA	2.3E-08	Liver	6.6E-05	NA	4.5E-05	1.1E-04
			Dibenzo(a,h)anthracene	1.5E-06	NA	1.3E-06	NA	2.8E-06	Kidney	9.1E-06	NA	8.0E-06	1.7E-05
			Indeno(1,2,3-cd)pyrene	3.7E-07	NA	3.3E-07	NA	7.0E-07	Kidney	2.3E-05	NA	2.0E-05	4.3E-05
			N-Nitroso-di-n-propylamine	1.7E-06	NA	1.2E-06	NA	2.9E-06		--	NA	--	
			Pentachlorophenol	3.2E-08	NA	5.4E-08	NA	8.6E-08	Liver / Kidney	1.2E-05	NA	2.0E-05	3.2E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	2.4E-05	NA	2.1E-05	4.5E-05
			alpha-Chlordane	2.1E-09	NA	5.8E-10	NA	2.7E-09	Liver	1.6E-05	NA	4.4E-06	2.1E-05
			Aroclor-1254	1.9E-07	NA	1.8E-07	NA	3.6E-07	Immune system	6.2E-03	NA	5.9E-03	1.2E-02
			Aroclor-1260	1.0E-08	NA	9.7E-09	NA	2.0E-08	Immune system	3.4E-04	NA	3.3E-04	6.7E-04
			Aroclor-1268	1.2E-07	NA	1.1E-07	NA	2.3E-07	Immune system	4.0E-03	NA	3.8E-03	7.8E-03
			Dieldrin	1.3E-08	NA	9.1E-09	NA	2.2E-08	Liver	2.2E-05	NA	1.5E-05	3.8E-05
			Endosulfan II	NC	NA	NC	NA		Kidney	2.1E-07	NA	1.4E-07	3.6E-07
			Endosulfan sulfate	NC	NA	NC	NA		Kidney	1.2E-07	NA	8.4E-08	2.1E-07
			gamma-Chlordane	9.9E-10	NA	2.7E-10	NA	1.3E-09	Liver	7.6E-06	NA	2.1E-06	9.7E-06
			Technical Chlordane	1.5E-07	NA	4.0E-08	NA	1.9E-07	Liver	1.1E-03	NA	3.1E-04	1.4E-03
			Antimony	NC	NA	NC	NA		Adverse clinical signs	2.0E-03	NA		2.0E-03
			Arsenic	1.8E-06	NA	3.7E-07	NA	2.2E-06	Skin	5.4E-03	NA	1.1E-03	6.5E-03
			Cadmium	NC	NA	NC	NA		Kidney	5.3E-04	NA	1.5E-04	6.8E-04
			Chromium	NC	NA	NC	NA		NOAEL	1.7E-02	NA		1.7E-02
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	3.0E-03	NA		3.0E-03
			Mercury	NC	NA	NC	NA		Immune system	5.3E-04	NA		5.3E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	8.8E-04	NA		8.8E-04
			Thallium	NC	NA	NC	NA		NOAEL	1.8E-03	NA		1.8E-03
			Vanadium	NC	NA	NC	NA		NOAEL	1.5E-03	NA		1.5E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.3E-04	NA	4.7E-05	NA	2.8E-04		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	1.8E-06	NA	3.8E-07	NA	2.2E-06		--	NA	--	
			CHEMICAL TOTAL	2.4E-04	--	5.5E-05	--	3E-04		4.5E-02	0.0E+00	1.2E-02	6E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-04					6E-02
	EXPOSURE MEDIUM TOTAL							3E-04					6E-02
SEDIMENT TOTAL								3E-04					6E-02
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	Acenaphthylene	NC	NA	NC	NA		Liver	1.1E-09	NA	--	1.1E-09
			bis(2-Ethylhexyl)phthalate	9.0E-09	NA	2.7E-06	NA	2.7E-06	Liver	4.3E-05	NA	1.3E-02	1.3E-02
			Aldrin	1.5E-08	NA	2.6E-07	NA	2.7E-07	Liver	3.9E-05	NA	6.7E-04	7.1E-04
			alpha-Chlordane	2.5E-10	NA	1.0E-07	NA	1.0E-07	Liver	1.9E-06	NA	7.8E-04	7.8E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	2.7E-08	NA	--	2.7E-08
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	8.5E-07	NA	1.2E-04	1.2E-04
			gamma-Chlordane	2.8E-10	NA	1.1E-07	NA	1.1E-07	Liver	2.1E-06	NA	8.6E-04	8.6E-04
			Arsenic	2.6E-07	NA	4.5E-07	NA	7.1E-07	Skin	7.8E-04	NA	1.4E-03	2.1E-03
			Barium	NC	NA	NC	NA		Cardiovascular system	1.5E-05	NA	3.8E-04	3.9E-04
			Chromium	NC	NA	NC	NA		NOAEL	3.9E-05	NA	5.4E-03	5.5E-03
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	2.8E-04	NA	1.2E-02	1.2E-02
			Mercury	NC	NA	NC	NA		Immune system	6.7E-07	NA	1.7E-05	1.7E-05
			Thallium	NC	NA	NC	NA		NOAEL	1.4E-03	NA	2.4E-03	3.8E-03
			Nitrate	NC	NA	NC	NA		Hematological system	2.4E-05	NA	--	2.4E-05
			Nitrite-N	NC	NA	NC	NA		Hematological system	4.4E-05	NA	--	4.4E-05

US EPA ARCHIVE DOCUMENT

TABLE F.9.37.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.9E-06	NA	1.9E-02	NA	1.9E-02		--	NA	--	
			CHEMICAL TOTAL	5.2E-06	--	1.9E-02	--	2E-02		2.7E-03	0.0E+00	3.7E-02	4E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-02					4E-02
	EXPOSURE MEDIUM TOTAL							2E-02					4E-02
SURFACE WATER TOTAL								2E-02					4E-02
LARGEMOUTH BASS	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.6E-05	NA	NA	1.6E-05
			Benzo(a)pyrene	8.6E-06	NA	NA	NA	8.6E-06	Kidney	5.3E-05	NA	NA	5.3E-05
			Benzo(b)fluoranthene	1.1E-06	NA	NA	NA	1.1E-06	Kidney	6.8E-05	NA	NA	6.8E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	6.8E-05	NA	NA	6.8E-05
			Dibenzo(a,h)anthracene	4.2E-06	NA	NA	NA	4.2E-06	Kidney	2.6E-05	NA	NA	2.6E-05
			Indeno(1,2,3-cd)pyrene	1.1E-06	NA	NA	NA	1.1E-06	Kidney	6.8E-05	NA	NA	6.8E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	2.9E-04	NA	NA	2.9E-04
			4,4'-DDE	3.0E-05	NA	NA	NA	3.0E-05	Liver	2.4E-01	NA	NA	2.4E-01
			alpha-Chlordane	4.4E-06	NA	NA	NA	4.4E-06	Liver	3.4E-02	NA	NA	3.4E-02
			Aroclor-1254	4.0E-03	NA	NA	NA	4.0E-03	Immune system	1.4E+02	NA	NA	1.4E+02
			Aroclor-1268	1.1E-04	NA	NA	NA	1.1E-04	Immune system	3.7E+00	NA	NA	3.7E+00
			Dieldrin	5.8E-05	NA	NA	NA	5.8E-05	Liver	9.7E-02	NA	NA	9.7E-02
			gamma-Chlordane	1.8E-06	NA	NA	NA	1.8E-06	Liver	1.4E-02	NA	NA	1.4E-02
			Technical Chlordane	6.8E-05	NA	NA	NA	6.8E-05	Liver	5.2E-01	NA	NA	5.2E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.6E+00	NA	NA	1.6E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.6E+00	NA	NA	5.6E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.3E-02	NA	NA	NA	4.3E-02		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	8.4E-03	NA	NA	NA	8.4E-03		--	NA	NA	
			CHEMICAL TOTAL	5.6E-02	--	--	--	6E-02		1.5E+02	0.0E+00	--	1E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-02					1E+02
	EXPOSURE MEDIUM TOTAL							6E-02					1E+02
WHOLE BODY TOTAL								6E-02					1E+02
RECEPTOR TOTAL								8E-02					1.5E+02
			TOTAL RISK ACROSS ALL MEDIA					8E-02	TOTAL HAZARD ACROSS ALL MEDIA				1.5E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

TOTAL ADVERSE CLINICAL SIGNS HI =	2.0E-03
TOTAL CARDIOVASCULAR SYSTEM HI =	4.0E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	5.6E+00
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	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	6.8E-05
TOTAL IMMUNE SYSTEM HI =	1.4E+02
TOTAL KIDNEY HI =	1.6E-03
TOTAL LIVER HI =	9.2E-01
	--
TOTAL NERVOUS SYSTEM HI =	1.2E-04
TOTAL NOAEL HI =	4.5E-02
TOTAL REPRODUCTIVE SYSTEM HI =	1.1E-04
TOTAL SKIN HI =	8.7E-03
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US EPA ARCHIVE DOCUMENT

TABLE F.9.38.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	LYMAN MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	2.0E-06	NA	3.7E-06	5.7E-06
			4-Chloro-3-methylphenol	NC	NA	NC	NA		Reproductive system	1.0E-04	NA	1.5E-04	2.5E-04
			4-Nitrophenol	NC	NA	NC	NA		--	--	NA	--	
			Acenaphthylene	NC	NA	NC	NA		Liver	2.8E-06	NA	5.3E-06	8.1E-06
			Benzo(a)anthracene	1.4E-07	NA	2.6E-07	NA	4.0E-07	Kidney	3.7E-05	NA	6.9E-05	1.1E-04
			Benzo(a)pyrene	1.4E-06	NA	2.7E-06	NA	4.1E-06	Kidney	3.8E-05	NA	7.1E-05	1.1E-04
			Benzo(b)fluoranthene	2.2E-07	NA	4.1E-07	NA	6.4E-07	Kidney	5.9E-05	NA	1.1E-04	1.7E-04
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	4.0E-05	NA	7.4E-05	1.1E-04
			Benzo(k)fluoranthene	1.0E-08	NA	1.9E-08	NA	3.0E-08	Kidney	2.8E-05	NA	5.1E-05	7.9E-05
			bis(2-Ethylhexyl)phthalate	4.9E-09	NA	7.1E-09	NA	1.2E-08	Liver	1.0E-04	NA	1.5E-04	2.5E-04
			Dibenzo(a,h)anthracene	5.3E-07	NA	9.8E-07	NA	1.5E-06	Kidney	1.4E-05	NA	2.6E-05	4.0E-05
			Indeno(1,2,3-cd)pyrene	1.3E-07	NA	2.5E-07	NA	3.8E-07	Kidney	3.6E-05	NA	6.6E-05	1.0E-04
			N-Nitroso-di-n-propylamine	6.2E-07	NA	8.8E-07	NA	1.5E-06	--	--	NA	--	
			Pentachlorophenol	1.1E-08	NA	4.1E-08	NA	5.2E-08	Liver / Kidney	1.8E-05	NA	6.6E-05	8.4E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	3.7E-05	NA	6.9E-05	1.1E-04
			alpha-Chlordane	7.6E-10	NA	4.3E-10	NA	1.2E-09	Liver	2.5E-05	NA	1.4E-05	4.0E-05
			Aroclor-1254	6.6E-08	NA	1.3E-07	NA	2.0E-07	*Immune system*	9.7E-03	NA	1.9E-02	2.9E-02
			Aroclor-1260	3.7E-09	NA	7.3E-09	NA	1.1E-08	Immune system	5.3E-04	NA	1.1E-03	1.6E-03
			Aroclor-1268	4.3E-08	NA	8.5E-08	NA	1.3E-07	Immune system	6.2E-03	NA	1.2E-02	1.9E-02
			Dieldrin	4.8E-09	NA	6.8E-09	NA	1.2E-08	Liver	3.5E-05	NA	5.0E-05	8.5E-05
			Endosulfan II	NC	NA	NC	NA		Kidney	3.3E-07	NA	4.7E-07	8.0E-07
			Endosulfan sulfate	NC	NA	NC	NA		Kidney	1.9E-07	NA	2.7E-07	4.6E-07
			gamma-Chlordane	3.6E-10	NA	2.0E-10	NA	5.6E-10	Liver	1.2E-05	NA	6.8E-06	1.9E-05
			Technical Chlordane	5.3E-08	NA	3.0E-08	NA	8.3E-08	Liver	1.8E-03	NA	1.0E-03	2.8E-03
			Antimony	NC	NA	NC	NA		Adverse clinical signs	3.1E-03	NA		3.1E-03
			Arsenic	6.5E-07	NA	2.8E-07	NA	9.3E-07	Skin	8.4E-03	NA	3.6E-03	1.2E-02
			Cadmium	NC	NA	NC	NA		Kidney	8.3E-04	NA	4.8E-04	1.3E-03
			Chromium	NC	NA	NC	NA		NOAEL	2.6E-02	NA		2.6E-02
			Lead	--	NA	--	NA		--	--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	4.7E-03	NA		4.7E-03
			Mercury	NC	NA	NC	NA		Immune system	8.2E-04	NA		8.2E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	1.4E-03	NA		1.4E-03
			Thallium	NC	NA	NC	NA		NOAEL	2.9E-03	NA		2.9E-03
			Vanadium	NC	NA	NC	NA		NOAEL	2.4E-03	NA		2.4E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	8.2E-05	NA	3.5E-05	NA	1.2E-04		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	6.6E-07	NA	2.8E-07	NA	9.4E-07		--	NA	--	
			CHEMICAL TOTAL	8.7E-05	--	4.2E-05	--	1E-04		7.0E-02	0.0E+00	3.9E-02	1E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					1E-01
	EXPOSURE MEDIUM TOTAL							1E-04					1E-01
SEDIMENT TOTAL								1E-04					1E-01
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	Acenaphthylene	NC	NA	NC	NA		Liver	1.7E-09	NA	--	1.7E-09
			bis(2-Ethylhexyl)phthalate	3.2E-09	NA	6.9E-07	NA	7.0E-07	Liver	6.7E-05	NA	1.4E-02	1.5E-02
			Aldrin	5.3E-09	NA	6.6E-08	NA	7.1E-08	Liver	6.1E-05	NA	7.5E-04	8.1E-04
			alpha-Chlordane	9.0E-11	NA	2.6E-08	NA	2.6E-08	Liver	3.0E-06	NA	8.7E-04	8.7E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	4.2E-08	NA	--	4.2E-08
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	1.3E-06	NA	1.3E-04	1.3E-04
			gamma-Chlordane	1.0E-10	NA	2.9E-08	NA	2.9E-08	Liver	3.3E-06	NA	9.6E-04	9.7E-04
			Arsenic	9.4E-08	NA	1.2E-07	NA	2.1E-07	Skin	1.2E-03	NA	1.5E-03	2.7E-03
			Barium	NC	NA	NC	NA		Cardiovascular system	2.4E-05	NA	4.2E-04	4.5E-04

US EPA ARCHIVE DOCUMENT

TABLE F.9.38.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Chromium	NC	NA	NC	NA		NOAEL	6.1E-05	NA	6.1E-03	6.1E-03
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	4.3E-04	NA	1.3E-02	1.4E-02
			Mercury	NC	NA	NC	NA		Immune system	1.0E-06	NA	1.9E-05	2.0E-05
			Thallium	NC	NA	NC	NA		NOAEL	2.2E-03	NA	2.7E-03	4.9E-03
			Nitrate	NC	NA	NC	NA		Hematological system	3.8E-05	NA	--	3.8E-05
			Nitrite-N	NC	NA	NC	NA		Hematological system	6.8E-05	NA	--	6.8E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.8E-06	NA	5.0E-03	NA	5.0E-03		--	NA	--	
			CHEMICAL TOTAL	1.9E-06	--	5.0E-03	--	5E-03		4.1E-03	0.0E+00	4.1E-02	5E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-03					5E-02
	EXPOSURE MEDIUM TOTAL							5E-03					5E-02
SURFACE WATER TOTAL								5E-03					5E-02
LARGEMOUTH BASS	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.6E-05	NA	NA	1.6E-05
			Benzo(a)pyrene	2.1E-06	NA	NA	NA	2.1E-06	Kidney	5.5E-05	NA	NA	5.5E-05
			Benzo(b)fluoranthene	2.6E-07	NA	NA	NA	2.6E-07	Kidney	7.0E-05	NA	NA	7.0E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	7.0E-05	NA	NA	7.0E-05
			Dibenzo(a,h)anthracene	1.0E-06	NA	NA	NA	1.0E-06	Kidney	2.7E-05	NA	NA	2.7E-05
			Indeno(1,2,3-cd)pyrene	2.6E-07	NA	NA	NA	2.6E-07	Kidney	7.0E-05	NA	NA	7.0E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	3.0E-04	NA	NA	3.0E-04
			4,4'-DDE	7.2E-06	NA	NA	NA	7.2E-06	Liver	2.5E-01	NA	NA	2.5E-01
			alpha-Chlordane	1.0E-06	NA	NA	NA	1.0E-06	Liver	3.5E-02	NA	NA	3.5E-02
			Aroclor-1254	9.7E-04	NA	NA	NA	9.7E-04	Immune system	1.4E+02	NA	NA	1.4E+02
			Aroclor-1268	2.6E-05	NA	NA	NA	2.6E-05	Immune system	3.8E+00	NA	NA	3.8E+00
			Dieldrin	1.4E-05	NA	NA	NA	1.4E-05	Liver	1.0E-01	NA	NA	1.0E-01
			gamma-Chlordane	4.3E-07	NA	NA	NA	4.3E-07	Liver	1.4E-02	NA	NA	1.4E-02
			Technical Chlordane	1.6E-05	NA	NA	NA	1.6E-05	Liver	5.4E-01	NA	NA	5.4E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.6E+00	NA	NA	1.6E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.8E+00	NA	NA	5.8E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.0E-02	NA	NA	NA	1.0E-02		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	2.0E-03	NA	NA	NA	2.0E-03		--	NA	NA	
			CHEMICAL TOTAL	1.3E-02	--	--	--	1E-02		1.5E+02	0.0E+00	--	2E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-02					2E+02
	EXPOSURE MEDIUM TOTAL							1E-02					2E+02
WHOLE BODY TOTAL								1E-02					2E+02
RECEPTOR TOTAL								2E-02					1.5E+02
							TOTAL RISK ACROSS ALL MEDIA	2E-02	TOTAL HAZARD ACROSS ALL MEDIA				1.5E+02

US EPA ARCHIVE DOCUMENT

TABLE F.9.38.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

TOTAL ADVERSE CLINICAL SIGNS HI =	3.1E-03
TOTAL CARDIOVASCULAR SYSTEM HI =	4.5E-04
TOTAL *DEVELOPMENTAL TOXICITY* HI =	5.8E+00
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TOTAL HEMATOLOGICAL SYSTEM HI =	1.1E-04
TOTAL IMMUNE SYSTEM HI =	1.5E+02
TOTAL KIDNEY HI =	2.8E-03
TOTAL LIVER HI =	9.6E-01
	--
TOTAL NERVOUS SYSTEM HI =	1.3E-04
TOTAL NOAEL HI =	6.1E-02
TOTAL REPRODUCTIVE SYSTEM HI =	2.5E-04
TOTAL SKIN HI =	1.5E-02
	--

US EPA ARCHIVE DOCUMENT

TABLE F.9.39.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.6E-05	NA	NA	2.6E-05
			Benzo(a)pyrene	1.7E-06	NA	NA	NA	1.7E-06	Kidney	8.9E-05	NA	NA	8.9E-05
			Benzo(b)fluoranthene	2.1E-07	NA	NA	NA	2.1E-07	Kidney	1.1E-04	NA	NA	1.1E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.1E-04	NA	NA	1.1E-04
			Dibenzo(a,h)anthracene	8.2E-07	NA	NA	NA	8.2E-07	Kidney	4.4E-05	NA	NA	4.4E-05
			Indeno(1,2,3-cd)pyrene	2.1E-07	NA	NA	NA	2.1E-07	Kidney	1.1E-04	NA	NA	1.1E-04
			Phenanthrene	NC	NA	NA	NA		Kidney	4.8E-04	NA	NA	4.8E-04
			4,4'-DDE	5.9E-06	NA	NA	NA	5.9E-06	Liver	4.0E-01	NA	NA	4.0E-01
			alpha-Chlordane	8.5E-07	NA	NA	NA	8.5E-07	Liver	5.7E-02	NA	NA	5.7E-02
			Aroclor-1254	7.9E-04	NA	NA	NA	7.9E-04	Immune system	2.3E+02	NA	NA	2.3E+02
			Aroclor-1268	2.1E-05	NA	NA	NA	2.1E-05	Immune system	6.3E+00	NA	NA	6.3E+00
			Dieldrin	1.1E-05	NA	NA	NA	1.1E-05	Liver	1.6E-01	NA	NA	1.6E-01
			gamma-Chlordane	3.5E-07	NA	NA	NA	3.5E-07	Liver	2.3E-02	NA	NA	2.3E-02
			Technical Chlordane	1.3E-05	NA	NA	NA	1.3E-05	Liver	8.8E-01	NA	NA	8.8E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.7E+00	NA	NA	2.7E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	9.5E+00	NA	NA	9.5E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	8.4E-03	NA	NA	NA	8.4E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	1.6E-03	NA	NA	NA	1.6E-03		--	NA	NA	
			CHEMICAL TOTAL	1.1E-02	--	--	--	1E-02		2.5E+02	0.0E+00	--	2E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-02					2E+02
	EXPOSURE MEDIUM TOTAL							1E-02					2E+02
WHOLE BODY TOTAL								1E-02					2E+02
RECEPTOR TOTAL								1E-02					2.5E+02
							TOTAL RISK ACROSS ALL MEDIA	1E-02	TOTAL HAZARD ACROSS ALL MEDIA				2.5E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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TOTAL DEVELOPMENTAL TOXICITY HI =	9.5E+00
	--
	--
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	--
TOTAL IMMUNE SYSTEM HI =	2.4E+02
TOTAL KIDNEY HI =	9.6E-04
TOTAL LIVER HI =	1.5E+00
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	--
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US EPA ARCHIVE DOCUMENT

TABLE F.9.40.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	LYMAN MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	1.3E-06	NA	1.1E-06	2.4E-06
			4-Chloro-3-methylphenol	NC	NA	NC	NA		Reproductive system	6.6E-05	NA	4.5E-05	1.1E-04
			4-Nitrophenol	NC	NA	NC	NA		--	--	NA	--	
			Acenaphthylene	NC	NA	NC	NA		Liver	1.8E-06	NA	1.6E-06	3.4E-06
			Benzo(a)anthracene	3.9E-07	NA	3.4E-07	NA	7.3E-07	Kidney	2.4E-05	NA	2.1E-05	4.5E-05
			Benzo(a)pyrene	4.0E-06	NA	3.5E-06	NA	7.5E-06	Kidney	2.5E-05	NA	2.2E-05	4.6E-05
			Benzo(b)fluoranthene	6.2E-07	NA	5.5E-07	NA	1.2E-06	Kidney	3.8E-05	NA	3.4E-05	7.2E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	2.5E-05	NA	2.3E-05	4.8E-05
			Benzo(k)fluoranthene	2.9E-08	NA	2.6E-08	NA	5.5E-08	Kidney	1.8E-05	NA	1.6E-05	3.4E-05
			bis(2-Ethylhexyl)phthalate	1.4E-08	NA	9.4E-09	NA	2.3E-08	Liver	6.6E-05	NA	4.5E-05	1.1E-04
			Dibenzo(a,h)anthracene	1.5E-06	NA	1.3E-06	NA	2.8E-06	Kidney	9.1E-06	NA	8.0E-06	1.7E-05
			Indeno(1,2,3-cd)pyrene	3.7E-07	NA	3.3E-07	NA	7.0E-07	Kidney	2.3E-05	NA	2.0E-05	4.3E-05
			N-Nitroso-di-n-propylamine	1.7E-06	NA	1.2E-06	NA	2.9E-06	--	--	NA	--	
			Pentachlorophenol	3.2E-08	NA	5.4E-08	NA	8.6E-08	Liver / Kidney	1.2E-05	NA	2.0E-05	3.2E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	2.4E-05	NA	2.1E-05	4.5E-05
			alpha-Chlordane	2.1E-09	NA	5.8E-10	NA	2.7E-09	Liver	1.6E-05	NA	4.4E-06	2.1E-05
			Aroclor-1254	1.9E-07	NA	1.8E-07	NA	3.6E-07	Immune system	6.2E-03	NA	5.9E-03	1.2E-02
			Aroclor-1260	1.0E-08	NA	9.7E-09	NA	2.0E-08	Immune system	3.4E-04	NA	3.3E-04	6.7E-04
			Aroclor-1268	1.2E-07	NA	1.1E-07	NA	2.3E-07	Immune system	4.0E-03	NA	3.8E-03	7.8E-03
			Dieldrin	1.3E-08	NA	9.1E-09	NA	2.2E-08	Liver	2.2E-05	NA	1.5E-05	3.8E-05
			Endosulfan II	NC	NA	NC	NA		Kidney	2.1E-07	NA	1.4E-07	3.6E-07
			Endosulfan sulfate	NC	NA	NC	NA		Kidney	1.2E-07	NA	8.4E-08	2.1E-07
			gamma-Chlordane	9.9E-10	NA	2.7E-10	NA	1.3E-09	Liver	7.6E-06	NA	2.1E-06	9.7E-06
			Technical Chlordane	1.5E-07	NA	4.0E-08	NA	1.9E-07	Liver	1.1E-03	NA	3.1E-04	1.4E-03
			Antimony	NC	NA	NC	NA		Adverse clinical signs	2.0E-03	NA		2.0E-03
			Arsenic	1.8E-06	NA	3.7E-07	NA	2.2E-06	Skin	5.4E-03	NA	1.1E-03	6.5E-03
			Cadmium	NC	NA	NC	NA		Kidney	5.3E-04	NA	1.5E-04	6.8E-04
			Chromium	NC	NA	NC	NA		NOAEL	1.7E-02	NA		1.7E-02
			Lead	--	NA	--	NA		--	--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	3.0E-03	NA		3.0E-03
			Mercury	NC	NA	NC	NA		Immune system	5.3E-04	NA		5.3E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	8.8E-04	NA		8.8E-04
			Thallium	NC	NA	NC	NA		NOAEL	1.8E-03	NA		1.8E-03
			Vanadium	NC	NA	NC	NA		NOAEL	1.5E-03	NA		1.5E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.3E-04	NA	4.7E-05	NA	2.8E-04		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	1.8E-06	NA	3.8E-07	NA	2.2E-06		--	NA	--	
			CHEMICAL TOTAL	2.4E-04	--	5.5E-05	--	3E-04		4.5E-02	0.0E+00	1.2E-02	6E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-04					6E-02
	EXPOSURE MEDIUM TOTAL							3E-04					6E-02
SEDIMENT TOTAL								3E-04					6E-02
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	Acenaphthylene	NC	NA	NC	NA		Liver	1.1E-09	NA	--	1.1E-09
			bis(2-Ethylhexyl)phthalate	9.0E-09	NA	2.7E-06	NA	2.7E-06	Liver	4.3E-05	NA	1.3E-02	1.3E-02
			Aldrin	1.5E-08	NA	2.6E-07	NA	2.7E-07	Liver	3.9E-05	NA	6.7E-04	7.1E-04
			alpha-Chlordane	2.5E-10	NA	1.0E-07	NA	1.0E-07	Liver	1.9E-06	NA	7.8E-04	7.8E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	2.7E-08	NA	--	2.7E-08
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	8.5E-07	NA	1.2E-04	1.2E-04
			gamma-Chlordane	2.8E-10	NA	1.1E-07	NA	1.1E-07	Liver	2.1E-06	NA	8.6E-04	8.6E-04
			Arsenic	2.6E-07	NA	4.5E-07	NA	7.1E-07	Skin	7.8E-04	NA	1.4E-03	2.1E-03
			Barium	NC	NA	NC	NA		Cardiovascular system	1.5E-05	NA	3.8E-04	3.9E-04
			Chromium	NC	NA	NC	NA		NOAEL	3.9E-05	NA	5.4E-03	5.5E-03

US EPA ARCHIVE DOCUMENT

TABLE F.9.40.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	2.8E-04	NA	1.2E-02	1.2E-02
			Mercury	NC	NA	NC	NA		Immune system	6.7E-07	NA	1.7E-05	1.7E-05
			Thallium	NC	NA	NC	NA		NOAEL	1.4E-03	NA	2.4E-03	3.8E-03
			Nitrate	NC	NA	NC	NA		Hematological system	2.4E-05	NA	--	2.4E-05
			Nitrite-N	NC	NA	NC	NA		Hematological system	4.4E-05	NA	--	4.4E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.9E-06	NA	1.9E-02	NA	1.9E-02		--	NA	--	
			CHEMICAL TOTAL	5.2E-06	--	1.9E-02	--	2E-02		2.7E-03	0.0E+00	3.7E-02	4E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-02					4E-02
	EXPOSURE MEDIUM TOTAL							2E-02					4E-02
SURFACE WATER TOTAL								2E-02					4E-02
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.2E-04	NA	NA	1.2E-04
			Benzo(a)anthracene	1.0E-05	NA	NA	NA	1.0E-05	Kidney	6.4E-04	NA	NA	6.4E-04
			Benzo(a)pyrene	1.6E-04	NA	NA	NA	1.6E-04	Kidney	9.9E-04	NA	NA	9.9E-04
			Benzo(b)fluoranthene	7.4E-06	NA	NA	NA	7.4E-06	Kidney	4.5E-04	NA	NA	4.5E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	7.7E-04	NA	NA	7.7E-04
			Dibenzo(a,h)anthracene	3.0E-05	NA	NA	NA	3.0E-05	Kidney	1.8E-04	NA	NA	1.8E-04
			Indeno(1,2,3-cd)pyrene	1.5E-05	NA	NA	NA	1.5E-05	Kidney	9.1E-04	NA	NA	9.1E-04
			Phenanthrene	NC	NA	NA	NA		Kidney	1.4E-03	NA	NA	1.4E-03
			4,4'-DDD	2.3E-05	NA	NA	NA	2.3E-05	Liver	2.6E-01	NA	NA	2.6E-01
			4,4'-DDE	1.1E-04	NA	NA	NA	1.1E-04	Liver	8.7E-01	NA	NA	8.7E-01
			4,4'-DDT	2.7E-06	NA	NA	NA	2.7E-06	Liver	2.1E-02	NA	NA	2.1E-02
			alpha-Chlordane	2.5E-05	NA	NA	NA	2.5E-05	Liver	1.9E-01	NA	NA	1.9E-01
			Aroclor-1254	1.6E-02	NA	NA	NA	1.6E-02	Immune system	5.3E+02	NA	NA	5.3E+02
			Aroclor-1268	1.3E-04	NA	NA	NA	1.3E-04	Immune system	4.4E+00	NA	NA	4.4E+00
			Dieldrin	2.1E-04	NA	NA	NA	2.1E-04	Liver	3.5E-01	NA	NA	3.5E-01
			gamma-Chlordane	1.5E-05	NA	NA	NA	1.5E-05	Liver	1.2E-01	NA	NA	1.2E-01
			Heptachlor Epoxide	2.3E-05	NA	NA	NA	2.3E-05	Liver	2.7E-01	NA	NA	2.7E-01
			Technical Chlordane	1.4E-03	NA	NA	NA	1.4E-03	Liver	1.0E+01	NA	NA	1.0E+01
			Arsenic	6.2E-05	NA	NA	NA	6.2E-05	Skin	1.9E-01	NA	NA	1.9E-01
			Chromium	NC	NA	NA	NA		NOAEL	2.6E-01	NA	NA	2.6E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	8.0E-01	NA	NA	8.0E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.2E+00	NA	NA	2.2E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.0E-01	NA	NA	NA	2.0E-01		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	1.1E-02	NA	NA	NA	1.1E-02		--	NA	NA	
			CHEMICAL TOTAL	2.3E-01	--	--	--	2E-01		5.5E+02	0.0E+00	--	5.5E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-01					5.5E+02
	EXPOSURE MEDIUM TOTAL							2E-01					5.5E+02
WHOLE BODY TOTAL								2E-01					5.5E+02

US EPA ARCHIVE DOCUMENT

TABLE F.9.40.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
RECEPTOR TOTAL								3E-01					5.5E+02
							TOTAL RISK ACROSS ALL MEDIA	3E-01			TOTAL HAZARD ACROSS ALL MEDIA		5.5E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

TOTAL ADVERSE CLINICAL SIGNS HI =	2.0E-03
TOTAL CARDIOVASCULAR SYSTEM HI =	4.0E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	2.2E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	6.8E-05
TOTAL IMMUNE SYSTEM HI =	5.3E+02
TOTAL KIDNEY HI =	6.4E-03
TOTAL LIVER HI =	1.3E+01
	--
TOTAL NERVOUS SYSTEM HI =	1.2E-04
TOTAL NOAEL HI =	3.0E-01
TOTAL REPRODUCTIVE SYSTEM HI =	1.1E-04
TOTAL SKIN HI =	2.0E-01
	--

US EPA ARCHIVE DOCUMENT

TABLE F.9.41.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	LYMAN MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	2.0E-06	NA	3.7E-06	5.7E-06
			4-Chloro-3-methylphenol	NC	NA	NC	NA		Reproductive system	1.0E-04	NA	1.5E-04	2.5E-04
			4-Nitrophenol	NC	NA	NC	NA			--	NA	--	
			Acenaphthylene	NC	NA	NC	NA		Liver	2.8E-06	NA	5.3E-06	8.1E-06
			Benzo(a)anthracene	1.4E-07	NA	2.6E-07	NA	4.0E-07	Kidney	3.7E-05	NA	6.9E-05	1.1E-04
			Benzo(a)pyrene	1.4E-06	NA	2.7E-06	NA	4.1E-06	Kidney	3.8E-05	NA	7.1E-05	1.1E-04
			Benzo(b)fluoranthene	2.2E-07	NA	4.1E-07	NA	6.4E-07	Kidney	5.9E-05	NA	1.1E-04	1.7E-04
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	4.0E-05	NA	7.4E-05	1.1E-04
			Benzo(k)fluoranthene	1.0E-08	NA	1.9E-08	NA	3.0E-08	Kidney	2.8E-05	NA	5.1E-05	7.9E-05
			bis(2-Ethylhexyl)phthalate	4.9E-09	NA	7.1E-09	NA	1.2E-08	Liver	1.0E-04	NA	1.5E-04	2.5E-04
			Dibenzo(a,h)anthracene	5.3E-07	NA	9.8E-07	NA	1.5E-06	Kidney	1.4E-05	NA	2.6E-05	4.0E-05
			Indeno(1,2,3-cd)pyrene	1.3E-07	NA	2.5E-07	NA	3.8E-07	Kidney	3.6E-05	NA	6.6E-05	1.0E-04
			N-Nitroso-di-n-propylamine	6.2E-07	NA	8.8E-07	NA	1.5E-06		--	NA	--	
			Pentachlorophenol	1.1E-08	NA	4.1E-08	NA	5.2E-08	Liver / Kidney	1.8E-05	NA	6.6E-05	8.4E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	3.7E-05	NA	6.9E-05	1.1E-04
			alpha-Chlordane	7.6E-10	NA	4.3E-10	NA	1.2E-09	Liver	2.5E-05	NA	1.4E-05	4.0E-05
			Aroclor-1254	6.6E-08	NA	1.3E-07	NA	2.0E-07	Immune system	9.7E-03	NA	1.9E-02	2.9E-02
			Aroclor-1260	3.7E-09	NA	7.3E-09	NA	1.1E-08	Immune system	5.3E-04	NA	1.1E-03	1.6E-03
			Aroclor-1268	4.3E-08	NA	8.5E-08	NA	1.3E-07	Immune system	6.2E-03	NA	1.2E-02	1.9E-02
			Dieldrin	4.8E-09	NA	6.8E-09	NA	1.2E-08	Liver	3.5E-05	NA	5.0E-05	8.5E-05
			Endosulfan II	NC	NA	NC	NA		Kidney	3.3E-07	NA	4.7E-07	8.0E-07
			Endosulfan sulfate	NC	NA	NC	NA		Kidney	1.9E-07	NA	2.7E-07	4.6E-07
			gamma-Chlordane	3.6E-10	NA	2.0E-10	NA	5.6E-10	Liver	1.2E-05	NA	6.8E-06	1.9E-05
			Technical Chlordane	5.3E-08	NA	3.0E-08	NA	8.3E-08	Liver	1.8E-03	NA	1.0E-03	2.8E-03
			Antimony	NC	NA	NC	NA		Adverse clinical signs	3.1E-03	NA		3.1E-03
			Arsenic	6.5E-07	NA	2.8E-07	NA	9.3E-07	Skin	8.4E-03	NA	3.6E-03	1.2E-02
			Cadmium	NC	NA	NC	NA		Kidney	8.3E-04	NA	4.8E-04	1.3E-03
			Chromium	NC	NA	NC	NA		NOAEL	2.6E-02	NA		2.6E-02
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	4.7E-03	NA		4.7E-03
			Mercury	NC	NA	NC	NA		Immune system	8.2E-04	NA		8.2E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	1.4E-03	NA		1.4E-03
			Thallium	NC	NA	NC	NA		NOAEL	2.9E-03	NA		2.9E-03
			Vanadium	NC	NA	NC	NA		NOAEL	2.4E-03	NA		2.4E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	8.2E-05	NA	3.5E-05	NA	1.2E-04		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	6.6E-07	NA	2.8E-07	NA	9.4E-07		--	NA	--	
			CHEMICAL TOTAL	8.7E-05	--	4.2E-05	--	1E-04		7.0E-02	0.0E+00	3.9E-02	1E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					1E-01
	EXPOSURE MEDIUM TOTAL							1E-04					1E-01
SEDIMENT TOTAL								1E-04					1E-01
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	Acenaphthylene	NC	NA	NC	NA		Liver	1.7E-09	NA	--	1.7E-09
			bis(2-Ethylhexyl)phthalate	3.2E-09	NA	6.9E-07	NA	7.0E-07	Liver	6.7E-05	NA	1.4E-02	1.5E-02
			Aldrin	5.3E-09	NA	6.6E-08	NA	7.1E-08	Liver	6.1E-05	NA	7.5E-04	8.1E-04
			alpha-Chlordane	9.0E-11	NA	2.6E-08	NA	2.6E-08	Liver	3.0E-06	NA	8.7E-04	8.7E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	4.2E-08	NA	--	4.2E-08
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	1.3E-06	NA	1.3E-04	1.3E-04
			gamma-Chlordane	1.0E-10	NA	2.9E-08	NA	2.9E-08	Liver	3.3E-06	NA	9.6E-04	9.7E-04
			Arsenic	9.4E-08	NA	1.2E-07	NA	2.1E-07	Skin	1.2E-03	NA	1.5E-03	2.7E-03
			Barium	NC	NA	NC	NA		Cardiovascular system	2.4E-05	NA	4.2E-04	4.5E-04
			Chromium	NC	NA	NC	NA		NOAEL	6.1E-05	NA	6.1E-03	6.1E-03

US EPA ARCHIVE DOCUMENT

TABLE F.9.41.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	4.3E-04	NA	1.3E-02	1.4E-02
			Mercury	NC	NA	NC	NA		Immune system	1.0E-06	NA	1.9E-05	2.0E-05
			Thallium	NC	NA	NC	NA		NOAEL	2.2E-03	NA	2.7E-03	4.9E-03
			Nitrate	NC	NA	NC	NA		Hematological system	3.8E-05	NA	--	3.8E-05
			Nitrite-N	NC	NA	NC	NA		Hematological system	6.8E-05	NA	--	6.8E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.8E-06	NA	5.0E-03	NA	5.0E-03		--	NA	--	
			CHEMICAL TOTAL	1.9E-06	--	5.0E-03	--	5E-03		4.1E-03	0.0E+00	4.1E-02	5E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-03					5E-02
	EXPOSURE MEDIUM TOTAL							5E-03					5E-02
SURFACE WATER TOTAL								5E-03					5E-02
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.2E-04	NA	NA	1.2E-04
			Benzo(a)anthracene	2.5E-06	NA	NA	NA	2.5E-06	Kidney	6.6E-04	NA	NA	6.6E-04
			Benzo(a)pyrene	3.9E-05	NA	NA	NA	3.9E-05	Kidney	1.0E-03	NA	NA	1.0E-03
			Benzo(b)fluoranthene	1.8E-06	NA	NA	NA	1.8E-06	Kidney	4.7E-04	NA	NA	4.7E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	8.0E-04	NA	NA	8.0E-04
			Dibenzo(a,h)anthracene	7.1E-06	NA	NA	NA	7.1E-06	Kidney	1.9E-04	NA	NA	1.9E-04
			Indeno(1,2,3-cd)pyrene	3.5E-06	NA	NA	NA	3.5E-06	Kidney	9.4E-04	NA	NA	9.4E-04
			Phenanthrene	NC	NA	NA	NA		Kidney	1.5E-03	NA	NA	1.5E-03
			4,4'-DDD	5.5E-06	NA	NA	NA	5.5E-06	Liver	2.7E-01	NA	NA	2.7E-01
			4,4'-DDE	2.6E-05	NA	NA	NA	2.6E-05	Liver	9.0E-01	NA	NA	9.0E-01
			4,4'-DDT	6.4E-07	NA	NA	NA	6.4E-07	Liver	2.2E-02	NA	NA	2.2E-02
			alpha-Chlordane	5.9E-06	NA	NA	NA	5.9E-06	Liver	2.0E-01	NA	NA	2.0E-01
			Aroclor-1254	3.8E-03	NA	NA	NA	3.8E-03	Immune system	5.5E+02	NA	NA	5.5E+02
			Aroclor-1268	3.1E-05	NA	NA	NA	3.1E-05	Immune system	4.6E+00	NA	NA	4.6E+00
			Dieldrin	5.0E-05	NA	NA	NA	5.0E-05	Liver	3.6E-01	NA	NA	3.6E-01
			gamma-Chlordane	3.7E-06	NA	NA	NA	3.7E-06	Liver	1.2E-01	NA	NA	1.2E-01
			Heptachlor Epoxide	5.6E-06	NA	NA	NA	5.6E-06	Liver	2.7E-01	NA	NA	2.7E-01
			Technical Chlordane	3.2E-04	NA	NA	NA	3.2E-04	Liver	1.1E+01	NA	NA	1.1E+01
			Arsenic	1.5E-05	NA	NA	NA	1.5E-05	Skin	1.9E-01	NA	NA	1.9E-01
			Chromium	NC	NA	NA	NA		NOAEL	2.6E-01	NA	NA	2.6E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	8.3E-01	NA	NA	8.3E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.3E+00	NA	NA	2.3E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.9E-02	NA	NA	NA	4.9E-02		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	2.7E-03	NA	NA	NA	2.7E-03		--	NA	NA	
			CHEMICAL TOTAL	5.6E-02	--	--	--	6E-02		5.7E+02	0.0E+00	--	5.7E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-02					5.7E+02
	EXPOSURE MEDIUM TOTAL							6E-02					5.7E+02
WHOLE BODY TOTAL								6E-02					5.7E+02

US EPA ARCHIVE DOCUMENT

TABLE F.9.41.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
RECEPTOR TOTAL								6E-02					5.7E+02
							TOTAL RISK ACROSS ALL MEDIA	6E-02			TOTAL HAZARD ACROSS ALL MEDIA		5.7E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

TOTAL ADVERSE CLINICAL SIGNS HI =	3.1E-03
TOTAL CARDIOVASCULAR SYSTEM HI =	4.5E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	2.3E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	1.1E-04
TOTAL IMMUNE SYSTEM HI =	5.5E+02
TOTAL KIDNEY HI =	7.8E-03
TOTAL LIVER HI =	1.3E+01
	--
TOTAL NERVOUS SYSTEM HI =	1.3E-04
TOTAL NOAEL HI =	3.3E-01
TOTAL REPRODUCTIVE SYSTEM HI =	2.5E-04
TOTAL SKIN HI =	2.1E-01
	--

US EPA ARCHIVE DOCUMENT

TABLE F.9.42.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.0E-04	NA	NA	2.0E-04
			Benzo(a)anthracene	2.0E-06	NA	NA	NA	2.0E-06	Kidney	1.1E-03	NA	NA	1.1E-03
			Benzo(a)pyrene	3.1E-05	NA	NA	NA	3.1E-05	Kidney	1.7E-03	NA	NA	1.7E-03
			Benzo(b)fluoranthene	1.4E-06	NA	NA	NA	1.4E-06	Kidney	7.6E-04	NA	NA	7.6E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.3E-03	NA	NA	1.3E-03
			Dibenzo(a,h)anthracene	5.8E-06	NA	NA	NA	5.8E-06	Kidney	3.1E-04	NA	NA	3.1E-04
			Indeno(1,2,3-cd)pyrene	2.9E-06	NA	NA	NA	2.9E-06	Kidney	1.5E-03	NA	NA	1.5E-03
			Phenanthrene	NC	NA	NA	NA		Kidney	2.4E-03	NA	NA	2.4E-03
			4,4'-DDD	4.5E-06	NA	NA	NA	4.5E-06	Liver	4.3E-01	NA	NA	4.3E-01
			4,4'-DDE	2.1E-05	NA	NA	NA	2.1E-05	Liver	1.5E+00	NA	NA	1.5E+00
			4,4'-DDT	5.2E-07	NA	NA	NA	5.2E-07	Liver	3.6E-02	NA	NA	3.6E-02
			alpha-Chlordane	4.8E-06	NA	NA	NA	4.8E-06	Liver	3.2E-01	NA	NA	3.2E-01
			Aroclor-1254	3.1E-03	NA	NA	NA	3.1E-03	Immune system	8.9E+02	NA	NA	8.9E+02
			Aroclor-1268	2.6E-05	NA	NA	NA	2.6E-05	Immune system	7.5E+00	NA	NA	7.5E+00
			Dieldrin	4.0E-05	NA	NA	NA	4.0E-05	Liver	5.9E-01	NA	NA	5.9E-01
			gamma-Chlordane	3.0E-06	NA	NA	NA	3.0E-06	Liver	2.0E-01	NA	NA	2.0E-01
			Heptachlor Epoxide	4.5E-06	NA	NA	NA	4.5E-06	Liver	4.5E-01	NA	NA	4.5E-01
			Technical Chlordane	2.6E-04	NA	NA	NA	2.6E-04	Liver	1.8E+01	NA	NA	1.8E+01
			Arsenic	1.2E-05	NA	NA	NA	1.2E-05	Skin	3.1E-01	NA	NA	3.1E-01
			Chromium	NC	NA	NA	NA		NOAEL	4.3E-01	NA	NA	4.3E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.3E+00	NA	NA	1.3E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	3.7E+00	NA	NA	3.7E+00
			Toxicity Equivalency (Dioxins/Furans) - Man	3.9E-02	NA	NA	NA	3.9E-02		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Man	2.2E-03	NA	NA	NA	2.2E-03		--	NA	NA	
			CHEMICAL TOTAL	4.5E-02	--	--	--	5E-02		9.3E+02	0.0E+00	--	9.3E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-02					9.3E+02
	EXPOSURE MEDIUM TOTAL							5E-02					9.3E+02
WHOLE BODY TOTAL								5E-02					9.3E+02
RECEPTOR TOTAL								5E-02					9.3E+02
							TOTAL RISK ACROSS ALL MEDIA	5E-02	TOTAL HAZARD ACROSS ALL MEDIA				9.3E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	3.7E+00
	--
	--
	--
	--
TOTAL IMMUNE SYSTEM HI =	9.0E+02
TOTAL KIDNEY HI =	9.1E-03
TOTAL LIVER HI =	2.1E+01
	--
	--
TOTAL NOAEL HI =	4.3E-01
	--
TOTAL SKIN HI =	3.1E-01
	--

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.9.43.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	MANTON POND	Benzo(a)anthracene	4.1E-08	NA	3.7E-08	NA	7.8E-08	Kidney	2.5E-06	NA	2.3E-06	4.8E-06
			Benzo(a)pyrene	5.1E-07	NA	4.5E-07	NA	9.6E-07	Kidney	3.1E-06	NA	2.8E-06	5.9E-06
			Benzo(b)fluoranthene	8.8E-08	NA	7.8E-08	NA	1.7E-07	Kidney	5.4E-06	NA	4.8E-06	1.0E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	1.9E-06	NA	1.7E-06	3.5E-06
			Benzo(k)fluoranthene	2.8E-09	NA	2.4E-09	NA	5.2E-09	Kidney	1.7E-06	NA	1.5E-06	3.2E-06
			bis(2-Ethylhexyl)phthalate	1.1E-09	NA	7.7E-10	NA	1.9E-09	Liver	5.5E-06	NA	3.7E-06	9.2E-06
			Indeno(1,2,3-cd)pyrene	4.0E-08	NA	3.5E-08	NA	7.5E-08	Kidney	2.5E-06	NA	2.2E-06	4.6E-06
			Phenanthrene	NC	NA	NC	NA		Kidney	2.5E-06	NA	2.3E-06	4.8E-06
			alpha-Chlordane	2.6E-10	NA	7.2E-11	NA	3.4E-10	Liver	2.0E-06	NA	5.5E-07	2.6E-06
			gamma-Chlordane	3.3E-10	NA	9.0E-11	NA	4.2E-10	Liver	2.5E-06	NA	6.9E-07	3.2E-06
			Arsenic	2.7E-07	NA	5.6E-08	NA	3.3E-07	Skin	8.2E-04	NA	1.7E-04	9.9E-04
			Cadmium	NC	NA	NC	NA		Kidney	2.4E-04	NA	6.6E-05	3.1E-04
			Chromium	NC	NA	NC	NA		NOAEL	1.6E-03	NA		1.6E-03
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	7.8E-04	NA		7.8E-04
			Vanadium	NC	NA	NC	NA		NOAEL	2.6E-04	NA		2.6E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.8E-05	NA	5.8E-06	NA	3.4E-05		--	NA	--	
			CHEMICAL TOTAL	2.9E-05	--	6.4E-06	--	4E-05		3.7E-03	0.0E+00	2.6E-04	4E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-05					4E-03
	EXPOSURE MEDIUM TOTAL							4E-05					4E-03
SEDIMENT TOTAL								4E-05					4E-03
SURFACE WATER	SURFACE WATER	MANTON POND	Acenaphthylene	NC	NA	NC	NA		Liver	1.1E-09	NA	--	1.1E-09
			bis(2-Ethylhexyl)phthalate	9.0E-09	NA	2.7E-06	NA	2.7E-06	Liver	4.3E-05	NA	1.3E-02	1.3E-02
			Aldrin	1.5E-08	NA	2.6E-07	NA	2.7E-07	Liver	3.9E-05	NA	6.7E-04	7.1E-04
			alpha-Chlordane	2.5E-10	NA	1.0E-07	NA	1.0E-07	Liver	1.9E-06	NA	7.8E-04	7.8E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	2.7E-08	NA	--	2.7E-08
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	8.5E-07	NA	1.2E-04	1.2E-04
			gamma-Chlordane	2.8E-10	NA	1.1E-07	NA	1.1E-07	Liver	2.1E-06	NA	8.6E-04	8.6E-04
			Arsenic	2.6E-07	NA	4.5E-07	NA	7.1E-07	Skin	7.8E-04	NA	1.4E-03	2.1E-03
			Barium	NC	NA	NC	NA		Cardiovascular system	1.5E-05	NA	3.8E-04	3.9E-04
			Chromium	NC	NA	NC	NA		NOAEL	3.9E-05	NA	5.4E-03	5.5E-03
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	2.8E-04	NA	1.2E-02	1.2E-02
			Mercury	NC	NA	NC	NA		Immune system	6.7E-07	NA	1.7E-05	1.7E-05
			Thallium	NC	NA	NC	NA		NOAEL	1.4E-03	NA	2.4E-03	3.8E-03
			Nitrate	NC	NA	NC	NA		Hematological system	2.4E-05	NA	--	2.4E-05
			Nitrite-N	NC	NA	NC	NA		Hematological system	4.4E-05	NA	--	4.4E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.9E-06	NA	1.9E-02	NA	1.9E-02		--	NA	--	
			CHEMICAL TOTAL	5.2E-06	--	1.9E-02	--	2E-02		2.7E-03	0.0E+00	3.7E-02	4E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-02					4E-02
	EXPOSURE MEDIUM TOTAL							2E-02					4E-02
SURFACE WATER TOTAL								2E-02					4E-02

US EPA ARCHIVE DOCUMENT

TABLE F.9.43.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.4E-05	NA	NA	1.4E-05
			Dibenzo(a,h)anthracene	2.5E-06	NA	NA	NA	2.5E-06	Kidney	1.5E-05	NA	NA	1.5E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	3.4E-04	NA	NA	3.4E-04
			4,4'-DDE	6.3E-06	NA	NA	NA	6.3E-06	Liver	5.0E-02	NA	NA	5.0E-02
			alpha-Chlordane	1.4E-06	NA	NA	NA	1.4E-06	Liver	1.1E-02	NA	NA	1.1E-02
			Aroclor-1254	6.6E-04	NA	NA	NA	6.6E-04	Immune system	2.2E+01	NA	NA	2.2E+01
			Aroclor-1268	2.0E-04	NA	NA	NA	2.0E-04	Immune system	6.8E+00	NA	NA	6.8E+00
			Dieldrin	1.4E-05	NA	NA	NA	1.4E-05	Liver	2.3E-02	NA	NA	2.3E-02
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	6.4E-04	NA	NA	6.4E-04
			gamma-Chlordane	5.1E-07	NA	NA	NA	5.1E-07	Liver	3.9E-03	NA	NA	3.9E-03
			Technical Chlordane	3.4E-05	NA	NA	NA	3.4E-05	Liver	2.6E-01	NA	NA	2.6E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.8E+00	NA	NA	1.8E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.6E+00	NA	NA	5.6E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	7.0E-03	NA	NA	NA	7.0E-03		--	NA	NA	
			CHEMICAL TOTAL	7.9E-03	--	--	--	8E-03		3.7E+01	0.0E+00	--	4E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						8E-03					4E+01
	EXPOSURE MEDIUM TOTAL							8E-03					4E+01
FILLET TOTAL								8E-03					4E+01
RECEPTOR TOTAL								3E-02					3.7E+01
							TOTAL RISK ACROSS ALL MEDIA	3E-02	TOTAL HAZARD ACROSS ALL MEDIA				3.7E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

	--
TOTAL CARDIOVASCULAR SYSTEM HI =	3.9E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	5.6E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	6.8E-05
TOTAL IMMUNE SYSTEM HI =	3.1E+01
TOTAL KIDNEY HI =	1.3E-03
TOTAL LIVER HI =	3.7E-01
	--
TOTAL NERVOUS SYSTEM HI =	1.2E-04
TOTAL NOAEL HI =	2.4E-02
	--
TOTAL SKIN HI =	3.1E-03
	--

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE F.9.44.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	MANTON POND	Benzo(a)anthracene	1.5E-08	NA	2.8E-08	NA	4.2E-08	Kidney	4.0E-06	NA	7.4E-06	1.1E-05
			Benzo(a)pyrene	1.8E-07	NA	3.4E-07	NA	5.2E-07	Kidney	4.9E-06	NA	9.1E-06	1.4E-05
			Benzo(b)fluoranthene	3.2E-08	NA	5.9E-08	NA	9.1E-08	Kidney	8.4E-06	NA	1.6E-05	2.4E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	2.9E-06	NA	5.4E-06	8.3E-06
			Benzo(k)fluoranthene	9.9E-10	NA	1.8E-09	NA	2.8E-09	Kidney	2.6E-06	NA	4.9E-06	7.5E-06
			bis(2-Ethylhexyl)phthalate	4.1E-10	NA	5.8E-10	NA	9.9E-10	Liver	8.5E-06	NA	1.2E-05	2.1E-05
			Indeno(1,2,3-cd)pyrene	1.4E-08	NA	2.7E-08	NA	4.1E-08	Kidney	3.8E-06	NA	7.1E-06	1.1E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	4.0E-06	NA	7.4E-06	1.1E-05
			alpha-Chlordane	9.5E-11	NA	5.4E-11	NA	1.5E-10	Liver	3.2E-06	NA	1.8E-06	5.0E-06
			gamma-Chlordane	1.2E-10	NA	6.8E-11	NA	1.9E-10	Liver	4.0E-06	NA	2.3E-06	6.2E-06
			Arsenic	9.9E-08	NA	4.2E-08	NA	1.4E-07	Skin	1.3E-03	NA	5.5E-04	1.8E-03
			Cadmium	NC	NA	NC	NA		Kidney	3.8E-04	NA	2.2E-04	6.0E-04
			Chromium	NC	NA	NC	NA		NOAEL	2.5E-03	NA		2.5E-03
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	1.2E-03	NA		1.2E-03
			Vanadium	NC	NA	NC	NA		NOAEL	4.0E-04	NA		4.0E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.0E-05	NA	4.4E-06	NA	1.5E-05		--	NA	--	
			CHEMICAL TOTAL	1.1E-05	--	4.9E-06	--	2E-05		5.8E-03	0.0E+00	8.4E-04	7E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-05					7E-03
	EXPOSURE MEDIUM TOTAL							2E-05					7E-03
SEDIMENT TOTAL								2E-05					7E-03
SURFACE WATER	SURFACE WATER	MANTON POND	Acenaphthylene	NC	NA	NC	NA		Liver	1.7E-09	NA	--	1.7E-09
			bis(2-Ethylhexyl)phthalate	3.2E-09	NA	6.9E-07	NA	7.0E-07	Liver	6.7E-05	NA	1.4E-02	1.5E-02
			Aldrin	5.3E-09	NA	6.6E-08	NA	7.1E-08	Liver	6.1E-05	NA	7.5E-04	8.1E-04
			alpha-Chlordane	9.0E-11	NA	2.6E-08	NA	2.6E-08	Liver	3.0E-06	NA	8.7E-04	8.7E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	4.2E-08	NA	--	4.2E-08
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	1.3E-06	NA	1.3E-04	1.3E-04
			gamma-Chlordane	1.0E-10	NA	2.9E-08	NA	2.9E-08	Liver	3.3E-06	NA	9.6E-04	9.7E-04
			Arsenic	9.4E-08	NA	1.2E-07	NA	2.1E-07	Skin	1.2E-03	NA	1.5E-03	2.7E-03
			Barium	NC	NA	NC	NA		Cardiovascular system	2.4E-05	NA	4.2E-04	4.5E-04
			Chromium	NC	NA	NC	NA		NOAEL	6.1E-05	NA	6.1E-03	6.1E-03
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	4.3E-04	NA	1.3E-02	1.4E-02
			Mercury	NC	NA	NC	NA		Immune system	1.0E-06	NA	1.9E-05	2.0E-05
			Thallium	NC	NA	NC	NA		NOAEL	2.2E-03	NA	2.7E-03	4.9E-03
			Nitrate	NC	NA	NC	NA		Hematological system	3.8E-05	NA	--	3.8E-05
			Nitrite-N	NC	NA	NC	NA		Hematological system	6.8E-05	NA	--	6.8E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.8E-06	NA	5.0E-03	NA	5.0E-03		--	NA	--	
			CHEMICAL TOTAL	1.9E-06	--	5.0E-03	--	5E-03		4.1E-03	0.0E+00	4.1E-02	5E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-03					5E-02
	EXPOSURE MEDIUM TOTAL							5E-03					5E-02
SURFACE WATER TOTAL								5E-03					5E-02

US EPA ARCHIVE DOCUMENT

TABLE F.9.44.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.4E-05	NA	NA	1.4E-05
			Dibenzo(a,h)anthracene	5.9E-07	NA	NA	NA	5.9E-07	Kidney	1.6E-05	NA	NA	1.6E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	3.5E-04	NA	NA	3.5E-04
			4,4'-DDE	1.5E-06	NA	NA	NA	1.5E-06	Liver	5.2E-02	NA	NA	5.2E-02
			alpha-Chlordane	3.3E-07	NA	NA	NA	3.3E-07	Liver	1.1E-02	NA	NA	1.1E-02
			Aroclor-1254	1.6E-04	NA	NA	NA	1.6E-04	Immune system	2.3E+01	NA	NA	2.3E+01
			Aroclor-1268	4.9E-05	NA	NA	NA	4.9E-05	Immune system	7.1E+00	NA	NA	7.1E+00
			Dieldrin	3.3E-06	NA	NA	NA	3.3E-06	Liver	2.4E-02	NA	NA	2.4E-02
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	6.7E-04	NA	NA	6.7E-04
			gamma-Chlordane	1.2E-07	NA	NA	NA	1.2E-07	Liver	4.0E-03	NA	NA	4.0E-03
			Technical Chlordane	8.2E-06	NA	NA	NA	8.2E-06	Liver	2.7E-01	NA	NA	2.7E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.8E+00	NA	NA	1.8E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.8E+00	NA	NA	5.8E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.7E-03	NA	NA	NA	1.7E-03		--	NA	NA	
			CHEMICAL TOTAL	1.9E-03	--	--	--	2E-03		3.8E+01	0.0E+00	--	4E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-03					4E+01
	EXPOSURE MEDIUM TOTAL							2E-03					4E+01
FILLET TOTAL								2E-03					4E+01
RECEPTOR TOTAL								7E-03					3.8E+01
			TOTAL RISK ACROSS ALL MEDIA					7E-03	TOTAL HAZARD ACROSS ALL MEDIA				3.8E+01

NOTES:
NC - Not carcinogenic by *this* exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

	--
TOTAL CARDIOVASCULAR SYSTEM HI =	4.5E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	5.8E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	1.1E-04
TOTAL IMMUNE SYSTEM HI =	3.2E+01
TOTAL KIDNEY HI =	1.7E-03
TOTAL LIVER HI =	3.8E-01
	--
TOTAL NERVOUS SYSTEM HI =	1.3E-04
TOTAL NOAEL HI =	2.9E-02
	--
TOTAL SKIN HI =	4.6E-03
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US EPA ARCHIVE DOCUMENT

TABLE F.9.45.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.3E-05	NA	NA	2.3E-05
			Dibenzo(a,h)anthracene	4.8E-07	NA	NA	NA	4.8E-07	Kidney	2.6E-05	NA	NA	2.6E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	5.7E-04	NA	NA	5.7E-04
			4,4'-DDE	1.2E-06	NA	NA	NA	1.2E-06	Liver	8.4E-02	NA	NA	8.4E-02
			alpha-Chlordane	2.7E-07	NA	NA	NA	2.7E-07	Liver	1.8E-02	NA	NA	1.8E-02
			Aroclor-1254	1.3E-04	NA	NA	NA	1.3E-04	Immune system	3.8E+01	NA	NA	3.8E+01
			Aroclor-1268	4.0E-05	NA	NA	NA	4.0E-05	Immune system	1.2E+01	NA	NA	1.2E+01
			Dieldrin	2.7E-06	NA	NA	NA	2.7E-06	Liver	3.9E-02	NA	NA	3.9E-02
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	1.1E-03	NA	NA	1.1E-03
			gamma-Chlordane	9.8E-08	NA	NA	NA	9.8E-08	Liver	6.6E-03	NA	NA	6.6E-03
			Technical Chlordane	6.7E-06	NA	NA	NA	6.7E-06	Liver	4.4E-01	NA	NA	4.4E-01
			Lead	--	NA	NA	NA		--	--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	3.0E+00	NA	NA	3.0E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	9.5E+00	NA	NA	9.5E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.4E-03	NA	NA	NA	1.4E-03		--	NA	NA	
			CHEMICAL TOTAL	1.5E-03	--	--	--	2E-03		6.2E+01	0.0E+00	--	6E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-03					6E+01
	EXPOSURE MEDIUM TOTAL							2E-03					6E+01
FILLET TOTAL								2E-03					6E+01
RECEPTOR TOTAL								2E-03					6.2E+01
							TOTAL RISK ACROSS ALL MEDIA	2E-03	TOTAL HAZARD ACROSS ALL MEDIA				6.2E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - *Not calculated; dose-response data and/or dermal absorption values are not available.*

	--
	--
TOTAL DEVELOPMENTAL TOXICITY HI =	9.5E+00
	--
	--
	--
	--
TOTAL IMMUNE SYSTEM HI =	5.2E+01
TOTAL KIDNEY HI =	1.7E-03
TOTAL LIVER HI =	5.9E-01
	--
	--
	--
	--
	--
	--

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE F.9.46.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: *CURRENT/FUTURE*
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	MANTON POND	Benzo(a)anthracene	4.1E-08	NA	3.7E-08	NA	7.8E-08	Kidney	2.5E-06	NA	2.3E-06	4.8E-06
			Benzo(a)pyrene	5.1E-07	NA	4.5E-07	NA	9.6E-07	Kidney	3.1E-06	NA	2.8E-06	5.9E-06
			Benzo(b)fluoranthene	8.8E-08	NA	7.8E-08	NA	1.7E-07	Kidney	5.4E-06	NA	4.8E-06	1.0E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	1.9E-06	NA	1.7E-06	3.5E-06
			Benzo(k)fluoranthene	2.8E-09	NA	2.4E-09	NA	5.2E-09	Kidney	1.7E-06	NA	1.5E-06	3.2E-06
			bis(2-Ethylhexyl)phthalate	1.1E-09	NA	7.7E-10	NA	1.9E-09	Liver	5.5E-06	NA	3.7E-06	9.2E-06
			Indeno(1,2,3-cd)pyrene	4.0E-08	NA	3.5E-08	NA	7.5E-08	Kidney	2.5E-06	NA	2.2E-06	4.6E-06
			Phenanthrene	NC	NA	NC	NA		Kidney	2.5E-06	NA	2.3E-06	4.8E-06
			alpha-Chlordane	2.6E-10	NA	7.2E-11	NA	3.4E-10	Liver	2.0E-06	NA	5.5E-07	2.6E-06
			gamma-Chlordane	3.3E-10	NA	9.0E-11	NA	4.2E-10	Liver	2.5E-06	NA	6.9E-07	3.2E-06
			Arsenic	2.7E-07	NA	5.6E-08	NA	3.3E-07	Skin	8.2E-04	NA	1.7E-04	9.9E-04
			Cadmium	NC	NA	NC	NA		Kidney	2.4E-04	NA	6.6E-05	3.1E-04
			Chromium	NC	NA	NC	NA		NOAEL	1.6E-03	NA		1.6E-03
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	7.8E-04	NA		7.8E-04
			Vanadium	NC	NA	NC	NA		NOAEL	2.6E-04	NA		2.6E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.8E-05	NA	5.8E-06	NA	3.4E-05		--	NA	--	
			CHEMICAL TOTAL	2.9E-05	--	6.4E-06	--	4E-05		3.7E-03	0.0E+00	2.6E-04	4E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-05					4E-03
	EXPOSURE MEDIUM TOTAL							4E-05					4E-03
SEDIMENT TOTAL								4E-05					4E-03
SURFACE WATER	SURFACE WATER	MANTON POND	Acenaphthylene	NC	NA	NC	NA		Liver	1.1E-09	NA	--	1.1E-09
			bis(2-Ethylhexyl)phthalate	9.0E-09	NA	2.7E-06	NA	2.7E-06	Liver	4.3E-05	NA	1.3E-02	1.3E-02
			Aldrin	1.5E-08	NA	2.6E-07	NA	2.7E-07	Liver	3.9E-05	NA	6.7E-04	7.1E-04
			alpha-Chlordane	2.5E-10	NA	1.0E-07	NA	1.0E-07	Liver	1.9E-06	NA	7.8E-04	7.8E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	2.7E-08	NA	--	2.7E-08
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	8.5E-07	NA	1.2E-04	1.2E-04
			gamma-Chlordane	2.8E-10	NA	1.1E-07	NA	1.1E-07	Liver	2.1E-06	NA	8.6E-04	8.6E-04
			Arsenic	2.6E-07	NA	4.5E-07	NA	7.1E-07	Skin	7.8E-04	NA	1.4E-03	2.1E-03
			Barium	NC	NA	NC	NA		Cardiovascular system	1.5E-05	NA	3.8E-04	3.9E-04
			Chromium	NC	NA	NC	NA		NOAEL	3.9E-05	NA	5.4E-03	5.5E-03
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	2.8E-04	NA	1.2E-02	1.2E-02
			Mercury	NC	NA	NC	NA		Immune system	6.7E-07	NA	1.7E-05	1.7E-05
			Thallium	NC	NA	NC	NA		NOAEL	1.4E-03	NA	2.4E-03	3.8E-03
			Nitrate	NC	NA	NC	NA		Hematological system	2.4E-05	NA	--	2.4E-05
			Nitrite-N	NC	NA	NC	NA		Hematological system	4.4E-05	NA	--	4.4E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.9E-06	NA	1.9E-02	NA	1.9E-02		--	NA	--	
			CHEMICAL TOTAL	5.2E-06	--	1.9E-02	--	2E-02		2.7E-03	0.0E+00	3.7E-02	4E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-02					4E-02
	EXPOSURE MEDIUM TOTAL							2E-02					4E-02
SURFACE WATER TOTAL								2E-02					4E-02

US EPA ARCHIVE DOCUMENT

TABLE F.9.46.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	WHOLE BODY	MANTON POND	Acenaphthylene	NC	NA	NA	NA		Liver	3.3E-05	NA	NA	3.3E-05
			Benzo(a)pyrene	2.5E-05	NA	NA	NA	2.5E-05	Kidney	1.5E-04	NA	NA	1.5E-04
			Benzo(b)fluoranthene	3.4E-06	NA	NA	NA	3.4E-06	Kidney	2.1E-04	NA	NA	2.1E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.1E-04	NA	NA	1.1E-04
			Dibenzo(a,h)anthracene	4.4E-06	NA	NA	NA	4.4E-06	Kidney	2.7E-05	NA	NA	2.7E-05
			Indeno(1,2,3-cd)pyrene	1.9E-06	NA	NA	NA	1.9E-06	Kidney	1.2E-04	NA	NA	1.2E-04
			Phenanthrene	NC	NA	NA	NA		Kidney	1.1E-03	NA	NA	1.1E-03
			4,4'-DDE	5.3E-05	NA	NA	NA	5.3E-05	Liver	4.2E-01	NA	NA	4.2E-01
			alpha-Chlordane	5.0E-06	NA	NA	NA	5.0E-06	Liver	3.8E-02	NA	NA	3.8E-02
			Aroclor-1254	2.7E-03	NA	NA	NA	2.7E-03	Immune system	9.1E+01	NA	NA	9.1E+01
			Aroclor-1268	8.9E-04	NA	NA	NA	8.9E-04	Immune system	3.0E+01	NA	NA	3.0E+01
			Dieldrin	5.3E-05	NA	NA	NA	5.3E-05	Liver	8.9E-02	NA	NA	8.9E-02
			gamma-Chlordane	1.7E-06	NA	NA	NA	1.7E-06	Liver	1.3E-02	NA	NA	1.3E-02
			Heptachlor Epoxide	6.9E-06	NA	NA	NA	6.9E-06	Liver	7.8E-02	NA	NA	7.8E-02
			Technical Chlordane	1.2E-04	NA	NA	NA	1.2E-04	Liver	9.5E-01	NA	NA	9.5E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	--	NA	NA	NA		Immune system	1.5E+00	NA	NA	1.5E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	4.5E+00	NA	NA	4.5E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.3E-02	NA	NA	NA	3.3E-02		--	NA	NA	
			CHEMICAL TOTAL	3.6E-02	--	--	--	4E-02		1.3E+02	0.0E+00	--	1E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-02					1E+02
	EXPOSURE MEDIUM TOTAL							4E-02					1E+02
WHOLE BODY TOTAL								4E-02					1E+02
RECEPTOR TOTAL								6E-02					1.3E+02
							TOTAL RISK ACROSS ALL MEDIA	6E-02	TOTAL HAZARD ACROSS ALL MEDIA				1.3E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

	--
TOTAL CARDIOVASCULAR SYSTEM HI =	3.9E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	4.5E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	6.8E-05
TOTAL IMMUNE SYSTEM HI =	1.2E+02
TOTAL KIDNEY HI =	2.1E-03
TOTAL LIVER HI =	1.6E+00
	--
TOTAL NERVOUS SYSTEM HI =	1.2E-04
TOTAL NOAEL HI =	2.4E-02
	--
TOTAL SKIN HI =	3.1E-03
	--

US EPA ARCHIVE DOCUMENT

TABLE F.9.47.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	MANTON POND	Benzo(a)anthracene	1.5E-08	NA	2.8E-08	NA	4.2E-08	Kidney	4.0E-06	NA	7.4E-06	1.1E-05
			Benzo(a)pyrene	1.8E-07	NA	3.4E-07	NA	5.2E-07	Kidney	4.9E-06	NA	9.1E-06	1.4E-05
			Benzo(b)fluoranthene	3.2E-08	NA	5.9E-08	NA	9.1E-08	Kidney	8.4E-06	NA	1.6E-05	2.4E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	2.9E-06	NA	5.4E-06	8.3E-06
			Benzo(k)fluoranthene	9.9E-10	NA	1.8E-09	NA	2.8E-09	Kidney	2.6E-06	NA	4.9E-06	7.5E-06
			bis(2-Ethylhexyl)phthalate	4.1E-10	NA	5.8E-10	NA	9.9E-10	Liver	8.5E-06	NA	1.2E-05	2.1E-05
			Indeno(1,2,3-cd)pyrene	1.4E-08	NA	2.7E-08	NA	4.1E-08	Kidney	3.8E-06	NA	7.1E-06	1.1E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	4.0E-06	NA	7.4E-06	1.1E-05
			alpha-Chlordane	9.5E-11	NA	5.4E-11	NA	1.5E-10	Liver	3.2E-06	NA	1.8E-06	5.0E-06
			gamma-Chlordane	1.2E-10	NA	6.8E-11	NA	1.9E-10	Liver	4.0E-06	NA	2.3E-06	6.2E-06
			Arsenic	9.9E-08	NA	4.2E-08	NA	1.4E-07	Skin	1.3E-03	NA	5.5E-04	1.8E-03
			Cadmium	NC	NA	NC	NA		Kidney	3.8E-04	NA	2.2E-04	6.0E-04
			Chromium	NC	NA	NC	NA		NOAEL	2.5E-03	NA		2.5E-03
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	1.2E-03	NA		1.2E-03
			Vanadium	NC	NA	NC	NA		NOAEL	4.0E-04	NA		4.0E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.0E-05	NA	4.4E-06	NA	1.5E-05		--	NA	--	
			CHEMICAL TOTAL	1.1E-05	--	4.9E-06	--	2E-05		5.8E-03	0.0E+00	8.4E-04	7E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-05					7E-03
	EXPOSURE MEDIUM TOTAL							2E-05					7E-03
SEDIMENT TOTAL								2E-05					7E-03
SURFACE WATER	SURFACE WATER	MANTON POND	Acenaphthylene	NC	NA	NC	NA		Liver	1.7E-09	NA	--	1.7E-09
			bis(2-Ethylhexyl)phthalate	3.2E-09	NA	6.9E-07	NA	7.0E-07	Liver	6.7E-05	NA	1.4E-02	1.5E-02
			Aldrin	5.3E-09	NA	6.6E-08	NA	7.1E-08	Liver	6.1E-05	NA	7.5E-04	8.1E-04
			alpha-Chlordane	9.0E-11	NA	2.6E-08	NA	2.6E-08	Liver	3.0E-06	NA	8.7E-04	8.7E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	4.2E-08	NA	--	4.2E-08
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	1.3E-06	NA	1.3E-04	1.3E-04
			gamma-Chlordane	1.0E-10	NA	2.9E-08	NA	2.9E-08	Liver	3.3E-06	NA	9.6E-04	9.7E-04
			Arsenic	9.4E-08	NA	1.2E-07	NA	2.1E-07	Skin	1.2E-03	NA	1.5E-03	2.7E-03
			Barium	NC	NA	NC	NA		Cardiovascular system	2.4E-05	NA	4.2E-04	4.5E-04
			Chromium	NC	NA	NC	NA		NOAEL	6.1E-05	NA	6.1E-03	6.1E-03
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	4.3E-04	NA	1.3E-02	1.4E-02
			Mercury	NC	NA	NC	NA		Immune system	1.0E-06	NA	1.9E-05	2.0E-05
			Thallium	NC	NA	NC	NA		NOAEL	2.2E-03	NA	2.7E-03	4.9E-03
			Nitrate	NC	NA	NC	NA		Hematological system	3.8E-05	NA	--	3.8E-05
			Nitrite-N	NC	NA	NC	NA		Hematological system	6.8E-05	NA	--	6.8E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.8E-06	NA	5.0E-03	NA	5.0E-03		--	NA	--	
			CHEMICAL TOTAL	1.9E-06	--	5.0E-03	--	5E-03		4.1E-03	0.0E+00	4.1E-02	5E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-03					5E-02
	EXPOSURE MEDIUM TOTAL							5E-03					5E-02
SURFACE WATER TOTAL								5E-03					5E-02

US EPA ARCHIVE DOCUMENT

TABLE F.9.47.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	WHOLE BODY	MANTON POND	Acenaphthylene	NC	NA	NA	NA		Liver	3.4E-05	NA	NA	3.4E-05
			Benzo(a)pyrene	5.9E-06	NA	NA	NA	5.9E-06	Kidney	1.6E-04	NA	NA	1.6E-04
			Benzo(b)fluoranthene	8.2E-07	NA	NA	NA	8.2E-07	Kidney	2.2E-04	NA	NA	2.2E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.1E-04	NA	NA	1.1E-04
			Dibenzo(a,h)anthracene	1.1E-06	NA	NA	NA	1.1E-06	Kidney	2.8E-05	NA	NA	2.8E-05
			Indeno(1,2,3-cd)pyrene	4.6E-07	NA	NA	NA	4.6E-07	Kidney	1.2E-04	NA	NA	1.2E-04
			Phenanthrene	NC	NA	NA	NA		Kidney	1.1E-03	NA	NA	1.1E-03
			4,4'-DDE	1.3E-05	NA	NA	NA	1.3E-05	Liver	4.3E-01	NA	NA	4.3E-01
			alpha-Chlordane	1.2E-06	NA	NA	NA	1.2E-06	Liver	4.0E-02	NA	NA	4.0E-02
			Aroclor-1254	6.5E-04	NA	NA	NA	6.5E-04	Immune system	9.4E+01	NA	NA	9.4E+01
			Aroclor-1268	2.1E-04	NA	NA	NA	2.1E-04	Immune system	3.1E+01	NA	NA	3.1E+01
			Dieldrin	1.3E-05	NA	NA	NA	1.3E-05	Liver	9.2E-02	NA	NA	9.2E-02
			gamma-Chlordane	4.0E-07	NA	NA	NA	4.0E-07	Liver	1.3E-02	NA	NA	1.3E-02
			Heptachlor Epoxide	1.6E-06	NA	NA	NA	1.6E-06	Liver	8.1E-02	NA	NA	8.1E-02
			Technical Chlordane	3.0E-05	NA	NA	NA	3.0E-05	Liver	9.9E-01	NA	NA	9.9E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	--	NA	NA	NA		Immune system	1.6E+00	NA	NA	1.6E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	4.7E+00	NA	NA	4.7E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	7.8E-03	NA	NA	NA	7.8E-03		--	NA	NA	
			CHEMICAL TOTAL	8.7E-03	--	--	--	9E-03		1.3E+02	0.0E+00	--	1E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						9E-03					1E+02
	EXPOSURE MEDIUM TOTAL							9E-03					1E+02
WHOLE BODY TOTAL								9E-03					1E+02
RECEPTOR TOTAL								1E-02					1.3E+02
			TOTAL RISK ACROSS ALL MEDIA					1E-02	TOTAL HAZARD ACROSS ALL MEDIA				1.3E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

	--
TOTAL CARDIOVASCULAR SYSTEM HI =	4.5E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	4.7E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	1.1E-04
TOTAL IMMUNE SYSTEM HI =	1.3E+02
TOTAL KIDNEY HI =	2.5E-03
TOTAL LIVER HI =	1.7E+00
	--
TOTAL NERVOUS SYSTEM HI =	1.3E-04
TOTAL NOAEL HI =	2.9E-02
	--
TOTAL SKIN HI =	4.6E-03
	--

US EPA ARCHIVE DOCUMENT

TABLE F.9.48.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	WHOLE BODY	MANTON POND	Acenaphthylene	NC	NA	NA	NA		Liver	5.6E-05	NA	NA	5.6E-05
			Benzo(a)pyrene	4.8E-06	NA	NA	NA	4.8E-06	Kidney	2.6E-04	NA	NA	2.6E-04
			Benzo(b)fluoranthene	6.6E-07	NA	NA	NA	6.6E-07	Kidney	3.5E-04	NA	NA	3.5E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.9E-04	NA	NA	1.9E-04
			Dibenzo(a,h)anthracene	8.6E-07	NA	NA	NA	8.6E-07	Kidney	4.6E-05	NA	NA	4.6E-05
			Indeno(1,2,3-cd)pyrene	3.7E-07	NA	NA	NA	3.7E-07	Kidney	2.0E-04	NA	NA	2.0E-04
			Phenanthrene	NC	NA	NA	NA		Kidney	1.8E-03	NA	NA	1.8E-03
			4,4'-DDE	1.0E-05	NA	NA	NA	1.0E-05	Liver	7.1E-01	NA	NA	7.1E-01
			alpha-Chlordane	9.7E-07	NA	NA	NA	9.7E-07	Liver	6.5E-02	NA	NA	6.5E-02
			Aroclor-1254	5.3E-04	NA	NA	NA	5.3E-04	Immune system	1.5E+02	NA	NA	1.5E+02
			Aroclor-1268	1.7E-04	NA	NA	NA	1.7E-04	Immune system	5.1E+01	NA	NA	5.1E+01
			Dieldrin	1.0E-05	NA	NA	NA	1.0E-05	Liver	1.5E-01	NA	NA	1.5E-01
			gamma-Chlordane	3.3E-07	NA	NA	NA	3.3E-07	Liver	2.2E-02	NA	NA	2.2E-02
			Heptachlor Epoxide	1.3E-06	NA	NA	NA	1.3E-06	Liver	1.3E-01	NA	NA	1.3E-01
			Technical Chlordane	2.4E-05	NA	NA	NA	2.4E-05	Liver	1.6E+00	NA	NA	1.6E+00
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	--	NA	NA	NA		Immune system	2.6E+00	NA	NA	2.6E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	7.6E+00	NA	NA	7.6E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	6.3E-03	NA	NA	NA	6.3E-03		--	NA	NA	
			CHEMICAL TOTAL	7.1E-03	--	--	--	7E-03		2.2E+02	0.0E+00	--	2E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-03					2E+02
	EXPOSURE MEDIUM TOTAL							7E-03					2E+02
WHOLE BODY TOTAL								7E-03					2E+02
RECEPTOR TOTAL								7E-03					2.2E+02
							TOTAL RISK ACROSS ALL MEDIA	7E-03	TOTAL HAZARD ACROSS ALL MEDIA				2.2E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	7.6E+00
	--
	--
	--
	--
TOTAL IMMUNE SYSTEM HI =	2.1E+02
TOTAL KIDNEY HI =	2.9E-03
TOTAL LIVER HI =	2.7E+00
	--
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	--
	--
	--
	--

US EPA ARCHIVE DOCUMENT

TABLE F.9.49.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	DYERVILLE POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	3.9E-07	NA	3.5E-07	7.4E-07
			Acenaphthylene	NC	NA	NC	NA		Liver	1.1E-06	NA	1.0E-06	2.2E-06
			Benzo(a)anthracene	3.6E-07	NA	3.2E-07	NA	6.8E-07	Kidney	2.2E-05	NA	2.0E-05	4.2E-05
			Benzo(a)pyrene	3.0E-06	NA	2.7E-06	NA	5.7E-06	Kidney	1.9E-05	NA	1.7E-05	3.5E-05
			Benzo(b)fluoranthene	5.5E-07	NA	4.9E-07	NA	1.0E-06	Kidney	3.4E-05	NA	3.0E-05	6.4E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	1.4E-05	NA	1.2E-05	2.6E-05
			Benzo(k)fluoranthene	1.5E-08	NA	1.3E-08	NA	2.9E-08	Kidney	9.3E-06	NA	8.3E-06	1.8E-05
			bis(2-Ethylhexyl)phthalate	4.2E-09	NA	2.9E-09	NA	7.1E-09	Liver	2.0E-05	NA	1.4E-05	3.4E-05
			Dibenzo(a,h)anthracene	4.4E-07	NA	3.9E-07	NA	8.3E-07	Kidney	2.7E-06	NA	2.4E-06	5.1E-06
			Indeno(*1,2,3-cd*)pyrene	2.8E-07	NA	2.4E-07	NA	5.2E-07	Kidney	1.7E-05	NA	1.5E-05	3.2E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	2.5E-05	NA	2.2E-05	4.6E-05
			alpha-Chlordane	7.3E-10	NA	2.0E-10	NA	9.3E-10	Liver	5.6E-06	NA	1.5E-06	7.1E-06
			Aroclor-1254	4.9E-07	NA	4.7E-07	NA	9.6E-07	Immune system	1.7E-02	NA	1.6E-02	3.2E-02
			Dieldrin	9.1E-08	NA	6.2E-08	NA	1.5E-07	Liver	1.5E-04	NA	1.0E-04	2.6E-04
			Endosulfan sulfate	NC	NA	NC	NA		Kidney	4.7E-07	NA	3.2E-07	7.8E-07
			Arsenic	6.0E-07	NA	1.2E-07	NA	7.2E-07	Skin	1.8E-03	NA	3.6E-04	2.1E-03
			Cadmium	NC	NA	NC	NA		Kidney	1.0E-03	NA	2.8E-04	1.3E-03
			Chromium	NC	NA	NC	NA		NOAEL	3.3E-02	NA		3.3E-02
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	2.1E-03	NA		2.1E-03
			Mercury	NC	NA	NC	NA		Immune system	9.0E-04	NA		9.0E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	4.5E-04	NA		4.5E-04
			Vanadium	NC	NA	NC	NA		NOAEL	1.0E-03	NA		1.0E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.3E-06	NA	8.8E-07	NA	5.2E-06		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	7.2E-10	NA	1.5E-10	NA	8.6E-10		--	NA	--	
			CHEMICAL TOTAL	1.0E-05	--	5.7E-06	--	2E-05		5.7E-02	0.0E+00	1.7E-02	7E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-05					7E-02
	EXPOSURE MEDIUM TOTAL							2E-05					7E-02
SEDIMENT TOTAL								2E-05					7E-02
SURFACE WATER	SURFACE WATER	DYERVILLE POND	Acenaphthylene	NC	NA	NC	NA		Liver	1.1E-09	NA	--	1.1E-09
			bis(2-Ethylhexyl)phthalate	9.0E-09	NA	2.7E-06	NA	2.7E-06	Liver	4.3E-05	NA	1.3E-02	1.3E-02
			Aldrin	1.5E-08	NA	2.6E-07	NA	2.7E-07	Liver	3.9E-05	NA	6.7E-04	7.1E-04
			alpha-Chlordane	2.5E-10	NA	1.0E-07	NA	1.0E-07	Liver	1.9E-06	NA	7.8E-04	7.8E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	2.7E-08	NA	--	2.7E-08
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	8.5E-07	NA	1.2E-04	1.2E-04
			gamma-Chlordane	2.8E-10	NA	1.1E-07	NA	1.1E-07	Liver	2.1E-06	NA	8.6E-04	8.6E-04
			Arsenic	2.6E-07	NA	4.5E-07	NA	7.1E-07	Skin	7.8E-04	NA	1.4E-03	2.1E-03
			Barium	NC	NA	NC	NA		Cardiovascular system	1.5E-05	NA	3.8E-04	3.9E-04
			Chromium	NC	NA	NC	NA		NOAEL	3.9E-05	NA	5.4E-03	5.5E-03
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	2.8E-04	NA	1.2E-02	1.2E-02
			Mercury	NC	NA	NC	NA		Immune system	6.7E-07	NA	1.7E-03	1.7E-03
			Thallium	NC	NA	NC	NA		NOAEL	1.4E-03	NA	2.4E-03	3.8E-03
			Nitrate	NC	NA	NC	NA		Hematological system	2.4E-05	NA	--	2.4E-05
			Nitrite-N	NC	NA	NC	NA		Hematological system	4.4E-05	NA	--	4.4E-05

US EPA ARCHIVE DOCUMENT

TABLE F.9.49.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.9E-06	NA	1.9E-02	NA	1.9E-02		--	NA	--	
			CHEMICAL TOTAL	5.2E-06	--	1.9E-02	--	2E-02		2.7E-03	0.0E+00	3.7E-02	4E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-02					4E-02
	EXPOSURE MEDIUM TOTAL							2E-02					4E-02
SURFACE WATER TOTAL								2E-02					4E-02
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	Acenaphthylene	NC	NA	NA	NA		Liver	3.2E-05	NA	NA	3.2E-05
			Dibenzo(a,h)anthracene	1.9E-06	NA	NA	NA	1.9E-06	Kidney	1.1E-05	NA	NA	1.1E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	4.3E-04	NA	NA	4.3E-04
			4,4'-DDD	1.5E-05	NA	NA	NA	1.5E-05	Liver	1.6E-01	NA	NA	1.6E-01
			4,4'-DDE	7.5E-06	NA	NA	NA	7.5E-06	Liver	6.0E-02	NA	NA	6.0E-02
			4,4'-DDT	7.5E-06	NA	NA	NA	7.5E-06	Liver	5.9E-02	NA	NA	5.9E-02
			alpha-Chlordane	1.0E-05	NA	NA	NA	1.0E-05	Liver	7.8E-02	NA	NA	7.8E-02
			Aroclor-1254	1.4E-03	NA	NA	NA	1.4E-03	Immune system	4.6E+01	NA	NA	4.6E+01
			Dieldrin	2.6E-04	NA	NA	NA	2.6E-04	Liver	4.4E-01	NA	NA	4.4E-01
			gamma-Chlordane	3.6E-06	NA	NA	NA	3.6E-06	Liver	2.8E-02	NA	NA	2.8E-02
			Heptachlor Epoxide	3.1E-05	NA	NA	NA	3.1E-05	Liver	3.6E-01	NA	NA	3.6E-01
			Technical Chlordane	2.0E-04	NA	NA	NA	2.0E-04	Liver	1.6E+00	NA	NA	1.6E+00
			Cadmium	NC	NA	NA	NA		Kidney	5.3E-01	NA	NA	5.3E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	3.3E-01	NA	NA	3.3E-01
			Mercury	NC	NA	NA	NA		Immune system	7.6E-01	NA	NA	7.6E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.5E+00	NA	NA	2.5E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.7E-02	NA	NA	NA	1.7E-02		--	NA	NA	
			CHEMICAL TOTAL	1.9E-02	--	--	--	2E-02		5.2E+01	0.0E+00	--	5.2E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-02					5.2E+01
	EXPOSURE MEDIUM TOTAL							2E-02					5.2E+01
WHOLE BODY TOTAL								2E-02					5.2E+01
RECEPTOR TOTAL								4E-02					5.3E+01
							TOTAL RISK ACROSS ALL MEDIA	4E-02	TOTAL HAZARD ACROSS ALL MEDIA				5.3E+01

US EPA ARCHIVE DOCUMENT

TABLE F.9.49.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
													--
									TOTAL CARDIOVASCULAR SYSTEM HI =				4.0E-04
									TOTAL DEVELOPMENTAL TOXICITY HI =				2.5E+00
													--
													--
													--
									TOTAL HEMATOLOGICAL SYSTEM HI =				6.8E-05
									TOTAL IMMUNE SYSTEM HI =				4.6E+01
									TOTAL KIDNEY HI =				5.3E-01
									TOTAL LIVER HI =				2.8E+00
													--
									TOTAL NERVOUS SYSTEM HI =				1.2E-04
									TOTAL NOAEL HI =				3.9E-01
													--
									TOTAL SKIN HI =				4.3E-03
													--

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TABLE F.9.50.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	DYERVILLE POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	6.1E-07	NA	1.1E-06	1.8E-06
			Acenaphthylene	NC	NA	NC	NA		Liver	1.8E-06	NA	3.3E-06	5.1E-06
			Benzo(a)anthracene	1.3E-07	NA	2.4E-07	NA	3.7E-07	Kidney	3.4E-05	NA	6.4E-05	9.8E-05
			Benzo(a)pyrene	1.1E-06	NA	2.0E-06	NA	3.1E-06	Kidney	2.9E-05	NA	5.4E-05	8.3E-05
			Benzo(b)fluoranthene	2.0E-07	NA	3.7E-07	NA	5.7E-07	Kidney	5.3E-05	NA	9.8E-05	1.5E-04
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	2.1E-05	NA	3.9E-05	6.0E-05
			Benzo(k)fluoranthene	5.4E-09	NA	1.0E-08	NA	1.6E-08	Kidney	1.5E-05	NA	2.7E-05	4.1E-05
			bis(2-Ethylhexyl)phthalate	1.5E-09	NA	2.2E-09	NA	3.7E-09	Liver	3.2E-05	NA	4.5E-05	7.7E-05
			Dibenzo(a,h)anthracene	1.6E-07	NA	2.9E-07	NA	4.5E-07	Kidney	4.2E-06	NA	7.8E-06	1.2E-05
			Indeno(1,2,3-cd)pyrene	9.9E-08	NA	1.8E-07	NA	2.8E-07	Kidney	2.6E-05	NA	4.9E-05	7.5E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	3.8E-05	NA	7.1E-05	1.1E-04
			alpha-Chlordane	2.6E-10	NA	1.5E-10	NA	4.1E-10	Liver	8.7E-06	NA	5.0E-06	1.4E-05
			Aroclor-1254	1.8E-07	NA	3.5E-07	NA	5.3E-07	Immune system	2.6E-02	NA	5.1E-02	7.7E-02
			Dieldrin	3.3E-08	NA	4.7E-08	NA	7.9E-08	Liver	2.4E-04	NA	3.4E-04	5.8E-04
			Endosulfan sulfate	NC	NA	NC	NA		Kidney	7.3E-07	NA	1.0E-06	1.8E-06
			Arsenic	2.1E-07	NA	9.2E-08	NA	3.1E-07	Skin	2.8E-03	NA	1.2E-03	4.0E-03
			Cadmium	NC	NA	NC	NA		Kidney	1.6E-03	NA	9.1E-04	2.5E-03
			Chromium	NC	NA	NC	NA		NOAEL	5.1E-02	NA		5.1E-02
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	3.3E-03	NA		3.3E-03
			Mercury	NC	NA	NC	NA		Immune system	1.4E-03	NA		1.4E-03
			Nickel	NC	NA	NC	NA		Developmental toxicity	6.9E-04	NA		6.9E-04
			Vanadium	NC	NA	NC	NA		NOAEL	1.6E-03	NA		1.6E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.5E-06	NA	6.6E-07	NA	2.2E-06		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	2.6E-10	NA	1.1E-10	NA	3.7E-10		--	NA	--	
			CHEMICAL TOTAL	3.7E-06	--	4.3E-06	--	8E-06		8.8E-02	0.0E+00	5.4E-02	1E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						8E-06					1E-01
	EXPOSURE MEDIUM TOTAL							8E-06					1E-01
SEDIMENT TOTAL								*8E-06*					*1E-01*
SURFACE WATER	SURFACE WATER	DYERVILLE POND	Acenaphthylene	NC	NA	NC	NA		Liver	1.7E-09	NA	--	1.7E-09
			bis(2-Ethylhexyl)phthalate	3.2E-09	NA	6.9E-07	NA	7.0E-07	Liver	6.7E-05	NA	1.4E-02	1.5E-02
			Aldrin	5.3E-09	NA	6.6E-08	NA	7.1E-08	Liver	6.1E-05	NA	7.5E-04	8.1E-04
			alpha-Chlordane	9.0E-11	NA	2.6E-08	NA	2.6E-08	Liver	3.0E-06	NA	8.7E-04	8.7E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	4.2E-08	NA	--	4.2E-08
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	1.3E-06	NA	1.3E-04	1.3E-04
			gamma-Chlordane	1.0E-10	NA	2.9E-08	NA	2.9E-08	Liver	3.3E-06	NA	9.6E-04	9.7E-04
			Arsenic	9.4E-08	NA	1.2E-07	NA	2.1E-07	Skin	1.2E-03	NA	1.5E-03	2.7E-03
			Barium	NC	NA	NC	NA		Cardiovascular system	2.4E-05	NA	4.2E-04	4.5E-04
			Chromium	NC	NA	NC	NA		NOAEL	6.1E-05	NA	6.1E-03	6.1E-03
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	4.3E-04	NA	1.3E-02	1.4E-02
			Mercury	NC	NA	NC	NA		Immune system	1.0E-06	NA	1.9E-05	2.0E-05
			Thallium	NC	NA	NC	NA		NOAEL	2.2E-03	NA	2.7E-03	4.9E-03
			Nitrate	NC	NA	NC	NA		Hematological system	3.8E-05	NA	--	3.8E-05
			Nitrite-N	NC	NA	NC	NA		Hematological system	6.8E-05	NA	--	6.8E-05

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TABLE F.9.50.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.8E-06	NA	5.0E-03	NA	5.0E-03		--	NA	--	
			CHEMICAL TOTAL	1.9E-06	--	5.0E-03	--	5E-03		4.1E-03	0.0E+00	4.1E-02	5E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-03					5E-02
	EXPOSURE MEDIUM TOTAL							5E-03					5E-02
SURFACE WATER TOTAL								5E-03					5E-02
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	Acenaphthylene	NC	NA	NA	NA		Liver	3.3E-05	NA	NA	3.3E-05
			Dibenzo(a,h)anthracene	4.5E-07	NA	NA	NA	4.5E-07	Kidney	1.2E-05	NA	NA	1.2E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	4.4E-04	NA	NA	4.4E-04
			4,4'-DDD	3.5E-06	NA	NA	NA	3.5E-06	Liver	1.7E-01	NA	NA	1.7E-01
			4,4'-DDE	1.8E-06	NA	NA	NA	1.8E-06	Liver	6.2E-02	NA	NA	6.2E-02
			4,4'-DDT	1.8E-06	NA	NA	NA	1.8E-06	Liver	6.2E-02	NA	NA	6.2E-02
			alpha-Chlordane	2.4E-06	NA	NA	NA	2.4E-06	Liver	8.0E-02	NA	NA	8.0E-02
			Aroclor-1254	3.2E-04	NA	NA	NA	3.2E-04	Immune system	4.7E+01	NA	NA	4.7E+01
			Dieldrin	6.3E-05	NA	NA	NA	6.3E-05	Liver	4.6E-01	NA	NA	4.6E-01
			gamma-Chlordane	8.6E-07	NA	NA	NA	8.6E-07	Liver	2.9E-02	NA	NA	2.9E-02
			Heptachlor Epoxide	7.5E-06	NA	NA	NA	7.5E-06	Liver	3.7E-01	NA	NA	3.7E-01
			Technical Chlordane	4.9E-05	NA	NA	NA	4.9E-05	Liver	1.6E+00	NA	NA	1.6E+00
			Cadmium	NC	NA	NA	NA		Kidney	5.5E-01	NA	NA	5.5E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	3.5E-01	NA	NA	3.5E-01
			Mercury	NC	NA	NA	NA		Immune system	7.9E-01	NA	NA	7.9E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.6E+00	NA	NA	2.6E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.1E-03	NA	NA	NA	4.1E-03		--	NA	NA	
			CHEMICAL TOTAL	4.5E-03	--	--	--	5E-03		5.4E+01	0.0E+00	--	5.4E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-03					5.4E+01
	EXPOSURE MEDIUM TOTAL							5E-03					5.4E+01
WHOLE BODY TOTAL								5E-03					5.4E+01
RECEPTOR TOTAL								1E-02					5.5E+01
			TOTAL RISK ACROSS ALL MEDIA					1E-02	TOTAL HAZARD ACROSS ALL MEDIA				5.5E+01

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TABLE F.9.50.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
													--
									TOTAL CARDIOVASCULAR SYSTEM HI =				4.5E-04
									TOTAL DEVELOPMENTAL TOXICITY HI =				2.6E+00
													--
													--
													--
									TOTAL HEMATOLOGICAL SYSTEM HI =				1.1E-04
									TOTAL IMMUNE SYSTEM HI =				4.8E+01
									TOTAL KIDNEY HI =				5.5E-01
									TOTAL LIVER HI =				2.9E+00
													--
									TOTAL NERVOUS SYSTEM HI =				1.3E-04
									TOTAL NOAEL HI =				4.3E-01
													--
									TOTAL SKIN HI =				6.7E-03
													--

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TABLE F.9.5I.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	Acenaphthylene	NC	NA	NA	NA		Liver	5.4E-05	NA	NA	5.4E-05
			Dibenzo(a,h)anthracene	3.6E-07	NA	NA	NA	3.6E-07	Kidney	1.9E-05	NA	NA	1.9E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	7.2E-04	NA	NA	7.2E-04
			4,4'-DDD	2.9E-06	NA	NA	NA	2.9E-06	Liver	2.8E-01	NA	NA	2.8E-01
			4,4'-DDE	1.5E-06	NA	NA	NA	1.5E-06	Liver	1.0E-01	NA	NA	1.0E-01
			4,4'-DDT	1.5E-06	NA	NA	NA	1.5E-06	Liver	1.0E-01	NA	NA	1.0E-01
			alpha-Chlordane	2.0E-06	NA	NA	NA	2.0E-06	Liver	1.3E-01	NA	NA	1.3E-01
			Aroclor-1254	2.6E-04	NA	NA	NA	2.6E-04	Immune system	7.7E+01	NA	NA	7.7E+01
			Dieldrin	5.1E-05	NA	NA	NA	5.1E-05	Liver	7.4E-01	NA	NA	7.4E-01
			gamma-Chlordane	7.0E-07	NA	NA	NA	7.0E-07	Liver	4.7E-02	NA	NA	4.7E-02
			Heptachlor Epoxide	6.1E-06	NA	NA	NA	6.1E-06	Liver	6.0E-01	NA	NA	6.0E-01
			Technical Chlordane	4.0E-05	NA	NA	NA	4.0E-05	Liver	2.7E+00	NA	NA	2.7E+00
			Cadmium	NC	NA	NA	NA		Kidney	8.9E-01	NA	NA	8.9E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	5.6E-01	NA	NA	5.6E-01
			Mercury	NC	NA	NA	NA		Immune system	1.3E+00	NA	NA	1.3E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	4.2E+00	NA	NA	4.2E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.3E-03	NA	NA	NA	3.3E-03		--	NA	NA	
			CHEMICAL TOTAL	3.7E-03	--	--	--	4E-03		8.8E+01	0.0E+00	--	8.8E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-03					8.8E+01
	EXPOSURE MEDIUM TOTAL							4E-03					8.8E+01
WHOLE BODY TOTAL								4E-03					8.8E+01
RECEPTOR TOTAL								4E-03					8.8E+01
							TOTAL RISK ACROSS ALL MEDIA	4E-03	TOTAL HAZARD ACROSS ALL MEDIA				8.8E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by:

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	4.2E+00
	--
	--
	--
	--
TOTAL IMMUNE SYSTEM HI =	7.8E+01
TOTAL KIDNEY HI =	8.9E-01
TOTAL LIVER HI =	4.7E+00
	--
	--
TOTAL NOAEL HI =	5.6E-01
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	--

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TABLE F.9.1.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	5.9E-08	NA	1.5E-08	7.4E-08
			Acenaphthylene	NC	NA	NC	NA		Liver	6.2E-08	NA	1.6E-08	7.8E-08
			Benzo(a)anthracene	4.1E-09	NA	1.0E-09	NA	5.2E-09	Kidney	1.1E-06	NA	2.8E-07	1.4E-06
			Benzo(a)pyrene	4.2E-08	NA	1.1E-08	NA	5.3E-08	Kidney	1.1E-06	NA	2.8E-07	1.4E-06
			Benzo(b)fluoranthene	5.0E-09	NA	1.3E-09	NA	6.3E-09	Kidney	1.3E-06	NA	3.4E-07	1.7E-06
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	8.5E-07	NA	2.1E-07	1.1E-06
			Dibenzo(a,h)anthracene	1.2E-08	NA	3.0E-09	NA	1.5E-08	Kidney	3.2E-07	NA	8.0E-08	4.0E-07
			Indeno(1,2,3-cd)pyrene	3.4E-09	NA	8.6E-10	NA	4.3E-09	Kidney	9.1E-07	NA	2.3E-07	1.1E-06
			Phenanthrene	NC	NA	NC	NA		Kidney	1.1E-06	NA	2.9E-07	1.4E-06
			alpha-Chlordane	5.1E-12	NA	3.9E-13	NA	5.5E-12	Liver	1.7E-07	NA	1.3E-08	1.8E-07
			Aroclor-1254	7.0E-10	NA	1.9E-10	NA	8.9E-10	Immune system	1.0E-04	NA	2.8E-05	1.3E-04
			Aroclor-1268	5.0E-10	NA	1.4E-10	NA	6.4E-10	Immune system	7.3E-05	NA	2.0E-05	9.3E-05
			gamma-Chlordane	2.5E-12	NA	1.9E-13	NA	2.7E-12	Liver	8.3E-08	NA	6.4E-09	8.9E-08
			Technical Chlordane	4.2E-10	NA	3.3E-11	NA	4.5E-10	Liver	1.4E-05	NA	1.1E-06	1.5E-05
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	4.4E-08	NA	2.6E-09	NA	4.7E-08	Skin	5.7E-04	NA	3.3E-05	6.1E-04
			Cadmium	NC	NA	NC	NA		Kidney	2.4E-05	NA	1.8E-06	2.5E-05
			Chromium	NC	NA	NC	NA		NOAEL	2.2E-04	NA	--	2.2E-04
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	6.4E-04	NA	--	6.4E-04
			Mercury	NC	NA	NC	NA		Immune system	1.1E-05	NA	--	1.1E-05
			Nickel	NC	NA	NC	NA		Developmental toxicity	3.2E-05	NA	--	3.2E-05
			Thallium	NC	NA	NC	NA		NOAEL	2.8E-04	NA	--	2.8E-04
			Vanadium	NC	NA	NC	NA		NOAEL	1.5E-04	NA	--	1.5E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	6.2E-09	NA	3.6E-10	NA	6.6E-09		--	NA	--	
			CHEMICAL TOTAL	1.2E-07	--	2.0E-08	--	1E-07		2.1E-03	0.0E+00	8.6E-05	2E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-07					2E-03
	EXPOSURE MEDIUM TOTAL							1E-07					2E-03
SEDIMENT TOTAL								1E-07					2E-03
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	Arsenic	1.6E-09	NA	5.6E-09	NA	7.2E-09	Skin	2.1E-05	NA	7.2E-05	9.3E-05
			Manganese	NC	NA	NC	NA		NOAEL	7.2E-05	NA	6.2E-03	6.3E-03
			Mercury	NC	NA	NC	NA		Immune system	9.1E-08	NA	4.5E-06	4.6E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	6.5E-07	NA	--	6.5E-07
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.7E-09	NA	1.4E-05	NA	1.4E-05		--	NA	--	
			CHEMICAL TOTAL	3.4E-09	--	1.4E-05	--	1E-05		9.3E-05	0.0E+00	6.3E-03	6E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-05					6E-03
	EXPOSURE MEDIUM TOTAL							1E-05					6E-03
SURFACE WATER TOTAL								1E-05					6E-03

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TABLE F.9.1.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.3E-05	NA	NA	1.3E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	6.6E-05	NA	NA	6.6E-05
			4,4'-DDD	1.5E-07	NA	NA	NA	1.5E-07	Liver	7.5E-03	NA	NA	7.5E-03
			4,4'-DDE	8.3E-07	NA	NA	NA	8.3E-07	Liver	2.9E-02	NA	NA	2.9E-02
			alpha-Chlordane	1.2E-07	NA	NA	NA	1.2E-07	Liver	4.1E-03	NA	NA	4.1E-03
			Aroclor-1254	8.8E-06	NA	NA	NA	8.8E-06	Immune system	1.3E+00	NA	NA	1.3E+00
			Dieldrin	2.9E-06	NA	NA	NA	2.9E-06	Liver	2.1E-02	NA	NA	2.1E-02
			gamma-Chlordane	4.3E-08	NA	NA	NA	4.3E-08	Liver	1.4E-03	NA	NA	1.4E-03
			Heptachlor Epoxide	9.7E-07	NA	NA	NA	9.7E-07	Liver	4.8E-02	NA	NA	4.8E-02
			Technical Chlordane	5.7E-06	NA	NA	NA	5.7E-06	Liver	1.9E-01	NA	NA	1.9E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.5E-01	NA	NA	2.5E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	7.2E-01	NA	NA	7.2E-01
			Zinc	NC	NA	NA	NA		Hematological system	4.6E-02	NA	NA	4.6E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.2E-05	NA	NA	NA	1.2E-05		--	NA	NA	
			CHEMICAL TOTAL	3.1E-05	--	--	--	3E-05		2.6E+00	0.0E+00	--	2.6E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-05					2.6E+00
	EXPOSURE MEDIUM TOTAL							3E-05					2.6E+00
WHOLE BODY TOTAL								3E-05					2.6E+00
RECEPTOR TOTAL								5E-05					2.6E+00
			TOTAL RISK ACROSS ALL MEDIA					5E-05	TOTAL HAZARD ACROSS ALL MEDIA				2.6E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

	--
TOTAL CARDIOVASCULAR SYSTEM HI =	7.4E-08
TOTAL DEVELOPMENTAL TOXICITY HI =	7.2E-01
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	4.6E-02
TOTAL IMMUNE SYSTEM HI =	1.5E+00
TOTAL KIDNEY HI =	1.0E-04
TOTAL LIVER HI =	3.0E-01
	--
	--
TOTAL NOAEL HI =	7.6E-03
	--
TOTAL SKIN HI =	7.0E-04
	--

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.9.2.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	9.2E-08	NA	6.8E-08	1.6E-07
			Acenaphthylene	NC	NA	NC	NA		Liver	9.7E-08	NA	7.2E-08	1.7E-07
			Benzo(a)anthracene	6.4E-09	NA	4.8E-09	NA	1.1E-08	Kidney	1.7E-06	NA	1.3E-06	3.0E-06
			Benzo(a)pyrene	6.6E-08	NA	4.9E-08	NA	1.1E-07	Kidney	1.7E-06	NA	1.3E-06	3.0E-06
			Benzo(b)fluoranthene	7.8E-09	NA	5.8E-09	NA	1.4E-08	Kidney	2.1E-06	NA	1.5E-06	3.6E-06
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	1.3E-06	NA	9.8E-07	2.3E-06
			Dibenzo(a,h)anthracene	1.9E-08	NA	1.4E-08	NA	3.2E-08	Kidney	4.9E-07	NA	3.7E-07	8.6E-07
			Indeno(1,2,3-cd)pyrene	5.3E-09	NA	4.0E-09	NA	9.3E-09	Kidney	1.4E-06	NA	1.1E-06	2.5E-06
			Phenanthrene	NC	NA	NC	NA		Kidney	1.8E-06	NA	1.3E-06	3.1E-06
			alpha-Chlordane	7.9E-12	NA	1.8E-12	NA	9.7E-12	Liver	2.6E-07	NA	6.0E-08	3.2E-07
			Aroclor-1254	1.1E-09	NA	8.7E-10	NA	2.0E-09	Immune system	1.6E-04	NA	1.3E-04	2.9E-04
			Aroclor-1268	7.8E-10	NA	6.2E-10	NA	1.4E-09	Immune system	1.1E-04	NA	9.1E-05	2.0E-04
			gamma-Chlordane	3.9E-12	NA	8.8E-13	NA	4.7E-12	Liver	1.3E-07	NA	2.9E-08	1.6E-07
			Technical Chlordane	6.5E-10	NA	1.5E-10	NA	8.0E-10	Liver	2.2E-05	NA	5.0E-06	2.7E-05
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	6.9E-08	NA	1.2E-08	NA	8.0E-08	Skin	8.9E-04	NA	1.5E-04	1.0E-03
			Cadmium	NC	NA	NC	NA		Kidney	3.7E-05	NA	8.4E-06	4.5E-05
			Chromium	NC	NA	NC	NA		NOAEL	3.4E-04	NA	--	3.4E-04
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	9.9E-04	NA	--	9.9E-04
			Mercury	NC	NA	NC	NA		Immune system	1.7E-05	NA	--	1.7E-05
			Nickel	NC	NA	NC	NA		Developmental toxicity	5.0E-05	NA	--	5.0E-05
			Thallium	NC	NA	NC	NA		NOAEL	4.4E-04	NA	--	4.4E-04
			Vanadium	NC	NA	NC	NA		NOAEL	2.4E-04	NA	--	2.4E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	9.6E-09	NA	1.7E-09	NA	1.1E-08		--	NA	--	
			CHEMICAL TOTAL	1.8E-07	--	9.2E-08	--	3E-07		3.3E-03	0.0E+00	3.9E-04	4E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-07					4E-03
	EXPOSURE MEDIUM TOTAL							3E-07					4E-03
SEDIMENT TOTAL								3E-07					4E-03
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	Arsenic	2.5E-09	NA	6.3E-09	NA	8.8E-09	Skin	3.2E-05	NA	8.1E-05	1.1E-04
			Manganese	NC	NA	NC	NA		NOAEL	1.1E-04	NA	7.0E-03	7.1E-03
			Mercury	NC	NA	NC	NA		Immune system	1.4E-07	NA	5.1E-06	5.2E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	1.0E-06	NA	--	1.0E-06
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.7E-09	NA	1.5E-05	NA	1.5E-05		--	NA	--	
			CHEMICAL TOTAL	5.2E-09	--	1.5E-05	--	2E-05		1.4E-04	0.0E+00	7.1E-03	7E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-05					7E-03
	EXPOSURE MEDIUM TOTAL							2E-05					7E-03
SURFACE WATER TOTAL								2E-05					7E-03

US EPA ARCHIVE DOCUMENT

TABLE F.9.2.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	9.9E-06	NA	NA	9.9E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	5.2E-05	NA	NA	5.2E-05
			4,4'-DDD	1.2E-07	NA	NA	NA	1.2E-07	Liver	5.8E-03	NA	NA	5.8E-03
			4,4'-DDE	6.5E-07	NA	NA	NA	6.5E-07	Liver	2.2E-02	NA	NA	2.2E-02
			alpha-Chlordane	9.5E-08	NA	NA	NA	9.5E-08	Liver	3.2E-03	NA	NA	3.2E-03
			Aroclor-1254	6.9E-06	NA	NA	NA	6.9E-06	Immune system	1.0E+00	NA	NA	1.0E+00
			Dieldrin	2.3E-06	NA	NA	NA	2.3E-06	Liver	1.6E-02	NA	NA	1.6E-02
			gamma-Chlordane	3.4E-08	NA	NA	NA	3.4E-08	Liver	1.1E-03	NA	NA	1.1E-03
			Heptachlor Epoxide	7.6E-07	NA	NA	NA	7.6E-07	Liver	3.7E-02	NA	NA	3.7E-02
			Technical Chlordane	4.4E-06	NA	NA	NA	4.4E-06	Liver	1.5E-01	NA	NA	1.5E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.0E-01	NA	NA	2.0E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.6E-01	NA	NA	5.6E-01
			Zinc	NC	NA	NA	NA		Hematological system	3.6E-02	NA	NA	3.6E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	9.1E-06	NA	NA	NA	9.1E-06		--	NA	NA	
			CHEMICAL TOTAL	2.4E-05	--	--	--	2E-05		2.0E+00	0.0E+00	--	2.0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-05					2.0E+00
	EXPOSURE MEDIUM TOTAL							2E-05					2.0E+00
WHOLE BODY TOTAL								2E-05					2.0E+00
RECEPTOR TOTAL								4E-05					2.0E+00
			TOTAL RISK ACROSS ALL MEDIA					4E-05	TOTAL HAZARD ACROSS ALL MEDIA				2.0E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

	--
TOTAL CARDIOVASCULAR SYSTEM HI =	1.6E-07
TOTAL DEVELOPMENTAL TOXICITY HI =	5.6E-01
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	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	3.6E-02
TOTAL IMMUNE SYSTEM HI =	1.2E+00
TOTAL KIDNEY HI =	1.2E-04
TOTAL LIVER HI =	2.3E-01
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	--
TOTAL NOAEL HI =	9.1E-03
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TOTAL SKIN HI =	1.2E-03
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Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.9.3.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.1E-05	NA	NA	2.1E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.1E-04	NA	NA	1.1E-04
			4,4'-DDD	1.3E-07	NA	NA	NA	1.3E-07	Liver	1.2E-02	NA	NA	1.2E-02
			4,4'-DDE	6.9E-07	NA	NA	NA	6.9E-07	Liver	4.7E-02	NA	NA	4.7E-02
			alpha-Chlordane	1.0E-07	NA	NA	NA	1.0E-07	Liver	6.7E-03	NA	NA	6.7E-03
			Aroclor-1254	7.3E-06	NA	NA	NA	7.3E-06	Immune system	2.1E+00	NA	NA	2.1E+00
			Dieldrin	2.4E-06	NA	NA	NA	2.4E-06	Liver	3.5E-02	NA	NA	3.5E-02
			gamma-Chlordane	3.6E-08	NA	NA	NA	3.6E-08	Liver	2.4E-03	NA	NA	2.4E-03
			Heptachlor Epoxide	8.1E-07	NA	NA	NA	8.1E-07	Liver	8.0E-02	NA	NA	8.0E-02
			Technical Chlordane	4.7E-06	NA	NA	NA	4.7E-06	Liver	3.1E-01	NA	NA	3.1E-01
			Lead	--	NA	NA	NA		--	--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	4.2E-01	NA	NA	4.2E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.2E+00	NA	NA	1.2E+00
			Zinc	NC	NA	NA	NA		Hematological system	7.6E-02	NA	NA	7.6E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	9.7E-06	NA	NA	NA	9.7E-06		--	NA	NA	
			CHEMICAL TOTAL	2.6E-05	--	--	--	3E-05		4.3E+00	0.0E+00	--	4.3E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-05					4.3E+00
	EXPOSURE MEDIUM TOTAL							3E-05					4.3E+00
WHOLE BODY TOTAL								3E-05					4.3E+00
RECEPTOR TOTAL								3E-05					4.3E+00
							TOTAL RISK ACROSS ALL MEDIA	3E-05	TOTAL HAZARD ACROSS ALL MEDIA				4.3E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	1.2E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	7.6E-02
TOTAL IMMUNE SYSTEM HI =	2.6E+00
TOTAL KIDNEY HI =	1.1E-04
TOTAL LIVER HI =	5.0E-01
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US EPA ARCHIVE DOCUMENT

TABLE F.9.4.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	5.9E-08	NA	1.5E-08	7.4E-08
			Acenaphthylene	NC	NA	NC	NA		Liver	6.2E-08	NA	1.6E-08	7.8E-08
			Benzo(a)anthracene	4.1E-09	NA	1.0E-09	NA	5.2E-09	Kidney	1.1E-06	NA	2.8E-07	1.4E-06
			Benzo(a)pyrene	4.2E-08	NA	1.1E-08	NA	5.3E-08	Kidney	1.1E-06	NA	2.8E-07	1.4E-06
			Benzo(b)fluoranthene	5.0E-09	NA	1.3E-09	NA	6.3E-09	Kidney	1.3E-06	NA	3.4E-07	1.7E-06
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	8.5E-07	NA	2.1E-07	1.1E-06
			Dibenzo(a,h)anthracene	1.2E-08	NA	3.0E-09	NA	1.5E-08	Kidney	3.2E-07	NA	8.0E-08	4.0E-07
			Indeno(1,2,3-cd)pyrene	3.4E-09	NA	8.6E-10	NA	4.3E-09	Kidney	9.1E-07	NA	2.3E-07	1.1E-06
			Phenanthrene	NC	NA	NC	NA		Kidney	1.1E-06	NA	2.9E-07	1.4E-06
			alpha-Chlordane	5.1E-12	NA	3.9E-13	NA	5.5E-12	Liver	1.7E-07	NA	1.3E-08	1.8E-07
			Aroclor-1254	7.0E-10	NA	1.9E-10	NA	8.9E-10	Immune system	1.0E-04	NA	2.8E-05	1.3E-04
			Aroclor-1268	5.0E-10	NA	1.4E-10	NA	6.4E-10	Immune system	7.3E-05	NA	2.0E-05	9.3E-05
			gamma-Chlordane	2.5E-12	NA	1.9E-13	NA	2.7E-12	Liver	8.3E-08	NA	6.4E-09	8.9E-08
			Technical Chlordane	4.2E-10	NA	3.3E-11	NA	4.5E-10	Liver	1.4E-05	NA	1.1E-06	1.5E-05
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	4.4E-08	NA	2.6E-09	NA	4.7E-08	Skin	5.7E-04	NA	3.3E-05	6.1E-04
			Cadmium	NC	NA	NC	NA		Kidney	2.4E-05	NA	1.8E-06	2.5E-05
			Chromium	NC	NA	NC	NA		NOAEL	2.2E-04	NA	--	2.2E-04
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	6.4E-04	NA	--	6.4E-04
			Mercury	NC	NA	NC	NA		Immune system	1.1E-05	NA	--	1.1E-05
			Nickel	NC	NA	NC	NA		Developmental toxicity	3.2E-05	NA	--	3.2E-05
			Thallium	NC	NA	NC	NA		NOAEL	2.8E-04	NA	--	2.8E-04
			Vanadium	NC	NA	NC	NA		NOAEL	1.5E-04	NA	--	1.5E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	6.2E-09	NA	3.6E-10	NA	6.6E-09		--	NA	--	
			CHEMICAL TOTAL	1.2E-07	--	2.0E-08	--	1E-07		2.1E-03	0.0E+00	8.6E-05	2E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-07					2E-03
	EXPOSURE MEDIUM TOTAL							1E-07					2E-03
SEDIMENT TOTAL								1E-07					2E-03
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	Arsenic	1.6E-09	NA	5.6E-09	NA	7.2E-09	Skin	2.1E-05	NA	7.2E-05	9.3E-05
			Manganese	NC	NA	NC	NA		NOAEL	7.2E-05	NA	6.2E-03	6.3E-03
			Mercury	NC	NA	NC	NA		Immune system	9.1E-08	NA	4.5E-06	4.6E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	6.5E-07	NA	--	6.5E-07
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.7E-09	NA	1.4E-05	NA	1.4E-05		--	NA	--	
			CHEMICAL TOTAL	3.4E-09	--	1.4E-05	--	1E-05		9.3E-05	0.0E+00	6.3E-03	6E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-05					6E-03
	EXPOSURE MEDIUM TOTAL							1E-05					6E-03
SURFACE WATER TOTAL								1E-05					6E-03

US EPA ARCHIVE DOCUMENT

TABLE F.9.4.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.1E-06	NA	NA	4.1E-06
			Benzo(a)pyrene	8.6E-07	NA	NA	NA	8.6E-07	Kidney	2.3E-05	NA	NA	2.3E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	2.9E-05	NA	NA	2.9E-05
			4,4'-DDE	2.2E-07	NA	NA	NA	2.2E-07	Liver	7.6E-03	NA	NA	7.6E-03
			alpha-Chlordane	1.5E-08	NA	NA	NA	1.5E-08	Liver	5.0E-04	NA	NA	5.0E-04
			Mercury	NC	NA	NA	NA		Immune system	6.9E-01	NA	NA	6.9E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.4E+00	NA	NA	2.4E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.8E-05	NA	NA	NA	3.8E-05		--	NA	NA	
			CHEMICAL TOTAL	3.9E-05	--	--	--	4E-05		3.1E+00	0.0E+00	--	3E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-05					3E+00
	EXPOSURE MEDIUM TOTAL							4E-05					3E+00
FILLET TOTAL								4E-05					3E+00
RECEPTOR TOTAL								5E-05					3.1E+00
			TOTAL RISK ACROSS ALL MEDIA					5E-05	TOTAL HAZARD ACROSS ALL MEDIA				3.1E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

	--
TOTAL CARDIOVASCULAR SYSTEM HI =	7.4E-08
TOTAL DEVELOPMENTAL TOXICITY HI =	2.4E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	6.5E-07
TOTAL IMMUNE SYSTEM HI =	6.9E-01
TOTAL KIDNEY HI =	8.6E-05
TOTAL LIVER HI =	8.1E-03
	--
	--
TOTAL NOAEL HI =	7.6E-03
	--
TOTAL SKIN HI =	7.0E-04
	--

US EPA ARCHIVE DOCUMENT

TABLE F.9.5.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	9.2E-08	NA	6.8E-08	1.6E-07
			Acenaphthylene	NC	NA	NC	NA		Liver	9.7E-08	NA	7.2E-08	1.7E-07
			Benzo(a)anthracene	6.4E-09	NA	4.8E-09	NA	1.1E-08	Kidney	1.7E-06	NA	1.3E-06	3.0E-06
			Benzo(a)pyrene	6.6E-08	NA	4.9E-08	NA	1.1E-07	Kidney	1.7E-06	NA	1.3E-06	3.0E-06
			Benzo(b)fluoranthene	7.8E-09	NA	5.8E-09	NA	1.4E-08	Kidney	2.1E-06	NA	1.5E-06	3.6E-06
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	1.3E-06	NA	9.8E-07	2.3E-06
			Dibenzo(a,h)anthracene	1.9E-08	NA	1.4E-08	NA	3.2E-08	Kidney	4.9E-07	NA	3.7E-07	8.6E-07
			Indeno(1,2,3-cd)pyrene	5.3E-09	NA	4.0E-09	NA	9.3E-09	Kidney	1.4E-06	NA	1.1E-06	2.5E-06
			Phenanthrene	NC	NA	NC	NA		Kidney	1.8E-06	NA	1.3E-06	3.1E-06
			alpha-Chlordane	7.9E-12	NA	1.8E-12	NA	9.7E-12	Liver	2.6E-07	NA	6.0E-08	3.2E-07
			Aroclor-1254	1.1E-09	NA	8.7E-10	NA	2.0E-09	Immune system	1.6E-04	NA	1.3E-04	2.9E-04
			Aroclor-1268	7.3E-10	NA	6.2E-10	NA	1.4E-09	Immune system	1.1E-04	NA	9.1E-05	2.0E-04
			gamma-Chlordane	3.9E-12	NA	8.8E-13	NA	4.7E-12	Liver	1.3E-07	NA	2.9E-08	1.6E-07
			Technical Chlordane	6.5E-10	NA	1.5E-10	NA	8.0E-10	Liver	2.2E-05	NA	5.0E-06	2.7E-05
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	6.9E-08	NA	1.2E-08	NA	8.0E-08	Skin	8.9E-04	NA	1.5E-04	1.0E-03
			Cadmium	NC	NA	NC	NA		Kidney	3.7E-05	NA	8.4E-06	4.5E-05
			Chromium	NC	NA	NC	NA		NOAEL	3.4E-04	NA	--	3.4E-04
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	9.9E-04	NA	--	9.9E-04
			Mercury	NC	NA	NC	NA		Immune system	1.7E-05	NA	--	1.7E-05
			Nickel	NC	NA	NC	NA		Developmental toxicity	5.0E-05	NA	--	5.0E-05
			Thallium	NC	NA	NC	NA		NOAEL	4.4E-04	NA	--	4.4E-04
			Vanadium	NC	NA	NC	NA		NOAEL	2.4E-04	NA	--	2.4E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	9.6E-09	NA	1.7E-09	NA	1.1E-08		--	NA	--	
			CHEMICAL TOTAL	1.8E-07	--	9.2E-08	--	3E-07		3.3E-03	0.0E+00	3.9E-04	4E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-07					4E-03
	EXPOSURE MEDIUM TOTAL							3E-07					4E-03
SEDIMENT TOTAL								3E-07					4E-03
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	Arsenic	2.5E-09	NA	6.3E-09	NA	8.8E-09	Skin	3.2E-05	NA	8.1E-05	1.1E-04
			Manganese	NC	NA	NC	NA		NOAEL	1.1E-04	NA	7.0E-03	7.1E-03
			Mercury	NC	NA	NC	NA		Immune system	1.4E-07	NA	5.1E-06	5.2E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	1.0E-06	NA	--	1.0E-06
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.7E-09	NA	1.5E-05	NA	1.5E-05		--	NA	--	
			CHEMICAL TOTAL	5.2E-09	--	1.5E-05	--	2E-05		1.4E-04	0.0E+00	7.1E-03	7E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-05					7E-03
	EXPOSURE MEDIUM TOTAL							2E-05					7E-03
SURFACE WATER TOTAL								2E-05					7E-03

US EPA ARCHIVE DOCUMENT

TABLE F.9.5.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	3.2E-06	NA	NA	3.2E-06
			Benzo(a)pyrene	6.7E-07	NA	NA	NA	6.7E-07	Kidney	1.8E-05	NA	NA	1.8E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	2.3E-05	NA	NA	2.3E-05
			4,4'-DDE	1.7E-07	NA	NA	NA	1.7E-07	Liver	5.9E-03	NA	NA	5.9E-03
			alpha-Chlordane	1.2E-08	NA	NA	NA	1.2E-08	Liver	3.9E-04	NA	NA	3.9E-04
			Mercury	NC	NA	NA	NA		Immune system	5.4E-01	NA	NA	5.4E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.9E+00	NA	NA	1.9E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.0E-05	NA	NA	NA	3.0E-05		--	NA	NA	
			CHEMICAL TOTAL	3.0E-05	--	--	--	3E-05		2.4E+00	0.0E+00	--	2E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-05					2E+00
	EXPOSURE MEDIUM TOTAL							3E-05					2E+00
FILLET TOTAL								3E-05					2E+00
RECEPTOR TOTAL								5E-05					2.5E+00
			TOTAL RISK ACROSS ALL MEDIA					5E-05	TOTAL HAZARD ACROSS ALL MEDIA				2.5E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

	--
TOTAL CARDIOVASCULAR SYSTEM HI =	1.6E-07
TOTAL DEVELOPMENTAL TOXICITY HI =	1.9E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	1.0E-06
TOTAL IMMUNE SYSTEM HI =	5.4E-01
TOTAL KIDNEY HI =	1.0E-04
TOTAL LIVER HI =	6.3E-03
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	--
TOTAL NOAEL HI =	9.1E-03
	--
TOTAL SKIN HI =	1.2E-03
	--

US EPA ARCHIVE DOCUMENT

TABLE F.9.6.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	6.7E-06	NA	NA	6.7E-06
			Benzo(a)pyrene	7.2E-07	NA	NA	NA	7.2E-07	Kidney	3.8E-05	NA	NA	3.8E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	4.9E-05	NA	NA	4.9E-05
			4,4'-DDE	1.8E-07	NA	NA	NA	1.8E-07	Liver	1.3E-02	NA	NA	1.3E-02
			alpha-Chlordane	1.3E-08	NA	NA	NA	1.3E-08	Liver	8.4E-04	NA	NA	8.4E-04
			Mercury	NC	NA	NA	NA		Immune system	1.1E+00	NA	NA	1.1E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	4.0E+00	NA	NA	4.0E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.2E-05	NA	NA	NA	3.2E-05		--	NA	NA	
			CHEMICAL TOTAL	3.2E-05	--	--	--	3E-05		5.2E+00	0.0E+00	--	5E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-05					5E+00
	EXPOSURE MEDIUM TOTAL							3E-05					5E+00
FILLET TOTAL								3E-05					5E+00
RECEPTOR TOTAL								3E-05					5.2E+00
							TOTAL RISK ACROSS ALL MEDIA	3E-05	TOTAL HAZARD ACROSS ALL MEDIA				5.2E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	4.0E+00
	--
	--
	--
	--
TOTAL IMMUNE SYSTEM HI =	1.1E+00
TOTAL KIDNEY HI =	8.7E-05
TOTAL LIVER HI =	1.3E-02
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	--

US EPA ARCHIVE DOCUMENT

TABLE F.9.7.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	5.9E-08	NA	1.5E-08	7.4E-08
			Acenaphthylene	NC	NA	NC	NA		Liver	6.2E-08	NA	1.6E-08	7.8E-08
			Benzo(a)anthracene	4.1E-09	NA	1.0E-09	NA	5.2E-09	Kidney	1.1E-06	NA	2.8E-07	1.4E-06
			Benzo(a)pyrene	4.2E-08	NA	1.1E-08	NA	5.3E-08	Kidney	1.1E-06	NA	2.8E-07	1.4E-06
			Benzo(b)fluoranthene	5.0E-09	NA	1.3E-09	NA	6.3E-09	Kidney	1.3E-06	NA	3.4E-07	1.7E-06
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	8.5E-07	NA	2.1E-07	1.1E-06
			Dibenzo(a,h)anthracene	1.2E-08	NA	3.0E-09	NA	1.5E-08	Kidney	3.2E-07	NA	8.0E-08	4.0E-07
			Indeno(1,2,3-cd)pyrene	3.4E-09	NA	8.6E-10	NA	4.3E-09	Kidney	9.1E-07	NA	2.3E-07	1.1E-06
			Phenanthrene	NC	NA	NC	NA		Kidney	1.1E-06	NA	2.9E-07	1.4E-06
			alpha-Chlordane	5.1E-12	NA	3.9E-13	NA	5.5E-12	Liver	1.7E-07	NA	1.3E-08	1.8E-07
			Aroclor-1254	7.0E-10	NA	1.9E-10	NA	8.9E-10	Immune system	1.0E-04	NA	2.8E-05	1.3E-04
			Aroclor-1268	5.0E-10	NA	1.4E-10	NA	6.4E-10	Immune system	7.3E-05	NA	2.0E-05	9.3E-05
			gamma-Chlordane	2.5E-12	NA	1.9E-13	NA	2.7E-12	Liver	8.3E-08	NA	6.4E-09	8.9E-08
			Technical Chlordane	4.2E-10	NA	3.3E-11	NA	4.5E-10	Liver	1.4E-05	NA	1.1E-06	1.5E-05
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	4.4E-08	NA	2.6E-09	NA	4.7E-08	Skin	5.7E-04	NA	3.3E-05	6.1E-04
			Cadmium	NC	NA	NC	NA		Kidney	2.4E-05	NA	1.8E-06	2.5E-05
			Chromium	NC	NA	NC	NA		NOAEL	2.2E-04	NA	--	2.2E-04
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	6.4E-04	NA	--	6.4E-04
			Mercury	NC	NA	NC	NA		Immune system	1.1E-05	NA	--	1.1E-05
			Nickel	NC	NA	NC	NA		Developmental toxicity	3.2E-05	NA	--	3.2E-05
			Thallium	NC	NA	NC	NA		NOAEL	2.8E-04	NA	--	2.8E-04
			Vanadium	NC	NA	NC	NA		NOAEL	1.5E-04	NA	--	1.5E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	6.2E-09	NA	3.6E-10	NA	6.6E-09		--	NA	--	
			CHEMICAL TOTAL	1.2E-07	--	2.0E-08	--	1E-07		2.1E-03	0.0E+00	8.6E-05	2E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-07					2E-03
	EXPOSURE MEDIUM TOTAL							1E-07					2E-03
SEDIMENT TOTAL								1E-07					2E-03
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	Arsenic	1.6E-09	NA	5.6E-09	NA	7.2E-09	Skin	2.1E-05	NA	7.2E-05	9.3E-05
			Manganese	NC	NA	NC	NA		NOAEL	7.2E-03	NA	6.2E-03	6.3E-03
			Mercury	NC	NA	NC	NA		Immune system	9.1E-08	NA	4.5E-06	4.6E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	6.5E-07	NA	--	6.5E-07
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.7E-09	NA	1.4E-05	NA	1.4E-05		--	NA	--	
			CHEMICAL TOTAL	3.4E-09	--	1.4E-05	--	1E-05		9.3E-05	0.0E+00	6.3E-03	6E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-05					6E-03
	EXPOSURE MEDIUM TOTAL							1E-05					6E-03
SURFACE WATER TOTAL								1E-05					6E-03

US EPA ARCHIVE DOCUMENT

TABLE F.9.7.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.2E-05	NA	NA	1.2E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.2E-04	NA	NA	1.2E-04
			4,4'-DDE	1.3E-06	NA	NA	NA	1.3E-06	Liver	4.5E-02	NA	NA	4.5E-02
			alpha-Chlordane	4.9E-08	NA	NA	NA	4.9E-08	Liver	1.6E-03	NA	NA	1.6E-03
			Aroclor-1254	2.2E-05	NA	NA	NA	2.2E-05	Immune system	3.2E+00	NA	NA	3.2E+00
			Aroclor-1268	2.2E-06	NA	NA	NA	2.2E-06	Immune system	3.2E-01	NA	NA	3.2E-01
			Dieldrin	1.3E-06	NA	NA	NA	1.3E-06	Liver	9.4E-03	NA	NA	9.4E-03
			gamma-Chlordane	1.8E-08	NA	NA	NA	1.8E-08	Liver	5.8E-04	NA	NA	5.8E-04
			Technical Chlordane	3.3E-06	NA	NA	NA	3.3E-06	Liver	1.1E-01	NA	NA	1.1E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	5.6E-01	NA	NA	5.6E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.6E+00	NA	NA	1.6E+00
			Thallium	NC	NA	NA	NA		NOAEL	5.6E-02	NA	NA	5.6E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.1E-04	NA	NA	NA	1.1E-04		--	NA	NA	
			CHEMICAL TOTAL	1.4E-04	--	--	--	1E-04		5.9E+00	0.0E+00	--	6E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					6E+00
	EXPOSURE MEDIUM TOTAL							1E-04					6E+00
WHOLE BODY TOTAL								1E-04					6E+00
RECEPTOR TOTAL								2E-04					5.9E+00
								TOTAL RISK ACROSS ALL MEDIA 2E-04					TOTAL HAZARD ACROSS ALL MEDIA 5.9E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

	--
TOTAL CARDIOVASCULAR SYSTEM HI =	7.4E-08
TOTAL DEVELOPMENTAL TOXICITY HI =	1.6E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	6.5E-07
TOTAL IMMUNE SYSTEM HI =	4.1E+00
TOTAL KIDNEY HI =	1.6E-04
TOTAL LIVER HI =	1.7E-01
	--
	--
TOTAL NOAEL HI =	6.4E-02
	--
TOTAL SKIN HI =	7.0E-04
	--

Prepared by: RAR
Checked by: KJA

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TABLE F.9.8.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	9.2E-08	NA	6.8E-08	1.6E-07
			Acenaphthylene	NC	NA	NC	NA		Liver	9.7E-08	NA	7.2E-08	1.7E-07
			Benzo(a)anthracene	6.4E-09	NA	4.8E-09	NA	1.1E-08	Kidney	1.7E-06	NA	1.3E-06	3.0E-06
			Benzo(a)pyrene	6.6E-08	NA	4.9E-08	NA	1.1E-07	Kidney	1.7E-06	NA	1.3E-06	3.0E-06
			Benzo(b)fluoranthene	7.8E-09	NA	5.8E-09	NA	1.4E-08	Kidney	2.1E-06	NA	1.5E-06	3.6E-06
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	1.3E-06	NA	9.8E-07	2.3E-06
			Dibenzo(a,h)anthracene	1.9E-08	NA	1.4E-08	NA	3.2E-08	Kidney	4.9E-07	NA	3.7E-07	8.6E-07
			Indeno(1,2,3-cd)pyrene	5.3E-09	NA	4.0E-09	NA	9.3E-09	Kidney	1.4E-06	NA	1.1E-06	2.5E-06
			Phenanthrene	NC	NA	NC	NA		Kidney	1.8E-06	NA	1.3E-06	3.1E-06
			alpha-Chlordane	7.9E-12	NA	1.8E-12	NA	9.7E-12	Liver	2.6E-07	NA	6.0E-08	3.2E-07
			Aroclor-1254	1.1E-09	NA	8.7E-10	NA	2.0E-09	Immune system	1.6E-04	NA	1.3E-04	2.9E-04
			Aroclor-1268	7.8E-10	NA	6.2E-10	NA	1.4E-09	Immune system	1.1E-04	NA	9.1E-05	2.0E-04
			gamma-Chlordane	3.9E-12	NA	8.8E-13	NA	4.7E-12	Liver	1.3E-07	NA	2.9E-08	1.6E-07
			Technical Chlordane	6.5E-10	NA	1.5E-10	NA	8.0E-10	Liver	2.2E-05	NA	5.0E-06	2.7E-05
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	6.9E-08	NA	1.2E-08	NA	8.0E-08	Skin	8.9E-04	NA	1.5E-04	1.0E-03
			Cadmium	NC	NA	NC	NA		Kidney	3.7E-05	NA	8.4E-06	4.5E-05
			Chromium	NC	NA	NC	NA		NOAEL	3.4E-04	NA	--	3.4E-04
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	9.9E-04	NA	--	9.9E-04
			Mercury	NC	NA	NC	NA		Immune system	1.7E-05	NA	--	1.7E-05
			Nickel	NC	NA	NC	NA		Developmental toxicity	5.0E-05	NA	--	5.0E-05
			Thallium	NC	NA	NC	NA		NOAEL	4.4E-04	NA	--	4.4E-04
			Vanadium	NC	NA	NC	NA		NOAEL	2.4E-04	NA	--	2.4E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	9.6E-09	NA	1.7E-09	NA	1.1E-08		--	NA	--	
			CHEMICAL TOTAL	1.8E-07	--	9.2E-08	--	3E-07		3.3E-03	0.0E+00	3.9E-04	4E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-07					4E-03
	EXPOSURE MEDIUM TOTAL							3E-07					4E-03
SEDIMENT TOTAL								3E-07					4E-03
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	Arsenic	2.5E-09	NA	6.3E-09	NA	8.8E-09	Skin	3.2E-05	NA	8.1E-05	1.1E-04
			Manganese	NC	NA	NC	NA		NOAEL	1.1E-04	NA	7.0E-03	7.1E-03
			Mercury	NC	NA	NC	NA		Immune system	1.4E-07	NA	5.1E-06	5.2E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	1.0E-06	NA	--	1.0E-06
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.7E-09	NA	1.5E-05	NA	1.5E-05		--	NA	--	
			CHEMICAL TOTAL	5.2E-09	--	1.5E-05	--	2E-05		1.4E-04	0.0E+00	7.1E-03	7E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-05					7E-03
	EXPOSURE MEDIUM TOTAL							2E-05					7E-03
SURFACE WATER TOTAL								2E-05					7E-03

US EPA ARCHIVE DOCUMENT

TABLE F.9.8.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	9.5E-06	NA	NA	9.5E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	9.7E-05	NA	NA	9.7E-05
			4,4'-DDE	1.0E-06	NA	NA	NA	1.0E-06	Liver	3.5E-02	NA	NA	3.5E-02
			alpha-Chlordane	3.8E-08	NA	NA	NA	3.8E-08	Liver	1.3E-03	NA	NA	1.3E-03
			Aroclor-1254	1.7E-05	NA	NA	NA	1.7E-05	Immune system	2.5E+00	NA	NA	2.5E+00
			Aroclor-1268	1.7E-06	NA	NA	NA	1.7E-06	Immune system	2.5E-01	NA	NA	2.5E-01
			Dieldrin	1.0E-06	NA	NA	NA	1.0E-06	Liver	7.3E-03	NA	NA	7.3E-03
			gamma-Chlordane	1.4E-08	NA	NA	NA	1.4E-08	Liver	4.6E-04	NA	NA	4.6E-04
			Technical Chlordane	2.6E-06	NA	NA	NA	2.6E-06	Liver	8.7E-02	NA	NA	8.7E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	4.4E-01	NA	NA	4.4E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.3E+00	NA	NA	1.3E+00
			Thallium	NC	NA	NA	NA		NOAEL	4.4E-02	NA	NA	4.4E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	8.4E-05	NA	NA	NA	8.4E-05		--	NA	NA	
			CHEMICAL TOTAL	1.1E-04	--	--	--	1E-04		4.6E+00	0.0E+00	--	5E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					5E+00
	EXPOSURE MEDIUM TOTAL							1E-04					5E+00
WHOLE BODY TOTAL								1E-04					5E+00
RECEPTOR TOTAL								1E-04					4.6E+00
			TOTAL RISK ACROSS ALL MEDIA					1E-04	TOTAL HAZARD ACROSS ALL MEDIA				4.6E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

	--
TOTAL CARDIOVASCULAR SYSTEM HI =	1.6E-07
TOTAL DEVELOPMENTAL TOXICITY HI =	1.3E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	1.0E-06
TOTAL IMMUNE SYSTEM HI =	3.2E+00
TOTAL KIDNEY HI =	1.6E-04
TOTAL LIVER HI =	1.3E-01
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	--
TOTAL NOAEL HI =	5.3E-02
	--
TOTAL SKIN HI =	1.2E-03
	--

Prepared by: RAR
Checked by: KJA

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TABLE F.9.9.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.0E-05	NA	NA	2.0E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	2.1E-04	NA	NA	2.1E-04
			4,4'-DDE	1.1E-06	NA	NA	NA	1.1E-06	Liver	7.5E-02	NA	NA	7.5E-02
			alpha-Chlordane	4.0E-08	NA	NA	NA	4.0E-08	Liver	2.7E-03	NA	NA	2.7E-03
			Aroclor-1254	1.8E-05	NA	NA	NA	1.8E-05	Immune system	5.3E+00	NA	NA	5.3E+00
			Aroclor-1268	1.8E-06	NA	NA	NA	1.8E-06	Immune system	5.4E-01	NA	NA	5.4E-01
			Dieldrin	1.1E-06	NA	NA	NA	1.1E-06	Liver	1.6E-02	NA	NA	1.6E-02
			gamma-Chlordane	1.5E-08	NA	NA	NA	1.5E-08	Liver	9.7E-04	NA	NA	9.7E-04
			Technical Chlordane	2.8E-06	NA	NA	NA	2.8E-06	Liver	1.8E-01	NA	NA	1.8E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	9.4E-01	NA	NA	9.4E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.7E+00	NA	NA	2.7E+00
			Thallium	NC	NA	NA	NA		NOAEL	9.4E-02	NA	NA	9.4E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	9.0E-05	NA	NA	NA	9.0E-05		--	NA	NA	
			CHEMICAL TOTAL	1.1E-04	--	--	--	1E-04		9.8E+00	0.0E+00	--	1E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					1E+01
	EXPOSURE MEDIUM TOTAL							1E-04					1E+01
WHOLE BODY TOTAL								1E-04					1E+01
RECEPTOR TOTAL								1E-04					9.8E+00
							TOTAL RISK ACROSS ALL MEDIA	1E-04	TOTAL HAZARD ACROSS ALL MEDIA				9.8E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

	--
	--
TOTAL DEVELOPMENTAL TOXICITY HI =	2.7E+00
	--
	--
	--
	--
TOTAL IMMUNE SYSTEM HI =	6.8E+00
TOTAL KIDNEY HI =	2.1E-04
TOTAL LIVER HI =	2.8E-01
	--
	--
TOTAL NOAEL HI =	9.4E-02
	--
	--
	--

US EPA ARCHIVE DOCUMENT

TABLE F.9.10.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	5.9E-08	NA	1.5E-08	7.4E-08
			Acenaphthylene	NC	NA	NC	NA		Liver	6.2E-08	NA	1.6E-08	7.8E-08
			Benzo(a)anthracene	4.1E-09	NA	1.0E-09	NA	5.2E-09	Kidney	1.1E-06	NA	2.8E-07	1.4E-06
			Benzo(a)pyrene	4.2E-08	NA	1.1E-08	NA	5.3E-08	Kidney	1.1E-06	NA	2.8E-07	1.4E-06
			Benzo(b)fluoranthene	5.0E-09	NA	1.3E-09	NA	6.3E-09	Kidney	1.3E-06	NA	3.4E-07	1.7E-06
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	8.5E-07	NA	2.1E-07	1.1E-06
			Dibenzo(a,h)anthracene	1.2E-08	NA	3.0E-09	NA	1.5E-08	Kidney	3.2E-07	NA	8.0E-08	4.0E-07
			Indeno(1,2,3-cd)pyrene	3.4E-09	NA	8.6E-10	NA	4.3E-09	Kidney	9.1E-07	NA	2.3E-07	1.1E-06
			Phenanthrene	NC	NA	NC	NA		Kidney	1.1E-06	NA	2.9E-07	1.4E-06
			alpha-Chlordane	5.1E-12	NA	3.9E-13	NA	5.5E-12	Liver	1.7E-07	NA	1.3E-08	1.8E-07
			Aroclor-1254	7.0E-10	NA	1.9E-10	NA	8.9E-10	Immune system	1.0E-04	NA	2.8E-05	1.3E-04
			Aroclor-1268	5.0E-10	NA	1.4E-10	NA	6.4E-10	Immune system	7.3E-05	NA	2.0E-05	9.3E-05
			gamma-Chlordane	2.5E-12	NA	1.9E-13	NA	2.7E-12	Liver	8.3E-08	NA	6.4E-09	8.9E-08
			Technical Chlordane	4.2E-10	NA	3.3E-11	NA	4.5E-10	Liver	1.4E-05	NA	1.1E-06	1.5E-05
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	4.4E-08	NA	2.6E-09	NA	4.7E-08	Skin	5.7E-04	NA	3.3E-05	6.1E-04
			Cadmium	NC	NA	NC	NA		Kidney	2.4E-05	NA	1.8E-06	2.5E-05
			Chromium	NC	NA	NC	NA		NOAEL	2.2E-04	NA	--	2.2E-04
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	6.4E-04	NA	--	6.4E-04
			Mercury	NC	NA	NC	NA		Immune system	1.1E-05	NA	--	1.1E-05
			Nickel	NC	NA	NC	NA		Developmental toxicity	3.2E-05	NA	--	3.2E-05
			Thallium	NC	NA	NC	NA		NOAEL	2.8E-04	NA	--	2.8E-04
			Vanadium	NC	NA	NC	NA		NOAEL	1.5E-04	NA	--	1.5E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	6.2E-09	NA	3.6E-10	NA	6.6E-09		--	NA	--	
			CHEMICAL TOTAL	1.2E-07	--	2.0E-08	--	1E-07		2.1E-03	0.0E+00	8.6E-05	2E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-07					2E-03
	EXPOSURE MEDIUM TOTAL							1E-07					2E-03
SEDIMENT TOTAL								1E-07					2E-03
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	Arsenic	1.6E-09	NA	5.6E-09	NA	7.2E-09	Skin	2.1E-05	NA	7.2E-05	9.3E-05
			Manganese	NC	NA	NC	NA		NOAEL	8.8E-05	NA	7.7E-03	7.7E-03
			Mercury	NC	NA	NC	NA		Immune system	9.1E-08	NA	4.5E-06	4.6E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	6.5E-07	NA	--	6.5E-07
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.7E-09	NA	1.4E-05	NA	1.4E-05		--	NA	--	
			CHEMICAL TOTAL	3.4E-09	--	1.4E-05	--	1E-05		1.1E-04	0.0E+00	7.7E-03	8E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-05					8E-03
	EXPOSURE MEDIUM TOTAL							1E-05					8E-03
SURFACE WATER TOTAL								1E-05					8E-03

US EPA ARCHIVE DOCUMENT

TABLE F.9.10.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.2E-05	NA	NA	1.2E-05
			Benzo(a)anthracene	3.4E-07	NA	NA	NA	3.4E-07	Kidney	9.0E-05	NA	NA	9.0E-05
			Benzo(a)pyrene	3.3E-06	NA	NA	NA	3.3E-06	Kidney	8.9E-05	NA	NA	8.9E-05
			Benzo(b)fluoranthene	4.2E-07	NA	NA	NA	4.2E-07	Kidney	1.1E-04	NA	NA	1.1E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	5.9E-05	NA	NA	5.9E-05
			Dibenzo(a,h)anthracene	1.1E-06	NA	NA	NA	1.1E-06	Kidney	2.9E-05	NA	NA	2.9E-05
			Indeno(1,2,3-cd)pyrene	2.9E-07	NA	NA	NA	2.9E-07	Kidney	7.7E-05	NA	NA	7.7E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.9E-04	NA	NA	1.9E-04
			4,4'-DDE	6.0E-07	NA	NA	NA	6.0E-07	Liver	2.1E-02	NA	NA	2.1E-02
			alpha-Chlordane	8.5E-08	NA	NA	NA	8.5E-08	Liver	2.8E-03	NA	NA	2.8E-03
			gamma-Chlordane	4.6E-08	NA	NA	NA	4.6E-08	Liver	1.5E-03	NA	NA	1.5E-03
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.1E-01	NA	NA	2.1E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	6.3E-01	NA	NA	6.3E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.5E-05	NA	NA	NA	4.5E-05		--	NA	NA	
			CHEMICAL TOTAL	5.1E-05	--	--	--	5E-05		8.6E-01	0.0E+00	--	8.6E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-05					8.6E-01
	EXPOSURE MEDIUM TOTAL							5E-05					8.6E-01
WHOLE BODY TOTAL								5E-05					8.6E-01
RECEPTOR TOTAL								**7E-05**					**8.7E-01**
							TOTAL RISK ACROSS ALL MEDIA	**7E-05**	**TOTAL HAZARD ACROSS ALL MEDIA**				**8.7E-01**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

	--
TOTAL CARDIOVASCULAR SYSTEM HI =	7.4E-08
TOTAL DEVELOPMENTAL TOXICITY HI =	6.3E-01
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	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	6.5E-07
TOTAL IMMUNE SYSTEM HI =	2.1E-01
TOTAL KIDNEY HI =	6.8E-04
TOTAL LIVER HI =	2.5E-02
	--
	--
TOTAL NOAEL HI =	9.0E-03
	--
TOTAL SKIN HI =	7.0E-04
	--

US EPA ARCHIVE DOCUMENT

TABLE F.9.11CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	ASSAPUMPSET POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	9.2E-08	NA	6.8E-08	1.6E-07
			Acenaphthylene	NC	NA	NC	NA		Liver	9.7E-08	NA	7.2E-08	1.7E-07
			Benzo(a)anthracene	6.4E-09	NA	4.8E-09	NA	1.1E-08	Kidney	1.7E-06	NA	1.3E-06	3.0E-06
			Benzo(a)pyrene	6.6E-08	NA	4.9E-08	NA	1.1E-07	Kidney	1.7E-06	NA	1.3E-06	3.0E-06
			Benzo(b)fluoranthene	7.8E-09	NA	5.8E-09	NA	1.4E-08	Kidney	2.1E-06	NA	1.5E-06	3.6E-06
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	1.3E-06	NA	9.8E-07	2.3E-06
			Dibenzo(a,h)anthracene	1.9E-08	NA	1.4E-08	NA	3.2E-08	Kidney	4.9E-07	NA	3.7E-07	8.6E-07
			Indeno(1,2,3-cd)pyrene	5.3E-09	NA	4.0E-09	NA	9.3E-09	Kidney	1.4E-06	NA	1.1E-06	2.5E-06
			Phenanthrene	NC	NA	NC	NA		Kidney	1.8E-06	NA	1.3E-06	3.1E-06
			alpha-Chlordane	7.9E-12	NA	1.8E-12	NA	9.7E-12	Liver	2.6E-07	NA	6.0E-08	3.2E-07
			Aroclor-1254	1.1E-09	NA	8.7E-10	NA	2.0E-09	*Immune system*	1.6E-04	NA	1.3E-04	2.9E-04
			Aroclor-1268	7.8E-10	NA	6.2E-10	NA	1.4E-09	Immune system	1.1E-04	NA	9.1E-05	2.0E-04
			gamma-Chlordane	3.9E-12	NA	8.8E-13	NA	4.7E-12	Liver	1.3E-07	NA	2.9E-08	1.6E-07
			Technical Chlordane	6.5E-10	NA	1.5E-10	NA	8.0E-10	Liver	2.2E-05	NA	5.0E-06	2.7E-05
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	6.9E-08	NA	1.2E-08	NA	8.0E-08	Skin	8.9E-04	NA	1.5E-04	1.0E-03
			Cadmium	NC	NA	NC	NA		Kidney	3.7E-05	NA	8.4E-06	4.5E-05
			Chromium	NC	NA	NC	NA		NOAEL	3.4E-04	NA	--	3.4E-04
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	9.9E-04	NA	--	9.9E-04
			Mercury	NC	NA	NC	NA		Immune system	1.7E-05	NA	--	1.7E-05
			Nickel	NC	NA	NC	NA		Developmental toxicity	5.0E-05	NA	--	5.0E-05
			Thallium	NC	NA	NC	NA		NOAEL	4.4E-04	NA	--	4.4E-04
			Vanadium	NC	NA	NC	NA		NOAEL	2.4E-04	NA	--	2.4E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	9.6E-09	NA	1.7E-09	NA	1.1E-08		--	NA	--	
			CHEMICAL TOTAL	1.8E-07	--	9.2E-08	--	3E-07		3.3E-03	0.0E+00	3.9E-04	4E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-07					4E-03
	EXPOSURE MEDIUM TOTAL							3E-07					4E-03
SEDIMENT TOTAL								3E-07					4E-03
SURFACE WATER	SURFACE WATER	ASSAPUMPSET POND	Arsenic	2.5E-09	NA	6.3E-09	NA	8.8E-09	Skin	3.2E-05	NA	8.1E-05	1.1E-04
			Manganese	NC	NA	NC	NA		NOAEL	1.1E-04	NA	7.0E-03	7.1E-03
			Mercury	NC	NA	NC	NA		Immune system	1.4E-07	NA	5.1E-06	5.2E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	1.0E-06	NA	--	1.0E-06
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.7E-09	NA	1.5E-05	NA	1.5E-05		--	NA	--	
			CHEMICAL TOTAL	5.2E-09	--	1.5E-05	--	2E-05		1.4E-04	0.0E+00	7.1E-03	7E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-05					7E-03
	EXPOSURE MEDIUM TOTAL							2E-05					7E-03
SURFACE WATER TOTAL								2E-05					7E-03

US EPA ARCHIVE DOCUMENT

TABLE F.9.11CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	9.6E-06	NA	NA	9.6E-06
			Benzo(a)anthracene	2.6E-07	NA	NA	NA	2.6E-07	Kidney	7.0E-05	NA	NA	7.0E-05
			Benzo(a)pyrene	2.6E-06	NA	NA	NA	2.6E-06	Kidney	6.9E-05	NA	NA	6.9E-05
			Benzo(b)fluoranthene	3.3E-07	NA	NA	NA	3.3E-07	Kidney	8.8E-05	NA	NA	8.8E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	4.6E-05	NA	NA	4.6E-05
			Dibenzo(a,h)anthracene	8.6E-07	NA	NA	NA	8.6E-07	Kidney	2.3E-05	NA	NA	2.3E-05
			Indeno(1,2,3-cd)pyrene	2.2E-07	NA	NA	NA	2.2E-07	Kidney	6.0E-05	NA	NA	6.0E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.5E-04	NA	NA	1.5E-04
			4,4'-DDE	4.7E-07	NA	NA	NA	4.7E-07	Liver	1.6E-02	NA	NA	1.6E-02
			alpha-Chlordane	6.6E-08	NA	NA	NA	6.6E-08	Liver	2.2E-03	NA	NA	2.2E-03
			gamma-Chlordane	3.6E-08	NA	NA	NA	3.6E-08	Liver	1.2E-03	NA	NA	1.2E-03
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.6E-01	NA	NA	1.6E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	4.9E-01	NA	NA	4.9E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.5E-05	NA	NA	NA	3.5E-05		--	NA	NA	
			CHEMICAL TOTAL	4.0E-05	--	--	--	4E-05		6.7E-01	0.0E+00	--	6.7E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-05					6.7E-01
	EXPOSURE MEDIUM TOTAL							4E-05					6.7E-01
WHOLE BODY TOTAL								4E-05					6.7E-01
RECEPTOR TOTAL								6E-05					6.8E-01
			TOTAL RISK ACROSS ALL MEDIA					6E-05	TOTAL HAZARD ACROSS ALL MEDIA				6.8E-01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
--- Not calculated, dose-response data and/or dermal absorption values are not available.

	--
TOTAL CARDIOVASCULAR SYSTEM HI =	1.6E-07
TOTAL DEVELOPMENTAL TOXICITY HI =	4.9E-01
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	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	1.0E-06
TOTAL IMMUNE SYSTEM HI =	1.6E-01
TOTAL KIDNEY HI =	5.7E-04
TOTAL LIVER HI =	2.0E-02
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	--
TOTAL NOAEL HI =	9.5E-03
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TOTAL SKIN HI =	1.2E-03
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Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.9.12.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.0E-05	NA	NA	2.0E-05
			Benzo(a)anthracene	2.8E-07	NA	NA	NA	2.8E-07	Kidney	1.5E-04	NA	NA	1.5E-04
			Benzo(a)pyrene	2.8E-06	NA	NA	NA	2.8E-06	Kidney	1.5E-04	NA	NA	1.5E-04
			Benzo(b)fluoranthene	3.5E-07	NA	NA	NA	3.5E-07	Kidney	1.9E-04	NA	NA	1.9E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	9.8E-05	NA	NA	9.8E-05
			Dibenzo(a,h)anthracene	9.1E-07	NA	NA	NA	9.1E-07	Kidney	4.9E-05	NA	NA	4.9E-05
			Indeno(1,2,3-cd)pyrene	2.4E-07	NA	NA	NA	2.4E-07	Kidney	1.3E-04	NA	NA	1.3E-04
			Phenanthrene	NC	NA	NA	NA		Kidney	3.2E-04	NA	NA	3.2E-04
			4,4'-DDE	5.0E-07	NA	NA	NA	5.0E-07	Liver	3.4E-02	NA	NA	3.4E-02
			alpha-Chlordane	7.0E-08	NA	NA	NA	7.0E-08	Liver	4.7E-03	NA	NA	4.7E-03
			gamma-Chlordane	3.8E-08	NA	NA	NA	3.8E-08	Liver	2.5E-03	NA	NA	2.5E-03
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	3.5E-01	NA	NA	3.5E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.0E+00	NA	NA	1.0E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.7E-05	NA	NA	NA	3.7E-05		--	NA	NA	
			CHEMICAL TOTAL	4.3E-05	--	--	--	4E-05		1.4E+00	0.0E+00	--	1.4E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-05					1.4E+00
	EXPOSURE MEDIUM TOTAL							4E-05					1.4E+00
WHOLE BODY TOTAL								4E-05					1.4E+00
RECEPTOR TOTAL								4E-05					1.4E+00
							TOTAL RISK ACROSS ALL MEDIA	4E-05	TOTAL HAZARD ACROSS ALL MEDIA				1.4E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.0E+00
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	--
TOTAL IMMUNE SYSTEM HI =	3.5E-01
TOTAL KIDNEY HI =	1.1E-03
TOTAL LIVER HI =	4.2E-02
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US EPA ARCHIVE DOCUMENT

TABLE F.9.13.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	GREYSTONE MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	5.4E-07	NA	1.6E-07	7.1E-07
			Acenaphthylene	NC	NA	NC	NA		Liver	5.4E-07	NA	1.6E-07	7.0E-07
			Benzo(a)anthracene	3.9E-08	NA	1.2E-08	NA	5.1E-08	Kidney	1.0E-05	NA	3.1E-06	1.4E-05
			Benzo(a)pyrene	3.9E-07	NA	1.2E-07	NA	5.1E-07	Kidney	1.0E-05	NA	3.1E-06	1.4E-05
			Benzo(b)fluoranthene	4.4E-08	NA	1.3E-08	NA	5.7E-08	Kidney	1.2E-05	NA	3.5E-06	1.5E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	7.9E-06	NA	2.3E-06	1.0E-05
			Dibenzo(a,h)anthracene	7.8E-08	NA	2.3E-08	NA	1.0E-07	Kidney	2.1E-06	NA	6.2E-07	2.7E-06
			Indeno(1,2,3-cd)pyrene	3.2E-08	NA	9.5E-09	NA	4.2E-08	Kidney	8.5E-06	NA	2.5E-06	1.1E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	1.3E-05	NA	4.0E-06	1.7E-05
			alpha-Chlordane	1.1E-10	NA	9.9E-12	NA	1.2E-10	Liver	3.6E-06	NA	3.3E-07	4.0E-06
			Aroclor-1254	1.8E-08	NA	5.8E-09	NA	2.4E-08	Immune system	2.6E-03	NA	8.4E-04	3.5E-03
			Aroclor-1268	2.9E-09	NA	9.3E-10	NA	3.9E-09	Immune system	4.3E-04	NA	1.4E-04	5.6E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	1.1E-07	NA	2.5E-08	1.4E-07
			Technical Chlordane	2.6E-09	NA	2.4E-10	NA	2.9E-09	Liver	8.8E-05	NA	8.0E-06	9.6E-05
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	2.0E-07	NA	1.4E-08	NA	2.2E-07	Skin	2.6E-03	NA	1.8E-04	2.8E-03
			Chromium	--	NA	--	NA		NOAEL	7.8E-03	NA	--	7.8E-03
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	2.6E-03	NA	--	2.6E-03
			Mercury	--	NA	--	NA		Immune system	2.0E-04	NA	--	2.0E-04
			Molybdenum	NC	NA	NC	NA		Kidney	1.1E-03	NA	--	1.1E-03
			Nickel	--	NA	--	NA		Developmental toxicity	6.1E-04	NA	--	6.1E-04
			Thallium	NC	NA	NC	NA		NOAEL	5.9E-04	NA	--	5.9E-04
			Vanadium	NC	NA	NC	NA		NOAEL	1.2E-03	NA	--	1.2E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.4E-07	NA	9.8E-09	NA	1.5E-07		--	NA	--	
			CHEMICAL TOTAL	9.6E-07	--	2.0E-07	--	1E-06		2.0E-02	0.0E+00	1.2E-03	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-06					2E-02
	EXPOSURE MEDIUM TOTAL							1E-06					2E-02
SOIL TOTAL								1E-06					3E-02
SEDIMENT	SEDIMENT	GREYSTONE MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	2.4E-07	NA	6.0E-08	3.0E-07
			Acenaphthylene	NC	NA	NC	NA		Liver	2.0E-07	NA	5.2E-08	2.6E-07
			Benzo(a)anthracene	1.2E-08	NA	3.0E-09	NA	1.5E-08	Kidney	3.2E-06	NA	8.0E-07	4.0E-06
			Benzo(a)pyrene	1.1E-07	NA	2.8E-08	NA	1.4E-07	Kidney	3.0E-06	NA	7.5E-07	3.7E-06
			Benzo(b)fluoranthene	1.2E-08	NA	3.0E-09	NA	1.5E-08	Kidney	3.2E-06	NA	8.0E-07	4.0E-06
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	1.8E-06	NA	4.6E-07	2.3E-06
			Dibenzo(a,h)anthracene	6.1E-08	NA	1.5E-08	NA	7.7E-08	Kidney	1.6E-06	NA	4.1E-07	2.0E-06
			Indeno(1,2,3-cd)pyrene	8.0E-09	NA	2.0E-09	NA	1.0E-08	Kidney	2.1E-06	NA	5.4E-07	2.7E-06
			Phenanthrene	NC	NA	NC	NA		Kidney	4.5E-06	NA	1.1E-06	5.6E-06
			alpha-Chlordane	2.3E-11	NA	1.8E-12	NA	2.5E-11	Liver	7.8E-07	NA	6.0E-08	8.4E-07
			Aroclor-1254	3.3E-09	NA	8.9E-10	NA	4.2E-09	Immune system	4.8E-04	NA	1.3E-04	6.1E-04
			Aroclor-1268	3.1E-09	NA	8.3E-10	NA	3.9E-09	Immune system	4.5E-04	NA	1.2E-04	5.7E-04
			gamma-Chlordane	1.8E-11	NA	1.4E-12	NA	2.0E-11	Liver	6.1E-07	NA	4.7E-08	6.6E-07
			Technical Chlordane	1.5E-09	NA	1.2E-10	NA	1.6E-09	Liver	5.1E-05	NA	4.0E-06	5.5E-05
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Antimony	NC	NA	NC	NA		Adverse clinical signs	1.2E-04	NA	--	1.2E-04
			Arsenic	1.6E-07	NA	9.2E-09	NA	1.7E-07	Skin	2.0E-03	NA	1.2E-04	2.2E-03
			Cadmium	NC	NA	NC	NA		Kidney	5.2E-05	NA	4.0E-06	5.6E-05

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TABLE F.9.13.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Chromium	NC	NA	NC	NA		NOAEL	2.1E-03	NA	--	2.1E-03
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	5.4E-04	NA	--	5.4E-04
			Mercury	NC	NA	NC	NA		Immune system	4.5E-05	NA	--	4.5E-05
			Nickel	NC	NA	NC	NA		Developmental toxicity	4.5E-04	NA	--	4.5E-04
			Thallium	NC	NA	NC	NA		NOAEL	2.9E-04	NA	--	2.9E-04
			Vanadium	NC	NA	NC	NA		NOAEL	7.2E-04	NA	--	7.2E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.0E-07	NA	1.2E-08	NA	2.1E-07		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	4.1E-08	NA	2.4E-09	NA	4.3E-08		--	NA	--	
			CHEMICAL TOTAL	6.1E-07	--	7.7E-08	--	7E-07		7.3E-03	0.0E+00	3.8E-04	8E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-07					8E-03
	EXPOSURE MEDIUM TOTAL							7E-07					8E-03
SEDIMENT TOTAL								7E-07					8E-03
SURFACE WATER	SURFACE WATER	GREYSTONE MILL POND	Arsenic	1.8E-09	NA	6.3E-09	NA	8.1E-09	Skin	2.3E-05	NA	8.1E-05	1.0E-04
			Manganese	NC	NA	NC	NA		NOAEL	6.9E-05	NA	6.0E-03	6.1E-03
			Mercury	NC	NA	NC	NA		Immune system	8.2E-08	NA	4.1E-06	4.2E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	1.6E-05	NA	--	1.6E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.8E-09	NA	1.5E-05	NA	1.5E-05		--	NA	--	
			CHEMICAL TOTAL	3.6E-09	--	1.5E-05	--	1E-05		1.1E-04	0.0E+00	6.1E-03	6E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-05					6E-03
	EXPOSURE MEDIUM TOTAL							1E-05					6E-03
SURFACE WATER TOTAL								1E-05					6E-03
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.6E-05	NA	NA	1.6E-05
			Benzo(a)pyrene	1.3E-06	NA	NA	NA	1.3E-06	Kidney	3.6E-05	NA	NA	3.6E-05
			Benzo(b)fluoranthene	1.5E-07	NA	NA	NA	1.5E-07	Kidney	4.0E-05	NA	NA	4.0E-05
			Dibenzo(a,h)anthracene	8.1E-07	NA	NA	NA	8.1E-07	Kidney	2.2E-05	NA	NA	2.2E-05
			Indeno(1,2,3-cd)pyrene	1.3E-07	NA	NA	NA	1.3E-07	Kidney	3.6E-05	NA	NA	3.6E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.3E-04	NA	NA	1.3E-04
			4,4'-DDD	5.0E-07	NA	NA	NA	5.0E-07	Liver	2.4E-02	NA	NA	2.4E-02
			4,4'-DDE	1.5E-06	NA	NA	NA	1.5E-06	Liver	5.1E-02	NA	NA	5.1E-02
			alpha-Chlordane	8.3E-07	NA	NA	NA	8.3E-07	Liver	2.8E-02	NA	NA	2.8E-02
			Aroclor-1254	7.0E-05	NA	NA	NA	7.0E-05	Immune system	1.0E+01	NA	NA	1.0E+01
			Aroclor-1268	3.5E-05	NA	NA	NA	3.5E-05	Immune system	5.1E+00	NA	NA	5.1E+00
			Dieldrin	7.9E-06	NA	NA	NA	7.9E-06	Liver	5.7E-02	NA	NA	5.7E-02
			gamma-Chlordane	3.4E-07	NA	NA	NA	3.4E-07	Liver	1.1E-02	NA	NA	1.1E-02
			Heptachlor Epoxide	1.5E-06	NA	NA	NA	1.5E-06	Liver	7.5E-02	NA	NA	7.5E-02
			Technical Chlordane	1.5E-05	NA	NA	NA	1.5E-05	Liver	5.1E-01	NA	NA	5.1E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.9E-01	NA	NA	1.9E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.3E+00	NA	NA	1.3E+00

US EPA ARCHIVE DOCUMENT

TABLE F.9.13.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - SUBSISTENCE ANGLER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Zinc	NC	NA	NA	NA		Hematological system	1.1E-01	NA	NA	1.1E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.6E-05	NA	NA	NA	1.6E-05		--	NA	NA	
			CHEMICAL TOTAL	1.5E-04	--	--	--	2E-04		1.8E+01	0.0E+00	--	1.8E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-04					1.8E+01
	EXPOSURE MEDIUM TOTAL							2E-04					1.8E+01
WHOLE BODY TOTAL								2E-04					1.8E+01
RECEPTOR TOTAL								2E-04					1.8E+01
							TOTAL RISK ACROSS ALL MEDIA	2E-04	TOTAL HAZARD ACROSS ALL MEDIA				1.8E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: XJA

TOTAL ADVERSE CLINICAL SIGNS HI =	1.2E-04
TOTAL CARDIOVASCULAR SYSTEM HI =	1.0E-06
TOTAL DEVELOPMENTAL TOXICITY HI =	1.3E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	1.1E-01
TOTAL IMMUNE SYSTEM HI =	1.6E+01
TOTAL KIDNEY HI =	1.5E-03
TOTAL LIVER HI =	7.6E-01
	--
	--
TOTAL NOAEL HI =	2.6E-02
	--
TOTAL SKIN HI =	5.1E-03
	--

US EPA ARCHIVE DOCUMENT

TABLE F.9.14.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	GREYSTONE MIL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	8.5E-07	NA	8.5E-07	1.7E-06
			Acenaphthylene	NC	NA	NC	NA		Liver	8.4E-07	NA	8.4E-07	1.7E-06
			Benzo(a)anthracene	6.1E-08	NA	6.1E-08	NA	1.2E-07	Kidney	1.6E-05	NA	1.6E-05	3.3E-05
			Benzo(a)pyrene	6.1E-07	NA	6.1E-07	NA	1.2E-06	Kidney	1.6E-05	NA	1.6E-05	3.2E-05
			Benzo(b)fluoranthene	6.8E-08	NA	6.8E-08	NA	1.4E-07	Kidney	1.8E-05	NA	1.8E-05	3.6E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	1.2E-05	NA	1.2E-05	2.5E-05
			Dibenzo(a,h)anthracene	1.2E-07	NA	1.2E-07	NA	2.4E-07	Kidney	3.2E-06	NA	3.2E-06	6.5E-06
			Indeno(1,2,3-cd)pyrene	5.0E-08	NA	5.0E-08	NA	1.0E-07	Kidney	1.3E-05	NA	1.3E-05	2.7E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	2.1E-05	NA	2.1E-05	4.2E-05
			alpha-Chlordane	1.7E-10	NA	5.2E-11	NA	2.2E-10	Liver	5.6E-06	NA	1.7E-06	7.4E-06
			Aroclor-1254	2.8E-08	NA	3.0E-08	NA	5.9E-08	Immune system	4.1E-03	NA	4.4E-03	8.5E-03
			Aroclor-1268	4.6E-09	NA	4.9E-09	NA	9.4E-09	Immune system	6.6E-04	NA	7.1E-04	1.4E-03
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	1.7E-07	NA	1.3E-07	3.0E-07
			Technical Chlordane	4.1E-09	NA	1.3E-09	NA	5.3E-09	Liver	1.4E-04	NA	4.2E-05	1.8E-04
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	3.1E-07	NA	7.2E-08	NA	3.9E-07	Skin	4.1E-03	NA	9.4E-04	5.0E-03
			Chromium	NC	NA	NC	NA		NOAEL	1.2E-02	NA	--	1.2E-02
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	4.1E-03	NA	--	4.1E-03
			Mercury	NC	NA	NC	NA		Immune system	3.1E-04	NA	--	3.1E-04
			Molybdenum	NC	NA	NC	NA		Kidney	1.7E-03	NA	--	1.7E-03
			Nickel	NC	NA	NC	NA		Developmental toxicity	9.5E-04	NA	--	9.5E-04
			Thallium	NC	NA	NC	NA		NOAEL	9.1E-04	NA	--	9.1E-04
			Vanadium	NC	NA	NC	NA		NOAEL	1.9E-03	NA	--	1.9E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.2E-07	NA	5.2E-08	NA	2.8E-07		--	NA	--	
			CHEMICAL TOTAL	1.5E-06	--	1.1E-06	--	3E-06		3.1E-02	0.0E+00	6.2E-03	4E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-06					4E-02
	EXPOSURE MEDIUM TOTAL							3E-06					4E-02
SOIL TOTAL								3E-06					4E-02
SEDIMENT	SEDIMENT	GREYSTONE MIL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	3.7E-07	NA	2.7E-07	6.4E-07
			Acenaphthylene	NC	NA	NC	NA		Liver	3.2E-07	NA	2.4E-07	5.5E-07
			Benzo(a)anthracene	1.9E-08	NA	1.4E-08	NA	3.2E-08	Kidney	4.9E-06	NA	3.7E-06	8.6E-06
			Benzo(a)pyrene	1.7E-07	NA	1.3E-07	NA	3.0E-07	Kidney	4.6E-06	NA	3.4E-06	8.0E-06
			Benzo(b)fluoranthene	1.9E-08	NA	1.4E-08	NA	3.2E-08	Kidney	4.9E-06	NA	3.7E-06	8.6E-06
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	2.8E-06	NA	2.1E-06	4.9E-06
			Dibenzo(a,h)anthracene	9.5E-08	NA	7.1E-08	NA	1.7E-07	Kidney	2.5E-06	NA	1.9E-06	4.4E-06
			Indeno(1,2,3-cd)pyrene	1.2E-08	NA	9.2E-09	NA	2.2E-08	Kidney	3.3E-06	NA	2.5E-06	5.7E-06
			Phenanthrene	NC	NA	NC	NA		Kidney	6.9E-06	NA	5.1E-06	1.2E-05
			alpha-Chlordane	3.6E-11	NA	8.3E-12	NA	4.4E-11	Liver	1.2E-06	NA	2.8E-07	1.5E-06
			Aroclor-1254	5.1E-09	NA	4.1E-09	NA	9.2E-09	Immune system	7.4E-04	NA	5.9E-04	1.3E-03
			Aroclor-1268	4.7E-09	NA	3.8E-09	NA	8.6E-09	Immune system	6.9E-04	NA	5.5E-04	1.2E-03
			gamma-Chlordane	2.8E-11	NA	6.5E-12	NA	3.5E-11	Liver	9.5E-07	NA	2.2E-07	1.2E-06
			Technical Chlordane	2.4E-09	NA	5.4E-10	NA	2.9E-09	Liver	7.9E-05	NA	1.8E-05	9.7E-05
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Antimony	NC	NA	NC	NA		Adverse clinical signs	1.8E-04	NA	--	1.8E-04

US EPA ARCHIVE DOCUMENT

TABLE F.9.14.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Arsenic	2.4E-07	NA	4.2E-08	NA	2.9E-07	Skin	3.2E-03	NA	5.4E-04	3.7E-03
			Cadmium	NC	NA	NC	NA		Kidney	8.0E-05	NA	1.8E-05	9.8E-05
			Chromium	NC	NA	NC	NA		NOAEL	3.3E-03	NA	--	3.3E-03
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	8.3E-04	NA	--	8.3E-04
			Mercury	NC	NA	NC	NA		Immune system	6.9E-05	NA	--	6.9E-05
			Nickel	NC	NA	NC	NA		Developmental toxicity	7.0E-04	NA	--	7.0E-04
			Thallium	NC	NA	NC	NA		NOAEL	4.6E-04	NA	--	4.6E-04
			Vanadium	NC	NA	NC	NA		NOAEL	1.1E-03	NA	--	1.1E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.1E-07	NA	5.3E-08	NA	3.6E-07		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	6.3E-08	NA	1.1E-08	NA	7.4E-08		--	NA	--	
			CHEMICAL TOTAL	9.5E-07	--	3.5E-07	--	1E-06		1.1E-02	0.0E+00	1.8E-03	1E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-06					1E-02
	EXPOSURE MEDIUM TOTAL							1E-06					1E-02
SEDIMENT TOTAL								1E-06					1E-02
SURFACE WATER	SURFACE WATER	GREYSTONE MIL POND	Arsenic	2.8E-09	NA	7.0E-09	NA	9.8E-09	Skin	3.6E-05	NA	9.1E-05	1.3E-04
			Manganese	NC	NA	NC	NA		NOAEL	1.1E-04	NA	6.8E-03	6.9E-03
			Mercury	NC	NA	NC	NA		Immune system	1.3E-07	NA	4.6E-06	4.7E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	2.5E-05	NA	--	2.5E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.9E-09	NA	1.6E-05	NA	1.6E-05		--	NA	--	
			CHEMICAL TOTAL	5.7E-09	--	1.6E-05	--	2E-05		1.7E-04	0.0E+00	6.9E-03	7E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-05					7E-03
	EXPOSURE MEDIUM TOTAL							2E-05					7E-03
SURFACE WATER TOTAL								2E-05					7E-03
AMERICAN EEL	WHOLE BODY	GREYSTONE MIL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.3E-05	NA	NA	1.3E-05
			Benzo(a)pyrene	1.0E-06	NA	NA	NA	1.0E-06	Kidney	2.8E-05	NA	NA	2.8E-05
			Benzo(b)fluoranthene	1.2E-07	NA	NA	NA	1.2E-07	Kidney	3.1E-05	NA	NA	3.1E-05
			Dibenzo(a,h)anthracene	6.3E-07	NA	NA	NA	6.3E-07	Kidney	1.7E-05	NA	NA	1.7E-05
			Indeno(1,2,3-cd)pyrene	1.0E-07	NA	NA	NA	1.0E-07	Kidney	2.8E-05	NA	NA	2.8E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.0E-04	NA	NA	1.0E-04
			4,4'-DDD	3.9E-07	NA	NA	NA	3.9E-07	Liver	1.9E-02	NA	NA	1.9E-02
			4,4'-DDE	1.2E-06	NA	NA	NA	1.2E-06	Liver	4.0E-02	NA	NA	4.0E-02
			alpha-Chlordane	6.5E-07	NA	NA	NA	6.5E-07	Liver	2.2E-02	NA	NA	2.2E-02
			Aroclor-1254	5.5E-05	NA	NA	NA	5.5E-05	Immune system	8.0E+00	NA	NA	8.0E+00
			Aroclor-1268	2.7E-05	NA	NA	NA	2.7E-05	Immune system	4.0E+00	NA	NA	4.0E+00
			Dieldrin	6.1E-06	NA	NA	NA	6.1E-06	Liver	4.5E-02	NA	NA	4.5E-02
			gamma-Chlordane	2.6E-07	NA	NA	NA	2.6E-07	Liver	8.7E-03	NA	NA	8.7E-03
			Heptachlor Epoxide	1.2E-06	NA	NA	NA	1.2E-06	Liver	5.8E-02	NA	NA	5.8E-02
			Technical Chlordane	1.2E-05	NA	NA	NA	1.2E-05	Liver	4.0E-01	NA	NA	4.0E-01
			Lead	--	NA	NA	NA			--	NA	NA	

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TABLE F.9.14.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Mercury	NC	NA	NA	NA		Immune system	1.5E-01	NA	NA	1.5E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.0E+00	NA	NA	1.0E+00
			Zinc	NC	NA	NA	NA		Hematological system	8.8E-02	NA	NA	8.8E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.2E-05	NA	NA	NA	1.2E-05		--	NA	NA	
			CHEMICAL TOTAL	1.2E-04	--	--	--	1E-04		1.4E+01	0.0E+00	--	1.4E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					1.4E+01
	EXPOSURE MEDIUM TOTAL							1E-04					1.4E+01
WHOLE BODY TOTAL								1E-04					1.4E+01
RECEPTOR TOTAL								1E-04					1.4E+01
			TOTAL RISK ACROSS ALL MEDIA					1E-04	TOTAL HAZARD ACROSS ALL MEDIA				1.4E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

TOTAL ADVERSE CLINICAL SIGNS HI =	1.8E-04
TOTAL CARDIOVASCULAR SYSTEM HI =	2.3E-06
TOTAL DEVELOPMENTAL TOXICITY HI =	1.0E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	8.8E-02
TOTAL IMMUNE SYSTEM HI =	1.2E+01
TOTAL KIDNEY HI =	2.3E-03
TOTAL LIVER HI =	5.9E-01
	--
	--
TOTAL NOAEL HI =	3.2E-02
	--
TOTAL SKIN HI =	8.8E-03
	--

Prepared by: RAR
Checked by: KJA

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TABLE F.9.15.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - SUBSISTENCE ANGLER - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	GREYSTONE MIL POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.7E-05	NA	NA	2.7E-05
			Benzo(a)pyrene	1.1E-06	NA	NA	NA	1.1E-06	Kidney	5.9E-05	NA	NA	5.9E-05
			Benzo(b)fluoranthene	1.3E-07	NA	NA	NA	1.3E-07	Kidney	6.7E-05	NA	NA	6.7E-05
			Dibenzo(a,h)anthracene	6.7E-07	NA	NA	NA	6.7E-07	Kidney	3.6E-05	NA	NA	3.6E-05
			Indeno(1,2,3-cd)pyrene	1.1E-07	NA	NA	NA	1.1E-07	Kidney	5.9E-05	NA	NA	5.9E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	2.1E-04	NA	NA	2.1E-04
			4,4'-DDD	4.2E-07	NA	NA	NA	4.2E-07	Liver	4.0E-02	NA	NA	4.0E-02
			4,4'-DDE	1.2E-06	NA	NA	NA	1.2E-06	Liver	8.5E-02	NA	NA	8.5E-02
			alpha-Chlordane	6.9E-07	NA	NA	NA	6.9E-07	Liver	4.6E-02	NA	NA	4.6E-02
			Aroclor-1254	5.9E-05	NA	NA	NA	5.9E-05	Immune system	1.7E+01	NA	NA	1.7E+01
			Aroclor-1268	2.9E-05	NA	NA	NA	2.9E-05	Immune system	8.4E+00	NA	NA	8.4E+00
			Dieldrin	6.5E-06	NA	NA	NA	6.5E-06	Liver	9.5E-02	NA	NA	9.5E-02
			gamma-Chlordane	2.8E-07	NA	NA	NA	2.8E-07	Liver	1.9E-02	NA	NA	1.9E-02
			Heptachlor Epoxide	1.3E-06	NA	NA	NA	1.3E-06	Liver	1.2E-01	NA	NA	1.2E-01
			Technical Chlordane	1.3E-05	NA	NA	NA	1.3E-05	Liver	8.6E-01	NA	NA	8.6E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	3.2E-01	NA	NA	3.2E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.2E+00	NA	NA	2.2E+00
			Zinc	NC	NA	NA	NA		Hematological system	1.9E-01	NA	NA	1.9E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.3E-05	NA	NA	NA	1.3E-05		--	NA	NA	
			CHEMICAL TOTAL	1.3E-04	--	--	--	1E-04		3.0E+01	0.0E+00	--	3.0E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					3.0E+01
	EXPOSURE MEDIUM TOTAL							1E-04					3.0E+01
WHOLE BODY TOTAL								1E-04					3.0E+01
RECEPTOR TOTAL								1E-04					3.0E+01
							TOTAL RISK ACROSS ALL MEDIA	1E-04	TOTAL HAZARD ACROSS ALL MEDIA				3.0E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	2.2E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	1.9E-01
TOTAL IMMUNE SYSTEM HI =	2.6E+01
TOTAL KIDNEY HI =	4.4E-04
TOTAL LIVER HI =	1.3E+00
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	--
	--
	--

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.9.16.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	GREYSTONE MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	5.4E-07	NA	1.6E-07	7.1E-07
			Acenaphthylene	NC	NA	NC	NA		Liver	5.4E-07	NA	1.6E-07	7.0E-07
			Benzo(a)anthracene	3.9E-08	NA	1.2E-08	NA	5.1E-08	Kidney	1.0E-05	NA	3.1E-06	1.4E-05
			Benzo(a)pyrene	3.9E-07	NA	1.2E-07	NA	5.1E-07	Kidney	1.0E-05	NA	3.1E-06	1.4E-05
			Benzo(b)fluoranthene	4.4E-08	NA	1.3E-08	NA	5.7E-08	Kidney	1.2E-05	NA	3.5E-06	1.5E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	7.9E-06	NA	2.3E-06	1.0E-05
			Dibenzo(a,h)anthracene	7.8E-08	NA	2.3E-08	NA	1.0E-07	Kidney	2.1E-06	NA	6.2E-07	2.7E-06
			Indeno(1,2,3-cd)pyrene	3.2E-08	NA	9.5E-09	NA	4.2E-08	Kidney	8.5E-06	NA	2.5E-06	1.1E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	1.3E-05	NA	4.0E-06	1.7E-05
			alpha-Chlordane	1.1E-10	NA	9.9E-12	NA	1.2E-10	Liver	3.6E-06	NA	3.3E-07	4.0E-06
			Aroclor-1254	1.8E-08	NA	5.8E-09	NA	2.4E-08	Immune system	2.6E-03	NA	8.4E-04	3.5E-03
			Aroclor-1268	2.9E-09	NA	9.3E-10	NA	3.9E-09	Immune system	4.3E-04	NA	1.4E-04	5.6E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	1.1E-07	NA	2.5E-08	1.4E-07
			Technical Chlordane	2.6E-09	NA	2.4E-10	NA	2.9E-09	Liver	8.8E-05	NA	8.0E-06	9.6E-05
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	2.0E-07	NA	1.4E-08	NA	2.2E-07	Skin	2.6E-03	NA	1.8E-04	2.8E-03
			Chromium	--	NA	--	NA		NOAEL	7.8E-03	NA	--	7.8E-03
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	2.6E-03	NA	--	2.6E-03
			Mercury	--	NA	--	NA		Immune system	2.0E-04	NA	--	2.0E-04
			Molybdenum	NC	NA	NC	NA		Kidney	1.1E-03	NA	--	1.1E-03
			Nickel	--	NA	--	NA		Developmental toxicity	6.1E-04	NA	--	6.1E-04
			Thallium	NC	NA	NC	NA		NOAEL	5.9E-04	NA	--	5.9E-04
			Vanadium	NC	NA	NC	NA		NOAEL	1.2E-03	NA	--	1.2E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.4E-07	NA	9.8E-09	NA	1.5E-07		--	NA	--	
			CHEMICAL TOTAL	9.6E-07	--	2.0E-07	--	1E-06		2.0E-02	0.0E+00	1.2E-03	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-06					2E-02
	EXPOSURE MEDIUM TOTAL							1E-06					2E-02
SOIL TOTAL								1E-06					2E-02
SEDIMENT	SEDIMENT	GREYSTONE MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	2.4E-07	NA	6.0E-08	3.0E-07
			Acenaphthylene	NC	NA	NC	NA		Liver	2.0E-07	NA	5.2E-08	2.6E-07
			Benzo(a)anthracene	1.2E-08	NA	3.0E-09	NA	1.5E-08	Kidney	3.2E-06	NA	8.0E-07	4.0E-06
			Benzo(a)pyrene	1.1E-07	NA	2.8E-08	NA	1.4E-07	Kidney	3.0E-06	NA	7.5E-07	3.7E-06
			Benzo(b)fluoranthene	1.2E-08	NA	3.0E-09	NA	1.5E-08	Kidney	3.2E-06	NA	8.0E-07	4.0E-06
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	1.8E-06	NA	4.6E-07	2.3E-06
			Dibenzo(a,h)anthracene	6.1E-08	NA	1.5E-08	NA	7.7E-08	Kidney	1.6E-06	NA	4.1E-07	2.0E-06
			Indeno(1,2,3-cd)pyrene	8.0E-09	NA	2.0E-09	NA	1.0E-08	Kidney	2.1E-06	NA	5.4E-07	2.7E-06
			Phenanthrene	NC	NA	NC	NA		Kidney	4.5E-06	NA	1.1E-06	5.6E-06
			alpha-Chlordane	2.3E-11	NA	1.8E-12	NA	2.5E-11	Liver	7.8E-07	NA	6.0E-08	8.4E-07
			Aroclor-1254	3.3E-09	NA	8.9E-10	NA	4.2E-09	Immune system	4.8E-04	NA	1.3E-04	6.1E-04
			Aroclor-1268	3.1E-09	NA	8.3E-10	NA	3.9E-09	Immune system	4.5E-04	NA	1.2E-04	5.7E-04
			gamma-Chlordane	1.8E-11	NA	1.4E-12	NA	2.0E-11	Liver	6.1E-07	NA	4.7E-08	6.6E-07
			Technical Chlordane	1.5E-09	NA	1.2E-10	NA	1.6E-09	Liver	5.1E-05	NA	4.0E-06	5.5E-05
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Antimony	NC	NA	NC	NA		Adverse clinical signs	1.2E-04	NA	--	1.2E-04
			Arsenic	1.6E-07	NA	9.2E-09	NA	1.7E-07	Skin	2.0E-03	NA	1.2E-04	2.2E-03

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TABLE F.9.16.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Cadmium	NC	NA	NC	NA		Kidney	5.2E-05	NA	4.0E-06	5.6E-05
			Chromium	NC	NA	NC	NA		NOAEL	2.1E-03	NA	--	2.1E-03
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	5.4E-04	NA	--	5.4E-04
			Mercury	NC	NA	NC	NA		Immune system	4.5E-05	NA	--	4.5E-05
			Nickel	NC	NA	NC	NA		Developmental toxicity	4.5E-04	NA	--	4.5E-04
			Thallium	NC	NA	NC	NA		NOAEL	2.9E-04	NA	--	2.9E-04
			Vanadium	NC	NA	NC	NA		NOAEL	7.2E-04	NA	--	7.2E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.0E-07	NA	1.2E-08	NA	2.1E-07		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	4.1E-08	NA	2.4E-09	NA	4.3E-08		--	NA	--	
			CHEMICAL TOTAL	6.1E-07	--	7.7E-08	--	7E-07		7.3E-03	0.0E+00	3.8E-04	8E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-07					8E-03
	EXPOSURE MEDIUM TOTAL							7E-07					8E-03
SEDIMENT TOTAL								7E-07					8E-03
SURFACE WATER	SURFACE WATER	GREYSTONE MILL POND	Arsenic	1.8E-09	NA	6.3E-09	NA	8.1E-09	Skin	2.3E-05	NA	8.1E-05	1.0E-04
			Manganese	NC	NA	NC	NA		NOAEL	6.9E-05	NA	6.0E-03	6.1E-03
			Mercury	NC	NA	NC	NA		Immune system	8.2E-08	NA	4.1E-06	4.2E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	1.6E-05	NA	--	1.6E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.8E-09	NA	1.5E-05	NA	1.5E-05		--	NA	--	
			CHEMICAL TOTAL	3.6E-09	--	1.5E-05	--	1E-05		1.1E-04	0.0E+00	6.1E-03	6E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-05					6E-03
	EXPOSURE MEDIUM TOTAL							1E-05					6E-03
SURFACE WATER TOTAL								1E-05					6E-03
LARGEMOUTH BASS	FILLET	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	5.4E-06	NA	NA	5.4E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	2.7E-05	NA	NA	2.7E-05
			4,4'-DDE	7.4E-07	NA	NA	NA	7.4E-07	Liver	2.5E-02	NA	NA	2.5E-02
			alpha-Chlordane	3.1E-08	NA	NA	NA	3.1E-08	Liver	1.0E-03	NA	NA	1.0E-03
			Aroclor-1254	2.1E-05	NA	NA	NA	2.1E-05	Immune system	3.1E+00	NA	NA	3.1E+00
			Aroclor-1268	2.1E-05	NA	NA	NA	2.1E-05	Immune system	3.0E+00	NA	NA	3.0E+00
			Dieldrin	7.8E-07	NA	NA	NA	7.8E-07	Liver	5.7E-03	NA	NA	5.7E-03
			gamma-Chlordane	3.4E-08	NA	NA	NA	3.4E-08	Liver	1.1E-03	NA	NA	1.1E-03
			Technical Chlordane	8.7E-07	NA	NA	NA	8.7E-07	Liver	2.9E-02	NA	NA	2.9E-02
			Mercury	NC	NA	NA	NA		Immune system	1.1E+00	NA	NA	1.1E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.1E+00	NA	NA	5.1E+00

US EPA ARCHIVE DOCUMENT

TABLE F.9.16.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Toxicity Equivalency (Dioxins/Furans) - Mam	5.0E-06	NA	NA	NA	5.0E-06		--	NA	NA	
			CHEMICAL TOTAL	5.0E-05	--	--	--	5E-05		1.2E+01	0.0E+00	--	1E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-05					1E+01
	EXPOSURE MEDIUM TOTAL							5E-05					1E+01
FILLET TOTAL								5E-05					1E+01
RECEPTOR TOTAL								7E-05					1.2E+01
			TOTAL RISK ACROSS ALL MEDIA					7E-05	TOTAL HAZARD ACROSS ALL MEDIA				1.2E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL ADVERSE CLINICAL SIGNS HI =	1.2E-04
TOTAL CARDIOVASCULAR SYSTEM HI =	1.0E-06
TOTAL DEVELOPMENTAL TOXICITY HI =	5.1E+00
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	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	1.6E-05
TOTAL IMMUNE SYSTEM HI =	7.3E+00
TOTAL KIDNEY HI =	1.3E-03
TOTAL LIVER HI =	6.3E-02
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	--
TOTAL NOAEL HI =	2.2E-02
	--
TOTAL SKIN HI =	5.1E-03
	--

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.9.17.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	GREYSTONE MIL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	8.5E-07	NA	8.5E-07	1.7E-06
			Acenaphthylene	NC	NA	NC	NA		Liver	8.4E-07	NA	8.4E-07	1.7E-06
			Benzo(a)anthracene	6.1E-08	NA	6.1E-08	NA	1.2E-07	Kidney	1.6E-05	NA	1.6E-05	3.3E-05
			Benzo(a)pyrene	6.1E-07	NA	6.1E-07	NA	1.2E-06	Kidney	1.6E-05	NA	1.6E-05	3.2E-05
			Benzo(b)fluoranthene	6.8E-08	NA	6.8E-08	NA	1.4E-07	Kidney	1.8E-05	NA	1.8E-05	3.6E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	1.2E-05	NA	1.2E-05	2.5E-05
			Dibenzo(a,h)anthracene	1.2E-07	NA	1.2E-07	NA	2.4E-07	Kidney	3.2E-06	NA	3.2E-06	6.5E-06
			Indeno(1,2,3-cd)pyrene	5.0E-08	NA	5.0E-08	NA	1.0E-07	Kidney	1.3E-05	NA	1.3E-05	2.7E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	2.1E-05	NA	2.1E-05	4.2E-05
			alpha-Chlordane	1.7E-10	NA	5.2E-11	NA	2.2E-10	Liver	5.6E-06	NA	1.7E-06	7.4E-06
			Aroclor-1254	2.8E-08	NA	3.0E-08	NA	5.9E-08	Immune system	4.1E-03	NA	4.4E-03	8.5E-03
			Aroclor-1268	4.6E-09	NA	4.9E-09	NA	9.4E-09	Immune system	6.6E-04	NA	7.1E-04	1.4E-03
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	1.7E-07	NA	1.3E-07	3.0E-07
			Technical Chlordane	4.1E-09	NA	1.3E-09	NA	5.3E-09	Liver	1.4E-04	NA	4.2E-05	1.8E-04
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	3.1E-07	NA	7.2E-08	NA	3.9E-07	Skin	4.1E-03	NA	9.4E-04	5.0E-03
			Chromium	NC	NA	NC	NA		NOAEL	1.2E-02	NA	--	1.2E-02
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	4.1E-03	NA	--	4.1E-03
			Mercury	NC	NA	NC	NA		Immune system	3.1E-04	NA	--	3.1E-04
			Molybdenum	NC	NA	NC	NA		Kidney	1.7E-03	NA	--	1.7E-03
			Nickel	NC	NA	NC	NA		Developmental toxicity	9.5E-04	NA	--	9.5E-04
			Thallium	NC	NA	NC	NA		NOAEL	9.1E-04	NA	--	9.1E-04
			Vanadium	NC	NA	NC	NA		NOAEL	1.9E-03	NA	--	1.9E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.2E-07	NA	5.2E-08	NA	2.8E-07		--	NA	--	
			CHEMICAL TOTAL	1.5E-06	--	1.1E-06	--	3E-06		3.1E-02	0.0E+00	6.2E-03	4E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-06					4E-02
	EXPOSURE MEDIUM TOTAL							3E-06					4E-02
SOIL TOTAL								3E-06					4E-02
SEDIMENT	SEDIMENT	GREYSTONE MIL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	3.7E-07	NA	2.7E-07	6.4E-07
			Acenaphthylene	NC	NA	NC	NA		Liver	3.2E-07	NA	2.4E-07	5.5E-07
			Benzo(a)anthracene	1.9E-08	NA	1.4E-08	NA	3.2E-08	Kidney	4.9E-06	NA	3.7E-06	8.6E-06
			Benzo(a)pyrene	1.7E-07	NA	1.3E-07	NA	3.0E-07	Kidney	4.6E-06	NA	3.4E-06	8.0E-06
			Benzo(b)fluoranthene	1.9E-08	NA	1.4E-08	NA	3.2E-08	Kidney	4.9E-06	NA	3.7E-06	8.6E-06
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	2.8E-06	NA	2.1E-06	4.9E-06
			Dibenzo(a,h)anthracene	9.5E-08	NA	7.1E-08	NA	1.7E-07	Kidney	2.5E-06	NA	1.9E-06	4.4E-06
			Indeno(1,2,3-cd)pyrene	1.2E-08	NA	9.2E-09	NA	2.2E-08	Kidney	3.3E-06	NA	2.5E-06	5.7E-06
			Phenanthrene	NC	NA	NC	NA		Kidney	6.9E-06	NA	5.1E-06	1.2E-05
			alpha-Chlordane	3.6E-11	NA	8.3E-12	NA	4.4E-11	Liver	1.2E-06	NA	2.8E-07	1.5E-06
			Aroclor-1254	5.1E-09	NA	4.1E-09	NA	9.2E-09	Immune system	7.4E-04	NA	5.9E-04	1.3E-03
			Aroclor-1268	4.7E-09	NA	3.8E-09	NA	8.6E-09	Immune system	6.9E-04	NA	5.5E-04	1.2E-03
			gamma-Chlordane	2.8E-11	NA	6.5E-12	NA	3.5E-11	Liver	9.5E-07	NA	2.2E-07	1.2E-06
			Technical Chlordane	2.4E-09	NA	5.4E-10	NA	2.9E-09	Liver	7.9E-05	NA	1.8E-05	9.7E-05
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Antimony	NC	NA	NC	NA		Adverse clinical signs	1.8E-04	NA	--	1.8E-04
			Arsenic	2.4E-07	NA	4.2E-08	NA	2.9E-07	Skin	3.2E-03	NA	5.4E-04	3.7E-03

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TABLE F.9.17.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Cadmium	NC	NA	NC	NA		Kidney	8.0E-05	NA	1.8E-05	9.8E-05
			Chromium	NC	NA	NC	NA		NOAEL	3.3E-03	NA	--	3.3E-03
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	8.3E-04	NA	--	8.3E-04
			Mercury	NC	NA	NC	NA		Immune system	6.9E-05	NA	--	6.9E-05
			Nickel	NC	NA	NC	NA		Developmental toxicity	7.0E-04	NA	--	7.0E-04
			Thallium	NC	NA	NC	NA		NOAEL	4.6E-04	NA	--	4.6E-04
			Vanadium	NC	NA	NC	NA		NOAEL	1.1E-03	NA	--	1.1E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.1E-07	NA	5.3E-08	NA	3.6E-07		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	6.3E-08	NA	1.1E-08	NA	7.4E-08		--	NA	--	
			CHEMICAL TOTAL	9.5E-07	--	3.5E-07	--	1E-06		1.1E-02	0.0E+00	1.8E-03	1E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-06					1E-02
	EXPOSURE MEDIUM TOTAL							1E-06					1E-02
SEDIMENT TOTAL								1E-06					1E-02
SURFACE WATER	SURFACE WATER	GREYSTONE MIL POND	Arsenic	2.8E-09	NA	7.0E-09	NA	9.8E-09	Skin	3.6E-05	NA	9.1E-05	1.3E-04
			Manganese	NC	NA	NC	NA		NOAEL	1.1E-04	NA	6.8E-03	6.9E-03
			Mercury	NC	NA	NC	NA		Immune system	1.3E-07	NA	4.6E-06	4.7E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	2.5E-05	NA	--	2.5E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.9E-09	NA	1.6E-05	NA	1.6E-05		--	NA	--	
			CHEMICAL TOTAL	5.7E-09	--	1.6E-05	--	2E-05		1.7E-04	0.0E+00	6.9E-03	7E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-05					7E-03
	EXPOSURE MEDIUM TOTAL							2E-05					7E-03
SURFACE WATER TOTAL								2E-05					7E-03
LARGEMOUTH BASS	FILLET	GREYSTONE MIL POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.2E-06	NA	NA	4.2E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	2.1E-05	NA	NA	2.1E-05
			4,4'-DDE	5.8E-07	NA	NA	NA	5.8E-07	Liver	2.0E-02	NA	NA	2.0E-02
			alpha-Chlordane	2.4E-08	NA	NA	NA	2.4E-08	Liver	8.1E-04	NA	NA	8.1E-04
			Aroclor-1254	1.7E-05	NA	NA	NA	1.7E-05	Immune system	2.4E+00	NA	NA	2.4E+00
			Aroclor-1268	1.6E-05	NA	NA	NA	1.6E-05	Immune system	2.4E+00	NA	NA	2.4E+00
			Dieldrin	6.1E-07	NA	NA	NA	6.1E-07	Liver	4.4E-03	NA	NA	4.4E-03
			gamma-Chlordane	2.7E-08	NA	NA	NA	2.7E-08	Liver	8.9E-04	NA	NA	8.9E-04
			Technical Chlordane	6.8E-07	NA	NA	NA	6.8E-07	Liver	2.3E-02	NA	NA	2.3E-02
			Mercury	NC	NA	NA	NA		Immune system	8.8E-01	NA	NA	8.8E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	4.0E+00	NA	NA	4.0E+00

US EPA ARCHIVE DOCUMENT

TABLE F.9.17.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.9E-06	NA	NA	NA	3.9E-06		--	NA	NA	
			CHEMICAL TOTAL	3.9E-05	--	--	--	4E-05		9.7E+00	0.0E+00	--	1E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-05					1E+01
	EXPOSURE MEDIUM TOTAL							4E-05					1E+01
FILLET TOTAL								4E-05					1E+01
RECEPTOR TOTAL								6E-05					9.7E+00
			TOTAL RISK ACROSS ALL MEDIA					6E-05	TOTAL HAZARD ACROSS ALL MEDIA				9.7E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL ADVERSE CLINICAL SIGNS HI =	1.8E-04
TOTAL CARDIOVASCULAR SYSTEM HI =	2.3E-06
TOTAL DEVELOPMENTAL TOXICITY HI =	4.0E+00
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TOTAL HEMATOLOGICAL SYSTEM HI =	2.5E-05
TOTAL IMMUNE SYSTEM HI =	5.7E+00
TOTAL KIDNEY HI =	2.1E-03
TOTAL LIVER HI =	4.9E-02
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	--
TOTAL NOAEL HI =	3.2E-02
	--
TOTAL SKIN HI =	8.8E-03
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Prepared by: RAR
Checked by: KJA

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TABLE F.9.18.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	GREYSTONE MIL POND	Acenaphthylene	NC	NA	NA	NA		Liver	9.0E-06	NA	NA	9.0E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	4.5E-05	NA	NA	4.5E-05
			4,4'-DDE	6.2E-07	NA	NA	NA	6.2E-07	Liver	4.2E-02	NA	NA	4.2E-02
			alpha-Chlordane	2.6E-08	NA	NA	NA	2.6E-08	Liver	1.7E-03	NA	NA	1.7E-03
			Aroclor-1254	1.8E-05	NA	NA	NA	1.8E-05	Immune system	5.2E+00	NA	NA	5.2E+00
			Aroclor-1268	1.7E-05	NA	NA	NA	1.7E-05	Immune system	5.1E+00	NA	NA	5.1E+00
			Dieldrin	6.5E-07	NA	NA	NA	6.5E-07	Liver	9.4E-03	NA	NA	9.4E-03
			gamma-Chlordane	2.8E-08	NA	NA	NA	2.8E-08	Liver	1.9E-03	NA	NA	1.9E-03
			Technical Chlordane	7.3E-07	NA	NA	NA	7.3E-07	Liver	4.8E-02	NA	NA	4.8E-02
			Mercury	NC	NA	NA	NA		Immune system	1.9E+00	NA	NA	1.9E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	8.4E+00	NA	NA	8.4E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.2E-06	NA	NA	NA	4.2E-06		--	NA	NA	
			CHEMICAL TOTAL	4.1E-05	--	--	--	4E-05		2.1E+01	0.0E+00	--	2E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-05					2E+01
	EXPOSURE MEDIUM TOTAL							4E-05					2E+01
FILLET TOTAL								4E-05					2E+01
RECEPTOR TOTAL								4E-05					2.1E+01
							TOTAL RISK ACROSS ALL MEDIA	4E-05	TOTAL HAZARD ACROSS ALL MEDIA				2.1E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	8.4E+00
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	--
TOTAL IMMUNE SYSTEM HI =	1.2E+01
TOTAL KIDNEY HI =	4.5E-05
TOTAL LIVER HI =	1.0E-01
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Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.9.19.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	GREYSTONE MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	5.4E-07	NA	1.6E-07	7.1E-07
			Acenaphthylene	NC	NA	NC	NA		Liver	5.4E-07	NA	1.6E-07	7.0E-07
			Benzo(a)anthracene	3.9E-08	NA	1.2E-08	NA	5.1E-08	Kidney	1.0E-05	NA	3.1E-06	1.4E-05
			Benzo(a)pyrene	3.9E-07	NA	1.2E-07	NA	5.1E-07	Kidney	1.0E-05	NA	3.1E-06	1.4E-05
			Benzo(b)fluoranthene	4.4E-08	NA	1.3E-08	NA	5.7E-08	Kidney	1.2E-05	NA	3.5E-06	1.5E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	7.9E-06	NA	2.3E-06	1.0E-05
			Dibenzo(a,h)anthracene	7.8E-08	NA	2.3E-08	NA	1.0E-07	Kidney	2.1E-06	NA	6.2E-07	2.7E-06
			Indeno(1,2,3-cd)pyrene	3.2E-08	NA	9.5E-09	NA	4.2E-08	Kidney	8.5E-06	NA	2.5E-06	1.1E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	1.3E-05	NA	4.0E-06	1.7E-05
			alpha-Chlordane	1.1E-10	NA	9.9E-12	NA	1.2E-10	Liver	3.6E-06	NA	3.3E-07	4.0E-06
			Aroclor-1254	1.8E-08	NA	5.8E-09	NA	2.4E-08	Immune system	2.6E-03	NA	8.4E-04	3.5E-03
			Aroclor-1268	2.9E-09	NA	9.3E-10	NA	3.9E-09	Immune system	4.3E-04	NA	1.4E-04	5.6E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	1.1E-07	NA	2.5E-08	1.4E-07
			Technical Chlordane	2.6E-09	NA	2.4E-10	NA	2.9E-09	Liver	8.8E-05	NA	8.0E-06	9.6E-05
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	2.0E-07	NA	1.4E-08	NA	2.2E-07	Skin	2.6E-03	NA	1.8E-04	2.8E-03
			Chromium	--	NA	--	NA		NOAEL	7.8E-03	NA	--	7.8E-03
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	2.6E-03	NA	--	2.6E-03
			Mercury	--	NA	--	NA		Immune system	2.0E-04	NA	--	2.0E-04
			Molybdenum	NC	NA	NC	NA		Kidney	1.1E-03	NA	--	1.1E-03
			Nickel	--	NA	--	NA		Developmental toxicity	6.1E-04	NA	--	6.1E-04
			Thallium	NC	NA	NC	NA		NOAEL	5.9E-04	NA	--	5.9E-04
			Vanadium	NC	NA	NC	NA		NOAEL	1.2E-03	NA	--	1.2E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.4E-07	NA	9.8E-09	NA	1.5E-07		--	NA	--	
			CHEMICAL TOTAL	9.6E-07	--	2.0E-07	--	1E-06		2.0E-02	0.0E+00	1.2E-03	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-06					2E-02
	EXPOSURE MEDIUM TOTAL							1E-06					2E-02
SOIL TOTAL								1E-06					2E-02
SEDIMENT	SEDIMENT	GREYSTONE MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	2.4E-07	NA	6.0E-08	3.0E-07
			Acenaphthylene	NC	NA	NC	NA		Liver	2.0E-07	NA	5.2E-08	2.6E-07
			Benzo(a)anthracene	1.2E-08	NA	3.0E-09	NA	1.5E-08	Kidney	3.2E-06	NA	8.0E-07	4.0E-06
			Benzo(a)pyrene	1.1E-07	NA	2.8E-08	NA	1.4E-07	Kidney	3.0E-06	NA	7.5E-07	3.7E-06
			Benzo(b)fluoranthene	1.2E-08	NA	3.0E-09	NA	1.5E-08	Kidney	3.2E-06	NA	8.0E-07	4.0E-06
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	1.8E-06	NA	4.6E-07	2.3E-06
			Dibenzo(a,h)anthracene	6.1E-08	NA	1.5E-08	NA	7.7E-08	Kidney	1.6E-06	NA	4.1E-07	2.0E-06
			Indeno(1,2,3-cd)pyrene	8.0E-09	NA	2.0E-09	NA	1.0E-08	Kidney	2.1E-06	NA	5.4E-07	2.7E-06
			Phenanthrene	NC	NA	NC	NA		Kidney	4.5E-06	NA	1.1E-06	5.6E-06
			alpha-Chlordane	2.3E-11	NA	1.8E-12	NA	2.5E-11	Liver	7.8E-07	NA	6.0E-08	8.4E-07
			Aroclor-1254	3.3E-09	NA	8.9E-10	NA	4.2E-09	Immune system	4.8E-04	NA	1.3E-04	6.1E-04
			Aroclor-1268	3.1E-09	NA	8.3E-10	NA	3.9E-09	Immune system	4.5E-04	NA	1.2E-04	5.7E-04
			gamma-Chlordane	1.8E-11	NA	1.4E-12	NA	2.0E-11	Liver	6.1E-07	NA	4.7E-08	6.6E-07
			Technical Chlordane	1.5E-09	NA	1.2E-10	NA	1.6E-09	Liver	5.1E-05	NA	4.0E-06	5.5E-05
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Antimony	NC	NA	NC	NA		Adverse clinical signs	1.2E-04	NA	--	1.2E-04
			Arsenic	1.6E-07	NA	9.2E-09	NA	1.7E-07	Skin	2.0E-03	NA	1.2E-04	2.2E-03

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TABLE F.9.19.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Cadmium	NC	NA	NC	NA		Kidney	5.2E-05	NA	4.0E-06	5.6E-05
			Chromium	NC	NA	NC	NA		NOAEL	2.1E-03	NA	--	2.1E-03
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	5.4E-04	NA	--	5.4E-04
			Mercury	NC	NA	NC	NA		Immune system	4.5E-05	NA	--	4.5E-05
			Nickel	NC	NA	NC	NA		Developmental toxicity	4.5E-04	NA	--	4.5E-04
			Thallium	NC	NA	NC	NA		NOAEL	2.9E-04	NA	--	2.9E-04
			Vanadium	NC	NA	NC	NA		NOAEL	7.2E-04	NA	--	7.2E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.0E-07	NA	1.2E-08	NA	2.1E-07		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	4.1E-08	NA	2.4E-09	NA	4.3E-08		--	NA	--	
			CHEMICAL TOTAL	6.1E-07	--	7.7E-08	--	7E-07		7.3E-03	0.0E+00	3.8E-04	8E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-07					8E-03
	EXPOSURE MEDIUM TOTAL							7E-07					8E-03
SEDIMENT TOTAL								7E-07					8E-03
SURFACE WATER	SURFACE WATER	GREYSTONE MILL POND	Arsenic	1.8E-09	NA	6.3E-09	NA	8.1E-09	Skin	2.3E-05	NA	8.1E-05	1.0E-04
			Manganese	NC	NA	NC	NA		NOAEL	6.9E-05	NA	6.0E-03	6.1E-03
			Mercury	NC	NA	NC	NA		Immune system	8.2E-08	NA	4.1E-06	4.2E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	1.6E-05	NA	--	1.6E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.8E-09	NA	1.5E-05	NA	1.5E-05		--	NA	--	
			CHEMICAL TOTAL	3.6E-09	--	1.5E-05	--	1E-05		1.1E-04	0.0E+00	6.1E-03	6E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-05					6E-03
	EXPOSURE MEDIUM TOTAL							1E-05					6E-03
SURFACE WATER TOTAL								1E-05					6E-03
LARGEMOUTH BASS	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.1E-05	NA	NA	1.1E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.0E-05	NA	NA	1.0E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	8.1E-05	NA	NA	8.1E-05
			4,4'-DDE	3.0E-06	NA	NA	NA	3.0E-06	Liver	1.0E-01	NA	NA	1.0E-01
			alpha-Chlordane	1.9E-07	NA	NA	NA	1.9E-07	Liver	6.5E-03	NA	NA	6.5E-03
			Aroclor-1254	8.8E-05	NA	NA	NA	8.8E-05	Immune system	1.3E+01	NA	NA	1.3E+01
			Aroclor-1268	2.6E-05	NA	NA	NA	2.6E-05	Immune system	3.7E+00	NA	NA	3.7E+00
			Dieldrin	1.7E-06	NA	NA	NA	1.7E-06	Liver	1.3E-02	NA	NA	1.3E-02
			gamma-Chlordane	9.7E-08	NA	NA	NA	9.7E-08	Liver	3.2E-03	NA	NA	3.2E-03
			Technical Chlordane	2.1E-06	NA	NA	NA	2.1E-06	Liver	7.1E-02	NA	NA	7.1E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	8.4E-01	NA	NA	8.4E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.5E+00	NA	NA	2.5E+00
			Thallium	NC	NA	NA	NA		NOAEL	5.0E-02	NA	NA	5.0E-02

US EPA ARCHIVE DOCUMENT

TABLE E.9.19.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.3E-05	NA	NA	NA	1.3E-05		--	NA	NA	
			CHEMICAL TOTAL	1.3E-04	--	--	--	1E-04		2.0E+01	0.0E+00	--	2E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					2E+01
	EXPOSURE MEDIUM TOTAL							1E-04					2E+01
WHOLE BODY TOTAL								1E-04					2E+01
RECEPTOR TOTAL								2E-04					2.0E+01
			TOTAL RISK ACROSS ALL MEDIA					2E-04	TOTAL HAZARD ACROSS ALL MEDIA				2.0E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL ADVERSE CLINICAL SIGNS HI =	1.2E-04
TOTAL CARDIOVASCULAR SYSTEM HI =	1.0E-06
TOTAL DEVELOPMENTAL TOXICITY HI =	2.5E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	1.6E-05
TOTAL IMMUNE SYSTEM HI =	1.7E+01
TOTAL KIDNEY HI =	1.4E-03
TOTAL LIVER HI =	2.0E-01
	--
	--
TOTAL NOAEL HI =	7.2E-02
	--
TOTAL SKIN HI =	5.1E-03
	--

Prepared by: RAR
Checked by: KJA

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TABLE F.9.20.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	GREYSTONE MIL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	8.5E-07	NA	8.5E-07	1.7E-06
			Acenaphthylene	NC	NA	NC	NA		Liver	8.4E-07	NA	8.4E-07	1.7E-06
			Benzo(a)anthracene	6.1E-08	NA	6.1E-08	NA	1.2E-07	Kidney	1.6E-05	NA	1.6E-05	3.3E-05
			Benzo(a)pyrene	6.1E-07	NA	6.1E-07	NA	1.2E-06	Kidney	1.6E-05	NA	1.6E-05	3.2E-05
			Benzo(b)fluoranthene	6.8E-08	NA	6.8E-08	NA	1.4E-07	Kidney	1.8E-05	NA	1.8E-05	3.6E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	1.2E-05	NA	1.2E-05	2.5E-05
			Dibenzo(a,h)anthracene	1.2E-07	NA	1.2E-07	NA	2.4E-07	Kidney	3.2E-06	NA	3.2E-06	6.5E-06
			Indeno(1,2,3-cd)pyrene	5.0E-08	NA	5.0E-08	NA	1.0E-07	Kidney	1.3E-05	NA	1.3E-05	2.7E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	2.1E-05	NA	2.1E-05	4.2E-05
			alpha-Chlordane	1.7E-10	NA	5.2E-11	NA	2.2E-10	Liver	5.6E-06	NA	1.7E-06	7.4E-06
			Aroclor-1254	2.8E-08	NA	3.0E-08	NA	5.9E-08	Immune system	4.1E-03	NA	4.4E-03	8.5E-03
			Aroclor-1268	4.6E-09	NA	4.9E-09	NA	9.4E-09	Immune system	6.6E-04	NA	7.1E-04	1.4E-03
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	1.7E-07	NA	1.3E-07	3.0E-07
			Technical Chlordane	4.1E-09	NA	1.3E-09	NA	5.3E-09	Liver	1.4E-04	NA	4.2E-05	1.8E-04
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	3.1E-07	NA	7.2E-08	NA	3.9E-07	Skin	4.1E-03	NA	9.4E-04	5.0E-03
			Chromium	NC	NA	NC	NA		NOAEL	1.2E-02	NA	--	1.2E-02
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	4.1E-03	NA	--	4.1E-03
			Mercury	NC	NA	NC	NA		Immune system	3.1E-04	NA	--	3.1E-04
			Molybdenum	NC	NA	NC	NA		Kidney	1.7E-03	NA	--	1.7E-03
			Nickel	NC	NA	NC	NA		Developmental toxicity	9.5E-04	NA	--	9.5E-04
			Thallium	NC	NA	NC	NA		NOAEL	9.1E-04	NA	--	9.1E-04
			Vanadium	NC	NA	NC	NA		NOAEL	1.9E-03	NA	--	1.9E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.2E-07	NA	5.2E-08	NA	2.8E-07		--	NA	--	
			CHEMICAL TOTAL	1.5E-06	--	1.1E-06	--	3E-06		3.1E-02	0.0E+00	6.2E-03	4E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-06					4E-02
	EXPOSURE MEDIUM TOTAL							3E-06					4E-02
SOIL TOTAL								3E-06					4E-02
SEDIMENT	SEDIMENT	GREYSTONE MIL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	3.7E-07	NA	2.7E-07	6.4E-07
			Acenaphthylene	NC	NA	NC	NA		Liver	3.2E-07	NA	2.4E-07	5.5E-07
			Benzo(a)anthracene	1.9E-08	NA	1.4E-08	NA	3.2E-08	Kidney	4.9E-06	NA	3.7E-06	8.6E-06
			Benzo(a)pyrene	1.7E-07	NA	1.3E-07	NA	3.0E-07	Kidney	4.6E-06	NA	3.4E-06	8.0E-06
			Benzo(b)fluoranthene	1.9E-08	NA	1.4E-08	NA	3.2E-08	Kidney	4.9E-06	NA	3.7E-06	8.6E-06
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	2.8E-06	NA	2.1E-06	4.9E-06
			Dibenzo(a,h)anthracene	9.5E-08	NA	7.1E-08	NA	1.7E-07	Kidney	2.5E-06	NA	1.9E-06	4.4E-06
			Indeno(1,2,3-cd)pyrene	1.2E-08	NA	9.2E-09	NA	2.2E-08	Kidney	3.3E-06	NA	2.5E-06	5.7E-06
			Phenanthrene	NC	NA	NC	NA		Kidney	6.9E-06	NA	5.1E-06	1.2E-05
			alpha-Chlordane	3.6E-11	NA	8.3E-12	NA	4.4E-11	Liver	1.2E-06	NA	2.8E-07	1.5E-06
			Aroclor-1254	5.1E-09	NA	4.1E-09	NA	9.2E-09	Immune system	7.4E-04	NA	5.9E-04	1.3E-03
			Aroclor-1268	4.7E-09	NA	3.8E-09	NA	8.6E-09	Immune system	6.9E-04	NA	5.5E-04	1.2E-03
			gamma-Chlordane	2.8E-11	NA	6.5E-12	NA	3.5E-11	Liver	9.5E-07	NA	2.2E-07	1.2E-06
			Technical Chlordane	2.4E-09	NA	5.4E-10	NA	2.9E-09	Liver	7.9E-05	NA	1.8E-05	9.7E-05
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Antimony	NC	NA	NC	NA		Adverse clinical signs	1.8E-04	NA	--	1.8E-04
			Arsenic	2.4E-07	NA	4.2E-08	NA	2.9E-07	Skin	3.2E-03	NA	5.4E-04	3.7E-03

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TABLE F.9.20.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Cadmium	NC	NA	NC	NA		Kidney	8.0E-05	NA	1.8E-05	9.8E-05
			Chromium	NC	NA	NC	NA		NOAEL	3.3E-03	NA	--	3.3E-03
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	8.3E-04	NA	--	8.3E-04
			Mercury	NC	NA	NC	NA		Immune system	6.9E-05	NA	--	6.9E-05
			Nickel	NC	NA	NC	NA		Developmental toxicity	7.0E-04	NA	--	7.0E-04
			Thallium	NC	NA	NC	NA		NOAEL	4.6E-04	NA	--	4.6E-04
			Vanadium	NC	NA	NC	NA		NOAEL	1.1E-03	NA	--	1.1E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.1E-07	NA	5.3E-08	NA	3.6E-07		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	6.3E-08	NA	1.1E-08	NA	7.4E-08		--	NA	--	
			CHEMICAL TOTAL	9.5E-07	--	3.5E-07	--	1E-06		1.1E-02	0.0E+00	1.8E-03	1E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-06					1E-02
	EXPOSURE MEDIUM TOTAL							1E-06					1E-02
SEDIMENT TOTAL								1E-06					1E-02
SURFACE WATER	SURFACE WATER	GREYSTONE MIL POND	Arsenic	2.8E-09	NA	7.0E-09	NA	9.8E-09	Skin	3.6E-05	NA	9.1E-05	1.3E-04
			Manganese	NC	NA	NC	NA		NOAEL	1.1E-04	NA	6.8E-03	6.9E-03
			Mercury	NC	NA	NC	NA		Immune system	1.3E-07	NA	4.6E-06	4.7E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	2.5E-05	NA	--	2.5E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.9E-09	NA	1.6E-05	NA	1.6E-05		--	NA	--	
			CHEMICAL TOTAL	5.7E-09	--	1.6E-05	--	2E-05		1.7E-04	0.0E+00	6.9E-03	7E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-05					7E-03
	EXPOSURE MEDIUM TOTAL							2E-05					7E-03
SURFACE WATER TOTAL								2E-05					7E-03
LARGEMOUTH BASS	WHOLE BODY	GREYSTONE MIL POND	Acenaphthylene	NC	NA	NA	NA		Liver	8.4E-06	NA	NA	8.4E-06
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	7.8E-06	NA	NA	7.8E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	6.3E-05	NA	NA	6.3E-05
			4,4'-DDE	2.4E-06	NA	NA	NA	2.4E-06	Liver	8.1E-02	NA	NA	8.1E-02
			alpha-Chlordane	1.5E-07	NA	NA	NA	1.5E-07	Liver	5.1E-03	NA	NA	5.1E-03
			Aroclor-1254	6.9E-05	NA	NA	NA	6.9E-05	Immune system	1.0E+01	NA	NA	1.0E+01
			Aroclor-1268	2.0E-05	NA	NA	NA	2.0E-05	Immune system	2.9E+00	NA	NA	2.9E+00
			Dieldrin	1.4E-06	NA	NA	NA	1.4E-06	Liver	9.9E-03	NA	NA	9.9E-03
			gamma-Chlordane	7.6E-08	NA	NA	NA	7.6E-08	Liver	2.5E-03	NA	NA	2.5E-03
			Technical Chlordane	1.7E-06	NA	NA	NA	1.7E-06	Liver	5.6E-02	NA	NA	5.6E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	6.5E-01	NA	NA	6.5E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.0E+00	NA	NA	2.0E+00
			Thallium	NC	NA	NA	NA		NOAEL	3.9E-02	NA	NA	3.9E-02

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TABLE F.9.20.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Toxicity Equivalency (Dioxins/Furans) - Mam	9.9E-06	NA	NA	NA	9.9E-06		--	NA	NA	
			CHEMICAL TOTAL	1.0E-04	--	--	--	1E-04		1.5E+01	0.0E+00	--	2E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					2E+01
	EXPOSURE MEDIUM TOTAL							1E-04					2E+01
WHOLE BODY TOTAL								1E-04					2E+01
RECEPTOR TOTAL								1E-04					1.6E+01
			TOTAL RISK ACROSS ALL MEDIA					1E-04	TOTAL HAZARD ACROSS ALL MEDIA				1.6E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

TOTAL ADVERSE CLINICAL SIGNS HI =	1.8E-04
TOTAL CARDIOVASCULAR SYSTEM HI =	2.3E-06
TOTAL DEVELOPMENTAL TOXICITY HI =	2.0E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	2.5E-05
TOTAL IMMUNE SYSTEM HI =	1.4E+01
TOTAL KIDNEY HI =	2.1E-03
TOTAL LIVER HI =	1.5E-01
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	--
TOTAL NOAEL HI =	7.1E-02
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TOTAL SKIN HI =	8.8E-03
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US EPA ARCHIVE DOCUMENT

TABLE F.9.21.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	WHOLE BODY	GREYSTONE MIL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.8E-05	NA	NA	1.8E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.7E-05	NA	NA	1.7E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.3E-04	NA	NA	1.3E-04
			4,4'-DDE	2.5E-06	NA	NA	NA	2.5E-06	Liver	1.7E-01	NA	NA	1.7E-01
			alpha-Chlordane	1.6E-07	NA	NA	NA	1.6E-07	Liver	1.1E-02	NA	NA	1.1E-02
			Aroclor-1254	7.4E-05	NA	NA	NA	7.4E-05	Immune system	2.1E+01	NA	NA	2.1E+01
			Aroclor-1268	2.1E-05	NA	NA	NA	2.1E-05	Immune system	6.2E+00	NA	NA	6.2E+00
			Dieldrin	1.4E-06	NA	NA	NA	1.4E-06	Liver	2.1E-02	NA	NA	2.1E-02
			gamma-Chlordane	8.1E-08	NA	NA	NA	8.1E-08	Liver	5.4E-03	NA	NA	5.4E-03
			Technical Chlordane	1.8E-06	NA	NA	NA	1.8E-06	Liver	1.2E-01	NA	NA	1.2E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.4E+00	NA	NA	1.4E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	4.2E+00	NA	NA	4.2E+00
			Thallium	NC	NA	NA	NA		NOAEL	8.3E-02	NA	NA	8.3E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.1E-05	NA	NA	NA	1.1E-05		--	NA	NA	
			CHEMICAL TOTAL	1.1E-04	--	--	--	1E-04		3.4E+01	0.0E+00	--	3E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					3E+01
	EXPOSURE MEDIUM TOTAL							1E-04					3E+01
WHOLE BODY TOTAL								1E-04					3E+01
RECEPTOR TOTAL								1E-04					3.4E+01
							TOTAL RISK ACROSS ALL MEDIA	1E-04	TOTAL HAZARD ACROSS ALL MEDIA				3.4E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available

Prepared by: RAR
Checked by: KJA

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	4.2E+00
	--
	--
	--
	--
TOTAL IMMUNE SYSTEM HI =	2.9E+01
TOTAL KIDNEY HI =	1.5E-04
TOTAL LIVER HI =	3.3E-01
	--
	--
TOTAL NOAEL HI =	8.3E-02
	--
	--
	--

US EPA ARCHIVE DOCUMENT

TABLE F.9.22.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	GREYSTONE MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	5.4E-07	NA	1.6E-07	7.1E-07
			Acenaphthylene	NC	NA	NC	NA		Liver	5.4E-07	NA	1.6E-07	7.0E-07
			Benzo(a)anthracene	3.9E-08	NA	1.2E-08	NA	5.1E-08	Kidney	1.0E-05	NA	3.1E-06	1.4E-05
			Benzo(a)pyrene	3.9E-07	NA	1.2E-07	NA	5.1E-07	Kidney	1.0E-05	NA	3.1E-06	1.4E-05
			Benzo(b)fluoranthene	4.4E-08	NA	1.3E-08	NA	5.7E-08	Kidney	1.2E-05	NA	3.5E-06	1.5E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	7.9E-06	NA	2.3E-06	1.0E-05
			Dibenzo(a,h)anthracene	7.8E-08	NA	2.3E-08	NA	1.0E-07	Kidney	2.1E-06	NA	6.2E-07	2.7E-06
			Indeno(1,2,3-cd)pyrene	3.2E-08	NA	9.5E-09	NA	4.2E-08	Kidney	8.5E-06	NA	2.5E-06	1.1E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	1.3E-05	NA	4.0E-06	1.7E-05
			alpha-Chlordane	1.1E-10	NA	9.9E-12	NA	1.2E-10	Liver	3.6E-06	NA	3.3E-07	4.0E-06
			Aroclor-1254	1.8E-08	NA	5.8E-09	NA	2.4E-08	Immune system	2.6E-03	NA	8.4E-04	3.5E-03
			Aroclor-1268	2.9E-09	NA	9.3E-10	NA	3.9E-09	Immune system	4.3E-04	NA	1.4E-04	5.6E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	1.1E-07	NA	2.5E-08	1.4E-07
			Technical Chlordane	2.6E-09	NA	2.4E-10	NA	2.9E-09	Liver	8.8E-05	NA	8.0E-06	9.6E-05
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	2.0E-07	NA	1.4E-08	NA	2.2E-07	Skin	2.6E-03	NA	1.8E-04	2.8E-03
			Chromium	--	NA	--	NA		NOAEL	7.8E-03	NA	--	7.8E-03
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	2.6E-03	NA	--	2.6E-03
			Mercury	--	NA	--	NA		Immune system	2.0E-04	NA	--	2.0E-04
			Molybdenum	NC	NA	NC	NA		Kidney	1.1E-03	NA	--	1.1E-03
			Nickel	--	NA	--	NA		Developmental toxicity	6.1E-04	NA	--	6.1E-04
			Thallium	NC	NA	NC	NA		NOAEL	5.9E-04	NA	--	5.9E-04
			Vanadium	NC	NA	NC	NA		NOAEL	1.2E-03	NA	--	1.2E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.4E-07	NA	9.8E-09	NA	1.5E-07		--	NA	--	
			CHEMICAL TOTAL	9.6E-07	--	2.0E-07	--	1E-06		2.0E-02	0.0E+00	1.2E-03	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-06					2E-02
	EXPOSURE MEDIUM TOTAL							1E-06					2E-02
SOIL TOTAL								1E-06					2E-02
SEDIMENT	SEDIMENT	GREYSTONE MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	2.4E-07	NA	6.0E-08	3.0E-07
			Acenaphthylene	NC	NA	NC	NA		Liver	2.0E-07	NA	5.2E-08	2.6E-07
			Benzo(a)anthracene	1.2E-08	NA	3.0E-09	NA	1.5E-08	Kidney	3.2E-06	NA	8.0E-07	4.0E-06
			Benzo(a)pyrene	1.1E-07	NA	2.8E-08	NA	1.4E-07	Kidney	3.0E-06	NA	7.5E-07	3.7E-06
			Benzo(b)fluoranthene	1.2E-08	NA	3.0E-09	NA	1.5E-08	Kidney	3.2E-06	NA	8.0E-07	4.0E-06
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	1.8E-06	NA	4.6E-07	2.3E-06
			Dibenzo(a,h)anthracene	6.1E-08	NA	1.5E-08	NA	7.7E-08	Kidney	1.6E-06	NA	4.1E-07	2.0E-06
			Indeno(1,2,3-cd)pyrene	8.0E-09	NA	2.0E-09	NA	1.0E-08	Kidney	2.1E-06	NA	5.4E-07	2.7E-06
			Phenanthrene	NC	NA	NC	NA		Kidney	4.5E-06	NA	1.1E-06	5.6E-06
			alpha-Chlordane	2.3E-11	NA	1.8E-12	NA	2.5E-11	Liver	7.8E-07	NA	6.0E-08	8.4E-07
			Aroclor-1254	3.3E-09	NA	8.9E-10	NA	4.2E-09	Immune system	4.8E-04	NA	1.3E-04	6.1E-04
			Aroclor-1268	3.1E-09	NA	8.3E-10	NA	3.9E-09	Immune system	4.5E-04	NA	1.2E-04	5.7E-04
			gamma-Chlordane	1.8E-11	NA	1.4E-12	NA	2.0E-11	Liver	6.1E-07	NA	4.7E-08	6.6E-07
			Technical Chlordane	1.5E-09	NA	1.2E-10	NA	1.6E-09	Liver	5.1E-05	NA	4.0E-06	5.5E-05
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Antimony	NC	NA	NC	NA		Adverse clinical signs	1.2E-04	NA	--	1.2E-04
			Arsenic	1.6E-07	NA	9.2E-09	NA	1.7E-07	Skin	2.0E-03	NA	1.2E-04	2.2E-03

US EPA ARCHIVE DOCUMENT

TABLE F.9.22.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Cadmium	NC	NA	NC	NA		Kidney	5.2E-05	NA	4.0E-06	5.6E-05
			Chromium	NC	NA	NC	NA		NOAEL	2.1E-03	NA	--	2.1E-03
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	5.4E-04	NA	--	5.4E-04
			Mercury	NC	NA	NC	NA		Immune system	4.5E-05	NA	--	4.5E-05
			Nickel	NC	NA	NC	NA		Developmental toxicity	4.5E-04	NA	--	4.5E-04
			Thallium	NC	NA	NC	NA		NOAEL	2.9E-04	NA	--	2.9E-04
			Vanadium	NC	NA	NC	NA		NOAEL	7.2E-04	NA	--	7.2E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.0E-07	NA	1.2E-08	NA	2.1E-07		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	4.1E-08	NA	2.4E-09	NA	4.3E-08		--	NA	--	
			CHEMICAL TOTAL	6.1E-07	--	7.7E-08	--	7E-07		7.3E-03	0.0E+00	3.8E-04	8E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-07					8E-03
	EXPOSURE MEDIUM TOTAL							7E-07					8E-03
SEDIMENT TOTAL								7E-07					8E-03
SURFACE WATER	SURFACE WATER	GREYSTONE MILL POND	Arsenic	1.3E-09	NA	6.3E-09	NA	8.1E-09	Skin	2.3E-05	NA	8.1E-05	1.0E-04
			Manganese	NC	NA	NC	NA		NOAEL	6.9E-05	NA	6.0E-03	6.1E-03
			Mercury	NC	NA	NC	NA		Immune system	8.2E-08	NA	4.1E-06	4.2E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	1.6E-05	NA	--	1.6E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.8E-09	NA	1.5E-05	NA	1.5E-05		--	NA	--	
			CHEMICAL TOTAL	3.6E-09	--	1.5E-05	--	1E-05		1.1E-04	0.0E+00	6.1E-03	6E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-05					6E-03
	EXPOSURE MEDIUM TOTAL							1E-05					6E-03
SURFACE WATER TOTAL								1E-05					6E-03
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	6.5E-05	NA	NA	6.5E-05
			Benzo(a)pyrene	1.1E-06	NA	NA	NA	1.1E-06	Kidney	3.0E-05	NA	NA	3.0E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	2.7E-05	NA	NA	2.7E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	4.6E-04	NA	NA	4.6E-04
			4,4'-DDD	7.3E-07	NA	NA	NA	7.3E-07	Liver	3.5E-02	NA	NA	3.5E-02
			4,4'-DDE	2.4E-06	NA	NA	NA	2.4E-06	Liver	8.3E-02	NA	NA	8.3E-02
			4,4'-DDT	3.0E-07	NA	NA	NA	3.0E-07	Liver	1.0E-02	NA	NA	1.0E-02
			alpha-Chlordane	1.2E-06	NA	NA	NA	1.2E-06	Liver	3.9E-02	NA	NA	3.9E-02
			Aroclor-1254	5.6E-05	NA	NA	NA	5.6E-05	Immune system	8.2E+00	NA	NA	8.2E+00
			Aroclor-1268	1.5E-05	NA	NA	NA	1.5E-05	Immune system	2.2E+00	NA	NA	2.2E+00
			Dieldrin	9.3E-06	NA	NA	NA	9.3E-06	Liver	6.8E-02	NA	NA	6.8E-02
			gamma-Chlordane	5.4E-07	NA	NA	NA	5.4E-07	Liver	1.8E-02	NA	NA	1.8E-02
			Heptachlor Epoxide	1.0E-06	NA	NA	NA	1.0E-06	Liver	5.1E-02	NA	NA	5.1E-02
			Technical Chlordane	1.4E-05	NA	NA	NA	1.4E-05	Liver	4.6E-01	NA	NA	4.6E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	5.1E-01	NA	NA	5.1E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.6E+00	NA	NA	1.6E+00

US EPA ARCHIVE DOCUMENT

TABLE F.9.22.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Toxicity Equivalency (Dioxins/Furans) - Mam	6.5E-05	NA	NA	NA	6.5E-05		--	NA	NA	
			CHEMICAL TOTAL	1.7E-04	--	--	--	2E-04		1.3E+01	0.0E+00	--	1.3E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-04					1.3E+01
	EXPOSURE MEDIUM TOTAL							2E-04					1.3E+01
WHOLE BODY TOTAL								2E-04					1.3E+01
RECEPTOR TOTAL								2E-04					1.3E+01
							TOTAL RISK ACROSS ALL MEDIA	2E-04				TOTAL HAZARD ACROSS ALL MEDIA	1.3E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

TOTAL ADVERSE CLINICAL SIGNS HI =	1.2E-04
TOTAL CARDIOVASCULAR SYSTEM HI =	1.0E-06
TOTAL DEVELOPMENTAL TOXICITY HI =	1.6E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	1.6E-05
TOTAL IMMUNE SYSTEM HI =	1.1E+01
TOTAL KIDNEY HI =	1.8E-03
TOTAL LIVER HI =	7.6E-01
	--
	--
TOTAL NOAEL HI =	2.2E-02
	--
TOTAL SKIN HI =	5.1E-03
	--

US EPA ARCHIVE DOCUMENT

TABLE F.9.23.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	GREYSTONE MIL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	8.5E-07	NA	8.5E-07	1.7E-06
			Acenaphthylene	NC	NA	NC	NA		Liver	8.4E-07	NA	8.4E-07	1.7E-06
			Benzo(a)anthracene	6.1E-08	NA	6.1E-08	NA	1.2E-07	Kidney	1.6E-05	NA	1.6E-05	3.3E-05
			Benzo(a)pyrene	6.1E-07	NA	6.1E-07	NA	1.2E-06	Kidney	1.6E-05	NA	1.6E-05	3.2E-05
			Benzo(b)fluoranthene	6.8E-08	NA	6.8E-08	NA	1.4E-07	Kidney	1.8E-05	NA	1.8E-05	3.6E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	1.2E-05	NA	1.2E-05	2.5E-05
			Dibenzo(a,h)anthracene	1.2E-07	NA	1.2E-07	NA	2.4E-07	Kidney	3.2E-06	NA	3.2E-06	6.5E-06
			Indeno(1,2,3-cd)pyrene	5.0E-08	NA	5.0E-08	NA	1.0E-07	Kidney	1.3E-05	NA	1.3E-05	2.7E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	2.1E-05	NA	2.1E-05	4.2E-05
			alpha-Chlordane	1.7E-10	NA	5.2E-11	NA	2.2E-10	Liver	5.6E-06	NA	1.7E-06	7.4E-06
			Aroclor-1254	2.8E-08	NA	3.0E-08	NA	5.9E-08	Immune system	4.1E-03	NA	4.4E-03	8.5E-03
			Aroclor-1268	4.6E-09	NA	4.9E-09	NA	9.4E-09	Immune system	6.6E-04	NA	7.1E-04	1.4E-03
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	1.7E-07	NA	1.3E-07	3.0E-07
			Technical Chlordane	4.1E-09	NA	1.3E-09	NA	5.3E-09	Liver	1.4E-04	NA	4.2E-05	1.8E-04
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Arsenic	3.1E-07	NA	7.2E-08	NA	3.9E-07	Skin	4.1E-03	NA	9.4E-04	5.0E-03
			Chromium	NC	NA	NC	NA		NOAEL	1.2E-02	NA	--	1.2E-02
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	4.1E-03	NA	--	4.1E-03
			Mercury	NC	NA	NC	NA		Immune system	3.1E-04	NA	--	3.1E-04
			Molybdenum	NC	NA	NC	NA		Kidney	1.7E-03	NA	--	1.7E-03
			Nickel	NC	NA	NC	NA		Developmental toxicity	9.5E-04	NA	--	9.5E-04
			Thallium	NC	NA	NC	NA		NOAEL	9.1E-04	NA	--	9.1E-04
			Vanadium	NC	NA	NC	NA		NOAEL	1.9E-03	NA	--	1.9E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.2E-07	NA	5.2E-08	NA	2.8E-07		--	NA	--	
			CHEMICAL TOTAL	1.5E-06	--	1.1E-06	--	3E-06		3.1E-02	0.0E+00	6.2E-03	4E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-06					4E-02
	EXPOSURE MEDIUM TOTAL							3E-06					4E-02
SOIL TOTAL								3E-06					4E-02
SEDIMENT	SEDIMENT	GREYSTONE MIL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	3.7E-07	NA	2.7E-07	6.4E-07
			Acenaphthylene	NC	NA	NC	NA		Liver	3.2E-07	NA	2.4E-07	5.5E-07
			Benzo(a)anthracene	1.9E-08	NA	1.4E-08	NA	3.2E-08	Kidney	4.9E-06	NA	3.7E-06	8.6E-06
			Benzo(a)pyrene	1.7E-07	NA	1.3E-07	NA	3.0E-07	Kidney	4.6E-06	NA	3.4E-06	8.0E-06
			Benzo(b)fluoranthene	1.9E-08	NA	1.4E-08	NA	3.2E-08	Kidney	4.9E-06	NA	3.7E-06	8.6E-06
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	2.8E-06	NA	2.1E-06	4.9E-06
			Dibenzo(a,h)anthracene	9.5E-08	NA	7.1E-08	NA	1.7E-07	Kidney	2.5E-06	NA	1.9E-06	4.4E-06
			Indeno(1,2,3-cd)pyrene	1.2E-08	NA	9.2E-09	NA	2.2E-08	Kidney	3.3E-06	NA	2.5E-06	5.7E-06
			Phenanthrene	NC	NA	NC	NA		Kidney	6.9E-06	NA	5.1E-06	1.2E-05
			alpha-Chlordane	3.6E-11	NA	8.3E-12	NA	4.4E-11	Liver	1.2E-06	NA	2.8E-07	1.5E-06
			Aroclor-1254	5.1E-09	NA	4.1E-09	NA	9.2E-09	Immune system	7.4E-04	NA	5.9E-04	1.3E-03
			Aroclor-1268	4.7E-09	NA	3.8E-09	NA	8.6E-09	Immune system	6.9E-04	NA	5.5E-04	1.2E-03
			gamma-Chlordane	2.8E-11	NA	6.5E-12	NA	3.5E-11	Liver	9.5E-07	NA	2.2E-07	1.2E-06
			Technical Chlordane	2.4E-09	NA	5.4E-10	NA	2.9E-09	Liver	7.9E-05	NA	1.8E-05	9.7E-05
			Aluminum	NC	NA	NC	NA			--	NA	--	
			Antimony	NC	NA	NC	NA		Adverse clinical signs	1.8E-04	NA	--	1.8E-04
			Arsenic	2.4E-07	NA	4.2E-08	NA	2.9E-07	Skin	3.2E-03	NA	5.4E-04	3.7E-03

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TABLE F.9.23.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Cadmium	NC	NA	NC	NA		Kidney	8.0E-05	NA	1.8E-05	9.8E-05
			Chromium	NC	NA	NC	NA		NOAEL	3.3E-03	NA	--	3.3E-03
			Copper	NC	NA	NC	NA			--	NA	--	
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	8.3E-04	NA	--	8.3E-04
			Mercury	NC	NA	NC	NA		Immune system	6.9E-05	NA	--	6.9E-05
			Nickel	NC	NA	NC	NA		Developmental toxicity	7.0E-04	NA	--	7.0E-04
			Thallium	NC	NA	NC	NA		NOAEL	4.6E-04	NA	--	4.6E-04
			Vanadium	NC	NA	NC	NA		NOAEL	1.1E-03	NA	--	1.1E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.1E-07	NA	5.3E-08	NA	3.6E-07		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	6.3E-08	NA	1.1E-08	NA	7.4E-08		--	NA	--	
			CHEMICAL TOTAL	9.5E-07	--	3.5E-07	--	1E-06		1.1E-02	0.0E+00	1.8E-03	1E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-06					1E-02
	EXPOSURE MEDIUM TOTAL							1E-06					1E-02
SEDIMENT TOTAL								1E-06					1E-02
SURFACE WATER	SURFACE WATER	GREYSTONE MIL POND	Arsenic	2.8E-09	NA	7.0E-09	NA	9.8E-09	Skin	3.6E-05	NA	9.1E-05	1.3E-04
			Manganese	NC	NA	NC	NA		NOAEL	1.1E-04	NA	6.8E-03	6.9E-03
			Mercury	NC	NA	NC	NA		Immune system	1.3E-07	NA	4.6E-06	4.7E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	2.5E-05	NA	--	2.5E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.9E-09	NA	1.6E-05	NA	1.6E-05		--	NA	--	
			CHEMICAL TOTAL	5.7E-09	--	1.6E-05	--	2E-05		1.7E-04	0.0E+00	6.9E-03	7E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-05					7E-03
	EXPOSURE MEDIUM TOTAL							2E-05					7E-03
SURFACE WATER TOTAL								2E-05					7E-03
WHITE SUCKER	WHOLE BODY	GREYSTONE MIL POND	Acenaphthylene	NC	NA	NA	NA		Liver	5.1E-05	NA	NA	5.1E-05
			Benzo(a)pyrene	8.9E-07	NA	NA	NA	8.9E-07	Kidney	2.4E-05	NA	NA	2.4E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	2.1E-05	NA	NA	2.1E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	3.6E-04	NA	NA	3.6E-04
			4,4'-DDD	5.7E-07	NA	NA	NA	5.7E-07	Liver	2.8E-02	NA	NA	2.8E-02
			4,4'-DDE	1.9E-06	NA	NA	NA	1.9E-06	Liver	6.5E-02	NA	NA	6.5E-02
			4,4'-DDT	2.3E-07	NA	NA	NA	2.3E-07	Liver	7.9E-03	NA	NA	7.9E-03
			alpha-Chlordane	9.2E-07	NA	NA	NA	9.2E-07	Liver	3.1E-02	NA	NA	3.1E-02
			Aroclor-1254	4.4E-05	NA	NA	NA	4.4E-05	Immune system	6.4E+00	NA	NA	6.4E+00
			Aroclor-1268	1.2E-05	NA	NA	NA	1.2E-05	Immune system	1.7E+00	NA	NA	1.7E+00
			Dieldrin	7.2E-06	NA	NA	NA	7.2E-06	Liver	5.3E-02	NA	NA	5.3E-02
			gamma-Chlordane	4.3E-07	NA	NA	NA	4.3E-07	Liver	1.4E-02	NA	NA	1.4E-02
			Heptachlor Epoxide	8.0E-07	NA	NA	NA	8.0E-07	Liver	3.9E-02	NA	NA	3.9E-02
			Technical Chlordane	1.1E-05	NA	NA	NA	1.1E-05	Liver	3.6E-01	NA	NA	3.6E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	4.0E-01	NA	NA	4.0E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.2E+00	NA	NA	1.2E+00

US EPA ARCHIVE DOCUMENT

TABLE F.9.23.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Toxicity Equivalency (Dioxins/Furans) - Mam	5.0E-05	NA	NA	NA	5.0E-05		--	NA	NA	
			CHEMICAL TOTAL	1.3E-04	--	--	--	1E-04		1.0E+01	0.0E+00	--	1.0E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					1.0E+01
	EXPOSURE MEDIUM TOTAL							1E-04					1.0E+01
WHOLE BODY TOTAL								1E-04					1.0E+01
RECEPTOR TOTAL								2E-04					1.0E+01
			TOTAL RISK ACROSS ALL MEDIA					2E-04	TOTAL HAZARD ACROSS ALL MEDIA				1.0E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

TOTAL ADVERSE CLINICAL SIGNS HI =	1.8E-04
TOTAL CARDIOVASCULAR SYSTEM HI =	2.3E-06
TOTAL DEVELOPMENTAL TOXICITY HI =	1.2E+00
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TOTAL HEMATOLOGICAL SYSTEM HI =	2.5E-05
TOTAL IMMUNE SYSTEM HI =	8.6E+00
TOTAL KIDNEY HI =	2.5E-03
TOTAL LIVER HI =	5.9E-01
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	--
TOTAL NOAEL HI =	3.2E-02
	--
TOTAL SKIN HI =	8.8E-03
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US EPA ARCHIVE DOCUMENT

TABLE F.9.24.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	GREYSTONE MIL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.1E-04	NA	NA	1.1E-04
			Benzo(a)pyrene	9.5E-07	NA	NA	NA	9.5E-07	Kidney	5.0E-05	NA	NA	5.0E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	4.4E-05	NA	NA	4.4E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	7.7E-04	NA	NA	7.7E-04
			4,4'-DDD	6.0E-07	NA	NA	NA	6.0E-07	Liver	5.9E-02	NA	NA	5.9E-02
			4,4'-DDE	2.0E-06	NA	NA	NA	2.0E-06	Liver	1.4E-01	NA	NA	1.4E-01
			4,4'-DDT	2.5E-07	NA	NA	NA	2.5E-07	Liver	1.7E-02	NA	NA	1.7E-02
			alpha-Chlordane	9.8E-07	NA	NA	NA	9.8E-07	Liver	6.6E-02	NA	NA	6.6E-02
			Aroclor-1254	4.7E-05	NA	NA	NA	4.7E-05	Immune system	1.4E+01	NA	NA	1.4E+01
			Aroclor-1268	1.3E-05	NA	NA	NA	1.3E-05	Immune system	3.7E+00	NA	NA	3.7E+00
			Dieldrin	7.7E-06	NA	NA	NA	7.7E-06	Liver	1.1E-01	NA	NA	1.1E-01
			gamma-Chlordane	4.5E-07	NA	NA	NA	4.5E-07	Liver	3.0E-02	NA	NA	3.0E-02
			Heptachlor Epoxide	8.5E-07	NA	NA	NA	8.5E-07	Liver	8.4E-02	NA	NA	8.4E-02
			Technical Chlordane	1.1E-05	NA	NA	NA	1.1E-05	Liver	7.6E-01	NA	NA	7.6E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	8.5E-01	NA	NA	8.5E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.6E+00	NA	NA	2.6E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	5.4E-05	NA	NA	NA	5.4E-05		--	NA	NA	
			CHEMICAL TOTAL	1.4E-04	--	--	--	1E-04		2.2E+01	0.0E+00	--	2.2E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					2.2E+01
	EXPOSURE MEDIUM TOTAL							1E-04					2.2E+01
WHOLE BODY TOTAL								1E-04					2.2E+01
RECEPTOR TOTAL								1E-04					2.2E+01
			TOTAL RISK ACROSS ALL MEDIA					1E-04	TOTAL HAZARD ACROSS ALL MEDIA				2.2E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	2.6E+00
	--
	--
	--
	--
TOTAL IMMUNE SYSTEM HI =	1.8E+01
TOTAL KIDNEY HI =	8.7E-04
TOTAL LIVER HI =	1.3E+00
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US EPA ARCHIVE DOCUMENT

TABLE F.9.25.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	ALLENDALE POND	2,3,7,8-TCDD	7.1E-07	NA	4.8E-08	NA	7.5E-07		--	NA	--	
			CHEMICAL TOTAL	7.1E-07	--	4.8E-08	--	8E-07		--	0.0E+00	--	0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						8E-07					0E+00
	EXPOSURE MEDIUM TOTAL							8E-07					0E+00
SOIL TOTAL								8E-07					0E+00
SEDIMENT	SEDIMENT	ALLENDALE POND	2-Methylnaphthalene	NC	NA	NC	NA		Lung	4.3E-07	NA	1.1E-07	5.4E-07
			Acenaphthylene	NC	NA	NC	NA		Liver	1.0E-06	NA	2.6E-07	1.3E-06
			Benzo(a)anthracene	2.7E-08	NA	6.8E-09	NA	3.4E-08	Kidney	7.2E-06	NA	1.8E-06	9.0E-06
			Benzo(a)pyrene	3.2E-07	NA	8.0E-08	NA	4.0E-07	Kidney	8.5E-06	NA	2.1E-06	1.1E-05
			Benzo(b)fluoranthene	3.5E-08	NA	8.9E-09	NA	4.4E-08	Kidney	9.3E-06	NA	2.4E-06	1.2E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	4.2E-06	NA	1.1E-06	5.3E-06
			Benzo(k)fluoranthene	3.1E-09	NA	7.8E-10	NA	3.9E-09	Kidney	8.3E-06	NA	2.1E-06	1.0E-05
			bis(2-Ethylhexyl)phthalate	4.9E-10	NA	9.5E-11	NA	5.8E-10	Liver	1.0E-05	NA	2.0E-06	1.2E-05
			Dibenzo(a,h)anthracene	1.6E-07	NA	4.0E-08	NA	2.0E-07	Kidney	4.2E-06	NA	1.1E-06	5.3E-06
			Indeno(1,2,3-cd)pyrene	2.5E-08	NA	6.4E-09	NA	3.2E-08	Kidney	6.8E-06	NA	1.7E-06	8.5E-06
			Pentachlorophenol	8.5E-09	NA	4.1E-09	NA	1.3E-08	Liver / Kidney	1.4E-05	NA	6.7E-06	2.0E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	1.0E-05	NA	2.6E-06	1.3E-05
			alpha-Chlordane	4.3E-11	NA	3.4E-12	NA	4.6E-11	Liver	1.4E-06	NA	1.1E-07	1.5E-06
			Aroclor-1254	5.2E-08	NA	1.4E-08	NA	6.7E-08	Immune system	7.6E-03	NA	2.1E-03	9.7E-03
			Aroclor-1260	4.4E-09	NA	1.2E-09	NA	5.5E-09	Immune system	6.4E-04	NA	1.7E-04	8.1E-04
			Aroclor-1268	1.7E-09	NA	4.7E-10	NA	2.2E-09	Immune system	2.5E-04	NA	6.8E-05	3.2E-04
			delta-BHC	NC	NA	NC	NA		Liver / Kidney	3.0E-07	NA	5.8E-08	3.5E-07
			Dieldrin	1.6E-09	NA	3.1E-10	NA	1.9E-09	Liver	1.1E-05	NA	2.2E-06	1.4E-05
			Endosulfan II	NC	NA	NC	NA		Kidney	3.9E-07	NA	7.6E-08	4.7E-07
			Endosulfan sulfate	NC	NA	NC	NA		Kidney	2.9E-08	NA	5.6E-09	3.4E-08
			Endrin aldehyde	NC	NA	NC	NA		Nervous system	6.1E-07	NA	1.2E-07	7.3E-07
			Endrin Ketone	NC	NA	NC	NA		Nervous system	8.1E-07	NA	1.6E-07	9.6E-07
			gamma-Chlordane	6.5E-11	NA	5.0E-12	NA	7.0E-11	Liver	2.2E-06	NA	1.7E-07	2.3E-06
			Technical Chlordane	2.5E-09	NA	1.9E-10	NA	2.7E-09	Liver	8.3E-05	NA	6.4E-06	8.9E-05
			Antimony	NC	NA	NC	NA		Adverse clinical signs	7.6E-04	NA		7.6E-04
			Arsenic	9.5E-08	NA	5.5E-09	NA	1.0E-07	Skin	1.2E-03	NA	7.2E-05	1.3E-03
			Cadmium	NC	NA	NC	NA		Kidney	7.6E-05	NA	5.9E-06	8.2E-05
			Chromium	NC	NA	NC	NA		NOAEL	5.0E-03	NA		5.0E-03
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	4.8E-04	NA		4.8E-04
			Mercury	NC	NA	NC	NA		Immune system	2.1E-04	NA		2.1E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	8.5E-05	NA		8.5E-05
			Thallium	NC	NA	NC	NA		NOAEL	5.4E-03	NA		5.4E-03
			Vanadium	NC	NA	NC	NA		NOAEL	4.2E-04	NA		4.2E-04

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TABLE F.9.25.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Toxicity Equivalency (Dioxins/Furans) - Mam	9.3E-06	NA	5.4E-07	NA	9.9E-06		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	1.8E-10	NA	1.1E-11	NA	1.9E-10		--	NA	--	
			CHEMICAL TOTAL	1.0E-05	--	7.1E-07	--	1E-05		2.2E-02	0.0E+00	2.4E-03	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-05					2E-02
	EXPOSURE MEDIUM TOTAL							1E-05					2E-02
SEDIMENT TOTAL								1E-05					2E-02
SURFACE WATER	SURFACE WATER	ALLENDALE POND	Tetrachloroethene	6.5E-10	NA	1.5E-07	NA	1.5E-07	Liver	7.0E-07	NA	1.6E-04	1.6E-04
			bis(2-Ethylhexyl)phthalate	3.1E-11	NA	1.8E-08	NA	1.8E-08	Liver	6.4E-07	NA	3.8E-04	3.8E-04
			Aldrin	4.1E-10	NA	1.4E-08	NA	1.4E-08	Liver	4.7E-06	NA	1.6E-04	1.7E-04
			alpha-Chlordane	5.3E-13	NA	4.2E-10	NA	4.2E-10	Liver	1.8E-08	NA	1.4E-05	1.4E-05
			Aroclor-1254	2.6E-09	NA	--	NA	2.6E-09	Immune system	3.8E-04	NA	--	3.8E-04
			delta-BHC	NC	NA	NC	NA		Liver / Kidney	4.1E-07	NA	6.1E-05	6.1E-05
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	9.1E-07	NA	--	9.1E-07
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	1.2E-07	NA	3.2E-05	3.2E-05
			gamma-Chlordane	1.9E-11	NA	1.5E-08	NA	1.5E-08	Liver	6.4E-07	NA	5.1E-04	5.1E-04
			Arsenic	1.4E-08	NA	5.0E-08	NA	6.4E-08	Skin	1.9E-04	NA	6.5E-04	8.4E-04
			Barium	NC	NA	NC	NA		Cardiovascular system	8.0E-06	NA	4.0E-04	4.1E-04
			Chromium	NC	NA	NC	NA		NOAEL	7.6E-05	NA	2.1E-02	2.1E-02
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	5.2E-04	NA	4.5E-02	4.6E-02
			Mercury	NC	NA	NC	NA		Immune system	1.4E-07	NA	6.7E-06	6.9E-06
			Thallium	NC	NA	NC	NA		NOAEL	5.9E-04	NA	2.0E-03	2.6E-03
			Nitrate	NC	NA	NC	NA		Hematological system	6.0E-06	NA	--	6.0E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	1.5E-05	NA	--	1.5E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.6E-07	NA	2.8E-03	NA	2.8E-03		--	NA	--	
			CHEMICAL TOTAL	3.8E-07	--	2.8E-03	--	3E-03		1.8E-03	0.0E+00	7.1E-02	7E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-03					7E-02
	EXPOSURE MEDIUM TOTAL							3E-03					7E-02
SURFACE WATER TOTAL								3E-03					7E-02
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.8E-05	NA	NA	1.8E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	2.2E-04	NA	NA	2.2E-04
			4,4'-DDD	4.4E-07	NA	NA	NA	4.4E-07	Liver	2.1E-02	NA	NA	2.1E-02
			4,4'-DDE	9.9E-07	NA	NA	NA	9.9E-07	Liver	3.4E-02	NA	NA	3.4E-02
			4,4'-DDT	4.2E-07	NA	NA	NA	4.2E-07	Liver	1.4E-02	NA	NA	1.4E-02
			alpha-Chlordane	9.3E-07	NA	NA	NA	9.3E-07	Liver	3.1E-02	NA	NA	3.1E-02
			Aroclor-1254	2.5E-04	NA	NA	NA	2.5E-04	Immune system	3.6E+01	NA	NA	3.6E+01
			Aroclor-1268	4.2E-06	NA	NA	NA	4.2E-06	Immune system	6.1E-01	NA	NA	6.1E-01
			beta-BHC	1.6E-07	NA	NA	NA	1.6E-07	Liver / Kidney	1.7E-03	NA	NA	1.7E-03
			Dieldrin	2.0E-05	NA	NA	NA	2.0E-05	Liver	1.5E-01	NA	NA	1.5E-01
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	2.1E-04	NA	NA	2.1E-04
			Endrin Aldehyde	NC	NA	NA	NA		Nervous system	2.7E-03	NA	NA	2.7E-03

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TABLE F.9.25.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			gamma-Chlordane	3.5E-07	NA	NA	NA	3.5E-07	Liver	1.2E-02	NA	NA	1.2E-02
			Heptachlor	4.2E-07	NA	NA	NA	4.2E-07	Liver	1.1E-03	NA	NA	1.1E-03
			Heptachlor Epoxide	1.9E-06	NA	NA	NA	1.9E-06	Liver	9.4E-02	NA	NA	9.4E-02
			Technical Chlordane	1.3E-05	NA	NA	NA	1.3E-05	Liver	4.2E-01	NA	NA	4.2E-01
			Cadmium	NC	NA	NA	NA		Kidney	7.9E-02	NA	NA	7.9E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	2.9E-02	NA	NA	2.9E-02
			Mercury	NC	NA	NA	NA		Immune system	4.1E-01	NA	NA	4.1E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.2E+00	NA	NA	2.2E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.3E-03	NA	NA	NA	2.3E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	7.4E-04	NA	NA	NA	7.4E-04		--	NA	NA	
			CHEMICAL TOTAL	3.3E-03	--	--	--	3E-03		4.0E+01	0.0E+00	--	4.0E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-03					4.0E+01
	EXPOSURE MEDIUM TOTAL							3E-03					4.0E+01
WHOLE BODY TOTAL								3E-03					4.0E+01
RECEPTOR TOTAL								6E-03					4.0E+01
			TOTAL RISK ACROSS ALL MEDIA					6E-03	TOTAL HAZARD ACROSS ALL MEDIA				4.0E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL ADVERSE CLINICAL SIGNS HI =	7.6E-04
TOTAL CARDIOVASCULAR SYSTEM HI =	4.1E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	2.2E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	2.1E-05
TOTAL IMMUNE SYSTEM HI =	3.7E+01
TOTAL KIDNEY HI =	8.1E-02
TOTAL LIVER HI =	7.8E-01
	--
TOTAL NERVOUS SYSTEM HI =	2.7E-03
TOTAL NOAEL HI =	1.1E-01
	--
TOTAL SKIN HI =	2.1E-03
	--

Prepared by: RAR
Checked by: KJA

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TABLE F.9.26.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	ALLENDALE POND	2,3,7,8-TCDD	1.1E-06	NA	2.5E-07	NA	1.4E-06		--	NA	--	
			CHEMICAL TOTAL	1.1E-06	--	2.5E-07	--	1E-06		--	0.0E+00	--	0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-06					0E+00
	EXPOSURE MEDIUM TOTAL							1E-06					0E+00
SOIL TOTAL								1E-06					0E+00
SEDIMENT	SEDIMENT	ALLENDALE POND	2-Methylnaphthalene	NC	NA	NC	NA		Lung	6.7E-07	NA	5.0E-07	1.2E-06
			Acenaphthylene	NC	NA	NC	NA		Liver	1.6E-06	NA	1.2E-06	2.8E-06
			Benzo(a)anthracene	4.2E-08	NA	3.1E-08	NA	7.3E-08	Kidney	1.1E-05	NA	8.3E-06	2.0E-05
			Benzo(a)pyrene	5.0E-07	NA	3.7E-07	NA	8.6E-07	Kidney	1.3E-05	NA	9.8E-06	2.3E-05
			Benzo(b)fluoranthene	5.4E-08	NA	4.0E-08	NA	9.5E-08	Kidney	1.5E-05	NA	1.1E-05	2.5E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	6.6E-06	NA	4.9E-06	1.1E-05
			Benzo(k)fluoranthene	4.8E-09	NA	3.6E-09	NA	8.4E-09	Kidney	1.3E-05	NA	9.6E-06	2.2E-05
			bis(2-Ethylhexyl)phthalate	7.6E-10	NA	4.3E-10	NA	1.2E-09	Liver	1.6E-05	NA	9.1E-06	2.5E-05
			Dibenzo(a,h)anthracene	2.5E-07	NA	1.8E-07	NA	4.3E-07	Kidney	6.6E-06	NA	4.9E-06	1.1E-05
			Indeno(1,2,3-cd)pyrene	4.0E-08	NA	2.9E-08	NA	6.9E-08	Kidney	1.1E-05	NA	7.8E-06	1.8E-05
			Pentachlorophenol	1.3E-08	NA	1.9E-08	NA	3.2E-08	Liver / Kidney	2.1E-05	NA	3.1E-05	5.2E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	1.6E-05	NA	1.2E-05	2.8E-05
			alpha-Chlordane	6.7E-11	NA	1.5E-11	NA	8.2E-11	Liver	2.2E-06	NA	5.1E-07	2.7E-06
			Aroclor-1254	8.1E-08	NA	6.5E-08	NA	1.5E-07	Immune system	1.2E-02	NA	9.5E-03	2.1E-02
			Aroclor-1260	6.8E-09	NA	5.4E-09	NA	1.2E-08	Immune system	9.9E-04	NA	7.9E-04	1.8E-03
			Aroclor-1268	2.7E-09	NA	2.1E-09	NA	4.8E-09	Immune system	3.9E-04	NA	3.1E-04	7.0E-04
			delta-BHC	NC	NA	NC	NA		Liver / Kidney	4.6E-07	NA	2.6E-07	7.3E-07
			Dieldrin	2.4E-09	NA	1.4E-09	NA	3.8E-09	Liver	1.8E-05	NA	1.0E-05	2.8E-05
			Endosulfan II	NC	NA	NC	NA		Kidney	6.1E-07	NA	3.5E-07	9.6E-07
			Endosulfan sulfate	NC	NA	NC	NA		Kidney	4.5E-08	NA	2.5E-08	7.0E-08
			Endrin aldehyde	NC	NA	NC	NA		Nervous system	9.6E-07	NA	5.5E-07	1.5E-06
			Endrin Ketone	NC	NA	NC	NA		Nervous system	1.3E-06	NA	7.2E-07	2.0E-06
			gamma-Chlordane	1.0E-10	NA	2.3E-11	NA	1.2E-10	Liver	3.4E-06	NA	7.7E-07	4.1E-06
			Technical Chlordane	3.9E-09	NA	8.8E-10	NA	4.7E-09	Liver	1.3E-04	NA	2.9E-05	1.6E-04
			Antimony	NC	NA	NC	NA		Adverse clinical signs	1.2E-03	NA		1.2E-03
			Arsenic	1.5E-07	NA	2.5E-08	NA	1.7E-07	Skin	1.9E-03	NA	3.3E-04	2.2E-03
			Cadmium	NC	NA	NC	NA		Kidney	1.2E-04	NA	2.7E-05	1.5E-04
			Chromium	NC	NA	NC	NA		NOAEL	7.8E-03	NA		7.8E-03
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	7.4E-04	NA		7.4E-04
			Mercury	NC	NA	NC	NA		Immune system	3.2E-04	NA		3.2E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	1.3E-04	NA		1.3E-04
			Thallium	NC	NA	NC	NA		NOAEL	8.4E-03	NA		8.4E-03
			Vanadium	NC	NA	NC	NA		NOAEL	6.5E-04	NA		6.5E-04

US EPA ARCHIVE DOCUMENT

TABLE F.9.26.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.5E-05	NA	2.5E-06	NA	1.7E-05		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	2.8E-10	NA	4.9E-11	NA	3.3E-10		--	NA	--	
			CHEMICAL TOTAL	1.6E-05	--	3.3E-06	--	2E-05		3.5E-02	0.0E+00	1.1E-02	5E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-05					5E-02
	EXPOSURE MEDIUM TOTAL							2E-05					5E-02
SEDIMENT TOTAL								2E-05					5E-02
SURFACE WATER	SURFACE WATER	ALLENDALE POND	Tetrachloroethene	1.0E-09	NA	1.7E-07	NA	1.7E-07	Liver	1.1E-06	NA	1.8E-04	1.8E-04
			bis(2-Ethylhexyl)phthalate	4.7E-11	NA	2.0E-08	NA	2.0E-08	Liver	9.9E-07	NA	4.2E-04	4.3E-04
			Aldrin	6.3E-10	NA	1.6E-08	NA	1.6E-08	Liver	7.3E-06	NA	1.8E-04	1.9E-04
			alpha-Chlordane	8.2E-13	NA	4.7E-10	NA	4.8E-10	Liver	2.7E-08	NA	1.6E-05	1.6E-05
			Aroclor-1254	4.1E-09	NA	--	NA	4.1E-09	Immune system	5.9E-04	NA	--	5.9E-04
			delta-BHC	NC	NA	NC	NA		Liver / Kidney	6.3E-07	NA	6.8E-05	6.9E-05
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	1.4E-06	NA	--	1.4E-06
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	1.8E-07	NA	3.6E-05	3.6E-05
			gamma-Chlordane	3.0E-11	NA	1.7E-08	NA	1.7E-08	Liver	9.9E-07	NA	5.7E-04	5.7E-04
			Arsenic	2.2E-08	NA	5.6E-08	NA	7.8E-08	Skin	2.9E-04	NA	7.3E-04	1.0E-03
			Barium	NC	NA	NC	NA		Cardiovascular system	1.2E-05	NA	4.4E-04	4.6E-04
			Chromium	NC	NA	NC	NA		NOAEL	1.2E-04	NA	2.4E-02	2.4E-02
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	8.1E-04	NA	5.1E-02	5.1E-02
			Mercury	NC	NA	NC	NA		Immune system	2.1E-07	NA	7.5E-06	7.7E-06
			Thallium	NC	NA	NC	NA		NOAEL	9.2E-04	NA	2.3E-03	3.2E-03
			Nitrate	NC	NA	NC	NA		Hematological system	9.4E-06	NA	--	9.4E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	2.4E-05	NA	--	2.4E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	5.6E-07	NA	3.2E-03	NA	3.2E-03		--	NA	--	
			CHEMICAL TOTAL	5.9E-07	--	3.2E-03	--	3E-03		2.8E-03	0.0E+00	7.9E-02	8E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-03					8E-02
	EXPOSURE MEDIUM TOTAL							3E-03					8E-02
SURFACE WATER TOTAL								3E-03					8E-02
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.4E-05	NA	NA	1.4E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.7E-04	NA	NA	1.7E-04
			4,4'-DDD	3.4E-07	NA	NA	NA	3.4E-07	Liver	1.7E-02	NA	NA	1.7E-02
			4,4'-DDE	7.7E-07	NA	NA	NA	7.7E-07	Liver	2.7E-02	NA	NA	2.7E-02
			4,4'-DDT	3.3E-07	NA	NA	NA	3.3E-07	Liver	1.1E-02	NA	NA	1.1E-02
			alpha-Chlordane	7.3E-07	NA	NA	NA	7.3E-07	Liver	2.4E-02	NA	NA	2.4E-02
			Aroclor-1254	1.9E-04	NA	NA	NA	1.9E-04	Immune system	2.8E+01	NA	NA	2.8E+01
			Aroclor-1268	3.3E-06	NA	NA	NA	3.3E-06	Immune system	4.8E-01	NA	NA	4.8E-01

US EPA ARCHIVE DOCUMENT

TABLE F.9.26.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			beta-BHC	1.2E-07	NA	NA	NA	1.2E-07	Liver / Kidney	1.3E-03	NA	NA	1.3E-03
			Dieldrin	1.6E-05	NA	NA	NA	1.6E-05	Liver	1.2E-01	NA	NA	1.2E-01
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	1.7E-04	NA	NA	1.7E-04
			Endrin Aldehyde	NC	NA	NA	NA		Nervous system	2.1E-03	NA	NA	2.1E-03
			gamma-Chlordane	2.7E-07	NA	NA	NA	2.7E-07	Liver	9.0E-03	NA	NA	9.0E-03
			Heptachlor	3.3E-07	NA	NA	NA	3.3E-07	Liver	8.6E-04	NA	NA	8.6E-04
			Heptachlor Epoxide	1.5E-06	NA	NA	NA	1.5E-06	Liver	7.3E-02	NA	NA	7.3E-02
			Technical Chlordane	9.9E-06	NA	NA	NA	9.9E-06	Liver	3.3E-01	NA	NA	3.3E-01
			Cadmium	NC	NA	NA	NA		Kidney	6.1E-02	NA	NA	6.1E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	2.3E-02	NA	NA	2.3E-02
			Mercury	NC	NA	NA	NA		Immune system	3.2E-01	NA	NA	3.2E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.7E+00	NA	NA	1.7E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.8E-03	NA	NA	NA	1.8E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	5.8E-04	NA	NA	NA	5.8E-04		--	NA	NA	
			CHEMICAL TOTAL	2.6E-03	--	--	--	3E-03		3.1E+01	0.0E+00	--	3.1E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-03					3.1E+01
	EXPOSURE MEDIUM TOTAL							3E-03					3.1E+01
WHOLE BODY TOTAL								3E-03					3.1E+01
RECEPTOR TOTAL								6E-03					3.1E+01
			TOTAL RISK ACROSS ALL MEDIA					6E-03	TOTAL HAZARD ACROSS ALL MEDIA				3.1E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

TOTAL ADVERSE CLINICAL SIGNS HI =	1.2E-03
TOTAL CARDIOVASCULAR SYSTEM HI =	4.6E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	1.7E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	3.3E-05
TOTAL IMMUNE SYSTEM HI =	2.9E+01
TOTAL KIDNEY HI =	6.4E-02
TOTAL LIVER HI =	6.1E-01
	--
TOTAL NERVOUS SYSTEM HI =	2.1E-03
TOTAL NOAEL HI =	1.2E-01
	--
TOTAL SKIN HI =	3.3E-03
	--

Prepared by: RAR
Checked by: KJA

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TABLE F.9.27.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.9E-05	NA	NA	2.9E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	3.6E-04	NA	NA	3.6E-04
			4,4'-DDD	3.6E-07	NA	NA	NA	3.6E-07	Liver	3.5E-02	NA	NA	3.5E-02
			4,4'-DDE	8.3E-07	NA	NA	NA	8.3E-07	Liver	5.7E-02	NA	NA	5.7E-02
			4,4'-DDT	3.5E-07	NA	NA	NA	3.5E-07	Liver	2.4E-02	NA	NA	2.4E-02
			alpha-Chlordane	7.8E-07	NA	NA	NA	7.8E-07	Liver	5.2E-02	NA	NA	5.2E-02
			Aroclor-1254	2.0E-04	NA	NA	NA	2.0E-04	Immune system	5.9E+01	NA	NA	5.9E+01
			Aroclor-1268	3.5E-06	NA	NA	NA	3.5E-06	Immune system	1.0E+00	NA	NA	1.0E+00
			beta-BHC	1.3E-07	NA	NA	NA	1.3E-07	Liver / Kidney	2.8E-03	NA	NA	2.8E-03
			Dieldrin	1.7E-05	NA	NA	NA	1.7E-05	Liver	2.5E-01	NA	NA	2.5E-01
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	3.6E-04	NA	NA	3.6E-04
			Endrin Aldehyde	NC	NA	NA	NA		Nervous system	4.5E-03	NA	NA	4.5E-03
			gamma-Chlordane	2.9E-07	NA	NA	NA	2.9E-07	Liver	1.9E-02	NA	NA	1.9E-02
			Heptachlor	3.5E-07	NA	NA	NA	3.5E-07	Liver	1.8E-03	NA	NA	1.8E-03
			Heptachlor Epoxide	1.6E-06	NA	NA	NA	1.6E-06	Liver	1.6E-01	NA	NA	1.6E-01
			Technical Chlordane	1.1E-05	NA	NA	NA	1.1E-05	Liver	7.1E-01	NA	NA	7.1E-01
			Cadmium	NC	NA	NA	NA		Kidney	1.3E-01	NA	NA	1.3E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	4.9E-02	NA	NA	4.9E-02
			Mercury	NC	NA	NA	NA		Immune system	6.9E-01	NA	NA	6.9E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	3.6E+00	NA	NA	3.6E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.9E-03	NA	NA	NA	1.9E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	6.2E-04	NA	NA	NA	6.2E-04		--	NA	NA	
			CHEMICAL TOTAL	2.8E-03	--	--	--	3E-03		6.6E+01	0.0E+00	--	6.6E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-03					6.6E+01
	EXPOSURE MEDIUM TOTAL							3E-03					6.6E+01
WHOLE BODY TOTAL								3E-03					6.6E+01
RECEPTOR TOTAL								3E-03					6.6E+01
			TOTAL RISK ACROSS ALL MEDIA					3E-03	TOTAL HAZARD ACROSS ALL MEDIA				6.6E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	3.6E+00
	--
	--
	--
	--
TOTAL IMMUNE SYSTEM HI =	6.1E+01
TOTAL KIDNEY HI =	1.3E-01
TOTAL LIVER HI =	1.3E+00
	--
TOTAL NERVOUS SYSTEM HI =	4.5E-03
TOTAL NOAEL HI =	4.9E-02
	--
	--
	--

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.9.28.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	ALLENDALE POND	2,3,7,8-TCDD	7.1E-07	NA	4.8E-08	NA	7.5E-07		--	NA	--	
			CHEMICAL TOTAL	7.1E-07	--	4.8E-08	--	8E-07		--	0.0E+00	--	0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						8E-07					0E+00
	EXPOSURE MEDIUM TOTAL							8E-07					0E+00
SOIL TOTAL								8E-07					0E+00
SEDIMENT	SEDIMENT	ALLENDALE POND	2-Methylnaphthalene	NC	NA	NC	NA		Lung	4.3E-07	NA	1.1E-07	5.4E-07
			Acenaphthylene	NC	NA	NC	NA		Liver	1.0E-06	NA	2.6E-07	1.3E-06
			Benzo(a)anthracene	2.7E-08	NA	6.8E-09	NA	3.4E-08	Kidney	7.2E-06	NA	1.8E-06	9.0E-06
			Benzo(a)pyrene	3.2E-07	NA	8.0E-08	NA	4.0E-07	Kidney	8.5E-06	NA	2.1E-06	1.1E-05
			Benzo(b)fluoranthene	3.5E-08	NA	8.9E-09	NA	4.4E-08	Kidney	9.3E-06	NA	2.4E-06	1.2E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	4.2E-06	NA	1.1E-06	5.3E-06
			Benzo(k)fluoranthene	3.1E-09	NA	7.8E-10	NA	3.9E-09	Kidney	8.3E-06	NA	2.1E-06	1.0E-05
			bis(2-Ethylhexyl)phthalate	4.9E-10	NA	9.5E-11	NA	5.8E-10	Liver	1.0E-05	NA	2.0E-06	1.2E-05
			Dibenzo(a,h)anthracene	1.6E-07	NA	4.0E-08	NA	2.0E-07	Kidney	4.2E-06	NA	1.1E-06	5.3E-06
			Indeno(1,2,3-cd)pyrene	2.5E-08	NA	6.4E-09	NA	3.2E-08	Kidney	6.8E-06	NA	1.7E-06	8.5E-06
			Pentachlorophenol	8.5E-09	NA	4.1E-09	NA	1.3E-08	Liver / Kidney	1.4E-05	NA	6.7E-06	2.0E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	1.0E-05	NA	2.6E-06	1.3E-05
			alpha-Chlordane	4.3E-11	NA	3.4E-12	NA	4.6E-11	Liver	1.4E-06	NA	1.1E-07	1.5E-06
			Aroclor-1254	5.2E-08	NA	1.4E-08	NA	6.7E-08	Immune system	7.6E-03	NA	2.1E-03	9.7E-03
			Aroclor-1260	4.4E-09	NA	1.2E-09	NA	5.5E-09	Immune system	6.4E-04	NA	1.7E-04	8.1E-04
			Aroclor-1268	1.7E-09	NA	4.7E-10	NA	2.2E-09	Immune system	2.5E-04	NA	6.8E-05	3.2E-04
			delta-BHC	NC	NA	NC	NA		Liver / Kidney	3.0E-07	NA	5.8E-08	3.5E-07
			Dieldrin	1.6E-09	NA	3.1E-10	NA	1.9E-09	Liver	1.1E-05	NA	2.2E-06	1.4E-05
			Endosulfan II	NC	NA	NC	NA		Kidney	3.9E-07	NA	7.6E-08	4.7E-07
			Endosulfan sulfate	NC	NA	NC	NA		Kidney	2.9E-08	NA	5.6E-09	3.4E-08
			Endrin aldehyde	NC	NA	NC	NA		Nervous system	6.1E-07	NA	1.2E-07	7.3E-07
			Endrin Ketone	NC	NA	NC	NA		Nervous system	8.1E-07	NA	1.6E-07	9.6E-07
			gamma-Chlordane	6.5E-11	NA	5.0E-12	NA	7.0E-11	Liver	2.2E-06	NA	1.7E-07	2.3E-06
			Technical Chlordane	2.5E-09	NA	1.9E-10	NA	2.7E-09	Liver	8.3E-05	NA	6.4E-06	8.9E-05
			Antimony	NC	NA	NC	NA		Adverse clinical signs	7.6E-04	NA		7.6E-04
			Arsenic	9.5E-08	NA	5.5E-09	NA	1.0E-07	Skin	1.2E-03	NA	7.2E-05	1.3E-03
			Cadmium	NC	NA	NC	NA		Kidney	7.6E-05	NA	5.9E-06	8.2E-05
			Chromium	NC	NA	NC	NA		NOAEL	5.0E-03	NA		5.0E-03
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	4.8E-04	NA		4.8E-04
			Mercury	NC	NA	NC	NA		Immune system	2.1E-04	NA		2.1E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	8.5E-05	NA		8.5E-05
			Thallium	NC	NA	NC	NA		NOAEL	5.4E-03	NA		5.4E-03
			Vanadium	NC	NA	NC	NA		NOAEL	4.2E-04	NA		4.2E-04

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TABLE F.9.28.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Toxicity Equivalency (Dioxins/Furans) - Mam	9.3E-06	NA	5.4E-07	NA	9.9E-06		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	1.8E-10	NA	1.1E-11	NA	1.9E-10		--	NA	--	
			CHEMICAL TOTAL	1.0E-05	--	7.1E-07	--	1E-05		2.2E-02	0.0E+00	2.4E-03	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-05					2E-02
	EXPOSURE MEDIUM TOTAL							1E-05					2E-02
SEDIMENT TOTAL								1E-05					2E-02
SURFACE WATER	SURFACE WATER	ALLENDALE POND	Tetrachloroethene	6.5E-10	NA	1.5E-07	NA	1.5E-07	Liver	7.0E-07	NA	1.6E-04	1.6E-04
			bis(2-Ethylhexyl)phthalate	3.1E-11	NA	1.8E-08	NA	1.8E-08	Liver	6.4E-07	NA	3.8E-04	3.8E-04
			Aldrin	4.1E-10	NA	1.4E-08	NA	1.4E-08	Liver	4.7E-06	NA	1.6E-04	1.7E-04
			alpha-Chlordane	5.3E-13	NA	4.2E-10	NA	4.2E-10	Liver	1.8E-08	NA	1.4E-05	1.4E-05
			Aroclor-1254	2.6E-09	NA	--	NA	2.6E-09	Immune system	3.8E-04	NA	--	3.8E-04
			delta-BHC	NC	NA	NC	NA		Liver / Kidney	4.1E-07	NA	6.1E-05	6.1E-05
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	9.1E-07	NA	--	9.1E-07
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	1.2E-07	NA	3.2E-05	3.2E-05
			gamma-Chlordane	1.9E-11	NA	1.5E-08	NA	1.5E-08	Liver	6.4E-07	NA	5.1E-04	5.1E-04
			Arsenic	1.4E-08	NA	5.0E-08	NA	6.4E-08	Skin	1.9E-04	NA	6.5E-04	8.4E-04
			Barium	NC	NA	NC	NA		Cardiovascular system	8.0E-06	NA	4.0E-04	4.1E-04
			Chromium	NC	NA	NC	NA		NOAEL	7.6E-05	NA	2.1E-02	2.1E-02
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	5.2E-04	NA	4.5E-02	4.6E-02
			Mercury	NC	NA	NC	NA		Immune system	1.4E-07	NA	6.7E-06	6.9E-06
			Thallium	NC	NA	NC	NA		NOAEL	5.9E-04	NA	2.0E-03	2.6E-03
			Nitrate	NC	NA	NC	NA		Hematological system	6.0E-06	NA	--	6.0E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	1.5E-05	NA	--	1.5E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.6E-07	NA	2.8E-03	NA	2.8E-03		--	NA	--	
			CHEMICAL TOTAL	3.8E-07	--	2.8E-03	--	3E-03		1.8E-03	0.0E+00	7.1E-02	7E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-03					7E-02
	EXPOSURE MEDIUM TOTAL							3E-03					7E-02
SURFACE WATER TOTAL								3E-03					7E-02
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	3.6E-05	NA	NA	3.6E-05
			Benzo(a)anthracene	2.2E-07	NA	NA	NA	2.2E-07	Kidney	5.9E-05	NA	NA	5.9E-05
			Benzo(a)pyrene	2.4E-06	NA	NA	NA	2.4E-06	Kidney	6.5E-05	NA	NA	6.5E-05
			Benzo(b)fluoranthene	2.5E-07	NA	NA	NA	2.5E-07	Kidney	6.8E-05	NA	NA	6.8E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.7E-05	NA	NA	1.7E-05
			Dibenzo(a,h)anthracene	4.1E-07	NA	NA	NA	4.1E-07	Kidney	1.1E-05	NA	NA	1.1E-05
			Indeno(1,2,3-cd)pyrene	8.0E-08	NA	NA	NA	8.0E-08	Kidney	2.1E-05	NA	NA	2.1E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	3.1E-04	NA	NA	3.1E-04
			4,4'-DDD	4.2E-07	NA	NA	NA	4.2E-07	Liver	2.0E-02	NA	NA	2.0E-02
			4,4'-DDE	1.4E-06	NA	NA	NA	1.4E-06	Liver	4.7E-02	NA	NA	4.7E-02

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TABLE F.9.28.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			4,4'-DDT	3.2E-07	NA	NA	NA	3.2E-07	Liver	1.1E-02	NA	NA	1.1E-02
			alpha-Chlordane	1.1E-06	NA	NA	NA	1.1E-06	Liver	3.8E-02	NA	NA	3.8E-02
			Aroclor-1254	8.0E-04	NA	NA	NA	8.0E-04	Immune system	1.2E+02	NA	NA	1.2E+02
			Aroclor-1268	1.1E-05	NA	NA	NA	1.1E-05	Immune system	1.6E+00	NA	NA	1.6E+00
			Dieldrin	1.9E-05	NA	NA	NA	1.9E-05	Liver	1.4E-01	NA	NA	1.4E-01
			gamma-Chlordane	4.3E-07	NA	NA	NA	4.3E-07	Liver	1.4E-02	NA	NA	1.4E-02
			Heptachlor Epoxide	8.9E-07	NA	NA	NA	8.9E-07	Liver	4.4E-02	NA	NA	4.4E-02
			Technical Chlordane	3.3E-05	NA	NA	NA	3.3E-05	Liver	1.1E+00	NA	NA	1.1E+00
			Chromium	NC	NA	NA	NA		NOAEL	3.0E-02	NA	NA	3.0E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	3.7E-01	NA	NA	3.7E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.2E+00	NA	NA	1.2E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.0E-02	NA	NA	NA	1.0E-02		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	4.1E-04	NA	NA	NA	4.1E-04		--	NA	NA	
			CHEMICAL TOTAL	1.2E-02	--	--	--	1E-02		1.2E+02	0.0E+00	--	1.2E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-02					1.2E+02
	EXPOSURE MEDIUM TOTAL							1E-02					1.2E+02
WHOLE BODY TOTAL								1E-02					1.2E+02
RECEPTOR TOTAL								1E-02					1.2E+02
			TOTAL RISK ACROSS ALL MEDIA					1E-02	TOTAL HAZARD ACROSS ALL MEDIA				1.2E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL ADVERSE CLINICAL SIGNS HI =	7.6E-04
TOTAL CARDIOVASCULAR SYSTEM HI =	4.1E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	1.2E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	2.1E-05
TOTAL IMMUNE SYSTEM HI =	1.2E+02
TOTAL KIDNEY HI =	7.9E-04
TOTAL LIVER HI =	1.4E+00
	--
TOTAL NERVOUS SYSTEM HI =	3.4E-05
TOTAL NOAEL HI =	1.1E-01
	--
TOTAL SKIN HI =	2.1E-03
	--

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.9.29.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	ALLENDALE POND	2,3,7,8-TCDD	1.1E-06	NA	2.5E-07	NA	1.4E-06		--	NA	--	
			CHEMICAL TOTAL	1.1E-06	--	2.5E-07	--	1E-06		--	0.0E+00	--	0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-06					0E+00
	EXPOSURE MEDIUM TOTAL							1E-06					0E+00
SOIL TOTAL								1E-06					0E+00
SEDIMENT	SEDIMENT	ALLENDALE POND	2-Methylnaphthalene	NC	NA	NC	NA		Lung	6.7E-07	NA	5.0E-07	1.2E-06
			Acenaphthylene	NC	NA	NC	NA		Liver	1.6E-06	NA	1.2E-06	2.8E-06
			Benzo(a)anthracene	4.2E-08	NA	3.1E-08	NA	7.3E-08	Kidney	1.1E-05	NA	8.3E-06	2.0E-05
			Benzo(a)pyrene	5.0E-07	NA	3.7E-07	NA	8.6E-07	Kidney	1.3E-05	NA	9.8E-06	2.3E-05
			Benzo(b)fluoranthene	5.4E-08	NA	4.0E-08	NA	9.5E-08	Kidney	1.5E-05	NA	1.1E-05	2.5E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	6.6E-06	NA	4.9E-06	1.1E-05
			Benzo(k)fluoranthene	4.8E-09	NA	3.6E-09	NA	8.4E-09	Kidney	1.3E-05	NA	9.6E-06	2.2E-05
			bis(2-Ethylhexyl)phthalate	7.6E-10	NA	4.3E-10	NA	1.2E-09	Liver	1.6E-05	NA	9.1E-06	2.5E-05
			Dibenzo(a,h)anthracene	2.5E-07	NA	1.8E-07	NA	4.3E-07	Kidney	6.6E-06	NA	4.9E-06	1.1E-05
			Indeno(1,2,3-cd)pyrene	4.0E-08	NA	2.9E-08	NA	6.9E-08	Kidney	1.1E-05	NA	7.8E-06	1.8E-05
			Pentachlorophenol	1.3E-08	NA	1.9E-08	NA	3.2E-08	Liver / Kidney	2.1E-05	NA	3.1E-05	5.2E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	1.6E-05	NA	1.2E-05	2.8E-05
			alpha-Chlordane	6.7E-11	NA	1.5E-11	NA	8.2E-11	Liver	2.2E-06	NA	5.1E-07	2.7E-06
			Aroclor-1254	8.1E-08	NA	6.5E-08	NA	1.5E-07	Immune system	1.2E-02	NA	9.5E-03	2.1E-02
			Aroclor-1260	6.8E-09	NA	5.4E-09	NA	1.2E-08	Immune system	9.9E-04	NA	7.9E-04	1.8E-03
			Aroclor-1268	2.7E-09	NA	2.1E-09	NA	4.8E-09	Immune system	3.9E-04	NA	3.1E-04	7.0E-04
			delta-BHC	NC	NA	NC	NA		Liver / Kidney	4.6E-07	NA	2.6E-07	7.3E-07
			Dieldrin	2.4E-09	NA	1.4E-09	NA	3.8E-09	Liver	1.8E-05	NA	1.0E-05	2.8E-05
			Endosulfan II	NC	NA	NC	NA		Kidney	6.1E-07	NA	3.5E-07	9.6E-07
			Endosulfan sulfate	NC	NA	NC	NA		Kidney	4.5E-08	NA	2.5E-08	7.0E-08
			Endrin aldehyde	NC	NA	NC	NA		Nervous system	9.6E-07	NA	5.5E-07	1.5E-06
			Endrin Ketone	NC	NA	NC	NA		Nervous system	1.3E-06	NA	7.2E-07	2.0E-06
			gamma-Chlordane	1.0E-10	NA	2.3E-11	NA	1.2E-10	Liver	3.4E-06	NA	7.7E-07	4.1E-06
			Technical Chlordane	3.9E-09	NA	8.8E-10	NA	4.7E-09	Liver	1.3E-04	NA	2.9E-05	1.6E-04
			Antimony	NC	NA	NC	NA		Adverse clinical signs	1.2E-03	NA		1.2E-03
			Arsenic	1.5E-07	NA	2.5E-08	NA	1.7E-07	Skin	1.9E-03	NA	3.3E-04	2.2E-03
			Cadmium	NC	NA	NC	NA		Kidney	1.2E-04	NA	2.7E-05	1.5E-04
			Chromium	NC	NA	NC	NA		NOAEL	7.8E-03	NA		7.8E-03
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	7.4E-04	NA		7.4E-04
			Mercury	NC	NA	NC	NA		Immune system	3.2E-04	NA		3.2E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	1.3E-04	NA		1.3E-04
			Thallium	NC	NA	NC	NA		NOAEL	8.4E-03	NA		8.4E-03
			Vanadium	NC	NA	NC	NA		NOAEL	6.5E-04	NA		6.5E-04

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TABLE F.9.29.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.5E-05	NA	2.5E-06	NA	1.7E-05		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	2.8E-10	NA	4.9E-11	NA	3.3E-10		--	NA	--	
			CHEMICAL TOTAL	1.6E-05	--	3.3E-06	--	2E-05		3.5E-02	0.0E+00	1.1E-02	5E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-05					5E-02
	EXPOSURE MEDIUM TOTAL							2E-05					5E-02
SEDIMENT TOTAL								2E-05					5E-02
SURFACE WATER	SURFACE WATER	ALLENDALE POND	Tetrachloroethene	1.0E-09	NA	1.7E-07	NA	1.7E-07	Liver	1.1E-06	NA	1.8E-04	1.8E-04
			bis(2-Ethylhexyl)phthalate	4.7E-11	NA	2.0E-08	NA	2.0E-08	Liver	9.9E-07	NA	4.2E-04	4.3E-04
			Aldrin	6.3E-10	NA	1.6E-08	NA	1.6E-08	Liver	7.3E-06	NA	1.8E-04	1.9E-04
			alpha-Chlordane	8.2E-13	NA	4.7E-10	NA	4.8E-10	Liver	2.7E-08	NA	1.6E-05	1.6E-05
			Aroclor-1254	4.1E-09	NA	--	NA	4.1E-09	Immune system	5.9E-04	NA	--	5.9E-04
			delta-BHC	NC	NA	NC	NA		Liver / Kidney	6.3E-07	NA	6.8E-05	6.9E-05
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	1.4E-06	NA	--	1.4E-06
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	1.8E-07	NA	3.6E-05	3.6E-05
			gamma-Chlordane	3.0E-11	NA	1.7E-08	NA	1.7E-08	Liver	9.9E-07	NA	5.7E-04	5.7E-04
			Arsenic	2.2E-08	NA	5.6E-08	NA	7.8E-08	Skin	2.9E-04	NA	7.3E-04	1.0E-03
			Barium	NC	NA	NC	NA		Cardiovascular system	1.2E-05	NA	4.4E-04	4.6E-04
			Chromium	NC	NA	NC	NA		NOAEL	1.2E-04	NA	2.4E-02	2.4E-02
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	8.1E-04	NA	5.1E-02	5.1E-02
			Mercury	NC	NA	NC	NA		Immune system	2.1E-07	NA	7.5E-06	7.7E-06
			Thallium	NC	NA	NC	NA		NOAEL	9.2E-04	NA	2.3E-03	3.2E-03
			Nitrate	NC	NA	NC	NA		Hematological system	9.4E-06	NA	--	9.4E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	2.4E-05	NA	--	2.4E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	5.6E-07	NA	3.2E-03	NA	3.2E-03		--	NA	--	
			CHEMICAL TOTAL	5.9E-07	--	3.2E-03	--	3E-03		2.8E-03	0.0E+00	7.9E-02	8E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-03					8E-02
	EXPOSURE MEDIUM TOTAL							3E-03					8E-02
SURFACE WATER TOTAL								3E-03					8E-02
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.8E-05	NA	NA	2.8E-05
			Benzo(a)anthracene	1.7E-07	NA	NA	NA	1.7E-07	Kidney	4.6E-05	NA	NA	4.6E-05
			Benzo(a)pyrene	1.9E-06	NA	NA	NA	1.9E-06	Kidney	5.1E-05	NA	NA	5.1E-05
			Benzo(b)fluoranthene	2.0E-07	NA	NA	NA	2.0E-07	Kidney	5.3E-05	NA	NA	5.3E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.3E-05	NA	NA	1.3E-05
			Dibenzo(a,h)anthracene	3.2E-07	NA	NA	NA	3.2E-07	Kidney	8.4E-06	NA	NA	8.4E-06
			Indeno(1,2,3-cd)pyrene	6.3E-08	NA	NA	NA	6.3E-08	Kidney	1.7E-05	NA	NA	1.7E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	2.4E-04	NA	NA	2.4E-04
			4,4'-DDD	3.3E-07	NA	NA	NA	3.3E-07	Liver	1.6E-02	NA	NA	1.6E-02
			4,4'-DDE	1.1E-06	NA	NA	NA	1.1E-06	Liver	3.6E-02	NA	NA	3.6E-02
			4,4'-DDT	2.5E-07	NA	NA	NA	2.5E-07	Liver	8.7E-03	NA	NA	8.7E-03
			alpha-Chlordane	9.0E-07	NA	NA	NA	9.0E-07	Liver	3.0E-02	NA	NA	3.0E-02
			Aroclor-1254	6.3E-04	NA	NA	NA	6.3E-04	Immune system	9.1E+01	NA	NA	9.1E+01
			Aroclor-1268	8.3E-06	NA	NA	NA	8.3E-06	Immune system	1.2E+00	NA	NA	1.2E+00
			Dieldrin	1.5E-05	NA	NA	NA	1.5E-05	Liver	1.1E-01	NA	NA	1.1E-01

US EPA ARCHIVE DOCUMENT

TABLE F.9.29.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			gamma-Chlordane	3.4E-07	NA	NA	NA	3.4E-07	Liver	1.1E-02	NA	NA	1.1E-02
			Heptachlor Epoxide	6.9E-07	NA	NA	NA	6.9E-07	Liver	3.4E-02	NA	NA	3.4E-02
			Technical Chlordane	2.6E-05	NA	NA	NA	2.6E-05	Liver	8.5E-01	NA	NA	8.5E-01
			Chromium	NC	NA	NA	NA		NOAEL	2.4E-02	NA	NA	2.4E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.9E-01	NA	NA	2.9E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	9.3E-01	NA	NA	9.3E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	8.0E-03	NA	NA	NA	8.0E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	3.2E-04	NA	NA	NA	3.2E-04		--	NA	NA	
			CHEMICAL TOTAL	9.0E-03	--	--	--	9E-03		9.5E+01	0.0E+00	--	9.5E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						9E-03					9.5E+01
	EXPOSURE MEDIUM TOTAL							9E-03					9.5E+01
WHOLE BODY TOTAL								9E-03					9.5E+01
RECEPTOR TOTAL								1E-02					9.5E+01
			TOTAL RISK ACROSS ALL MEDIA					1E-02	TOTAL HAZARD ACROSS ALL MEDIA				9.5E+01

NOTES
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium
-- - Not calculated, dose-response data and/or dermal absorption values are not available

Prepared by: RAR
Checked by: KJA

TOTAL ADVERSE CLINICAL SIGNS HI =	1.2E-03
TOTAL CARDIOVASCULAR SYSTEM HI =	4.6E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	9.3E-01
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	3.3E-05
TOTAL IMMUNE SYSTEM HI =	9.3E+01
TOTAL KIDNEY HI =	8.6E-04
TOTAL LIVER HI =	1.1E+00
	--
TOTAL NERVOUS SYSTEM HI =	4.0E-05
TOTAL NOAEL HI =	1.2E-01
	--
TOTAL SKIN HI =	3.3E-03
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US EPA ARCHIVE DOCUMENT

TABLE F.9.30.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	6.0E-05	NA	NA	6.0E-05
			Benzo(a)anthracene	1.9E-07	NA	NA	NA	1.9E-07	Kidney	9.9E-05	NA	NA	9.9E-05
			Benzo(a)pyrene	2.0E-06	NA	NA	NA	2.0E-06	Kidney	1.1E-04	NA	NA	1.1E-04
			Benzo(b)fluoranthene	2.1E-07	NA	NA	NA	2.1E-07	Kidney	1.1E-04	NA	NA	1.1E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	2.8E-05	NA	NA	2.8E-05
			Dibenzo(a,h)anthracene	3.4E-07	NA	NA	NA	3.4E-07	Kidney	1.8E-05	NA	NA	1.8E-05
			Indeno(1,2,3-cd)pyrene	6.7E-08	NA	NA	NA	6.7E-08	Kidney	3.6E-05	NA	NA	3.6E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	5.1E-04	NA	NA	5.1E-04
			4,4'-DDD	3.5E-07	NA	NA	NA	3.5E-07	Liver	3.4E-02	NA	NA	3.4E-02
			4,4'-DDE	1.1E-06	NA	NA	NA	1.1E-06	Liver	7.7E-02	NA	NA	7.7E-02
			4,4'-DDT	2.7E-07	NA	NA	NA	2.7E-07	Liver	1.9E-02	NA	NA	1.9E-02
			alpha-Chlordane	9.5E-07	NA	NA	NA	9.5E-07	Liver	6.4E-02	NA	NA	6.4E-02
			Aroclor-1254	6.7E-04	NA	NA	NA	6.7E-04	Immune system	1.9E+02	NA	NA	1.9E+02
			Aroclor-1268	8.9E-06	NA	NA	NA	8.9E-06	Immune system	2.6E+00	NA	NA	2.6E+00
			Dieldrin	1.6E-05	NA	NA	NA	1.6E-05	Liver	2.3E-01	NA	NA	2.3E-01
			gamma-Chlordane	3.6E-07	NA	NA	NA	3.6E-07	Liver	2.4E-02	NA	NA	2.4E-02
			Heptachlor Epoxide	7.4E-07	NA	NA	NA	7.4E-07	Liver	7.3E-02	NA	NA	7.3E-02
			Technical Chlordane	2.7E-05	NA	NA	NA	2.7E-05	Liver	1.8E+00	NA	NA	1.8E+00
			Chromium	NC	NA	NA	NA		NOAEL	5.0E-02	NA	NA	5.0E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	6.1E-01	NA	NA	6.1E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.0E+00	NA	NA	2.0E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	8.5E-03	NA	NA	NA	8.5E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	3.4E-04	NA	NA	NA	3.4E-04		--	NA	NA	
			CHEMICAL TOTAL	9.6E-03	--	--	--	1E-02		2.0E+02	0.0E+00	--	2.0E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-02					2.0E+02
	EXPOSURE MEDIUM TOTAL							1E-02					2.0E+02
WHOLE BODY TOTAL								1E-02					2.0E+02
RECEPTOR TOTAL								1E-02					2.0E+02
			TOTAL RISK ACROSS ALL MEDIA					1E-02	TOTAL HAZARD ACROSS ALL MEDIA				2.0E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	2.0E+00
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TOTAL IMMUNE SYSTEM HI =	2.0E+02
TOTAL KIDNEY HI =	9.2E-04
TOTAL LIVER HI =	2.3E+00
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TOTAL NOAEL HI =	5.0E-02
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Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.9.31.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	LYMAN MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	3.2E-07	NA	8.0E-08	4.0E-07
			4-Chloro-3-methylphenol	NC	NA	NC	NA		Reproductive system	1.8E-05	NA	3.5E-06	2.1E-05
			4-Nitrophenol	NC	NA	NC	NA			--	NA	--	
			Acenaphthylene	NC	NA	NC	NA		Liver	4.5E-07	NA	1.1E-07	5.7E-07
			Benzo(a)anthracene	2.2E-08	NA	5.6E-09	NA	2.8E-08	Kidney	5.9E-06	NA	1.5E-06	7.4E-06
			Benzo(a)pyrene	2.3E-07	NA	5.8E-08	NA	2.9E-07	Kidney	6.1E-06	NA	1.6E-06	7.7E-06
			Benzo(b)fluoranthene	3.6E-08	NA	9.1E-09	NA	4.5E-08	Kidney	9.5E-06	NA	2.4E-06	1.2E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	6.4E-06	NA	1.6E-06	8.0E-06
			Benzo(k)fluoranthene	1.7E-09	NA	4.2E-10	NA	2.1E-09	Kidney	4.5E-06	NA	1.1E-06	5.6E-06
			bis(2-Ethylhexyl)phthalate	7.9E-10	NA	1.5E-10	NA	9.5E-10	Liver	1.7E-05	NA	3.2E-06	2.0E-05
			Dibenzo(a,h)anthracene	6.1E-08	NA	1.5E-08	NA	7.7E-08	Kidney	1.6E-06	NA	4.1E-07	2.0E-06
			Indeno(1,2,3-cd)pyrene	2.1E-08	NA	5.4E-09	NA	2.7E-08	Kidney	5.7E-06	NA	1.4E-06	7.2E-06
			N-Nitroso-di-n-propylamine	9.9E-08	NA	1.9E-08	NA	1.2E-07		--	NA	--	
			Pentachlorophenol	1.8E-09	NA	8.9E-10	NA	2.7E-09	Liver / Kidney	3.0E-06	NA	1.4E-06	4.4E-06
			Phenanthrene	NC	NA	NC	NA		Kidney	5.9E-06	NA	1.5E-06	7.4E-06
			alpha-Chlordane	1.2E-10	NA	9.5E-12	NA	1.3E-10	Liver	4.1E-06	NA	3.2E-07	4.4E-06
			Aroclor-1254	1.1E-08	NA	2.9E-09	NA	1.4E-08	Immune system	1.6E-03	NA	4.2E-04	2.0E-03
			Aroclor-1260	5.9E-10	NA	1.6E-10	NA	7.5E-10	Immune system	8.6E-05	NA	2.3E-05	1.1E-04
			Aroclor-1268	2.6E-09	NA	7.1E-10	NA	3.3E-09	Immune system	3.8E-04	NA	1.0E-04	4.9E-04
			Dieldrin	7.7E-10	NA	1.5E-10	NA	9.2E-10	Liver	5.6E-06	NA	1.1E-06	6.7E-06
			Endosulfan II	NC	NA	NC	NA		Kidney	5.3E-08	NA	1.0E-08	6.3E-08
			Endosulfan sulfate	NC	NA	NC	NA		Kidney	3.1E-08	NA	6.0E-09	3.7E-08
			gamma-Chlordane	5.7E-11	NA	4.5E-12	NA	6.2E-11	Liver	1.9E-06	NA	1.5E-07	2.1E-06
			Technical Chlordane	4.9E-09	NA	3.8E-10	NA	5.3E-09	Liver	1.6E-04	NA	1.3E-05	1.8E-04
			Antimony	NC	NA	NC	NA		Adverse clinical signs	4.9E-04	NA		4.9E-04
			Arsenic	1.0E-07	NA	6.1E-09	NA	1.1E-07	Skin	1.4E-03	NA	7.9E-05	1.4E-03
			Cadmium	NC	NA	NC	NA		Kidney	1.3E-04	NA	1.0E-05	1.4E-04
			Chromium	NC	NA	NC	NA		NOAEL	4.2E-03	NA		4.2E-03
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	7.6E-04	NA		7.6E-04
			Mercury	NC	NA	NC	NA		Immune system	1.3E-04	NA		1.3E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	2.2E-04	NA		2.2E-04
			Thallium	NC	NA	NC	NA		NOAEL	4.6E-04	NA		4.6E-04
			Vanadium	NC	NA	NC	NA		NOAEL	3.9E-04	NA		3.9E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.9E-06	NA	1.7E-07	NA	3.1E-06		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	5.4E-08	NA	3.1E-09	NA	5.7E-08		--	NA	--	
			CHEMICAL TOTAL	3.6E-06	--	3.0E-07	--	4E-06		1.0E-02	0.0E+00	6.8E-04	1E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-06					1E-02
	EXPOSURE MEDIUM TOTAL							4E-06					1E-02
SEDIMENT TOTAL								4E-06					1E-02
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	Acenaphthylene	NC	NA	NC	NA		Liver	2.8E-10	NA	--	2.8E-10
			bis(2-Ethylhexyl)phthalate	5.2E-10	NA	3.1E-07	NA	3.1E-07	Liver	1.1E-05	NA	6.4E-03	6.5E-03
			Aldrin	8.5E-10	NA	2.9E-08	NA	3.0E-08	Liver	9.8E-06	NA	3.4E-04	3.5E-04
			alpha-Chlordane	1.5E-11	NA	1.2E-08	NA	1.2E-08	Liver	4.8E-07	NA	3.9E-04	3.9E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	6.8E-09	NA	--	6.8E-09
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	2.1E-07	NA	5.8E-05	5.8E-05
			gamma-Chlordane	1.6E-11	NA	1.3E-08	NA	1.3E-08	Liver	5.3E-07	NA	4.3E-04	4.3E-04
			Arsenic	1.5E-08	NA	5.2E-08	NA	6.7E-08	Skin	2.0E-04	NA	6.8E-04	8.7E-04

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TABLE F.9.31.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Barium	NC	NA	NC	NA		Cardiovascular system	3.8E-06	NA	1.9E-04	1.9E-04
			Chromium	NC	NA	NC	NA		NOAEL	9.8E-06	NA	2.7E-03	2.7E-03
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	6.9E-05	NA	6.0E-03	6.1E-03
			Mercury	NC	NA	NC	NA		Immune system	1.7E-07	NA	8.3E-06	8.5E-06
			Thallium	NC	NA	NC	NA		NOAEL	3.5E-04	NA	1.2E-03	1.6E-03
			Nitrate	NC	NA	NC	NA		Hematological system	6.0E-06	NA	--	6.0E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	1.1E-05	NA	--	1.1E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.3E-08	NA	3.4E-04	NA	3.4E-04		--	NA	--	
			CHEMICAL TOTAL	5.9E-08	--	3.4E-04	--	3E-04		6.7E-04	0.0E+00	1.8E-02	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-04					2E-02
	EXPOSURE MEDIUM TOTAL							3E-04					2E-02
SURFACE WATER TOTAL								3E-04					2E-02
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.6E-05	NA	NA	2.6E-05
			Benzo(a)pyrene	9.8E-07	NA	NA	NA	9.8E-07	Kidney	2.6E-05	NA	NA	2.6E-05
			Benzo(b)fluoranthene	1.2E-07	NA	NA	NA	1.2E-07	Kidney	3.2E-05	NA	NA	3.2E-05
			Dibenzo(a,h)anthracene	6.6E-07	NA	NA	NA	6.6E-07	Kidney	1.8E-05	NA	NA	1.8E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	5.4E-04	NA	NA	5.4E-04
			4,4'-DDD	4.9E-07	NA	NA	NA	4.9E-07	Liver	2.4E-02	NA	NA	2.4E-02
			4,4'-DDE	2.1E-06	NA	NA	NA	2.1E-06	Liver	7.2E-02	NA	NA	7.2E-02
			4,4'-DDT	1.6E-07	NA	NA	NA	1.6E-07	Liver	5.5E-03	NA	NA	5.5E-03
			alpha-Chlordane	9.8E-07	NA	NA	NA	9.8E-07	Liver	3.3E-02	NA	NA	3.3E-02
			Aroclor-1254	2.7E-04	NA	NA	NA	2.7E-04	Immune system	3.9E+01	NA	NA	3.9E+01
			beta-BHC	4.5E-07	NA	NA	NA	4.5E-07	Liver / Kidney	4.9E-03	NA	NA	4.9E-03
			Dieldrin	1.8E-05	NA	NA	NA	1.8E-05	Liver	1.3E-01	NA	NA	1.3E-01
			gamma-Chlordane	4.2E-07	NA	NA	NA	4.2E-07	Liver	1.4E-02	NA	NA	1.4E-02
			Heptachlor Epoxide	2.9E-06	NA	NA	NA	2.9E-06	Liver	1.4E-01	NA	NA	1.4E-01
			Technical Chlordane	2.2E-05	NA	NA	NA	2.2E-05	Liver	7.3E-01	NA	NA	7.3E-01
			Cadmium	NC	NA	NA	NA		Kidney	2.1E-02	NA	NA	2.1E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	2.9E-02	NA	NA	2.9E-02
			Mercury	NC	NA	NA	NA		Immune system	9.4E-02	NA	NA	9.4E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	3.0E-01	NA	NA	3.0E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.8E-03	NA	NA	NA	3.8E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	6.7E-04	NA	NA	NA	6.7E-04		--	NA	NA	
			CHEMICAL TOTAL	4.8E-03	--	--	--	5E-03		4.0E+01	0.0E+00	--	4.0E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-03					4.0E+01
	EXPOSURE MEDIUM TOTAL							5E-03					4.0E+01
WHOLE BODY TOTAL								5E-03					4.0E+01
RECEPTOR TOTAL								5E-03					4.0E+01
			TOTAL RISK ACROSS ALL MEDIA					5E-03	TOTAL HAZARD ACROSS ALL MEDIA				4.0E+01

US EPA ARCHIVE DOCUMENT

TABLE F.9.31.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL

NOTES:
NC - Not carcinogenic by this exposure route
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

TOTAL ADVERSE CLINICAL SIGNS HI =	4.9E-04
TOTAL CARDIOVASCULAR SYSTEM HI =	1.9E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	3.0E-01
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TOTAL HEMATOLOGICAL SYSTEM HI =	1.7E-05
TOTAL IMMUNE SYSTEM HI =	3.9E+01
TOTAL KIDNEY HI =	2.7E-02
TOTAL LIVER HI =	1.2E+00
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TOTAL NERVOUS SYSTEM HI =	5.8E-05
TOTAL NOAEL HI =	4.5E-02
TOTAL REPRODUCTIVE SYSTEM HI =	2.1E-05
TOTAL SKIN HI =	2.3E-03
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US EPA ARCHIVE DOCUMENT

TABLE F.9.32.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.3E-05	NA	NA	4.3E-05
			Benzo(a)pyrene	8.1E-07	NA	NA	NA	8.1E-07	Kidney	4.3E-05	NA	NA	4.3E-05
			Benzo(b)fluoranthene	1.0E-07	NA	NA	NA	1.0E-07	Kidney	5.4E-05	NA	NA	5.4E-05
			Dibenzo(a,h)anthracene	5.5E-07	NA	NA	NA	5.5E-07	Kidney	2.9E-05	NA	NA	2.9E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	9.0E-04	NA	NA	9.0E-04
			4,4'-DDD	4.1E-07	NA	NA	NA	4.1E-07	Liver	4.0E-02	NA	NA	4.0E-02
			4,4'-DDE	1.7E-06	NA	NA	NA	1.7E-06	Liver	1.2E-01	NA	NA	1.2E-01
			4,4'-DDT	1.3E-07	NA	NA	NA	1.3E-07	Liver	9.1E-03	NA	NA	9.1E-03
			alpha-Chlordane	8.1E-07	NA	NA	NA	8.1E-07	Liver	5.4E-02	NA	NA	5.4E-02
			Aroclor-1254	2.2E-04	NA	NA	NA	2.2E-04	Immune system	6.5E+01	NA	NA	6.5E+01
			beta-BHC	3.7E-07	NA	NA	NA	3.7E-07	Liver / Kidney	8.1E-03	NA	NA	8.1E-03
			Dieldrin	1.5E-05	NA	NA	NA	1.5E-05	Liver	2.1E-01	NA	NA	2.1E-01
			gamma-Chlordane	3.5E-07	NA	NA	NA	3.5E-07	Liver	2.3E-02	NA	NA	2.3E-02
			Heptachlor Epoxide	2.4E-06	NA	NA	NA	2.4E-06	Liver	2.4E-01	NA	NA	2.4E-01
			Technical Chlordane	1.8E-05	NA	NA	NA	1.8E-05	Liver	1.2E+00	NA	NA	1.2E+00
			Cadmium	NC	NA	NA	NA		Kidney	3.5E-02	NA	NA	3.5E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	4.8E-02	NA	NA	4.8E-02
			Mercury	NC	NA	NA	NA		Immune system	1.6E-01	NA	NA	1.6E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.0E-01	NA	NA	5.0E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.1E-03	NA	NA	NA	3.1E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	5.6E-04	NA	NA	NA	5.6E-04		--	NA	NA	
			CHEMICAL TOTAL	4.0E-03	--	--	--	4E-03		6.7E+01	0.0E+00	--	6.7E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-03					6.7E+01
	EXPOSURE MEDIUM TOTAL							4E-03					6.7E+01
WHOLE BODY TOTAL								4E-03					6.7E+01
RECEPTOR TOTAL								4E-03					6.7E+01
							TOTAL RISK ACROSS ALL MEDIA	4E-03	TOTAL HAZARD ACROSS ALL MEDIA				6.7E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	5.0E-01
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TOTAL IMMUNE SYSTEM HI =	6.5E+01
TOTAL KIDNEY HI =	4.4E-02
TOTAL LIVER HI =	1.9E+00
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TOTAL NOAEL HI =	4.8E-02
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US EPA ARCHIVE DOCUMENT

TABLE F.9.33.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	LYMAN MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	4.9E-07	NA	3.7E-07	8.6E-07
			4-Chloro-3-methylphenol	NC	NA	NC	NA		Reproductive system	2.8E-05	NA	1.6E-05	4.4E-05
			4-Nitrophenol	NC	NA	NC	NA			--	NA	--	
			Acenaphthylene	NC	NA	NC	NA		Liver	7.1E-07	NA	5.3E-07	1.2E-06
			Benzo(a)anthracene	3.5E-08	NA	2.6E-08	NA	6.0E-08	Kidney	9.2E-06	NA	6.9E-06	1.6E-05
			Benzo(a)pyrene	3.6E-07	NA	2.7E-07	NA	6.3E-07	Kidney	9.6E-06	NA	7.1E-06	1.7E-05
			Benzo(b)fluoranthene	5.6E-08	NA	4.1E-08	NA	9.7E-08	Kidney	1.5E-05	NA	1.1E-05	2.6E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	9.9E-06	NA	7.4E-06	1.7E-05
			Benzo(k)fluoranthene	2.6E-09	NA	1.9E-09	NA	4.5E-09	Kidney	6.9E-06	NA	5.1E-06	1.2E-05
			bis(2-Ethylhexyl)phthalate	1.2E-09	NA	7.1E-10	NA	1.9E-09	Liver	2.6E-05	NA	1.5E-05	4.0E-05
			Dibenzo(a,h)anthracene	9.5E-08	NA	7.1E-08	NA	1.7E-07	Kidney	2.5E-06	NA	1.9E-06	4.4E-06
			Indeno(1,2,3-cd)pyrene	3.3E-08	NA	2.5E-08	NA	5.8E-08	Kidney	8.9E-06	NA	6.6E-06	1.6E-05
			N-Nitroso-di-n-propylamine	1.5E-07	NA	8.8E-08	NA	2.4E-07		--	NA	--	
			Pentachlorophenol	2.8E-09	NA	4.1E-09	NA	6.9E-09	Liver / Kidney	4.6E-06	NA	6.6E-06	1.1E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	9.2E-06	NA	6.9E-06	1.6E-05
			alpha-Chlordane	1.9E-10	NA	4.3E-11	NA	2.3E-10	Liver	6.3E-06	NA	1.4E-06	7.8E-06
			Aroclor-1254	1.7E-08	NA	1.3E-08	NA	3.0E-08	Immune system	2.4E-03	NA	1.9E-03	4.4E-03
			Aroclor-1260	9.2E-10	NA	7.3E-10	NA	1.6E-09	Immune system	1.3E-04	NA	1.1E-04	2.4E-04
			Aroclor-1268	4.1E-09	NA	3.3E-09	NA	7.3E-09	Immune system	5.9E-04	NA	4.8E-04	1.1E-03
			Dieldrin	1.2E-09	NA	6.8E-10	NA	1.9E-09	Liver	8.7E-06	NA	5.0E-06	1.4E-05
			Endosulfan II	NC	NA	NC	NA		Kidney	8.2E-08	NA	4.7E-08	1.3E-07
			Endosulfan sulfate	NC	NA	NC	NA		Kidney	4.8E-08	NA	2.7E-08	7.5E-08
			gamma-Chlordane	8.9E-11	NA	2.0E-11	NA	1.1E-10	Liver	3.0E-06	NA	6.8E-07	3.6E-06
			Technical Chlordane	7.7E-09	NA	1.8E-09	NA	9.4E-09	Liver	2.6E-04	NA	5.8E-05	3.1E-04
			Antimony	NC	NA	NC	NA		Adverse clinical signs	7.7E-04	NA		7.7E-04
			Arsenic	1.6E-07	NA	2.8E-08	NA	1.9E-07	Skin	2.1E-03	NA	3.6E-04	2.5E-03
			Cadmium	NC	NA	NC	NA		Kidney	2.1E-04	NA	4.8E-05	2.6E-04
			Chromium	NC	NA	NC	NA		NOAEL	6.6E-03	NA		6.6E-03
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	1.2E-03	NA		1.2E-03
			Mercury	NC	NA	NC	NA		Immune system	2.0E-04	NA		2.0E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	3.4E-04	NA		3.4E-04
			Thallium	NC	NA	NC	NA		NOAEL	7.2E-04	NA		7.2E-04
			Vanadium	NC	NA	NC	NA		NOAEL	6.0E-04	NA		6.0E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.6E-06	NA	7.9E-07	NA	5.4E-06		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	8.4E-08	NA	1.4E-08	NA	9.8E-08		--	NA	--	
			CHEMICAL TOTAL	5.6E-06	--	1.4E-06	--	7E-06		1.6E-02	0.0E+00	3.1E-03	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-06					2E-02
	EXPOSURE MEDIUM TOTAL							7E-06					2E-02
SEDIMENT TOTAL								7E-06					2E-02
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	Acenaphthylene	NC	NA	NC	NA		Liver	4.4E-10	NA	--	4.4E-10
			bis(2-Ethylhexyl)phthalate	8.1E-10	NA	3.5E-07	NA	3.5E-07	Liver	1.7E-05	NA	7.2E-03	7.2E-03
			Aldrin	1.3E-09	NA	3.3E-08	NA	3.4E-08	Liver	1.5E-05	NA	3.8E-04	3.9E-04
			alpha-Chlordane	2.3E-11	NA	1.3E-08	NA	1.3E-08	Liver	7.5E-07	NA	4.4E-04	4.4E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	1.1E-08	NA	--	1.1E-08
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	3.3E-07	NA	6.5E-05	6.5E-05
			gamma-Chlordane	2.5E-11	NA	1.4E-08	NA	1.4E-08	Liver	8.3E-07	NA	4.8E-04	4.8E-04

US EPA ARCHIVE DOCUMENT

TABLE F.9.33.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Arsenic	2.3E-08	NA	5.9E-08	NA	8.2E-08	Skin	3.0E-04	NA	7.6E-04	1.1E-03
			Barium	NC	NA	NC	NA		Cardiovascular system	5.9E-06	NA	2.1E-04	2.2E-04
			Chromium	NC	NA	NC	NA		NOAEL	1.5E-05	NA	3.0E-03	3.1E-03
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	1.1E-04	NA	6.7E-03	6.8E-03
			Mercury	NC	NA	NC	NA		Immune system	2.6E-07	NA	9.3E-06	9.6E-06
			Thallium	NC	NA	NC	NA		NOAEL	5.4E-04	NA	1.4E-03	1.9E-03
			Nitrate	NC	NA	NC	NA		Hematological system	9.4E-06	NA	--	9.4E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	1.7E-05	NA	--	1.7E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	6.6E-08	NA	3.8E-04	NA	3.8E-04		--	NA	--	
			CHEMICAL TOTAL	9.2E-08	--	3.8E-04	--	4E-04		1.0E-03	0.0E+00	2.1E-02	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-04					2E-02
	EXPOSURE MEDIUM TOTAL							4E-04					2E-02
SURFACE WATER TOTAL								4E-04					2E-02
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.0E-05	NA	NA	2.0E-05
			Benzo(a)pyrene	7.6E-07	NA	NA	NA	7.6E-07	Kidney	2.0E-05	NA	NA	2.0E-05
			Benzo(b)fluoranthene	9.4E-08	NA	NA	NA	9.4E-08	Kidney	2.5E-05	NA	NA	2.5E-05
			Dibenzo(a,h)anthracene	5.1E-07	NA	NA	NA	5.1E-07	Kidney	1.4E-05	NA	NA	1.4E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	4.2E-04	NA	NA	4.2E-04
			4,4'-DDD	3.8E-07	NA	NA	NA	3.8E-07	Liver	1.9E-02	NA	NA	1.9E-02
			4,4'-DDE	1.6E-06	NA	NA	NA	1.6E-06	Liver	5.6E-02	NA	NA	5.6E-02
			4,4'-DDT	1.2E-07	NA	NA	NA	1.2E-07	Liver	4.3E-03	NA	NA	4.3E-03
			alpha-Chlordane	7.6E-07	NA	NA	NA	7.6E-07	Liver	2.5E-02	NA	NA	2.5E-02
			Aroclor-1254	2.1E-04	NA	NA	NA	2.1E-04	Immune system	3.0E+01	NA	NA	3.0E+01
			beta-BHC	3.5E-07	NA	NA	NA	3.5E-07	Liver / Kidney	3.8E-03	NA	NA	3.8E-03
			Dieldrin	1.4E-05	NA	NA	NA	1.4E-05	Liver	1.0E-01	NA	NA	1.0E-01
			gamma-Chlordane	3.3E-07	NA	NA	NA	3.3E-07	Liver	1.1E-02	NA	NA	1.1E-02
			Heptachlor Epoxide	2.2E-06	NA	NA	NA	2.2E-06	Liver	1.1E-01	NA	NA	1.1E-01
			Technical Chlordane	1.7E-05	NA	NA	NA	1.7E-05	Liver	5.7E-01	NA	NA	5.7E-01
			Cadmium	NC	NA	NA	NA		Kidney	1.6E-02	NA	NA	1.6E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	2.3E-02	NA	NA	2.3E-02
			Mercury	NC	NA	NA	NA		Immune system	7.4E-02	NA	NA	7.4E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.3E-01	NA	NA	2.3E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.9E-03	NA	NA	NA	2.9E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	5.3E-04	NA	NA	NA	5.3E-04		--	NA	NA	
			CHEMICAL TOTAL	3.7E-03	--	--	--	4E-03		3.2E+01	0.0E+00	--	3.2E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-03					3.2E+01
	EXPOSURE MEDIUM TOTAL							4E-03					3.2E+01
WHOLE BODY TOTAL								4E-03					3.2E+01
RECEPTOR TOTAL								4E-03					3.2E+01
			TOTAL RISK ACROSS ALL MEDIA					4E-03	TOTAL HAZARD ACROSS ALL MEDIA				3.2E+01

US EPA ARCHIVE DOCUMENT

TABLE F.9.33.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

TOTAL ADVERSE CLINICAL SIGNS HI =	7.7E-04
TOTAL CARDIOVASCULAR SYSTEM HI =	2.2E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	2.3E-01
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	2.6E-05
TOTAL IMMUNE SYSTEM HI =	3.0E+01
TOTAL KIDNEY HI =	2.1E-02
TOTAL LIVER HI =	9.0E-01
	--
TOTAL NERVOUS SYSTEM HI =	6.5E-05
TOTAL NOAEL HI =	4.3E-02
TOTAL REPRODUCTIVE SYSTEM HI =	4.4E-05
TOTAL SKIN HI =	3.5E-03
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US EPA ARCHIVE DOCUMENT

TABLE F.9.34.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	LYMAN MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	3.2E-07	NA	8.0E-08	4.0E-07
			4-Chloro-3-methylphenol	NC	NA	NC	NA		Reproductive system	1.8E-05	NA	3.5E-06	2.1E-05
			4-Nitrophenol	NC	NA	NC	NA			--	NA	--	
			Acenaphthylene	NC	NA	NC	NA		Liver	4.5E-07	NA	1.1E-07	5.7E-07
			Benzo(a)anthracene	2.2E-08	NA	5.6E-09	NA	2.8E-08	Kidney	5.9E-06	NA	1.5E-06	7.4E-06
			Benzo(a)pyrene	2.3E-07	NA	5.8E-08	NA	2.9E-07	Kidney	6.1E-06	NA	1.6E-06	7.7E-06
			Benzo(b)fluoranthene	3.6E-08	NA	9.1E-09	NA	4.5E-08	Kidney	9.5E-06	NA	2.4E-06	1.2E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	6.4E-06	NA	1.6E-06	8.0E-06
			Benzo(k)fluoranthene	1.7E-09	NA	4.2E-10	NA	2.1E-09	Kidney	4.5E-06	NA	1.1E-06	5.6E-06
			bis(2-Ethylhexyl)phthalate	7.9E-10	NA	1.5E-10	NA	9.5E-10	Liver	1.7E-05	NA	3.2E-06	2.0E-05
			Dibenzo(a,h)anthracene	6.1E-08	NA	1.5E-08	NA	7.7E-08	Kidney	1.6E-06	NA	4.1E-07	2.0E-06
			Indeno(1,2,3-cd)pyrene	2.1E-08	NA	5.4E-09	NA	2.7E-08	Kidney	5.7E-06	NA	1.4E-06	7.2E-06
			N-Nitroso-di-n-propylamine	9.9E-08	NA	1.9E-08	NA	1.2E-07		--	NA	--	
			Pentachlorophenol	1.8E-09	NA	8.9E-10	NA	2.7E-09	Liver / Kidney	3.0E-06	NA	1.4E-06	4.4E-06
			Phenanthrene	NC	NA	NC	NA		Kidney	5.9E-06	NA	1.5E-06	7.4E-06
			alpha-Chlordane	1.2E-10	NA	9.5E-12	NA	1.3E-10	Liver	4.1E-06	NA	3.2E-07	4.4E-06
			Aroclor-1254	1.1E-08	NA	2.9E-09	NA	1.4E-08	Immune system	1.6E-03	NA	4.2E-04	2.0E-03
			Aroclor-1260	5.9E-10	NA	1.6E-10	NA	7.5E-10	Immune system	8.6E-05	NA	2.3E-05	1.1E-04
			Aroclor-1268	2.6E-09	NA	7.1E-10	NA	3.3E-09	Immune system	3.8E-04	NA	1.0E-04	4.9E-04
			Dieldrin	7.7E-10	NA	1.5E-10	NA	9.2E-10	Liver	5.6E-06	NA	1.1E-06	6.7E-06
			Endosulfan II	NC	NA	NC	NA		Kidney	5.3E-08	NA	1.0E-08	6.3E-08
			Endosulfan sulfate	NC	NA	NC	NA		Kidney	3.1E-08	NA	6.0E-09	3.7E-08
			gamma-Chlordane	5.7E-11	NA	4.5E-12	NA	6.2E-11	Liver	1.9E-06	NA	1.5E-07	2.1E-06
			Technical Chlordane	4.9E-09	NA	3.8E-10	NA	5.3E-09	Liver	1.6E-04	NA	1.3E-05	1.8E-04
			Antimony	NC	NA	NC	NA		Adverse clinical signs	4.9E-04	NA		4.9E-04
			Arsenic	1.0E-07	NA	6.1E-09	NA	1.1E-07	Skin	1.4E-03	NA	7.9E-05	1.4E-03
			Cadmium	NC	NA	NC	NA		Kidney	1.3E-04	NA	1.0E-05	1.4E-04
			Chromium	NC	NA	NC	NA		NOAEL	4.2E-03	NA		4.2E-03
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	7.6E-04	NA		7.6E-04
			Mercury	NC	NA	NC	NA		Immune system	1.3E-04	NA		1.3E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	2.2E-04	NA		2.2E-04
			Thallium	NC	NA	NC	NA		NOAEL	4.6E-04	NA		4.6E-04
			Vanadium	NC	NA	NC	NA		NOAEL	3.9E-04	NA		3.9E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.9E-06	NA	1.7E-07	NA	3.1E-06		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	5.4E-08	NA	3.1E-09	NA	5.7E-08		--	NA	--	
			CHEMICAL TOTAL	3.6E-06	--	3.0E-07	--	4E-06		1.0E-02	0.0E+00	6.8E-04	1E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-06					1E-02
	EXPOSURE MEDIUM TOTAL							4E-06					1E-02
SEDIMENT TOTAL								4E-06					1E-02
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	Acenaphthylene	NC	NA	NC	NA		Liver	2.8E-10	NA	--	2.8E-10
			bis(2-Ethylhexyl)phthalate	5.2E-10	NA	1.1E-07	NA	3.1E-07	Liver	1.1E-05	NA	6.4E-03	6.5E-03
			Aldrin	8.5E-10	NA	2.9E-08	NA	3.0E-08	Liver	9.8E-06	NA	3.4E-04	3.5E-04
			alpha-Chlordane	1.5E-11	NA	1.2E-08	NA	1.2E-08	Liver	4.8E-07	NA	3.9E-04	3.9E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	6.8E-09	NA	--	6.8E-09
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	2.1E-07	NA	5.8E-05	5.8E-05
			gamma-Chlordane	1.6E-11	NA	1.3E-08	NA	1.3E-08	Liver	5.3E-07	NA	4.3E-04	4.3E-04
			Arsenic	1.5E-08	NA	5.2E-08	NA	6.7E-08	Skin	2.0E-04	NA	6.8E-04	8.7E-04
			Barium	NC	NA	NC	NA		Cardiovascular system	3.8E-06	NA	1.9E-04	1.9E-04
			Chromium	NC	NA	NC	NA		NOAEL	9.8E-06	NA	2.7E-03	2.7E-03

US EPA ARCHIVE DOCUMENT

TABLE F.9.34.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	6.9E-05	NA	6.0E-03	6.1E-03
			Mercury	NC	NA	NC	NA		Immune system	1.7E-07	NA	8.3E-06	8.5E-06
			Thallium	NC	NA	NC	NA		NOAEL	3.5E-04	NA	1.2E-03	1.6E-03
			Nitrate	NC	NA	NC	NA		Hematological system	6.0E-06	NA	--	6.0E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	1.1E-05	NA	--	1.1E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.3E-08	NA	3.4E-04	NA	3.4E-04		--	NA	--	
			CHEMICAL TOTAL	5.9E-08	--	3.4E-04	--	3E-04		6.7E-04	0.0E+00	1.8E-02	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-04					2E-02
	EXPOSURE MEDIUM TOTAL							3E-04					2E-02
SURFACE WATER TOTAL								3E-04					2E-02
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	5.4E-06	NA	NA	5.4E-06
			Benzo(a)pyrene	7.1E-07	NA	NA	NA	7.1E-07	Kidney	1.9E-05	NA	NA	1.9E-05
			Benzo(b)fluoranthene	8.1E-08	NA	NA	NA	8.1E-08	Kidney	2.2E-05	NA	NA	2.2E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.9E-05	NA	NA	1.9E-05
			Dibenzo(a,h)anthracene	3.9E-07	NA	NA	NA	3.9E-07	Kidney	1.0E-05	NA	NA	1.0E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	3.8E-05	NA	NA	3.8E-05
			4,4'-DDE	4.9E-07	NA	NA	NA	4.9E-07	Liver	1.7E-02	NA	NA	1.7E-02
			alpha-Chlordane	9.7E-08	NA	NA	NA	9.7E-08	Liver	3.2E-03	NA	NA	3.2E-03
			Aroclor-1254	6.0E-05	NA	NA	NA	6.0E-05	Immune system	8.8E+00	NA	NA	8.8E+00
			Aroclor-1268	3.5E-06	NA	NA	NA	3.5E-06	Immune system	5.1E-01	NA	NA	5.1E-01
			Dieldrin	1.4E-06	NA	NA	NA	1.4E-06	Liver	9.9E-03	NA	NA	9.9E-03
			gamma-Chlordane	4.2E-08	NA	NA	NA	4.2E-08	Liver	1.4E-03	NA	NA	1.4E-03
			Technical Chlordane	1.8E-06	NA	NA	NA	1.8E-06	Liver	6.0E-02	NA	NA	6.0E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	7.3E-01	NA	NA	7.3E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.9E+00	NA	NA	1.9E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	6.6E-04	NA	NA	NA	6.6E-04		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	9.4E-05	NA	NA	NA	9.4E-05		--	NA	NA	
			CHEMICAL TOTAL	8.2E-04	--	--	--	8E-04		1.2E+01	0.0E+00	--	1E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						8E-04					1E+01
	EXPOSURE MEDIUM TOTAL							8E-04					1E+01
FILLET TOTAL								8E-04					1E+01
RECEPTOR TOTAL								1E-03					1.2E+01
							TOTAL RISK ACROSS ALL MEDIA	1E-03	TOTAL HAZARD ACROSS ALL MEDIA				1.2E+01

US EPA ARCHIVE DOCUMENT

TABLE F.9.34.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

TOTAL ADVERSE CLINICAL SIGNS HI =	4.9E-04
TOTAL CARDIOVASCULAR SYSTEM HI =	1.9E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	1.9E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	1.7E-05
TOTAL IMMUNE SYSTEM HI =	1.0E+01
TOTAL KIDNEY HI =	3.1E-04
TOTAL LIVER HI =	9.9E-02
	--
TOTAL NERVOUS SYSTEM HI =	5.8E-05
TOTAL NOAEL HI =	1.6E-02
TOTAL REPRODUCTIVE SYSTEM HI =	2.1E-05
TOTAL SKIN HI =	2.3E-03
	--

US EPA ARCHIVE DOCUMENT

TABLE F.9.35.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	LYMAN MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	4.9E-07	NA	3.7E-07	8.6E-07
			4-Chloro-3-methylphenol	NC	NA	NC	NA		Reproductive system	2.8E-05	NA	1.6E-05	4.4E-05
			4-Nitrophenol	NC	NA	NC	NA			--	NA	--	
			Acenaphthylene	NC	NA	NC	NA		Liver	7.1E-07	NA	5.3E-07	1.2E-06
			Benzo(a)anthracene	3.5E-08	NA	2.6E-08	NA	6.0E-08	Kidney	9.2E-06	NA	6.9E-06	1.6E-05
			Benzo(a)pyrene	3.6E-07	NA	2.7E-07	NA	6.3E-07	Kidney	9.6E-06	NA	7.1E-06	1.7E-05
			Benzo(b)fluoranthene	5.6E-08	NA	4.1E-08	NA	9.7E-08	Kidney	1.5E-05	NA	1.1E-05	2.6E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	9.9E-06	NA	7.4E-06	1.7E-05
			Benzo(k)fluoranthene	2.6E-09	NA	1.9E-09	NA	4.5E-09	Kidney	6.9E-06	NA	5.1E-06	1.2E-05
			bis(2-Ethylhexyl)phthalate	1.2E-09	NA	7.1E-10	NA	1.9E-09	Liver	2.6E-05	NA	1.5E-05	4.0E-05
			Dibenzo(a,h)anthracene	9.5E-08	NA	7.1E-08	NA	1.7E-07	Kidney	2.5E-06	NA	1.9E-06	4.4E-06
			Indeno(1,2,3-cd)pyrene	3.3E-08	NA	2.5E-08	NA	5.8E-08	Kidney	8.9E-06	NA	6.6E-06	1.6E-05
			N-Nitroso-di-n-propylamine	1.5E-07	NA	8.8E-08	NA	2.4E-07		--	NA	--	
			Pentachlorophenol	2.8E-09	NA	4.1E-09	NA	6.9E-09	Liver / Kidney	4.6E-06	NA	6.6E-06	1.1E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	9.2E-06	NA	6.9E-06	1.6E-05
			alpha-Chlordane	1.9E-10	NA	4.3E-11	NA	2.3E-10	Liver	6.3E-06	NA	1.4E-06	7.8E-06
			Aroclor-1254	1.7E-08	NA	1.3E-08	NA	3.0E-08	Immune system	2.4E-03	NA	1.9E-03	4.4E-03
			Aroclor-1260	9.2E-10	NA	7.3E-10	NA	1.6E-09	Immune system	1.3E-04	NA	1.1E-04	2.4E-04
			Aroclor-1268	4.1E-09	NA	3.3E-09	NA	7.3E-09	Immune system	5.9E-04	NA	4.8E-04	1.1E-03
			Dieldrin	1.2E-09	NA	6.8E-10	NA	1.9E-09	Liver	8.7E-06	NA	5.0E-06	1.4E-05
			Endosulfan II	NC	NA	NC	NA		Kidney	8.2E-08	NA	4.7E-08	1.3E-07
			Endosulfan sulfate	NC	NA	NC	NA		Kidney	4.8E-08	NA	2.7E-08	7.5E-08
			gamma-Chlordane	8.9E-11	NA	2.0E-11	NA	1.1E-10	Liver	3.0E-06	NA	6.8E-07	3.6E-06
			Technical Chlordane	7.7E-09	NA	1.8E-09	NA	9.4E-09	Liver	2.6E-04	NA	5.8E-05	3.1E-04
			Antimony	NC	NA	NC	NA		Adverse clinical signs	7.7E-04	NA		7.7E-04
			Arsenic	1.6E-07	NA	2.8E-08	NA	1.9E-07	Skin	2.1E-03	NA	3.6E-04	2.5E-03
			Cadmium	NC	NA	NC	NA		Kidney	2.1E-04	NA	4.8E-05	2.6E-04
			Chromium	NC	NA	NC	NA		NOAEL	6.6E-03	NA		6.6E-03
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	1.2E-03	NA		1.2E-03
			Mercury	NC	NA	NC	NA		Immune system	2.0E-04	NA		2.0E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	3.4E-04	NA		3.4E-04
			Thallium	NC	NA	NC	NA		NOAEL	7.2E-04	NA		7.2E-04
			Vanadium	NC	NA	NC	NA		NOAEL	6.0E-04	NA		6.0E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.6E-06	NA	7.9E-07	NA	5.4E-06		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	8.4E-08	NA	1.4E-08	NA	9.8E-08		--	NA	--	
			CHEMICAL TOTAL	5.6E-06	--	1.4E-06	--	7E-06		1.6E-02	0.0E+00	3.1E-03	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-06					2E-02
	EXPOSURE MEDIUM TOTAL							7E-06					2E-02
SEDIMENT TOTAL								7E-06					2E-02
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	Acenaphthylene	NC	NA	NC	NA		Liver	4.4E-10	NA	--	4.4E-10
			bis(2-Ethylhexyl)phthalate	8.1E-10	NA	3.5E-07	NA	3.5E-07	Liver	1.7E-05	NA	7.2E-03	7.2E-03
			Aldrin	1.3E-09	NA	3.3E-08	NA	3.4E-08	Liver	1.5E-05	NA	3.8E-04	3.9E-04
			alpha-Chlordane	2.3E-11	NA	1.3E-08	NA	1.3E-08	Liver	7.5E-07	NA	4.4E-04	4.4E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	1.1E-08	NA	--	1.1E-08
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	3.3E-07	NA	6.5E-05	6.5E-05
			gamma-Chlordane	2.5E-11	NA	1.4E-08	NA	1.4E-08	Liver	8.3E-07	NA	4.8E-04	4.8E-04
			Arsenic	2.3E-08	NA	5.9E-08	NA	8.2E-08	Skin	3.0E-04	NA	7.6E-04	1.1E-03
			Barium	NC	NA	NC	NA		Cardiovascular system	5.9E-06	NA	2.1E-04	2.2E-04

US EPA ARCHIVE DOCUMENT

TABLE F.9.35.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Chromium	NC	NA	NC	NA		NOAEL	1.5E-05	NA	3.0E-03	3.1E-03
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	1.1E-04	NA	6.7E-03	6.8E-03
			Mercury	NC	NA	NC	NA		Immune system	2.6E-07	NA	9.3E-06	9.6E-06
			Thallium	NC	NA	NC	NA		NOAEL	5.4E-04	NA	1.4E-03	1.9E-03
			Nitrate	NC	NA	NC	NA		Hematological system	9.4E-06	NA	--	9.4E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	1.7E-05	NA	--	1.7E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	6.6E-08	NA	3.8E-04	NA	3.8E-04		--	NA	--	
			CHEMICAL TOTAL	9.2E-08	--	3.8E-04	--	4E-04		1.0E-03	0.0E+00	2.1E-02	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-04					2E-02
	EXPOSURE MEDIUM TOTAL							4E-04					2E-02
SURFACE WATER TOTAL								4E-04					2E-02
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.2E-06	NA	NA	4.2E-06
			Benzo(a)pyrene	5.6E-07	NA	NA	NA	5.6E-07	Kidney	1.5E-05	NA	NA	1.5E-05
			Benzo(b)fluoranthene	6.3E-08	NA	NA	NA	6.3E-08	Kidney	1.7E-05	NA	NA	1.7E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.5E-05	NA	NA	1.5E-05
			Dibenzo(a,h)anthracene	3.0E-07	NA	NA	NA	3.0E-07	Kidney	8.0E-06	NA	NA	8.0E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	3.0E-05	NA	NA	3.0E-05
			4,4'-DDD	1.4E-07	NA	NA	NA	1.4E-07	Liver	6.8E-03	NA	NA	6.8E-03
			4,4'-DDE	2.4E-07	NA	NA	NA	2.4E-07	Liver	8.3E-03	NA	NA	8.3E-03
			alpha-Chlordane	7.6E-08	NA	NA	NA	7.6E-08	Liver	2.5E-03	NA	NA	2.5E-03
			Aroclor-1254	4.7E-05	NA	NA	NA	4.7E-05	Immune system	6.9E+00	NA	NA	6.9E+00
			Aroclor-1268	2.8E-06	NA	NA	NA	2.8E-06	Immune system	4.0E-01	NA	NA	4.0E-01
			Dieldrin	1.1E-06	NA	NA	NA	1.1E-06	Liver	7.7E-03	NA	NA	7.7E-03
			gamma-Chlordane	3.3E-08	NA	NA	NA	3.3E-08	Liver	1.1E-03	NA	NA	1.1E-03
			Technical Chlordane	1.4E-06	NA	NA	NA	1.4E-06	Liver	4.6E-02	NA	NA	4.6E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	5.7E-01	NA	NA	5.7E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.5E+00	NA	NA	1.5E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	5.1E-04	NA	NA	NA	5.1E-04		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	7.4E-05	NA	NA	NA	7.4E-05		--	NA	NA	
			CHEMICAL TOTAL	6.4E-04	--	--	--	6E-04		9.4E+00	0.0E+00	--	9E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-04					9E+00
	EXPOSURE MEDIUM TOTAL							6E-04					9E+00
FILLET TOTAL								6E-04					9E+00
RECEPTOR TOTAL								1E-03					9.4E+00
							TOTAL RISK ACROSS ALL MEDIA	1E-03	TOTAL HAZARD ACROSS ALL MEDIA				9.4E+00

US EPA ARCHIVE DOCUMENT

TABLE F.9.35.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

TOTAL ADVERSE CLINICAL SIGNS HI =	7.7E-04
TOTAL CARDIOVASCULAR SYSTEM HI =	2.2E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	1.5E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	2.6E-05
TOTAL IMMUNE SYSTEM HI =	7.8E+00
TOTAL KIDNEY HI =	4.7E-04
TOTAL LIVER HI =	8.2E-02
	--
TOTAL NERVOUS SYSTEM HI =	6.5E-05
TOTAL NOAEL HI =	2.1E-02
TOTAL REPRODUCTIVE SYSTEM HI =	4.4E-05
TOTAL SKIN HI =	3.5E-03
	--

US EPA ARCHIVE DOCUMENT

TABLE F.9.36.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	9.0E-06	NA	NA	9.0E-06
			Benzo(a)pyrene	5.9E-07	NA	NA	NA	5.9E-07	Kidney	3.2E-05	NA	NA	3.2E-05
			Benzo(b)fluoranthene	6.8E-08	NA	NA	NA	6.8E-08	Kidney	3.6E-05	NA	NA	3.6E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	3.2E-05	NA	NA	3.2E-05
			Dibenzo(a,h)anthracene	3.2E-07	NA	NA	NA	3.2E-07	Kidney	1.7E-05	NA	NA	1.7E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	6.3E-05	NA	NA	6.3E-05
			4,4'-DDE	4.1E-07	NA	NA	NA	4.1E-07	Liver	2.8E-02	NA	NA	2.8E-02
			alpha-Chlordane	8.1E-08	NA	NA	NA	8.1E-08	Liver	5.4E-03	NA	NA	5.4E-03
			Aroclor-1254	5.0E-05	NA	NA	NA	5.0E-05	Immune system	1.5E+01	NA	NA	1.5E+01
			Aroclor-1268	2.9E-06	NA	NA	NA	2.9E-06	Immune system	8.6E-01	NA	NA	8.6E-01
			Dieldrin	1.1E-06	NA	NA	NA	1.1E-06	Liver	1.6E-02	NA	NA	1.6E-02
			gamma-Chlordane	3.5E-08	NA	NA	NA	3.5E-08	Liver	2.3E-03	NA	NA	2.3E-03
			Technical Chlordane	1.5E-06	NA	NA	NA	1.5E-06	Liver	9.9E-02	NA	NA	9.9E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.2E+00	NA	NA	1.2E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	3.2E+00	NA	NA	3.2E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	5.5E-04	NA	NA	NA	5.5E-04		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	7.9E-05	NA	NA	NA	7.9E-05		--	NA	NA	
			CHEMICAL TOTAL	6.8E-04	--	--	--	7E-04		2.0E+01	0.0E+00	--	2E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-04					2E+01
	EXPOSURE MEDIUM TOTAL							7E-04					2E+01
FILLET TOTAL								7E-04					2E+01
RECEPTOR TOTAL								7E-04					2.0E+01
			TOTAL RISK ACROSS ALL MEDIA					7E-04	TOTAL HAZARD ACROSS ALL MEDIA				2.0E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL DEVELOPMENTAL TOXICITY HI =	3.2E+00
TOTAL IMMUNE SYSTEM HI =	1.7E+01
TOTAL KIDNEY HI =	1.8E-04
TOTAL LIVER HI =	1.5E-01

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.9.37.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	LYMAN MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	3.2E-07	NA	8.0E-08	4.0E-07
			4-Chloro-3-methylphenol	NC	NA	NC	NA		Reproductive system	1.8E-05	NA	3.5E-06	2.1E-05
			4-Nitrophenol	NC	NA	NC	NA			--	NA	--	
			Acenaphthylene	NC	NA	NC	NA		Liver	4.5E-07	NA	1.1E-07	5.7E-07
			Benzo(a)anthracene	2.2E-08	NA	5.6E-09	NA	2.8E-08	Kidney	5.9E-06	NA	1.5E-06	7.4E-06
			Benzo(a)pyrene	2.3E-07	NA	5.8E-08	NA	2.9E-07	Kidney	6.1E-06	NA	1.6E-06	7.7E-06
			Benzo(b)fluoranthene	3.6E-08	NA	9.1E-09	NA	4.5E-08	Kidney	9.5E-06	NA	2.4E-06	1.2E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	6.4E-06	NA	1.6E-06	8.0E-06
			Benzo(k)fluoranthene	1.7E-09	NA	4.2E-10	NA	2.1E-09	Kidney	4.5E-06	NA	1.1E-06	5.6E-06
			bis(2-Ethylhexyl)phthalate	7.9E-10	NA	1.5E-10	NA	9.5E-10	Liver	1.7E-05	NA	3.2E-06	2.0E-05
			Dibenzo(a,h)anthracene	6.1E-08	NA	1.5E-08	NA	7.7E-08	Kidney	1.6E-06	NA	4.1E-07	2.0E-06
			Indeno(1,2,3-cd)pyrene	2.1E-08	NA	5.4E-09	NA	2.7E-08	Kidney	5.7E-06	NA	1.4E-06	7.2E-06
			N-Nitroso-di-n-propylamine	9.9E-08	NA	1.9E-08	NA	1.2E-07		--	NA	--	
			Pentachlorophenol	1.8E-09	NA	8.9E-10	NA	2.7E-09	Liver / Kidney	3.0E-06	NA	1.4E-06	4.4E-06
			Phenanthrene	NC	NA	NC	NA		Kidney	5.9E-06	NA	1.5E-06	7.4E-06
			alpha-Chlordane	1.2E-10	NA	9.5E-12	NA	1.3E-10	Liver	4.1E-06	NA	3.2E-07	4.4E-06
			Aroclor-1254	1.1E-08	NA	2.9E-09	NA	1.4E-08	Immune system	1.6E-03	NA	4.2E-04	2.0E-03
			Aroclor-1260	5.9E-10	NA	1.6E-10	NA	7.5E-10	Immune system	8.6E-05	NA	2.3E-05	1.1E-04
			Aroclor-1268	2.6E-09	NA	7.1E-10	NA	3.3E-09	Immune system	3.8E-04	NA	1.0E-04	4.9E-04
			Dieldrin	7.7E-10	NA	1.5E-10	NA	9.2E-10	Liver	5.6E-06	NA	1.1E-06	6.7E-06
			Endosulfan II	NC	NA	NC	NA		Kidney	5.3E-08	NA	1.0E-08	6.3E-08
			Endosulfan sulfate	NC	NA	NC	NA		Kidney	3.1E-08	NA	6.0E-09	3.7E-08
			gamma-Chlordane	5.7E-11	NA	4.5E-12	NA	6.2E-11	Liver	1.9E-06	NA	1.5E-07	2.1E-06
			Technical Chlordane	4.9E-09	NA	3.8E-10	NA	5.3E-09	Liver	1.6E-04	NA	1.3E-05	1.8E-04
			Antimony	NC	NA	NC	NA		Adverse clinical signs	4.9E-04	NA		4.9E-04
			Arsenic	1.0E-07	NA	6.1E-09	NA	1.1E-07	Skin	1.4E-03	NA	7.9E-05	1.4E-03
			Cadmium	NC	NA	NC	NA		Kidney	1.3E-04	NA	1.0E-05	1.4E-04
			Chromium	NC	NA	NC	NA		NOAEL	4.2E-03	NA		4.2E-03
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	7.6E-04	NA		7.6E-04
			Mercury	NC	NA	NC	NA		Immune system	1.3E-04	NA		1.3E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	2.2E-04	NA		2.2E-04
			Thallium	NC	NA	NC	NA		NOAEL	4.6E-04	NA		4.6E-04
			Vanadium	NC	NA	NC	NA		NOAEL	3.9E-04	NA		3.9E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.9E-06	NA	1.7E-07	NA	3.1E-06		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	5.4E-08	NA	3.1E-09	NA	5.7E-08		--	NA	--	
			CHEMICAL TOTAL	3.6E-06	--	3.0E-07	--	4E-06		1.0E-02	0.0E+00	6.8E-04	1E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-06					1E-02
	EXPOSURE MEDIUM TOTAL							4E-06					1E-02
SEDIMENT TOTAL								4E-06					1E-02
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	Acenaphthylene	NC	NA	NC	NA		Liver	2.8E-10	NA	--	2.8E-10
			bis(2-Ethylhexyl)phthalate	5.2E-10	NA	3.1E-07	NA	3.1E-07	Liver	1.1E-05	NA	6.4E-03	6.5E-03
			Aldrin	8.5E-10	NA	2.9E-08	NA	3.0E-08	Liver	9.8E-06	NA	3.4E-04	3.5E-04
			alpha-Chlordane	1.5E-11	NA	1.2E-08	NA	1.2E-08	Liver	4.8E-07	NA	3.9E-04	3.9E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	6.8E-09	NA	--	6.8E-09
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	2.1E-07	NA	5.8E-05	5.8E-05
			gamma-Chlordane	1.6E-11	NA	1.3E-08	NA	1.3E-08	Liver	5.3E-07	NA	4.3E-04	4.3E-04
			Arsenic	1.5E-08	NA	5.2E-08	NA	6.7E-08	Skin	2.0E-04	NA	6.8E-04	8.7E-04
			Barium	NC	NA	NC	NA		Cardiovascular system	3.8E-06	NA	1.9E-04	1.9E-04
			Chromium	NC	NA	NC	NA		NOAEL	9.8E-06	NA	2.7E-03	2.7E-03

US EPA ARCHIVE DOCUMENT

TABLE F.9.37.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	6.9E-05	NA	6.0E-03	6.1E-03
			Mercury	NC	NA	NC	NA		Immune system	1.7E-07	NA	8.3E-06	8.5E-06
			Thallium	NC	NA	NC	NA		NOAEL	3.5E-04	NA	1.2E-03	1.6E-03
			Nitrate	NC	NA	NC	NA		Hematological system	6.0E-06	NA	--	6.0E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	1.1E-05	NA	--	1.1E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.3E-08	NA	3.4E-04	NA	3.4E-04		--	NA	--	
			CHEMICAL TOTAL	5.9E-08	--	3.4E-04	--	3E-04		6.7E-04	0.0E+00	1.8E-02	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-04					2E-02
	EXPOSURE MEDIUM TOTAL							3E-04					2E-02
SURFACE WATER TOTAL								3E-04					2E-02
LARGEMOUTH BASS	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	6.2E-06	NA	NA	6.2E-06
			Benzo(a)pyrene	7.9E-07	NA	NA	NA	7.9E-07	Kidney	2.1E-05	NA	NA	2.1E-05
			Benzo(b)fluoranthene	1.0E-07	NA	NA	NA	1.0E-07	Kidney	2.7E-05	NA	NA	2.7E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	2.7E-05	NA	NA	2.7E-05
			Dibenzo(a,h)anthrucene	3.9E-07	NA	NA	NA	3.9E-07	Kidney	1.0E-05	NA	NA	1.0E-05
			Indeno(1,2,3-cd)pyrene	1.0E-07	NA	NA	NA	1.0E-07	Kidney	2.7E-05	NA	NA	2.7E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.1E-04	NA	NA	1.1E-04
			4,4'-DDE	2.8E-06	NA	NA	NA	2.8E-06	Liver	9.5E-02	NA	NA	9.5E-02
			alpha-Chlordane	3.1E-07	NA	NA	NA	3.1E-07	Liver	1.0E-02	NA	NA	1.0E-02
			Aroclor-1254	3.7E-04	NA	NA	NA	3.7E-04	Immune system	5.4E+01	NA	NA	5.4E+01
			Aroclor-1268	7.2E-06	NA	NA	NA	7.2E-06	Immune system	1.1E+00	NA	NA	1.1E+00
			Dieldrin	3.6E-06	NA	NA	NA	3.6E-06	Liver	2.6E-02	NA	NA	2.6E-02
			gamma-Chlordane	1.2E-07	NA	NA	NA	1.2E-07	Liver	4.1E-03	NA	NA	4.1E-03
			Technical Chlordane	5.6E-06	NA	NA	NA	5.6E-06	Liver	1.9E-01	NA	NA	1.9E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	3.8E-01	NA	NA	3.8E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.5E+00	NA	NA	1.5E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.0E-03	NA	NA	NA	4.0E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	4.0E-04	NA	NA	NA	4.0E-04		--	NA	NA	
			CHEMICAL TOTAL	4.8E-03	--	--	--	5E-03		5.8E+01	0.0E+00	--	6E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-03					6E+01
	EXPOSURE MEDIUM TOTAL							5E-03					6E+01
WHOLE BODY TOTAL								5E-03					6E+01
RECEPTOR TOTAL								5E-03					5.8E+01
							TOTAL RISK ACROSS ALL MEDIA	5E-03	TOTAL HAZARD ACROSS ALL MEDIA				5.8E+01

US EPA ARCHIVE DOCUMENT

TABLE F.9.37.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

TOTAL ADVERSE CLINICAL SIGNS HI =	4.9E-04
TOTAL CARDIOVASCULAR SYSTEM HI =	1.9E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	1.5E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	1.7E-05
TOTAL IMMUNE SYSTEM HI =	5.6E+01
TOTAL KIDNEY HI =	4.3E-04
TOTAL LIVER HI =	3.3E-01
	--
TOTAL NERVOUS SYSTEM HI =	5.8E-05
TOTAL NOAEL HI =	1.6E-02
TOTAL REPRODUCTIVE SYSTEM HI =	2.1E-05
TOTAL SKIN HI =	2.3E-03
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US EPA ARCHIVE DOCUMENT

TABLE F.9.38.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	LYMAN MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	4.9E-07	NA	3.7E-07	8.6E-07
			4-Chloro-3-methylphenol	NC	NA	NC	NA		Reproductive system	2.8E-05	NA	1.6E-05	4.4E-05
			4-Nitrophenol	NC	NA	NC	NA			--	NA	--	
			Acenaphthylene	NC	NA	NC	NA		Liver	7.1E-07	NA	5.3E-07	1.2E-06
			Benzo(a)anthracene	3.5E-08	NA	2.6E-08	NA	6.0E-08	Kidney	9.2E-06	NA	6.9E-06	1.6E-05
			Benzo(a)pyrene	3.6E-07	NA	2.7E-07	NA	6.3E-07	Kidney	9.6E-06	NA	7.1E-06	1.7E-05
			Benzo(b)fluoranthene	5.6E-08	NA	4.1E-08	NA	9.7E-08	Kidney	1.5E-05	NA	1.1E-05	2.6E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	9.9E-06	NA	7.4E-06	1.7E-05
			Benzo(k)fluoranthene	2.6E-09	NA	1.9E-09	NA	4.5E-09	Kidney	6.9E-06	NA	5.1E-06	1.2E-05
			bis(2-Ethylhexyl)phthalate	1.2E-09	NA	7.1E-10	NA	1.9E-09	Liver	2.6E-05	NA	1.5E-05	4.0E-05
			Dibenzo(a,h)anthracene	9.5E-08	NA	7.1E-08	NA	1.7E-07	Kidney	2.5E-06	NA	1.9E-06	4.4E-06
			Indeno(1,2,3-cd)pyrene	3.3E-08	NA	2.5E-08	NA	5.8E-08	Kidney	8.9E-06	NA	6.6E-06	1.6E-05
			N-Nitroso-di-n-propylamine	1.5E-07	NA	8.8E-08	NA	2.4E-07		--	NA	--	
			Pentachlorophenol	2.8E-09	NA	4.1E-09	NA	6.9E-09	Liver / Kidney	4.6E-06	NA	6.6E-06	1.1E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	9.2E-06	NA	6.9E-06	1.6E-05
			alpha-Chlordane	1.9E-10	NA	4.3E-11	NA	2.3E-10	Liver	6.3E-06	NA	1.4E-06	7.8E-06
			Aroclor-1254	1.7E-08	NA	1.3E-08	NA	3.0E-08	Immune system	2.4E-03	NA	1.9E-03	4.4E-03
			Aroclor-1260	9.2E-10	NA	7.3E-10	NA	1.6E-09	Immune system	1.3E-04	NA	1.1E-04	2.4E-04
			Aroclor-1268	4.1E-09	NA	3.3E-09	NA	7.3E-09	Immune system	5.9E-04	NA	4.8E-04	1.1E-03
			Dieldrin	1.2E-09	NA	6.8E-10	NA	1.9E-09	Liver	8.7E-06	NA	5.0E-06	1.4E-05
			Endosulfan II	NC	NA	NC	NA		Kidney	8.2E-08	NA	4.7E-08	1.3E-07
			Endosulfan sulfate	NC	NA	NC	NA		Kidney	4.8E-08	NA	2.7E-08	7.5E-08
			gamma-Chlordane	8.9E-11	NA	2.0E-11	NA	1.1E-10	Liver	3.0E-06	NA	6.8E-07	3.6E-06
			Technical Chlordane	7.7E-09	NA	1.8E-09	NA	9.4E-09	Liver	2.6E-04	NA	5.8E-05	3.1E-04
			Antimony	NC	NA	NC	NA		Adverse clinical signs	7.7E-04	NA		7.7E-04
			Arsenic	1.6E-07	NA	2.8E-08	NA	1.9E-07	Skin	2.1E-03	NA	3.6E-04	2.5E-03
			Cadmium	NC	NA	NC	NA		Kidney	2.1E-04	NA	4.8E-05	2.6E-04
			Chromium	NC	NA	NC	NA		NOAEL	6.6E-03	NA		6.6E-03
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	1.2E-03	NA		1.2E-03
			Mercury	NC	NA	NC	NA		Immune system	2.0E-04	NA		2.0E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	3.4E-04	NA		3.4E-04
			Thallium	NC	NA	NC	NA		NOAEL	7.2E-04	NA		7.2E-04
			Vanadium	NC	NA	NC	NA		NOAEL	6.0E-04	NA		6.0E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.6E-06	NA	7.9E-07	NA	5.4E-06		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	8.4E-08	NA	1.4E-08	NA	9.8E-08		--	NA	--	
			CHEMICAL TOTAL	5.6E-06	--	1.4E-06	--	7E-06		1.6E-02	0.0E+00	3.1E-03	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-06					2E-02
	EXPOSURE MEDIUM TOTAL							7E-06					2E-02
SEDIMENT TOTAL								7E-06					2E-02
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	Acenaphthylene	NC	NA	NC	NA		Liver	4.4E-10	NA	--	4.4E-10
			bis(2-Ethylhexyl)phthalate	8.1E-10	NA	3.5E-07	NA	3.5E-07	Liver	1.7E-05	NA	7.2E-03	7.2E-03
			Aldrin	1.3E-09	NA	3.3E-08	NA	3.4E-08	Liver	1.5E-05	NA	3.8E-04	3.9E-04
			alpha-Chlordane	2.3E-11	NA	1.3E-08	NA	1.3E-08	Liver	7.5E-07	NA	4.4E-04	4.4E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	1.1E-08	NA	--	1.1E-08
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	3.3E-07	NA	6.5E-05	6.5E-05
			gamma-Chlordane	2.5E-11	NA	1.4E-08	NA	1.4E-08	Liver	8.3E-07	NA	4.8E-04	4.8E-04
			Arsenic	2.3E-08	NA	5.9E-09	NA	8.2E-08	Skin	3.0E-04	NA	7.6E-04	1.1E-03
			Barium	NC	NA	NC	NA		Cardiovascular system	5.9E-06	NA	2.1E-04	2.2E-04

US EPA ARCHIVE DOCUMENT

TABLE F.9.38.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Chromium	NC	NA	NC	NA		NOAEL	1.5E-05	NA	3.0E-03	3.1E-03
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	1.1E-04	NA	6.7E-03	6.8E-03
			Mercury	NC	NA	NC	NA		Immune system	2.6E-07	NA	9.3E-06	9.6E-06
			Thallium	NC	NA	NC	NA		NOAEL	5.4E-04	NA	1.4E-03	1.9E-03
			Nitrate	NC	NA	NC	NA		Hematological system	9.4E-06	NA	--	9.4E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	1.7E-05	NA	--	1.7E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	*6.6E-08*	*NA*	*3.8E-04*	*NA*	3.8E-04		--	NA	--	
			CHEMICAL TOTAL	9.2E-08	--	3.8E-04	--	4E-04		1.0E-03	0.0E+00	2.1E-02	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-04					2E-02
	EXPOSURE MEDIUM TOTAL							4E-04					2E-02
SURFACE WATER TOTAL								4E-04					2E-02
LARGEMOUTH BASS	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.9E-06	NA	NA	4.9E-06
			Benzo(a)pyrene	6.2E-07	NA	NA	NA	6.2E-07	Kidney	1.6E-05	NA	NA	1.6E-05
			Benzo(b)fluoranthene	7.9E-08	NA	NA	NA	7.9E-08	Kidney	2.1E-05	NA	NA	2.1E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	2.1E-05	NA	NA	2.1E-05
			Dibenzo(a,h)anthracene	*3.0E-07*	*NA*	*NA*	*NA*	*3.0E-07*	*Kidney*	*8.1E-06*	*NA*	*NA*	*8.1E-06*
			Indeno(1,2,3-cd)pyrene	7.9E-08	NA	NA	NA	7.9E-08	Kidney	2.1E-05	NA	NA	2.1E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	9.0E-05	NA	NA	9.0E-05
			4,4'-DDE	2.2E-06	NA	NA	NA	2.2E-06	Liver	7.4E-02	NA	NA	7.4E-02
			alpha-Chlordane	2.4E-07	NA	NA	NA	2.4E-07	Liver	8.1E-03	NA	NA	8.1E-03
			Aroclor-1254	2.9E-04	NA	NA	NA	2.9E-04	Immune system	4.3E+01	NA	NA	4.3E+01
			Aroclor-1268	5.6E-06	NA	NA	NA	5.6E-06	Immune system	8.2E-01	NA	NA	8.2E-01
			Dieldrin	2.8E-06	NA	NA	NA	2.8E-06	Liver	2.0E-02	NA	NA	2.0E-02
			gamma-Chlordane	9.5E-08	NA	NA	NA	9.5E-08	Liver	3.2E-03	NA	NA	3.2E-03
			Technical Chlordane	4.4E-06	NA	NA	NA	4.4E-06	Liver	1.5E-01	NA	NA	1.5E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.9E-01	NA	NA	2.9E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.2E+00	NA	NA	1.2E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.1E-03	NA	NA	NA	3.1E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	3.1E-04	NA	NA	NA	3.1E-04		--	NA	NA	
			CHEMICAL TOTAL	3.7E-03	--	--	--	4E-03		4.5E+01	0.0E+00	--	5E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-03					5E+01
	EXPOSURE MEDIUM TOTAL							4E-03					5E+01
WHOLE BODY TOTAL								4E-03					5E+01
RECEPTOR TOTAL								4E-03					4.5E+01
							TOTAL RISK ACROSS ALL MEDIA	4E-03	TOTAL HAZARD ACROSS ALL MEDIA				4.5E+01

US EPA ARCHIVE DOCUMENT

TABLE F.9.38.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

TOTAL ADVERSE CLINICAL SIGNS HI =	7.7E-04
TOTAL CARDIOVASCULAR SYSTEM HI =	2.2E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	1.2E+00
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	--
TOTAL HEMATOLOGICAL SYSTEM HI =	2.6E-05
TOTAL IMMUNE SYSTEM HI =	4.4E+01
TOTAL KIDNEY HI =	5.7E-04
TOTAL LIVER HI =	2.6E-01
	--
TOTAL NERVOUS SYSTEM HI =	6.5E-05
TOTAL NOAEL HI =	2.1E-02
TOTAL REPRODUCTIVE SYSTEM HI =	4.4E-05
TOTAL SKIN HI =	3.5E-03
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US EPA ARCHIVE DOCUMENT

TABLE F.9.39.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

				CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.0E-05	NA	NA	1.0E-05
			Benzo(a)pyrene	6.6E-07	NA	NA	NA	6.6E-07	Kidney	3.5E-05	NA	NA	3.5E-05
			Benzo(b)fluoranthene	8.4E-08	NA	NA	NA	8.4E-08	Kidney	4.5E-05	NA	NA	4.5E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	4.5E-05	NA	NA	4.5E-05
			Dibenzo(a,h)anthracene	3.2E-07	NA	NA	NA	3.2E-07	Kidney	1.7E-05	NA	NA	1.7E-05
			Indeno(1,2,3-cd)pyrene	8.4E-08	NA	NA	NA	8.4E-08	Kidney	4.5E-05	NA	NA	4.5E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.9E-04	NA	NA	1.9E-04
			4,4'-DDE	2.3E-06	NA	NA	NA	2.3E-06	Liver	1.6E-01	NA	NA	1.6E-01
			alpha-Chlordane	2.6E-07	NA	NA	NA	2.6E-07	Liver	1.7E-02	NA	NA	1.7E-02
			Aroclor-1254	3.1E-04	NA	NA	NA	3.1E-04	Immune system	9.1E+01	NA	NA	9.1E+01
			Aroclor-1268	6.0E-06	NA	NA	NA	6.0E-06	Immune system	1.7E+00	NA	NA	1.7E+00
			Dieldrin	3.0E-06	NA	NA	NA	3.0E-06	Liver	4.3E-02	NA	NA	4.3E-02
			gamma-Chlordane	1.0E-07	NA	NA	NA	1.0E-07	Liver	6.7E-03	NA	NA	6.7E-03
			Technical Chlordane	4.7E-06	NA	NA	NA	4.7E-06	Liver	3.1E-01	NA	NA	3.1E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	6.2E-01	NA	NA	6.2E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.5E+00	NA	NA	2.5E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.3E-03	NA	NA	NA	3.3E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	3.3E-04	NA	NA	NA	3.3E-04		--	NA	NA	
			CHEMICAL TOTAL	4.0E-03	--	--	--	4E-03		9.6E+01	0.0E+00	--	1E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-03					1E+02
	EXPOSURE MEDIUM TOTAL							4E-03					1E+02
WHOLE BODY TOTAL								4E-03					1E+02
RECEPTOR TOTAL								4E-03					9.6E+01
			TOTAL RISK ACROSS ALL MEDIA					4E-03	TOTAL HAZARD ACROSS ALL MEDIA				9.6E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	2.5E+00
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	--
	--
TOTAL IMMUNE SYSTEM HI =	9.3E+01
TOTAL KIDNEY HI =	3.8E-04
TOTAL LIVER HI =	5.4E-01
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	--
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	--
	--
	--

Prepared by: RAR
Checked by: KJA

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TABLE F.9.40.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	LYMAN MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	3.2E-07	NA	8.0E-08	4.0E-07
			4-Chloro-3-methylphenol	NC	NA	NC	NA		Reproductive system	1.8E-05	NA	3.5E-06	2.1E-05
			4-Nitrophenol	NC	NA	NC	NA			--	NA	--	
			Acenaphthylene	NC	NA	NC	NA		Liver	4.5E-07	NA	1.1E-07	5.7E-07
			Benzo(a)anthracene	2.2E-08	NA	5.6E-09	NA	2.8E-08	Kidney	5.9E-06	NA	1.5E-06	7.4E-06
			Benzo(a)pyrene	2.3E-07	NA	5.8E-08	NA	2.9E-07	Kidney	6.1E-06	NA	1.6E-06	7.7E-06
			Benzo(b)fluoranthene	3.6E-08	NA	9.1E-09	NA	4.5E-08	Kidney	9.5E-06	NA	2.4E-06	1.2E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	6.4E-06	NA	1.6E-06	8.0E-06
			Benzo(k)fluoranthene	1.7E-09	NA	4.2E-10	NA	2.1E-09	Kidney	4.5E-06	NA	1.1E-06	5.6E-06
			bis(2-Ethylhexyl)phthalate	7.9E-10	NA	1.5E-10	NA	9.5E-10	Liver	1.7E-05	NA	3.2E-06	2.0E-05
			Dibenzo(a,h)anthracene	6.1E-08	NA	1.5E-08	NA	7.7E-08	Kidney	1.6E-06	NA	4.1E-07	2.0E-06
			Indeno(1,2,3-cd)pyrene	2.1E-08	NA	5.4E-09	NA	2.7E-08	Kidney	5.7E-06	NA	1.4E-06	7.2E-06
			N-Nitroso-di-n-propylamine	9.9E-08	NA	1.9E-08	NA	1.2E-07		--	NA	--	
			Pentachlorophenol	1.8E-09	NA	8.9E-10	NA	2.7E-09	Liver / Kidney	3.0E-06	NA	1.4E-06	4.4E-06
			Phenanthrene	NC	NA	NC	NA		Kidney	5.9E-06	NA	1.5E-06	7.4E-06
			alpha-Chlordane	1.2E-10	NA	9.5E-12	NA	1.3E-10	Liver	4.1E-06	NA	3.2E-07	4.4E-06
			Aroclor-1254	1.1E-08	NA	2.9E-09	NA	1.4E-08	Immune system	1.6E-03	NA	4.2E-04	2.0E-03
			Aroclor-1260	5.9E-10	NA	1.6E-10	NA	7.5E-10	Immune system	8.6E-05	NA	2.3E-05	1.1E-04
			Aroclor-1268	2.6E-09	NA	7.1E-10	NA	3.3E-09	Immune system	3.8E-04	NA	1.0E-04	4.9E-04
			Dieldrin	7.7E-10	NA	1.5E-10	NA	9.2E-10	Liver	5.6E-06	NA	1.1E-06	6.7E-06
			Endosulfan II	NC	NA	NC	NA		Kidney	5.3E-08	NA	1.0E-08	6.3E-08
			Endosulfan sulfate	NC	NA	NC	NA		Kidney	3.1E-08	NA	6.0E-09	3.7E-08
			gamma-Chlordane	5.7E-11	NA	4.5E-12	NA	6.2E-11	Liver	1.9E-06	NA	1.5E-07	2.1E-06
			Technical Chlordane	4.9E-09	NA	3.8E-10	NA	5.3E-09	Liver	1.6E-04	NA	1.3E-05	1.8E-04
			Antimony	NC	NA	NC	NA		Adverse clinical signs	4.9E-04	NA		4.9E-04
			Arsenic	1.0E-07	NA	6.1E-09	NA	1.1E-07	Skin	1.4E-03	NA	7.9E-05	1.4E-03
			Cadmium	NC	NA	NC	NA		Kidney	1.3E-04	NA	1.0E-05	1.4E-04
			Chromium	NC	NA	NC	NA		NOAEL	4.2E-03	NA		4.2E-03
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	7.6E-04	NA		7.6E-04
			Mercury	NC	NA	NC	NA		Immune system	1.3E-04	NA		1.3E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	2.2E-04	NA		2.2E-04
			Thallium	NC	NA	NC	NA		NOAEL	4.6E-04	NA		4.6E-04
			Vanadium	NC	NA	NC	NA		NOAEL	3.9E-04	NA		3.9E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.9E-06	NA	1.7E-07	NA	3.1E-06		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	5.4E-08	NA	3.1E-09	NA	5.7E-08		--	NA	--	
			CHEMICAL TOTAL	3.6E-06	--	3.0E-07	--	4E-06		1.0E-02	0.0E+00	6.8E-04	1E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-06					1E-02
	EXPOSURE MEDIUM TOTAL							4E-06					1E-02
SEDIMENT TOTAL								4E-06					1E-02
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	Acenaphthylene	NC	NA	NC	NA		Liver	2.8E-10	NA	--	2.8E-10
			bis(2-Ethylhexyl)phthalate	5.2E-10	NA	3.1E-07	NA	3.1E-07	Liver	1.1E-05	NA	6.4E-03	6.5E-03
			Aldrin	8.5E-10	NA	2.9E-08	NA	3.0E-08	Liver	9.8E-06	NA	3.4E-04	3.5E-04
			alpha-Chlordane	1.5E-11	NA	1.2E-08	NA	1.2E-08	Liver	4.8E-07	NA	3.9E-04	3.9E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	6.8E-09	NA	--	6.8E-09
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	2.1E-07	NA	5.8E-05	5.8E-05
			gamma-Chlordane	1.6E-11	NA	1.3E-08	NA	1.3E-08	Liver	5.3E-07	NA	4.3E-04	4.3E-04
			Arsenic	1.5E-08	NA	5.2E-08	NA	6.7E-08	Skin	2.0E-04	NA	6.8E-04	8.7E-04
			Barium	NC	NA	NC	NA		Cardiovascular system	3.8E-06	NA	1.9E-04	1.9E-04
			Chromium	NC	NA	NC	NA		NOAEL	9.8E-06	NA	2.7E-03	2.7E-03

US EPA ARCHIVE DOCUMENT

TABLE F.9.40.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	6.9E-05	NA	6.0E-03	6.1E-03
			Mercury	NC	NA	NC	NA		Immune system	1.7E-07	NA	8.3E-06	8.5E-06
			Thallium	NC	NA	NC	NA		NOAEL	3.5E-04	NA	1.2E-03	1.6E-03
			Nitrate	NC	NA	NC	NA		Hematological system	6.0E-06	NA	--	6.0E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	1.1E-05	NA	--	1.1E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.3E-08	NA	3.4E-04	NA	3.4E-04		--	NA	--	
			CHEMICAL TOTAL	5.9E-08	--	3.4E-04	--	3E-04		6.7E-04	0.0E+00	1.8E-02	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-04					2E-02
	EXPOSURE MEDIUM TOTAL							3E-04					2E-02
SURFACE WATER TOTAL								3E-04					2E-02
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.8E-05	NA	NA	4.8E-05
			Benzo(a)anthracene	9.6E-07	NA	NA	NA	9.6E-07	Kidney	2.6E-04	NA	NA	2.6E-04
			Benzo(a)pyrene	5.0E-06	NA	NA	NA	5.0E-06	Kidney	1.3E-04	NA	NA	1.3E-04
			Benzo(b)fluoranthene	6.8E-07	NA	NA	NA	6.8E-07	Kidney	1.8E-04	NA	NA	1.8E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.0E-04	NA	NA	1.0E-04
			Dibenzo(a,h)anthracene	2.7E-06	NA	NA	NA	2.7E-06	Kidney	7.3E-05	NA	NA	7.3E-05
			Indeno(1,2,3-cd)pyrene	4.4E-07	NA	NA	NA	4.4E-07	Kidney	1.2E-04	NA	NA	1.2E-04
			Phenanthrene	NC	NA	NA	NA		Kidney	5.7E-04	NA	NA	5.7E-04
			4,4'-DDD	2.1E-06	NA	NA	NA	2.1E-06	Liver	1.0E-01	NA	NA	1.0E-01
			4,4'-DDE	1.0E-05	NA	NA	NA	1.0E-05	Liver	3.5E-01	NA	NA	3.5E-01
			4,4'-DDT	2.5E-07	NA	NA	NA	2.5E-07	Liver	8.4E-03	NA	NA	8.4E-03
			alpha-Chlordane	2.3E-06	NA	NA	NA	2.3E-06	Liver	7.6E-02	NA	NA	7.6E-02
			Aroclor-1254	1.4E-03	NA	NA	NA	1.4E-03	Immune system	2.1E+02	NA	NA	2.1E+02
			Aroclor-1268	1.2E-05	NA	NA	NA	1.2E-05	Immune system	1.8E+00	NA	NA	1.8E+00
			Dieldrin	1.9E-05	NA	NA	NA	1.9E-05	Liver	1.4E-01	NA	NA	1.4E-01
			gamma-Chlordane	1.4E-06	NA	NA	NA	1.4E-06	Liver	4.7E-02	NA	NA	4.7E-02
			Heptachlor Epoxide	2.2E-06	NA	NA	NA	2.2E-06	Liver	1.1E-01	NA	NA	1.1E-01
			Technical Chlordane	1.3E-04	NA	NA	NA	1.3E-04	Liver	4.2E+00	NA	NA	4.2E+00
			Arsenic	5.8E-06	NA	NA	NA	5.8E-06	Skin	7.5E-02	NA	NA	7.5E-02
			Chromium	NC	NA	NA	NA		NOAEL	1.0E-01	NA	NA	1.0E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	3.2E-01	NA	NA	3.2E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	8.8E-01	NA	NA	8.8E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.9E-02	NA	NA	NA	1.9E-02	--	--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	8.4E-04	NA	NA	NA	8.4E-04		--	NA	NA	
			CHEMICAL TOTAL	2.1E-02	--	--	--	2E-02		2.2E+02	0.0E+00	--	2.2E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-02					2.2E+02
	EXPOSURE MEDIUM TOTAL							2E-02					2.2E+02
WHOLE BODY TOTAL								2E-02					2.2E+02
RECEPTOR TOTAL								2E-02					2.2E+02
							TOTAL RISK ACROSS ALL MEDIA	2E-02	TOTAL HAZARD ACROSS ALL MEDIA				2.2E+02

US EPA ARCHIVE DOCUMENT

TABLE F.9.40.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL

NOTES
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

TOTAL ADVERSE CLINICAL SIGNS HI =	4.9E-04
TOTAL CARDIOVASCULAR SYSTEM HI =	1.9E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	8.8E-01
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	1.7E-05
TOTAL IMMUNE SYSTEM HI =	2.1E+02
TOTAL KIDNEY HI =	1.6E-03
TOTAL LIVER HI =	5.0E+00
	--
TOTAL NERVOUS SYSTEM HI =	5.8E-05
TOTAL NOAEL HI =	1.2E-01
TOTAL REPRODUCTIVE SYSTEM HI =	2.1E-05
TOTAL SKIN HI =	7.7E-02
	--

US EPA ARCHIVE DOCUMENT

TABLE F.9.41.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	LYMAN MILL POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	4.9E-07	NA	3.7E-07	8.6E-07
			4-Chloro-3-methylphenol	NC	NA	NC	NA		Reproductive system	2.8E-05	NA	1.6E-05	4.4E-05
			4-Nitrophenol	NC	NA	NC	NA			--	NA	--	
			Acenaphthylene	NC	NA	NC	NA		Liver	7.1E-07	NA	5.3E-07	1.2E-06
			Benzo(a)anthracene	3.5E-08	NA	2.6E-08	NA	6.0E-08	Kidney	9.2E-06	NA	6.9E-06	1.6E-05
			Benzo(a)pyrene	3.6E-07	NA	2.7E-07	NA	6.3E-07	Kidney	9.6E-06	NA	7.1E-06	1.7E-05
			Benzo(b)fluoranthene	5.6E-08	NA	4.1E-08	NA	9.7E-08	Kidney	1.5E-05	NA	1.1E-05	2.6E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	9.9E-06	NA	7.4E-06	1.7E-05
			Benzo(k)fluoranthene	2.6E-09	NA	1.9E-09	NA	4.5E-09	Kidney	6.9E-06	NA	5.1E-06	1.2E-05
			bis(2-Ethylhexyl)phthalate	1.2E-09	NA	7.1E-10	NA	1.9E-09	Liver	2.6E-05	NA	1.5E-05	4.0E-05
			Dibenzo(a,h)anthracene	9.5E-08	NA	7.1E-08	NA	1.7E-07	Kidney	2.5E-06	NA	1.9E-06	4.4E-06
			Indeno(1,2,3-cd)pyrene	3.3E-08	NA	2.5E-08	NA	5.8E-08	Kidney	8.9E-06	NA	6.6E-06	1.6E-05
			N-Nitroso-di-n-propylamine	1.5E-07	NA	8.8E-08	NA	2.4E-07		--	NA	--	
			Pentachlorophenol	2.8E-09	NA	4.1E-09	NA	6.9E-09	Liver / Kidney	4.6E-06	NA	6.6E-06	1.1E-05
			Phenanthrene	NC	NA	NC	NA		Kidney	9.2E-06	NA	6.9E-06	1.6E-05
			alpha-Chlordane	1.9E-10	NA	4.3E-11	NA	2.3E-10	Liver	6.3E-06	NA	1.4E-06	7.8E-06
			Aroclor-1254	1.7E-08	NA	1.3E-08	NA	3.0E-08	Immune system	2.4E-03	NA	1.9E-03	4.4E-03
			Aroclor-1260	9.2E-10	NA	7.3E-10	NA	1.6E-09	Immune system	1.3E-04	NA	1.1E-04	2.4E-04
			Aroclor-1268	4.1E-09	NA	3.3E-09	NA	7.3E-09	Immune system	5.9E-04	NA	4.8E-04	1.1E-03
			Dieldrin	1.2E-09	NA	6.8E-10	NA	1.9E-09	Liver	8.7E-06	NA	5.0E-06	1.4E-05
			Endosulfan II	NC	NA	NC	NA		Kidney	8.2E-08	NA	4.7E-08	1.3E-07
			Endosulfan sulfate	NC	NA	NC	NA		Kidney	4.8E-08	NA	2.7E-08	7.5E-08
			gamma-Chlordane	8.9E-11	NA	2.0E-11	NA	1.1E-10	Liver	3.0E-06	NA	6.8E-07	3.6E-06
			Technical Chlordane	7.7E-09	NA	1.8E-09	NA	9.4E-09	Liver	2.6E-04	NA	5.8E-05	3.1E-04
			Antimony	NC	NA	NC	NA		Adverse clinical signs	7.7E-04	NA		7.7E-04
			Arsenic	1.6E-07	NA	2.8E-08	NA	1.9E-07	Skin	2.1E-03	NA	3.6E-04	2.5E-03
			Cadmium	NC	NA	NC	NA		Kidney	2.1E-04	NA	4.8E-05	2.6E-04
			Chromium	NC	NA	NC	NA		NOAEL	6.6E-03	NA		6.6E-03
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	1.2E-03	NA		1.2E-03
			Mercury	NC	NA	NC	NA		Immune system	2.0E-04	NA		2.0E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	3.4E-04	NA		3.4E-04
			Thallium	NC	NA	NC	NA		NOAEL	7.2E-04	NA		7.2E-04
			Vanadium	NC	NA	NC	NA		NOAEL	6.0E-04	NA		6.0E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.6E-06	NA	7.9E-07	NA	5.4E-06		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	8.4E-08	NA	1.4E-08	NA	9.8E-08		--	NA	--	
			CHEMICAL TOTAL	5.6E-06	--	1.4E-06	--	7E-06		1.6E-02	0.0E+00	3.1E-03	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-06					2E-02
	EXPOSURE MEDIUM TOTAL							7E-06					2E-02
SEDIMENT TOTAL								7E-06					2E-02
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	Acenaphthylene	NC	NA	NC	NA		Liver	4.4E-10	NA	--	4.4E-10
			bis(2-Ethylhexyl)phthalate	8.1E-10	NA	3.5E-07	NA	3.5E-07	Liver	1.7E-05	NA	7.2E-03	7.2E-03
			Aldrin	1.3E-09	NA	3.3E-08	NA	3.4E-08	Liver	1.5E-05	NA	3.8E-04	3.9E-04
			alpha-Chlordane	2.3E-11	NA	1.3E-08	NA	1.3E-08	Liver	7.5E-07	NA	4.4E-04	4.4E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	1.1E-08	NA	--	1.1E-08
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	3.3E-07	NA	6.5E-05	6.5E-05
			gamma-Chlordane	2.5E-11	NA	1.4E-08	NA	1.4E-08	Liver	8.3E-07	NA	4.8E-04	4.8E-04
			Arsenic	2.3E-08	NA	5.9E-08	NA	8.2E-08	Skin	3.0E-04	NA	7.6E-04	1.1E-03
			Barium	NC	NA	NC	NA		Cardiovascular system	5.9E-06	NA	2.1E-04	2.2E-04
			Chromium	NC	NA	NC	NA		NOAEL	1.5E-05	NA	3.0E-03	3.1E-03

US EPA ARCHIVE DOCUMENT

TABLE F.9.41.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	1.1E-04	NA	6.7E-03	6.8E-03
			Mercury	NC	NA	NC	NA		Immune system	2.6E-07	NA	9.3E-06	9.6E-06
			Thallium	NC	NA	NC	NA		NOAEL	5.4E-04	NA	1.4E-03	1.9E-03
			Nitrate	NC	NA	NC	NA		Hematological system	9.4E-06	NA	--	9.4E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	1.7E-05	NA	--	1.7E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	6.6E-08	NA	3.8E-04	NA	3.8E-04		--	NA	--	
			CHEMICAL TOTAL	9.2E-08	--	3.8E-04	--	4E-04		1.0E-03	0.0E+00	2.1E-02	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-04					2E-02
	EXPOSURE MEDIUM TOTAL							4E-04					2E-02
SURFACE WATER TOTAL								4E-04					2E-02
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	3.7E-05	NA	NA	3.7E-05
			Benzo(a)anthracene	7.5E-07	NA	NA	NA	7.5E-07	Kidney	2.0E-04	NA	NA	2.0E-04
			Benzo(a)pyrene	3.9E-06	NA	NA	NA	3.9E-06	Kidney	1.0E-04	NA	NA	1.0E-04
			Benzo(b)fluoranthene	5.3E-07	NA	NA	NA	5.3E-07	Kidney	1.4E-04	NA	NA	1.4E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	7.9E-05	NA	NA	7.9E-05
			Dibenzo(a,h)anthracene	2.1E-06	NA	NA	NA	2.1E-06	Kidney	5.7E-05	NA	NA	5.7E-05
			Indeno(1,2,3-cd)pyrene	3.4E-07	NA	NA	NA	3.4E-07	Kidney	9.1E-05	NA	NA	9.1E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	4.5E-04	NA	NA	4.5E-04
			4,4'-DDD	1.7E-06	NA	NA	NA	1.7E-06	Liver	8.0E-02	NA	NA	8.0E-02
			4,4'-DDE	7.9E-06	NA	NA	NA	7.9E-06	Liver	2.7E-01	NA	NA	2.7E-01
			4,4'-DDT	1.9E-07	NA	NA	NA	1.9E-07	Liver	6.6E-03	NA	NA	6.6E-03
			alpha-Chlordane	1.8E-06	NA	NA	NA	1.8E-06	Liver	5.9E-02	NA	NA	5.9E-02
			Aroclor-1254	1.1E-03	NA	NA	NA	1.1E-03	Immune system	1.6E+02	NA	NA	1.6E+02
			Aroclor-1268	9.5E-06	NA	NA	NA	9.5E-06	Immune system	1.4E+00	NA	NA	1.4E+00
			Dieldrin	1.5E-05	NA	NA	NA	1.5E-05	Liver	1.1E-01	NA	NA	1.1E-01
			gamma-Chlordane	1.1E-06	NA	NA	NA	1.1E-06	Liver	3.7E-02	NA	NA	3.7E-02
			Heptachlor Epoxide	1.7E-06	NA	NA	NA	1.7E-06	Liver	8.3E-02	NA	NA	8.3E-02
			Technical Chlordane	9.8E-05	NA	NA	NA	9.8E-05	Liver	3.3E+00	NA	NA	3.3E+00
			Arsenic	4.5E-06	NA	NA	NA	4.5E-06	Skin	5.8E-02	NA	NA	5.8E-02
			Chromium	NC	NA	NA	NA		NOAEL	8.0E-02	NA	NA	8.0E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.5E-01	NA	NA	2.5E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	6.9E-01	NA	NA	6.9E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.5E-02	NA	NA	NA	1.5E-02		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	6.5E-04	NA	NA	NA	6.5E-04		--	NA	NA	
			CHEMICAL TOTAL	1.7E-02	--	--	--	2E-02		1.7E+02	0.0E+00	--	1.7E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-02					1.7E+02
	EXPOSURE MEDIUM TOTAL							2E-02					1.7E+02
WHOLE BODY TOTAL								2E-02					1.7E+02
RECEPTOR TOTAL								2E-02					1.7E+02
							TOTAL RISK ACROSS ALL MEDIA	2E-02	TOTAL HAZARD ACROSS ALL MEDIA				1.7E+02

US EPA ARCHIVE DOCUMENT

TABLE F.9.41.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

TOTAL ADVERSE CLINICAL SIGNS HI =	7.7E-04
TOTAL CARDIOVASCULAR SYSTEM HI =	2.2E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	6.9E-01
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	2.6E-05
TOTAL IMMUNE SYSTEM HI =	1.7E+02
TOTAL KIDNEY HI =	1.5E-03
TOTAL LIVER HI =	3.9E+00
	--
TOTAL NERVOUS SYSTEM HI =	6.5E-05
TOTAL NOAEL HI =	1.0E-01
TOTAL REPRODUCTIVE SYSTEM HI =	4.4E-05
TOTAL SKIN HI =	6.2E-02
	--

US EPA ARCHIVE DOCUMENT

TABLE F.9.42.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	8.0E-05	NA	NA	8.0E-05
			Benzo(a)anthracene	8.0E-07	NA	NA	NA	8.0E-07	Kidney	4.3E-04	NA	NA	4.3E-04
			Benzo(a)pyrene	4.1E-06	NA	NA	NA	4.1E-06	Kidney	2.2E-04	NA	NA	2.2E-04
			Benzo(b)fluoranthene	5.7E-07	NA	NA	NA	5.7E-07	Kidney	3.0E-04	NA	NA	3.0E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.7E-04	NA	NA	1.7E-04
			Dibenzo(a,h)anthracene	2.3E-06	NA	NA	NA	2.3E-06	Kidney	1.2E-04	NA	NA	1.2E-04
			Indeno(1,2,3-cd)pyrene	3.6E-07	NA	NA	NA	3.6E-07	Kidney	1.9E-04	NA	NA	1.9E-04
			Phenanthrene	NC	NA	NA	NA		Kidney	9.5E-04	NA	NA	9.5E-04
			4,4'-DDD	1.8E-06	NA	NA	NA	1.8E-06	Liver	1.7E-01	NA	NA	1.7E-01
			4,4'-DDE	8.4E-06	NA	NA	NA	8.4E-06	Liver	5.8E-01	NA	NA	5.8E-01
			4,4'-DDT	2.0E-07	NA	NA	NA	2.0E-07	Liver	1.4E-02	NA	NA	1.4E-02
			alpha-Chlordane	1.9E-06	NA	NA	NA	1.9E-06	Liver	1.3E-01	NA	NA	1.3E-01
			Aroclor-1254	1.2E-03	NA	NA	NA	1.2E-03	Immune system	3.5E+02	NA	NA	3.5E+02
			Aroclor-1268	1.0E-05	NA	NA	NA	1.0E-05	Immune system	2.9E+00	NA	NA	2.9E+00
			Dieldrin	1.6E-05	NA	NA	NA	1.6E-05	Liver	2.3E-01	NA	NA	2.3E-01
			gamma-Chlordane	1.2E-06	NA	NA	NA	1.2E-06	Liver	7.9E-02	NA	NA	7.9E-02
			Heptachlor Epoxide	1.8E-06	NA	NA	NA	1.8E-06	Liver	1.8E-01	NA	NA	1.8E-01
			Technical Chlordane	1.0E-04	NA	NA	NA	1.0E-04	Liver	6.9E+00	NA	NA	6.9E+00
			Arsenic	4.8E-06	NA	NA	NA	4.8E-06	Skin	1.2E-01	NA	NA	1.2E-01
			Chromium	NC	NA	NA	NA		NOAEL	1.7E-01	NA	NA	1.7E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	5.3E-01	NA	NA	5.3E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.5E+00	NA	NA	1.5E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.6E-02	NA	NA	NA	1.6E-02		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	7.0E-04	NA	NA	NA	7.0E-04		--	NA	NA	
			CHEMICAL TOTAL	1.8E-02	--	--	--	2E-02		3.7E+02	0.0E+00	--	3.7E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-02					3.7E+02
	EXPOSURE MEDIUM TOTAL							2E-02					3.7E+02
WHOLE BODY TOTAL								2E-02					3.7E+02
RECEPTOR TOTAL								2E-02					3.7E+02
			TOTAL RISK ACROSS ALL MEDIA					2E-02	TOTAL HAZARD ACROSS ALL MEDIA				3.7E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.5E+00
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	--
TOTAL IMMUNE SYSTEM HI =	3.6E+02
TOTAL KIDNEY HI =	2.4E-03
TOTAL LIVER HI =	8.3E+00
	--
	--
TOTAL NOAEL HI =	1.7E-01
	--
TOTAL SKIN HI =	1.2E-01
	--

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.9.43.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	MANTON POND	Benzo(a)anthracene	1.2E-09	NA	3.0E-10	NA	1.5E-09	Kidney	3.2E-07	NA	8.0E-08	4.0E-07
			Benzo(a)pyrene	1.4E-08	NA	3.6E-09	NA	1.8E-08	Kidney	3.8E-07	NA	9.6E-08	4.8E-07
			Benzo(b)fluoranthene	2.5E-09	NA	6.2E-10	NA	3.1E-09	Kidney	6.6E-07	NA	1.7E-07	8.2E-07
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	2.3E-07	NA	5.9E-08	2.9E-07
			Benzo(k)fluoranthene	1.4E-10	NA	3.6E-11	NA	1.8E-10	Kidney	3.8E-07	NA	9.6E-08	4.8E-07
			bis(2-Ethylhexyl)phthalate	4.7E-11	NA	9.2E-12	NA	5.7E-11	Liver	9.9E-07	NA	1.9E-07	1.2E-06
			Indeno(1,2,3-cd)pyrene	1.2E-09	NA	3.0E-10	NA	1.5E-09	Kidney	3.2E-07	NA	8.0E-08	4.0E-07
			Phenanthrene	NC	NA	NC	NA		Kidney	3.0E-07	NA	7.5E-08	3.7E-07
			alpha-Chlordane	8.4E-12	NA	6.5E-13	NA	9.0E-12	Liver	2.8E-07	NA	2.2E-08	3.0E-07
			gamma-Chlordane	9.5E-12	NA	7.4E-13	NA	1.0E-11	Liver	3.2E-07	NA	2.5E-08	3.4E-07
			Arsenic	1.3E-08	NA	7.3E-10	NA	1.3E-08	Skin	1.6E-04	NA	9.5E-06	1.7E-04
			Cadmium	NC	NA	NC	NA		Kidney	4.3E-05	NA	3.4E-06	4.7E-05
			Chromium	NC	NA	NC	NA		NOAEL	2.8E-04	NA		2.8E-04
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	1.1E-04	NA		1.1E-04
			Vanadium	NC	NA	NC	NA		NOAEL	5.2E-05	NA		5.2E-05
			Toxicity Equivalency (Dioxins/Furans) - Mant	7.0E-07	NA	4.1E-08	NA	7.4E-07		--	NA	--	
			CHEMICAL TOTAL	7.4E-07	--	4.7E-08	--	8E-07		6.6E-04	0.0E+00	1.4E-05	7E-04
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						8E-07					7E-04
	EXPOSURE MEDIUM TOTAL							8E-07					7E-04
SEDIMENT TOTAL								8E-07					7E-04
SURFACE WATER	SURFACE WATER	MANTON POND	Acenaphthylene	NC	NA	NC	NA		Liver	2.8E-10	NA	--	2.8E-10
			bis(2-Ethylhexyl)phthalate	5.2E-10	NA	3.1E-07	NA	3.1E-07	Liver	1.1E-05	NA	6.4E-03	6.5E-03
			Aldrin	8.5E-10	NA	2.9E-08	NA	3.0E-08	Liver	9.8E-06	NA	3.4E-04	3.5E-04
			alpha-Chlordane	1.5E-11	NA	1.2E-08	NA	1.2E-08	Liver	4.8E-07	NA	3.9E-04	3.9E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	6.8E-09	NA	--	6.8E-09
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	2.1E-07	NA	5.8E-05	5.8E-05
			gamma-Chlordane	1.6E-11	NA	1.3E-08	NA	1.3E-08	Liver	5.3E-07	NA	4.3E-04	4.3E-04
			Arsenic	1.5E-08	NA	5.2E-08	NA	6.7E-08	Skin	2.0E-04	NA	6.8E-04	8.7E-04
			Barium	NC	NA	NC	NA		Cardiovascular system	3.8E-06	NA	1.9E-04	1.9E-04
			Chromium	NC	NA	NC	NA		NOAEL	9.8E-06	NA	2.7E-03	2.7E-03
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	6.9E-05	NA	6.0E-03	6.1E-03
			Mercury	NC	NA	NC	NA		Immune system	1.7E-07	NA	8.3E-06	8.5E-06
			Thallium	NC	NA	NC	NA		NOAEL	3.5E-04	NA	1.2E-03	1.6E-03
			Nitrate	NC	NA	NC	NA		Hematological system	6.0E-06	NA	--	6.0E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	1.1E-05	NA	--	1.1E-05
			Toxicity Equivalency (Dioxins/Furans) - Mant	4.3E-08	NA	3.4E-04	NA	3.4E-04		--	NA	--	
			CHEMICAL TOTAL	5.9E-08	--	3.4E-04	--	3E-04		6.7E-04	0.0E+00	1.8E-02	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-04					2E-02
	EXPOSURE MEDIUM TOTAL							3E-04					2E-02
SURFACE WATER TOTAL								3E-04					2E-02

US EPA ARCHIVE DOCUMENT

TABLE F.9.43.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.1E-06	NA	NA	4.1E-06
			Dibenzo(a,h)anthracene	2.2E-07	NA	NA	NA	2.2E-07	Kidney	5.9E-06	NA	NA	5.9E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	7.9E-05	NA	NA	7.9E-05
			4,4'-DDE	4.2E-07	NA	NA	NA	4.2E-07	Liver	1.4E-02	NA	NA	1.4E-02
			alpha-Chlordane	6.8E-08	NA	NA	NA	6.8E-08	Liver	2.3E-03	NA	NA	2.3E-03
			Aroclor-1254	3.5E-05	NA	NA	NA	3.5E-05	Immune system	5.1E+00	NA	NA	5.1E+00
			Aroclor-1268	9.2E-06	NA	NA	NA	9.2E-06	Immune system	1.3E+00	NA	NA	1.3E+00
			Dieldrin	1.2E-06	NA	NA	NA	1.2E-06	Liver	8.4E-03	NA	NA	8.4E-03
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	1.3E-04	NA	NA	1.3E-04
			gamma-Chlordane	2.5E-08	NA	NA	NA	2.5E-08	Liver	8.4E-04	NA	NA	8.4E-04
			Technical Chlordane	2.0E-06	NA	NA	NA	2.0E-06	Liver	6.6E-02	NA	NA	6.6E-02
			Lead	--	NA	NA	NA		--	NA	NA		
			Mercury	NC	NA	NA	NA		Immune system	5.0E-01	NA	NA	5.0E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.2E+00	NA	NA	1.2E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.9E-04	NA	NA	NA	3.9E-04		--	NA	NA	
			CHEMICAL TOTAL	4.4E-04	--	--	--	4E-04		8.2E+00	0.0E+00	--	8E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-04					8E+00
	EXPOSURE MEDIUM TOTAL							4E-04					8E+00
FILLET TOTAL								4E-04					8E+00
RECEPTOR TOTAL								8E-04					8.2E+00
			TOTAL RISK ACROSS ALL MEDIA					8E-04	TOTAL HAZARD ACROSS ALL MEDIA				8.2E+00

NOTES
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

	--
TOTAL CARDIOVASCULAR SYSTEM HI =	1.9E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	1.2E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	1.7E-05
TOTAL IMMUNE SYSTEM HI =	6.9E+00
TOTAL KIDNEY HI =	2.6E-04
TOTAL LIVER HI =	9.9E-02
	--
TOTAL NERVOUS SYSTEM HI =	5.8E-05
TOTAL NOAEL HI =	1.1E-02
	--
TOTAL SKIN HI =	1.0E-03
	--

US EPA ARCHIVE DOCUMENT

TABLE F.9.44.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	MANTON POND	Benzo(a)anthracene	1.9E-09	NA	1.4E-09	NA	3.2E-09	Kidney	4.9E-07	NA	3.7E-07	8.6E-07
			Benzo(a)pyrene	2.2E-08	NA	1.7E-08	NA	3.9E-08	Kidney	5.9E-07	NA	4.4E-07	1.0E-06
			Benzo(b)fluoranthene	3.8E-09	NA	2.9E-09	NA	6.7E-09	Kidney	1.0E-06	NA	7.6E-07	1.8E-06
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	3.6E-07	NA	2.7E-07	6.3E-07
			Benzo(k)fluoranthene	2.2E-10	NA	1.7E-10	NA	3.9E-10	Kidney	5.9E-07	NA	4.4E-07	1.0E-06
			bis(2-Ethylhexyl)phthalate	7.4E-11	NA	4.2E-11	NA	1.2E-10	Liver	1.5E-06	NA	8.8E-07	2.4E-06
			Indeno(1,2,3-cd)pyrene	1.9E-09	NA	1.4E-09	NA	3.2E-09	Kidney	4.9E-07	NA	3.7E-07	8.6E-07
			Phenanthrene	NC	NA	NC	NA		Kidney	4.6E-07	NA	3.4E-07	8.0E-07
			alpha-Chlordane	1.3E-11	NA	3.0E-12	NA	1.6E-11	Liver	4.4E-07	NA	1.0E-07	5.3E-07
			gamma-Chlordane	1.5E-11	NA	3.4E-12	NA	1.8E-11	Liver	4.9E-07	NA	1.1E-07	6.1E-07
			Arsenic	2.0E-08	NA	3.4E-09	NA	2.3E-08	Skin	2.5E-04	NA	4.4E-05	3.0E-04
			Cadmium	NC	NA	NC	NA		Kidney	6.7E-05	NA	1.5E-05	8.3E-05
			Chromium	NC	NA	NC	NA		NOAEL	4.4E-04	NA		4.4E-04
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	1.8E-04	NA		1.8E-04
			Vanadium	NC	NA	NC	NA		NOAEL	8.1E-05	NA		8.1E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.1E-06	NA	1.9E-07	NA	1.3E-06		--	NA	--	
			CHEMICAL TOTAL	1.1E-06	--	2.1E-07	--	1E-06		1.0E-03	0.0E+00	6.3E-05	1E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-06					1E-03
	EXPOSURE MEDIUM TOTAL							1E-06					1E-03
SEDIMENT TOTAL								1E-06					1E-03
SURFACE WATER	SURFACE WATER	MANTON POND	Acenaphthylene	NC	NA	NC	NA		Liver	4.4E-10	NA	--	4.4E-10
			bis(2-Ethylhexyl)phthalate	8.1E-10	NA	3.5E-07	NA	3.5E-07	Liver	1.7E-05	NA	7.2E-03	7.2E-03
			Aldrin	1.3E-09	NA	3.3E-08	NA	3.4E-08	Liver	1.5E-05	NA	3.8E-04	3.9E-04
			alpha-Chlordane	2.3E-11	NA	1.3E-08	NA	1.3E-08	Liver	7.5E-07	NA	4.4E-04	4.4E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	1.1E-08	NA	--	1.1E-08
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	3.3E-07	NA	6.5E-05	6.5E-05
			gamma-Chlordane	2.5E-11	NA	1.4E-08	NA	1.4E-08	Liver	8.3E-07	NA	4.8E-04	4.8E-04
			Arsenic	2.3E-08	NA	5.9E-08	NA	8.2E-08	Skin	3.0E-04	NA	7.6E-04	1.1E-03
			Barium	NC	NA	NC	NA		Cardiovascular system	5.9E-06	NA	2.1E-04	2.2E-04
			Chromium	NC	NA	NC	NA		NOAEL	1.5E-05	NA	3.0E-03	3.1E-03
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	1.1E-04	NA	6.7E-03	6.8E-03
			Mercury	NC	NA	NC	NA		Immune system	2.6E-07	NA	9.3E-06	9.6E-06
			Thallium	NC	NA	NC	NA		NOAEL	5.4E-04	NA	1.4E-03	1.9E-03
			Nitrate	NC	NA	NC	NA		Hematological system	9.4E-06	NA	--	9.4E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	1.7E-05	NA	--	1.7E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	6.6E-08	NA	3.8E-04	NA	3.8E-04		--	NA	--	
			CHEMICAL TOTAL	9.2E-08	--	3.8E-04	--	4E-04		1.0E-03	0.0E+00	2.1E-02	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-04					2E-02
	EXPOSURE MEDIUM TOTAL							4E-04					2E-02
SURFACE WATER TOTAL								4E-04					2E-02

US EPA ARCHIVE DOCUMENT

TABLE F.9.44.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	Acenaphthylene	NC	NA	NA	NA		Liver	3.2E-06	NA	NA	3.2E-06
			Dibenzo(a,h)anthracene	1.7E-07	NA	NA	NA	1.7E-07	Kidney	4.6E-06	NA	NA	4.6E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	6.2E-05	NA	NA	6.2E-05
			4,4'-DDE	3.3E-07	NA	NA	NA	3.3E-07	Liver	1.1E-02	NA	NA	1.1E-02
			alpha-Chlordane	5.3E-08	NA	NA	NA	5.3E-08	Liver	1.8E-03	NA	NA	1.8E-03
			Aroclor-1254	2.7E-05	NA	NA	NA	2.7E-05	Immune system	3.9E+00	NA	NA	3.9E+00
			Aroclor-1268	7.1E-06	NA	NA	NA	7.1E-06	Immune system	1.0E+00	NA	NA	1.0E+00
			Dieldrin	9.0E-07	NA	NA	NA	9.0E-07	Liver	6.6E-03	NA	NA	6.6E-03
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	1.0E-04	NA	NA	1.0E-04
			gamma-Chlordane	2.0E-08	NA	NA	NA	2.0E-08	Liver	6.6E-04	NA	NA	6.6E-04
			Technical Chlordane	1.5E-06	NA	NA	NA	1.5E-06	Liver	5.1E-02	NA	NA	5.1E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	3.9E-01	NA	NA	3.9E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	9.4E-01	NA	NA	9.4E-01
			Toxicity Equivalency (Dioxins/Furans) - Main	3.0E-04	NA	NA	NA	3.0E-04		--	NA	NA	
			CHEMICAL TOTAL	3.4E-04	--	--	--	3E-04		6.4E+00	0.0E+00	--	6E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-04					6E+00
	EXPOSURE MEDIUM TOTAL							3E-04					6E+00
FILLET TOTAL								3E-04					6E+00
RECEPTOR TOTAL								7E-04					6.4E+00
			TOTAL RISK ACROSS ALL MEDIA					7E-04	TOTAL HAZARD ACROSS ALL MEDIA				6.4E+00

NOTES
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

	--
TOTAL CARDIOVASCULAR SYSTEM HI =	2.2E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	9.4E-01
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	2.6E-05
TOTAL IMMUNE SYSTEM HI =	5.4E+00
TOTAL KIDNEY HI =	2.6E-04
TOTAL LIVER HI =	8.0E-02
	--
TOTAL NERVOUS SYSTEM HI =	6.5E-05
TOTAL NOAEL HI =	1.2E-02
	--
TOTAL SKIN HI =	1.4E-03
	--

US EPA ARCHIVE DOCUMENT

TABLE F.9.45.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	Acenaphthylene	NC	NA	NA	NA		0.6	--	NA	NA	
			Dibenzo(a,h)anthrucene	5.7E-12	NA	NA	NA	5.7E-12	0.3	4.2E-08	NA	NA	4.2E-08
			Phenanthrene	NC	NA	NA	NA		0.3	--	NA	NA	
			4,4'-DDE	1.3E-08	NA	NA	NA	1.3E-08	0.0005	4.9E-05	NA	NA	4.9E-05
			alpha-Chlordane	4.3E-10	NA	NA	NA	4.3E-10	0.0005	1.0E-05	NA	NA	1.0E-05
			Aroclor-1254	3.2E-06	NA	NA	NA	3.2E-06	0.00005	1.5E-04	NA	NA	1.5E-04
			Aroclor-1268	2.6E-07	NA	NA	NA	2.6E-07	0.00005	4.6E-05	NA	NA	4.6E-05
			Dieldrin	3.4E-11	NA	NA	NA	3.4E-11	0.00005	4.8E-08	NA	NA	4.8E-08
			Endosulfan Sulfate	NC	NA	NA	NA		0.006	--	NA	NA	
			gamma-Chlordane	5.8E-11	NA	NA	NA	5.8E-11	0.0005	3.7E-06	NA	NA	3.7E-06
			Technical Chlordane	3.1E-07	NA	NA	NA	3.1E-07	0.0005	2.5E-04	NA	NA	2.5E-04
			Lead	1.6E-08	NA	NA	NA	1.6E-08		--	NA	NA	
			Mercury	NC	NA	NA	NA		0.00021	--	NA	NA	
			Mercury (methyl)	NC	NA	NA	NA		0.0001	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	6.7E-14	NA	NA	NA	6.7E-14		2.8E-13	NA	NA	2.8E-13
			CHEMICAL TOTAL	3.8E-06	--	--	--	4E-06		5.1E-04	0.0E+00	--	5E-04
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-06					5E-04
	EXPOSURE MEDIUM TOTAL							4E-06					5E-04
FILLET TOTAL								4E-06					5E-04

RECEPTOR TOTAL			5.1E-04
TOTAL RISK ACROSS ALL MEDIA	4E-06	TOTAL HAZARD ACROSS ALL MEDIA	5.1E-04

NOTES
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL NOAEL HI =	2.8E-13
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TABLE F.9.46.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	MANTON POND	Benzo(a)anthracene	1.2E-09	NA	3.0E-10	NA	1.5E-09	Kidney	3.2E-07	NA	8.0E-08	4.0E-07
			Benzo(a)pyrene	1.4E-08	NA	3.6E-09	NA	1.8E-08	Kidney	3.8E-07	NA	9.6E-08	4.8E-07
			Benzo(b)fluoranthene	2.5E-09	NA	6.2E-10	NA	3.1E-09	Kidney	6.6E-07	NA	1.7E-07	8.2E-07
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	2.3E-07	NA	5.9E-08	2.9E-07
			Benzo(k)fluoranthene	1.4E-10	NA	3.6E-11	NA	1.8E-10	Kidney	3.8E-07	NA	9.6E-08	4.8E-07
			bis(2-Ethylhexyl)phthalate	4.7E-11	NA	9.2E-12	NA	5.7E-11	Liver	9.9E-07	NA	1.9E-07	1.2E-06
			Indeno(1,2,3-cd)pyrene	1.2E-09	NA	3.0E-10	NA	1.5E-09	Kidney	3.2E-07	NA	8.0E-08	4.0E-07
			Phenanthrene	NC	NA	NC	NA		Kidney	3.0E-07	NA	7.5E-08	3.7E-07
			alpha-Chlordane	8.4E-12	NA	6.5E-13	NA	9.0E-12	Liver	2.8E-07	NA	2.2E-08	3.0E-07
			gamma-Chlordane	9.5E-12	NA	7.4E-13	NA	1.0E-11	Liver	3.2E-07	NA	2.5E-08	3.4E-07
			Arsenic	1.3E-08	NA	7.3E-10	NA	1.3E-08	Skin	1.6E-04	NA	9.5E-06	1.7E-04
			Cadmium	NC	NA	NC	NA		Kidney	4.3E-05	NA	3.4E-06	4.7E-05
			Chromium	NC	NA	NC	NA		NOAEL	2.8E-04	NA		2.8E-04
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	1.1E-04	NA		1.1E-04
			Vanadium	NC	NA	NC	NA		NOAEL	5.2E-05	NA		5.2E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	7.0E-07	NA	4.1E-08	NA	7.4E-07		--	NA	--	
			CHEMICAL TOTAL	7.4E-07	--	4.7E-08	--	8E-07		6.6E-04	0.0E+00	1.4E-05	7E-04
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						8E-07					7E-04
	EXPOSURE MEDIUM TOTAL							8E-07					7E-04
SEDIMENT TOTAL								8E-07					7E-04
SURFACE WATER	SURFACE WATER	MANTON POND	Acenaphthylene	NC	NA	NC	NA		Liver	2.8E-10	NA	--	2.8E-10
			bis(2-Ethylhexyl)phthalate	5.2E-10	NA	3.1E-07	NA	3.1E-07	Liver	1.1E-05	NA	6.4E-03	6.5E-03
			Aldrin	8.5E-10	NA	2.9E-08	NA	3.0E-08	Liver	9.8E-06	NA	3.4E-04	3.5E-04
			alpha-Chlordane	1.5E-11	NA	1.2E-08	NA	1.2E-08	Liver	4.8E-07	NA	3.9E-04	3.9E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	6.8E-09	NA	--	6.8E-09
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	2.1E-07	NA	5.8E-05	5.8E-05
			gamma-Chlordane	1.6E-11	NA	1.3E-08	NA	1.3E-08	Liver	5.3E-07	NA	4.3E-04	4.3E-04
			Arsenic	1.5E-08	NA	5.2E-08	NA	6.7E-08	Skin	2.0E-04	NA	6.8E-04	8.7E-04
			Barium	NC	NA	NC	NA		Cardiovascular system	3.8E-06	NA	1.9E-04	1.9E-04
			Chromium	NC	NA	NC	NA		NOAEL	9.8E-06	NA	2.7E-03	2.7E-03
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	6.9E-05	NA	6.0E-03	6.1E-03
			Mercury	NC	NA	NC	NA		Immune system	1.7E-07	NA	8.3E-06	8.5E-06
			Thallium	NC	NA	NC	NA		NOAEL	3.5E-04	NA	1.2E-03	1.6E-03
			Nitrate	NC	NA	NC	NA		Hematological system	6.0E-06	NA	--	6.0E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	1.1E-05	NA	--	1.1E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.3E-08	NA	3.4E-04	NA	3.4E-04		--	NA	--	
			CHEMICAL TOTAL	5.9E-08	--	3.4E-04	--	3E-04		6.7E-04	0.0E+00	1.8E-02	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-04					2E-02
	EXPOSURE MEDIUM TOTAL							3E-04					2E-02
SURFACE WATER TOTAL								3E-04					2E-02

US EPA ARCHIVE DOCUMENT

TABLE F.9.46.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	WHOLE BODY	MANTON POND	Acenaphthylene	NC	NA	NA	NA		Liver	9.1E-06	NA	NA	9.1E-06
			Benzo(a)pyrene	1.1E-06	NA	NA	NA	1.1E-06	Kidney	3.0E-05	NA	NA	3.0E-05
			Benzo(b)fluoranthene	1.6E-07	NA	NA	NA	1.6E-07	Kidney	4.3E-05	NA	NA	4.3E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	3.5E-05	NA	NA	3.5E-05
			Dibenzo(a,h)anthracene	1.9E-07	NA	NA	NA	1.9E-07	Kidney	5.1E-06	NA	NA	5.1E-06
			Indeno(1,2,3-cd)pyrene	1.1E-07	NA	NA	NA	1.1E-07	Kidney	2.8E-05	NA	NA	2.8E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	2.4E-04	NA	NA	2.4E-04
			4,4'-DDE	2.6E-06	NA	NA	NA	2.6E-06	Liver	8.9E-02	NA	NA	8.9E-02
			alpha-Chlordane	2.6E-07	NA	NA	NA	2.6E-07	Liver	8.7E-03	NA	NA	8.7E-03
			Aroclor-1254	1.4E-04	NA	NA	NA	1.4E-04	Immune system	2.1E+01	NA	NA	2.1E+01
			Aroclor-1268	3.5E-05	NA	NA	NA	3.5E-05	Immune system	5.1E+00	NA	NA	5.1E+00
			Dieldrin	2.9E-06	NA	NA	NA	2.9E-06	Liver	2.1E-02	NA	NA	2.1E-02
			gamma-Chlordane	9.2E-08	NA	NA	NA	9.2E-08	Liver	3.1E-03	NA	NA	3.1E-03
			Heptachlor Epoxide	3.8E-07	NA	NA	NA	3.8E-07	Liver	1.9E-02	NA	NA	1.9E-02
			Technical Chlordane	7.0E-06	NA	NA	NA	7.0E-06	Liver	2.3E-01	NA	NA	2.3E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	--	NA	NA	NA		Immune system	4.1E-01	NA	NA	4.1E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	9.7E-01	NA	NA	9.7E-01
			Toxicity Equivalency (Dioxins/Furans) - Main	*1.8E-03*	NA	NA	NA	*1.8E-03*		--	NA	NA	
			CHEMICAL TOTAL	2.0E-03	--	--	--	2E-03		2.8E+01	0.0E+00	--	3E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-03					3E+01
	EXPOSURE MEDIUM TOTAL							2E-03					3E+01
WHOLE BODY TOTAL								2E-03					*3E+01*
RECEPTOR TOTAL								2E-03					2.8E+01
							TOTAL RISK ACROSS ALL MEDIA	2E-03	TOTAL HAZARD ACROSS ALL MEDIA				2.8E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL CARDIOVASCULAR SYSTEM HI =	1.9E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	9.7E-01
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TOTAL HEMATOLOGICAL SYSTEM HI =	1.7E-05
TOTAL IMMUNE SYSTEM HI =	2.6E+01
TOTAL KIDNEY HI =	4.4E-04
TOTAL LIVER HI =	3.8E-01
	--
TOTAL NERVOUS SYSTEM HI =	5.8E-05
TOTAL NOAEL HI =	1.1E-02
	--
TOTAL SKIN HI =	1.0E-03
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US EPA ARCHIVE DOCUMENT

TABLE F.9.47.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	MANTON POND	Benzo(a)anthracene	1.9E-09	NA	1.4E-09	NA	3.2E-09	Kidney	4.9E-07	NA	3.7E-07	8.6E-07
			Benzo(a)pyrene	2.2E-08	NA	1.7E-08	NA	3.9E-08	Kidney	5.9E-07	NA	4.4E-07	1.0E-06
			Benzo(b)fluoranthene	3.8E-09	NA	2.9E-09	NA	6.7E-09	Kidney	1.0E-06	NA	7.6E-07	1.8E-06
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	3.6E-07	NA	2.7E-07	6.3E-07
			Benzo(k)fluoranthene	2.2E-10	NA	1.7E-10	NA	3.9E-10	Kidney	5.9E-07	NA	4.4E-07	1.0E-06
			bis(2-Ethylhexyl)phthalate	7.4E-11	NA	4.2E-11	NA	1.2E-10	Liver	1.5E-06	NA	8.8E-07	2.4E-06
			Indeno(1,2,3-cd)pyrene	1.9E-09	NA	1.4E-09	NA	3.2E-09	Kidney	4.9E-07	NA	3.7E-07	8.6E-07
			Phenanthrene	NC	NA	NC	NA		Kidney	4.6E-07	NA	3.4E-07	8.0E-07
			alpha-Chlordane	1.3E-11	NA	3.0E-12	NA	1.6E-11	Liver	4.4E-07	NA	1.0E-07	5.3E-07
			gamma-Chlordane	1.5E-11	NA	3.4E-12	NA	1.8E-11	Liver	4.9E-07	NA	1.1E-07	6.1E-07
			Arsenic	2.0E-08	NA	3.4E-09	NA	2.3E-08	Skin	2.5E-04	NA	4.4E-05	3.0E-04
			Cadmium	NC	NA	NC	NA		Kidney	6.7E-05	NA	1.5E-05	8.3E-05
			Chromium	NC	NA	NC	NA		NOAEL	4.4E-04	NA		4.4E-04
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	1.8E-04	NA		1.8E-04
			Vanadium	NC	NA	NC	NA		NOAEL	8.1E-05	NA		8.1E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.1E-06	NA	1.9E-07	NA	1.3E-06		--	NA	--	
			CHEMICAL TOTAL	1.1E-06	--	2.1E-07	--	1E-06		1.0E-03	0.0E+00	6.3E-05	1E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-06					1E-03
	EXPOSURE MEDIUM TOTAL							1E-06					1E-03
SEDIMENT TOTAL								1E-06					1E-03
SURFACE WATER	SURFACE WATER	MANTON POND	Acenaphthylene	NC	NA	NC	NA		Liver	4.4E-10	NA	--	4.4E-10
			bis(2-Ethylhexyl)phthalate	8.1E-10	NA	1.5E-07	NA	1.5E-07	Liver	1.7E-05	NA	7.2E-03	7.2E-03
			Aldrin	1.3E-09	NA	3.1E-08	NA	3.4E-08	Liver	1.5E-05	NA	3.8E-04	3.9E-04
			alpha-Chlordane	2.3E-11	NA	1.3E-08	NA	1.3E-08	Liver	7.5E-07	NA	4.4E-04	4.4E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	1.1E-08	NA	--	1.1E-08
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	3.3E-07	NA	6.5E-05	6.5E-05
			gamma-Chlordane	2.5E-11	NA	1.4E-08	NA	1.4E-08	Liver	8.3E-07	NA	4.8E-04	4.8E-04
			Arsenic	2.3E-08	NA	5.9E-08	NA	8.2E-08	Skin	3.0E-04	NA	7.6E-04	1.1E-03
			Barium	NC	NA	NC	NA		Cardiovascular system	5.9E-06	NA	2.1E-04	2.2E-04
			Chromium	NC	NA	NC	NA		NOAEL	1.5E-05	NA	3.0E-03	3.1E-03
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	1.1E-04	NA	6.7E-03	6.8E-03
			Mercury	NC	NA	NC	NA		Immune system	2.6E-07	NA	9.3E-06	9.6E-06
			Thallium	NC	NA	NC	NA		NOAEL	5.4E-04	NA	1.4E-03	1.9E-03
			Nitrate	NC	NA	NC	NA		Hematological system	9.4E-06	NA	--	9.4E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	1.7E-05	NA	--	1.7E-05
			Toxicity Equivalency (Dioxins/Furans) - Mam	6.6E-08	NA	3.8E-04	NA	3.8E-04		--	NA	--	
			CHEMICAL TOTAL	9.2E-08	--	3.8E-04	--	4E-04		1.0E-03	0.0E+00	2.1E-02	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-04					2E-02
	EXPOSURE MEDIUM TOTAL							4E-04					2E-02
SURFACE WATER TOTAL								4E-04					2E-02

US EPA ARCHIVE DOCUMENT

TABLE F.9.47.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	Acenaphthylene	NC	NA	NA	NA		Liver	7.1E-06	NA	NA	7.1E-06
			Benzo(a)pyrene	8.8E-07	NA	NA	NA	8.8E-07	Kidney	2.3E-05	NA	NA	2.3E-05
			Benzo(b)fluoranthene	1.3E-07	NA	NA	NA	1.3E-07	Kidney	3.4E-05	NA	NA	3.4E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	2.7E-05	NA	NA	2.7E-05
			Dibenzo(a,h)anthracene	1.5E-07	NA	NA	NA	1.5E-07	Kidney	4.0E-06	NA	NA	4.0E-06
			Indeno(1,2,3-cd)pyrene	8.3E-08	NA	NA	NA	8.3E-08	Kidney	2.2E-05	NA	NA	2.2E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.9E-04	NA	NA	1.9E-04
			4,4'-DDE	2.0E-06	NA	NA	NA	2.0E-06	Liver	6.9E-02	NA	NA	6.9E-02
			alpha-Chlordane	2.0E-07	NA	NA	NA	2.0E-07	Liver	6.8E-03	NA	NA	6.8E-03
			Aroclor-1254	1.1E-04	NA	NA	NA	1.1E-04	Immune system	1.6E+01	NA	NA	1.6E+01
			Aroclor-1268	2.7E-05	NA	NA	NA	2.7E-05	Immune system	4.0E+00	NA	NA	4.0E+00
			Dieldrin	2.3E-06	NA	NA	NA	2.3E-06	Liver	1.6E-02	NA	NA	1.6E-02
			gamma-Chlordane	7.2E-08	NA	NA	NA	7.2E-08	Liver	2.4E-03	NA	NA	2.4E-03
			Heptachlor Epoxide	3.0E-07	NA	NA	NA	3.0E-07	Liver	1.5E-02	NA	NA	1.5E-02
			Technical Chlordane	5.5E-06	NA	NA	NA	5.5E-06	Liver	1.8E-01	NA	NA	1.8E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	--	NA	NA	NA		Immune system	3.2E-01	NA	NA	3.2E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	7.6E-01	NA	NA	7.6E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.4E-03	NA	NA	NA	1.4E-03		--	NA	NA	
			CHEMICAL TOTAL	1.6E-03	--	--	--	2E-03		2.2E+01	0.0E+00	--	2E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-03					2E+01
	EXPOSURE MEDIUM TOTAL							2E-03					2E+01
FILLET TOTAL								2E-03					2E+01
RECEPTOR TOTAL								2E-03					2.2E+01
							TOTAL RISK ACROSS ALL MEDIA	2E-03	TOTAL HAZARD ACROSS ALL MEDIA				2.2E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

	--
TOTAL CARDIOVASCULAR SYSTEM HI =	2.2E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	7.6E-01
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	2.6E-05
TOTAL IMMUNE SYSTEM HI =	2.1E+01
TOTAL KIDNEY HI =	3.9E-04
TOTAL LIVER HI =	3.0E-01
	--
TOTAL NERVOUS SYSTEM HI =	6.5E-05
TOTAL NOAEL HI =	1.2E-02
	--
TOTAL SKIN HI =	1.4E-03
	--

US EPA ARCHIVE DOCUMENT

TABLE F.9.48.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	WHOLE BODY	MANTON POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.5E-05	NA	NA	1.5E-05
			Benzo(a)pyrene	9.4E-07	NA	NA	NA	9.4E-07	Kidney	5.0E-05	NA	NA	5.0E-05
			Benzo(b)fluoranthene	1.4E-07	NA	NA	NA	1.4E-07	Kidney	7.2E-05	NA	NA	7.2E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	5.8E-05	NA	NA	5.8E-05
			Dibenzo(a,h)anthracene	1.6E-07	NA	NA	NA	1.6E-07	Kidney	8.5E-06	NA	NA	8.5E-06
			Indeno(1,2,3-cd)pyrene	8.9E-08	NA	NA	NA	8.9E-08	Kidney	4.7E-05	NA	NA	4.7E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	4.1E-04	NA	NA	4.1E-04
			4,4'-DDE	2.1E-06	NA	NA	NA	2.1E-06	Liver	1.5E-01	NA	NA	1.5E-01
			alpha-Chlordane	2.2E-07	NA	NA	NA	2.2E-07	Liver	1.4E-02	NA	NA	1.4E-02
			Aroclor-1254	1.2E-04	NA	NA	NA	1.2E-04	Immune system	3.5E+01	NA	NA	3.5E+01
			Aroclor-1268	2.9E-05	NA	NA	NA	2.9E-05	Immune system	8.5E+00	NA	NA	8.5E+00
			Dieldrin	2.4E-06	NA	NA	NA	2.4E-06	Liver	3.5E-02	NA	NA	3.5E-02
			gamma-Chlordane	7.7E-08	NA	NA	NA	7.7E-08	Liver	5.1E-03	NA	NA	5.1E-03
			Heptachlor Epoxide	3.2E-07	NA	NA	NA	3.2E-07	Liver	3.1E-02	NA	NA	3.1E-02
			Technical Chlordane	5.8E-06	NA	NA	NA	5.8E-06	Liver	3.9E-01	NA	NA	3.9E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	--	NA	NA	NA		Immune system	6.9E-01	NA	NA	6.9E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.6E+00	NA	NA	1.6E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.5E-03	NA	NA	NA	1.5E-03		--	NA	NA	
			CHEMICAL TOTAL	1.7E-03	--	--	--	2E-03		4.6E+01	0.0E+00	--	5E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-03					5E+01
	EXPOSURE MEDIUM TOTAL							2E-03					5E+01
WHOLE BODY TOTAL								2E-03					5E+01
RECEPTOR TOTAL								2E-03					4.6E+01
							TOTAL RISK ACROSS ALL MEDIA	2E-03	TOTAL HAZARD ACROSS ALL MEDIA				4.6E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

	--
	--
TOTAL DEVELOPMENTAL TOXICITY HI =	1.6E+00
	--
	--
	--
	--
TOTAL IMMUNE SYSTEM HI =	4.4E+01
TOTAL KIDNEY HI =	5.4E-04
TOTAL LIVER HI =	6.2E-01
	--
	--
	--
	--
	--
	--

US EPA ARCHIVE DOCUMENT

TABLE F.9.49.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	DYERVILLE POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	9.9E-08	NA	2.3E-08	1.2E-07
			Acenaphthylene	NC	NA	NC	NA		Liver	1.7E-07	NA	4.3E-08	2.1E-07
			Benzo(a)anthracene	1.1E-08	NA	2.8E-09	NA	1.4E-08	Kidney	3.0E-06	NA	7.5E-07	3.7E-06
			Benzo(a)pyrene	1.1E-07	NA	2.8E-08	NA	1.4E-07	Kidney	3.0E-06	NA	7.5E-07	3.7E-06
			Benzo(b)fluoranthene	2.0E-08	NA	5.0E-09	NA	2.5E-08	Kidney	5.3E-06	NA	1.3E-06	6.6E-06
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	2.3E-06	NA	5.9E-07	2.9E-06
			Benzo(k)fluoranthene	5.7E-10	NA	1.4E-10	NA	7.1E-10	Kidney	1.5E-06	NA	3.8E-07	1.9E-06
			bis(2-Ethylhexyl)phthalate	1.7E-10	NA	3.3E-11	NA	2.0E-10	Liver	3.5E-06	NA	6.8E-07	4.2E-06
			Dibenzo(a,h)anthracene	1.6E-08	NA	4.0E-09	NA	2.0E-08	Kidney	4.2E-07	NA	1.1E-07	5.3E-07
			Indeno(1,2,3-cd)pyrene	1.1E-08	NA	2.8E-09	NA	1.4E-08	Kidney	3.0E-06	NA	7.5E-07	3.7E-06
			Phenanthrene	NC	NA	NC	NA		Kidney	3.0E-06	NA	7.5E-07	3.7E-06
			alpha-Chlordane	1.6E-11	NA	1.3E-12	NA	1.8E-11	Liver	5.5E-07	NA	4.3E-08	5.9E-07
			Aroclor-1254	1.1E-08	NA	2.9E-09	NA	1.4E-08	Immune system	1.6E-03	NA	4.2E-04	2.0E-03
			Dieldrin	2.1E-09	NA	4.1E-10	NA	2.5E-09	Liver	1.5E-05	NA	3.0E-06	1.8E-05
			Endosulfan sulfate	NC	NA	NC	NA		Kidney	5.5E-08	NA	1.1E-08	6.6E-08
			Arsenic	3.4E-08	NA	2.0E-09	NA	3.6E-08	Skin	4.5E-04	NA	2.6E-05	4.7E-04
			Cadmium	NC	NA	NC	NA		Kidney	1.1E-04	NA	8.4E-06	1.2E-04
			Chromium	NC	NA	NC	NA		NOAEL	3.3E-03	NA		3.3E-03
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	3.0E-04	NA		3.0E-04
			Mercury	NC	NA	NC	NA		Immune system	8.5E-05	NA		8.5E-05
			Nickel	NC	NA	NC	NA		Developmental toxicity	6.0E-05	NA		6.0E-05
			Vanadium	NC	NA	NC	NA		NOAEL	1.5E-04	NA		1.5E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.4E-07	NA	7.9E-09	NA	1.4E-07		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	4.1E-11	NA	2.4E-12	NA	4.4E-11		--	NA	--	
			CHEMICAL TOTAL	1.5E-07		5.6E-08		4E-07		6.0E-03	0.0E+00	4.7E-04	7E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-07					7E-03
	EXPOSURE MEDIUM TOTAL							4E-07					7E-03
SEDIMENT TOTAL								4E-07					7E-03
SURFACE WATER	SURFACE WATER	DYERVILLE POND	Acenaphthylene	NC	NA	NC	NA		Liver	2.8E-10	NA	--	2.8E-10
			bis(2-Ethylhexyl)phthalate	5.2E-10	NA	3.1E-07	NA	3.1E-07	Liver	1.1E-05	NA	6.4E-03	6.5E-03
			Aldrin	8.5E-10	NA	2.9E-08	NA	3.0E-08	Liver	9.8E-06	NA	3.4E-04	3.5E-04
			alpha-Chlordane	1.5E-11	NA	1.2E-08	NA	1.2E-08	Liver	4.8E-07	NA	3.9E-04	3.9E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	6.8E-09	NA	--	6.8E-09
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	2.1E-07	NA	5.8E-05	5.8E-05
			gamma-Chlordane	1.6E-11	NA	1.3E-08	NA	1.3E-08	Liver	5.3E-07	NA	4.3E-04	4.3E-04
			Arsenic	1.5E-08	NA	5.2E-08	NA	6.7E-08	Skin	2.0E-04	NA	6.8E-04	8.7E-04
			Barium	NC	NA	NC	NA		Cardiovascular system	3.8E-06	NA	1.9E-04	1.9E-04
			Chromium	NC	NA	NC	NA		NOAEL	9.8E-06	NA	2.7E-03	2.7E-03
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	6.9E-05	NA	6.0E-03	6.1E-03
			Mercury	NC	NA	NC	NA		Immune system	1.7E-07	NA	8.3E-06	8.5E-06
			Thallium	NC	NA	NC	NA		NOAEL	3.5E-04	NA	1.2E-03	1.6E-03
			Nitrate	NC	NA	NC	NA		Hematological system	6.0E-06	NA	--	6.0E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	1.1E-05	NA	--	1.1E-05

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TABLE F.9.49.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1) INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	NON-CARCINOGENIC HAZARD QUOTIENT (1) PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.3E-08	NA	3.4E-04	NA	3.4E-04		--	NA	--	
			CHEMICAL TOTAL	5.9E-08	--	3.4E-04	--	3E-04		6.7E-04	0.0E+00	1.8E-02	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-04					2E-02
	EXPOSURE MEDIUM TOTAL							3E-04					2E-02
SURFACE WATER TOTAL								3E-04					2E-02
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.0E-05	NA	NA	1.0E-05
			Dibenzo(a,h)anthracene	1.7E-07	NA	NA	NA	1.7E-07	Kidney	4.6E-06	NA	NA	4.6E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.3E-04	NA	NA	1.3E-04
			4,4'-DDD	1.2E-06	NA	NA	NA	1.2E-06	Liver	5.7E-02	NA	NA	5.7E-02
			4,4'-DDE	5.2E-07	NA	NA	NA	5.2E-07	Liver	1.8E-02	NA	NA	1.8E-02
			4,4'-DDT	5.6E-07	NA	NA	NA	5.6E-07	Liver	1.9E-02	NA	NA	1.9E-02
			alpha-Chlordane	7.0E-07	NA	NA	NA	7.0E-07	Liver	2.3E-02	NA	NA	2.3E-02
			Aroclor-1254	1.0E-04	NA	NA	NA	1.0E-04	Immune system	1.5E+01	NA	NA	1.5E+01
			Dieldrin	1.9E-05	NA	NA	NA	1.9E-05	Liver	1.4E-01	NA	NA	1.4E-01
			gamma-Chlordane	2.8E-07	NA	NA	NA	2.8E-07	Liver	9.3E-03	NA	NA	9.3E-03
			Heptachlor Epoxide	2.3E-06	NA	NA	NA	2.3E-06	Liver	1.1E-01	NA	NA	1.1E-01
			Technical Chlordane	1.5E-05	NA	NA	NA	1.5E-05	Liver	5.0E-01	NA	NA	5.0E-01
			Cadmium	NC	NA	NA	NA		Kidney	1.3E-01	NA	NA	1.3E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	7.3E-02	NA	NA	7.3E-02
			Mercury	NC	NA	NA	NA		Immune system	2.8E-01	NA	NA	2.8E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	9.5E-01	NA	NA	9.5E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.1E-03	NA	NA	NA	1.1E-03		--	NA	NA	
			CHEMICAL TOTAL	1.2E-03	--	--	--	1E-03		1.7E+01	0.0E+00	--	1.7E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-03					1.7E+01
	EXPOSURE MEDIUM TOTAL							1E-03					1.7E+01
WHOLE BODY TOTAL								1E-03					1.7E+01
RECEPTOR TOTAL								2E-03					1.7E+01
							TOTAL RISK ACROSS ALL MEDIA	2E-03	TOTAL HAZARD ACROSS ALL MEDIA				1.7E+01

US EPA ARCHIVE DOCUMENT

TABLE F.9.49.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
													--
									TOTAL CARDIOVASCULAR SYSTEM HI =				1.9E-04
									TOTAL DEVELOPMENTAL TOXICITY HI =				9.5E-01
													--
													--
													--
									TOTAL HEMATOLOGICAL SYSTEM HI =				1.7E-05
									TOTAL IMMUNE SYSTEM HI =				1.5E+01
									TOTAL KIDNEY HI =				1.3E-01
									TOTAL LIVER HI =				8.9E-01
													--
									TOTAL NERVOUS SYSTEM HI =				5.8E-05
									TOTAL NOAEL HI =				8.7E-02
													--
									TOTAL SKIN HI =				1.3E-03
													--

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.9.50.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	DYERVILLE POND	2-Methylnaphthalene	NC	NA	NC	NA		Cardiovascular system	1.5E-07	NA	1.1E-07	2.7E-07
			Acenaphthylene	NC	NA	NC	NA		Liver	2.6E-07	NA	2.0E-07	4.6E-07
			Benzo(a)anthracene	1.7E-08	NA	1.3E-08	NA	3.0E-08	Kidney	4.6E-06	NA	3.4E-06	8.0E-06
			Benzo(a)pyrene	1.7E-07	NA	1.3E-07	NA	3.0E-07	Kidney	4.6E-06	NA	3.4E-06	8.0E-06
			Benzo(b)fluoranthene	3.1E-08	NA	2.3E-08	NA	5.4E-08	Kidney	8.2E-06	NA	6.1E-06	1.4E-05
			Benzo(g,h,i)perylene	NC	NA	NC	NA		Kidney	3.6E-06	NA	2.7E-06	6.3E-06
			Benzo(k)fluoranthene	8.8E-10	NA	6.5E-10	NA	1.5E-09	Kidney	2.3E-06	NA	1.7E-06	4.1E-06
			bis(2-Ethylhexyl)phthalate	2.6E-10	NA	1.5E-10	NA	4.1E-10	Liver	5.4E-06	NA	3.1E-06	8.6E-06
			Dibenzo(a,h)anthracene	2.5E-08	NA	1.8E-08	NA	4.3E-08	Kidney	6.6E-07	NA	4.9E-07	1.1E-06
			Indeno(1,2,3-cd)pyrene	1.7E-08	NA	1.3E-08	NA	3.0E-08	Kidney	4.6E-06	NA	3.4E-06	8.0E-06
			Phenanthrene	NC	NA	NC	NA		Kidney	4.6E-06	NA	3.4E-06	8.0E-06
			alpha-Chlordane	2.6E-11	NA	5.8E-12	NA	3.1E-11	Liver	8.5E-07	NA	1.9E-07	1.0E-06
			Aroclor-1254	1.7E-08	NA	1.3E-08	NA	3.0E-08	Immune system	2.4E-03	NA	1.9E-03	4.4E-03
			Dieldrin	3.3E-09	NA	1.9E-09	NA	5.1E-09	Liver	2.4E-05	NA	1.4E-05	3.7E-05
			Endosulfan sulfate	NC	NA	NC	NA		Kidney	8.6E-08	NA	4.9E-08	1.3E-07
			Arsenic	5.3E-08	NA	9.2E-09	NA	6.3E-08	Skin	6.9E-04	NA	1.2E-04	8.1E-04
			Cadmium	NC	NA	NC	NA		Kidney	1.7E-04	NA	3.8E-05	2.1E-04
			Chromium	NC	NA	NC	NA		NOAEL	5.1E-03	NA		5.1E-03
			Lead	--	NA	--	NA			--	NA		
			Manganese	NC	NA	NC	NA		NOAEL	4.6E-04	NA		4.6E-04
			Mercury	NC	NA	NC	NA		Immune system	1.3E-04	NA		1.3E-04
			Nickel	NC	NA	NC	NA		Developmental toxicity	9.4E-05	NA		9.4E-05
			Vanadium	NC	NA	NC	NA		NOAEL	2.3E-04	NA		2.3E-04
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.1E-07	NA	3.6E-08	NA	2.5E-07		--	NA	--	
			Toxicity Equivalency (PCB Congeners) - Mam	6.4E-11	NA	1.1E-11	NA	7.5E-11		--	NA	--	
			CHEMICAL TOTAL	5.5E-07	--	2.6E-07	--	8E-07		9.4E-03	9.0E-00	2.1E-03	1E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						8E-07					1E-02
	EXPOSURE MEDIUM TOTAL							8E-07					1E-02
SEDIMENT TOTAL								8E-07					1E-02
SURFACE WATER	SURFACE WATER	DYERVILLE POND	Acenaphthylene	NC	NA	NC	NA		Liver	4.4E-10	NA	--	4.4E-10
			bis(2-Ethylhexyl)phthalate	8.1E-10	NA	3.5E-07	NA	3.5E-07	Liver	1.7E-05	NA	7.2E-03	7.2E-03
			Aldrin	1.3E-09	NA	3.3E-08	NA	3.4E-08	Liver	1.5E-05	NA	3.8E-04	3.9E-04
			alpha-Chlordane	2.3E-11	NA	1.3E-08	NA	1.3E-08	Liver	7.5E-07	NA	4.4E-04	4.4E-04
			Endosulfan Sulfate	NC	NA	NC	NA		Kidney	1.1E-08	NA	--	1.1E-08
			Endrin Aldehyde	NC	NA	NC	NA		Nervous system	3.3E-07	NA	6.5E-05	6.5E-05
			gamma-Chlordane	2.5E-11	NA	1.4E-08	NA	1.4E-08	Liver	8.3E-07	NA	4.8E-04	4.8E-04
			Arsenic	2.3E-08	NA	5.9E-08	NA	8.2E-08	Skin	3.0E-04	NA	7.6E-04	1.1E-03
			Barium	NC	NA	NC	NA		Cardiovascular system	5.9E-06	NA	2.1E-04	2.2E-04
			Chromium	NC	NA	NC	NA		NOAEL	1.5E-05	NA	3.0E-03	3.1E-03
			Lead	--	NA	--	NA			--	NA	--	
			Manganese	NC	NA	NC	NA		NOAEL	1.1E-04	NA	6.7E-03	6.8E-03
			Mercury	NC	NA	NC	NA		Immune system	2.6E-07	NA	9.3E-06	9.6E-06
			Thallium	NC	NA	NC	NA		NOAEL	5.4E-04	NA	1.4E-03	1.9E-03
			Nitrate	NC	NA	NC	NA		Hematological system	9.4E-06	NA	--	9.4E-06
			Nitrite-N	NC	NA	NC	NA		Hematological system	1.7E-05	NA	--	1.7E-05

US EPA ARCHIVE DOCUMENT

TABLE F.9.50.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1) INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	NON-CARCINOGENIC HAZARD QUOTIENT (1) PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			Toxicity Equivalency (Dioxins/Furans) - Mam	6.6E-08	NA	3.8E-04	NA	3.8E-04		--	NA	--	
			CHEMICAL TOTAL	9.2E-08	--	3.8E-04	--	4E-04		1.0E-03	0.0E+00	2.1E-02	2E-02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-04					2E-02
	EXPOSURE MEDIUM TOTAL							4E-04					2E-02
SURFACE WATER TOTAL								4E-04					2E-02
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	Acenaphthylene	NC	NA	NA	NA		Liver	8.0E-06	NA	NA	8.0E-06
			Dibenzo(a,h)anthracene	1.3E-07	NA	NA	NA	1.3E-07	Kidney	3.6E-06	NA	NA	3.6E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.0E-04	NA	NA	1.0E-04
			4,4'-DDD	9.2E-07	NA	NA	NA	9.2E-07	Liver	4.5E-02	NA	NA	4.5E-02
			4,4'-DDE	4.1E-07	NA	NA	NA	4.1E-07	Liver	1.4E-02	NA	NA	1.4E-02
			4,4'-DDT	4.4E-07	NA	NA	NA	4.4E-07	Liver	1.5E-02	NA	NA	1.5E-02
			alpha-Chlordane	5.5E-07	NA	NA	NA	5.5E-07	Liver	1.8E-02	NA	NA	1.8E-02
			Aroclor-1254	8.0E-05	NA	NA	NA	8.0E-05	Immune system	1.2E+01	NA	NA	1.2E+01
			Dieldrin	1.5E-05	NA	NA	NA	1.5E-05	Liver	1.1E-01	NA	NA	1.1E-01
			gamma-Chlordane	2.2E-07	NA	NA	NA	2.2E-07	Liver	7.3E-03	NA	NA	7.3E-03
			Heptachlor Epoxide	1.8E-06	NA	NA	NA	1.8E-06	Liver	8.8E-02	NA	NA	8.8E-02
			Technical Chlordane	1.2E-05	NA	NA	NA	1.2E-05	Liver	3.9E-01	NA	NA	3.9E-01
			Cadmium	NC	NA	NA	NA		Kidney	9.9E-02	NA	NA	9.9E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	5.7E-02	NA	NA	5.7E-02
			Mercury	NC	NA	NA	NA		Immune system	2.2E-01	NA	NA	2.2E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	7.4E-01	NA	NA	7.4E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	8.5E-04	NA	NA	NA	8.5E-04		-	NA	NA	
			CHEMICAL TOTAL	9.6E-04	--	--	--	1E-03		1.4E+01	0.0E+00	--	1.4E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-03					1.4E+01
	EXPOSURE MEDIUM TOTAL							1E-03					1.4E+01
WHOLE BODY TOTAL								1E-03					1.4E+01
RECEPTOR TOTAL								1E-03					1.4E+01
			TOTAL RISK ACROSS ALL MEDIA					1E-03	TOTAL HAZARD ACROSS ALL MEDIA				1.4E+01

US EPA ARCHIVE DOCUMENT

TABLE F.9.50.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

	--
TOTAL CARDIOVASCULAR SYSTEM HI =	2.2E-04
TOTAL DEVELOPMENTAL TOXICITY HI =	7.4E-01
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	2.6E-05
TOTAL IMMUNE SYSTEM HI =	1.2E+01
TOTAL KIDNEY HI =	1.0E-01
TOTAL LIVER HI =	7.0E-01
	--
TOTAL NERVOUS SYSTEM HI =	6.5E-05
TOTAL NOAEL HI =	7.5E-02
	--
TOTAL SKIN HI =	1.9E-03
	--

US EPA ARCHIVE DOCUMENT

TABLE F.9.51.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.7E-05	NA	NA	1.7E-05
			Dibenzo(a,h)anthracene	1.4E-07	NA	NA	NA	1.4E-07	Kidney	7.6E-06	NA	NA	7.6E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	2.2E-04	NA	NA	2.2E-04
			4,4'-DDD	9.8E-07	NA	NA	NA	9.8E-07	Liver	9.6E-02	NA	NA	9.6E-02
			4,4'-DDE	4.3E-07	NA	NA	NA	4.3E-07	Liver	3.0E-02	NA	NA	3.0E-02
			4,4'-DDT	4.7E-07	NA	NA	NA	4.7E-07	Liver	3.2E-02	NA	NA	3.2E-02
			alpha-Chlordane	5.8E-07	NA	NA	NA	5.8E-07	Liver	3.9E-02	NA	NA	3.9E-02
			Aroclor-1254	8.6E-05	NA	NA	NA	8.6E-05	Immune system	2.5E+01	NA	NA	2.5E+01
			Dieldrin	1.6E-05	NA	NA	NA	1.6E-05	Liver	2.3E-01	NA	NA	2.3E-01
			gamma-Chlordane	2.3E-07	NA	NA	NA	2.3E-07	Liver	1.5E-02	NA	NA	1.5E-02
			Heptachlor Epoxide	1.9E-06	NA	NA	NA	1.9E-06	Liver	1.9E-01	NA	NA	1.9E-01
			Technical Chlordane	1.3E-05	NA	NA	NA	1.3E-05	Liver	8.4E-01	NA	NA	8.4E-01
			Cadmium	NC	NA	NA	NA		Kidney	2.1E-01	NA	NA	2.1E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	1.2E-01	NA	NA	1.2E-01
			Mercury	NC	NA	NA	NA		Immune system	4.6E-01	NA	NA	4.6E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.6E+00	NA	NA	1.6E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	9.1E-04	NA	NA	NA	9.1E-04		--	NA	NA	
			CHEMICAL TOTAL	*1.0E-03*	--	--	--	*1E-03*		*2.9E+01*	*0.0E+00*	--	*2.9E+01*
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-03					2.9E+01
	EXPOSURE MEDIUM TOTAL							1E-03					2.9E+01
WHOLE BODY TOTAL								1E-03					2.9E+01
RECEPTOR TOTAL								1E-03					2.9E+01
			TOTAL RISK ACROSS ALL MEDIA					1E-03	TOTAL HAZARD ACROSS ALL MEDIA				2.9E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; *dose-response data and/or dermal absorption values are not available.*

	--
	--
TOTAL DEVELOPMENTAL TOXICITY HI =	1.6E+00
	--
	--
	--
	--
TOTAL IMMUNE SYSTEM HI =	2.5E+01
TOTAL KIDNEY HI =	2.1E-01
TOTAL LIVER HI =	1.5E+00
	--
	--
TOTAL NOAEL HI =	1.2E-01
	--
	--
	--

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.10.40.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	LYMAN MILL POND	Benzo(a)pyrene	4.0E-06	NA	3.5E-06	NA	7.5E-06	Kidney	--	NA	--	
			Dibenzo(a,h)anthracene	1.5E-06	NA	1.3E-06	NA	2.8E-06	Kidney	--	NA	--	
			N-Nitroso-di-n-propylamine	1.7E-06	NA	1.2E-06	NA	2.9E-06					
			Arsenic	1.8E-06	NA	--	NA	1.8E-06	Skin	--	NA	--	
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.3E-04	NA	4.7E-05	NA	2.8E-04					
			Toxicity Equivalency (PCB Congeners) - Mam	1.8E-06	NA	--	NA	1.8E-06					
			CHEMICAL TOTAL	2.4E-04	--	5.3E-05	--	3E-04		--	0.0E+00	--	0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-04					0E+00
	EXPOSURE MEDIUM TOTAL							3E-04					0E+00
SEDIMENT TOTAL								3E-04					0E+00
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	bis(2-Ethylhexyl)phthalate	--	NA	2.7E-06	NA	2.7E-06	Liver	--	NA	--	
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.9E-06	NA	1.9E-02	NA	1.9E-02					
			CHEMICAL TOTAL	4.9E-06	--	1.9E-02	--	2E-02		--	0.0E+00	--	0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-02					0E+00
	EXPOSURE MEDIUM TOTAL							2E-02					0E+00
SURFACE WATER TOTAL								2E-02					0E+00
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Benzo(a)anthracene	1.0E-05	NA	NA	NA	1.0E-05	Kidney	--	NA	NA	
			Benzo(a)pyrene	1.6E-04	NA	NA	NA	1.6E-04	Kidney	--	NA	NA	
			Benzo(b)fluoranthene	7.4E-06	NA	NA	NA	7.4E-06	Kidney	--	NA	NA	
			Dibenzo(a,h)anthracene	3.0E-05	NA	NA	NA	3.0E-05	Kidney	--	NA	NA	
			Indeno(1,2,3-cd)pyrene	1.5E-05	NA	NA	NA	1.5E-05	Kidney	--	NA	NA	
			4,4'-DDD	2.3E-05	NA	NA	NA	2.3E-05	Liver	--	NA	NA	
			4,4'-DDE	1.1E-04	NA	NA	NA	1.1E-04	Liver	--	NA	NA	
			4,4'-DDT	2.7E-06	NA	NA	NA	2.7E-06	Liver	--	NA	NA	
			alpha-Chlordane	2.5E-05	NA	NA	NA	2.5E-05	Liver	--	NA	NA	
			Aroclor-1254	1.6E-02	NA	NA	NA	1.6E-02	Immune system	5.3E+02	NA	NA	5.3E+02
			Aroclor-1268	1.3E-04	NA	NA	NA	1.3E-04	Immune system	4.4E+00	NA	NA	4.4E+00
			Dieldrin	2.1E-04	NA	NA	NA	2.1E-04	Liver	--	NA	NA	
			gamma-Chlordane	1.5E-05	NA	NA	NA	1.5E-05	Liver	--	NA	NA	
			Heptachlor Epoxide	2.3E-05	NA	NA	NA	2.3E-05	Liver	--	NA	NA	
			Technical Chlordane	1.4E-03	NA	NA	NA	1.4E-03	Liver	1.0E+01	NA	NA	1.0E+01
			Arsenic	6.2E-05	NA	NA	NA	6.2E-05	Skin	--	NA	NA	
			Mercury (methyl)				NA		Developmental toxicity	2.2E+00	NA	NA	2.2E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.0E-01	NA	NA	NA	2.0E-01					
			Toxicity Equivalency (PCB Congeners) - Mam	1.1E-02	NA	NA	NA	1.1E-02					
			CHEMICAL TOTAL	2.3E-01	--	--	--	2E-01		5.5E+02	0.0E+00	--	5.5E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-01					5.5E+02
	EXPOSURE MEDIUM TOTAL							2E-01					5.5E+02
WHOLE BODY TOTAL								2E-01					5.5E+02
RECEPTOR TOTAL								3E-01					5.5E+02
							TOTAL RISK ACROSS ALL MEDIA	3E-01	TOTAL HAZARD ACROSS ALL MEDIA				5.5E+02

US EPA ARCHIVE DOCUMENT

TABLE F.10.40.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
													--
													--
													--
													--
													--
													--
													--
													--
													--
													--
													--
													--
													--

TOTAL DEVELOPMENTAL TOXICITY HI = 2.2E+00

TOTAL IMMUNE SYSTEM HI = 5.3E+02

TOTAL LIVER HI = 1.0E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.10.41.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	LYMAN MILL POND	Benzo(a)pyrene	1.4E-06	NA	2.7E-06	NA	4.1E-06	Kidney	--	NA	--	
			Toxicity Equivalency (Dioxins/Furans) - Mam	8.2E-05	NA	3.5E-05	NA	1.2E-04					
			CHEMICAL TOTAL	8.3E-05	--	3.8E-05	--	1E-04		--	0.0E+00	--	0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					0E+00
	EXPOSURE MEDIUM TOTAL							1E-04					0E+00
SEDIMENT TOTAL								1E-04					0E+00
SURFACE WATER	WHOLE BODY	LYMAN MILL POND	Toxicity Equivalency (Dioxins/Furans) - Mam	1.8E-06	NA	5.0E-03	NA	5.0E-03					
			CHEMICAL TOTAL	1.8E-06	--	5.0E-03	--	5E-03		--	0.0E+00	--	0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-03					0E+00
	EXPOSURE MEDIUM TOTAL							5E-03					0E+00
SURFACE WATER TOTAL								5E-03					0E+00
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Benzo(a)anthracene	2.5E-06	NA	NA	NA	2.5E-06	Kidney	--	NA	NA	
			Benzo(a)pyrene	3.9E-05	NA	NA	NA	3.9E-05	Kidney	--	NA	NA	
			Benzo(b)fluoranthene	1.8E-06	NA	NA	NA	1.8E-06	Kidney	--	NA	NA	
			Dibenzo(a,h)anthracene	7.1E-06	NA	NA	NA	7.1E-06	Kidney	--	NA	NA	
			Indeno(1,2,3-cd)pyrene	3.5E-06	NA	NA	NA	3.5E-06	Kidney	--	NA	NA	
			4,4'-DDD	5.5E-06	NA	NA	NA	5.5E-06	Liver	--	NA	NA	
			4,4'-DDE	2.6E-05	NA	NA	NA	2.6E-05	Liver	--	NA	NA	
			alpha-Chlordane	5.9E-06	NA	NA	NA	5.9E-06	Liver	--	NA	NA	
			Aroclor-1254	3.8E-03	NA	NA	NA	3.8E-03	Immune system	5.5E+02	NA	NA	5.5E+02
			Aroclor-1268	3.1E-05	NA	NA	NA	3.1E-05	Immune system	4.6E+00	NA	NA	4.6E+00
			Dieldrin	5.0E-05	NA	NA	NA	5.0E-05	Liver	--	NA	NA	
			gamma-Chlordane	3.7E-06	NA	NA	NA	3.7E-06	Liver	--	NA	NA	
			Heptachlor Epoxide	5.6E-06	NA	NA	NA	5.6E-06	Liver	--	NA	NA	
			Technical Chlordane	3.2E-04	NA	NA	NA	3.2E-04	Liver	1.1E+01	NA	NA	1.1E+01
			Arsenic	1.5E-05	NA	NA	NA	1.5E-05	Skin	--	NA	NA	
			Mercury (methyl)				NA		Developmental toxicity	2.3E+00	NA	NA	2.3E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.9E-02	NA	NA	NA	4.9E-02					
			Toxicity Equivalency (PCB Congeners) - Mam	2.7E-03	NA	NA	NA	2.7E-03					
			CHEMICAL TOTAL	5.6E-02	--	--	--	6E-02		5.7E+02	0.0E+00	--	5.7E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-02					5.7E+02
	EXPOSURE MEDIUM TOTAL							6E-02					5.7E+02
WHOLE BODY TOTAL								6E-02					5.7E+02
RECEPTOR TOTAL								6E-02					5.7E+02
							TOTAL RISK ACROSS ALL MEDIA	6E-02	TOTAL HAZARD ACROSS ALL MEDIA				5.7E+02

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TABLE F.10.41.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
													--
													--
									TOTAL DEVELOPMENTAL TOXICITY HI =				2.3E+00
													--
													--
													--
													--
									TOTAL IMMUNE SYSTEM HI =				5.5E+02
													--
									TOTAL LIVER HI =				1.1E+01
													--
													--
													--
													--
													--
													--
													--

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TABLE *F.10.42.RME*
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Benzo(a)anthracene	2.0E-06	NA	NA	NA	2.0E-06	Kidney	--	NA	NA	
			Benzo(a)pyrene	3.1E-05	NA	NA	NA	3.1E-05	Kidney	--	NA	NA	
			Benzo(b)fluoranthene	1.4E-06	NA	NA	NA	1.4E-06	Kidney	--	NA	NA	
			Benzo(g,h,i)perylene				NA		Kidney	--	NA	NA	
			Dibenzo(a,h)anthracene	5.8E-06	NA	NA	NA	5.8E-06	Kidney	--	NA	NA	
			Indeno(1,2,3-cd)pyrene	2.9E-06	NA	NA	NA	2.9E-06	Kidney	--	NA	NA	
			4,4'-DDD	4.5E-06	NA	NA	NA	4.5E-06	Liver	--	NA	NA	
			4,4'-DDE	2.1E-05	NA	NA	NA	2.1E-05	Liver	1.5E+00	NA	NA	1.5E+00
			alpha-Chlordane	4.8E-06	NA	NA	NA	4.8E-06	Liver	--	NA	NA	
			Aroclor-1254	3.1E-03	NA	NA	NA	3.1E-03	Immune system	8.9E+02	NA	NA	8.9E+02
			Aroclor-1268	2.6E-05	NA	NA	NA	2.6E-05	Immune system	7.5E+00	NA	NA	7.5E+00
			Dieldrin	4.0E-05	NA	NA	NA	4.0E-05	Liver	--	NA	NA	
			gamma-Chlordane	3.0E-06	NA	NA	NA	3.0E-06	Liver	--	NA	NA	
			Heptachlor Epoxide	4.5E-06	NA	NA	NA	4.5E-06	Liver	--	NA	NA	
			Technical Chlordane	2.6E-04	NA	NA	NA	2.6E-04	Liver	1.8E+01	NA	NA	1.8E+01
			Arsenic	1.2E-05	NA	NA	NA	1.2E-05	Skin	--	NA	NA	
			Mercury				NA		Immune system	1.3E+00	NA	NA	1.3E+00
			Mercury (methyl)				NA		Developmental toxicity	3.7E+00	NA	NA	3.7E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.9E-02	NA	NA	NA	3.9E-02					
			Toxicity Equivalency (PCB Congeners) - Mam	2.2E-03	NA	NA	NA	2.2E-03					
			CHEMICAL TOTAL	4.5E-02	--	--	--	5E-02		9.2E+02	0.0E+00	--	9.2E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-02					9.2E+02
	EXPOSURE MEDIUM TOTAL							5E-02					9.2E+02
WHOLE BODY TOTAL								5E-02					9.2E+02
RECEPTOR TOTAL								5E-02					9.2E+02
							TOTAL RISK ACROSS ALL MEDIA	5E-02	TOTAL HAZARD ACROSS ALL MEDIA				9.2E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

	--
	--
TOTAL DEVELOPMENTAL TOXICITY HI =	3.7E+00
	--
	--
	--
	--
TOTAL IMMUNE SYSTEM HI =	9.0E+02
	--
TOTAL LIVER HI =	1.9E+01
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Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.10.40.CT
RISK SUMMARY - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	LYMAN MILL POND	Toxicity Equivalency (Dioxins/Furans) - Mam	2.9E-06	NA	--	NA	2.9E-06					
			CHEMICAL TOTAL	2.9E-06	--	--	--	3E-06		--	0.0E+00	--	0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-06					0E+00
	EXPOSURE MEDIUM TOTAL							3E-06					0E+00
SEDIMENT TOTAL								3E-06					0E+00
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	Toxicity Equivalency (Dioxins/Furans) - Mam	--	NA	3.4E-04	NA	3.4E-04					
			CHEMICAL TOTAL	--	--	3.4E-04	--	3E-04		--	0.0E+00	--	0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-04					0E+00
	EXPOSURE MEDIUM TOTAL							3E-04					0E+00
SURFACE WATER TOTAL								3E-04					0E+00
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Benzo(a)pyrene	5.0E-06	NA	NA	NA	5.0E-06	Kidney	--	NA	NA	
			Dibenzo(a,h)anthracene	2.7E-06	NA	NA	NA	2.7E-06	Kidney	--	NA	NA	
			4,4'-DDD	2.1E-06	NA	NA	NA	2.1E-06	Liver	--	NA	NA	
			4,4'-DDE	1.0E-05	NA	NA	NA	1.0E-05	Liver	--	NA	NA	
			alpha-Chlordane	2.3E-06	NA	NA	NA	2.3E-06	Liver	--	NA	NA	
			Aroclor-1254	1.4E-03	NA	NA	NA	1.4E-03	Immune system	2.1E+02	NA	NA	2.1E+02
			Aroclor-1268	1.2E-05	NA	NA	NA	1.2E-05	Immune system	1.8E+00	NA	NA	1.8E+00
			Dieldrin	1.9E-05	NA	NA	NA	1.9E-05	Liver	--	NA	NA	
			gamma-Chlordane	1.4E-06	NA	NA	NA	1.4E-06	Liver	--	NA	NA	
			Heptachlor Epoxide	2.2E-06	NA	NA	NA	2.2E-06	Liver	--	NA	NA	
			Technical Chlordane	1.3E-04	NA	NA	NA	1.3E-04	Liver	4.2E+00	NA	NA	4.2E+00
			Arsenic	5.8E-06	NA	NA	NA	5.8E-06	Skin	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.9E-02	NA	NA	NA	1.9E-02					
			Toxicity Equivalency (PCB Congeners) - Mam	8.4E-04	NA	NA	NA	8.4E-04					
			CHEMICAL TOTAL	2.1E-02	--	--	--	2E-02		2.2E+02	0.0E+00	--	2.2E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-02					2.2E+02
	EXPOSURE MEDIUM TOTAL							2E-02					2.2E+02
WHOLE BODY TOTAL								2E-02					2.2E+02
RECEPTOR TOTAL								2E-02					2.2E+02
			TOTAL RISK ACROSS ALL MEDIA					2E-02	TOTAL HAZARD ACROSS ALL MEDIA				2.2E+02

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TABLE F.10.40.CT
RISK SUMMARY - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
													--
													--
													--
													--
													--
													--
													--
									TOTAL IMMUNE SYSTEM HI =				2.1E+02
													--
									TOTAL LIVER HI =				4.2E+00
													--
													--
													--
													--
													--
													--

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.10.41.CT
RISK SUMMARY - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	LYMAN MILL POND	Toxicity Equivalency (Dioxins/Furans) - Mam	4.6E-06	NA	--	NA	4.6E-06					
			CHEMICAL TOTAL	4.6E-06	--	--	--	5E-06		--	0.0E+00	--	0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-06					0E+00
	EXPOSURE MEDIUM TOTAL							5E-06					0E+00
SEDIMENT TOTAL								5E-06					0E-04
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	Toxicity Equivalency (Dioxins/Furans) - Mam	--	NA	3.8E-04	NA	3.8E-04					
			CHEMICAL TOTAL	--	--	3.8E-04	--	4E-04		--	0.0E+00	--	0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-04					0E+00
	EXPOSURE MEDIUM TOTAL							4E-04					0E+00
SURFACE WATER TOTAL								4E-04					0E+00
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Benzo(a)pyrene	3.9E-06	NA	NA	NA	3.9E-06	Kidney	--	NA	NA	
			Dibenzo(a,h)anthracene	2.1E-06	NA	NA	NA	2.1E-06	Kidney	--	NA	NA	
			4,4'-DDD	1.7E-06	NA	NA	NA	1.7E-06	Liver	--	NA	NA	
			4,4'-DDE	7.9E-06	NA	NA	NA	7.9E-06	Liver	--	NA	NA	
			alpha-Chlordane	1.8E-06	NA	NA	NA	1.8E-06	Liver	--	NA	NA	
			Aroclor-1254	1.1E-03	NA	NA	NA	1.1E-03	Immune system	1.6E+02	NA	NA	1.6E+02
			Aroclor-1268	9.5E-06	NA	NA	NA	9.5E-06	Immune system	1.4E+00	NA	NA	1.4E+00
			Dieldrin	1.5E-05	NA	NA	NA	1.5E-05	Liver	--	NA	NA	
			gamma-Chlordane	1.1E-06	NA	NA	NA	1.1E-06	Liver	--	NA	NA	
			Heptachlor Epoxide	1.7E-06	NA	NA	NA	1.7E-06	Liver	--	NA	NA	
			Technical Chlordane	9.8E-05	NA	NA	NA	9.8E-05	Liver	3.3E+00	NA	NA	3.3E+00
			Arsenic	4.5E-06	NA	NA	NA	4.5E-06	Skin	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.5E-02	NA	NA	NA	1.5E-02					
			Toxicity Equivalency (PCB Congeners) - Mam	6.5E-04	NA	NA	NA	6.5E-04					
			CHEMICAL TOTAL	1.7E-02	--	--	--	2E-02		1.7E+02	0.0E+00	--	1.7E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-02					1.7E+02
	EXPOSURE MEDIUM TOTAL							2E-02					1.7E+02
WHOLE BODY TOTAL								2E-02					1.7E+02
RECEPTOR TOTAL								2E-02					1.7E+02
			TOTAL RISK ACROSS ALL MEDIA					2E-02	TOTAL HAZARD ACROSS ALL MEDIA				1.7E+02

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TABLE F.10.41.CT
RISK SUMMARY - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- OLDER CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
													--
									TOTAL CARDIOVASCULAR SYSTEM HI =				1.0E-09
													--
													--
													--
													--
									TOTAL IMMUNE SYSTEM HI =				1.7E+02
													--
									TOTAL LIVER HI =				3.3E+00
													--
													--
									TOTAL NOAEL HI =				5.9E-04
													--
													--
													--

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE F.10.42.CT
RISK SUMMARY - CENTRAL TENDENCY- CURRENT/FUTURE- SUBSISTENCE ANGLER- CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT - DRAFT
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: SUBSISTENCE ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Benzo(a)pyrene	4.1E-06	NA	NA	NA	4.1E-06	Kidney	--	NA	NA	
			Dibenzo(a,h)anthracene	2.3E-06	NA	NA	NA	2.3E-06	Kidney	--	NA	NA	
			4,4'-DDD	1.8E-06	NA	NA	NA	1.8E-06	Liver	--	NA	NA	
			4,4'-DDE	8.4E-06	NA	NA	NA	8.4E-06	Liver	--	NA	NA	
			alpha-Chlordane	1.9E-06	NA	NA	NA	1.9E-06	Liver	--	NA	NA	
			Aroclor-1254	1.2E-03	NA	NA	NA	1.2E-03	Immune system	3.5E+02	NA	NA	3.5E+02
			Aroclor-1268	1.0E-05	NA	NA	NA	1.0E-05	Immune system	2.9E+00	NA	NA	2.9E+00
			Dieldrin	1.6E-05	NA	NA	NA	1.6E-05	Liver	--	NA	NA	
			gamma-Chlordane	1.2E-06	NA	NA	NA	1.2E-06	Liver	--	NA	NA	
			Heptachlor Epoxide	1.8E-06	NA	NA	NA	1.8E-06	Liver	--	NA	NA	
			Technical Chlordane	1.0E-04	NA	NA	NA	1.0E-04	Liver	6.9E+00	NA	NA	6.9E+00
			Arsenic	4.8E-06	NA	NA	NA	4.8E-06	Skin	--	NA	NA	
			Mercury (methyl)				NA		Developmental toxicity	1.5E+00	NA	NA	1.5E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.6E-02	NA	NA	NA	1.6E-02					
			Toxicity Equivalency (PCB Congeners) - Mam	7.0E-04	NA	NA	NA	7.0E-04					
			CHEMICAL TOTAL	1.8E-02	--	--	--	2E-02		3.6E+02	0.0E+00	--	3.6E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-02					3.6E+02
	EXPOSURE MEDIUM TOTAL							2E-02					3.6E+02
WHOLE BODY TOTAL								2E-02					3.6E+02
RECEPTOR TOTAL								2E-02					3.6E+02
			TOTAL RISK ACROSS ALL MEDIA					2E-02	TOTAL HAZARD ACROSS ALL MEDIA				3.6E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	1.5E+00
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TOTAL IMMUNE SYSTEM HI =	3.5E+02
	--
TOTAL LIVER HI =	6.9E+00
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	--
	--

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

Table F.11.RME
Risk Assessment Summary

Baseline Human Health Risk Assessment - Draft
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Assapumpset Pond					
Visiting Subsistence Angler	Child (ages 1 through 6)	Sediment	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Surface water	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		American Eel	Ingestion	2E-04	26
		Largemouth Bass (F)	Ingestion	1E-04	17
		Largemouth Bass (W)	Ingestion	8E-04	39
		Brown Bullhead	Ingestion	1E-04	7
			Total Risk:	**8E-04**	**39**
Visiting Subsistence Angler	Older Child (ages 7 through 18)	Sediment	Incidental ingestion	1E-06	0.02
			Dermal contact	2E-06	0.007
		Surface water	Incidental ingestion	2E-08	0.0007
			Dermal contact	3E-05	0.02
		American Eel	Ingestion	2E-04	16
		Largemouth Bass (F)	Ingestion	2E-04	10
		Largemouth Bass (W)	Ingestion	1E-03	24
		Brown Bullhead	Ingestion	2E-04	4
			Total Risk:	**1E-03**	**24**
Visiting Subsistence Angler	Adult (ages 19 and above)	Sediment	Incidental ingestion	4E-06	0.02
			Dermal contact	2E-06	0.002
		Surface water	Incidental ingestion	6E-08	0.0004
			Dermal contact	1E-04	0.02
		American Eel	Ingestion	9E-04	15
		Largemouth Bass (F)	Ingestion	6E-04	10
		Largemouth Bass (W)	Ingestion	4E-03	23
		Brown Bullhead	Ingestion	7E-04	4
			Total Risk:	**4E-03**	**23**

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Table F.11.RME
Risk Assessment Summary

Baseline Human Health Risk Assessment - Draft
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Greystone Mill Pond					
Visiting Subsistence Angler	Child (ages 1 through 6)	Bank Soil	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Sediment	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Surface water	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		American Eel	Ingestion	3E-04	75
		Largemouth Bass (F)	Ingestion	1E-04	52
		Largemouth Bass (W)	Ingestion	3E-04	85
		White Sucker	Ingestion	4E-04	56
			Total Risk:	**4E-04**	**85**
Visiting Subsistence Angler	Older Child (ages 7 through 18)	Bank Soil	Incidental ingestion	8E-06	0.2
			Dermal contact	1E-05	0.1
		Sediment	Incidental ingestion	5E-06	0.08
			Dermal contact	6E-06	0.03
		Surface water	Incidental ingestion	2E-08	0.0007
			Dermal contact	3E-05	0.02
		American Eel	Ingestion	4E-04	46
		Largemouth Bass (F)	Ingestion	1E-04	32
		Largemouth Bass (W)	Ingestion	3E-04	52
		White Sucker	Ingestion	4E-04	34
			Total Risk:	**5E-04**	**53**
Visiting Subsistence Angler	Adult (ages 19 and above)	Bank Soil	Incidental ingestion	2E-05	0.1
			Dermal contact	2E-05	0.03
		Sediment	Incidental ingestion	1E-05	0.05
			Dermal contact	7E-06	0.01
		Surface water	Incidental ingestion	6E-08	0.0005
			Dermal contact	1E-04	0.01
		American Eel	Ingestion	2E-03	44
		Largemouth Bass (F)	Ingestion	5E-04	31
		Largemouth Bass (W)	Ingestion	1E-03	51
		White Sucker	Ingestion	2E-03	33
			Total Risk:	**2E-03**	**51**

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Table F.11.RME
Risk Assessment Summary

Baseline Human Health Risk Assessment - Draft
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Allendale Pond					
Visiting Subsistence Angler	Child (ages 1 through 6)	Bank Soil	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Sediment	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Surface water	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		American Eel	Ingestion	7E-03	168
		White Sucker	Ingestion	2E-02	513
			Total Risk:	**2E-02**	**513**
Visiting Subsistence Angler	Older Child (ages 7 through 18)	Bank Soil	Incidental ingestion	4E-06	NA
			Dermal contact	3E-06	NA
		Sediment	Incidental ingestion	6E-05	0.1
			Dermal contact	3E-05	0.1
		Surface water	Incidental ingestion	2E-06	0.01
			Dermal contact	6E-03	0.2
		American Eel	Ingestion	9E-03	103
		White Sucker	Ingestion	3E-02	315
			Total Risk:	**4E-02**	**316**
Visiting Subsistence Angler	Adult (ages 19 and above)	Bank Soil	Incidental ingestion	1E-05	NA
			Dermal contact	3E-06	NA
		Sediment	Incidental ingestion	2E-04	0.09
			Dermal contact	4E-05	0.03
		Surface water	Incidental ingestion	7E-06	0.007
			Dermal contact	2E-02	0.1
		American Eel	Ingestion	4E-02	100
		White Sucker	Ingestion	1E-01	304
			Total Risk:	**2E-01**	**305**

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Table F.11.RME
Risk Assessment Summary

Baseline Human Health Risk Assessment - Draft
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Lyman Mill Pond					
Visiting Subsistence Angler	Child (ages 1 through 6)	Sediment	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Surface water	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		American Eel	Ingestion	1E-02	171
		Largemouth Bass (F)	Ingestion	2E-03	51
		Largemouth Bass (W)	Ingestion	1E-02	250
		White Sucker	Ingestion	5E-02	926
			Total Risk:	**5E-02**	**926**
Visiting Subsistence Angler	Older Child (ages 7 through 18)	Sediment	Incidental ingestion	9E-05	0.07
			Dermal contact	4E-05	0.04
		Surface water	Incidental ingestion	2E-06	0.004
			Dermal contact	5E-03	0.04
		American Eel	Ingestion	1E-02	105
		Largemouth Bass (F)	Ingestion	2E-03	31
		Largemouth Bass (W)	Ingestion	1E-02	153
		White Sucker	Ingestion	6E-02	569
			Total Risk:	**6E-02**	**569**
Visiting Subsistence Angler	Adult (ages 19 and above)	Sediment	Incidental ingestion	2E-04	0.04
			Dermal contact	6E-05	0.01
		Surface water	Incidental ingestion	5E-06	0.003
			Dermal contact	2E-02	0.04
		American Eel	Ingestion	6E-02	101
		Largemouth Bass (F)	Ingestion	1E-02	30
		Largemouth Bass (W)	Ingestion	6E-02	148
		White Sucker	Ingestion	2E-01	549
			Total Risk:	**3E-01**	**549**

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Table F.11.RME
Risk Assessment Summary

Baseline Human Health Risk Assessment - Draft
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Manton Pond					
Visiting Subsistence Angler	Child (ages 1 through 6)	Sediment	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Surface water	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Largemouth Bass (F)	Ingestion	2E-03	62
		Largemouth Bass (W)	Ingestion	7E-03	217
			Total Risk:	**7E-03**	**217**
Visiting Subsistence Angler	Older Child (ages 7 through 18)	Sediment	Incidental ingestion	1E-05	0.006
			Dermal contact	5E-06	0.0008
		Surface water	Incidental ingestion	2E-06	0.004
			Dermal contact	5E-03	0.04
		Largemouth Bass (F)	Ingestion	2E-03	38
		Largemouth Bass (W)	Ingestion	9E-03	134
			Total Risk:	**1E-02**	**134**
Visiting Subsistence Angler	Adult (ages 19 and above)	Sediment	Incidental ingestion	3E-05	0.004
			Dermal contact	6E-06	0.0003
		Surface water	Incidental ingestion	5E-06	0.003
			Dermal contact	2E-02	0.04
		Largemouth Bass (F)	Ingestion	8E-03	37
		Largemouth Bass (W)	Ingestion	4E-02	129
			Total Risk:	**6E-02**	**129**

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Table F.11.RME
Risk Assessment Summary

Baseline Human Health Risk Assessment - Draft
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Dyerville Pond					
Visiting Subsistence Angler	Child (ages 1 through 6)	Sediment	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Surface water	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		American Eel	Ingestion	4E-03	88
			Total Risk:	**4E-03**	**88**
Visiting Subsistence Angler	Older Child (ages 7 through 18)	Sediment	Incidental ingestion	4E-06	0.09
			Dermal contact	4E-06	0.05
		Surface water	Incidental ingestion	2E-06	0.004
			Dermal contact	5E-03	0.04
		American Eel	Ingestion	5E-03	54
			Total Risk:	**1E-02**	**55**
Visiting Subsistence Angler	Adult (ages 19 and above)	Sediment	Incidental ingestion	1E-05	0.06
			Dermal contact	6E-06	0.02
		Surface water	Incidental ingestion	5E-06	0.003
			Dermal contact	2E-02	0.04
		American Eel	Ingestion	2E-02	52
			Total Risk:	**4E-02**	**53**

NA = Not applicable. The "Visiting Recreational Angler Child" and the "Visiting Subsistence Angler Child" are not expected to visit the Site and therefore are not exposed to surface water, sediment, or bank soil at the Site. It is presumed that the Child is exposed only by consuming fish caught by older family members.
Largemouth Bass (F) - Fillet
Largemouth Bass (W) - Reconstituted Whole Body

(1)Total Risk: = The sum of risks associated with all exposure media for the receptor age-group. This sum includes the value for consumption of only one species of fish (that species with the highest risk).

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Table F.11.CT
Risk Assessment Summary

Baseline Human Health Risk Assessment - Draft
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Assapumpset Pond					
Visiting Subsistence Angler	Child (ages 1 through 6)	Sediment	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Surface water	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		American Eel	Ingestion	3E-05	4
		Largemouth Bass (F)	Ingestion	3E-05	5
		Largemouth Bass (W)	Ingestion	4E-05	1
		Brown Bullhead	Ingestion	1E-04	10
			Total Risk:	**1E-04**	**10**
Visiting Subsistence Angler	Older Child (ages 7 through 18)	Sediment	Incidental ingestion	2E-07	0.003
			Dermal contact	9E-08	0.0004
		Surface water	Incidental ingestion	5E-09	0.0001
			Dermal contact	2E-05	0.007
		American Eel	Ingestion	2E-05	2
		Largemouth Bass (F)	Ingestion	3E-05	2
		Largemouth Bass (W)	Ingestion	1E-04	5
		Brown Bullhead	Ingestion	4E-05	0.7
			Total Risk:	**1E-04**	**5**
Visiting Subsistence Angler	Adult (ages 19 and above)	Sediment	Incidental ingestion	1E-07	0.002
			Dermal contact	2E-08	0.00009
		Surface water	Incidental ingestion	3E-09	0.00009
			Dermal contact	1E-05	0.006
		American Eel	Ingestion	3E-05	3
		Largemouth Bass (F)	Ingestion	4E-05	3
		Largemouth Bass (W)	Ingestion	1E-04	6
		Brown Bullhead	Ingestion	5E-05	0.9
			Total Risk:	**2E-04**	**6**

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Table F.11.CT
Risk Assessment Summary

Baseline Human Health Risk Assessment - Draft
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Greystone Mill Pond					
Visiting Subsistence Angler	Child (ages 1 through 6)	Bank Soil	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Sediment	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Surface water	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		American Eel	Ingestion	1E-04	30
		Largemouth Bass (F)	Ingestion	4E-05	21
		Largemouth Bass (W)	Ingestion	1E-04	34
		White Sucker	Ingestion	1E-04	22
			Total Risk:	**1E-04**	**34**
Visiting Subsistence Angler	Older Child (ages 7 through 18)	Bank Soil	Incidental ingestion	1E-06	0.03
			Dermal contact	1E-06	0.006
		Sediment	Incidental ingestion	9E-07	0.01
			Dermal contact	4E-07	0.002
		Surface water	Incidental ingestion	6E-09	0.0002
			Dermal contact	2E-05	0.007
		American Eel	Ingestion	1E-04	14
		Largemouth Bass (F)	Ingestion	4E-05	10
		Largemouth Bass (W)	Ingestion	1E-04	16
		White Sucker	Ingestion	1E-04	10
			Total Risk:	**2E-04**	**16**
Visiting Subsistence Angler	Adult (ages 19 and above)	Bank Soil	Incidental ingestion	1E-06	0.02
			Dermal contact	2E-07	0.001
		Sediment	Incidental ingestion	6E-07	0.007
			Dermal contact	8E-08	0.0004
		Surface water	Incidental ingestion	4E-09	0.0001
			Dermal contact	1E-05	0.006
		American Eel	Ingestion	2E-04	18
		Largemouth Bass (F)	Ingestion	5E-05	12
		Largemouth Bass (W)	Ingestion	1E-04	20
		White Sucker	Ingestion	2E-04	13
			Total Risk:	**2E-04**	**20**

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Table F.11.CT
Risk Assessment Summary

Baseline Human Health Risk Assessment - Draft
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Allendale Pond					
Visiting Subsistence Angler	Child (ages 1 through 6)	Bank Soil	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Sediment	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Surface water	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		American Eel	Ingestion	3E-03	66
		White Sucker	Ingestion	1E-02	202
			Total Risk:	**1E-02**	**202**
Visiting Subsistence Angler	Older Child (ages 7 through 18)	Bank Soil	Incidental ingestion	1E-06	NA
			Dermal contact	3E-07	NA
		Sediment	Incidental ingestion	2E-05	0.03
			Dermal contact	3E-06	0.01
		Surface water	Incidental ingestion	6E-07	0.003
			Dermal contact	3E-03	0.08
		American Eel	Ingestion	3E-03	31
		White Sucker	Ingestion	9E-03	95
			Total Risk:	**1E-02**	**95**
Visiting Subsistence Angler	Adult (ages 19 and above)	Bank Soil	Incidental ingestion	7E-07	NA
			Dermal contact	5E-08	NA
		Sediment	Incidental ingestion	1E-05	0.02
			Dermal contact	7E-07	0.002
		Surface water	Incidental ingestion	4E-07	0.002
			Dermal contact	3E-03	0.07
		American Eel	Ingestion	3E-03	40
		White Sucker	Ingestion	1E-02	122
			Total Risk:	**1E-02**	**122**

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Table F.11.CT
Risk Assessment Summary

Baseline Human Health Risk Assessment - Draft
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Lyman Mill Pond					
Visiting Subsistence Angler	Child (ages 1 through 6)	Sediment	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Surface water	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		American Eel	Ingestion	4E-03	67
		Largemouth Bass (F)	Ingestion	7E-04	20
		Largemouth Bass (W)	Ingestion	4E-03	96
		White Sucker	Ingestion	2E-02	365
			Total Risk:	**2E-02**	**365**
Visiting Subsistence Angler	Older Child (ages 7 through 18)	Sediment	Incidental ingestion	6E-06	0.02
			Dermal contact	1E-06	0.003
		Surface water	Incidental ingestion	9E-08	0.001
			Dermal contact	4E-04	0.02
		American Eel	Ingestion	4E-03	32
		Largemouth Bass (F)	Ingestion	6E-04	9
		Largemouth Bass (W)	Ingestion	4E-03	45
		White Sucker	Ingestion	2E-02	171
			Total Risk:	**2E-02**	**171**
Visiting Subsistence Angler	Adult (ages 19 and above)	Sediment	Incidental ingestion	4E-06	0.01
			Dermal contact	3E-07	0.0007
		Surface water	Incidental ingestion	6E-08	0.0007
			Dermal contact	3E-04	0.02
		American Eel	Ingestion	5E-03	40
		Largemouth Bass (F)	Ingestion	8E-04	12
		Largemouth Bass (W)	Ingestion	5E-03	58
		White Sucker	Ingestion	2E-02	220
			Total Risk:	**2E-02**	**220**

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Table F.11.CT
Risk Assessment Summary

Baseline Human Health Risk Assessment - Draft
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Manton Pond					
Visiting Subsistence Angler	Child (ages 1 through 6)	Sediment	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Surface water	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Largemouth Bass (F)	Ingestion	4E-06	0.0005
		Largemouth Bass (W)	Ingestion	2E-03	46
			Total Risk:	**2E-03**	**46**
Visiting Subsistence Angler	Older Child (ages 7 through 18)	Sediment	Incidental ingestion	1E-06	0.001
			Dermal contact	2E-07	0.00006
		Surface water	Incidental ingestion	9E-08	0.001
			Dermal contact	4E-04	0.02
		Largemouth Bass (F)	Ingestion	3E-04	6
		Largemouth Bass (W)	Ingestion	2E-03	22
			Total Risk:	**2E-03**	**22**
Visiting Subsistence Angler	Adult (ages 19 and above)	Sediment	Incidental ingestion	7E-07	0.0007
			Dermal contact	5E-08	0.00001
		Surface water	Incidental ingestion	6E-08	0.0007
			Dermal contact	3E-04	0.02
		Largemouth Bass	Ingestion	4E-04	8
		Largemouth Bass	Ingestion	2E-03	28
			Total Risk:	**2E-03**	**28**

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Table F.11.CT
Risk Assessment Summary

Baseline Human Health Risk Assessment - Draft
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Dyerville Pond					
Visiting Subsistence Angler	Child (ages 1 through 6)				
		Sediment	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Surface water	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		American Eel	Ingestion	1E-03	29
			Total Risk:	**1E-03**	**29**
Visiting Subsistence Angler	Older Child (ages 7 through 18)				
		Sediment	Incidental ingestion	5E-07	0.009
			Dermal contact	3E-07	0.002
		Surface water	Incidental ingestion	9E-08	0.001
			Dermal contact	4E-04	0.02
		American Eel	Ingestion	1E-03	14
			Total Risk:	**1E-03**	**14**
Visiting Subsistence Angler	Adult (ages 19 and above)				
		Sediment	Incidental ingestion	4E-07	0.006
			Dermal contact	6E-08	0.0005
		Surface water	Incidental ingestion	6E-08	0.0007
			Dermal contact	3E-04	0.02
		American Eel	Ingestion	1E-03	17
			Total Risk:	**2E-03**	**17**

NA = Not applicable. The "Visiting Recreational Angler Child" and the "Visiting Subsistence Angler Child" are not expected to visit the Site and therefore are not exposed to surface water, sediment, or bank soil at the Site. It is presumed that the Child is exposed only by consuming fish caught by older family members.
Largemouth Bass (F) - Fillet
Largemouth Bass (W) - Reconstituted Whole Body

(1)Total Risk: = The sum of risks associated with all exposure media for the receptor age-group. This sum includes the value for consumption of only one species of fish (that species with the highest risk).

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Table F.12
***Incremental* Risks Above Background**

Baseline Human Health Risk Assessment - Draft
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

	Child Visiting Subsistence Angler White sucker		Adult Visiting Subsistence Angler White sucker		% Increment	
Exposure Area	RME Hazard Index	Incremental Hazard Index	RME Cancer Risk	Incremental Cancer Risk	Hazard Index	Cancer Risk
Greystone Mill Pond	56		2.E-03			
Allendale Pond	513	457	1.E-01	1.E-01	816	4900
Lyman Mill Pond	926	870	2.E-01	2.E-01	1554	9900
Manton Pond	not available	not available	not available	not available	not available	not available
Dyerville Pond	not available	not available	not available	not available	not available	not available

	Child Visiting Subsistence Angler Whole Body Largemouth Bass		Adult Visiting Subsistence Angler Whole Body Largemouth Bass		% Increment	
Exposure Area	RME Hazard Index	Incremental Hazard Index	RME Cancer Risk	Incremental Cancer Risk	Hazard Index	Cancer Risk
Greystone Mill Pond	85		1.E-03			
Allendale Pond	not available	not available	not available	not available	not available	not available
Lyman Mill Pond	250	165	6.E-02	6.E-02	194	5900
Manton Pond	217	132	4.E-02	4.E-02	155	3900
Dyerville Pond	not available	not available	not available	not available	not available	not available

	Child Visiting Subsistence Angler American eel		Adult Visiting Subsistence Angler American eel		% Increment	
Exposure Area	RME Hazard Index	Incremental Hazard Index	RME Cancer Risk	Incremental Cancer Risk	Hazard Index	Cancer Risk
Greystone Mill Pond	75		2.E-03			
Allendale Pond	168	93	4.E-02	4.E-02	124	1900
Lyman Mill Pond	171	96	6.E-02	6.E-02	128	2900
Manton Pond	not available	not available	not available	not available	not available	not available
Dyerville Pond	88	13	2.E-02	2.E-02	17	900

Prepared By: MJM
Checked By: KJA

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APPENDIX G

RISK CHARACTERIZATION FOR RESIDENT LIVING ALONG THE RIVER AND THE VISITING RECREATIONAL ANGLER – HIGH END FISH CONSUMPTION SCENARIO

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1.0 INTRODUCTION

This appendix evaluates the human health risk associated with high-end recreational angler scenarios. Both the Resident Living Along the River and the Visiting Recreational Angler are considered recreational anglers. This appendix evaluates the risks associated with potential exposure to chemicals of potential concern (COPCs) via ingestion of fish. This appendix is intended to provide additional perspective and reduce uncertainty with respect to fish consumption rates by identifying a more conservative exposure assessment approach for fish consumption than that used in the main body of the BHHRA. The potential exposure to chemicals of potential concern via incidental ingestion and dermal contact with surface water, sediment, and bank soil are not re-evaluated in this appendix.

Contaminants that are present in surface water and aquatic sediments may have bioaccumulated in fish and other biota present in the Woonasquatucket River. These fish may be consumed by individuals that catch and/or consume biota from the river. Child, older child, and adult consumers may be exposed to COPCs via ingestion of fish and other biota. Residents living Along the River and Visiting Recreational Anglers are evaluated in this appendix, focusing on three age groups that include the child (ages 1 through 6), the older child (ages 7 through 18), and the adult (19 and older). COPCs selected for fish tissue in the main body of the BHHRA have been carried through the calculations in this appendix. The dose-response data used in the main body of the BHHRA have also been utilized in this appendix. The exposure points evaluated in the main body of this BHHRA have also been evaluated in this appendix. These include the reference area Assapumpset Pond and Brook, the upstream background area Greystone Mill Pond, and the four areas adjacent to and downstream of the Centredale Manor Restoration Project Superfund Site source area which are Allendale Pond, Lyman Mill Pond, Manton Pond, and Dyerville Pond. The fish tissue exposure point concentrations (with one minor exception) used in the main body of the BHHRA have also been utilized in this appendix. The exception is that HCX toxic equivalency has been included in the dioxin toxic equivalency concentrations in this appendix, while it has not been included in the dioxin toxic equivalency in the main body of the report. Appendix H presents a separate evaluation of the potential risks associated with the chemical HCX for the Site.

Exposures were evaluated based on two scenarios, the CT and RME scenarios. The CT exposure is the typical or average exposure that would be expected in a population. The RME is the highest exposure that is reasonably expected to occur at a site. The CT and reasonable maximum exposure RME scenarios are characterized by coupling the contaminant concentrations with conservative exposure parameters developed for each exposure scenario. The CT and RME scenarios are summarized in RAGS Part D Table 4s and are discussed in section 2.0 below, and results are described in the text. Exposure parameters are obtained from USEPA guidance (USEPA, 1997a) and other USEPA-approved sources. In general, RME parameters represent 95th percentile values and CT parameters represent mean values.

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2.0 RECEPTOR EXPOSURE SCENARIOS FOR BIOTA CONSUMPTION

Currently, there is a fish consumption advisory issued by the State of Rhode Island that is not believed to be a sufficient barrier to precluding all exposure to biota from the Woonasquatucket River in the short-term. Current and potential future exposure to fish and other biota (including high lipid content biota such as eels) may occur at the river. A current biota consumption scenario as well as a future scenario is evaluated in the BHHRA with the understanding that the fish consumption advisory is not always completely effective.

For the purposes of this appendix, it is assumed that currently, and in the future, neighborhood residents may be involved in recreational angling and associated consumption of caught fish in each of the two reference/background areas and each of the four Exposure Areas (EAs) associated with the portions of the Woonasquatucket River adjacent to and downstream of the source area. In addition, it is assumed that currently, and in the future, people who do not reside in the neighborhood may visit each of the two reference/background areas or each of the four EAs and be involved in either recreational angling.

The fish tissue exposure point concentrations used in this high-end fish consumption scenario are the same values that have been used in the main body of the BHHRA. Exposure point concentrations for American eel, largemouth bass fillet, and white sucker are presented in Tables G.3.1.RME through G.3.3.RME and Tables G.3.1.CT through G.3.3.CT.

Tables G.4.1.RME through G.4.3.RME present RME parameters for consumption of American eel, largemouth bass fillet, and white sucker respectively for the resident living along the river and the visiting recreational angler. Tables G. 4.1.CT through G.4.3.CT present CT parameters for consumption of American eel, white sucker, and largemouth bass respectively for the resident living along the river and the visiting recreational angler. The following average daily RME fish consumption rates for recreational anglers have been identified in Appendix C: child (14.0 gram/day); older child (25.8 gram/day); adult (38.7 gram/day). The average daily CT fish consumption rates utilized in this appendix are: child (5.63 gram/day); older child (7.94 gram/day); adult (15.8 gram/day). The adult RME fish consumption rate corresponds to fish consumption of approximately 5.3 ounces per day. The documentation of the derivation of these high-end recreational angler fish consumption rates are presented in Appendix C. These consumption rates were chosen based on fish intake studies discussed in EPA's Exposure Factors Handbook, Volume II (USEPA, 1997), and therefore are not based on local or regional recreational fish consumption rates.

3.0 CALCULATION OF NON-CANCER AND CANCER RISKS

RAGS Part D Table 7s are used to present the risk calculations. In simplistic terms, for a given receptor/age-group, cancer risks are calculated for each chemical in each medium (e.g., sediment) and exposure route (e.g., ingestion, dermal contact). Risks across exposure routes are summed to yield the risk for that medium. Cancer risks associated with all exposure media for that receptor/age-group are summed to yield the cumulative receptor cancer risk for that receptor/age-group. For a given receptor (by age-group), the non-cancer Hazard Index is calculated for each chemical, and exposure route for a given medium. Hazard Index values associated with all exposure media for that receptor/age-group are summed to yield the screening cumulative Hazard

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Index for that receptor/age-group. This summing of Hazard Index values across chemicals and exposure media is a conservative screening approach. Because chemicals can have different target organs, non-cancer risks are not necessarily additive.

The calculated RME and CT cancer risks and Hazard Index values for the six exposure points for the visiting recreational angler and the resident living along the river are presented in Tables G.7.1.RME through G.7.78.RME and Tables G.7.1.CT through G.7.78.CT. The RAGS Part D Table 7s document the risk calculations by identifying the COPCs, exposure point concentrations, daily chemical intakes by chemical for both cancer and non-cancer endpoints, the CSFs and RfDs, and the calculated cancer risk and Hazard Quotient for each chemical in each exposure medium. Further, the Table 7s present summed risks for fish consumption.

Table 7s are presented in the order discussed below. The CT risks are presented in Tables 7.1.CT through 7.78.CT. The tables are presented by exposure point (Assapumpset Brook and Pond, Greystone Mill Pond, Allendale Pond, Lyman Mill Pond, Manton Pond, and Dyerville Pond. Each of the scenarios evaluated have been identified as both current and future exposure scenarios. For each receptor group, each of the age groups is presented in a separate table.

This assessment has not specifically evaluated a scenario that combines the three fish species to evaluate a cumulative fish consumption scenario. Rather, each species is evaluated separately, under the assumption that the entire recreational fish diet is comprised of that one species. However, the assessment does provide information regarding the range of risks that might be expected for a mixed fish consumption diet. The mixed fish consumption diet risks (a weighted average for the three species) would be expected to be between the risks for the species with the lowest estimated risks (largemouth bass for both non-cancer and cancer risk) and the species with the highest risk (white sucker for both non-cancer and cancer risks).

The RME risk calculation spreadsheets are presented in the following order.

ASSAPUMPSET BROOK AND POND

- Visiting recreational angler at Assapumpset Brook and Pond – adult, older child, child - consumption of American eel. Tables G.7.1.RME through G.7.3.RME.
- Resident living along the Woonasquatucket River (Assapumpset Brook and Pond) - adult, older child, child - consumption of American eel. Tables G.7.4.RME through G.7.6.RME.
- Visiting recreational angler at Assapumpset Brook and Pond – adult, older child, child - consumption of largemouth bass fillet. Tables G.7.7.RME through G.7.9.RME.
- Resident living along the Woonasquatucket River (Assapumpset Brook and Pond) – adult, older child, child - consumption of largemouth bass fillet. Tables G.7.10.RME through G.7.12RME.
- Visiting recreational angler at Assapumpset Brook and Pond – adult, older child, child - consumption of brown bullhead. Tables G.7.13.RME through G.7.15.RME.
- Resident living along the Woonasquatucket River (Assapumpset Brook and Pond) – adult, older child, child – consumption of brown bullhead. Tables G.7.16.RME through G.7.18.RME.

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GREYSTONE MILL POND

- Visiting recreational angler at Greystone Mill Pond – adult, older child - consumption of American eel. Tables G.7.19.RME through G.7.21RME.
- Resident living along the Woonasquatucket River (Greystone Mill Pond) - adult, older child, child – consumption of American eel. Tables G.7.22.RME through G.7.24.RME.
- Visiting recreational angler at Greystone Mill Pond – adult, older child - consumption of largemouth bass fillet. Tables G.7.25.RME through G.7.27.RME.
- Resident living along the Woonasquatucket River (Greystone Mill Pond) – adult, older child, child – consumption of largemouth bass fillet. Tables G.7.28.RME through G.7.30.RME.
- Visiting recreational angler at Greystone Mill Pond – adult, older child - consumption of white sucker. Tables G.7.31.RME through G.7.33.RME.
- Resident living along the Woonasquatucket River (Greystone Mill Pond) – adult, older child, child – consumption of white sucker. Tables G.7.34.RME through G.7.36.RME.

ALLENDALE POND

- Visiting recreational angler at Allendale Pond – adult, older child, child - consumption of American eel. Tables G.7.37.RME through G.7.39.RME.
- Resident living along the Woonasquatucket River (Allendale Pond) - adult, older child, child – consumption of American eel. Tables G.7.40.RME through G.7.42.RME.
- Visiting recreational angler at Allendale Pond – adult, older child - consumption of white sucker. Tables G.7.43.RME through G.7.45.RME.
- Resident living along the Woonasquatucket River (Allendale Pond) – adult, older child, child – consumption of white sucker. Tables G.7.46.RME through G.7.48.RME.

LYMAN MILL POND

- Visiting recreational angler at Lyman Mill Pond – adult, older child - consumption of American eel. Tables G.7.49.RME through G.7.51.RME.
- Resident living along the Woonasquatucket River (Lyman Mill Pond) – adult, older child, child – consumption of American eel Tables G.7.52.RME through G.7.54.RME.
- Visiting recreational angler at Lyman Mill Pond – adult, older child - consumption of largemouth bass fillet. Tables G.7.55.RME through G.7.57.RME.
- Resident living along the Woonasquatucket River (Lyman Mill Pond) – adult, older child, child – consumption of largemouth bass fillet. Tables G.7.58.RME through G.7.60.RME.
- Visiting recreational angler at Lyman Mill Pond – adult, older child - consumption of white sucker. Tables G.7.61.RME through G.7.63.RME.
- Resident living along the Woonasquatucket River (Lyman Mill Pond) – adult, older child, child – consumption of white sucker. Tables G.7.64.RME through G.7.66.RME.

MANTON POND

- Visiting recreational angler at Manton Pond – adult, older child, child - consumption of largemouth bass fillet. Tables G.7.67.RME through G.7.69.RME.
- Resident living along the Woonasquatucket River (Manton Pond) – adult, older child, child – consumption of largemouth bass fillet. Tables G.7.70.RME through G.7.72.RME.

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DYERVILLE POND

- Visiting recreational angler at Dyerville Pond – adult, older child, child - consumption of American eel. Tables G.7.73.RME through G.7.75.RME.
- Resident living along the Woonasquatucket River (Dyerville Pond) – adult, older child, child – consumption of American eel. Tables G.7.76.RME through G.7.78.RME.

The CT risk calculation spreadsheets are presented in the same order with the same numbering scheme as the RME spreadsheets, but the table numbers contain "CT" rather than "RME (e.g., Table G.7.1.CT).

Presentation of Non-cancer and Cancer Risks

RAGS Part D Table 9s summarize the information that is documented in the Table 7s. In addition, consistent with USEPA guidance (USEPA, 1989, 2001c), the Table 9s segregate the Hazard Index calculations by target organ system, and calculate a Hazard Index for each target organ system. This presentation of the Hazard Index calculations is an enhancement of the screening Hazard index calculations presented previously in the Table 7s. RAGS Part D Tables G.9.1.RME through G.9.78.RME and Tables G.9.1.CT through G.9.78.CT summarize the risk calculations that are documented in the Table 7s that were discussed previously.

Summary of Calculation of Receptor Risks –High End Fish Consumption Scenario

Tables G.11.RME and G.11.CT are risk summary tables. These tables present the fish consumption risks for each receptor/age-group combination. In addition to the RAGS Part D Table 7s and 9s, Figures G.1 through G.8 summarize the RME and CT risk calculations. For each receptor group, there are two RME figures and two CT figures. One RME figure summarizes, for one receptor group, the non-cancer risk for each of the six exposure points, while the other RME figure summarizes cancer risk for fish consumption at the six exposure points. The two CT figures for each receptor group also present, first, non-cancer, and then cancer risks.

As shown in Table G.11.RME and in Figures G.1 and G.3, the Hazard Index associated with consumption of each of the fish species is greater than ten for both receptors (at least one age group) at all four exposure areas (EA1, EA2, EA3, and EA4) and at Greystone Mill Pond for the RME scenarios. The Hazard Index associated with consumption of each of the fish species collected from Assapumpset Pond is generally between one and ten for the visiting recreational angler and resident living along the river. The highest RME Hazard Index values are associated with consumption of white sucker from Lyman Mill Pond. As shown in Table G.11.CT and in Figures G5 and G.7, the Hazard Index associated with consumption of each of the fish species is greater than one for all receptors at all four exposure areas and at Greystone Mill Pond for the CT scenarios. The Hazard Index associated with consumption of each of the fish species from Assapumpset Pond is generally lower than for the other exposure points and areas, with values slightly below and slightly above one.

As shown in Tables G.11.RME and G.11.CT and in Figures G.2, G.4, G.6, and G.8, the cancer risk associated with consumption of each of the three species of fish is greater than one in ten-thousand (1×10^{-4}) for both receptor groups (all age groups) at each of the four exposure areas for

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both RME and CT exposure scenarios. In Assapumpset Pond, the cancer risk associated with consumption of each of the American eel, largemouth bass fillet, and brown bullhead by the resident living along the river is below 1 x 10^{-4} for all age groups. The calculated cancer risk associated with consumption of all fish species (for at least one age group) for the visiting recreational angler is greater than 1 x 10^{-4} in the four exposure areas and in the reference/background areas. However, calculated cancer risks are higher in the four exposure areas than in the reference/background areas.

Figures G.9 and G.10 identify the major chemical contributors to total non-cancer and cancer risks for the visiting recreational angler at Lyman Mill Pond for the RME and CT scenarios respectively. These two figures are specific to one receptor (visiting recreational angler) and one exposure point (Lyman Mill Pond) only. This example is presented to identify the major chemical contributors to non-cancer and cancer risks, and the contribution of specific chemicals identified here appear to be typical for other receptors and exposure points. For non-cancer risks, Aroclor 1254 (97%), Technical chlordane (2%), Aroclor 1268 (1% for RME, 0.8% for CT), and methyl mercury (0.4%) in fish tissue (white sucker) are the predominant risk contributors. For cancer risks, Dioxins/furans (88%), Aroclor 1254 (6% for RME, 7% for CT), coplanar PCBs dioxin equivalents (5% for RME, 4% for CT), and Technical chlordane (0.5% for RME, 1% for CT) in fish tissue (white sucker) are the predominant risk contributors. An analysis of the contribution of congeners to the dioxins/furans TEQ in fish tissue in Allendale Pond, Lyman Mill Pond, Manton Pond, and Dyerville Pond indicates that 2,3,7,8-TCDD congener contributes approximately 99% of the TEQ that is comprised of the various dioxin and furan congeners as well as HCX.

Comparison of High-End Fish Consumption Risks to Risks Presented in the Main Body of the BHHRA

The results of this high-end fish consumption risk evaluation can be compared to the results of the evaluation of the fish consumption scenarios in the main body of the BHHRA. Using the RME risks for the visiting recreational angler at Lyman Mill Pond as an example, Table 11.RME (main body of BHHRA) and Table G.11.RME (this appendix) can be used to compare the high-end risks to those presented in the main body of the text.

As shown and in Table 11.RME, the RME Cancer Risk for the combined fish diet for the Visiting Recreational Angler at Lyman Mill Pond (6 x 10^{-3}) is the sum of the risks for the child (2 x 10^{-3}), the older child (2 x 10^{-3}), and the adult (2 x 10^{-3}). For the high-end exposure, as shown in Table G.11.RME, the RME Cancer Risk for the diet comprised solely of white sucker (highest contaminant concentrations) for the Visiting Recreational Angler at Lyman Mill Pond (8 x 10^{-2}) is the sum of the risks for the child (1 x 10^{-2}), the older child (1 x 10^{-2}), and the adult (6 x 10^{-2}). For this high-end fish consumption scenario, the cancer risk is approximately 13 times higher than for the realistic, regional fish consumption scenario presented in the main body of the text. If a high-end diet comprised of only largemouth bass fillet (lowest contaminant concentrations) is considered, the RME fish consumption cancer risk for the visiting recreational angler (4 x 10^{-3}) is actually slightly lower than the corresponding RME cancer risk for the combined diet (6 x 10^{-3}). The arithmetic average of the high-end RME cancer risk (4 x 10^{-2}) for the three species (American eel, largemouth bass fillet, and white sucker) is approximately six times higher than

the corresponding RME cancer risk for the combined fish diet for the visiting recreational angler as described in Table 11.RME of the main body of the BHHRA.

For non-cancer risk, the RME scenario for the child (age group with the highest Hazard Index) visiting recreational angler at Lyman Mill Pond can be used as an example. As shown in Table 11.RME of the main body of the BHHRA, the RME Hazard Index for the combined fish diet for the child is 34. As shown in Table G.11.RME, the corresponding high-end Hazard Index values are 45 (American eel), 13 (largemouth bass fillet), and 242 (white sucker). The arithmetic mean hazard index value for the three species (100) is approximately three times the corresponding combined fish diet Hazard Index (34) identified in the main body of the BHHRA.

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Figure G.1
Summary of RME Human Health Noncancer Risks - Resident Living Along the Woonasquatucket River Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

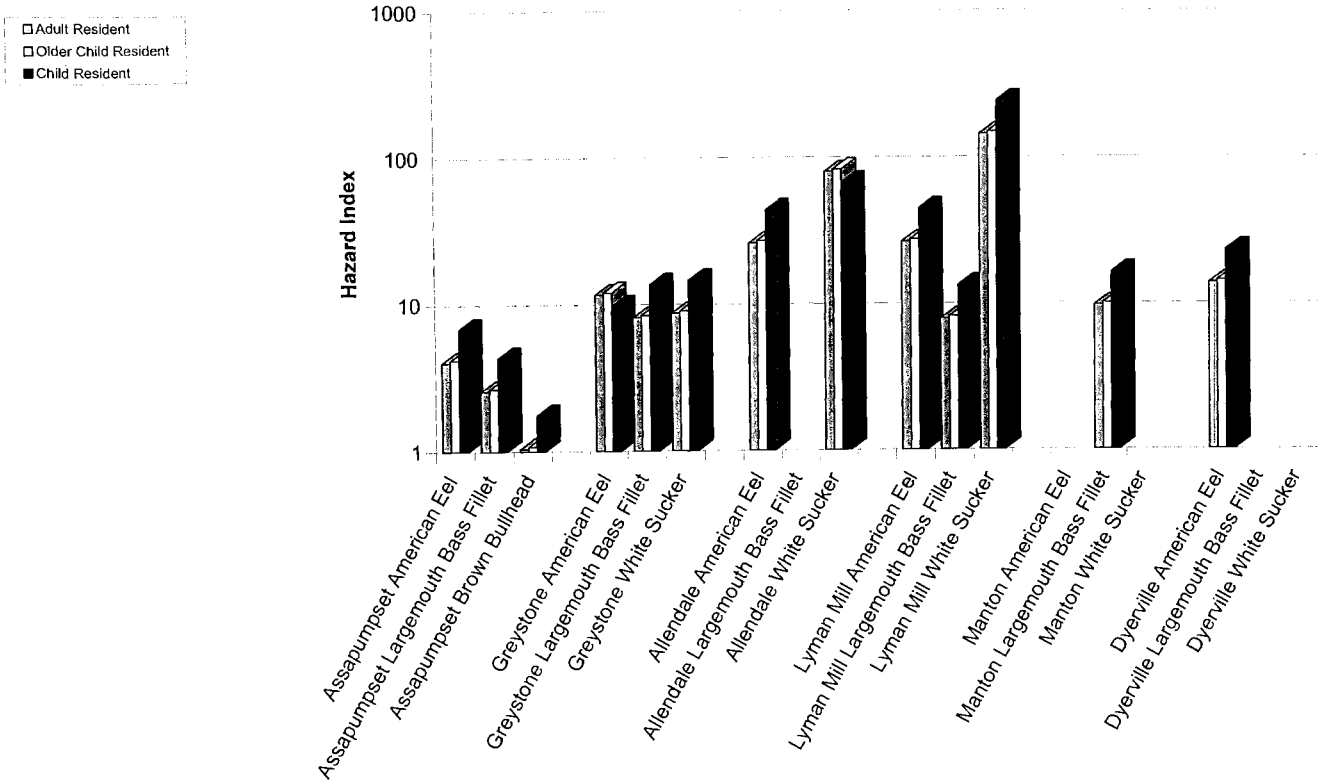

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Figure G.2
Summary of RME Human Health Cancer Risks - Resident Living Along the Woonasquatucket River
Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site North Providence, Rhode Island

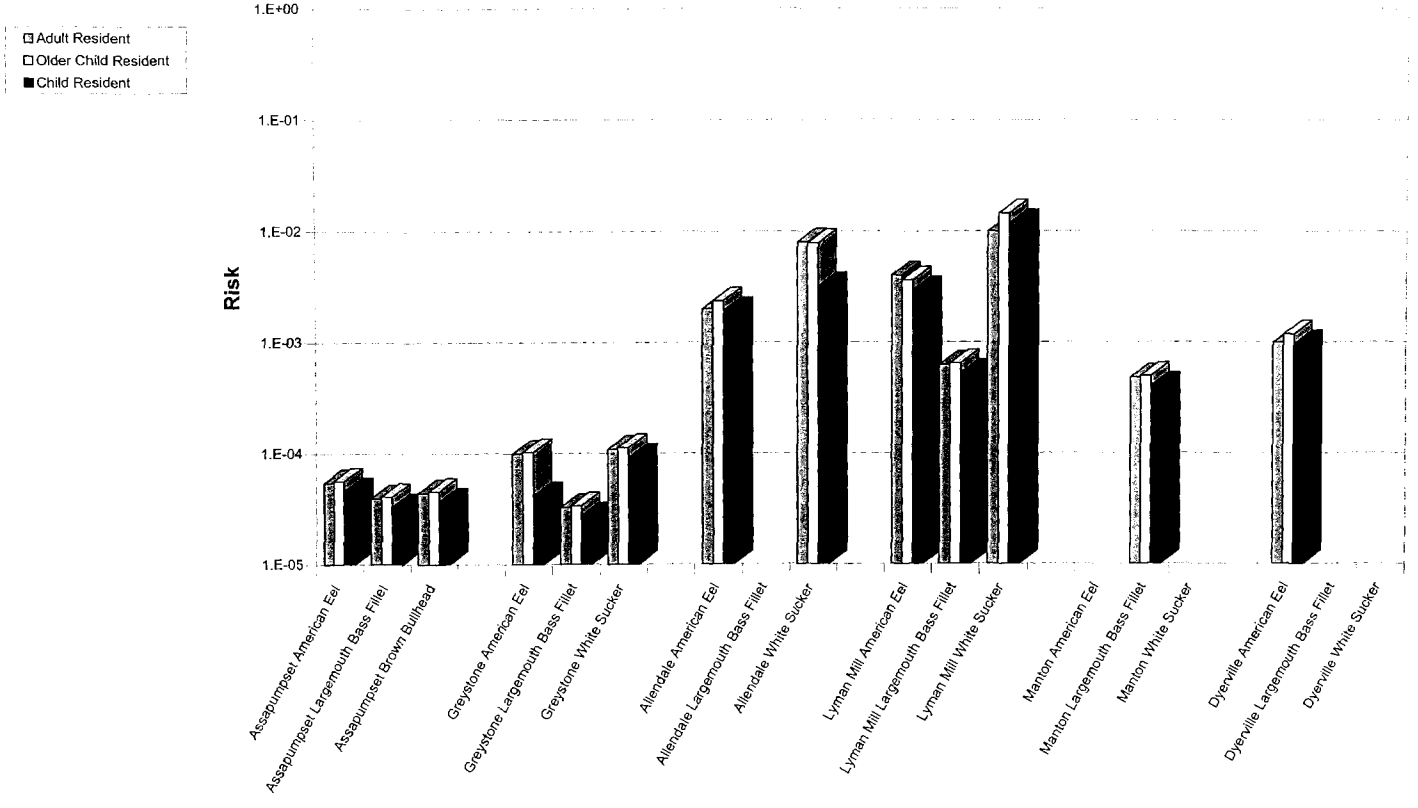

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Figure G.3
Summary of RME Human Health Noncancer Risks - Visiting Recreational Angler
Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

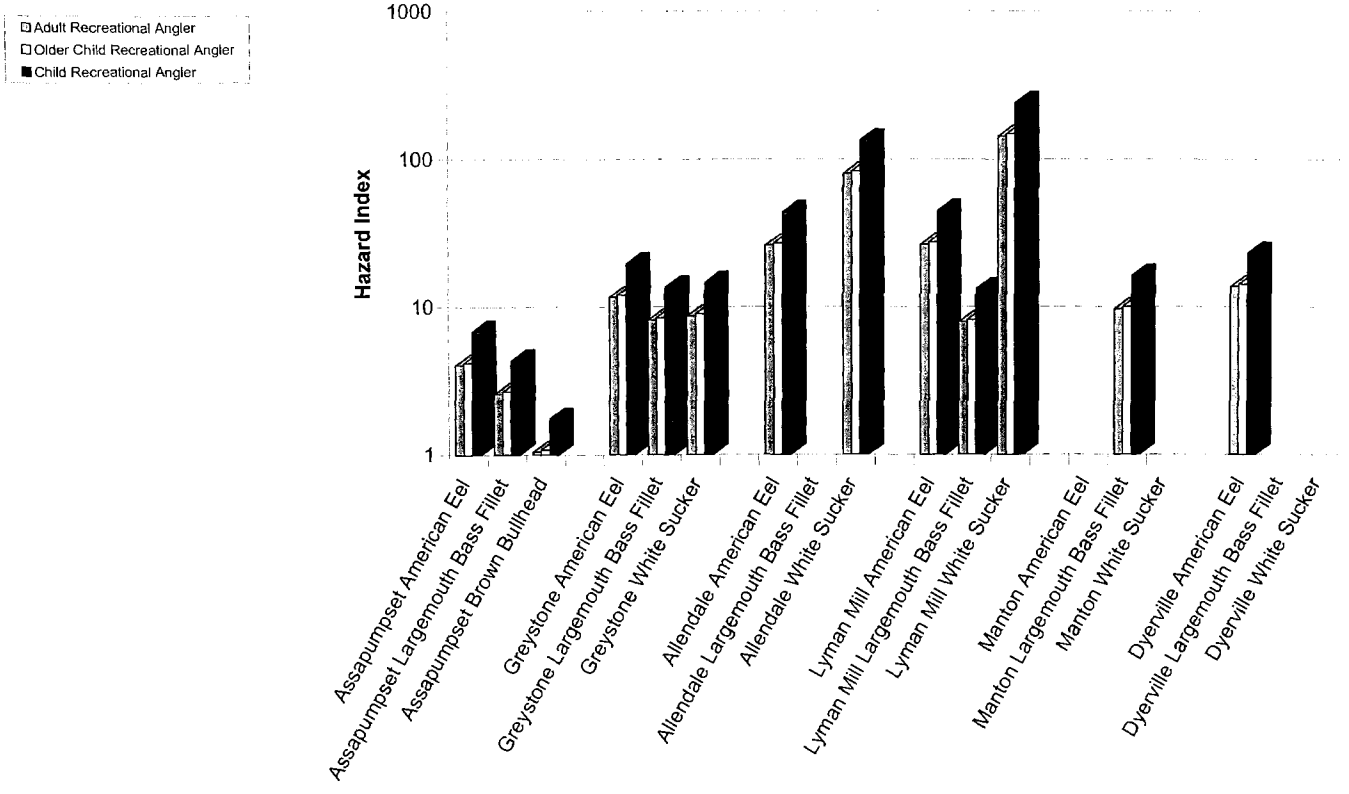

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Figure G.4
Summary of RME Human Health Cancer Risks - Visiting Recreational Angler
Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

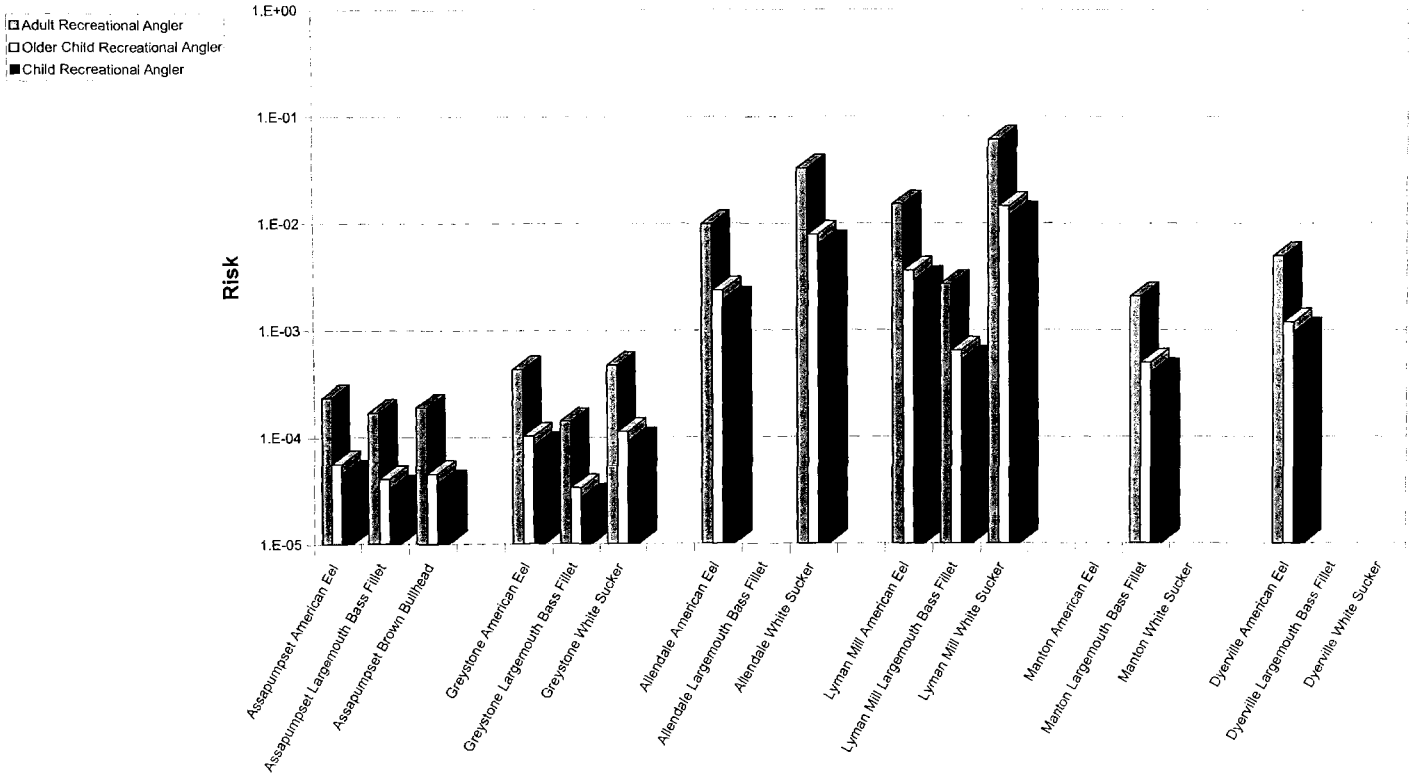

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Figure G.5
Summary of CT Human Health Noncancer Risks - Resident Living Along the Woonasquatucket River

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

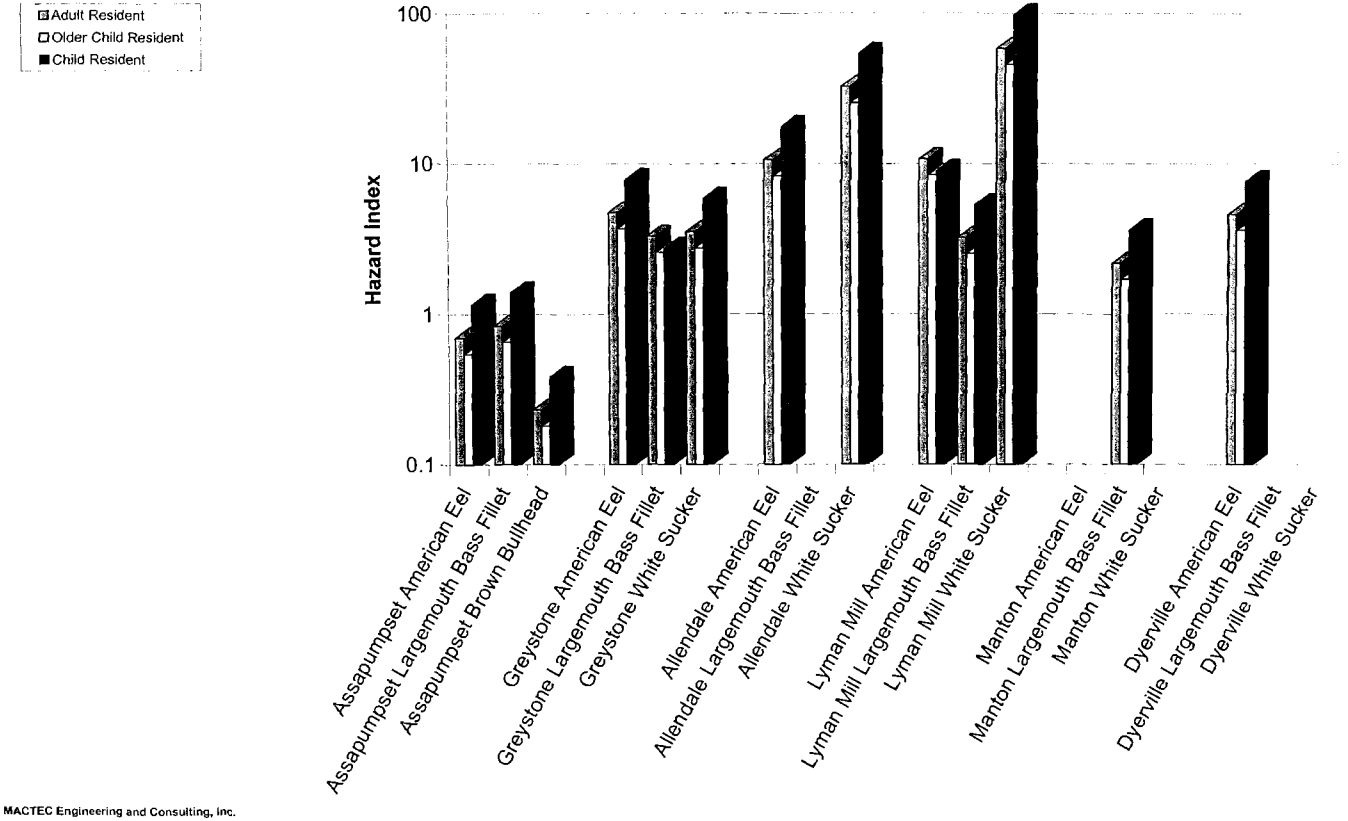

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Figure G.6
Summary of CT Human Health Cancer Risks - Resident Living Along the Woonasquatucket River

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

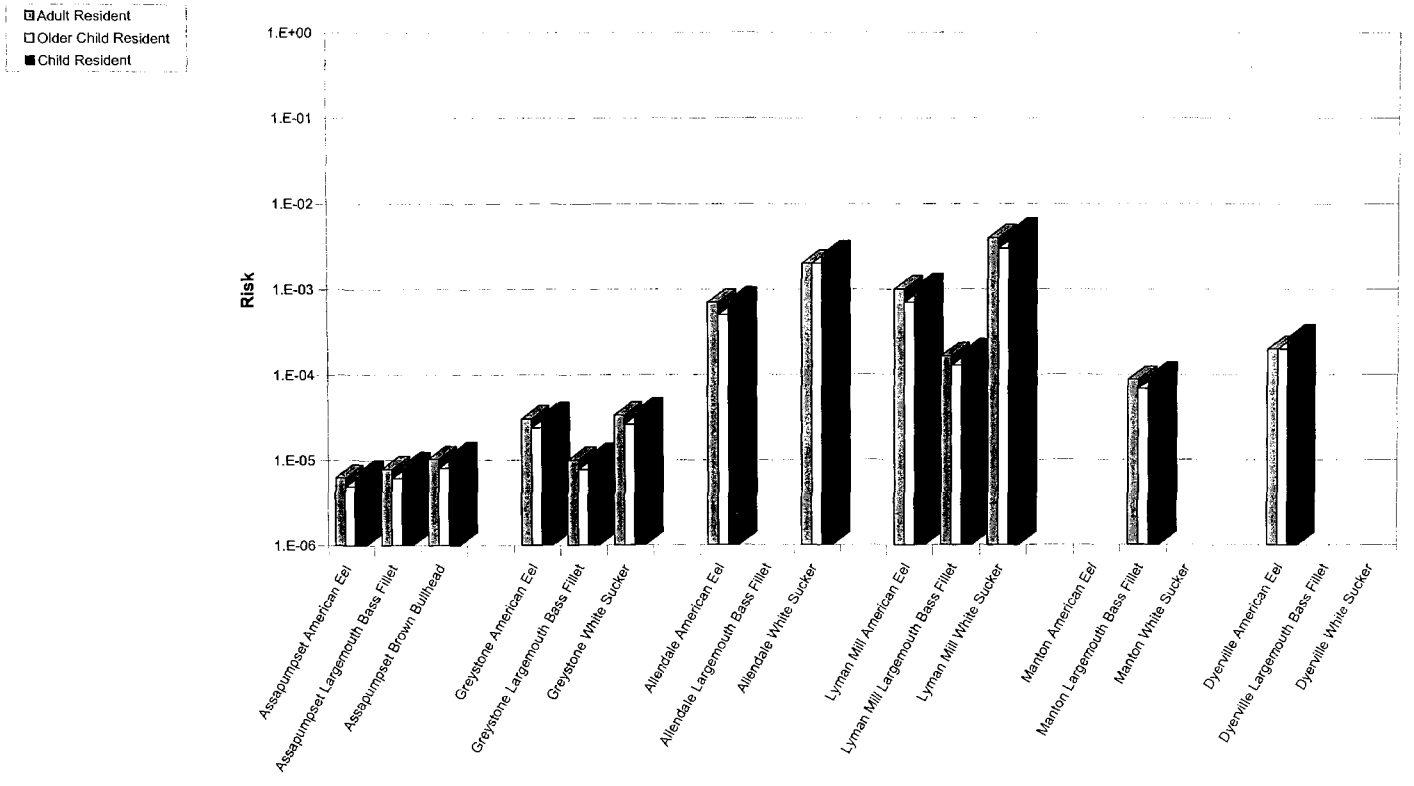

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Figure G.7
Summary of CT Human Health Noncancer Risks - Visiting Recreational Angler

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

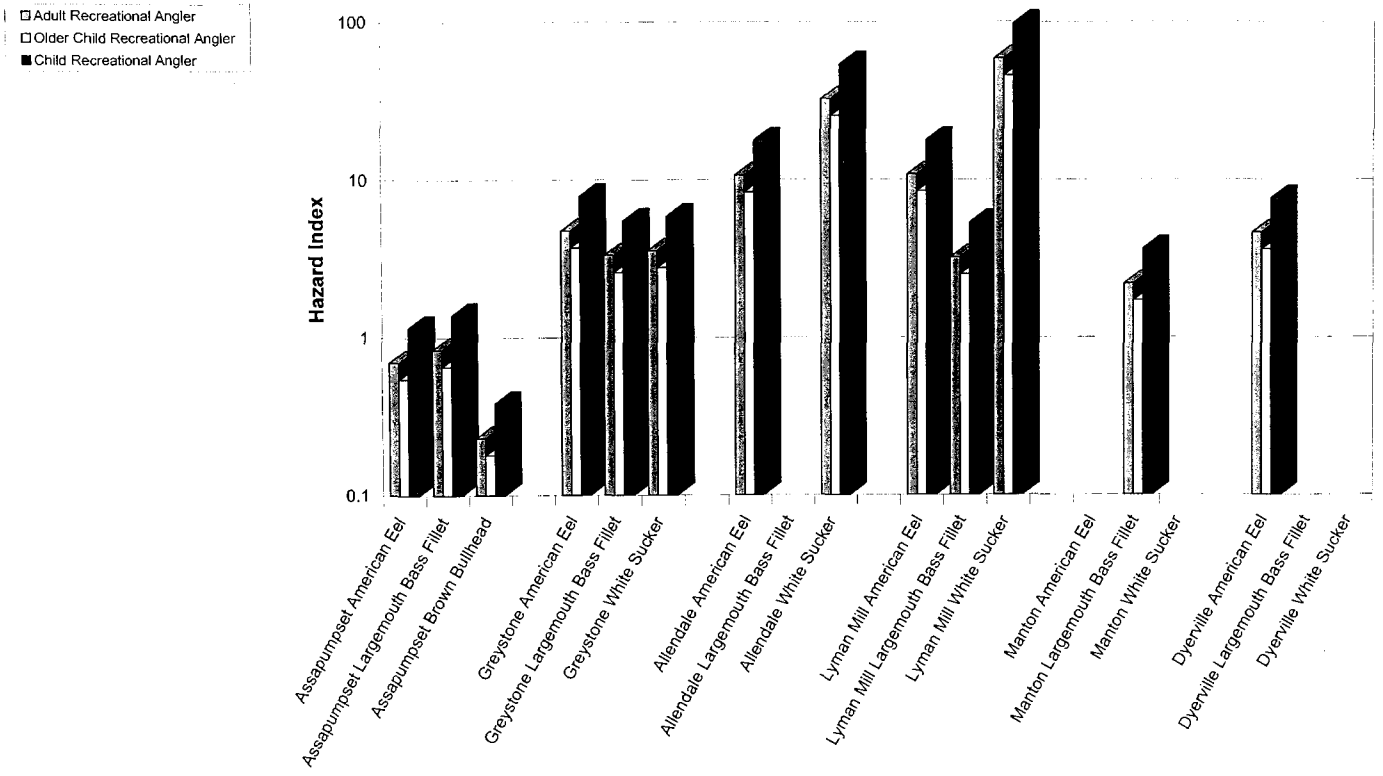

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Figure G.8
Summary of CT Human Health Cancer Risks - Visiting Recreational Angler
Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

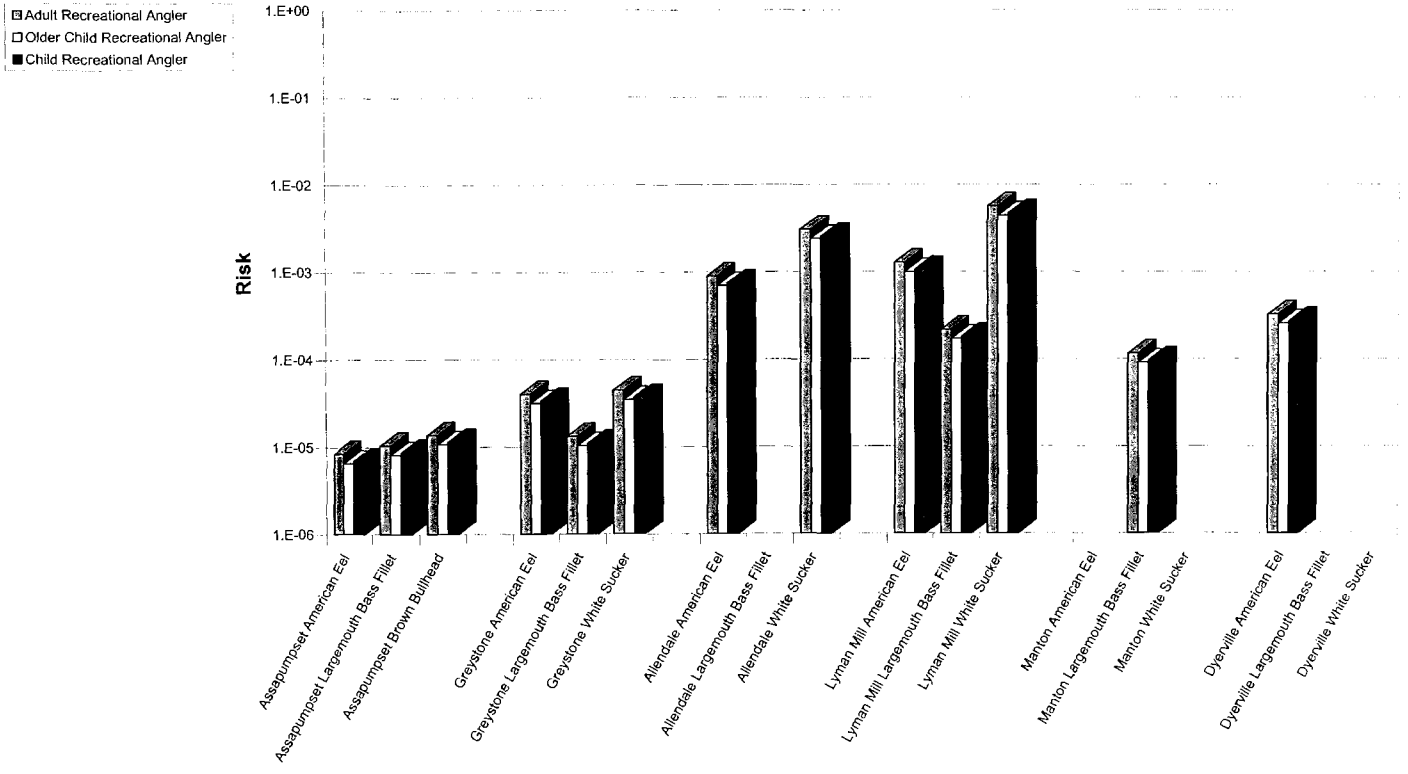

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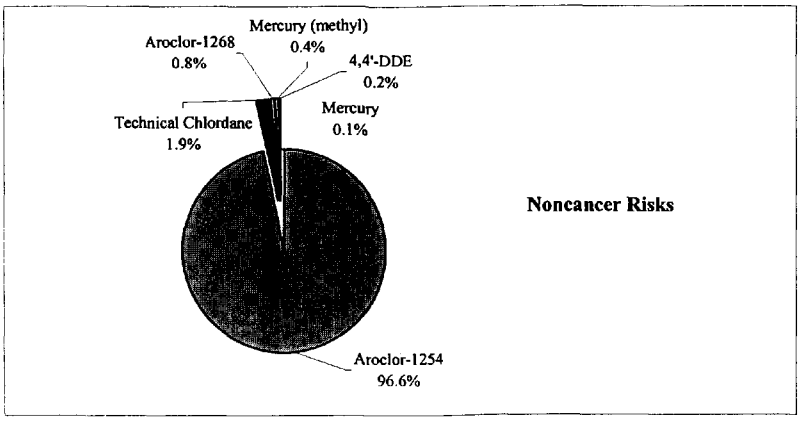
Figure G.9
Distribution of RME Human Health Noncancer and Cancer Risks by Chemical - Visiting Recreational Angler
Lyman Mill Pond

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island



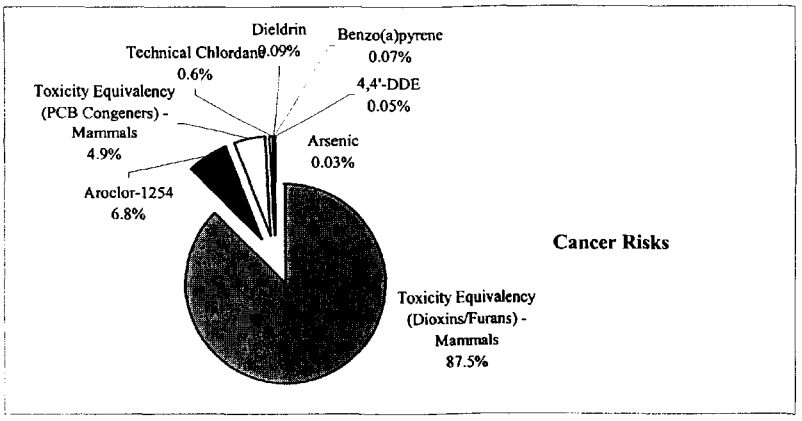


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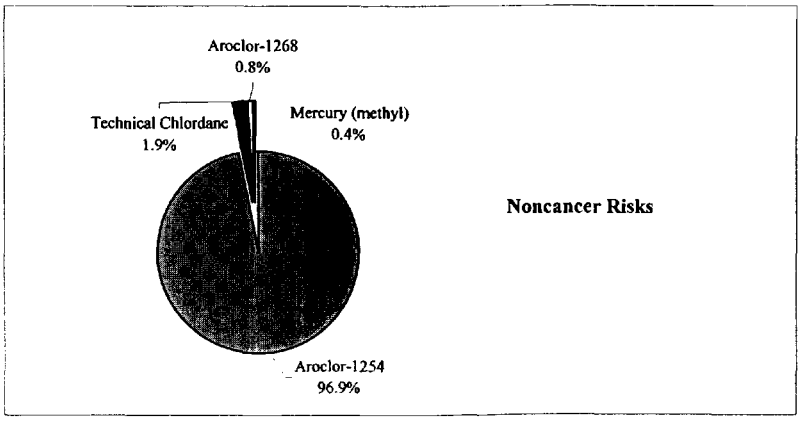
Figure G.10
Distribution of CT Human Health Noncancer and Cancer Risks by Chemical - Visiting Recreational Angler
Lyman Mill Pond

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island



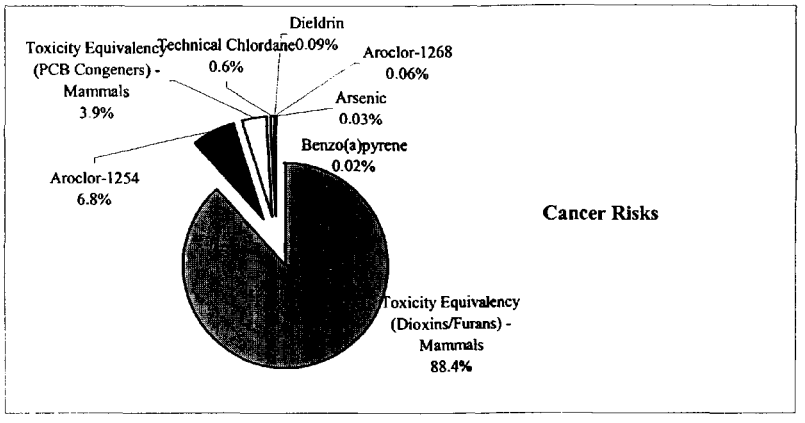


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Table G.11.RME
Risk Assessment Summary

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Assapumpset Pond					
Visiting Recreational Angler	Child (ages 1 through 6)	Sediment	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Surface water	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		American Eel	Ingestion	5E-05	7
		Largemouth Bass (F)	Ingestion	3E-05	4
		Largemouth Bass (W)	Ingestion	2E-04	10
		Brown Bullhead	Ingestion	4E-05	2
			Total Risk:	**2E-04**	**10**
Visiting Recreational Angler	Older Child (ages 7 through 18)	Sediment	Incidental ingestion	1E-07	0.002
			Dermal contact	2E-07	0.0007
		Surface water	Incidental ingestion	1E-09	0.00003
			Dermal contact	2E-06	0.0009
		American Eel	Ingestion	6E-05	4
		Largemouth Bass (F)	Ingestion	4E-05	3
		Largemouth Bass (W)	Ingestion	3E-04	6
		Brown Bullhead	Ingestion	5E-05	1.1
			Total Risk:	**3E-04**	**6**
Visiting Recreational Angler	Adult (ages 19 and above)	Sediment	Incidental ingestion	4E-07	0.002
			Dermal contact	2E-07	0.0002
		Surface water	Incidental ingestion	3E-09	0.00002
			Dermal contact	8E-06	0.0008
		American Eel	Ingestion	2E-04	4
		Largemouth Bass (F)	Ingestion	2E-04	3
		Largemouth Bass (W)	Ingestion	1E-03	6
		Brown Bullhead	Ingestion	2E-04	1
			Total Risk:	**1E-03**	**6**

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Table G.11.RME
Risk Assessment Summary

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Assapumpset Pond (cont)					
Resident Living Along the River	Child (ages 1 through 6)				
		Sediment	Incidental ingestion	3E-06	0.1
			Dermal contact	7E-07	0.007
		Surface water	Incidental ingestion	6E-08	0.004
			Dermal contact	6E-06	0.004
		American Eel	Ingestion	5E-05	7
		Largemouth Bass (F)	Ingestion	3E-05	4
		Largemouth Bass (W)	Ingestion	2E-04	10
		Brown Bullhead	Ingestion	4E-05	2
			Total Risk:	**2E-04**	**10**
Resident Living Along the River	Older Child (ages 7 through 18)				
		Sediment	Incidental ingestion	8E-07	0.01
			Dermal contact	5E-07	0.002
		Surface water	Incidental ingestion	4E-08	0.001
			Dermal contact	2E-05	0.008
		American Eel	Ingestion	6E-05	4
		Largemouth Bass (F)	Ingestion	4E-05	3
		Largemouth Bass (W)	Ingestion	3E-04	6
		Brown Bullhead	Ingestion	5E-05	1
			Total Risk:	**3E-04**	**6**
Resident Living Along the River	Adult (ages 19 and above)				
		Sediment	Incidental ingestion	5E-07	0.01
			Dermal contact	1E-07	0.0007
		Surface water	Incidental ingestion	3E-08	0.0009
			Dermal contact	2E-05	0.006
		American Eel	Ingestion	5E-05	4
		Largemouth Bass (F)	Ingestion	4E-05	3
		Largemouth Bass (W)	Ingestion	3E-04	6
		Brown Bullhead	Ingestion	4E-05	1
			Total Risk:	**3E-04**	**6**

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Risk Assessment Summary

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Greystone Mill Pond					
Visiting Recreational Angler	Child (ages 1 through 6)	Bank Soil	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Sediment	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Surface water	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		American Eel	Ingestion	8E-05	20
		Largemouth Bass (F)	Ingestion	3E-05	14
		Largemouth Bass (W)	Ingestion	7E-05	22
		White Sucker	Ingestion	9E-05	15
			Total Risk:	**9E-05**	**22**
Visiting Recreational Angler	Older Child (ages 7 through 18)	Bank Soil	Incidental ingestion	5E-07	0.01
			Dermal contact	8E-07	0.006
		Sediment	Incidental ingestion	5E-07	0.008
			Dermal contact	6E-07	0.003
		Surface water	Incidental ingestion	1E-09	0.00004
			Dermal contact	2E-06	0.0008
		American Eel	Ingestion	1E-04	12
		Largemouth Bass (F)	Ingestion	3E-05	8
		Largemouth Bass (W)	Ingestion	9E-05	14
		White Sucker	Ingestion	1E-04	9
			Total Risk:	**1E-04**	**14**
Visiting Recreational Angler	Adult (ages 19 and above)	Bank Soil	Incidental ingestion	1E-06	0.008
			Dermal contact	9E-07	0.002
		Sediment	Incidental ingestion	1E-06	0.005
			Dermal contact	7E-07	0.001
		Surface water	Incidental ingestion	3E-09	0.00002
			Dermal contact	9E-06	0.0007
		American Eel	Ingestion	4E-04	12
		Largemouth Bass (F)	Ingestion	1E-04	8
		Largemouth Bass (W)	Ingestion	4E-04	13
		White Sucker	Ingestion	5E-04	9
			Total Risk:	**5E-04**	**13**

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Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Greystone Mill Pond (cont)					
Resident Living Along the River	Child (ages 1 through 6)				
		Bank Soil	Incidental ingestion	2E-05	0.9
			Dermal contact	4E-06	0.07
		Sediment	Incidental ingestion	1E-05	0.4
			Dermal contact	3E-06	0.03
		Surface water	Incidental ingestion	7E-08	0.004
			Dermal contact	6E-06	0.004
		American Eel	Ingestion	8E-05	20
		Largemouth Bass (F)	Ingestion	3E-05	14
		Largemouth Bass (W)	Ingestion	7E-05	22
		White Sucker	Ingestion	9E-05	15
			Total Risk:	**1E-04**	**24**
Resident Living Along the River	Older Child (ages 7 through 18)				
		Bank Soil	Incidental ingestion	6E-06	0.1
			Dermal contact	5E-06	0.04
		Sediment	Incidental ingestion	3E-06	0.05
			Dermal contact	2E-06	0.01
		Surface water	Incidental ingestion	5E-08	0.001
			Dermal contact	2E-05	0.007
		American Eel	Ingestion	1E-04	12
		Largemouth Bass (F)	Ingestion	3E-05	8
		Largemouth Bass (W)	Ingestion	9E-05	14
		White Sucker	Ingestion	1E-04	9
			Total Risk:	**1E-04**	**14**
Resident Living Along the River	Adult (ages 19 and above)				
		Bank Soil	Incidental ingestion	4E-06	0.09
			Dermal contact	1E-06	0.01
		Sediment	Incidental ingestion	2E-06	0.03
			Dermal contact	5E-07	0.003
		Surface water	Incidental ingestion	3E-08	0.0009
			Dermal contact	2E-05	0.006
		American Eel	Ingestion	1E-04	12
		Largemouth Bass (F)	Ingestion	3E-05	8
		Largemouth Bass (W)	Ingestion	9E-05	13
		White Sucker	Ingestion	1E-04	9
			Total Risk:	**1E-04**	**13**

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Baseline Human Health Risk Assessment - Interim Final
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Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Allendale Pond					
Visiting Recreational Angler	Child (ages 1 through 6)	Bank Soil	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Sediment	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Surface water	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		American Eel	Ingestion	2E-03	44
		White Sucker	Ingestion	6E-03	134
			Total Risk:	**6E-03**	**134**
Visiting Recreational Angler	Older Child (ages 7 through 18)	Bank Soil	Incidental ingestion	3E-07	NA
			Dermal contact	2E-07	NA
		Sediment	Incidental ingestion	6E-06	0.01
			Dermal contact	3E-06	0.01
		Surface water	Incidental ingestion	1E-07	0.0006
			Dermal contact	4E-04	0.008
		American Eel	Ingestion	2E-03	27
		White Sucker	Ingestion	8E-03	82
			Total Risk:	**8E-03**	**83**
Visiting Recreational Angler	Adult (ages 19 and above)	Bank Soil	Incidental ingestion	8E-07	NA
			Dermal contact	2E-07	NA
		Sediment	Incidental ingestion	2E-05	0.009
			Dermal contact	4E-06	0.003
		Surface water	Incidental ingestion	3E-07	0.0004
			Dermal contact	2E-03	0.007
		American Eel	Ingestion	1E-02	26
		White Sucker	Ingestion	3E-02	80
			Total Risk:	**3E-02**	**80**

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Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Allendale Pond (cont)					
Resident Living Along the River	Child (ages 1 through 6)				
		Bank Soil	Incidental ingestion	1E-05	NA
			Dermal contact	8E-07	NA
		Sediment	Incidental ingestion	2E-04	0.7
			Dermal contact	2E-05	0.1
		Surface water	Incidental ingestion	7E-06	0.07
			Dermal contact	1E-03	0.04
		American Eel	Ingestion	2E-03	44
		White Sucker	Ingestion	6E-03	134
			Total Risk:	**8E-03**	**135**
Resident Living Along the River	Older Child (ages 7 through 18)				
		Bank Soil	Incidental ingestion	3E-06	NA
			Dermal contact	9E-07	NA
		Sediment	Incidental ingestion	4E-05	0.08
			Dermal contact	1E-05	0.03
		Surface water	Incidental ingestion	5E-06	0.02
			Dermal contact	4E-03	0.07
		American Eel	Ingestion	2E-03	27
		White Sucker	Ingestion	8E-03	82
			Total Risk:	**1E-02**	**83**
Resident Living Along the River	Adult (ages 19 and above)				
		Bank Soil	Incidental ingestion	2E-06	NA
			Dermal contact	3E-07	NA
		Sediment	Incidental ingestion	2E-05	0.05
			Dermal contact	3E-06	0.01
		Surface water	Incidental ingestion	3E-06	0.01
			Dermal contact	3E-03	0.06
		American Eel	Ingestion	2E-03	26
		White Sucker	Ingestion	8E-03	80
			Total Risk:	**1E-02**	**80**

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Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Lyman Mill Pond					
Visiting Recreational Angler	Child (ages 1 through 6)	Sediment	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Surface water	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		American Eel	Ingestion	3E-03	45
		Largemouth Bass (F)	Ingestion	5E-04	13
		Largemouth Bass (W)	Ingestion	3E-03	65
		White Sucker	Ingestion	1E-02	242
			Total Risk:	**1E-02**	**242**
Visiting Recreational Angler	Older Child (ages 7 through 18)	Sediment	Incidental ingestion	9E-06	0.007
			Dermal contact	4E-06	0.004
		Surface water	Incidental ingestion	9E-08	0.0002
			Dermal contact	4E-04	0.002
		American Eel	Ingestion	4E-03	27
		Largemouth Bass (F)	Ingestion	6E-04	8
		Largemouth Bass (W)	Ingestion	3E-03	40
		White Sucker	Ingestion	1E-02	149
			Total Risk:	**1E-02**	**149**
Visiting Recreational Angler	Adult (ages 19 and above)	Sediment	Incidental ingestion	2E-05	0.004
			Dermal contact	6E-06	0.001
		Surface water	Incidental ingestion	3E-07	0.0001
			Dermal contact	1E-03	0.002
		American Eel	Ingestion	2E-02	26
		Largemouth Bass (F)	Ingestion	3E-03	8
		Largemouth Bass (W)	Ingestion	1E-02	39
		White Sucker	Ingestion	6E-02	144
			Total Risk:	**6E-02**	**144**

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Baseline Human Health Risk Assessment - Interim Final
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North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Lyman Mill Pond (cont)					
Resident Living Along the River	Child (ages 1 through 6)				
		Sediment	Incidental ingestion	2E-04	0.3
			Dermal contact	2E-05	0.04
		Surface water	Incidental ingestion	6E-06	0.02
			Dermal contact	9E-04	0.01
		American Eel	Ingestion	3E-03	45
		Largemouth Bass (F)	Ingestion	5E-04	13
		Largemouth Bass (W)	Ingestion	3E-03	65
		White Sucker	Ingestion	1E-02	242
			Total Risk:	**1E-02**	**243**
Resident Living Along the River	Older Child (ages 7 through 18)				
		Sediment	Incidental ingestion	5E-05	0.04
			Dermal contact	1E-05	0.01
		Surface water	Incidental ingestion	4E-06	0.008
			Dermal contact	3E-03	0.02
		American Eel	Ingestion	4E-03	27
		Largemouth Bass (F)	Ingestion	6E-04	8
		Largemouth Bass (W)	Ingestion	3E-03	40
		White Sucker	Ingestion	1E-02	149
			Total Risk:	**2E-02**	**149**
Resident Living Along the River	Adult (ages 19 and above)				
		Sediment	Incidental ingestion	3E-05	0.03
			Dermal contact	4E-06	0.004
		Surface water	Incidental ingestion	2E-06	0.005
			Dermal contact	3E-03	0.02
		American Eel	Ingestion	4E-03	26
		Largemouth Bass (F)	Ingestion	6E-04	8
		Largemouth Bass (W)	Ingestion	3E-03	39
		White Sucker	Ingestion	1E-02	144
			Total Risk:	**1E-02**	**144**

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Baseline Human Health Risk Assessment - Interim Final
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North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Manton Pond					
Visiting Recreational Angler	Child (ages 1 through 6)	Sediment	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Surface water	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Largemouth Bass (F)	Ingestion	4E-04	16
		Largemouth Bass (W)	Ingestion	2E-03	57
			Total Risk:	**2E-03**	**57**
Visiting Recreational Angler	Older Child (ages 7 through 18)	Sediment	Incidental ingestion	1E-06	0.0006
			Dermal contact	5E-07	0.00008
		Surface water	Incidental ingestion	9E-08	0.0002
			Dermal contact	4E-04	0.002
		Largemouth Bass (F)	Ingestion	5E-04	10
		Largemouth Bass (W)	Ingestion	2E-03	35
			Total Risk:	**3E-03**	35
Visiting Recreational Angler	Adult (ages 19 and above)	Sediment	Incidental ingestion	3E-06	0.0004
			Dermal contact	6E-07	0.00003
		Surface water	Incidental ingestion	3E-07	0.0001
			Dermal contact	1E-03	0.002
		Largemouth Bass (F)	Ingestion	2E-03	10
		Largemouth Bass (W)	Ingestion	1E-02	34
			Total Risk:	**1E-02**	**34**

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Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Manton Pond (cont)					
Resident Living Along the River	Child (ages 1 through 6)				
		Sediment	Incidental ingestion	3E-05	0.03
			Dermal contact	2E-06	0.0008
		Surface water	Incidental ingestion	6E-06	0.02
			Dermal contact	9E-04	0.01
		Largemouth Bass (F)	Ingestion	4E-04	16
		Largemouth Bass (W)	Ingestion	2E-03	57
			Total Risk:	**3E-03**	57
Resident Living Along the River	Older Child (ages 7 through 18)				
		Sediment	Incidental ingestion	6E-06	0.003
			Dermal contact	1E-06	0.0003
		Surface water	Incidental ingestion	4E-06	0.008
			Dermal contact	3E-03	0.02
		Largemouth Bass (F)	Ingestion	5E-04	10
		Largemouth Bass (W)	Ingestion	2E-03	35
			Total Risk:	**5E-03**	35
Resident Living Along the River	Adult (ages 19 and above)				
		Sediment	Incidental ingestion	4E-06	0.002
			Dermal contact	4E-07	0.00008
		Surface water	Incidental ingestion	2E-06	0.005
			Dermal contact	3E-03	0.02
		Largemouth Bass (F)	Ingestion	5E-04	10
		Largemouth Bass (W)	Ingestion	2E-03	34
			Total Risk:	**5E-03**	34

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Baseline Human Health Risk Assessment - Interim Final
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North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Dyerville Pond					
Visiting Recreational Angler	Child (ages 1 through 6)	Sediment	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Surface water	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		American Eel	Ingestion	1E-03	23
			Total Risk:	**1E-03**	**23**
Visiting Recreational Angler	Older Child (ages 7 through 18)	Sediment	Incidental ingestion	4E-07	0.009
			Dermal contact	4E-07	0.005
		Surface water	Incidental ingestion	9E-08	0.0002
			Dermal contact	4E-04	0.002
		American Eel	Ingestion	1E-03	14
			Total Risk:	**2E-03**	**14**
Visiting Recreational Angler	Adult (ages 19 and above)	Sediment	Incidental ingestion	1E-06	0.006
			Dermal contact	6E-07	0.002
		Surface water	Incidental ingestion	3E-07	0.0001
			Dermal contact	1E-03	0.002
		American Eel	Ingestion	5E-03	14
			Total Risk:	**6E-03**	**14**

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Baseline Human Health Risk Assessment - Interim Final
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North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Dyerville Pond (cont)					
Resident Living Along the River	Child (ages 1 through 6)				
		Sediment	Incidental ingestion	9E-06	0.4
			Dermal contact	2E-06	0.05
		Surface water	Incidental ingestion	6E-06	0.02
			Dermal contact	9E-04	0.01
		American Eel	Ingestion	1E-03	23
			Total Risk:	**2E-03**	**24**
Resident Living Along the River	Older Child (ages 7 through 18)				
		Sediment	Incidental ingestion	2E-06	0.05
			Dermal contact	1E-06	0.02
		Surface water	Incidental ingestion	4E-06	0.008
			Dermal contact	3E-03	0.02
		American Eel	Ingestion	1E-03	14
			Total Risk:	**4E-03**	**14**
Resident Living Along the River	Adult (ages 19 and above)				
		Sediment	Incidental ingestion	1E-06	0.03
			Dermal contact	4E-07	0.005
		Surface water	Incidental ingestion	2E-06	0.005
			Dermal contact	3E-03	0.02
		American Eel	Ingestion	1E-03	14
			Total Risk:	**4E-03**	**14**
Current/Future - Fogarty Center					
Worker	Adult (ages 19 and above)	Surface Soil	Incidental ingestion	8E-06	0.03
			Dermal contact	1E-05	0.03
			Total Risk:	**2E-05**	**0.06**

NA = Not applicable. The "Visiting Recreational Angler Child" and the "Visiting Subsistence Angler Child" are not expected to visit the Site and therefore are not exposed to surface water, sediment, or bank soil at the Site. It is presumed that the Child is exposed only by consuming fish caught by older family members.
Largemouth Bass (F) - Fillet
Largemouth Bass (W) - Reconstituted Whole Body

(1)Total Risk: = The sum of risks associated with all exposure media for the receptor age-group. This sum includes the value for consumption of only one species of fish (that species with the highest risk).

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Risk Assessment Summary

Baseline Human Health Risk Assessment - Interim Final
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Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Assapumpset Pond					
Visiting Recreational Angler	Child (ages 1 through 6)	Sediment	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Surface water	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		American Eel	Ingestion	7E-06	1
		Largemouth Bass (F)	Ingestion	9E-06	1
		Largemouth Bass (W)	Ingestion	3E-05	3
		Brown Bullhead	Ingestion	1E-05	0.4
			Total Risk:	**3E-05**	**3**
Visiting Recreational Angler	Older Child (ages 7 through 18)	Sediment	Incidental ingestion	2E-08	0.0003
			Dermal contact	9E-09	0.00004
		Surface water	Incidental ingestion	2E-10	0.000007
			Dermal contact	1E-06	0.0003
		American Eel	Ingestion	7E-06	0.5
		Largemouth Bass (F)	Ingestion	8E-06	0.7
		Largemouth Bass (W)	Ingestion	3E-05	1
		Brown Bullhead	Ingestion	1E-05	0.2
			Total Risk:	**3E-05**	**1**
Visiting Recreational Angler	Adult (ages 19 and above)	Sediment	Incidental ingestion	1E-08	0.0002
			Dermal contact	2E-09	0.000008
		Surface water	Incidental ingestion	2E-10	0.000004
			Dermal contact	9E-07	0.0003
		American Eel	Ingestion	8E-06	0.7
		Largemouth Bass (F)	Ingestion	1E-05	0.8
		Largemouth Bass (W)	Ingestion	4E-05	2
		Brown Bullhead	Ingestion	1E-05	0.2
			Total Risk:	**4E-05**	**2**

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Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Assapumpset Pond (cont)					
Resident Living Along the River	Child (ages 1 through 6)				
		Sediment	Incidental ingestion	4E-07	0.02
			Dermal contact	4E-08	0.0004
		Surface water	Incidental ingestion	2E-08	0.0009
			Dermal contact	3E-06	0.002
		American Eel	Ingestion	7E-06	1
		Largemouth Bass (F)	Ingestion	9E-06	1
		Largemouth Bass (W)	Ingestion	3E-05	3
		Brown Bullhead	Ingestion	1E-05	0.4
			Total Risk:	**3E-05**	**3**
Resident Living Along the River	Older Child (ages 7 through 18)				
		Sediment	Incidental ingestion	6E-08	0.001
			Dermal contact	1E-08	0.00008
		Surface water	Incidental ingestion	8E-09	0.0003
			Dermal contact	7E-06	0.003
		American Eel	Ingestion	5E-06	0.5
		Largemouth Bass (F)	Ingestion	6E-06	0.7
		Largemouth Bass (W)	Ingestion	2E-05	1
		Brown Bullhead	Ingestion	8E-06	0.2
			Total Risk:	**3E-05**	**1**
Resident Living Along the River	Adult (ages 19 and above)				
		Sediment	Incidental ingestion	4E-08	0.0009
			Dermal contact	3E-09	0.00002
		Surface water	Incidental ingestion	5E-09	0.0002
			Dermal contact	6E-06	0.003
		American Eel	Ingestion	6E-06	0.7
		Largemouth Bass (F)	Ingestion	8E-06	0.8
		Largemouth Bass (W)	Ingestion	3E-05	2
		Brown Bullhead	Ingestion	1E-05	0.2
			Total Risk:	**3E-05**	**2**

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Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Greystone Mill Pond					
Visiting Recreational Angler	Child (ages 1 through 6)	Bank Soil	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Sediment	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Surface water	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		American Eel	Ingestion	3E-05	8
		Largemouth Bass (F)	Ingestion	1E-05	6
		Largemouth Bass (W)	Ingestion	3E-05	9
		White Sucker	Ingestion	4E-05	6
			Total Risk:	**4E-05**	**9**
Visiting Recreational Angler	Older Child (ages 7 through 18)	Bank Soil	Incidental ingestion	9E-08	0.002
			Dermal contact	6E-08	0.0004
		Sediment	Incidental ingestion	9E-08	0.001
			Dermal contact	3E-08	0.0002
		Surface water	Incidental ingestion	3E-10	0.000008
			Dermal contact	1E-06	0.0003
		American Eel	Ingestion	3E-05	4
		Largemouth Bass (F)	Ingestion	1E-05	3
		Largemouth Bass (W)	Ingestion	3E-05	4
		White Sucker	Ingestion	3E-05	3
			Total Risk:	**4E-05**	**4**
Visiting Recreational Angler	Adult (ages 19 and above)	Bank Soil	Incidental ingestion	6E-08	0.001
			Dermal contact	1E-08	0.00007
		Sediment	Incidental ingestion	6E-08	0.0007
			Dermal contact	7E-09	0.00004
		Surface water	Incidental ingestion	2E-10	0.000005
			Dermal contact	9E-07	0.0003
		American Eel	Ingestion	4E-05	5
		Largemouth Bass (F)	Ingestion	1E-05	3
		Largemouth Bass (W)	Ingestion	4E-05	5
		White Sucker	Ingestion	4E-05	4
			Total Risk:	**5E-05**	**5**

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Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Greystone Mill Pond (cont)					
Resident Living Along the River	Child (ages 1 through 6)				
		Bank Soil	Incidental ingestion	3E-06	0.1
			Dermal contact	4E-07	0.004
		Sediment	Incidental ingestion	2E-06	0.05
			Dermal contact	2E-07	0.002
		Surface water	Incidental ingestion	2E-08	0.001
			Dermal contact	3E-06	0.002
		American Eel	Ingestion	3E-05	8
		Largemouth Bass (F)	Ingestion	1E-05	6
		Largemouth Bass (W)	Ingestion	3E-05	9
		White Sucker	Ingestion	4E-05	6
			Total Risk:	***5E-05***	***9***
Resident Living Along the River	Older Child (ages 7 through 18)				
		Bank Soil	Incidental ingestion	8E-07	0.02
			Dermal contact	3E-07	0.002
		Sediment	Incidental ingestion	3E-07	0.005
			Dermal contact	5E-08	0.0004
		Surface water	Incidental ingestion	9E-09	0.0003
			Dermal contact	8E-06	0.003
		American Eel	Ingestion	2E-05	4
		Largemouth Bass (F)	Ingestion	8E-06	3
		Largemouth Bass (W)	Ingestion	2E-05	4
		White Sucker	Ingestion	3E-05	3
			Total Risk:	**4E-05**	**4**
Resident Living Along the River	Adult (ages 19 and above)				
		Bank Soil	Incidental ingestion	5E-07	0.02
			Dermal contact	6E-08	0.0004
		Sediment	Incidental ingestion	2E-07	0.003
			Dermal contact	1E-08	0.00008
		Surface water	Incidental ingestion	5E-09	0.0002
			Dermal contact	6E-06	0.003
		American Eel	Ingestion	3E-05	5
		Largemouth Bass (F)	Ingestion	1E-05	3
		Largemouth Bass (W)	Ingestion	3E-05	5
		White Sucker	Ingestion	3E-05	4
			Total Risk:	**4E-05**	**5**

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Baseline Human Health Risk Assessment - Interim Final
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Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Allendale Pond					
Visiting Recreational Angler	Child (ages 1 through 6)	Bank Soil	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Sediment	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Surface water	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		American Eel	Ingestion	7E-04	18
		White Sucker	Ingestion	3E-03	54
			Total Risk:	**3E-03**	**54**
Visiting Recreational Angler	Older Child (ages 7 through 18)	Bank Soil	Incidental ingestion	6E-08	NA
			Dermal contact	1E-08	NA
		Sediment	Incidental ingestion	1E-06	0.003
			Dermal contact	3E-07	0.001
		Surface water	Incidental ingestion	3E-08	0.0001
			Dermal contact	2E-04	0.004
		American Eel	Ingestion	7E-04	8
		White Sucker	Ingestion	2E-03	25
			Total Risk:	**3E-03**	**25**
Visiting Recreational Angler	Adult (ages 19 and above)	Bank Soil	Incidental ingestion	4E-08	NA
			Dermal contact	3E-09	NA
		Sediment	Incidental ingestion	9E-07	0.002
			Dermal contact	7E-08	0.0002
		Surface water	Incidental ingestion	2E-08	0.00008
			Dermal contact	2E-04	0.003
		American Eel	Ingestion	9E-04	11
		White Sucker	Ingestion	3E-03	32
			Total Risk:	**3E-03**	**32**

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Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Allendale Pond (cont)					
Resident Living Along the River	Child (ages 1 through 6)				
		Bank Soil	Incidental ingestion	2E-06	NA
			Dermal contact	8E-08	NA
		Sediment	Incidental ingestion	4E-05	0.2
			Dermal contact	2E-06	0.01
		Surface water	Incidental ingestion	2E-06	0.02
			Dermal contact	6E-04	0.02
		American Eel	Ingestion	7E-04	18
		White Sucker	Ingestion	3E-03	54
			Total Risk:	**3E-03**	**54**
Resident Living Along the River	Older Child (ages 7 through 18)				
		Bank Soil	Incidental ingestion	6E-07	NA
			Dermal contact	7E-08	NA
		Sediment	Incidental ingestion	5E-06	0.01
			Dermal contact	5E-07	0.002
		Surface water	Incidental ingestion	9E-07	0.006
			Dermal contact	2E-03	0.04
		American Eel	Ingestion	5E-04	8
		White Sucker	Ingestion	2E-03	25
			Total Risk:	**4E-03**	**25**
Resident Living Along the River	Adult (ages 19 and above)				
		Bank Soil	Incidental ingestion	4E-07	NA
			Dermal contact	1E-08	NA
		Sediment	Incidental ingestion	3E-06	0.009
			Dermal contact	1E-07	0.0005
		Surface water	Incidental ingestion	6E-07	0.004
			Dermal contact	1E-03	0.03
		American Eel	Ingestion	7E-04	11
		White Sucker	Ingestion	2E-03	32
			Total Risk:	**3E-03**	**33**

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Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Lyman Mill Pond					
Visiting Recreational Angler	Child (ages 1 through 6)	Sediment	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Surface water	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		American Eel	Ingestion	1E-03	18
		Largemouth Bass (F)	Ingestion	2E-04	5
		Largemouth Bass (W)	Ingestion	1E-03	26
		White Sucker	Ingestion	5E-03	97
			Total Risk:	**5E-03**	**97**
Visiting Recreational Angler	Older Child (ages 7 through 18)	Sediment	Incidental ingestion	5E-07	0.002
			Dermal contact	1E-07	0.0003
		Surface water	Incidental ingestion	4E-09	0.00005
			Dermal contact	2E-05	0.001
		American Eel	Ingestion	1E-03	8
		Largemouth Bass (F)	Ingestion	2E-04	3
		Largemouth Bass (W)	Ingestion	1E-03	12
		White Sucker	Ingestion	4E-03	46
			Total Risk:	**4E-03**	**46**
Visiting Recreational Angler	Adult (ages 19 and above)	Sediment	Incidental ingestion	3E-07	0.001
			Dermal contact	3E-08	0.00006
		Surface water	Incidental ingestion	3E-09	0.00003
			Dermal contact	2E-05	0.001
		American Eel	Ingestion	1E-03	11
		Largemouth Bass (F)	Ingestion	2E-04	3
		Largemouth Bass (W)	Ingestion	1E-03	15
		White Sucker	Ingestion	6E-03	59
			Total Risk:	**6E-03**	**59**

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Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Lyman Mill Pond (cont)					
Resident Living Along the River	Child (ages 1 through 6)				
		Sediment	Incidental ingestion	1E-05	0.08
			Dermal contact	6E-07	0.003
		Surface water	Incidental ingestion	3E-07	0.006
			Dermal contact	7E-05	0.006
		American Eel	Ingestion	1E-03	18
		Largemouth Bass (F)	Ingestion	2E-04	5
		Largemouth Bass (W)	Ingestion	1E-03	26
		White Sucker	Ingestion	5E-03	97
			Total Risk:	**5E-03**	**98**
Resident Living Along the River	Older Child (ages 7 through 18)				
		Sediment	Incidental ingestion	2E-06	0.007
			Dermal contact	2E-07	0.0006
		Surface water	Incidental ingestion	1E-07	0.002
			Dermal contact	2E-04	0.01
		American Eel	Ingestion	7E-04	8
		Largemouth Bass (F)	Ingestion	1E-04	3
		Largemouth Bass (W)	Ingestion	7E-04	12
		White Sucker	Ingestion	3E-03	46
			Total Risk:	**3E-03**	**46**
Resident Living Along the River	Adult (ages 19 and above)				
		Sediment	Incidental ingestion	1E-06	0.004
			Dermal contact	4E-08	0.0001
		Surface water	Incidental ingestion	9E-08	0.001
			Dermal contact	1E-04	0.009
		American Eel	Ingestion	1E-03	11
		Largemouth Bass (F)	Ingestion	2E-04	3
		Largemouth Bass (W)	Ingestion	1E-03	15
		White Sucker	Ingestion	4E-03	59
			Total Risk:	**4E-03**	**59**

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Risk Assessment Summary

Baseline Human Health Risk Assessment - Interim Final
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Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Manton Pond					
Visiting Recreational Angler	Child (ages 1 through 6)	Sediment	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Surface water	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Largemouth Bass (F)	Ingestion	1E-04	4
		Largemouth Bass (W)	Ingestion	4E-04	12
			Total Risk:	**4E-04**	**12**
Visiting Recreational Angler	Older Child (ages 7 through 18)	Sediment	Incidental ingestion	1E-07	0.00009
			Dermal contact	2E-08	0.000006
		Surface water	Incidental ingestion	4E-09	0.00005
			Dermal contact	2E-05	0.001
		Largemouth Bass (F)	Ingestion	9E-05	2
		Largemouth Bass (W)	Ingestion	4E-04	6
			Total Risk:	**4E-04**	**6**
Visiting Recreational Angler	Adult (ages 19 and above)	Sediment	Incidental ingestion	7E-08	0.00006
			Dermal contact	4E-09	0.000001
		Surface water	Incidental ingestion	3E-09	0.00003
			Dermal contact	2E-05	0.001
		Largemouth Bass (F)	Ingestion	1E-04	2
		Largemouth Bass (W)	Ingestion	5E-04	7
			Total Risk:	**6E-04**	7

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Centredale Manor Restoration Project Superfund Site
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Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Manton Pond (cont)					
Resident Living Along the River	Child (ages 1 through 6)	Sediment	Incidental ingestion	3E-06	0.005
			Dermal contact	1E-07	0.00006
		Surface water	Incidental ingestion	3E-07	0.006
			Dermal contact	7E-05	0.006
		Largemouth Bass (F)	Ingestion	1E-04	4
		Largemouth Bass (W)	Ingestion	4E-04	12
			Total Risk:	**5E-04**	**12**
Resident Living Along the River	Older Child (ages 7 through 18)	Sediment	Incidental ingestion	3E-07	0.0004
			Dermal contact	3E-08	0.00001
		Surface water	Incidental ingestion	1E-07	0.002
			Dermal contact	2E-04	0.01
		Largemouth Bass (F)	Ingestion	7E-05	2
		Largemouth Bass (W)	Ingestion	3E-04	6
			Total Risk:	**5E-04**	**6**
Resident Living Along the River	Adult (ages 19 and above)	Sediment	Incidental ingestion	2E-07	0.0003
			Dermal contact	7E-09	0.000003
		Surface water	Incidental ingestion	9E-08	0.001
			Dermal contact	1E-04	0.009
		Largemouth Bass (F)	Ingestion	9E-05	2
		Largemouth Bass (W)	Ingestion	4E-04	7
			Total Risk:	**6E-04**	**7**

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Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Dyerville Pond					
Visiting Recreational Angler	Child (ages 1 through 6)	Sediment	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		Surface water	Incidental ingestion	NA	NA
			Dermal contact	NA	NA
		American Eel	Ingestion	3E-04	8
			Total Risk:	**3E-04**	**8**
Visiting Recreational Angler	Older Child (ages 7 through 18)	Sediment	Incidental ingestion	5E-08	0.0009
			Dermal contact	2E-08	0.0002
		Surface water	Incidental ingestion	4E-09	0.00005
			Dermal contact	2E-05	0.001
		American Eel	Ingestion	3E-04	4
			Total Risk:	**3E-04**	4
Visiting Recreational Angler	Adult (ages 19 and above)	Sediment	Incidental ingestion	3E-08	0.0006
			Dermal contact	5E-09	0.00004
		Surface water	Incidental ingestion	3E-09	0.00003
			Dermal contact	2E-05	0.001
		American Eel	Ingestion	3E-04	5
			Total Risk:	**4E-04**	**5**

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Baseline Human Health Risk Assessment - Interim Final
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Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Dyerville Pond (cont)					
Resident Living Along the River	Child (ages 1 through 6)				
		Sediment	Incidental ingestion	1E-06	0.05
			Dermal contact	1E-07	0.002
		Surface water	Incidental ingestion	3E-07	0.006
			Dermal contact	7E-05	0.006
		American Eel	Ingestion	3E-04	8
			Total Risk:	**3E-04**	**8**
Resident Living Along the River	Older Child (ages 7 through 18)				
		Sediment	Incidental ingestion	2E-07	0.004
			Dermal contact	4E-08	0.0004
		Surface water	Incidental ingestion	1E-07	0.002
			Dermal contact	2E-04	0.01
		American Eel	Ingestion	2E-04	4
			Total Risk:	**4E-04**	**4**
Resident Living Along the River	Adult (ages 19 and above)				
		Sediment	Incidental ingestion	1E-07	0.002
			Dermal contact	8E-09	0.00009
		Surface water	Incidental ingestion	9E-08	0.0013
			Dermal contact	1E-04	0.009
		American Eel	Ingestion	2E-04	5
			Total Risk:	**3E-04**	**5**
Current/Future - Fogarty Center					
Worker	Adult (ages 19 and above)	Surface Soil	Incidental ingestion	7E-07	0.01
			Dermal contact	2E-07	0.002
			Total Risk:	**8E-07**	**0.01**

NA = Not applicable. The "Visiting Recreational Angler Child" and the "Visiting Subsistence Angler Child" are not expected to visit the Site and therefore are not exposed to surface water, sediment, or bank soil at the Site. It is presumed that the Child is exposed only by consuming fish caught by older family members.
Largemouth Bass (F) - Fillet
Largemouth Bass (W) - Reconstituted Whole Body

(1)Total Risk: = The sum of risks associated with all exposure media for the receptor age-group. This sum includes the value for consumption of only one species of fish (that species with the highest risk).

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Table G.12
Incremental Risks Above Background

Baseline Human Health Risk Assessment - Interim Final
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	Child Visiting Recreational Angler White sucker		Adult Visiting Recreational Angler White sucker	
Exposure Area	**RME Hazard Index**	**Incremental Hazard Index**	**RME Cancer Risk**	**Incremental Cancer Risk**
Greystone Mill Pond	15		5.E-04	
Allendale Pond	134	119	3.E-02	3.E-02
Lyman Mill Pond	242	227	6.E-02	6.E-02
Manton Pond	not available	not available	not available	not available
Dyerville Pond	not available	not available	not available	not available

	Child Resident Living Along the River Fillet Largemouth Bass		Adult Resident Living Along the River Fillet Largemouth Bass	
Exposure Area	**RME Hazard Index**	**Incremental Hazard Index**	**RME Cancer Risk**	**Incremental Cancer Risk**
Greystone Mill Pond	22		9.E-05	
Allendale Pond	not available	not available	not available	not available
Lyman Mill Pond	65	43	3.E-03	3.E-03
Manton Pond	57	35	2.E-03	2.E-03
Dyerville Pond	not available	not available	not available	not available

	Child Visiting Recreational Angler American eel		Adult Visiting Recreational Angler American eel	
Exposure Area	**RME Hazard Index**	**Incremental Hazard Index**	**RME Cancer Risk**	**Incremental Cancer Risk**
Greystone Mill Pond	20		4.E-04	
Allendale Pond	44	24	1.E-02	1.E-02
Lyman Mill Pond	45	25	2.E-02	2.E-02
Manton Pond	not available	not available	not available	not available
Dyerville Pond	23	3	5.E-03	5.E-03

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Table G.12
Incremental Risks Above Background

Baseline Human Health Risk Assessment - Interim Final
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	Child Visiting Recreational Angler White sucker		Adult Visiting Recreational Angler White sucker	
Exposure Area	**CT Hazard Index**	**Incremental Hazard Index**	**CT Cancer Risk**	**Incremental Cancer Risk**
Greystone Mill Pond	6		4.E-05	
Allendale Pond	54	48	3.E-03	3.E-03
Lyman Mill Pond	97	91	6.E-03	6.E-03
Manton Pond	not available	not available	not available	not available
Dyerville Pond	not available	not available	not available	not available

	Child Resident Living Along the River Fillet Largemouth Bass		Adult Resident Living Along the River Fillet Largemouth Bass	
Exposure Area	**CT Hazard Index**	**Incremental Hazard Index**	**CT Cancer Risk**	**Incremental Cancer Risk**
Greystone Mill Pond	9		3.E-05	
Allendale Pond	not available	not available	not available	not available
Lyman Mill Pond	26	17	1.E-03	1.E-03
Manton Pond	12	3	4.E-04	4.E-04
Dyerville Pond	not available	not available	not available	not available

	Child Visiting Recreational Angler American eel		Adult Visiting Recreational Angler American eel	
Exposure Area	**CT Hazard Index**	**Incremental Hazard Index**	**CT Cancer Risk**	**Incremental Cancer Risk**
Greystone Mill Pond	8		4.E-05	
Allendale Pond	18	10	9.E-04	9.E-04
Lyman Mill Pond	18	10	1.E-03	1.E-03
Manton Pond	not available	not available	not available	not available
Dyerville Pond	8	0	3.E-04	3.E-04

Prepared By: MJM
Checked By: KJA

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Table G.3.1.RME
Medium-Specific Exposure Point Concentration Summary - Reasonable Maximum Exposure
American Eel

Baseline Human Health Risk Assessment - Interim Final
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Scenario Timeframe: Current/Future
Medium: American Eel
Exposure Medium: Whole Body

Exposure Point	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (distribution)		Maximum Detected Concentration (qualifier)		Exposure Point Concentration			
								Value	Units	Statistic (1)	Rationale
ASSAPUMPSET	**Semivolatile Organics**										
	Acenaphthylene	MG/KG	0.000943	NC		0.00179		0.00179	MG/KG	Max	(5)
	Phenanthrene	MG/KG	0.00246	NC		0.00876		0.00876	MG/KG	Max	(5)
	Pesticides/PCBs										
	4,4'-DDD	MG/KG	0.00461	NC		0.00828	J	0.00828	MG/KG	Max	(5)
	4,4'-DDE	MG/KG	0.0176	NC		0.0373	J	0.0373	MG/KG	Max	(5)
	alpha-Chlordane	MG/KG	0.0025	NC		0.00487	J	0.00487	MG/KG	Max	(5)
	Aroclor-1254	MG/KG	0.03178	NC		0.10246	J	0.10246	MG/KG	Max	(5)
	Dieldrin	MG/KG	0.0013	NC		0.00246	J	0.00246	MG/KG	Max	(5)
	gamma-Chlordane	MG/KG	0.00089	NC		0.00185	J	0.00185	MG/KG	Max	(5)
	Heptachlor Epoxide	MG/KG	0.00077	NC		0.00138	J	0.00138	MG/KG	Max	(5)
	Technical Chlordane	MG/KG	0.11622	NC		0.16108	J	0.16108	MG/KG	Max	(5)
	Inorganics										
	Lead	MG/KG	0.0466	NC		0.0893	J	0.0893	MG/KG	Max	(5)
	Mercury	MG/KG	0.0926	NC		0.14		0.14	MG/KG	Max	(5)
	Mercury (methyl)	MG/KG	0.0889	NC		0.137		0.137	MG/KG	Max	(5)
	Zinc	MG/KG	16.9	NC		26.2		26.2	MG/KG	Max	(5)
	Dioxins										
	Toxicity Equivalency (Dioxins/Furans) - Mammals	MG/KG	0.00000056	NC		0.00000178		0.00000178	MG/KG	Max	(5)
GREYSTONE	**Semivolatile Organics**										
	Acenaphthylene	MG/KG	0.00104	0.00121	N	0.00155		0.00121	MG/KG	95% UCL-N	(2)
	Benzo(a)pyrene	MG/KG	0.00132	0.00132	NP	0.00457		0.00132	MG/KG	95% UCL-NP	(4)
	Benzo(b)fluoranthene	MG/KG	0.00149	0.00149	NP	0.00533		0.00149	MG/KG	95% UCL-NP	(4)
	Dibenzo(a,h)anthracene	MG/KG	0.000799	0.000799	NP	0.00156		0.000799	MG/KG	95% UCL-NP	(4)
	Indeno(1,2,3-cd)pyrene	MG/KG	0.00132	0.00132	NP	0.00432		0.00132	MG/KG	95% UCL-NP	(4)
	Phenanthrene	MG/KG	0.00286	0.00475	T	0.00689		0.00475	MG/KG	95% UCL-T	(3)
	Pesticides/PCBs										
	4,4'-DDD	MG/KG	0.0128	0.0150	T	0.0163	J	0.0150	MG/KG	95% UCL-T	(3)
	4,4'-DDE	MG/KG	0.03161	0.03161	NP	0.0439	J	0.03161	MG/KG	95% UCL-NP	(4)
	alpha-Chlordane	MG/KG	0.0140	0.0170	N	0.0222	J	0.0170	MG/KG	95% UCL-N	(2)

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Table G.3.1.RME
Medium-Specific Exposure Point Concentration Summary - Reasonable Maximum Exposure
American Eel

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Scenario Timeframe: Current/Future
Medium: American Eel
Exposure Medium: Whole Body

Exposure Point	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (distribution)		Maximum Detected Concentration (qualifier)		Exposure Point Concentration			
								Value	Units	Statistic (1)	Rationale
	Aroclor-1254	MG/KG	0.20781	0.25318	T	0.2928	J	0.25318	MG/KG	95% UCL-T	(3)
	Aroclor-1268	MG/KG	0.1022	0.1251	T	0.14591	J	0.1251	MG/KG	95% UCL-T	(3)
	Dieldrin	MG/KG	0.00353	0.00353	NP	0.00885	J	0.00353	MG/KG	95% UCL-NP	(4)
	gamma-Chlordane	MG/KG	0.0055	0.0069	N	0.00902	J	0.0069	MG/KG	95% UCL-N	(2)
	Heptachlor Epoxide	MG/KG	0.0012	0.0012	NP	0.0026	J	0.0012	MG/KG	95% UCL-NP	(4)
	Technical Chlordane	MG/KG	0.26541	0.31695	N	0.41089	J	0.31695	MG/KG	95% UCL-N	(2)
	Inorganics										
	Lead	MG/KG	0.214	6.36	T	1.47		1.47	MG/KG	Max	(5)
	Mercury	MG/KG	0.0706	0.0706	NP	0.227		0.0706	MG/KG	95% UCL-NP	(4)
	Mercury (methyl)	MG/KG	0.0825	0.165	T	0.234		0.165	MG/KG	95% UCL-T	(3)
	Zinc	MG/KG	33.4	41.5	T	53.3	J	41.5	MG/KG	95% UCL-T	(3)
	Dioxins										
	Toxicity Equivalency (Dioxins/Furans) - Mammals	MG/KG	0.000000611	0.000000749	T	0.000000851		0.000000749	MG/KG	95% UCL-T	(3)
ALLENDALE	**Semivolatile Organics**										
	Acenaphthylene	MG/KG	0.0013	0.0013	NP	0.00187		0.0013	MG/KG	95% UCL-NP	(4)
	Phenanthrene	MG/KG	0.00807	0.00807	NP	0.01063		0.00807	MG/KG	95% UCL-NP	(4)
	Pesticides/PCBs										
	4,4'-DDD	MG/KG	0.0131	0.0131	NP	0.04205		0.0131	MG/KG	95% UCL-NP	(4)
	4,4'-DDE	MG/KG	0.0210	0.0210	NP	0.03305		0.0210	MG/KG	95% UCL-NP	(4)
	4,4'-DDT	MG/KG	0.00386	0.00892	T	0.01106		0.00892	MG/KG	95% UCL-T	(3)
	alpha-Chlordane	MG/KG	0.01923	0.01923	NP	0.06327		0.01923	MG/KG	95% UCL-NP	(4)
	Aroclor-1254	MG/KG	0.65474	0.88187	N	1.15576		0.88187	MG/KG	95% UCL-N	(2)
	Aroclor-1268	MG/KG	0.01504	0.01504	NP	0.07747	J	0.01504	MG/KG	95% UCL-NP	(4)
	beta-BHC	MG/KG	0.00062	0.00062	NP	0.00072	J	0.00062	MG/KG	95% UCL-NP	(4)
	Dieldrin	MG/KG	0.00667	0.00912	N	0.01448		0.00912	MG/KG	95% UCL-N	(2)
	Endosulfan Sulfate	MG/KG	0.00158	0.00158	NP	0.00999		0.00158	MG/KG	95% UCL-NP	(4)
	Endrin Aldehyde	MG/KG	0.001	0.001	NP	0.0008		0.001	MG/KG	95% UCL-NP	(4)
	gamma-Chlordane	MG/KG	0.00712	0.00712	NP	0.02296		0.00712	MG/KG	95% UCL-NP	(4)

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Table G.3.1.RME
Medium-Specific Exposure Point Concentration Summary - Reasonable Maximum Exposure
American Eel

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Scenario Timeframe: Current/Future
Medium: American Eel
Exposure Medium: Whole Body

Exposure Point	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (distribution)		Maximum Detected Concentration (qualifier)		Exposure Point Concentration Value	Units	Statistic (1)	Rationale
	Heptachlor	MG/KG	0.000678	0.000678	NP	0.00129		0.000678	MG/KG	95% UCL-NP	(4)
	Heptachlor Epoxide	MG/KG	0.0015	0.0015	NP	0.00446		0.0015	MG/KG	95% UCL-NP	(4)
	Technical Chlordane	MG/KG	0.2615	0.2615	NP	0.76253		0.2615	MG/KG	95% UCL-NP	(4)
	Inorganics										
	Cadmium	MG/KG	0.0971	0.0971	NP	0.248		0.0971	MG/KG	95% UCL-NP	(4)
	Lead	MG/KG	0.428	0.580	N	0.952	J	0.580	MG/KG	95% UCL-N	(2)
	Manganese	MG/KG	3.51	5.04	T	7.7	J	5.04	MG/KG	95% UCL-T	(3)
	Mercury	MG/KG	0.111	0.153	N	0.24		0.153	MG/KG	95% UCL-N	(2)
	Mercury (methyl)	MG/KG	0.134	0.269	T	0.471		0.269	MG/KG	95% UCL-T	(3)
	Dioxins										
	Toxicity Equivalency (PCB Congeners) - Mammals	MG/KG	0.0000356	NC		0.000042		0.000042	MG/KG	Max	(5)
	Toxicity Equivalency (Dioxins/Furans) - Mammals	MG/KG	0.000111	0.000111	NP	0.000308		0.000111	MG/KG	95% UCL-NP	(4)
LYMAN MILL	**Semivolatile Organics**										
	Acenaphthylene	MG/KG	0.00193	0.00193	NP	0.00294		0.00193	MG/KG	95% UCL-NP	(4)
	Benzo(a)pyrene	MG/KG	0.000962	0.000962	NP	0.00382		0.000962	MG/KG	95% UCL-NP	(4)
	Benzo(b)fluoranthene	MG/KG	0.00119	0.00119	NP	0.00577		0.00119	MG/KG	95% UCL-NP	(4)
	Dibenzo(a,h)anthracene	MG/KG	0.00065	0.00065	NP	0.00075	J	0.00065	MG/KG	95% UCL-NP	(4)
	Phenanthrene	MG/KG	0.01554	0.02012	T	0.02717		0.02012	MG/KG	95% UCL-T	(3)
	Pesticides/PCBs										
	4,4'-DDD	MG/KG	0.01469	0.01469	NP	0.02072	J	0.01469	MG/KG	95% UCL-NP	(4)
	4,4'-DDE	MG/KG	0.04451	0.04451	NP	0.07891	J	0.04451	MG/KG	95% UCL-NP	(4)
	4,4'-DDT	MG/KG	0.00238	0.00337	N	0.00566	J	0.00337	MG/KG	95% UCL-N	(2)
	alpha-Chlordane	MG/KG	0.02007	0.02007	NP	0.04272		0.02007	MG/KG	95% UCL-NP	(4)
	Aroclor-1254	MG/KG	0.70316	0.95861	T	1.17773	J	0.95861	MG/KG	95% UCL-T	(3)
	beta-BHC	MG/KG	0.0012	0.0018	T	0.00255	J	0.0018	MG/KG	95% UCL-T	(3)
	Dieldrin	MG/KG	0.00789	0.00789	NP	0.01115	J	0.00789	MG/KG	95% UCL-NP	(4)
	gamma-Chlordane	MG/KG	0.00859	0.00859	NP	0.01605		0.00859	MG/KG	95% UCL-NP	(4)
	Heptachlor Epoxide	MG/KG	0.00227	0.00227	NP	0.00559		0.00227	MG/KG	95% UCL-NP	(4)
	Technical Chlordane	MG/KG	0.44722	0.44722	NP	0.76577		0.44722	MG/KG	95% UCL-NP	(4)

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Table G.3.1.RME
Medium-Specific Exposure Point Concentration Summary - Reasonable Maximum Exposure
American Eel

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Scenario Timeframe: Current/Future
Medium: American Eel
Exposure Medium: Whole Body

Exposure Point	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (distribution)	Maximum Detected Concentration (qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (1)	Rationale
	Inorganics								
	Cadmium	MG/KG	0.026	0.026 NP	0.0425 J	0.026	MG/KG	95% UCL-NP	(4)
	Lead	MG/KG	0.27	0.38 T	0.473 J	0.38	MG/KG	95% UCL-T	(3)
	Manganese	MG/KG	3.50	4.98 T	7.65	4.98	MG/KG	95% UCL-T	(3)
	Mercury	MG/KG	0.0349	0.0349 NP	0.0756	0.0349	MG/KG	95% UCL-NP	(4)
	Mercury (methyl)	MG/KG	0.0367	0.0367 NP	0.0673	0.0367	MG/KG	95% UCL-NP	(4)
	Dioxins								
	Toxicity Equivalency (PCB Congeners) - Mammals	MG/KG	0.0000323	NC	0.0000604	0.0000604	MG/KG	Max	(5)
	Toxicity Equivalency (Dioxins/Furans) - Mammals	MG/KG	0.000141	0.000181 N	0.000248	0.000181	MG/KG	95% UCL-N	(2)
DYERVILLE	**Semivolatile Organics**								
	Acenaphthylene	MG/KG	0.00076	NC	0.00094 J	0.00094	MG/KG	Max	(5)
	Dibenzo(a,h)anthracene	MG/KG	0.00068	NC	0.00017 J	0.00017	MG/KG	Max	(5)
	Phenanthrene	MG/KG	0.00490	NC	0.00632	0.00632	MG/KG	Max	(5)
	Pesticides/PCBs								
	4,4'-DDD	MG/KG	0.03543	NC	0.04068	0.04068	MG/KG	Max	(5)
	4,4'-DDE	MG/KG	0.0110	NC	0.01474	0.01474	MG/KG	Max	(5)
	4,4'-DDT	MG/KG	0.0119	NC	0.01467	0.01467	MG/KG	Max	(5)
	alpha-Chlordane	MG/KG	0.01440	NC	0.01914	0.01914	MG/KG	Max	(5)
	Aroclor-1254	MG/KG	0.37026	NC	0.4495	0.4495	MG/KG	Max	(5)
	Dieldrin	MG/KG	0.00852	NC	0.01086	0.01086	MG/KG	Max	(5)
	gamma-Chlordane	MG/KG	0.00574	NC	0.0068	0.0068	MG/KG	Max	(5)
	Heptachlor Epoxide	MG/KG	0.00184	NC	0.00228	0.00228	MG/KG	Max	(5)
	Technical Chlordane	MG/KG	0.31006	NC	0.38798	0.38798	MG/KG	Max	(5)
	Inorganics								
	Cadmium	MG/KG	0.157	NC	0.261	0.261	MG/KG	Max	(5)
	Lead	MG/KG	0.341	NC	0.562	0.562	MG/KG	Max	(5)
	Manganese	MG/KG	12.6	NC	23 J	23	MG/KG	Max	(5)
	Mercury	MG/KG	0.102	NC	0.113	0.113	MG/KG	Max	(5)

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Table G.3.1.RME
Medium-Specific Exposure Point Concentration Summary - Reasonable Maximum Exposure
American Eel

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Scenario Timeframe: Current/Future
Medium: American Eel
Exposure Medium: Whole Body

Exposure Point	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (distribution)	Maximum Detected Concentration (qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (1)	Rationale
	Mercury (methyl)	MG/KG	0.117	NC	0.122	0.122	MG/KG	Max	(5)
	Dioxins								
	Toxicity Equivalency (Dioxins/Furans) - Mammals	MG/KG	0.0000522	NC	0.0000757	0.0000757	MG/KG	Max	(5)

(1) Chemicals of potential concern are identified in Table 2.1 and Table 2.9 for site exposure areas and reference/background areas respectively.
(2) 95% UCL-N: 95% Upper Concentration Limit on the mean, normal distribution
(3) 95% UCL-T: 95% Upper Concentration Limit on the mean, lognormal distribution
(4) 95% UCL-NP: 95% Upper Concentration Limit on the mean, nonparametric distribution. Arithmetic mean used to approximate the 95% UCL for nonparametric data.
(5) Max: Maximum detected concentration, applied if fewer than 10 samples (95% UCL not calculated), or if the 95% UCL is greater than the maximum concentration.

T - The Shapiro-Wilk W Test indicates that the data are log-normally distributed.
NP - The Shapiro-Wilk W Test indicates that the data are neither normally nor log-normally distributed. The data are therefore assumed to be non-parametrically distributed.
N - The Shapiro-Wilk W Test indicates that the data are normally distributed.

Qualifier Definitions:
J = Value is estimated.

MG/KG = milligrams per kilogram
NC = Not Calculated
EPC = Exposure Point Concentration
UCL = Upper Confidence Limit on the arithmetic mean

Prepared by: KJA
Checked by: MJM

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Table G.3.2.RME
Medium-Specific Exposure Point Concentration Summary - Reasonable Maximum Exposure
Largemouth Bass

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Scenario Timeframe: Current/Future
Medium: Largemouth Bass
Exposure Medium: Fillet

Exposure Point	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (distribution)		Maximum Detected Concentration (qualifier)		Exposure Point Concentration Value	Units	Statistic (1)	Rationale
ASSAPUMPSET	**Semivolatile Organics**										
	Acenaphthylene	MG/KG	0.0003	NC		0.00032	J	0.00032	MG/KG	Max	(5)
	Benzo(a)pyrene	MG/KG	0.000849	NC		0.00128	J	0.00128	MG/KG	Max	(5)
	Phenanthrene	MG/KG	0.00108	NC		0.00119		0.00119	MG/KG	Max	(5)
	Pesticides/PCBs										
	4,4'-DDE	MG/KG	0.00467	NC		0.00932		0.00932	MG/KG	Max	(5)
	alpha-Chlordane	MG/KG	0.0003	NC		0.00031	J	0.00031	MG/KG	Max	(5)
	Inorganics										
	Mercury	MG/KG	0.254	NC		0.315	J	0.315	MG/KG	Max	(5)
	Mercury (methyl)	MG/KG	0.3	NC		0.379		0.379	MG/KG	Max	(5)
	Dioxins										
	Toxicity Equivalency - Mammals	MG/KG	0.00000182	NC		0.00000279		0.00000279	MG/KG	Max	(5)
GREYSTONE	**Semivolatile Organics**										
	Acenaphthylene	MG/KG	0.0004	0.0009	T	0.00047	J	0.00047	MG/KG	Max	(5)
	Phenanthrene	MG/KG	0.0009	0.001	T	0.00147		0.001	MG/KG	95% UCL-T	(3)
	Pesticides/PCBs										
	4,4'-DDE	MG/KG	0.00681	0.0157	T	0.02122	J	0.0157	MG/KG	95% UCL-T	(3)
	alpha-Chlordane	MG/KG	0.00064	0.00064	NP	0.0018		0.00064	MG/KG	95% UCL-NP	(4)
	Aroclor-1254	MG/KG	0.0378	0.0766	T	0.10139		0.0766	MG/KG	95% UCL-T	(3)
	Aroclor-1268	MG/KG	0.0302	0.0750	T	0.08518		0.0750	MG/KG	95% UCL-T	(3)
	Dieldrin	MG/KG	0.00035	0.00035	NP	0.00042	J	0.00035	MG/KG	95% UCL-NP	(4)
	gamma-Chlordane	MG/KG	0.0004	0.0007	T	0.00076		0.0007	MG/KG	95% UCL-T	(3)
	Technical Chlordane	MG/KG	0.0352	0.0352	NP	0.01794	J	0.01794	MG/KG	Max	(5)
	Inorganics										
	Mercury	MG/KG	0.419	0.419	NP	0.708	J	0.419	MG/KG	95% UCL-NP	(4)
	Mercury (methyl)	MG/KG	0.398	0.625	T	0.652		0.625	MG/KG	95% UCL-T	(3)
	Dioxins										
	Toxicity Equivalency - Mammals	MG/KG	0.000000210	0.000000242	T	0.000000315		0.000000242	MG/KG	95% UCL-T	(3)
LYMAN MILL	**Semivolatile Organics**										
	Acenaphthylene	MG/KG	0.0002	0.0004	N	0.00062	J	0.0004	MG/KG	95% UCL-N	(2)
	Benzo(a)pyrene	MG/KG	0.000704	0.000704	NP	0.00373		0.000704	MG/KG	95% UCL-NP	(4)
	Benzo(b)fluoranthene	MG/KG	0.0008	0.0008	NP	0.00509		0.0008	MG/KG	95% UCL-NP	(4)
	Benzo(g,h,i)perylene	MG/KG	0.000703	0.000703	NP	0.00372		0.000703	MG/KG	95% UCL-NP	(4)
	Dibenzo(a,h)anthracene	MG/KG	0.00038	0.00038	NP	0.0008	J	0.00038	MG/KG	95% UCL-NP	(4)
	Phenanthrene	MG/KG	0.0014	0.0014	NP	0.00712	J	0.0014	MG/KG	95% UCL-NP	(4)

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Table G.3.2.RME
Medium-Specific Exposure Point Concentration Summary - Reasonable Maximum Exposure
Largemouth Bass

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Scenario Timeframe: Current/Future
Medium: Largemouth Bass
Exposure Medium: Fillet

Exposure Point	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (distribution)		Maximum Detected Concentration (qualifier)		Exposure Point Concentration Value	Units	Statistic (1)	Rationale
	Pesticides/PCBs										
	4,4'-DDE	MG/KG	0.01037	0.01037	NP	0.0391		0.01037	MG/KG	95% UCL-NP	(4)
	alpha-Chlordane	MG/KG	0.002	0.002	NP	0.0099		0.002	MG/KG	95% UCL-NP	(4)
	Aroclor-1254	MG/KG	0.2166	0.2166	NP	0.39434	J	0.2166	MG/KG	95% UCL-NP	(4)
	Aroclor-1268	MG/KG	0.0127	0.0127	NP	0.05476	J	0.0127	MG/KG	95% UCL-NP	(4)
	Dieldrin	MG/KG	0.00061	0.00061	NP	0.00255		0.00061	MG/KG	95% UCL-NP	(4)
	gamma-Chlordane	MG/KG	0.00086	0.00086	NP	0.0038		0.00086	MG/KG	95% UCL-NP	(4)
	Technical Chlordane	MG/KG	0.03671	0.03671	NP	0.1365	J	0.03671	MG/KG	95% UCL-NP	(4)
	Inorganics										
	Lead	MG/KG	0.0066	0.0090	N	0.0144	J	0.0090	MG/KG	95% UCL-N	(2)
	Mercury	MG/KG	0.154	0.269	T	0.398		0.269	MG/KG	95% UCL-T	(3)
	Mercury (methyl)	MG/KG	0.236	0.236	NP	0.41		0.236	MG/KG	95% UCL-NP	(4)
	Dioxins										
	Toxicity Equivalency (PCB) - Mammals	MG/KG	0.00000453	NC		0.0000109		0.0000109	MG/KG	Max	(5)
	Toxicity Equivalency - Mammals	MG/KG	0.0000217	0.0000315	T	0.0000442		0.0000315	MG/KG	95% UCL-T	(3)
MANTON	**Semivolatile Organics**										
	Acenaphthylene	MG/KG	0.00030	NC		0.00041	J	0.00041	MG/KG	Max	(5)
	Dibenzo(a,h)anthracene	MG/KG	0.00030	NC		0.00022	J	0.00022	MG/KG	Max	(5)
	Phenanthrene	MG/KG	0.00293	NC		0.00498		0.00498	MG/KG	Max	(5)
	Pesticides/PCBs										
	4,4'-DDE	MG/KG	0.0089	NC		0.01235		0.01235	MG/KG	Max	(5)
	alpha-Chlordane	MG/KG	0.0014	NC		0.00263		0.00263	MG/KG	Max	(5)
	Aroclor-1254	MG/KG	0.12472	NC		0.22052		0.22052	MG/KG	Max	(5)
	Aroclor-1268	MG/KG	0.03292	NC		0.06755		0.06755	MG/KG	Max	(5)
	Dieldrin	MG/KG	0.00052	NC		0.00057		0.00057	MG/KG	Max	(5)
	Endosulfan Sulfate	MG/KG	0.00096	NC		0.0019		0.0019	MG/KG	Max	(5)
	gamma-Chlordane	MG/KG	0.00052	NC		0.00096	J	0.00096	MG/KG	Max	(5)
	Technical Chlordane	MG/KG	0.04062	NC		0.06498	J	0.06498	MG/KG	Max	(5)
	Inorganics										
	Lead	MG/KG	0.0113	NC		0.0119	J	0.0119	MG/KG	Max	(5)
	Mercury	MG/KG	0.185	NC		0.259		0.259	MG/KG	Max	(5)
	Mercury (methyl)	MG/KG	0.149	NC		0.278		0.278	MG/KG	Max	(5)

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Table G.3.2.RME
Medium-Specific Exposure Point Concentration Summary - Reasonable Maximum Exposure
Largemouth Bass

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Scenario Timeframe: Current/Future
Medium: Largemouth Bass
Exposure Medium: Fillet

Exposure Point	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (distribution)	Maximum Detected Concentration (qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (1)	Rationale
	Dioxins								
	Toxicity Equivalency - Mammals	MG/KG	0.0000186	NC	0.000031	0.000031	MG/KG	Max	(5)

(1) Chemicals of potential concern are identified in Table 2.2 and Table 2.10 for site exposure areas and reference/background areas respectively.
(2) 95% UCL-N: 95% Upper Concentration Limit on the mean, normal distribution
(3) 95% UCL-T: 95% Upper Concentration Limit on the mean, lognormal distribution
(4) 95% UCL-NP: 95% Upper Concentration Limit on the mean, nonparametric distribution. Arithmetic mean used to approximate the 95% UCL for nonparametric data.
(5) Max: Maximum detected concentration, applied if fewer than 10 samples (95% UCL is not calculated), or if the 95% UCL is greater than the maximum concentration.

T - The Shapiro-Wilk W Test indicates that the data are log-normally distributed.
NP - The Shapiro-Wilk W Test indicates that the data are neither normally nor log-normally distributed. The data are therefore assumed to be non-parametrically distributed.
N - The Shapiro-Wilk W Test indicates that the data are normally distributed.

Qualifier Definitions:
J = Value is estimated.

MG/KG = milligrams per kilogram
NC = Not Calculated
EPC = Exposure Point Concentration
UCL = Upper Confidence Limit on the arithmetic mean

Prepared by: KJA
Checked by: MJM

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Table G.3.3.RME
Medium-Specific Exposure Point Concentration Summary - Reasonable Maximum Exposure
White Sucker

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Scenario Timeframe: Current/Future
Medium: White Sucker, Brown Bullhead
Exposure Medium: Whole Body

Exposure Point	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (distribution)	Maximum Detected Concentration (qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (1)	Rationale
ASSAPUMPSET	**Semivolatile Organics**								
BROWN BULLHEAD	Acenaphthylene	MG/KG	0.00091	NC	0.00122 J	0.00122	MG/KG	Max	(5)
USED AS A SURROGATE	Benzo(a)anthracene	MG/KG	0.00334	NC	0.00808	0.00808	MG/KG	Max	(5)
FOR WHITE SUCKER IN	Benzo(a)pyrene	MG/KG	0.00329	NC	0.00791	0.00791	MG/KG	Max	(5)
THIS AREA	Benzo(b)fluoranthene	MG/KG	0.004177	NC	0.01058	0.01058	MG/KG	Max	(5)
	Benzo(g,h,i)perylene	MG/KG	0.00219	NC	0.00462	0.00462	MG/KG	Max	(5)
	Dibenzo(a,h)anthracene	MG/KG	0.00108	NC	0.00129 J	0.00129	MG/KG	Max	(5)
	Indeno(1,2,3-cd)pyrene	MG/KG	0.00283	NC	0.00653	0.00653	MG/KG	Max	(5)
	Phenanthrene	MG/KG	0.0071	NC	0.00776	0.00776	MG/KG	Max	(5)
	Pesticides/PCBs								
	4,4'-DDE	MG/KG	0.0127	NC	0.02374	0.02374	MG/KG	Max	(5)
	alpha-Chlordane	MG/KG	0.00174	NC	0.00288	0.00288	MG/KG	Max	(5)
	gamma-Chlordane	MG/KG	0.00094	NC	0.0013 J	0.0013	MG/KG	Max	(5)
	Inorganics								
	Lead	MG/KG	0.0894	NC	0.129 J	0.129	MG/KG	Max	(5)
	Mercury	MG/KG	0.077	NC	0.137 J	0.137	MG/KG	Max	(5)
	Mercury (methyl)	MG/KG	0.0775	NC	0.145	0.145	MG/KG	Max	(5)
	Dioxins								
	Toxicity Equivalency (Dioxins/Furans) - Mammals	MG/KG	0.00000216	NC	0.00000258	0.00000258	MG/KG	Max	(5)
GREYSTONE	**Semivolatile Organics**								
	Acenaphthylene	MG/KG	0.00388	0.00482 N	0.00706	0.00482	MG/KG	95% UCL-N	(2)
	Benzo(a)pyrene	MG/KG	0.00112	0.00112 NP	0.00273	0.00112	MG/KG	95% UCL-NP	(4)
	Benzo(g,h,i)perylene	MG/KG	0.000988	0.000988 NP	0.00138 J	0.000988	MG/KG	95% UCL-NP	(4)
	Phenanthrene	MG/KG	0.0172	0.0172 NP	0.02832	0.0172	MG/KG	95% UCL-NP	(4)
	Pesticides/PCBs								
	4,4'-DDD	MG/KG	0.0174	0.0218 T	0.02488	0.0218	MG/KG	95% UCL-T	(3)
	4,4'-DDE	MG/KG	0.04306	0.05130 N	0.06803	0.05130	MG/KG	95% UCL-N	(2)
	4,4'-DDT	MG/KG	0.00626	0.00626 NP	0.01314 J	0.00626	MG/KG	95% UCL-NP	(4)
	alpha-Chlordane	MG/KG	0.02094	0.02431 T	0.02862	0.02431	MG/KG	95% UCL-T	(3)
	Aroclor-1254	MG/KG	0.20236	0.20236 NP	0.35135	0.20236	MG/KG	95% UCL-NP	(4)
	Aroclor-1268	MG/KG	0.05512	0.05512 NP	0.16789	0.05512	MG/KG	95% UCL-NP	(4)
	Dieldrin	MG/KG	0.00417	0.00417 NP	0.02346	0.00417	MG/KG	95% UCL-NP	(4)
	gamma-Chlordane	MG/KG	0.0112	0.0112 NP	0.01453	0.0112	MG/KG	95% UCL-NP	(4)
	Heptachlor Epoxide	MG/KG	0.00081	0.00081 NP	0.00123 J	0.00081	MG/KG	95% UCL-NP	(4)
	Technical Chlordane	MG/KG	0.2820	0.2820 NP	0.34491	0.2820	MG/KG	95% UCL-NP	(4)

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Table G.3.3.RME
Medium-Specific Exposure Point Concentration Summary - Reasonable Maximum Exposure
White Sucker

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Scenario Timeframe: Current/Future
Medium: White Sucker, Brown Bullhead
Exposure Medium: Whole Body

Exposure Point	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (distribution)		Maximum Detected Concentration (qualifier)		Exposure Point Concentration Value	Units	Statistic (1)	Rationale
	Inorganics										
	Lead	MG/KG	0.012	0.012	NP	0.022	J	0.012	MG/KG	95% UCL-NP	(4)
	Mercury	MG/KG	0.190	0.190	NP	0.278		0.190	MG/KG	95% UCL-NP	(4)
	Mercury (methyl)	MG/KG	0.193	0.193	NP	0.299		0.193	MG/KG	95% UCL-NP	(4)
	Dioxins										
	Toxicity Equivalency (Dioxins/Furans) - Mammals	MG/KG	0.0000021	0.0000031	T	0.00000395		0.0000031	MG/KG	95% UCL-T	(3)
ALLENDALE	**Semivolatile Organics**										
	Acenaphthylene	MG/KG	0.00215	0.00268	T	0.00387		0.00268	MG/KG	95% UCL-T	(3)
	Benzo(a)anthracene	MG/KG	0.0013	0.0022	T	0.00301		0.0022	MG/KG	95% UCL-T	(3)
	Benzo(a)pyrene	MG/KG	0.0010	0.0024	T	0.00279		0.0024	MG/KG	95% UCL-T	(3)
	Benzo(b)fluoranthene	MG/KG	0.0012	0.0025	T	0.00401		0.0025	MG/KG	95% UCL-T	(3)
	Benzo(g,h,i)perylene	MG/KG	0.000632	0.000632	NP	0.00243		0.000632	MG/KG	95% UCL-NP	(4)
	Dibenzo(a,h)anthracene	MG/KG	0.00027	0.00040	T	0.00069		0.00040	MG/KG	95% UCL-T	(3)
	Indeno(1,2,3-cd)pyrene	MG/KG	0.00079	0.00079	NP	0.00267		0.00079	MG/KG	95% UCL-NP	(4)
	Phenanthrene	MG/KG	0.00958	0.0114	N	0.01451		0.0114	MG/KG	95% UCL-N	(2)
	Pesticides/PCBs										
	4,4'-DDD	MG/KG	0.0126	0.0126	NP	0.03498	J	0.0126	MG/KG	95% UCL-NP	(4)
	4,4'-DDE	MG/KG	0.02869	0.02869	NP	0.05383	J	0.02869	MG/KG	95% UCL-NP	(4)
	4,4'-DDT	MG/KG	0.00686	0.00686	NP	0.02462	J	0.00686	MG/KG	95% UCL-NP	(4)
	alpha-Chlordane	MG/KG	0.0168	0.0236	T	0.03511	J	0.0236	MG/KG	95% UCL-T	(3)
	Aroclor-1254	MG/KG	1.5832	2.8888	T	3.24344	J	2.8888	MG/KG	95% UCL-T	(3)
	Aroclor-1268	MG/KG	0.02949	0.03843	T	0.05274	J	0.03843	MG/KG	95% UCL-T	(3)
	Dieldrin	MG/KG	0.00537	0.00866	T	0.0099	J	0.00866	MG/KG	95% UCL-T	(3)
	gamma-Chlordane	MG/KG	0.0089	0.0089	NP	0.0247	J	0.0089	MG/KG	95% UCL-NP	(4)
	Heptachlor Epoxide	MG/KG	0.00061	0.00070	N	0.00083	J	0.00070	MG/KG	95% UCL-N	(2)
	Technical Chlordane	MG/KG	0.346	0.674	T	1.24742	J	0.674	MG/KG	95% UCL-T	(3)
	Inorganics										
	Chromium	MG/KG	0.112	0.112	NP	0.229	J	0.112	MG/KG	95% UCL-NP	(4)
	Lead	MG/KG	0.16	0.39	T	0.349		0.349	MG/KG	Max	(5)
	Mercury	MG/KG	0.136	0.136	NP	0.216		0.136	MG/KG	95% UCL-NP	(4)
	Mercury (methyl)	MG/KG	0.147	0.147	NP	0.225		0.147	MG/KG	95% UCL-NP	(4)
	Dioxins										
	Toxicity Equivalency (PCB Congeners) - Mammals	MG/KG	0.0000195	NC		0.0000215		0.0000215	MG/KG	Max	(5)
	Toxicity Equivalency (Dioxins/Furans) - Mammals	MG/KG	0.000346	0.000492	N	0.000802		0.000492	MG/KG	95% UCL-N	(2)

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Table G.3.3.RME
Medium-Specific Exposure Point Concentration Summary - Reasonable Maximum Exposure
White Sucker

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Scenario Timeframe: Current/Future
Medium: White Sucker, Brown Bullhead
Exposure Medium: Whole Body

Exposure Point	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (distribution)		Maximum Detected Concentration (qualifier)		Exposure Point Concentration			
								Value	Units	Statistic (1)	Rationale
LYMAN MILL	**Semivolatile Organics**										
	Acenaphthylene	MG/KG	0.00297	0.00355	T	0.00458		0.00355	MG/KG	95% UCL-T	(3)
	Benzo(a)anthracene	MG/KG	0.00447	0.00946	T	0.01173		0.00946	MG/KG	95% UCL-T	(3)
	Benzo(a)pyrene	MG/KG	0.0049	0.024	T	0.01469		0.01469	MG/KG	Max	(5)
	Benzo(b)fluoranthene	MG/KG	0.0067	0.007	NP	0.02077		0.00666	MG/KG	95% UCL-NP	(4)
	Benzo(g,h,i)perylene	MG/KG	0.0038	0.019	T	0.01143		0.01143	MG/KG	Max	(5)
	Dibenzo(a,h)anthracene	MG/KG	0.0010	0.0027	T	0.00273		0.0027	MG/KG	95% UCL-T	(3)
	Indeno(1,2,3-cd)pyrene	MG/KG	0.0043	0.034	T	0.01347		0.01347	MG/KG	Max	(5)
	Phenanthrene	MG/KG	0.0154	0.0212	T	0.02954		0.0212	MG/KG	95% UCL-T	(3)
	Pesticides/PCBs										
	4,4'-DDD	MG/KG	0.03866	0.06351	T	0.0668	J	0.06351	MG/KG	95% UCL-T	(3)
	4,4'-DDE	MG/KG	0.1309	0.2134	T	0.28651	J	0.2134	MG/KG	95% UCL-T	(3)
	4,4'-DDT	MG/KG	0.0037	0.0052	N	0.00847	J	0.0052	MG/KG	95% UCL-N	(2)
	alpha-Chlordane	MG/KG	0.03963	0.04690	N	0.05956	J	0.04690	MG/KG	95% UCL-N	(2)
	Aroclor-1254	MG/KG	4.19359	5.21365	T	7.09977	J	5.21365	MG/KG	95% UCL-T	(3)
	Aroclor-1268	MG/KG	0.03590	0.04370	T	0.04566	J	0.04370	MG/KG	95% UCL-T	(3)
	Dieldrin	MG/KG	0.00556	0.00862	T	0.00971	J	0.00862	MG/KG	95% UCL-T	(3)
	gamma-Chlordane	MG/KG	0.02921	0.02921	NP	0.0408	J	0.02921	MG/KG	95% UCL-NP	(4)
	Heptachlor Epoxide	MG/KG	0.0014	0.0017	T	0.002	J	0.0017	MG/KG	95% UCL-T	(3)
	Technical Chlordane	MG/KG	1.3657	2.5751	T	2.61185	J	2.5751	MG/KG	95% UCL-T	(3)
	Inorganics										
	Arsenic	MG/KG	0.0276	0.0276	NP	0.0715		0.0276	MG/KG	95% UCL-NP	(4)
	Chromium	MG/KG	0.270	0.378	T	0.513		0.378	MG/KG	95% UCL-T	(3)
	Lead	MG/KG	0.428	0.594	N	1.01	J	0.594	MG/KG	95% UCL-N	(2)
	Mercury	MG/KG	0.0984	0.118	T	0.157		0.118	MG/KG	95% UCL-T	(3)
	Mercury (methyl)	MG/KG	0.0927	0.109	T	0.139		0.109	MG/KG	95% UCL-T	(3)
	Dioxins										
	Toxicity Equivalency (PCB Congeners) - Mammals	MG/KG	0.0000401	NC		0.0000503		0.0000503	MG/KG	Max	(5)
	Toxicity Equivalency (Dioxins/Furans) - Mammals	MG/KG	0.000580	0.000898	T	0.00137		0.000898	MG/KG	95% UCL-T	(3)

(1) Chemicals of potential concern are identified in Table 2.4 and Table 2.12 for site exposure areas and reference/background areas respecitively.
Chemicals of potential concern for Brown Bullhead area identified in Table 2.13.
(2) 95% UCL-N: 95% Upper Concentration Limit on the mean, normal distribution
(3) 95% UCL-T: 95% Upper Concentration Limit on the mean, lognormal distribution

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Table G.3.3.RME
Medium-Specific Exposure Point Concentration Summary - Reasonable Maximum Exposure
White Sucker

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Scenario Timeframe: Current/Future
Medium: White Sucker, Brown Bullhead
Exposure Medium: Whole Body

Exposure Point	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (distribution)	Maximum Detected Concentration (qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (1)	Rationale

(4) 95% UCL-NP: 95% Upper Concentration Limit on the mean, nonparametric distribution. Arithmetic mean used to approximate the 95% UCL for nonparametric data.
(5) Max: Maximum detected concentration, applied if fewer than 10 samples (95% UCL not calculated), or if the 95% UCL is greater than the maximum concentration.

T - The Shapiro-Wilk W Test indicates that the data are log-normally distributed.
NP - The Shapiro-Wilk W Test indicates that the data are neither normally nor log-normally distributed. The data are therefore assumed to be non-parametrically distributed.
N - The Shapiro-Wilk W Test indicates that the data are normally distributed.

Qualifier Definitions:
J = Value is estimated.

MG/KG = milligrams per kilogram
NC = Not Calculated
EPC = Exposure Point Concentration
UCL = Upper Confidence Limit on the arithmetic mean

Prepared by: KJA
Checked by: MJM

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Table G.4.1.RME
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: AMERICAN EEL
EXPOSURE MEDIUM: WHOLE BODY

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME
INGESTION	RESIDENT	ADULT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	38.74	g/day	USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
			DYERVILLE REACH	ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	70	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	18980	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		ADOLESCENT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	25.8	g/day	USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
			DYERVILLE REACH	ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	45	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		CHILD	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	14	g/day	USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
			DYERVILLE REACH	ED	EXPOSURE DURATION	6	yr	Assumption	
				BW	BODY WEIGHT	15	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	2190	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
	RECREATIONAL ANGLER	ADULT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	38.74	g/day	USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
			DYERVILLE REACH	ED	EXPOSURE DURATION	52	yr	Assumption	
				BW	BODY WEIGHT	70	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	18980	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		ADOLESCENT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	25.8	g/day	USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
			DYERVILLE REACH	ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	45	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		CHILD	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	14	g/day	USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
			DYERVILLE REACH	ED	EXPOSURE DURATION	6	yr	Assumption	
				BW	BODY WEIGHT	15	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	2190	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		

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Table G.4.1.RME
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: AMERICAN EEL
EXPOSURE MEDIUM: WHOLE BODY

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME
	SUBSISTENCE ANGLER	ADULT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	148	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
			DYERVILLE REACH	ED	EXPOSURE DURATION	52	yr	Assumption	
				BW	BODY WEIGHT	70	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	18980	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		ADOLESCENT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	98.6	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
			DYERVILLE REACH	ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	45	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		CHILD	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	53.5	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
			DYERVILLE REACH	ED	EXPOSURE DURATION	6	yr	Assumption	
				BW	BODY WEIGHT	15	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	2190	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		

Balcom, N. C., C. M. Capacchione, D. W. Hirsch, 1999. Quantification of Fish and Seafood Consumption Rates in Connecticut. Submitted to CTDEP. January.
USEPA, 1989. "Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A)"; Office of Emergency and Remedial Response; EPA-540/1-89/002 (interim final); Washington, D.C., December.
USEPA, 1994. "Risk Updates No. 2"; USEPA Region I, Waste Management Division; August. Values from "Attachment 2" to Risk Updates No. 2.
USEPA, 1997. "Exposure Factors Handbook, Volume I"; Office of Research and Development; EPA-600/P-95/002Fa; Washington, D.C.; August.
USEPA, 1999. "Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part E)"; Office of Solid Waste and Emergency Response; EPA-540/R-99/005 (interim final); Washington, D.C.

Prepared by: KJA
Checked by: MJM

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Table G.4.2.RME
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: LARGEMOUTH BASS
EXPOSURE MEDIUM: FILLET

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME
INGESTION	RESIDENT	ADULT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	38.74	g/day	USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			LYMAN MILL POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			MANTON REACH	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	70	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	18980	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		ADOLESCENT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	25.8	g/day	USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			LYMAN MILL POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			MANTON REACH	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	45	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		CHILD	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	14	g/day	USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			LYMAN MILL POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			MANTON REACH	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	6	yr	Assumption	
				BW	BODY WEIGHT	15	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	2190	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
	RECREATIONAL ANGLER	ADULT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	38.74	g/day	USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			LYMAN MILL POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			MANTON REACH	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	52	yr	Assumption	
				BW	BODY WEIGHT	70	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	18980	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
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			MANTON REACH	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	45	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
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			LYMAN MILL POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			MANTON REACH	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	6	yr	Assumption	
				BW	BODY WEIGHT	15	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	2190	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		

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Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: LARGEMOUTH BASS
EXPOSURE MEDIUM: FILLET

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME
	SUBSISTENCE ANGLER	ADULT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	148	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			LYMAN MILL POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			MANTON REACH	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	52	yr	Assumption	
				BW	BODY WEIGHT	70	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	18980	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		ADOLESCENT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	98.6	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			LYMAN MILL POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			MANTON REACH	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	45	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		CHILD	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	53.5	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			LYMAN MILL POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			MANTON REACH	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	6	yr	Assumption	
				BW	BODY WEIGHT	15	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	2190	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		

Balcom, N. C., C. M. Capacchione, D. W. Hirsch, 1999. Quantification of Fish and Seafood Consumption Rates in Connecticut. Submitted to CTDEP. January.
USEPA, 1989. "Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A)"; Office of Emergency and Remedial Response; EPA-540/1-89/002 (interim final); Washington, D.C., December.
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USEPA, 1999. "Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part E)"; Office of Solid Waste and Emergency Response; EPA-540/R-99/005 (interim final); Washington, D.C.

Prepared by: KJA
Checked by: MJM

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Table G.4.3.RME
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: WHITE SUCKER, BROWN BULLHEAD
EXPOSURE MEDIUM: WHOLE BODY

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME
INGESTION	RESIDENT	ADULT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	38.74	g/day	USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	70	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	18980	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		ADOLESCENT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	25.8	g/day	USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	45	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		CHILD	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	14	g/day	USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	6	yr	Assumption	
				BW	BODY WEIGHT	15	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	2190	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
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			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	52	yr	Assumption	
				BW	BODY WEIGHT	70	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	18980	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		ADOLESCENT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	25.8	g/day	USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	45	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
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		CHILD	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	14	g/day	USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	6	yr	Assumption	
				BW	BODY WEIGHT	15	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	2190	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		

US EPA ARCHIVE DOCUMENT

Table G.4.3.RME
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: WHITE SUCKER, BROWN BULLHEAD
EXPOSURE MEDIUM: WHOLE BODY

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME
	SUBSISTENCE ANGLER	ADULT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	148	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	52	yr	Assumption	
				BW	BODY WEIGHT	70	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	18980	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		ADOLESCENT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	98.6	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	45	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		CHILD	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	53.5	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	6	yr	Assumption	
				BW	BODY WEIGHT	15	kg	USEPA, 1997	
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				AT-N	AVERAGING TIME (NONCANCER)	2190	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		

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USEPA, 1989. "Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A)"; Office of Emergency and Remedial Response; EPA-540/1-89/002 (interim final); Washington, D.C., December.

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USEPA, 1999. "Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part E)"; Office of Solid Waste and Emergency Response; EPA-540/R-99/005 (interim final); Washington, D.C.

Prepared by: KJA
Checked by: MJM

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Table G.3.1.CT
Medium-Specific Exposure Point Concentration Summary - Central Tendency
American Eel

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Scenario Timeframe: Current/Future
Medium: American Eel
Exposure Medium: Whole Body

Exposure Point	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (distribution)	Maximum Detected Concentration (qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (1)	Rationale
ASSAPUMPSET	**Semivolatile Organics**								
	Acenaphthylene	MG/KG	0.000943	NC	0.00179	0.000943	MG/KG	Mean	(5)
	Phenanthrene	MG/KG	0.00246	NC	0.00876	0.00246	MG/KG	Mean	(5)
	Pesticides/PCBs								
	4,4'-DDD	MG/KG	0.00461	NC	0.00828 J	0.00461	MG/KG	Mean	(5)
	4,4'-DDE	MG/KG	0.0176	NC	0.0373 J	0.0176	MG/KG	Mean	(5)
	alpha-Chlordane	MG/KG	0.0025	NC	0.00487 J	0.0025	MG/KG	Mean	(5)
	Aroclor-1254	MG/KG	0.03178	NC	0.10246 J	0.03178	MG/KG	Mean	(5)
	Dieldrin	MG/KG	0.0013	NC	0.00246 J	0.0013	MG/KG	Mean	(5)
	gamma-Chlordane	MG/KG	0.00089	NC	0.00185 J	0.00089	MG/KG	Mean	(5)
	Heptachlor Epoxide	MG/KG	0.00077	NC	0.00138 J	0.00077	MG/KG	Mean	(5)
	Technical Chlordane	MG/KG	0.11622	NC	0.16108 J	0.11622	MG/KG	Mean	(5)
	Inorganics								
	Lead	MG/KG	0.0466	NC	0.0893 J	0.0466	MG/KG	Mean	(5)
	Mercury	MG/KG	0.0926	NC	0.14	0.0926	MG/KG	Mean	(5)
	Mercury (methyl)	MG/KG	0.0889	NC	0.137	0.0889	MG/KG	Mean	(5)
	Zinc	MG/KG	16.9	NC	26.2	16.9	MG/KG	Mean	(5)
	Dioxins								
	Toxicity Equivalency - Mammals	MG/KG	0.00000056	NC	0.00000178	0.00000056	MG/KG	Mean	(5)
GREYSTONE	**Semivolatile Organics**								
	Acenaphthylene	MG/KG	0.00104	0.00121 N	0.00155	0.00121	MG/KG	95% UCL-N	(2)
	Benzo(a)pyrene	MG/KG	0.00132	0.00132 NP	0.00457	0.00132	MG/KG	95% UCL-NP	(4)
	Benzo(b)fluoranthene	MG/KG	0.00149	0.00149 NP	0.00533	0.00149	MG/KG	95% UCL-NP	(4)
	Dibenzo(a,h)anthracene	MG/KG	0.000799	0.000799 NP	0.00156	0.000799	MG/KG	95% UCL-NP	(4)
	Indeno(1,2,3-cd)pyrene	MG/KG	0.00132	0.00132 NP	0.00432	0.00132	MG/KG	95% UCL-NP	(4)
	Phenanthrene	MG/KG	0.00286	0.00475 T	0.00689	0.00475	MG/KG	95% UCL-T	(3)
	Pesticides/PCBs								
	4,4'-DDD	MG/KG	0.0128	0.0150 T	0.0163 J	0.0150	MG/KG	95% UCL-T	(3)
	4,4'-DDE	MG/KG	0.03161	0.03161 NP	0.0439 J	0.03161	MG/KG	95% UCL-NP	(4)
	alpha-Chlordane	MG/KG	0.0140	0.0170 N	0.0222 J	0.0170	MG/KG	95% UCL-N	(2)

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Table G.3.1.CT
Medium-Specific Exposure Point Concentration Summary - Central Tendency
American Eel

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Scenario Timeframe: Current/Future
Medium: American Eel
Exposure Medium: Whole Body

Exposure Point	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (distribution)		Maximum Detected Concentration (qualifier)		Exposure Point Concentration Value	Units	Statistic (1)	Rationale
	Aroclor-1254	MG/KG	0.20781	0.25318	T	0.2928	J	0.25318	MG/KG	95% UCL-T	(3)
	Aroclor-1268	MG/KG	0.1022	0.1251	T	0.14591	J	0.1251	MG/KG	95% UCL-T	(3)
	Dieldrin	MG/KG	0.00353	0.00353	NP	0.00885	J	0.00353	MG/KG	95% UCL-NP	(4)
	gamma-Chlordane	MG/KG	0.0055	0.0069	N	0.00902	J	0.0069	MG/KG	95% UCL-N	(2)
	Heptachlor Epoxide	MG/KG	0.0012	0.0012	NP	0.0026	J	0.0012	MG/KG	95% UCL-NP	(4)
	Technical Chlordane	MG/KG	0.26541	0.31695	N	0.41089	J	0.31695	MG/KG	95% UCL-N	(2)
	Inorganics										
	Lead	MG/KG	0.214	6.36	T	1.47		0.214	MG/KG	Mean	(5)
	Mercury	MG/KG	0.0706	0.0706	NP	0.227		0.0706	MG/KG	95% UCL-NP	(4)
	Mercury (methyl)	MG/KG	0.0825	0.165	T	0.234		0.165	MG/KG	95% UCL-T	(3)
	Zinc	MG/KG	33.4	41.5	T	53.3	J	41.5	MG/KG	95% UCL-T	(3)
	Dioxins										
	Toxicity Equivalency - Mammals	MG/KG	0.000000611	0.000000749	T	0.000000851		0.000000749	MG/KG	95% UCL-T	(3)
ALLENDALE	**Semivolatile Organics**										
	Acenaphthylene	MG/KG	0.0013	0.0013	NP	0.00187		0.0013	MG/KG	95% UCL-NP	(4)
	Phenanthrene	MG/KG	0.00807	0.00807	NP	0.01063		0.00807	MG/KG	95% UCL-NP	(4)
	Pesticides/PCBs										
	4,4'-DDD	MG/KG	0.0131	0.0131	NP	0.04205		0.0131	MG/KG	95% UCL-NP	(4)
	4,4'-DDE	MG/KG	0.0210	0.0210	NP	0.03305		0.0210	MG/KG	95% UCL-NP	(4)
	4,4'-DDT	MG/KG	0.00386	0.00892	T	0.01106		0.00892	MG/KG	95% UCL-T	(3)
	alpha-Chlordane	MG/KG	0.0192	0.0192	NP	0.06327		0.0192	MG/KG	95% UCL-NP	(4)
	Aroclor-1254	MG/KG	0.65474	0.88187	N	1.15576		0.88187	MG/KG	95% UCL-N	(2)
	Aroclor-1268	MG/KG	0.01504	0.01504	NP	0.07747	J	0.01504	MG/KG	95% UCL-NP	(4)
	beta-BHC	MG/KG	0.00062	0.00062	NP	0.00072	J	0.00062	MG/KG	95% UCL-NP	(4)
	Dieldrin	MG/KG	0.00667	0.00912	N	0.01448		0.00912	MG/KG	95% UCL-N	(2)
	Endosulfan Sulfate	MG/KG	0.00158	0.00158	NP	0.00999		0.00158	MG/KG	95% UCL-NP	(4)
	Endrin Aldehyde	MG/KG	0.001	0.001	NP	0.0008		0.001	MG/KG	95% UCL-NP	(4)
	gamma-Chlordane	MG/KG	0.00712	0.00712	NP	0.02296		0.00712	MG/KG	95% UCL-NP	(4)
	Heptachlor	MG/KG	0.000678	0.000678	NP	0.00129		0.000678	MG/KG	95% UCL-NP	(4)
	Heptachlor Epoxide	MG/KG	0.0015	0.0015	NP	0.00446		0.0015	MG/KG	95% UCL-NP	(4)

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Table G.3.1.CT
Medium-Specific Exposure Point Concentration Summary - Central Tendency
American Eel

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Scenario Timeframe: Current/Future
Medium: American Eel
Exposure Medium: Whole Body

Exposure Point	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (distribution)		Maximum Detected Concentration (qualifier)		Exposure Point Concentration			
								Value	Units	Statistic (1)	Rationale
	Technical Chlordane	MG/KG	0.2615	0.2615	NP	0.76253		0.2615	MG/KG	95% UCL-NP	(4)
	Inorganics										
	Cadmium	MG/KG	0.0971	0.0971	NP	0.248		0.0971	MG/KG	95% UCL-NP	(4)
	Lead	MG/KG	0.428	0.580	N	0.952	J	0.580	MG/KG	95% UCL-N	(2)
	Manganese	MG/KG	3.51	5.04	T	7.7	J	5.04	MG/KG	95% UCL-T	(3)
	Mercury	MG/KG	0.111	0.153	N	0.24		0.153	MG/KG	95% UCL-N	(2)
	Mercury (methyl)	MG/KG	0.134	0.269	T	0.471		0.269	MG/KG	95% UCL-T	(3)
	Dioxins										
	Toxicity Equivalency (PCB Congeners) - Mammals	MG/KG	0.0000356	NC		0.000042		0.0000356	MG/KG	Mean	(5)
	Toxicity Equivalency (Dioxins/Furans) - Mammals	MG/KG	0.000111	0.000111	NP	0.000308		0.000111	MG/KG	95% UCL-NP	(4)
LYMAN MILL	**Semivolatile Organics**										
	Acenaphthylene	MG/KG	0.00193	0.00193	NP	0.00294		0.00193	MG/KG	95% UCL-NP	(4)
	Benzo(a)pyrene	MG/KG	0.000962	0.000962	NP	0.00382		0.000962	MG/KG	95% UCL-NP	(4)
	Benzo(b)fluoranthene	MG/KG	0.00119	0.00119	NP	0.00577		0.00119	MG/KG	95% UCL-NP	(4)
	Dibenzo(a,h)anthracene	MG/KG	0.00065	0.00065	NP	0.00075	J	0.00065	MG/KG	95% UCL-NP	(4)
	Phenanthrene	MG/KG	0.01554	0.02012	T	0.02717		0.02012	MG/KG	95% UCL-T	(3)
	Pesticides/PCBs										
	4,4'-DDD	MG/KG	0.01469	0.01469	NP	0.02072	J	0.01469	MG/KG	95% UCL-NP	(4)
	4,4'-DDE	MG/KG	0.04451	0.04451	NP	0.07891	J	0.04451	MG/KG	95% UCL-NP	(4)
	4,4'-DDT	MG/KG	0.00238	0.00337	N	0.00566	J	0.00337	MG/KG	95% UCL-N	(2)
	alpha-Chlordane	MG/KG	0.02007	0.02007	NP	0.04272		0.02007	MG/KG	95% UCL-NP	(4)
	Aroclor-1254	MG/KG	0.70316	0.95861	T	1.17773	J	0.95861	MG/KG	95% UCL-T	(3)
	beta-BHC	MG/KG	0.0012	0.0018	T	0.00255	J	0.0018	MG/KG	95% UCL-T	(3)
	Dieldrin	MG/KG	0.00789	0.00789	NP	0.01115	J	0.00789	MG/KG	95% UCL-NP	(4)
	gamma-Chlordane	MG/KG	0.00859	0.00859	NP	0.01605		0.00859	MG/KG	95% UCL-NP	(4)
	Heptachlor Epoxide	MG/KG	0.00227	0.00227	NP	0.00559		0.00227	MG/KG	95% UCL-NP	(4)
	Technical Chlordane	MG/KG	0.44722	0.44722	NP	0.76577		0.44722	MG/KG	95% UCL-NP	(4)
	Inorganics										
	Cadmium	MG/KG	0.026	0.026	NP	0.0425	J	0.026	MG/KG	95% UCL-NP	(4)
	Lead	MG/KG	0.27	0.38	T	0.473	J	0.38	MG/KG	95% UCL-T	(3)

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Table G.3.1.CT
Medium-Specific Exposure Point Concentration Summary - Central Tendency
American Eel

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Scenario Timeframe: Current/Future
Medium: American Eel
Exposure Medium: Whole Body

Exposure Point	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (distribution)	Maximum Detected Concentration (qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (1)	Rationale
	Manganese	MG/KG	3.50	4.98 T	7.65	4.98	MG/KG	95% UCL-T	(3)
	Mercury	MG/KG	0.0349	0.0349 NP	0.0756	0.0349	MG/KG	95% UCL-NP	(4)
	Mercury (methyl)	MG/KG	0.0367	0.0367 NP	0.0673	0.0367	MG/KG	95% UCL-NP	(4)
	Dioxins								
	Toxicity Equivalency (PCB Congeners) - Mammals	MG/KG	0.0000323	NC	0.0000604	0.0000323	MG/KG	Mean	(5)
	Toxicity Equivalency (Dioxins/Furans) - Mammals	MG/KG	0.000141	0.000181 N	0.000248	0.000181	MG/KG	95% UCL-N	(2)
DYERVILLE	**Semivolatile Organics**								
	Acenaphthylene	MG/KG	0.00076	NC	0.00094 J	0.00076	MG/KG	Mean	(5)
	Dibenzo(a,h)anthracene	MG/KG	0.00068	NC	0.00017 J	0.00017	MG/KG	Max	(6)
	Phenanthrene	MG/KG	0.00490	NC	0.00632	0.00490	MG/KG	Mean	(5)
	Pesticides/PCBs								
	4,4'-DDD	MG/KG	0.03543	NC	0.04068	0.03543	MG/KG	Mean	(5)
	4,4'-DDE	MG/KG	0.0110	NC	0.01474	0.0110	MG/KG	Mean	(5)
	4,4'-DDT	MG/KG	0.0119	NC	0.01467	0.0119	MG/KG	Mean	(5)
	alpha-Chlordane	MG/KG	0.01440	NC	0.01914	0.01440	MG/KG	Mean	(5)
	Aroclor-1254	MG/KG	0.37026	NC	0.4495	0.37026	MG/KG	Mean	(5)
	Dieldrin	MG/KG	0.00852	NC	0.01086	0.00852	MG/KG	Mean	(5)
	gamma-Chlordane	MG/KG	0.00574	NC	0.0068	0.00574	MG/KG	Mean	(5)
	Heptachlor Epoxide	MG/KG	0.00184	NC	0.00228	0.00184	MG/KG	Mean	(5)
	Technical Chlordane	MG/KG	0.31006	NC	0.38798	0.31006	MG/KG	Mean	(5)
	Inorganics								
	Cadmium	MG/KG	0.157	NC	0.261	0.157	MG/KG	Mean	(5)
	Lead	MG/KG	0.341	NC	0.562	0.341	MG/KG	Mean	(5)
	Manganese	MG/KG	12.6	NC	23 J	12.6	MG/KG	Mean	(5)
	Mercury	MG/KG	0.102	NC	0.113	0.102	MG/KG	Mean	(5)
	Mercury (methyl)	MG/KG	0.117	NC	0.122	0.117	MG/KG	Mean	(5)

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Table G.3.1.CT
Medium-Specific Exposure Point Concentration Summary - Central Tendency
American Eel

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Scenario Timeframe: Current/Future
Medium: American Eel
Exposure Medium: Whole Body

Exposure Point	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (distribution)	Maximum Detected Concentration (qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (1)	Rationale
	Dioxins								
	Toxicity Equivalency (Dioxins/Furans) - Mammals	MG/KG	0.0000522	NC	0.0000757	0.0000522	MG/KG	Mean	(5)

(1) Chemicals of potential concern are identified in Table 2.1 and Table 2.9 for site exposure areas and reference/background areas respectively.
(2) 95% UCL-N: 95% Upper Concentration Limit on the mean, normal distribution
(3) 95% UCL-T: 95% Upper Concentration Limit on the mean, lognormal distribution
(4) 95% UCL-NP: 95% Upper Concentration Limit on the mean, nonparametric distribution. *Arithmetic mean used to approximate the 95% UCL for nonparametric data.*
(5) Mean: Arithmetic Mean, applied if fewer than 10 samples (95% UCL not calculated), or if the 95% UCL is greater than the maximum concentration.
(6) Max: Maximum, applied in the special case where the arithmetic mean has been selected, but because of elevated detection limits in non-detects, it is greater than the maximum detected concentration.

T - The Shapiro-Wilk W Test indicates that the data are log-normally distributed.
NP - The Shapiro-Wilk W Test indicates that the data are neither normally nor log-normally distributed. The data are therefore assumed to be non-parametrically distributed.
N - The Shapiro-Wilk W Test indicates that the data are normally distributed.

Qualifier Definitions:
J = Value is estimated.

MG/KG = milligrams per kilogram
NC = Not Calculated
EPC = Exposure Point Concentration
UCL = Upper Confidence Limit on the arithmetic mean

Prepared by: KJA
Checked by: MJM

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Table G.3.2.CT
Medium-Specific Exposure Point Concentration Summary - Central Tendency
Largemouth Bass

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Scenario Timeframe: Current/Future
Medium: Largemouth Bass
Exposure Medium: Fillet

Exposure Point	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (distribution)	Maximum Detected Concentration (qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (1)	Rationale
ASSAPUMPSET	**Semivolatile Organics**								
	Acenaphthylene	MG/KG	0.0003	NC	0.00032 J	0.0003	MG/KG	Mean	(5)
	Benzo(a)pyrene	MG/KG	0.000849	NC	0.00128 J	0.000849	MG/KG	Mean	(5)
	Phenanthrene	MG/KG	0.00108	NC	0.00119	0.00108	MG/KG	Mean	(5)
	Pesticides/PCBs								
	4,4'-DDE	MG/KG	0.00467	NC	0.00932	0.00467	MG/KG	Mean	(5)
	alpha-Chlordane	MG/KG	0.0003	NC	0.00031 J	0.00031	MG/KG	Max	(6)
	Inorganics								
	Mercury	MG/KG	0.254	NC	0.315 J	0.254	MG/KG	Mean	(5)
	Mercury (methyl)	MG/KG	0.3	NC	0.379	0.3	MG/KG	Mean	(5)
	Dioxins								
	Toxicity Equivalency - Mammals	MG/KG	0.00000182	NC	0.00000279	0.00000182	MG/KG	Mean	(5)
GREYSTONE	**Semivolatile Organics**								
	Acenaphthylene	MG/KG	0.0004	0.0009 T	0.00047 J	0.0004	MG/KG	Mean	(5)
	Phenanthrene	MG/KG	0.0009	0.001 T	0.00147	0.001	MG/KG	95% UCL-T	(3)
	Pesticides/PCBs								
	4,4'-DDE	MG/KG	0.00681	0.0157 T	0.02122 J	0.0157	MG/KG	95% UCL-T	(3)
	alpha-Chlordane	MG/KG	0.00064	0.00064 NP	0.0018	0.00064	MG/KG	95% UCL-NP	(4)
	Aroclor-1254	MG/KG	0.0378	0.0766 T	0.10139	0.0766	MG/KG	95% UCL-T	(3)
	Aroclor-1268	MG/KG	0.0302	0.0750 T	0.08518	0.0750	MG/KG	95% UCL-T	(3)
	Dieldrin	MG/KG	0.00035	0.00035 NP	0.00042 J	0.00035	MG/KG	95% UCL-NP	(4)
	gamma-Chlordane	MG/KG	0.0004	0.0007 T	0.00076	0.0007	MG/KG	95% UCL-T	(3)
	Technical Chlordane	MG/KG	0.0352	0.0352 NP	0.01794 J	0.01794	MG/KG	Max	(6)
	Inorganics								
	Mercury	MG/KG	0.419	0.419 NP	0.708 J	0.419	MG/KG	95% UCL-NP	(4)
	Mercury (methyl)	MG/KG	0.398	0.625 T	0.652	0.625	MG/KG	95% UCL-T	(3)
	Dioxins								
	Toxicity Equivalency - Mammals	MG/KG	0.000000210	0.000000242 T	0.000000315	0.000000242	MG/KG	95% UCL-T	(3)
LYMAN MILL	**Semivolatile Organics**								
	Acenaphthylene	MG/KG	0.0002	0.0004 N	0.00062 J	0.0004	MG/KG	95% UCL-N	(2)
	Benzo(a)pyrene	MG/KG	0.000704	0.000704 NP	0.00373	0.000704	MG/KG	95% UCL-NP	(4)
	Benzo(b)fluoranthene	MG/KG	0.0008	0.0008 NP	0.00509	0.0008	MG/KG	95% UCL-NP	(4)
	Benzo(g,h,i)perylene	MG/KG	0.000703	0.000703 NP	0.00372	0.000703	MG/KG	95% UCL-NP	(4)
	Dibenzo(a,h)anthracene	MG/KG	0.00038	0.00038 NP	0.0008 J	0.00038	MG/KG	95% UCL-NP	(4)
	Phenanthrene	MG/KG	0.0014	0.0014 NP	0.00712 J	0.0014	MG/KG	95% UCL-NP	(4)

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Table G.3.2.CT
Medium-Specific Exposure Point Concentration Summary - Central Tendency
Largemouth Bass

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Scenario Timeframe: Current/Future
Medium: Largemouth Bass
Exposure Medium: Fillet

Exposure Point	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (distribution)		Maximum Detected Concentration (qualifier)		Exposure Point Concentration Value	Units	Statistic (1)	Rationale
	Pesticides/PCBs										
	4,4'-DDE	MG/KG	0.01037	0.01037	NP	0.0391		0.01037	MG/KG	95% UCL-NP	(4)
	alpha-Chlordane	MG/KG	0.002	0.002	NP	0.0099		0.002	MG/KG	95% UCL-NP	(4)
	Aroclor-1254	MG/KG	0.2166	0.2166	NP	0.59434	J	0.2166	MG/KG	95% UCL-NP	(4)
	Aroclor-1268	MG/KG	0.0127	0.0127	NP	0.05476	J	0.0127	MG/KG	95% UCL-NP	(4)
	Dieldrin	MG/KG	0.00061	0.00061	NP	0.00255		0.00061	MG/KG	95% UCL-NP	(4)
	gamma-Chlordane	MG/KG	0.00086	0.00086	NP	0.0038		0.00086	MG/KG	95% UCL-NP	(4)
	Technical Chlordane	MG/KG	0.03671	0.03671	NP	0.1365	J	0.03671	MG/KG	95% UCL-NP	(4)
	Inorganics										
	Lead	MG/KG	0.0066	0.0090	N	0.0144	J	0.0090	MG/KG	95% UCL-N	(2)
	Mercury	MG/KG	0.154	0.269	T	0.398		0.269	MG/KG	95% UCL-T	(3)
	Mercury (methyl)	MG/KG	0.236	0.236	NP	0.41		0.236	MG/KG	95% UCL-NP	(4)
	Dioxins										
	Toxicity Equivalency (PCB) - Mammals	MG/KG	0.00000453	NC		0.0000109		0.00000453	MG/KG	Mean	(5)
	Toxicity Equivalency - Mammals	MG/KG	0.0000217	0.0000315	T	0.0000442		0.0000315	MG/KG	95% UCL-T	(3)
MANTON	**Semivolatile Organics**										
	Acenaphthylene	MG/KG	0.00030	NC		0.00041	J	0.00030	MG/KG	Mean	(5)
	Dibenzo(a,h)anthracene	MG/KG	0.00030	NC		0.00022	J	0.00022	MG/KG	Max	(6)
	Phenanthrene	MG/KG	0.00293	NC		0.00498		0.00293	MG/KG	Mean	(5)
	Pesticides/PCBs										
	4,4'-DDE	MG/KG	0.0089	NC		0.01235		0.0089	MG/KG	Mean	(5)
	alpha-Chlordane	MG/KG	0.0014	NC		0.00263		0.0014	MG/KG	Mean	(5)
	Aroclor-1254	MG/KG	0.1247	NC		0.22052		0.1247	MG/KG	Mean	(5)
	Aroclor-1268	MG/KG	0.03292	NC		0.06755		0.03292	MG/KG	Mean	(5)
	Dieldrin	MG/KG	0.0005	NC		0.00057		0.0005	MG/KG	Mean	(5)
	Endosulfan Sulfate	MG/KG	0.00096	NC		0.0019		0.00096	MG/KG	Mean	(5)
	gamma-Chlordane	MG/KG	0.00052	NC		0.00096	J	0.00052	MG/KG	Mean	(5)
	Technical Chlordane	MG/KG	0.04062	NC		0.06498	J	0.04062	MG/KG	Mean	(5)
	Inorganics										
	Lead	MG/KG	0.0113	NC		0.0119	J	0.0113	MG/KG	Mean	(5)
	Mercury	MG/KG	0.185	NC		0.259		0.185	MG/KG	Mean	(5)
	Mercury (methyl)	MG/KG	0.149	NC		0.278		0.149	MG/KG	Mean	(5)

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Table G.3.2.CT
Medium-Specific Exposure Point Concentration Summary - Central Tendency
Largemouth Bass

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Scenario Timeframe: Current/Future
Medium: Largemouth Bass
Exposure Medium: Fillet

Exposure Point	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (distribution)	Maximum Detected Concentration (qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (1)	Rationale
	Dioxins								
	Toxicity Equivalency - Mammals	MG/KG	0.0000186	NC	0.000031	0.0000186	MG/KG	Mean	(5)

(1) Chemicals of potential concern are identified in Table 2.2 and Table 2.10 for site exposure areas and reference/background areas respectively.
(2) 95% UCL-N: 95% Upper Concentration Limit on the mean, normal distribution
(3) 95% UCL-T: 95% Upper Concentration Limit on the mean, lognormal distribution
(4) 95% UCL-NP: 95% Upper Concentration Limit on the mean, nonparametric distribution. Arithmetic mean used to approximate the 95% UCL for nonparametric data.
(5) Mean: Arithmetic Mean, applied if fewer than 10 samples (95% UCL not calculated), or if the 95% UCL is greater than the maximum concentration.
(6) Max: Maximum, applied in the special case where the arithmetic mean has been selected, but because of elevated detection limits in non-detects, it is greater than the maximum detected concentration.

T - The Shapiro-Wilk W Test indicates that the data are log-normally distributed.
NP - The Shapiro-Wilk W Test indicates that the data are neither normally nor log-normally distributed. The data are therefore assumed to be non-parametrically distributed.
N - The Shapiro-Wilk W Test indicates that the data are normally distributed.

Qualifier Definitions:
J = Value is estimated.

MG/KG = milligrams per kilogram
NC = Not Calculated
EPC = Exposure Point Concentration
UCL = Upper Confidence Limit on the arithmetic mean

Prepared by: KJA
Checked by: MJM

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Table G.3.3.CT
Medium-Specific Exposure Point Concentration Summary - Central Tendency
White Sucker

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Scenario Timeframe: Current/Future
Medium: White Sucker, Brown Bullhead
Exposure Medium: Whole Body

Exposure Point	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (distribution)		Maximum Detected Concentration (qualifier)		Exposure Point Concentration Value	Units	Statistic (1)	Rationale
ASSAPUMPSET	**Semivolatile Organics**										
BROWN BULLHEAD	Acenaphthylene	MG/KG	0.00091	NC		0.00122	J	0.00091	MG/KG	Mean	(5)
USED AS A SURROGATE	Benzo(a)anthracene	MG/KG	0.00334	NC		0.00808		0.00334	MG/KG	Mean	(5)
FOR WHITE SUCKER IN	Benzo(a)pyrene	MG/KG	0.00329	NC		0.00791		0.00329	MG/KG	Mean	(5)
THIS AREA	Benzo(b)fluoranthene	MG/KG	0.004177	NC		0.01058		0.004177	MG/KG	Mean	(5)
	Benzo(g,h,i)perylene	MG/KG	0.00219	NC		0.00462		0.00219	MG/KG	Mean	(5)
	Dibenzo(a,h)anthracene	MG/KG	0.00108	NC		0.00129	J	0.00108	MG/KG	Mean	(5)
	Indeno(1,2,3-cd)pyrene	MG/KG	0.00283	NC		0.00653		0.00283	MG/KG	Mean	(5)
	Phenanthrene	MG/KG	0.0071	NC		0.00776		0.0071	MG/KG	Mean	(5)
	Pesticides/PCBs										
	4,4'-DDE	MG/KG	0.0127	NC		0.02374		0.0127	MG/KG	Mean	(5)
	alpha-Chlordane	MG/KG	0.00174	NC		0.00288		0.00174	MG/KG	Mean	(5)
	gamma-Chlordane	MG/KG	0.00094	NC		0.0013	J	0.00094	MG/KG	Mean	(5)
	Inorganics										
	Lead	MG/KG	0.0894	NC		0.129	J	0.0894	MG/KG	Mean	(5)
	Mercury	MG/KG	0.077	NC		0.137	J	0.077	MG/KG	Mean	(5)
	Mercury (methyl)	MG/KG	0.0775	NC		0.145		0.0775	MG/KG	Mean	(5)
	Dioxins										
	Toxicity Equivalency (Dioxins/Furans) - Mammals	MG/KG	0.00000216	NC		0.00000258		0.00000216	MG/KG	Mean	(5)
GREYSTONE	**Semivolatile Organics**										
	Acenaphthylene	MG/KG	0.00388	0.00482	N	0.00706		0.00482	MG/KG	95% UCL-N	(2)
	Benzo(a)pyrene	MG/KG	0.00112	0.00112	NP	0.00273		0.00112	MG/KG	95% UCL-NP	(4)
	Benzo(g,h,i)perylene	MG/KG	0.000988	0.000988	NP	0.00138	J	0.000988	MG/KG	95% UCL-NP	(4)
	Phenanthrene	MG/KG	0.0172	0.0172	NP	0.02832		0.0172	MG/KG	95% UCL-NP	(4)
	Pesticides/PCBs										
	4,4'-DDD	MG/KG	0.0174	0.0218	T	0.02488		0.0218	MG/KG	95% UCL-T	(3)
	4,4'-DDE	MG/KG	0.04306	0.05130	N	0.06803		0.05130	MG/KG	95% UCL-N	(2)
	4,4'-DDT	MG/KG	0.00626	0.00626	NP	0.01314	J	0.00626	MG/KG	95% UCL-NP	(4)
	alpha-Chlordane	MG/KG	0.02094	0.02431	T	0.02862		0.02431	MG/KG	95% UCL-T	(3)
	Aroclor-1254	MG/KG	0.20236	0.20236	NP	0.35135		0.20236	MG/KG	95% UCL-NP	(4)
	Aroclor-1268	MG/KG	0.05512	0.05512	NP	0.16789		0.05512	MG/KG	95% UCL-NP	(4)
	Dieldrin	MG/KG	0.00417	0.00417	NP	0.02346		0.00417	MG/KG	95% UCL-NP	(4)
	gamma-Chlordane	MG/KG	0.0112	0.0112	NP	0.01453		0.0112	MG/KG	95% UCL-NP	(4)
	Heptachlor Epoxide	MG/KG	0.00081	0.00081	NP	0.00123	J	0.00081	MG/KG	95% UCL-NP	(4)
	Technical Chlordane	MG/KG	0.2820	0.2820	NP	0.34491		0.2820	MG/KG	95% UCL-NP	(4)

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Table G.3.3.CT
Medium-Specific Exposure Point Concentration Summary - Central Tendency
White Sucker

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Scenario Timeframe: Current/Future
Medium: White Sucker, Brown Bullhead
Exposure Medium: Whole Body

Exposure Point	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (distribution)		Maximum Detected Concentration (qualifier)		Exposure Point Concentration			
								Value	Units	Statistic (1)	Rationale
	Inorganics										
	Lead	MG/KG	0.012	0.012	NP	0.022	J	0.012	MG/KG	95% UCL-NP	(4)
	Mercury	MG/KG	0.190	0.190	NP	0.278		0.190	MG/KG	95% UCL-NP	(4)
	Mercury (methyl)	MG/KG	0.193	0.193	NP	0.299		0.193	MG/KG	95% UCL-NP	(4)
	Dioxins										
	Toxicity Equivalency (Dioxins/Furans) - Mammals	MG/KG	0.0000021	0.0000031	T	0.00000395		0.0000031	MG/KG	95% UCL-T	(3)
ALLENDALE	**Semivolatile Organics**										
	Acenaphthylene	MG/KG	0.00215	0.00268	T	0.00387		0.00268	MG/KG	95% UCL-T	(3)
	Benzo(a)anthracene	MG/KG	0.0013	0.0022	T	0.00301		0.0022	MG/KG	95% UCL-T	(3)
	Benzo(a)pyrene	MG/KG	0.0010	0.0024	T	0.00279		0.0024	MG/KG	95% UCL-T	(3)
	Benzo(b)fluoranthene	MG/KG	0.0012	0.0025	T	0.00401		0.0025	MG/KG	95% UCL-T	(3)
	Benzo(g,h,i)perylene	MG/KG	0.000632	0.000632	NP	0.00243		0.000632	MG/KG	95% UCL-NP	(4)
	Dibenzo(a,h)anthracene	MG/KG	0.00027	0.00040	T	0.00069		0.00040	MG/KG	95% UCL-T	(3)
	Indeno(1,2,3-cd)pyrene	MG/KG	0.00079	0.00079	NP	0.00267		0.00079	MG/KG	95% UCL-NP	(4)
	Phenanthrene	MG/KG	0.00958	0.0114	N	0.01451		0.01143	MG/KG	95% UCL-N	(2)
	Pesticides/PCBs										
	4,4'-DDD	MG/KG	0.0126	0.0126	NP	0.03498	J	0.0126	MG/KG	95% UCL-NP	(4)
	4,4'-DDE	MG/KG	0.02869	0.02869	NP	0.05383	J	0.02869	MG/KG	95% UCL-NP	(4)
	4,4'-DDT	MG/KG	0.00686	0.00686	NP	0.02462	J	0.00686	MG/KG	95% UCL-NP	(4)
	alpha-Chlordane	MG/KG	0.0168	0.0236	T	0.03511	J	0.0236	MG/KG	95% UCL-T	(3)
	Aroclor-1254	MG/KG	1.5832	2.8888	T	3.24344	J	2.8888	MG/KG	95% UCL-T	(3)
	Aroclor-1268	MG/KG	0.02949	0.03843	T	0.05274	J	0.03843	MG/KG	95% UCL-T	(3)
	Dieldrin	MG/KG	0.00537	0.00866	T	0.0099	J	0.00866	MG/KG	95% UCL-T	(3)
	gamma-Chlordane	MG/KG	0.0089	0.0089	NP	0.0247	J	0.0089	MG/KG	95% UCL-NP	(4)
	Heptachlor Epoxide	MG/KG	0.00061	0.00070	N	0.00083	J	0.00070	MG/KG	95% UCL-N	(2)
	Technical Chlordane	MG/KG	0.346	0.674	T	1.24742	J	0.674	MG/KG	95% UCL-T	(3)
	Inorganics										
	Chromium	MG/KG	0.112	0.112	NP	0.229	J	0.112	MG/KG	95% UCL-NP	(4)
	Lead	MG/KG	0.16	0.39	T	0.349		0.16	MG/KG	Mean	(5)
	Mercury	MG/KG	0.136	0.136	NP	0.216		0.136	MG/KG	95% UCL-NP	(4)
	Mercury (methyl)	MG/KG	0.147	0.147	NP	0.225		0.147	MG/KG	95% UCL-NP	(4)
	Dioxins										
	Toxicity Equivalency (PCB Congeners) - Mammals	MG/KG	0.0000195	NC		0.0000215		0.0000195	MG/KG	Mean	(5)
	Toxicity Equivalency (Dioxins/Furans) - Mammals	MG/KG	0.000346	0.000492	N	0.000802		0.000492	MG/KG	95% UCL-N	(2)

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Table G.3.3.CT
Medium-Specific Exposure Point Concentration Summary - Central Tendency
White Sucker

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Scenario Timeframe: Current/Future
Medium: White Sucker, Brown Bullhead
Exposure Medium: Whole Body

Exposure Point	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (distribution)		Maximum Detected Concentration (qualifier)		Exposure Point Concentration			
								Value	Units	Statistic (1)	Rationale
LYMAN MILL	**Semivolatile Organics**										
	Acenaphthylene	MG/KG	0.00297	0.00355	T	0.00458		0.00355	MG/KG	95% UCL-T	(3)
	Benzo(a)anthracene	MG/KG	0.00447	0.00946	T	0.01173		0.00946	MG/KG	95% UCL-T	(3)
	Benzo(a)pyrene	MG/KG	0.0049	0.024	T	0.01469		0.0049	MG/KG	Mean	(5)
	Benzo(b)fluoranthene	MG/KG	0.0067	0.0067	NP	0.02077		0.0067	MG/KG	95% UCL-NP	(4)
	Benzo(g,h,i)perylene	MG/KG	0.00376	0.0191	T	0.01143		0.00376	MG/KG	Mean	(5)
	Dibenzo(a,h)anthracene	MG/KG	0.0010	0.0027	T	0.00273		0.0027	MG/KG	95% UCL-T	(3)
	Indeno(1,2,3-cd)pyrene	MG/KG	0.0043	0.034	T	0.01347		0.0043	MG/KG	Mean	(5)
	Phenanthrene	MG/KG	0.0154	0.0212	T	0.02954		0.0212	MG/KG	95% UCL-T	(3)
	Pesticides/PCBs										
	4,4'-DDD	MG/KG	0.03866	0.06351	T	0.0668	J	0.06351	MG/KG	95% UCL-T	(3)
	4,4'-DDE	MG/KG	0.1309	0.2134	T	0.28651	J	0.2134	MG/KG	95% UCL-T	(3)
	4,4'-DDT	MG/KG	0.0037	0.0052	N	0.00847	J	0.0052	MG/KG	95% UCL-N	(2)
	alpha-Chlordane	MG/KG	0.03963	0.04690	N	0.05956	J	0.04690	MG/KG	95% UCL-N	(2)
	Aroclor-1254	MG/KG	4.19359	5.21365	T	7.09977	J	5.21365	MG/KG	95% UCL-T	(3)
	Aroclor-1268	MG/KG	0.03590	0.04370	T	0.04566	J	0.04370	MG/KG	95% UCL-T	(3)
	Dieldrin	MG/KG	0.00556	0.00862	T	0.00971	J	0.00862	MG/KG	95% UCL-T	(3)
	gamma-Chlordane	MG/KG	0.02921	0.02921	NP	0.0408	J	0.02921	MG/KG	95% UCL-NP	(4)
	Heptachlor Epoxide	MG/KG	0.0014	0.0017	T	0.002	J	0.0017	MG/KG	95% UCL-T	(3)
	Technical Chlordane	MG/KG	1.3657	2.5751	T	2.61185	J	2.5751	MG/KG	95% UCL-T	(3)
	Inorganics										
	Arsenic	MG/KG	0.0276	0.0276	NP	0.0715		0.0276	MG/KG	95% UCL-NP	(4)
	Chromium	MG/KG	0.270	0.378	T	0.513		0.378	MG/KG	95% UCL-T	(3)
	Lead	MG/KG	0.428	0.594	N	1.01	J	0.594	MG/KG	95% UCL-N	(2)
	Mercury	MG/KG	0.0984	0.118	T	0.157		0.1175	MG/KG	95% UCL-T	(3)
	Mercury (methyl)	MG/KG	0.0927	0.109	T	0.139		0.1087	MG/KG	95% UCL-T	(3)
	Dioxins										
	Toxicity Equivalency (PCB Congeners) - Mammals	MG/KG	0.0000401	NC		0.0000503		0.0000401	MG/KG	Mean	(5)
	Toxicity Equivalency (Dioxins/Furans) - Mammals	MG/KG	0.000580	0.000898	T	0.00137		0.000898	MG/KG	95% UCL-T	(3)

(1) Chemicals of potential concern are identified in Table 2.4 and Table 2.12 for site exposure areas and reference/background areas respecitively.
Chemicals of potential concern for Brown Bullhead area identified in Table 2.13.

(2) 95% UCL-N: 95% Upper Concentration Limit on the mean, normal distribution

(3) 95% UCL-T: 95% Upper Concentration Limit on the mean, lognormal distribution

(4) 95% UCL-NP: 95% Upper Concentration Limit on the mean, nonparametric distribution. Arithmetic mean used to approximate the 95% UCL for nonparametric data.

(5) Mean: Arithmetic Mean, applied if fewer than 10 samples (95% UCL not calculated), or if the 95% UCL is greater than the maximum concentration.

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Table G.3.3.CT
Medium-Specific Exposure Point Concentration Summary - Central Tendency
White Sucker

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Scenario Timeframe: Current/Future
Medium: White Sucker, Brown Bullhead
Exposure Medium: Whole Body

Exposure Point	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (distribution)	Maximum Detected Concentration (qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (1)	Rationale

T - The Shapiro-Wilk W Test indicates that the data are log-normally distributed.
NP - The Shapiro-Wilk W Test indicates that the data are neither normally nor log-normally distributed. The data are therefore assumed to be non-parametrically distributed
N - The Shapiro-Wilk W Test indicates that the data are normally distributed.

Qualifier Definitions:
J = Value is estimated.

MG/KG = milligrams per kilogram
NC = Not Calculated
EPC = Exposure Point Concentration
UCL = Upper Confidence Limit on the arithmetic mean

Prepared by: KJA
Checked by: MJM

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Table G.4.1.CT
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: AMERICAN EEL
EXPOSURE MEDIUM: WHOLE BODY

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME
INGESTION	RESIDENT	ADULT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	15.8	g/day	USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
			DYERVILLE REACH	ED	EXPOSURE DURATION	9	yr	Assumption	
				BW	BODY WEIGHT	70	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		ADOLESCENT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	7.94	g/day	USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
			DYERVILLE REACH	ED	EXPOSURE DURATION	9	yr	Assumption	
				BW	BODY WEIGHT	45	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		CHILD	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	5.63	g/day	USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
			DYERVILLE REACH	ED	EXPOSURE DURATION	6	yr	Assumption	
				BW	BODY WEIGHT	15	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	2190	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
	RECREATIONAL ANGLER	ADULT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	15.8	g/day	USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
			DYERVILLE REACH	ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	70	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		ADOLESCENT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	7.94	g/day	USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
			DYERVILLE REACH	ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	45	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		CHILD	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	5.63	g/day	USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
			DYERVILLE REACH	ED	EXPOSURE DURATION	6	yr	Assumption	
				BW	BODY WEIGHT	15	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	2190	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		

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Table G.4.1.CT
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: AMERICAN EEL
EXPOSURE MEDIUM: WHOLE BODY

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME
	SUBSISTENCE ANGLER	ADULT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	59.2	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
			DYERVILLE REACH	ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	70	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		ADOLESCENT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	29.7	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
			DYERVILLE REACH	ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	45	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		CHILD	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	21.1	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			ALLENDALE POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			LYMAN MILL POND	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
			DYERVILLE REACH	ED	EXPOSURE DURATION	6	yr	Assumption	
				BW	BODY WEIGHT	15	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	2190	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		

Balcom, N. C., C. M. Capacchione, D. W. Hirsch, 1999. Quantification of Fish and Seafood Consumption Rates in Connecticut. Submitted to CTDEP. January.
USEPA, 1989. "Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A)"; Office of Emergency and Remedial Response; EPA-540/1-89/002 (interim final); Washington, D.C., December.
USEPA, 1994. "Risk Updates No. 2"; USEPA Region I, Waste Management Division; August. Values from "Attachment 2" to Risk Updates No. 2.
USEPA, 1997. "Exposure Factors Handbook, Volume I"; Office of Research and Development; EPA-600/P-95/002Fa; Washington, D.C.; August.
USEPA, 1999. "Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part E)"; Office of Solid Waste and Emergency Response; EPA-540/R-99/005 (interim final); Washington, D.C.

Prepared by: KJA
Checked by: MJM

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Table G.4.2.CT
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: LARGEMOUTH BASS
EXPOSURE MEDIUM: FILLET

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME
INGESTION	RESIDENT	ADULT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	15.8	g/day	USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			LYMAN MILL POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			MANTON REACH	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	9	yr	Assumption	
				BW	BODY WEIGHT	70	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		ADOLESCENT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	7.94	g/day	USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			LYMAN MILL POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			MANTON REACH	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	9	yr	Assumption	
				BW	BODY WEIGHT	45	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		CHILD	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	5.63	g/day	USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			LYMAN MILL POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			MANTON REACH	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	6	yr	Assumption	
				BW	BODY WEIGHT	15	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	2190	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
	RECREATIONAL ANGLER	ADULT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	15.8	g/day	USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			LYMAN MILL POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			MANTON REACH	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	70	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		ADOLESCENT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	7.94	g/day	USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			LYMAN MILL POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			MANTON REACH	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	45	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		CHILD	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	5.63	g/day	USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			LYMAN MILL POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			MANTON REACH	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	6	yr	Assumption	
				BW	BODY WEIGHT	15	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	2190	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		

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Table G.4.2.CT
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: LARGEMOUTH BASS
EXPOSURE MEDIUM: FILLET

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME
	SUBSISTENCE ANGLER	ADULT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	59.2	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			LYMAN MILL POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			MANTON REACH	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	70	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		ADOLESCENT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	29.7	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			LYMAN MILL POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			MANTON REACH	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	45	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		CHILD	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND	IR-B	INGESTION RATE OF BIOTA	21.1	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
			LYMAN MILL POND	FI	FRACTION INGESTED	1	unitless	Assumption	
			MANTON REACH	EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	6	yr	Assumption	
				BW	BODY WEIGHT	15	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	2190	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		

Balcom, N. C., C. M. Capacchione, D. W. Hirsch, 1999. Quantification of Fish and Seafood Consumption Rates in Connecticut. Submitted to CTDEP. January.
USEPA, 1989. "Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A)"; Office of Emergency and Remedial Response; EPA-540/1-89/002 (interim final); Washington, D.C., December.
USEPA, 1994. "Risk Updates No. 2"; USEPA Region I, Waste Management Division; August. Values from "Attachment 2" to Risk Updates No. 2.
USEPA, 1997. "Exposure Factors Handbook, Volume I"; Office of Research and Development; EPA-600/P-95/002Fa; Washington, D.C.; August.
USEPA, 1999. "Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part E)"; Office of Solid Waste and Emergency Response; EPA-540/R-99/005 (interim final); Washington, D.C.

Prepared by: KJA
Checked by: MJM

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Table G.4.3.CT
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: WHITE SUCKER, BROWN BULLHEAD
EXPOSURE MEDIUM: WHOLE BODY

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME
INGESTION	RESIDENT	ADULT	ASSAPUMPSET POND GREYSTONE MILL POND ALLENDALE POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION = CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
				IR-B	INGESTION RATE OF BIOTA	15.8	g/day	USEPA, 1997	
				FI	FRACTION INGESTED	1	unitless	Assumption	
				EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	9	yr	Assumption	
				BW	BODY WEIGHT	70	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		ADOLESCENT	ASSAPUMPSET POND GREYSTONE MILL POND ALLENDALE POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION = CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
				IR-B	INGESTION RATE OF BIOTA	7.94	g/day	USEPA, 1997	
				FI	FRACTION INGESTED	1	unitless	Assumption	
				EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	9	yr	Assumption	
				BW	BODY WEIGHT	45	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		CHILD	ASSAPUMPSET POND GREYSTONE MILL POND ALLENDALE POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION = CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
				IR-B	INGESTION RATE OF BIOTA	5.63	g/day	USEPA, 1997	
				FI	FRACTION INGESTED	1	unitless	Assumption	
				EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	6	yr	Assumption	
				BW	BODY WEIGHT	15	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	2190	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
	RECREATIONAL ANGLER	ADULT	ASSAPUMPSET POND GREYSTONE MILL POND ALLENDALE POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION = CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
				IR-B	INGESTION RATE OF BIOTA	15.8	g/day	USEPA, 1997	
				FI	FRACTION INGESTED	1	unitless	Assumption	
				EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	70	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		ADOLESCENT	ASSAPUMPSET POND GREYSTONE MILL POND ALLENDALE POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION = CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
				IR-B	INGESTION RATE OF BIOTA	7.94	g/day	USEPA, 1997	
				FI	FRACTION INGESTED	1	unitless	Assumption	
				EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	45	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		CHILD	ASSAPUMPSET POND GREYSTONE MILL POND ALLENDALE POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION = CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
				IR-B	INGESTION RATE OF BIOTA	5.63	g/day	USEPA, 1997	
				FI	FRACTION INGESTED	1	unitless	Assumption	
				EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	6	yr	Assumption	
				BW	BODY WEIGHT	15	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	2190	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		

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Table G.4.3.CT
Values Used For Daily Intake Calculations
Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

SCENARIO TIMEFRAME: CURRENT/FUTURE
MEDIUM: WHITE SUCKER, BROWN BULLHEAD
EXPOSURE MEDIUM: WHOLE BODY

EXPOSURE ROUTE	RECEPTOR POPULATION	RECEPTOR AGE	EXPOSURE POINT	PARAMETER CODE	PARAMETER DEFINITION	VALUE	UNITS	RATIONALE/ REFERENCE	INTAKE EQUATION/ MODEL NAME
	SUBSISTENCE ANGLER	ADULT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND ALLENDALE POND	IR-B	INGESTION RATE OF BIOTA	59.2	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
				FI	FRACTION INGESTED	1	unitless	Assumption	
				EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	70	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		ADOLESCENT	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND ALLENDALE POND	IR-B	INGESTION RATE OF BIOTA	29.7	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
				FI	FRACTION INGESTED	1	unitless	Assumption	
				EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	12	yr	Assumption	
				BW	BODY WEIGHT	45	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	4380	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		
		CHILD	ASSAPUMPSET POND	CB	CHEMICAL CONCENTRATION IN BIOTA	chemical-specific	mg/kg	EPC Table	INTAKE-INGESTION =
			GREYSTONE MILL POND ALLENDALE POND	IR-B	INGESTION RATE OF BIOTA	21.1	g/day	Balcom, 1999; USEPA, 1997	CB x IR-B x FI x EF x ED x CF x 1/BW x 1/AT
				FI	FRACTION INGESTED	1	unitless	Assumption	
				EF	EXPOSURE FREQUENCY	350	day/yr	USEPA, 1994	
				ED	EXPOSURE DURATION	6	yr	Assumption	
				BW	BODY WEIGHT	15	kg	USEPA, 1997	
				AT-C	AVERAGING TIME (CANCER)	25550	day	USEPA, 1989	
				AT-N	AVERAGING TIME (NONCANCER)	2190	day	USEPA, 1997	
				CF	CONVERSION FACTOR	0.001	kg/g		

Balcom, N. C., C. M. Capacchione, D. W. Hirsch. 1999. Quantification of Fish and Seafood Consumption Rates in Connecticut. Submitted to CTDEP. January.
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USEPA, 1994. "Risk Updates No. 2"; USEPA Region I, Waste Management Division; August. Values from "Attachment 2" to Risk Updates No. 2.
USEPA, 1997. "Exposure Factors Handbook, Volume I"; Office of Research and Development; EPA-600/P-95/002Fa; Washington, D.C.; August.
USEPA, 1999. "Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part E)"; Office of Solid Waste and Emergency Response; EPA-540/R-99/005 (interim final); Washington, D.C.

Prepared by: KJA
Checked by: MJM

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TABLE G.7.1.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - AMERICAN EEL - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: *CURRENT/FUTURE*
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00179	mg/kg	NC		NC			9.5E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.00876	mg/kg	NC		NC			4.6E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDD	0.00828	mg/kg	3.3E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	8.E-07	4.4E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				4,4'-DDE	0.0373	mg/kg	1.5E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-06	2.0E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				alpha-Chlordane	0.00487	mg/kg	1.9E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-07	2.6E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				Aroclor-1254	0.10246	mg/kg	4.0E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-05	5.4E-05	mg/kg/day	2.0E-05	mg/kg/day	3.E+00
				Dieldrin	0.00246	mg/kg	9.7E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-05	1.3E-06	mg/kg/day	5.0E-05	mg/kg/day	3.E-02
				gamma-Chlordane	0.00185	mg/kg	7.3E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	9.8E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Heptachlor Epoxide	0.00138	mg/kg	5.4E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	5.E-06	7.3E-07	mg/kg/day	1.3E-03	mg/kg/day	6.E-02
				Technical Chlordane	0.16108	mg/kg	6.4E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-05	8.5E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Lead	0.0893	mg/kg	3.5E-05	mg/kg/day				4.7E-05	mg/kg/day			
				Mercury	0.14	mg/kg	NC		NC			7.4E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.137	mg/kg	NC		NC			7.3E-05	mg/kg/day	1.0E-04	mg/kg/day	7.E-01
				Zinc	26.2	mg/kg	NC		NC			1.4E-02	mg/kg/day	3.0E-01	mg/kg/day	5.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.00000178	mg/kg	7.0E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-04	9.4E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-04					4.0.E+00
		EXPOSURE POINT TOTAL									2.E-04					4.0.E+00
	EXPOSURE MEDIUM TOTAL										2.E-04					4.0.E+00
WHOLE BODY TOTAL											2.E-04					4.0.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	2.E-04		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		4.0.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.7.2.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - AMERICAN EEL - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00179	mg/kg	NC		NC			9.8E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.00876	mg/kg	NC		NC			4.8E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDD	0.00828	mg/kg	7.8E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	2.E-07	4.6E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				4,4'-DDE	0.0373	mg/kg	3.5E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	2.1E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				alpha-Chlordane	0.00487	mg/kg	4.6E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	2.7E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				Aroclor-1254	0.10246	mg/kg	9.7E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	5.6E-05	mg/kg/day	2.0E-05	mg/kg/day	3.E+00
				Dieldrin	0.00246	mg/kg	2.3E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	1.4E-06	mg/kg/day	5.0E-05	mg/kg/day	3.E-02
				gamma-Chlordane	0.00185	mg/kg	1.7E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-08	1.0E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Heptachlor Epoxide	0.00138	mg/kg	1.3E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	1.E-06	7.6E-07	mg/kg/day	1.3E-05	mg/kg/day	6.E-02
				Technical Chlordane	0.16108	mg/kg	1.5E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-06	8.9E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Lead	0.0893	mg/kg	8.4E-06	mg/kg/day				4.9E-05	mg/kg/day			
				Mercury	0.14	mg/kg	NC		NC			7.7E-05	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				Mercury (methyl)	0.137	mg/kg	NC		NC			7.5E-05	mg/kg/day	1.0E-04	mg/kg/day	8.E-01
				Zinc	26.2	mg/kg	NC		NC			1.4E-02	mg/kg/day	3.0E-01	mg/kg/day	5.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.00000178	mg/kg	1.7E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-05	9.8E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-05					4.2.E+00
		EXPOSURE POINT TOTAL									6.E-05					4.2.E+00
	EXPOSURE MEDIUM TOTAL										6.E-05					4.2.E+00
WHOLE BODY TOTAL											6.E-05					4.2.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											6.E-05					4.2.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.3.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - AMERICAN EEL - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00179	mg/kg	NC		NC			1.6E-06	mg/kg/day	6.0E-02	mg/kg/day	3.E-05
				Phenanthrene	0.00876	mg/kg	NC		NC			7.8E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				4,4'-DDD	0.00828	mg/kg	6.4E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	2.E-07	7.4E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				4,4'-DDE	0.0373	mg/kg	2.9E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	3.3E-05	mg/kg/day	5.0E-04	mg/kg/day	7.E-02
				alpha-Chlordane	0.00487	mg/kg	3.7E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	4.4E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				Aroclor-1254	0.10246	mg/kg	7.9E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	9.2E-05	mg/kg/day	2.0E-05	mg/kg/day	5.E+00
				Dieldrin	0.00246	mg/kg	1.9E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.E-06	2.2E-06	mg/kg/day	5.0E-05	mg/kg/day	4.E-02
				gamma-Chlordane	0.00185	mg/kg	1.4E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-08	1.7E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Heptachlor Epoxide	0.00138	mg/kg	1.1E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	1.E-06	1.2E-06	mg/kg/day	1.3E-05	mg/kg/day	1.E-01
				Technical Chlordane	0.16108	mg/kg	1.2E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-06	1.4E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				Lead	0.0893	mg/kg	6.9E-06	mg/kg/day				8.0E-05	mg/kg/day			
				Mercury	0.14	mg/kg	NC		NC			1.3E-04	mg/kg/day	3.0E-04	mg/kg/day	4.E-01
				Mercury (methyl)	0.137	mg/kg	NC		NC			1.2E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Zinc	26.2	mg/kg	NC		NC			2.3E-02	mg/kg/day	3.0E-01	mg/kg/day	8.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.00000178	mg/kg	1.4E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-05	1.6E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-05					6.8.E+00
		EXPOSURE POINT TOTAL									5.E-05					6.8.E+00
	EXPOSURE MEDIUM TOTAL										5.E-05					6.8.E+00
WHOLE BODY TOTAL											5.E-05					6.8.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	5.E-05		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		6.8.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - *Not calculated; dose-response data and/or dermal absorption values are not available.*

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.4.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - AMERICAN EEL - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00179	mg/kg	NC		NC			9.5E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.00876	mg/kg	NC		NC			4.6E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDD	0.00828	mg/kg	7.5E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	2.E-07	4.4E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				4,4'-DDE	0.0373	mg/kg	3.4E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	2.0E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				alpha-Chlordane	0.00487	mg/kg	4.4E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	2.6E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				Aroclor-1254	0.10246	mg/kg	9.3E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	5.4E-05	mg/kg/day	2.0E-05	mg/kg/day	3.E+00
				Dieldrin	0.00246	mg/kg	2.2E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	1.3E-06	mg/kg/day	5.0E-05	mg/kg/day	3.E-02
				gamma-Chlordane	0.00185	mg/kg	1.7E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-08	9.8E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Heptachlor Epoxide	0.00138	mg/kg	1.3E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	1.E-06	7.3E-07	mg/kg/day	1.3E-05	mg/kg/day	6.E-02
				Technical Chlordane	0.16108	mg/kg	1.5E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-06	8.5E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Lead	0.0893	mg/kg	8.1E-06	mg/kg/day				4.7E-05	mg/kg/day			
				Mercury	0.14	mg/kg	NC		NC			7.4E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.137	mg/kg	NC		NC			7.3E-05	mg/kg/day	1.0E-04	mg/kg/day	7.E-01
				Zinc	26.2	mg/kg	NC		NC			1.4E-02	mg/kg/day	3.0E-01	mg/kg/day	5.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.00000178	mg/kg	1.6E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-05	9.4E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-05					4.0E+00
		EXPOSURE POINT TOTAL									5.E-05					4.0E+00
	EXPOSURE MEDIUM TOTAL										5.E-05					4.0E+00
WHOLE BODY TOTAL											5.E-05					4.0E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	5.E-05		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		4.0E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.5.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - AMERICAN EEL - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00179	mg/kg	NC		NC			9.8E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.00876	mg/kg	NC		NC			4.8E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDD	0.00828	mg/kg	7.8E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	2.E-07	4.6E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				4,4'-DDE	0.0373	mg/kg	3.5E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	2.1E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				alpha-Chlordane	0.00487	mg/kg	4.6E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	2.7E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				Aroclor-1254	0.10246	mg/kg	9.7E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	5.6E-05	mg/kg/day	2.0E-05	mg/kg/day	3.E+00
				Dieldrin	0.00246	mg/kg	2.3E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	1.4E-06	mg/kg/day	5.0E-05	mg/kg/day	3.E-02
				gamma-Chlordane	0.00185	mg/kg	1.7E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-08	1.0E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Heptachlor Epoxide	0.00138	mg/kg	1.3E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	1.E-06	7.6E-07	mg/kg/day	1.3E-05	mg/kg/day	6.E-02
				Technical Chlordane	0.16108	mg/kg	1.5E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-06	8.9E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Lead	0.0893	mg/kg	8.4E-06	mg/kg/day				4.9E-05	mg/kg/day			
				Mercury	0.14	mg/kg	NC		NC			7.7E-05	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				Mercury (methyl)	0.137	mg/kg	NC		NC			7.5E-05	mg/kg/day	1.0E-04	mg/kg/day	8.E-01
				Zinc	26.2	mg/kg	NC		NC			1.4E-02	mg/kg/day	3.0E-01	mg/kg/day	5.E-02
				Toxicity Equivalency (Dioxins/Furans	0.00000178	mg/kg	1.7E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-05	9.8E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-05					4.2.E+00
		EXPOSURE POINT TOTAL									6.E-05					4.2.E+00
	EXPOSURE MEDIUM TOTAL										6.E-05					4.2.E+00
WHOLE BODY TOTAL											6.E-05					4.2.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											6.E-05					4.2.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.6.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - AMERICAN EEL - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00179	mg/kg	NC		NC			1.6E-06	mg/kg/day	6.0E-02	mg/kg/day	3.E-05
				Phenanthrene	0.00876	mg/kg	NC		NC			7.8E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				4,4'-DDD	0.00828	mg/kg	6.4E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	2.E-07	7.4E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				4,4'-DDE	0.0373	mg/kg	2.9E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	3.3E-05	mg/kg/day	5.0E-04	mg/kg/day	7.E-02
				alpha-Chlordane	0.00487	mg/kg	3.7E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	4.4E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				Aroclor-1254	0.10246	mg/kg	7.9E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	9.2E-05	mg/kg/day	2.0E-05	mg/kg/day	5.E+00
				Dieldrin	0.00246	mg/kg	1.9E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.E-06	2.2E-06	mg/kg/day	5.0E-05	mg/kg/day	4.E-02
				gamma-Chlordane	0.00185	mg/kg	1.4E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-08	1.7E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Heptachlor Epoxide	0.00138	mg/kg	1.1E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	1.E-06	1.2E-06	mg/kg/day	1.3E-05	mg/kg/day	1.E-01
				Technical Chlordane	0.16108	mg/kg	1.2E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-06	1.4E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				Lead	0.0893	mg/kg	6.9E-06	mg/kg/day				8.0E-05	mg/kg/day			
				Mercury	0.14	mg/kg	NC		NC			1.3E-04	mg/kg/day	3.0E-04	mg/kg/day	4.E-01
				Mercury (methyl)	0.137	mg/kg	NC		NC			1.2E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Zinc	26.2	mg/kg	NC		NC			2.3E-02	mg/kg/day	3.0E-01	mg/kg/day	8.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.00000178	mg/kg	1.4E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-05	1.6E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-05					6.8.E+00
		EXPOSURE POINT TOTAL									5.E-05					6.8.E+00
	EXPOSURE MEDIUM TOTAL										5.E-05					6.8.E+00
WHOLE BODY TOTAL											5.E-05					6.8.E+00
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	5.E-05	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				6.8.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TABLE G.7.7.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - LARGEMOUTH BASS - FILLET - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00032	mg/kg	NC		NC			1.7E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Benzo(a)pyrene	0.00128	mg/kg	5.0E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-06	6.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.00119	mg/kg	NC		NC			6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				4,4'-DDE	0.00932	mg/kg	3.7E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	4.9E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.00031	mg/kg	1.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-08	1.6E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Mercury	0.315	mg/kg	NC		NC			1.7E-04	mg/kg/day	3.0E-04	mg/kg/day	6.E-01
				Mercury (methyl)	0.379	mg/kg	NC		NC			2.0E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.00000279	mg/kg	1.1E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	1.5E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-04					3.E+00
		EXPOSURE POINT TOTAL									2.E-04					3.E+00
	EXPOSURE MEDIUM TOTAL										2.E-04					3.E+00
FILLET TOTAL											2.E-04					3.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											2.E-04					2.6.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availalbable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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TABLE G.7.8.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - LARGEMOUTH BASS - FILLET - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00032	mg/kg	NC		NC			1.8E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Benzo(a)pyrene	0.00128	mg/kg	1.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-07	7.0E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.00119	mg/kg	NC		NC			6.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				4,4'-DDE	0.00932	mg/kg	8.8E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-07	5.1E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.00031	mg/kg	2.9E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	1.7E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Mercury	0.315	mg/kg	NC		NC			1.7E-04	mg/kg/day	3.0E-04	mg/kg/day	6.E-01
				Mercury (methyl)	0.379	mg/kg	NC		NC			2.1E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.00000279	mg/kg	2.6E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-05	1.5E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-05					3.E+00
		EXPOSURE POINT TOTAL									4.E-05					3.E+00
	EXPOSURE MEDIUM TOTAL										4.E-05					3.E+00
FILLET TOTAL											4.E-05					3.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					*TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA*
											4.E-05					2.7.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TABLE G.7.9.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - LARGEMOUTH BASS - FILLET - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00032	mg/kg	NC		NC			2.9E-07	mg/kg/day	6.0E-02	mg/kg/day	5.E-06
				Benzo(a)pyrene	0.00128	mg/kg	9.8E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-07	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Phenanthrene	0.00119	mg/kg	NC		NC			1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				4,4'-DDE	0.00932	mg/kg	7.1E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	8.3E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.00031	mg/kg	2.4E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-09	2.8E-07	mg/kg/day	5.0E-04	mg/kg/day	6.E-04
				Mercury	0.315	mg/kg	NC		NC			2.8E-04	mg/kg/day	3.0E-04	mg/kg/day	9.E-01
				Mercury (methyl)	0.379	mg/kg	NC		NC			3.4E-04	mg/kg/day	1.0E-04	mg/kg/day	3.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.00000279	mg/kg	2.1E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-05	2.5E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-05					4.E+00
		EXPOSURE POINT TOTAL									3.E-05					4.E+00
	EXPOSURE MEDIUM TOTAL										3.E-05					4.E+00
FILLET TOTAL											3.E-05					4.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	3.E-05		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		4.3.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TABLE G.7.10.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - LARGEMOUTH BASS - FILLET - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00032	mg/kg	NC		NC			1.7E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Benzo(a)pyrene	0.00128	mg/kg	1.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-07	6.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.00119	mg/kg	NC		NC			6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				4,4'-DDE	0.00932	mg/kg	8.5E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-07	4.9E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.00031	mg/kg	2.8E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	1.6E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Mercury	0.315	mg/kg	NC		NC			1.7E-04	mg/kg/day	3.0E-04	mg/kg/day	6.E-01
				Mercury (methyl)	0.379	mg/kg	NC		NC			2.0E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.00000279	mg/kg	2.5E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-05	1.5E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-05					3.E+00
		EXPOSURE POINT TOTAL									4.E-05					3.E+00
	EXPOSURE MEDIUM TOTAL										4.E-05					3.E+00
FILLET TOTAL											4.E-05					3.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					4.E-05	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	2.6.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TABLE G.7.11.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - LARGEMOUTH BASS - FILLET - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00032	mg/kg	NC		NC			1.8E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Benzo(a)pyrene	0.00128	mg/kg	1.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-07	7.0E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.00119	mg/kg	NC		NC			6.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				4,4'-DDE	0.00932	mg/kg	8.8E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-07	5.1E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.00031	mg/kg	2.9E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	1.7E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Mercury	0.315	mg/kg	NC		NC			1.7E-04	mg/kg/day	3.0E-04	mg/kg/day	6.E-01
				Mercury (methyl)	0.379	mg/kg	NC		NC			2.1E-04	mg/kg/day	1.0E-01	mg/kg/day	2.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.00000279	mg/kg	2.6E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-05	1.5E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-05					3.E+00
		EXPOSURE POINT TOTAL									4.E-05					3.E+00
	EXPOSURE MEDIUM TOTAL										4.E-05					3.E+00
FILLET TOTAL											4.E-05					3.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	4.E-05		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		2.7.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TABLE G.7.12.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - LARGEMOUTH BASS - FILLET - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00032	mg/kg	NC		NC			2.9E-07	mg/kg/day	6.0E-02	mg/kg/day	5.E-06
				Benzo(a)pyrene	0.00128	mg/kg	9.8E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-07	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Phenanthrene	0.00119	mg/kg	NC		NC			1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				4,4'-DDE	0.00932	mg/kg	7.1E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	8.3E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.00031	mg/kg	2.4E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-09	2.8E-07	mg/kg/day	5.0E-04	mg/kg/day	6.E-04
				Mercury	0.315	mg/kg	NC		NC			2.8E-04	mg/kg/day	3.0E-04	mg/kg/day	9.E-01
				Mercury (methyl)	0.379	mg/kg	NC		NC			3.4E-04	mg/kg/day	1.0E-04	mg/kg/day	3.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.00000279	mg/kg	2.1E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-05	2.5E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-05					4.E+00
		EXPOSURE POINT TOTAL									3.E-05					4.E+00
	EXPOSURE MEDIUM TOTAL										3.E-05					4.E+00
FILLET TOTAL											3.E-05					4.E+00
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	3.E-05	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				4.3.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.13.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - BROWN BULLHEAD - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00122	mg/kg	NC		NC			6.5E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)anthracene	0.00808	mg/kg	3.2E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-06	4.3E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(a)pyrene	0.00791	mg/kg	3.1E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-05	4.2E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(b)fluoranthene	0.01058	mg/kg	4.2E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-06	5.6E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(g,h,i)perylene	0.00462	mg/kg	NC		NC			2.5E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				Dibenzo(a,h)anthracene	0.00129	mg/kg	5.1E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-06	6.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Indeno(1,2,3-cd)pyrene	0.00653	mg/kg	2.6E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-06	3.5E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Phenanthrene	0.00776	mg/kg	NC		NC			4.1E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDE	0.02374	mg/kg	9.4E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-06	1.3E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				alpha-Chlordane	0.00288	mg/kg	1.1E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-07	1.5E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				gamma-Chlordane	0.0013	mg/kg	5.1E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	6.9E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Lead	0.129	mg/kg	5.1E-05	mg/kg/day				6.8E-05	mg/kg/day			
				Mercury	0.137	mg/kg	NC		NC			7.3E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.145	mg/kg	NC		NC			7.7E-05	mg/kg/day	1.0E-04	mg/kg/day	8.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.00000258	mg/kg	1.0E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	1.4E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-04					1.0.E+00
		EXPOSURE POINT TOTAL									2.E-04					1.0.E+00
	EXPOSURE MEDIUM TOTAL										2.E-04					1.0.E+00
WHOLE BODY TOTAL											2.E-04					1.0.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											2.E-04					1.0.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.14.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - BROWN BULLHEAD - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00122	mg/kg	NC		NC			6.7E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)anthracene	0.00808	mg/kg	7.6E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-07	4.4E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(a)pyrene	0.00791	mg/kg	7.5E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-06	4.3E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(b)fluoranthene	0.01058	mg/kg	1.0E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-07	5.8E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(g,h,i)perylene	0.00462	mg/kg	NC		NC			2.5E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				Dibenzo(a,h)anthracene	0.00129	mg/kg	1.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-07	7.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Indeno(1,2,3-cd)pyrene	0.00653	mg/kg	6.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	3.6E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Phenanthrene	0.00776	mg/kg	NC		NC			4.3E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDE	0.02374	mg/kg	2.2E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	8.E-07	1.3E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				alpha-Chlordane	0.00288	mg/kg	2.7E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	1.6E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				gamma-Chlordane	0.0013	mg/kg	1.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-08	7.1E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Lead	0.129	mg/kg	1.2E-05	mg/kg/day				7.1E-05	mg/kg/day			
				Mercury	0.137	mg/kg	NC		NC			7.5E-05	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				Mercury (methyl)	0.145	mg/kg	NC		NC			8.0E-05	mg/kg/day	1.0E-04	mg/kg/day	8.E-01
				Toxicity Equivalency (Dioxins/Furans	0.00000258	mg/kg	2.4E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-05	1.4E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-05					1.1.E+00
		EXPOSURE POINT TOTAL									5.E-05					1.1.E+00
	EXPOSURE MEDIUM TOTAL										5.E-05					1.1.E+00
WHOLE BODY TOTAL											5.E-05					1.1.E+00
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		5.E-05	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.1.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.15.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - BROWN BULLHEAD - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00122	mg/kg	NC		NC			1.1E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Benzo(a)anthracene	0.00808	mg/kg	6.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-07	7.2E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(a)pyrene	0.00791	mg/kg	6.1E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-06	7.1E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(b)fluoranthene	0.01058	mg/kg	8.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-07	9.5E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				Benzo(g,h,i)perylene	0.00462	mg/kg	NC		NC			4.1E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Dibenzo(a,h)anthracene	0.00129	mg/kg	9.9E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-07	1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Indeno(1,2,3-cd)pyrene	0.00653	mg/kg	5.0E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	5.8E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Phenanthrene	0.00776	mg/kg	NC		NC			6.9E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDE	0.02374	mg/kg	1.8E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	6.E-07	2.1E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				alpha-Chlordane	0.00288	mg/kg	2.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-08	2.6E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				gamma-Chlordane	0.0013	mg/kg	1.0E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	1.2E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Lead	0.129	mg/kg	9.9E-06	mg/kg/day				1.2E-04	mg/kg/day			
				Mercury	0.137	mg/kg	NC		NC			1.2E-04	mg/kg/day	3.0E-04	mg/kg/day	4.E-01
				Mercury (methyl)	0.145	mg/kg	NC		NC			1.3E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.00000258	mg/kg	2.0E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-05	2.3E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-05					1.8.E+00
		EXPOSURE POINT TOTAL									4.E-05					1.8.E+00
	EXPOSURE MEDIUM TOTAL										4.E-05					1.8.E+00
WHOLE BODY TOTAL											4.E-05					1.8.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											4.E-05					1.8.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.16.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - BROWN BULLHEAD - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00122	mg/kg	NC		NC			6.5E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)anthracene	0.00808	mg/kg	7.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-07	4.3E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(a)pyrene	0.00791	mg/kg	7.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-06	4.2E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(b)fluoranthene	0.01058	mg/kg	9.6E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-07	5.6E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(g,h,i)perylene	0.00462	mg/kg	NC		NC			2.5E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				Dibenzo(a,h)anthracene	0.00129	mg/kg	1.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-07	6.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Indeno(1,2,3-cd)pyrene	0.00653	mg/kg	5.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	3.5E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Phenanthrene	0.00776	mg/kg	NC		NC			4.1E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDE	0.02374	mg/kg	2.2E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	7.E-07	1.3E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				alpha-Chlordane	0.00288	mg/kg	2.6E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-08	1.5E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				gamma-Chlordane	0.0013	mg/kg	1.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-08	6.9E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Lead	0.129	mg/kg	1.2E-05	mg/kg/day				6.8E-05	mg/kg/day			
				Mercury	0.137	mg/kg	NC		NC			7.3E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.145	mg/kg	NC		NC			7.7E-05	mg/kg/day	1.0E-04	mg/kg/day	8.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.00000258	mg/kg	2.3E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-05	1.4E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-05					1.0.E+00
		EXPOSURE POINT TOTAL									4.E-05					1.0.E+00
	EXPOSURE MEDIUM TOTAL										4.E-05					1.0.E+00
WHOLE BODY TOTAL											4.E-05					1.0.E+00
TOTAL RECEPTOR RISK ACROSS ALL MEDIA											4.E-05	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.0.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.17.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - BROWN BULLHEAD - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00122	mg/kg	NC		NC			6.7E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)anthracene	0.00808	mg/kg	7.6E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-07	4.4E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(a)pyrene	0.00791	mg/kg	7.5E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-06	4.3E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(b)fluoranthene	0.01058	mg/kg	1.0E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-07	5.8E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(g,h,i)perylene	0.00462	mg/kg	NC		NC			2.5E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				Dibenzo(a,h)anthracene	0.00129	mg/kg	1.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-07	7.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Indeno(1,2,3-cd)pyrene	0.00653	mg/kg	6.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	3.6E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Phenanthrene	0.00776	mg/kg	NC		NC			4.3E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDE	0.02374	mg/kg	2.2E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	8.E-07	1.3E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				alpha-Chlordane	0.00288	mg/kg	2.7E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	1.6E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				gamma-Chlordane	0.0013	mg/kg	1.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-08	7.1E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Lead	0.129	mg/kg	1.2E-05	mg/kg/day				7.1E-05	mg/kg/day			
				Mercury	0.137	mg/kg	NC		NC			7.5E-05	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				Mercury (methyl)	0.145	mg/kg	NC		NC			8.0E-05	mg/kg/day	1.0E-04	mg/kg/day	8.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.00000258	mg/kg	2.4E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-05	1.4E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-05					1.1.E+00
		EXPOSURE POINT TOTAL									5.E-05					1.1.E+00
	EXPOSURE MEDIUM TOTAL										5.E-05					1.1.E+00
WHOLE BODY TOTAL											5.E-05					1.1.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											5.E-05					1.1.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.18.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - BROWN BULLHEAD - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00122	mg/kg	NC		NC			1.1E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Benzo(a)anthracene	0.00808	mg/kg	6.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-07	7.2E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(a)pyrene	0.00791	mg/kg	6.1E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-06	7.1E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(b)fluoranthene	0.01058	mg/kg	8.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-07	9.5E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				Benzo(g,h,i)perylene	0.00462	mg/kg	NC		NC			4.1E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Dibenzo(a,h)anthracene	0.00129	mg/kg	9.9E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-07	1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Indeno(1,2,3-cd)pyrene	0.00653	mg/kg	5.0E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	5.8E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Phenanthrene	0.00776	mg/kg	NC		NC			6.9E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDE	0.02374	mg/kg	1.8E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	6.E-07	2.1E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				alpha-Chlordane	0.00288	mg/kg	2.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-08	2.6E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				gamma-Chlordane	0.0013	mg/kg	1.0E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	1.2E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Lead	0.129	mg/kg	9.9E-06	mg/kg/day				1.2E-04	mg/kg/day			
				Mercury	0.137	mg/kg	NC		NC			1.2E-04	mg/kg/day	3.0E-04	mg/kg/day	4.E-01
				Mercury (methyl)	0.145	mg/kg	NC		NC			1.3E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	*0.00000258*	mg/kg	2.0E-10	mg/kg/day	*1.5E+05*	(mg/kg/day)-1	3.E-05	2.3E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-05					1.8.E+00
		EXPOSURE POINT TOTAL									4.E-05					1.8.E+00
	EXPOSURE MEDIUM TOTAL										4.E-05					1.8.E+00
WHOLE BODY TOTAL											4.E-05					1.8.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	4.E-05		**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**		1.8.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.19.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - AMERICAN EEL - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00121	mg/kg	NC		NC			6.4E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)pyrene	0.00132	mg/kg	5.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-06	7.0E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	0.00149	mg/kg	5.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	7.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Dibenzo(a,h)anthracene	0.000799	mg/kg	3.1E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	4.2E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Indeno(1,2,3-cd)pyrene	0.00132	mg/kg	5.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	7.0E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.00475	mg/kg	NC		NC			2.5E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				4,4'-DDD	0.015	mg/kg	5.9E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-06	8.0E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDE	0.03161	mg/kg	1.2E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-06	1.7E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				alpha-Chlordane	0.017	mg/kg	6.7E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	9.0E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	0.25318	mg/kg	1.0E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	1.3E-04	mg/kg/day	2.0E-05	mg/kg/day	7.E+00
				Aroclor-1268	0.1251	mg/kg	4.9E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-04	6.6E-05	mg/kg/day	2.0E-05	mg/kg/day	3.E+00
				Dieldrin	0.00353	mg/kg	1.4E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-05	1.9E-06	mg/kg/day	5.0E-05	mg/kg/day	4.E-02
				gamma-Chlordane	0.0069	mg/kg	2.7E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	3.7E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				Heptachlor Epoxide	0.0012	mg/kg	4.7E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	4.E-06	6.4E-07	mg/kg/day	1.3E-05	mg/kg/day	5.E-02
				Technical Chlordane	0.31695	mg/kg	1.2E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-05	1.7E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				Lead	1.47	mg/kg	5.8E-04	mg/kg/day				7.8E-04	mg/kg/day			
				Mercury	0.0706	mg/kg	NC		NC			3.7E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Mercury (methyl)	0.165	mg/kg	NC		NC			8.8E-05	mg/kg/day	1.0E-04	mg/kg/day	9.E-01
				Zinc	41.5	mg/kg	NC		NC			2.2E-02	mg/kg/day	3.0E-01	mg/kg/day	7.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.000000749	mg/kg	3.0E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-05	4.0E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-04					1.2.E+01
		EXPOSURE POINT TOTAL									4.E-04					1.2.E+01
	EXPOSURE MEDIUM TOTAL										4.E-04					1.2.E+01
WHOLE BODY TOTAL											4.E-04					1.2.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	4.E-04				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	1.2.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.7.20.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - AMERICAN EEL - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00121	mg/kg	NC		NC			6.7E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)pyrene	0.00132	mg/kg	1.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-07	7.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	0.00149	mg/kg	1.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	8.2E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Dibenzo(a,h)anthracene	0.000799	mg/kg	7.5E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-07	4.4E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Indeno(1,2,3-cd)pyrene	0.00132	mg/kg	1.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-08	7.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.00475	mg/kg	NC		NC			2.6E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				4,4'-DDD	0.015	mg/kg	1.4E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	3.E-07	8.2E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDE	0.03161	mg/kg	3.0E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	1.7E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				alpha-Chlordane	0.017	mg/kg	1.6E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-07	9.3E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	0.25318	mg/kg	2.4E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-05	1.4E-04	mg/kg/day	2.0E-05	mg/kg/day	7.E+00
				Aroclor-1268	0.1251	mg/kg	1.2E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	6.9E-05	mg/kg/day	2.0E-05	mg/kg/day	3.E+00
				Dieldrin	0.00353	mg/kg	3.3E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.E-06	1.9E-06	mg/kg/day	5.0E-05	mg/kg/day	4.E-02
				gamma-Chlordane	0.0069	mg/kg	6.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	3.8E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				Heptachlor Epoxide	0.0012	mg/kg	1.1E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	1.E-06	6.6E-07	mg/kg/day	1.3E-05	mg/kg/day	5.E-02
				Technical Chlordane	0.31695	mg/kg	3.0E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	1.7E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				Lead	1.47	mg/kg	1.4E-04	mg/kg/day				8.1E-04	mg/kg/day			
				Mercury	0.0706	mg/kg	NC		NC			3.9E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Mercury (methyl)	0.165	mg/kg	NC		NC			9.1E-05	mg/kg/day	1.0E-04	mg/kg/day	9.E-01
				Zinc	41.5	mg/kg	NC		NC			2.3E-02	mg/kg/day	3.0E-01	mg/kg/day	8.E-02
				Toxicity Equivalency (Dioxins/Furans	0.000000749	mg/kg	7.1E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-05	4.1E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					1.2.E+01
		EXPOSURE POINT TOTAL									1.E-04					1.2.E+01
	EXPOSURE MEDIUM TOTAL										1.E-04					1.2.E+01
WHOLE BODY TOTAL											1.E-04					1.2.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	1.E-04		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		1.2.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalaitable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.21.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - AMERICAN EEL - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00121	mg/kg	NC		NC			1.1E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	0.00132	mg/kg	1.0E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-07	1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(b)fluoranthene	0.00149	mg/kg	1.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-08	1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Dibenzo(a,h)anthracene	0.000799	mg/kg	6.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	7.2E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Indeno(1,2,3-cd)pyrene	0.00132	mg/kg	1.0E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-08	1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Phenanthrene	0.00475	mg/kg	NC		NC			4.3E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDD	0.015	mg/kg	1.2E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	3.E-07	1.3E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				4,4'-DDE	0.03161	mg/kg	2.4E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	8.E-07	2.8E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				alpha-Chlordane	0.017	mg/kg	1.3E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-07	1.5E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Aroclor-1254	0.25318	mg/kg	1.9E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-05	2.3E-04	mg/kg/day	2.0E-05	mg/kg/day	1.E+01
				Aroclor-1268	0.1251	mg/kg	9.6E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	1.1E-04	mg/kg/day	2.0E-05	mg/kg/day	6.E+00
				Dieldrin	0.00353	mg/kg	2.7E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	3.2E-06	mg/kg/day	5.0E-05	mg/kg/day	6.E-02
				gamma-Chlordane	0.0069	mg/kg	5.3E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	6.2E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Heptachlor Epoxide	0.0012	mg/kg	9.2E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	8.E-07	1.1E-06	mg/kg/day	1.3E-05	mg/kg/day	8.E-02
				Technical Chlordane	0.31695	mg/kg	2.4E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-06	2.8E-04	mg/kg/day	5.0E-04	mg/kg/day	6.E-01
				Lead	1.47	mg/kg	1.1E-04	mg/kg/day				1.3E-03	mg/kg/day			
				Mercury	0.0706	mg/kg	NC		NC			6.3E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.165	mg/kg	NC		NC			1.5E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Zinc	41.5	mg/kg	NC		NC			3.7E-02	mg/kg/day	3.0E-01	mg/kg/day	1.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000000749	mg/kg	5.7E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	9.E-06	6.7E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								8.E-05					2.0.E+01
		EXPOSURE POINT TOTAL									8.E-05					2.0.E+01
	EXPOSURE MEDIUM TOTAL										8.E-05					2.0.E+01
WHOLE BODY TOTAL											8.E-05					2.0.E+01
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	8.E-05	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				2.0.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availaliable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.22-RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - AMERICAN EEL - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00121	mg/kg	NC		NC			6.4E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)pyrene	0.00132	mg/kg	1.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-07	7.0E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	0.00149	mg/kg	1.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	7.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Dibenzo(a,h)anthracene	0.000799	mg/kg	7.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-07	4.2E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Indeno(1,2,3-cd)pyrene	0.00132	mg/kg	1.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-08	7.0E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.00475	mg/kg	NC		NC			2.5E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				4,4'-DDD	0.015	mg/kg	1.4E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	3.E-07	8.0E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDE	0.03161	mg/kg	2.9E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	1.7E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				alpha-Chlordane	0.017	mg/kg	1.5E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-07	9.0E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	0.25318	mg/kg	2.3E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-05	1.3E-04	mg/kg/day	2.0E-05	mg/kg/day	7.E+00
				Aroclor-1268	0.1251	mg/kg	1.1E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	6.6E-05	mg/kg/day	2.0E-05	mg/kg/day	3.E+00
				Dieldrin	0.00353	mg/kg	3.2E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.E-06	1.9E-06	mg/kg/day	5.0E-05	mg/kg/day	4.E-02
				gamma-Chlordane	0.0069	mg/kg	6.3E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	3.7E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				Heptachlor Epoxide	0.0012	mg/kg	1.1E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	1.E-06	6.4E-07	mg/kg/day	1.3E-05	mg/kg/day	5.E-02
				Technical Chlordane	0.31695	mg/kg	2.9E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	1.7E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				Lead	1.47	mg/kg	1.3E-04	mg/kg/day				7.8E-04	mg/kg/day			
				Mercury	0.0706	mg/kg	NC		NC			3.7E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Mercury (methyl)	0.165	mg/kg	NC		NC			8.8E-05	mg/kg/day	1.0E-04	mg/kg/day	9.E-01
				Zinc	41.5	mg/kg	NC		NC			2.2E-02	mg/kg/day	3.0E-01	mg/kg/day	7.E-02
				Toxicity Equivalency (Dioxins/Furans	0.000000749	mg/kg	6.8E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-05	4.0E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					1.2.E+01
		EXPOSURE POINT TOTAL									1.E-04					1.2.E+01
	EXPOSURE MEDIUM TOTAL										1.E-04					1.2.E+01
WHOLE BODY TOTAL											1.E-04					1.2.E+01
TOTAL RECEPTOR RISK ACROSS ALL MEDIA											1.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.2.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.13.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - AMERICAN EEL - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00121	mg/kg	NC		NC			6.7E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)pyrene	0.00132	mg/kg	1.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-07	7.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	0.00149	mg/kg	1.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	8.2E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Dibenzo(a,h)anthracene	0.000799	mg/kg	7.5E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-07	4.4E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Indeno(1,2,3-cd)pyrene	0.00132	mg/kg	1.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-08	7.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.00475	mg/kg	NC		NC			2.6E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				4,4'-DDD	0.015	mg/kg	1.4E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	3.E-07	8.2E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDE	0.03161	mg/kg	3.0E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	1.7E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				alpha-Chlordane	0.017	mg/kg	1.6E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-07	9.3E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	0.25318	mg/kg	2.4E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-05	1.4E-04	mg/kg/day	2.0E-05	mg/kg/day	7.E+00
				Aroclor-1268	0.1251	mg/kg	1.2E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	6.9E-05	mg/kg/day	2.0E-05	mg/kg/day	3.E+00
				Dieldrin	0.00353	mg/kg	3.3E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.E-06	1.9E-06	mg/kg/day	5.0E-05	mg/kg/day	4.E-02
				gamma-Chlordane	0.0069	mg/kg	6.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	3.8E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				Heptachlor Epoxide	0.0012	mg/kg	1.1E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	1.E-06	6.6E-07	mg/kg/day	1.3E-05	mg/kg/day	5.E-02
				Technical Chlordane	0.31695	mg/kg	3.0E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	1.7E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				Lead	1.47	mg/kg	1.4E-04	mg/kg/day				8.1E-04	mg/kg/day			
				Mercury	0.0706	mg/kg	NC		NC			3.9E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Mercury (methyl)	0.165	mg/kg	NC		NC			9.1E-05	mg/kg/day	1.0E-04	mg/kg/day	9.E-01
				Zinc	41.5	mg/kg	NC		NC			2.3E-02	mg/kg/day	3.0E-01	mg/kg/day	8.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.000000749	mg/kg	7.1E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-05	4.1E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					1.2.E+01
		EXPOSURE POINT TOTAL									1.E-04					1.2.E+01
	EXPOSURE MEDIUM TOTAL										1.E-04					1.2.E+01
WHOLE BODY TOTAL											1.E-04					1.2.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		1.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.2.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.24.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - AMERICAN EEL - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00121	mg/kg	NC		NC			1.1E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	0.00132	mg/kg	1.0E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-07	1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(b)fluoranthene	0.00149	mg/kg	1.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-08	1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Dibenzo(a,h)anthracene	0.000799	mg/kg	6.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	7.2E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Indeno(1,2,3-cd)pyrene	0.00132	mg/kg	1.0E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-08	1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Phenanthrene	0.00475	mg/kg	NC		NC			4.3E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDD	0.015	mg/kg	1.2E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	3.E-07	1.3E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				4,4'-DDE	0.03161	mg/kg	2.4E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	8.E-07	2.8E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				alpha-Chlordane	0.017	mg/kg	1.3E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-07	1.5E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Aroclor-1254	0.25318	mg/kg	1.9E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-05	2.3E-04	mg/kg/day	2.0E-05	mg/kg/day	1.E+01
				Aroclor-1268	0.1251	mg/kg	9.6E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	1.1E-04	mg/kg/day	2.0E-05	mg/kg/day	6.E+00
				Dieldrin	0.00353	mg/kg	2.7E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	3.2E-06	mg/kg/day	5.0E-05	mg/kg/day	6.E-02
				gamma-Chlordane	0.0069	mg/kg	5.3E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	6.2E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Heptachlor Epoxide	0.0012	mg/kg	9.2E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	8.E-07	1.1E-06	mg/kg/day	1.3E-05	mg/kg/day	8.E-02
				Technical Chlordane	0.31695	mg/kg	2.4E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-06	2.8E-04	mg/kg/day	5.0E-04	mg/kg/day	6.E-01
				Lead	1.47	mg/kg	1.1E-04	mg/kg/day				1.3E-03	mg/kg/day			
				Mercury	0.0706	mg/kg	NC		NC			6.3E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.165	mg/kg	NC		NC			1.5E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Zinc	41.5	mg/kg	NC		NC			3.7E-02	mg/kg/day	3.0E-01	mg/kg/day	1.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000000749	mg/kg	5.7E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	9.E-06	6.7E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								8.E-05					2.0.E+01
		EXPOSURE POINT TOTAL									8.E-05					2.0.E+01
	EXPOSURE MEDIUM TOTAL										8.E-05					2.0.E+01
WHOLE BODY TOTAL											*8.E-05*					*2.0.E+01*
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		8.E-05	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				2.0.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.25.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - LARGEMOUTH BASS - FILLET - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
LARGEMOUTH BASS	FILLET	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00047	mg/kg	NC		NC			2.5E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				Phenanthrene	0.001	mg/kg	NC		NC			5.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				4,4'-DDE	0.0157	mg/kg	6.2E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	8.3E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.00064	mg/kg	2.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-08	3.4E-07	mg/kg/day	5.0E-04	mg/kg/day	7.E-04
				Aroclor-1254	0.0766	mg/kg	3.0E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-05	4.1E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Aroclor-1268	0.075	mg/kg	3.0E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-05	4.0E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Dieldrin	0.00035	mg/kg	1.4E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-06	1.9E-07	mg/kg/day	5.0E-05	mg/kg/day	4.E-03
				gamma-Chlordane	0.0007	mg/kg	2.8E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	3.7E-07	mg/kg/day	5.0E-04	mg/kg/day	7.E-04
				Technical Chlordane	0.01794	mg/kg	7.1E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	9.5E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Mercury	0.419	mg/kg	NC		NC			2.2E-04	mg/kg/day	3.0E-04	mg/kg/day	7.E-01
				Mercury (methyl)	0.625	mg/kg	NC		NC			3.3E-04	mg/kg/day	1.0E-04	mg/kg/day	3.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000000242	mg/kg	9.5E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-05	1.3E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					8.E+00
		EXPOSURE POINT TOTAL									1.E-04					8.E+00
	EXPOSURE MEDIUM TOTAL										1.E-04					8.E+00
FILLET TOTAL											1.E-04					8.E+00
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	1.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				8.1.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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TABLE G.7.26.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - LARGEMOUTH BASS - FILLET - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
LARGEMOUTH BASS	FILLET	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00047	mg/kg	NC		NC			2.6E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				Phenanthrene	0.001	mg/kg	NC		NC			5.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				4,4'-DDE	0.0157	mg/kg	1.5E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-07	8.6E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.00064	mg/kg	6.0E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	3.5E-07	mg/kg/day	5.0E-04	mg/kg/day	7.E-04
				Aroclor-1254	0.0766	mg/kg	7.2E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	4.2E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Aroclor-1268	0.075	mg/kg	7.1E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	4.1E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Dieldrin	0.00035	mg/kg	3.3E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.E-07	1.9E-07	mg/kg/day	5.0E-05	mg/kg/day	4.E-03
				gamma-Chlordane	0.0007	mg/kg	6.6E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	3.8E-07	mg/kg/day	5.0E-04	mg/kg/day	8.E-04
				Technical Chlordane	0.01794	mg/kg	1.7E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-07	9.9E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Mercury	0.419	mg/kg	NC		NC			2.3E-04	mg/kg/day	3.0E-04	mg/kg/day	8.E-01
				Mercury (methyl)	0.625	mg/kg	NC		NC			3.4E-04	mg/kg/day	1.0E-04	mg/kg/day	3.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000000242	mg/kg	2.3E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-06	1.3E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-05					8.E+00
		EXPOSURE POINT TOTAL									3.E-05					8.E+00
	EXPOSURE MEDIUM TOTAL										3.E-05					8.E+00
FILLET TOTAL											3.E-05					8.E+00
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	3.E-05	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				8.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.17.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - LARGEMOUTH BASS - FILLET - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
LARGEMOUTH BASS	FILLET	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00047	mg/kg	NC		NC			4.2E-07	mg/kg/day	6.0E-02	mg/kg/day	7.E-06
				Phenanthrene	0.001	mg/kg	NC		NC			8.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				4,4'-DDE	0.0157	mg/kg	1.2E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-07	1.4E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				alpha-Chlordane	0.00064	mg/kg	4.9E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	5.7E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Aroclor-1254	0.0766	mg/kg	5.9E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	6.9E-05	mg/kg/day	2.0E-05	mg/kg/day	3.E+00
				Aroclor-1268	0.075	mg/kg	5.8E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	6.7E-05	mg/kg/day	2.0E-05	mg/kg/day	3.E+00
				Dieldrin	0.00035	mg/kg	2.7E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-07	3.1E-07	mg/kg/day	5.0E-05	mg/kg/day	6.E-03
				gamma-Chlordane	0.0007	mg/kg	5.4E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	6.3E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Technical Chlordane	0.01794	mg/kg	1.4E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-07	1.6E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Mercury	0.419	mg/kg	NC		NC			3.7E-04	mg/kg/day	3.0E-04	mg/kg/day	1.E+00
				Mercury (methyl)	0.625	*mg/kg*	NC		NC			5.6E-04	*mg/kg/day*	1.0E-04	*mg/kg/day*	6.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000000242	mg/kg	1.9E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-06	2.2E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-05					1.E+01
		EXPOSURE POINT TOTAL									3.E-05					1.E+01
	EXPOSURE MEDIUM TOTAL										3.E-05					1.E+01
FILLET TOTAL											3.E-05					1.E+01
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	3.E-05	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.4.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.28.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - LARGEMOUTH BASS - FILLET - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00047	mg/kg	NC		NC			2.5E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				Phenanthrene	0.001	mg/kg	NC		NC			5.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				4,4'-DDE	0.0157	mg/kg	1.4E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-07	8.3E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.00064	mg/kg	5.8E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	3.4E-07	mg/kg/day	5.0E-04	mg/kg/day	7.E-04
				Aroclor-1254	0.0766	mg/kg	7.0E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	4.1E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Aroclor-1268	0.075	mg/kg	6.8E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	4.0E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Dieldrin	0.00035	mg/kg	3.2E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.E-07	1.9E-07	mg/kg/day	5.0E-05	mg/kg/day	4.E-03
				gamma-Chlordane	0.0007	mg/kg	6.4E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	3.7E-07	mg/kg/day	5.0E-04	mg/kg/day	7.E-04
				Technical Chlordane	0.01794	mg/kg	1.6E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-07	9.5E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Mercury	0.419	mg/kg	NC		NC			2.2E-04	mg/kg/day	3.0E-04	mg/kg/day	7.E-01
				Mercury (methyl)	0.625	mg/kg	NC		NC			3.3E-04	mg/kg/day	1.0E-04	mg/kg/day	3.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000000242	mg/kg	2.2E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-06	1.3E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-05					8.E+00
		EXPOSURE POINT TOTAL									3.E-05					8.E+00
	EXPOSURE MEDIUM TOTAL										3.E-05					8.E+00
FILLET TOTAL											3.E-05					8.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											3.E-05					8.1.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.29.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - LARGEMOUTH BASS - FILLET - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00047	mg/kg	NC		NC			2.6E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				Phenanthrene	0.001	mg/kg	NC		NC			5.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				4,4'-DDE	0.0157	mg/kg	1.5E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-07	8.6E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.00064	mg/kg	6.0E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	3.5E-07	mg/kg/day	5.0E-04	mg/kg/day	7.E-04
				Aroclor-1254	0.0766	mg/kg	7.2E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	4.2E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Aroclor-1268	0.075	mg/kg	7.1E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	4.1E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Dieldrin	0.00035	mg/kg	3.3E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.E-07	1.9E-07	mg/kg/day	5.0E-05	mg/kg/day	4.E-03
				gamma-Chlordane	0.0007	mg/kg	6.6E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	3.8E-07	mg/kg/day	5.0E-04	mg/kg/day	8.E-04
				Technical Chlordane	0.01794	mg/kg	1.7E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-07	9.9E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Mercury	0.419	mg/kg	NC		NC			2.3E-04	mg/kg/day	3.0E-04	mg/kg/day	8.E-01
				Mercury (methyl)	0.625	mg/kg	NC		NC			3.4E-04	mg/kg/day	1.0E-04	mg/kg/day	3.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000000242	mg/kg	2.3E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-06	1.3E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-05					8.E+00
		EXPOSURE POINT TOTAL									3.E-05					8.E+00
	EXPOSURE MEDIUM TOTAL										3.E-05					8.E+00
FILLET TOTAL											3.E-05					8.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	3.E-05		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA			8.4.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.30.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - LARGEMOUTH BASS - FILLET - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00047	mg/kg	NC		NC			4.2E-07	mg/kg/day	6.0E-02	mg/kg/day	7.E-06
				Phenanthrene	0.001	mg/kg	NC		NC			8.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				4,4'-DDE	0.0157	mg/kg	1.2E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-07	1.4E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				alpha-Chlordane	0.00064	mg/kg	4.9E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	5.7E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Aroclor-1254	0.0766	mg/kg	5.9E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	6.9E-05	mg/kg/day	2.0E-05	mg/kg/day	3.E+00
				Aroclor-1268	0.075	mg/kg	5.8E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	6.7E-05	mg/kg/day	2.0E-05	mg/kg/day	3.E+00
				Dieldrin	0.00035	mg/kg	2.7E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-07	3.1E-07	mg/kg/day	5.0E-05	mg/kg/day	6.E-03
				gamma-Chlordane	0.0007	mg/kg	5.4E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	6.3E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Technical Chlordane	0.01794	mg/kg	1.4E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-07	1.6E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Mercury	0.419	mg/kg	NC		NC			3.7E-04	mg/kg/day	3.0E-04	mg/kg/day	1.E+00
				Mercury (methyl)	0.625	mg/kg	NC		NC			5.6E-04	mg/kg/day	1.0E-04	mg/kg/day	6.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000000242	mg/kg	1.9E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-06	2.2E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-05					1.E+01
		EXPOSURE POINT TOTAL									3.E-05					1.E+01
	EXPOSURE MEDIUM TOTAL										3.E-05					1.E+01
FILLET TOTAL											3.E-05					1.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	3.E-05				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	1.4.E+01

NOTES.
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assesement.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.31.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - WHITE SUCKER - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00482	mg/kg	NC		NC			2.6E-06	mg/kg/day	6.0E-02	mg/kg/day	4.E-05
				Benzo(a)pyrene	0.00112	mg/kg	4.4E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	5.9E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)peryiene	0.000988	mg/kg	NC		NC			5.2E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.0172	mg/kg	NC		NC			9.1E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				4,4'-DDD	0.0218	mg/kg	8.6E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	2.E-06	1.2E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDE	0.0513	mg/kg	2.0E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	7.E-06	2.7E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				4,4'-DDT	0.00626	mg/kg	2.5E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	8.E-07	3.3E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				alpha-Chlordane	0.02431	mg/kg	9.6E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-06	1.3E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Aroclor-1254	0.20236	mg/kg	8.0E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	1.1E-04	mg/kg/day	2.0E-05	mg/kg/day	5.E+00
				Aroclor-1268	0.05512	mg/kg	2.2E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-05	2.9E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Dieldrin	0.00417	mg/kg	1.6E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.E-05	2.2E-06	mg/kg/day	5.0E-05	mg/kg/day	4.E-02
				gamma-Chlordane	0.0112	mg/kg	4.4E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	5.9E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Heptachlor Epoxide	0.00081	mg/kg	3.2E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.E-06	4.3E-07	mg/kg/day	1.3E-05	mg/kg/day	3.E-02
				Technical Chlordane	0.282	mg/kg	1.1E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-05	1.5E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				Lead	0.012	mg/kg	4.7E-06	mg/kg/day				6.4E-06	mg/kg/day			
				Mercury	0.19	mg/kg	NC		NC			1.0E-04	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				Mercury (methyl)	0.193	mg/kg	NC		NC			1.0E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.0000031	mg/kg	1.2E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	1.6E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-04					8.7.E+00
		EXPOSURE POINT TOTAL									5.E-04					8.7.E+00
	EXPOSURE MEDIUM TOTAL										5.E-04					8.7.E+00
WHOLE BODY TOTAL											5.E-04					8.7.E+00
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		5.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				8.7.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.J2.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - WHITE SUCKER - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00482	mg/kg	NC		NC			2.6E-06	mg/kg/day	6.0E-02	mg/kg/day	4.E-05
				Benzo(a)pyrene	0.00112	mg/kg	1.1E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-07	6.2E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	0.000988	mg/kg	NC		NC			5.4E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.0172	mg/kg	NC		NC			9.5E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				4,4'-DDD	0.0218	mg/kg	2.1E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	5.E-07	1.2E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDE	0.0513	mg/kg	4.8E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	2.8E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				4,4'-DDT	0.00626	mg/kg	5.9E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	3.4E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				alpha-Chlordane	0.02431	mg/kg	2.3E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-07	1.3E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Aroclor-1254	0.20236	mg/kg	1.9E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-05	1.1E-04	mg/kg/day	2.0E-05	mg/kg/day	6.E+00
				Aroclor-1268	0.05512	mg/kg	5.2E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	3.0E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Dieldrin	0.00417	mg/kg	3.9E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	6.E-06	2.3E-06	mg/kg/day	5.0E-05	mg/kg/day	5.E-02
				gamma-Chlordane	0.0112	mg/kg	1.1E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-07	6.2E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Heptachlor Epoxide	0.00081	mg/kg	7.6E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	7.E-07	4.5E-07	mg/kg/day	1.3E-05	mg/kg/day	3.E-02
				Technical Chlordane	0.282	mg/kg	2.7E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-06	1.6E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				Lead	0.012	mg/kg	1.1E-06	mg/kg/day				6.6E-06	mg/kg/day			
				Mercury	0.19	mg/kg	NC		NC			1.0E-04	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				Mercury (methyl)	0.193	mg/kg	NC		NC			1.1E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.0000031	mg/kg	2.9E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-05	1.7E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					9.0.E+00
		EXPOSURE POINT TOTAL									1.E-04					9.0.E+00
	EXPOSURE MEDIUM TOTAL										1.E-04					9.0.E+00
WHOLE BODY TOTAL											1.E-04					9.0.E+00
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		1.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				9.0.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.33.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - WHITE SUCKER - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00482	mg/kg	NC		NC			4.3E-06	mg/kg/day	6.0E-02	mg/kg/day	7.E-05
				Benzo(a)pyrene	0.00112	mg/kg	8.6E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-07	1.0E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(g,h,i)perylene	0.000988	mg/kg	NC		NC			8.8E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Phenanthrene	0.0172	mg/kg	NC		NC			1.5E-05	mg/kg/day	3.0E-02	mg/kg/day	5.E-04
				4,4'-DDD	0.0218	mg/kg	1.7E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	4.E-07	2.0E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				4,4'-DDE	0.0513	mg/kg	3.9E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	4.6E-05	mg/kg/day	5.0E-04	mg/kg/day	9.E-02
				4,4'-DDT	0.00626	mg/kg	4.8E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	5.6E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.02431	mg/kg	1.9E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-07	2.2E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				Aroclor-1254	0.20236	mg/kg	1.6E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-05	1.8E-04	mg/kg/day	2.0E-05	mg/kg/day	9.E+00
				Aroclor-1268	0.05512	mg/kg	4.2E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-06	4.9E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Dieldrin	0.00417	mg/kg	3.2E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.E-06	3.7E-06	mg/kg/day	5.0E-05	mg/kg/day	7.E-02
				gamma-Chlordane	0.0112	mg/kg	8.6E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	1.0E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Heptachlor Epoxide	0.00081	mg/kg	6.2E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	6.E-07	7.2E-07	mg/kg/day	1.3E-05	mg/kg/day	6.E-02
				Technical Chlordane	0.282	mg/kg	2.2E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-06	2.5E-04	mg/kg/day	5.0E-04	mg/kg/day	5.E-01
				Lead	0.012	mg/kg	9.2E-07	mg/kg/day				1.1E-05	mg/kg/day			
				Mercury	0.19	mg/kg	NC		NC			1.7E-04	mg/kg/day	3.0E-04	mg/kg/day	6.E-01
				Mercury (methyl)	0.193	mg/kg	NC		NC			1.7E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.0000031	mg/kg	2.4E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-05	2.8E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								9.E-05					1.5.E+01
		EXPOSURE POINT TOTAL									9.E-05					1.5.E+01
	EXPOSURE MEDIUM TOTAL										9.E-05					1.5.E+01
WHOLE BODY TOTAL											9.E-05					1.5.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	9.E-05		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		1.5.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.34.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - WHITE SUCKER - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00482	mg/kg	NC		NC			2.6E-06	mg/kg/day	6.0E-02	mg/kg/day	4.E-05
				Benzo(a)pyrene	0.00112	mg/kg	1.0E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-07	5.9E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	0.000988	mg/kg	NC		NC			5.2E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.0172	mg/kg	NC		NC			9.1E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				4,4'-DDD	0.0218	mg/kg	2.0E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	5.E-07	1.2E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDE	0.0513	mg/kg	4.7E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	2.7E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				4,4'-DDT	0.00626	mg/kg	5.7E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	3.3E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				alpha-Chlordane	0.02431	mg/kg	2.2E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-07	1.3E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Aroclor-1254	0.20236	mg/kg	1.8E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-05	1.1E-04	mg/kg/day	2.0E-05	mg/kg/day	5.E+00
				Aroclor-1268	0.05512	mg/kg	5.0E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	2.9E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Dieldrin	0.00417	mg/kg	3.8E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	6.E-06	2.2E-06	mg/kg/day	5.0E-05	mg/kg/day	4.E-02
				gamma-Chlordane	0.0112	mg/kg	1.0E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-07	5.9E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Heptachlor Epoxide	0.00081	mg/kg	7.4E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	7.E-07	4.3E-07	mg/kg/day	1.3E-05	mg/kg/day	3.E-02
				Technical Chlordane	0.282	mg/kg	2.6E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-06	1.5E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				Lead	0.012	mg/kg	1.1E-06	mg/kg/day				6.4E-06	mg/kg/day			
				Mercury	0.19	mg/kg	NC		NC			1.0E-04	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				Mercury (methyl)	0.193	mg/kg	NC		NC			1.0E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans	0.0000031	mg/kg	2.8E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-05	1.6E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					8.7.E+00
		EXPOSURE POINT TOTAL									1.E-04					8.7.E+00
	EXPOSURE MEDIUM TOTAL										1.E-04					8.7.E+00
WHOLE BODY TOTAL											1.E-04					8.7.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	1.E-04		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		8.7.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.35.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - WHITE SUCKER - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00482	mg/kg	NC		NC			2.6E-06	mg/kg/day	6.0E-02	mg/kg/day	4.E-05
				Benzo(a)pyrene	0.00112	mg/kg	1.1E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-07	6.2E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	0.000988	mg/kg	NC		NC			5.4E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.0172	mg/kg	NC		NC			9.5E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				4,4'-DDD	0.0218	mg/kg	2.1E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	5.E-07	1.2E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDE	0.0513	mg/kg	4.8E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	2.8E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				4,4'-DDT	0.00626	mg/kg	5.9E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	3.4E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				alpha-Chlordane	0.02431	mg/kg	2.3E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-07	1.3E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Aroclor-1254	0.20236	mg/kg	1.9E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-05	1.1E-04	mg/kg/day	2.0E-05	mg/kg/day	6.E+00
				Aroclor-1268	0.05512	mg/kg	5.2E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	3.0E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Dieldrin	0.00417	mg/kg	3.9E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	6.E-06	2.3E-06	mg/kg/day	5.0E-05	mg/kg/day	5.E-02
				gamma-Chlordane	0.0112	mg/kg	1.1E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-07	6.2E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Heptachlor Epoxide	0.00081	mg/kg	7.6E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	7.E-07	4.5E-07	mg/kg/day	1.3E-05	mg/kg/day	3.E-02
				Technical Chlordane	0.282	mg/kg	2.7E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-06	1.6E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				Lead	0.012	mg/kg	1.1E-06	mg/kg/day				6.6E-06	mg/kg/day			
				Mercury	0.19	mg/kg	NC		NC			1.0E-04	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				Mercury (methyl)	0.193	mg/kg	NC		NC			1.1E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.0000031	mg/kg	2.9E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-05	1.7E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					9.0.E+00
		EXPOSURE POINT TOTAL									1.E-04					9.0.E+00
	EXPOSURE MEDIUM TOTAL										1.E-04					9.0.E+00
WHOLE BODY TOTAL											1.E-04					9.0.E+00
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		1.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				9.0.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.36.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - WHITE SUCKER - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00482	mg/kg	NC		NC			4.3E-06	mg/kg/day	6.0E-02	mg/kg/day	7.E-05
				Benzo(a)pyrene	0.00112	mg/kg	8.6E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-07	1.0E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(g,h,I)perylene	0.000988	mg/kg	NC		NC			8.8E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Phenanthrene	0.0172	mg/kg	NC		NC			1.5E-05	mg/kg/day	3.0E-02	mg/kg/day	5.E-04
				4,4'-DDD	0.0218	mg/kg	1.7E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	4.E-07	2.0E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				4,4'-DDE	0.0513	mg/kg	3.9E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	4.6E-05	mg/kg/day	5.0E-04	mg/kg/day	9.E-02
				4,4'-DDT	0.00626	mg/kg	4.8E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	5.6E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.02431	mg/kg	1.9E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-07	2.2E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				Aroclor-1254	0.20236	mg/kg	1.6E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-05	1.8E-04	mg/kg/day	2.0E-05	mg/kg/day	9.E+00
				Aroclor-1268	0.05512	mg/kg	4.2E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-06	4.9E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Dieldrin	0.00417	mg/kg	3.2E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.E-06	3.7E-06	mg/kg/day	5.0E-05	mg/kg/day	7.E-02
				gamma-Chlordane	0.0112	mg/kg	8.6E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	1.0E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Heptachlor Epoxide	0.00081	mg/kg	6.2E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	6.E-07	7.2E-07	mg/kg/day	1.3E-05	mg/kg/day	6.E-02
				Technical Chlordane	0.282	mg/kg	2.2E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-06	2.5E-04	mg/kg/day	5.0E-04	mg/kg/day	5.E-01
				Lead	0.012	mg/kg	9.2E-07	mg/kg/day				1.1E-05	mg/kg/day			
				Mercury	0.19	mg/kg	NC		NC			1.7E-04	mg/kg/day	3.0E-04	mg/kg/day	6.E-01
				Mercury (methyl)	0.193	mg/kg	NC		NC			1.7E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Toxicity Equivalency (Dioxins/Furans	0.0000031	mg/kg	2.4E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-05	2.8E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								9.E-05					1.5.E+01
		EXPOSURE POINT TOTAL									9.E-05					1.5.E+01
	EXPOSURE MEDIUM TOTAL										9.E-05					1.5.E+01
WHOLE BODY TOTAL											9.E-05					1.5.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	9.E-05				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	1.5.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availaltable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.37.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.0013	mg/kg	NC		NC			6.9E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Phenanthrene	0.00807	mg/kg	NC		NC			4.3E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDD	0.0131	mg/kg	5.2E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-06	7.0E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				4,4'-DDE	0.021	mg/kg	8.3E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-06	1.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDT	0.00892	mg/kg	3.5E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	4.7E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				alpha-Chlordane	0.0192	mg/kg	7.6E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-06	1.0E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	0.88187	mg/kg	3.5E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-04	4.7E-04	mg/kg/day	2.0E-05	mg/kg/day	2.E+01
				Aroclor-1268	0.01504	mg/kg	5.9E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	8.0E-06	mg/kg/day	2.0E-05	mg/kg/day	4.E-01
				beta-BHC	0.00062	mg/kg	2.4E-07	mg/kg/day	1.8E+00	(mg/kg/day)-1	4.E-07	3.3E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Dieldrin	0.00912	mg/kg	3.6E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	6.E-05	4.8E-06	mg/kg/day	5.0E-05	mg/kg/day	1.E-01
				Endosulfan Sulfate	0.00158	mg/kg	NC		NC			8.4E-07	mg/kg/day	6.0E-03	mg/kg/day	1.E-04
				Endrin Aldehyde	0.001	mg/kg	NC		NC			5.3E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				gamma-Chlordane	0.00712	mg/kg	2.8E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	3.8E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				Heptachlor	0.000678	mg/kg	2.7E-07	mg/kg/day	4.5E+00	(mg/kg/day)-1	1.E-06	3.6E-07	mg/kg/day	5.0E-04	mg/kg/day	7.E-04
				Heptachlor Epoxide	0.0015	mg/kg	5.9E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	5.E-06	8.0E-07	mg/kg/day	1.3E-05	mg/kg/day	6.E-02
				Technical Chlordane	0.2615	mg/kg	1.0E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-05	1.4E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				Cadmium	0.0971	mg/kg	NC		NC			5.2E-05	mg/kg/day	1.0E-03	mg/kg/day	5.E-02
				Lead	0.58	mg/kg	2.3E-04	mg/kg/day	--			3.1E-04	mg/kg/day			
				Manganese	5.04	mg/kg	NC		NC			2.7E-03	mg/kg/day	1.4E-01	mg/kg/day	2.E-02
				Mercury	0.153	mg/kg	NC		NC			8.1E-05	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				Mercury (methyl)	0.269	mg/kg	NC		NC			1.4E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans	0.000111	mg/kg	4.4E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-03	5.9E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners	0.000042	mg/kg	1.7E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-03	2.2E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-02					2.E+01
		EXPOSURE POINT TOTAL									1.E-02					2.E+01
	EXPOSURE MEDIUM TOTAL										1.E-02					2.E+01
WHOLE BODY TOTAL											1.E-02					2.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	1.E-02				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	2.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.7.3B.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.0013	mg/kg	NC		NC			7.1E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Phenanthrene	0.00807	mg/kg	NC		NC			4.4E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDD	0.0131	mg/kg	1.2E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	3.E-07	7.2E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				4,4'-DDE	0.021	mg/kg	2.0E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	7.E-07	1.2E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDT	0.00892	mg/kg	8.4E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-07	4.9E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.0192	mg/kg	1.8E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-07	1.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	0.88187	mg/kg	8.3E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	4.8E-04	mg/kg/day	2.0E-05	mg/kg/day	2.E+01
				Aroclor-1268	0.01504	mg/kg	1.4E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-06	8.2E-06	mg/kg/day	2.0E-05	mg/kg/day	4.E-01
				beta-BHC	0.00062	mg/kg	5.8E-08	mg/kg/day	1.8E+00	(mg/kg/day)-1	1.E-07	3.4E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Dieldrin	0.00912	mg/kg	8.6E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	5.0E-06	mg/kg/day	5.0E-05	mg/kg/day	1.E-01
				Endosulfan Sulfate	0.00158	mg/kg	NC		NC			8.7E-07	mg/kg/day	6.0E-03	mg/kg/day	1.E-04
				Endrin Aldehyde	0.001	mg/kg	NC		NC			5.5E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				gamma-Chlordane	0.00712	mg/kg	6.7E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	3.9E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				Heptachlor	0.000678	mg/kg	6.4E-08	mg/kg/day	4.5E+00	(mg/kg/day)-1	3.E-07	3.7E-07	mg/kg/day	5.0E-04	mg/kg/day	7.E-04
				Heptachlor Epoxide	0.0015	mg/kg	1.4E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	1.E-06	8.2E-07	mg/kg/day	1.3E-05	mg/kg/day	6.E-02
				Technical Chlordane	0.2615	mg/kg	2.5E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-06	1.4E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				Cadmium	0.0971	mg/kg	NC		NC			5.3E-05	mg/kg/day	1.0E-03	mg/kg/day	5.E-02
				Lead	0.58	mg/kg	5.5E-05	mg/kg/day	--			3.2E-04	mg/kg/day			
				Manganese	5.04	mg/kg	NC		NC			2.8E-03	mg/kg/day	1.4E-01	mg/kg/day	2.E-02
				Mercury	0.153	mg/kg	NC		NC			8.4E-05	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				Mercury (methyl)	0.269	mg/kg	NC		NC			1.5E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000111	mg/kg	1.0E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-03	6.1E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000042	mg/kg	4.0E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-04	2.3E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-03					2.7E+01
		EXPOSURE POINT TOTAL									2.E-03					2.7E+01
	EXPOSURE MEDIUM TOTAL										2.E-03					2.7E+01
WHOLE BODY TOTAL											2.E-03					2.7E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											2.E-03					2.7E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.7.39.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.0913	mg/kg	NC		NC			1.2E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.00807	mg/kg	NC		NC			7.2E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDD	0.0131	mg/kg	1.0E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	2.E-07	1.2E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDE	0.021	mg/kg	1.6E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-07	1.9E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				4,4'-DDT	0.00892	mg/kg	6.8E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	8.0E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.0192	mg/kg	1.5E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-07	1.7E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Aroclor-1254	0.88187	mg/kg	6.8E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-04	7.9E-04	mg/kg/day	2.0E-05	mg/kg/day	4.E+01
				Aroclor-1268	0.01504	mg/kg	1.2E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-06	1.3E-05	mg/kg/day	2.0E-05	mg/kg/day	7.E-01
				beta-BHC	0.00062	mg/kg	4.8E-08	mg/kg/day	1.8E+00	(mg/kg/day)-1	9.E-08	5.5E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Dieldrin	0.00912	mg/kg	7.0E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	8.2E-06	mg/kg/day	5.0E-05	mg/kg/day	2.E-01
				Endosulfan Sulfate	0.00158	mg/kg	NC		NC			1.4E-06	mg/kg/day	6.0E-03	mg/kg/day	2.E-04
				Endrin Aldehyde	0.001	mg/kg	NC		NC			8.9E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				gamma-Chlordane	0.00712	mg/kg	5.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	6.4E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Heptachlor	0.000678	mg/kg	5.2E-08	mg/kg/day	4.5E+00	(mg/kg/day)-1	2.E-07	6.1E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Heptachlor Epoxide	0.0015	mg/kg	1.2E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	1.E-06	1.3E-06	mg/kg/day	1.3E-05	mg/kg/day	1.E-01
				Technical Chlordane	0.2615	mg/kg	2.0E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-06	2.3E-04	mg/kg/day	5.0E-04	mg/kg/day	5.E-01
				Cadmium	0.0971	mg/kg	NC		NC			8.7E-05	mg/kg/day	1.0E-03	mg/kg/day	9.E-02
				Lead	0.58	mg/kg	4.4E-05	mg/kg/day	--			5.2E-04	mg/kg/day			
				Manganese	5.04	mg/kg	NC		NC			4.5E-03	mg/kg/day	1.4E-01	mg/kg/day	3.E-02
				Mercury	0.153	mg/kg	NC		NC			1.4E-04	mg/kg/day	3.0E-04	mg/kg/day	5.E-01
				Mercury (methyl)	0.269	mg/kg	NC		NC			2.4E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000111	mg/kg	8.5E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-03	9.9E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000042	mg/kg	3.2E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-04	3.8E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-03					4.4.E+01
		EXPOSURE POINT TOTAL									2.E-03					4.4.E+01
	EXPOSURE MEDIUM TOTAL										2.E-03					4.4.E+01
WHOLE BODY TOTAL											2.E-03					4.4.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	2.E-03				*TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA*	4.4.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by:	KJA
Checked by:	MJM

US EPA ARCHIVE DOCUMENT

TABLE G.7.40.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.0013	mg/kg	NC		NC			6.9E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Phenanthrene	0.00807	mg/kg	NC		NC			4.3E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDD	0.0131	mg/kg	1.2E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	3.E-07	7.0E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				4,4'-DDE	0.021	mg/kg	1.9E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	6.E-07	1.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDT	0.00892	mg/kg	8.1E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-07	4.7E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				alpha-Chlordane	0.0192	mg/kg	1.7E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-07	1.0E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	0.88187	mg/kg	8.0E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	4.7E-04	mg/kg/day	2.0E-05	mg/kg/day	2.E+01
				Aroclor-1268	0.01504	mg/kg	1.4E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-06	8.0E-06	mg/kg/day	2.0E-05	mg/kg/day	4.E-01
				beta-BHC	0.00062	mg/kg	5.6E-08	mg/kg/day	1.8E+00	(mg/kg/day)-1	1.E-07	3.3E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Dieldrin	0.00912	mg/kg	8.3E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	4.8E-06	mg/kg/day	5.0E-05	mg/kg/day	1.E-01
				Endosulfan Sulfate	0.00158	mg/kg	NC		NC			8.4E-07	mg/kg/day	6.0E-03	mg/kg/day	1.E-04
				Endrin Aldehyde	0.001	mg/kg	NC		NC			5.3E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				gamma-Chlordane	0.00712	mg/kg	6.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	3.8E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				Heptachlor	0.000678	mg/kg	6.2E-08	mg/kg/day	4.5E+00	(mg/kg/day)-1	3.E-07	3.6E-07	mg/kg/day	5.0E-04	mg/kg/day	7.E-04
				Heptachlor Epoxide	0.0015	mg/kg	1.4E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	1.E-06	8.0E-07	mg/kg/day	1.3E-05	mg/kg/day	6.E-02
				Technical Chlordane	0.2615	mg/kg	2.4E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-06	1.4E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				Cadmium	0.0971	mg/kg	NC		NC			5.2E-05	mg/kg/day	1.0E-03	mg/kg/day	5.E-02
				Lead	0.58	mg/kg	5.3E-05	mg/kg/day	--			3.1E-04	mg/kg/day			
				Manganese	5.04	mg/kg	NC		NC			2.7E-03	mg/kg/day	1.4E-01	mg/kg/day	2.E-02
				Mercury	0.153	mg/kg	NC		NC			8.1E-05	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				Mercury (methyl)	0.269	mg/kg	NC		NC			1.4E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000111	mg/kg	1.0E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-03	5.9E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000942	mg/kg	8.8E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-04	2.2E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-03					2.6.E+01
		EXPOSURE POINT TOTAL									2.E-03					2.6.E+01
	EXPOSURE MEDIUM TOTAL										2.E-03					2.6.E+01
WHOLE BODY TOTAL											2.E-03					2.6.E+01
TOTAL RECEPTOR RISK ACROSS ALL MEDIA											2.E-03	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				2.6.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availaible from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.7.41.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.0013	mg/kg	NC		NC			7.1E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Phenanthrene	0.00807	mg/kg	NC		NC			4.4E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDD	0.0131	mg/kg	1.2E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	3.E-07	7.2E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				4,4'-DDE	0.021	mg/kg	2.0E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	7.E-07	1.2E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDT	0.00892	mg/kg	8.4E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-07	4.9E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.0192	mg/kg	1.8E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-07	1.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	0.88187	mg/kg	8.3E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	4.8E-04	mg/kg/day	2.0E-05	mg/kg/day	2.E+01
				Aroclor-1268	0.01504	mg/kg	1.4E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-06	8.3E-06	mg/kg/day	2.0E-05	mg/kg/day	4.E-01
				beta-BHC	0.00062	mg/kg	5.8E-08	mg/kg/day	1.8E+00	(mg/kg/day)-1	1.E-07	3.4E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Dieldrin	0.00912	mg/kg	8.6E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	5.0E-06	mg/kg/day	5.0E-05	mg/kg/day	1.E-01
				Endosulfan Sulfate	0.00158	mg/kg	NC		NC			8.7E-07	mg/kg/day	6.0E-03	mg/kg/day	1.E-04
				Endrin Aldehyde	0.001	mg/kg	NC		NC			5.5E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				gamma-Chlordane	0.00712	mg/kg	6.7E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	3.9E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				Heptachlor	0.000678	mg/kg	6.4E-08	mg/kg/day	4.5E+00	(mg/kg/day)-1	3.E-07	3.7E-07	mg/kg/day	5.0E-04	mg/kg/day	7.E-04
				Heptachlor Epoxide	0.0015	mg/kg	1.4E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	1.E-06	8.2E-07	mg/kg/day	1.3E-05	mg/kg/day	6.E-02
				Technical Chlordane	0.2615	mg/kg	2.5E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-06	1.4E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				Cadmium	0.0971	mg/kg	NC		NC			5.3E-05	mg/kg/day	1.0E-03	mg/kg/day	5.E-02
				Lead	0.58	mg/kg	5.5E-05	mg/kg/day	--			3.2E-04	mg/kg/day			
				Manganese	5.04	mg/kg	NC		NC			2.8E-03	mg/kg/day	1.4E-01	mg/kg/day	2.E-02
				Mercury	0.153	mg/kg	NC		NC			8.4E-05	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				Mercury (methyl)	0.269	mg/kg	NC		NC			1.5E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000111	mg/kg	1.0E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-03	6.1E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000042	mg/kg	4.0E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-04	2.3E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-03					2.7.E+01
		EXPOSURE POINT TOTAL									2.E-03					2.7.E+01
	EXPOSURE MEDIUM TOTAL										2.E-03					2.7.E+01
WHOLE BODY TOTAL											2.E-03					2.7.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	2.E-03				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	2.7.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availalable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.7.42.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.0013	mg/kg	NC		NC			1.2E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.00807	mg/kg	NC		NC			7.2E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDD	0.0131	mg/kg	1.0E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	2.E-07	1.2E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDE	0.021	mg/kg	1.6E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-07	1.9E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				4,4'-DDT	0.00892	mg/kg	6.8E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	8.0E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.0192	mg/kg	1.5E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-07	1.7E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Aroclor-1254	0.88187	mg/kg	6.8E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-04	7.9E-04	mg/kg/day	2.0E-05	mg/kg/day	4.E+01
				Aroclor-1268	0.01504	mg/kg	1.2E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-06	1.3E-05	mg/kg/day	2.0E-05	mg/kg/day	7.E-01
				beta-BHC	0.00062	mg/kg	4.8E-08	mg/kg/day	1.8E+00	(mg/kg/day)-1	9.E-08	5.5E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Dieldrin	0.00912	mg/kg	7.0E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	8.2E-06	mg/kg/day	5.0E-05	mg/kg/day	2.E-01
				Endosulfan Sulfate	0.00158	mg/kg	NC		NC			1.4E-06	mg/kg/day	6.0E-03	mg/kg/day	2.E-04
				Endrin Aldehyde	0.001	mg/kg	NC		NC			8.9E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				gamma-Chlordane	0.00732	mg/kg	5.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	6.4E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Heptachlor	0.000678	mg/kg	5.2E-08	mg/kg/day	4.5E+00	(mg/kg/day)-1	2.E-07	6.1E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Heptachlor Epoxide	0.0015	mg/kg	1.2E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	1.E-06	1.3E-06	mg/kg/day	1.3E-05	mg/kg/day	1.E-01
				Technical Chlordane	0.2615	mg/kg	2.0E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-06	2.3E-04	mg/kg/day	5.0E-04	mg/kg/day	5.E-01
				Cadmium	0.0971	mg/kg	NC		NC			8.7E-05	mg/kg/day	1.0E-03	mg/kg/day	9.E-02
				Lead	0.58	mg/kg	4.4E-05	mg/kg/day	--			5.2E-04	mg/kg/day			
				Manganese	5.04	mg/kg	NC		NC			4.5E-03	mg/kg/day	1.4E-01	mg/kg/day	3.E-02
				Mercury	0.153	mg/kg	NC		NC			1.4E-04	mg/kg/day	3.0E-04	mg/kg/day	5.E-01
				Mercury (methyl)	0.269	mg/kg	NC		NC			2.4E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000111	mg/kg	8.5E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-03	9.9E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.000042	mg/kg	3.2E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-04	3.8E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-03					4.4.E+01
		EXPOSURE POINT TOTAL									2.E-03					4.4.E+01
	EXPOSURE MEDIUM TOTAL										2.E-03					4.4.E+01
WHOLE BODY TOTAL											2.E-03					4.4.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	2.E-03				**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**	4.4.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.7.43.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.00268	mg/kg	NC		NC			1.4E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Benzo(a)anthracene	0.0022	mg/kg	8.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-07	1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(a)pyrene	0.0024	mg/kg	9.5E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-06	1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(b)fluoranthene	0.0025	mg/kg	9.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-07	1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(g,h,i)perylene	0.000632	mg/kg	NC		NC			3.4E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.0004	mg/kg	1.6E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Indeno(1,2,3-cd)pyrene	0.00079	mg/kg	3.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	4.2E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	0.0114	mg/kg	NC		NC			6.0E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDD	0.0126	mg/kg	5.0E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-06	6.7E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				4,4'-DDE	0.02869	mg/kg	1.1E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-06	1.5E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				4,4'-DDT	0.00686	mg/kg	2.7E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	9.E-07	3.6E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				alpha-Chlordane	0.0236	mg/kg	9.3E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-06	1.3E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Aroclor-1254	2.8888	mg/kg	1.1E-03	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-03	1.5E-03	mg/kg/day	2.0E-05	mg/kg/day	8.E+01
				Aroclor-1268	0.0843	mg/kg	1.5E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-05	2.0E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Dieldrin	0.00866	mg/kg	3.4E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.E-05	4.6E-06	mg/kg/day	5.0E-05	mg/kg/day	9.E-02
				gamma-Chlordane	0.0089	mg/kg	3.5E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	4.7E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				Heptachlor Epoxide	0.0007	mg/kg	2.8E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.E-06	3.7E-07	mg/kg/day	1.3E-05	mg/kg/day	3.E-02
				Technical Chlordane	0.674	mg/kg	2.7E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-05	3.6E-04	mg/kg/day	5.0E-04	mg/kg/day	7.E-01
				Chromium	0.112	mg/kg	NC		NC			5.9E-05	mg/kg/day	3.0E-03	mg/kg/day	2.E-02
				Lead	0.349	mg/kg	1.4E-04	mg/kg/day	--			1.9E-04	mg/kg/day			
				Mercury	0.136	mg/kg	NC		NC			7.2E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.147	mg/kg	NC		NC			7.8E-05	mg/kg/day	1.0E-04	mg/kg/day	8.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000492	mg/kg	1.9E-07	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-02	2.6E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000215	mg/kg	8.5E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-03	1.1E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-02					8.0.E+01
		EXPOSURE POINT TOTAL									3.E-02					8.0.E+01
	EXPOSURE MEDIUM TOTAL										3.E-02					8.0.E+01
WHOLE BODY TOTAL											3.E-02					8.0.E+01
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	3.E-02	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				8.0.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by:	KJA
Checked by:	MJM

US EPA ARCHIVE DOCUMENT

TABLE G.7.44.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - *INTERIM FINAL*
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.00268	mg/kg	NC		NC			1.5E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Benzo(a)anthracene	0.0022	mg/kg	2.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(a)pyrene	0.0024	mg/kg	2.3E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(b)fluoranthene	0.0025	mg/kg	2.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(g,h,i)perylene	0.000632	mg/kg	NC		NC			3.5E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.0004	mg/kg	3.8E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	2.2E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Indeno(1,2,3-cd)pyrene	0.00079	mg/kg	7.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	4.3E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	0.0114	mg/kg	NC		NC			6.3E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDD	0.0126	mg/kg	1.2E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	3.E-07	6.9E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				4,4'-DDE	0.02899	mg/kg	2.7E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	9.E-07	1.6E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				4,4'-DDT	0.00686	mg/kg	6.5E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	3.8E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				alpha-Chlordane	0.0236	mg/kg	2.2E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-07	1.3E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Aroclor-1254	2.8888	mg/kg	2.7E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-04	1.6E-03	mg/kg/day	2.0E-05	mg/kg/day	8.E+01
				Aroclor-1268	0.03843	mg/kg	3.6E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-06	2.1E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Dieldrin	0.00866	mg/kg	8.2E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	4.8E-06	mg/kg/day	5.0E-05	mg/kg/day	1.E-01
				gamma-Chlordane	0.0089	mg/kg	8.4E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	4.9E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Heptachlor Epoxide	0.0007	mg/kg	6.6E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	6.E-07	3.8E-07	mg/kg/day	1.3E-05	mg/kg/day	3.E-02
				Technical Chlordane	0.674	mg/kg	6.4E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-05	3.7E-04	mg/kg/day	5.0E-04	mg/kg/day	7.E-01
				Chromium	0.112	mg/kg	NC		NC			6.2E-05	mg/kg/day	3.0E-03	mg/kg/day	2.E-02
				Lead	0.349	mg/kg	3.3E-05	mg/kg/day	--			1.9E-04	mg/kg/day			
				Mercury	0.136	mg/kg	NC		NC			7.5E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.147	mg/kg	NC		NC			8.1E-05	mg/kg/day	1.0E-04	mg/kg/day	8.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000492	mg/kg	4.6E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-03	2.7E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000215	mg/kg	2.0E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-04	1.2E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								8.E-03					8.2.E+01
		EXPOSURE POINT TOTAL									8.E-03					8.2.E+01
	EXPOSURE MEDIUM TOTAL										8.E-03					8.2.E+01
WHOLE BODY TOTAL											*8.E-03*					*8.2.E+01*
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	8.E-03		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		8.2.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by:	KJA
Checked by:	MJM

US EPA ARCHIVE DOCUMENT

TABLE G.7.45.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS				NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.00268	mg/kg	NC		NC			2.4E-06	mg/kg/day	6.0E-02	mg/kg/day	4.E-05
				Benzo(a)anthracene	0.0022	mg/kg	1.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	2.0E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(a)pyrene	0.0024	mg/kg	1.8E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	2.1E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(b)fluoranthene	0.0025	mg/kg	1.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	2.2E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(g,h,i)perylene	0.000632	mg/kg	NC		NC			5.7E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.0004	mg/kg	3.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	3.6E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Indeno(1,2,3-cd)pyrene	0.00079	mg/kg	6.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	7.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.0114	mg/kg	NC		NC			1.0E-05	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				4,4'-DDD	0.0126	mg/kg	9.7E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	2.E-07	1.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDE	0.02869	mg/kg	2.2E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	7.E-07	2.6E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				4,4'-DDT	0.00686	mg/kg	5.3E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	6.1E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.0236	mg/kg	1.8E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-07	2.1E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				Aroclor-1254	2.8888	mg/kg	2.2E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-04	2.6E-03	mg/kg/day	2.0E-05	mg/kg/day	1.E+02
				Aroclor-1268	0.03843	mg/kg	2.9E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-06	3.4E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Dieldrin	0.00896	mg/kg	6.8E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	7.8E-06	mg/kg/day	5.0E-05	mg/kg/day	2.E-01
				gamma-Chlordane	0.0089	mg/kg	6.8E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	8.0E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Heptachlor Epoxide	0.0007	mg/kg	5.4E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	5.E-07	6.3E-07	mg/kg/day	1.3E-03	mg/kg/day	5.E-02
				Technical Chlordane	0.674	mg/kg	5.2E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-05	6.0E-04	mg/kg/day	5.0E-04	mg/kg/day	1.E+00
				Chromium	0.112	mg/kg	NC		NC			1.0E-04	mg/kg/day	3.0E-03	mg/kg/day	3.E-02
				Lead	0.349	mg/kg	2.7E-05	mg/kg/day	--			3.1E-04	mg/kg/day			
				Mercury	0.136	mg/kg	NC		NC			1.2E-04	mg/kg/day	3.0E-04	mg/kg/day	4.E-01
				Mercury (methyl)	0.147	mg/kg	NC		NC			1.3E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000492	mg/kg	3.8E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-03	4.4E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000215	mg/kg	1.6E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	1.9E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-03					1.3.E+02
		EXPOSURE POINT TOTAL									6.E-03					1.3.E+02
	EXPOSURE MEDIUM TOTAL										6.E-03					1.3.E+02
WHOLE BODY TOTAL											6.E-03					1.3.E+02
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	6.E-03	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.3.E+02

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.7.46.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.00268	mg/kg	NC		NC			1.4E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Benzo(a)anthracene	0.0022	mg/kg	2.0E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(a)pyrene	0.0024	mg/kg	2.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(b)fluoranthene	0.0025	mg/kg	2.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(g,h,i)perylene	0.000632	mg/kg	NC		NC			3.4E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.0004	mg/kg	3.6E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Indeno(1,2,3-cd)pyrene	0.00079	mg/kg	7.2E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	4.2E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	0.0114	mg/kg	NC		NC			6.0E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDD	0.0126	mg/kg	1.1E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	3.E-07	6.7E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				4,4'-DDE	0.02869	mg/kg	2.6E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	9.E-07	1.5E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				4,4'-DDT	0.00686	mg/kg	6.2E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	3.6E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				alpha-Chlordane	0.0236	mg/kg	2.1E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-07	1.3E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Aroclor-1254	2.8888	mg/kg	2.6E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-04	1.5E-03	mg/kg/day	2.0E-05	mg/kg/day	8.E+01
				Aroclor-1268	0.03843	mg/kg	3.5E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-06	2.0E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Dieldrin	0.00866	mg/kg	7.9E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	4.6E-06	mg/kg/day	5.0E-05	mg/kg/day	9.E-02
				gamma-Chlordane	0.0089	mg/kg	8.1E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	4.7E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				Heptachlor Epoxide	0.0007	mg/kg	6.4E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	6.E-07	3.7E-07	mg/kg/day	1.3E-05	mg/kg/day	3.E-02
				Technical Chlordane	0.674	mg/kg	6.1E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-05	3.6E-04	mg/kg/day	5.0E-04	mg/kg/day	7.E-01
				Chromium	0.112	mg/kg	NC		NC			5.9E-05	mg/kg/day	3.0E-03	mg/kg/day	2.E-02
				Lead	0.349	mg/kg	3.2E-05	mg/kg/day	--			1.9E-04	mg/kg/day			
				Mercury	0.136	mg/kg	NC		NC			7.2E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.147	mg/kg	NC		NC			7.8E-05	mg/kg/day	1.0E-04	mg/kg/day	8.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000492	mg/kg	4.5E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-03	2.6E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000215	mg/kg	2.0E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-04	1.1E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								8.E-03					8.0E+01
		EXPOSURE POINT TOTAL									8.E-03					8.0E+01
	EXPOSURE MEDIUM TOTAL										8.E-03					8.0E+01
WHOLE BODY TOTAL											8.E-03					8.0E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		8.E-03	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				8.0E+01

NOTES
(1) - Blank cells indicate that an RfD or RfC is not availalible from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.7.47.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	R/D/R/C (1) VALUE	R/D/R/C (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.00268	mg/kg	NC		NC			1.5E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Benzo(a)anthracene	0.0022	mg/kg	2.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(a)pyrene	0.0024	mg/kg	2.3E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(b)fluoranthene	0.0025	mg/kg	2.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(g,h,i)perylene	0.000632	mg/kg	NC		NC			3.5E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.0004	mg/kg	3.8E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	2.2E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Indeno(1,2,3-cd)pyrene	0.00079	mg/kg	7.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	4.3E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	0.0114	mg/kg	NC		NC			6.3E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDD	0.0126	mg/kg	1.2E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	3.E-07	6.9E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				4,4'-DDE	0.02869	mg/kg	2.7E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	9.E-07	1.6E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				4,4'-DDT	0.00686	mg/kg	6.5E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	3.8E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				alpha-Chlordane	0.0236	mg/kg	2.2E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-07	1.3E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Aroclor-1254	2.8888	mg/kg	2.7E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-04	1.6E-03	mg/kg/day	2.0E-05	mg/kg/day	8.E+01
				Aroclor-1268	0.03843	mg/kg	3.6E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-06	2.1E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Dieldrin	0.00866	mg/kg	8.2E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	4.8E-06	mg/kg/day	5.0E-05	mg/kg/day	1.E-01
				gamma-Chlordane	0.0089	mg/kg	8.4E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	4.9E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Heptachlor Epoxide	0.0007	mg/kg	6.6E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	6.E-07	3.8E-07	mg/kg/day	1.3E-05	mg/kg/day	3.E-02
				Technical Chlordane	0.674	mg/kg	6.4E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-05	3.7E-04	mg/kg/day	5.0E-04	mg/kg/day	7.E-01
				Chromium	0.112	mg/kg	NC		NC			6.2E-05	mg/kg/day	3.0E-03	mg/kg/day	2.E-02
				Lead	0.349	mg/kg	3.3E-05	mg/kg/day	--			1.9E-04	mg/kg/day			
				Mercury	0.136	mg/kg	NC		NC			7.5E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.147	mg/kg	NC		NC			8.1E-05	mg/kg/day	1.0E-04	mg/kg/day	8.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000492	mg/kg	4.6E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-03	2.7E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000215	mg/kg	2.0E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-04	1.2E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								8.E-03					8.E+01
		EXPOSURE POINT TOTAL									8.E-03					8.E+01
	EXPOSURE MEDIUM TOTAL										8.E-03					8.E+01
WHOLE BODY TOTAL											*8.E-03*					*8.E+01*
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											8.E-03					8.2E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.7.48.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.00268	mg/kg	NC		NC			2.4E-06	mg/kg/day	6.0E-02	mg/kg/day	4.E-05
				Benzo(a)anthracene	0.0022	mg/kg	1.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	2.0E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(a)pyrene	0.0024	mg/kg	1.8E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	2.1E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(b)fluoranthene	0.0025	mg/kg	1.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	2.2E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(g,h,i)perylene	0.000632	mg/kg	NC		NC			5.7E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.0004	mg/kg	3.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	3.6E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Indeno(1,2,3-cd)pyrene	0.00079	mg/kg	6.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	7.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.0114	mg/kg	NC		NC			1.0E-05	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				4,4'-DDD	0.0126	mg/kg	9.7E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	2.E-07	1.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDE	0.02869	mg/kg	2.2E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	7.E-07	2.6E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				4,4'-DDT	0.00686	mg/kg	5.3E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	6.1E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.0236	mg/kg	1.8E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-07	2.1E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				Aroclor-1254	2.8888	mg/kg	2.2E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-04	2.6E-03	mg/kg/day	2.0E-05	mg/kg/day	1.E+02
				Aroclor-1268	0.03843	mg/kg	2.9E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-06	3.4E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Dieldrin	0.00866	mg/kg	6.6E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	7.8E-06	mg/kg/day	5.0E-05	mg/kg/day	2.E-01
				gamma-Chlordane	0.0089	mg/kg	6.8E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	8.0E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Heptachlor Epoxide	0.0007	mg/kg	5.4E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	5.E-07	6.3E-07	mg/kg/day	1.3E-05	mg/kg/day	5.E-02
				Technical Chlordane	0.674	mg/kg	5.2E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-05	6.0E-04	mg/kg/day	5.0E-04	mg/kg/day	1.E+00
				Chromium	0.112	mg/kg	NC		NC			1.0E-04	mg/kg/day	3.0E-03	mg/kg/day	3.E-02
				Lead	0.349	mg/kg	2.7E-05	mg/kg/day	--			3.1E-04	mg/kg/day			
				Mercury	0.136	mg/kg	NC		NC			1.2E-04	mg/kg/day	3.0E-04	mg/kg/day	4.E-01
				Mercury (methyl)	0.147	mg/kg	NC		NC			1.3E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000492	mg/kg	3.8E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-03	4.4E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000215	mg/kg	1.6E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	1.9E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-03					1.3 E+02
		EXPOSURE POINT TOTAL									6.E-03					1.3.E+02
	EXPOSURE MEDIUM TOTAL										6.E-03					1.3.E+02
WHOLE BODY TOTAL											6.E-03					1.3.E+02
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		6.E-03	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.3.E+02

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.7.49.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
							INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
					VALUE	UNITS	VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00193	mg/kg	NC		NC			1.0E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	0.000962	mg/kg	3.8E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	5.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	0.00119	mg/kg	4.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.00065	mg/kg	2.6E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	3.4E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	0.02012	mg/kg	NC		NC			1.1E-05	mg/kg/day	3.0E-02	mg/kg/day	4.E-04
				4,4'-DDD	0.01469	mg/kg	5.8E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-06	7.8E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDE	0.04451	mg/kg	1.8E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	6.E-06	2.4E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				4,4'-DDT	0.00337	mg/kg	1.3E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-07	1.8E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				alpha-Chlordane	0.02007	mg/kg	7.9E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-06	1.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	0.95861	mg/kg	3.8E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-04	5.1E-04	mg/kg/day	2.0E-05	mg/kg/day	3.E+01
				beta-BHC	0.0018	mg/kg	7.1E-07	mg/kg/day	1.8E+00	(mg/kg/day)-1	1.E-06	9.6E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				Dieldrin	0.00789	mg/kg	3.1E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.E-05	4.2E-06	mg/kg/day	5.0E-05	mg/kg/day	8.E-02
				gamma-Chlordane	0.00859	mg/kg	3.4E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	4.6E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				Heptachlor Epoxide	0.00227	mg/kg	8.9E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	8.E-06	1.2E-06	mg/kg/day	1.3E-05	mg/kg/day	9.E-02
				Technical Chlordane	0.44722	mg/kg	1.8E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-05	2.4E-04	mg/kg/day	5.0E-04	mg/kg/day	5.E-01
				Cadmium	0.026	mg/kg	NC		NC			1.4E-05	mg/kg/day	1.0E-03	mg/kg/day	1.E-02
				Lead	0.38	mg/kg	1.5E-04	mg/kg/day	--			2.0E-04	mg/kg/day			
				Manganese	4.98	mg/kg	NC		NC			2.6E-03	mg/kg/day	1.4E-01	mg/kg/day	2.E-02
				Mercury	0.0349	mg/kg	NC		NC			1.9E-05	mg/kg/day	3.0E-04	mg/kg/day	6.E-02
				Mercury (methyl)	0.0367	mg/kg	NC		NC			1.9E-05	mg/kg/day	1.0E-04	mg/kg/day	2.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000181	mg/kg	7.1E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-02	9.6E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000604	mg/kg	2.4E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-03	3.2E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-02					2.6.E+01
		EXPOSURE POINT TOTAL									2.E-02					2.6.E+01
	EXPOSURE MEDIUM TOTAL										2.E-02					2.6.E+01
WHOLE BODY TOTAL											2.E-02					2.6.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		2.E-02	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				2.6.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.7.50.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00193	mg/kg	NC		NC			1.1E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	0.000962	mg/kg	9.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-07	5.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	0.00119	mg/kg	1.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-08	6.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.00065	mg/kg	6.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	3.6E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	0.02012	mg/kg	NC		NC			1.1E-05	mg/kg/day	3.0E-02	mg/kg/day	4.E-04
				4,4'-DDD	0.01469	mg/kg	1.4E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	3.E-07	8.1E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDE	0.04451	mg/kg	4.2E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	2.4E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				4,4'-DDT	0.00337	mg/kg	3.2E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-07	1.9E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				alpha-Chlordane	0.02007	mg/kg	1.9E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-07	1.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	0.95861	mg/kg	9.0E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	5.3E-04	mg/kg/day	2.0E-05	mg/kg/day	3.E+01
				beta-BHC	0.0018	mg/kg	1.7E-07	mg/kg/day	1.8E+00	(mg/kg/day)-1	3.E-07	9.9E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				Dieldrin	0.00789	mg/kg	7.4E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	4.3E-06	mg/kg/day	5.0E-05	mg/kg/day	9.E-02
				gamma-Chlordane	0.00859	mg/kg	8.1E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	4.7E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				Heptachlor Epoxide	0.00227	mg/kg	2.1E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-06	1.2E-06	mg/kg/day	1.3E-05	mg/kg/day	1.E-01
				Technical Chlordane	0.44722	mg/kg	4.2E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	2.5E-04	mg/kg/day	5.0E-04	mg/kg/day	5.E-01
				Cadmium	0.026	mg/kg	NC		NC			1.4E-05	mg/kg/day	1.0E-03	mg/kg/day	1.E-02
				Lead	0.38	mg/kg	3.6E-05	mg/kg/day	--			2.1E-04	mg/kg/day			
				Manganese	4.98	mg/kg	NC		NC			2.7E-03	mg/kg/day	1.4E-01	mg/kg/day	2.E-02
				Mercury	0.0349	mg/kg	NC		NC			1.9E-05	mg/kg/day	3.0E-04	mg/kg/day	6.E-02
				Mercury (methyl)	0.0367	mg/kg	NC		NC			2.0E-05	mg/kg/day	1.0E-04	mg/kg/day	2.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000181	mg/kg	1.7E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-03	1.0E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000604	mg/kg	5.7E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	9.E-04	3.3E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-03					2.7.E+01
		EXPOSURE POINT TOTAL									4.E-03					2.7.E+01
	EXPOSURE MEDIUM TOTAL										4.E-03					2.7.E+01
WHOLE BODY TOTAL											4.E-03					2.7.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		4.E-03	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				2.7.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalaitable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.7.51.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00193	mg/kg	NC		NC			1.7E-06	mg/kg/day	6.0E-02	mg/kg/day	3.E-05
				Benzo(a)pyrene	0.000962	mg/kg	7.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-07	8.6E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(b)fluoranthene	0.00119	mg/kg	9.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-08	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Dibenzo(a,h)anthracene	0.00065	mg/kg	5.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	5.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.02012	mg/kg	NC		NC			1.9E-05	mg/kg/day	3.0E-02	mg/kg/day	6.E-04
				4,4'-DDD	0.01469	mg/kg	1.1E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	3.E-07	1.3E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				4,4'-DDE	0.04451	mg/kg	3.4E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	4.0E-05	mg/kg/day	5.0E-04	mg/kg/day	8.E-02
				4,4'-DDT	0.00337	mg/kg	2.6E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	9.E-08	3.0E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				alpha-Chlordane	0.02007	mg/kg	1.5E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-07	1.8E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				Aroclor-1254	0.95861	mg/kg	7.4E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-04	8.6E-04	mg/kg/day	2.0E-05	mg/kg/day	4.E+01
				beta-BHC	0.0018	mg/kg	1.4E-07	mg/kg/day	1.8E+00	(mg/kg/day)-1	2.E-07	1.6E-06	mg/kg/day	3.0E-04	mg/kg/day	5.E-03
				Dieldrin	0.00789	mg/kg	6.1E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	7.1E-06	mg/kg/day	5.0E-05	mg/kg/day	1.E-01
				gamma-Chlordane	0.00859	mg/kg	6.6E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	7.7E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Heptachlor Epoxide	0.00227	mg/kg	1.7E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-06	2.0E-06	mg/kg/day	1.3E-05	mg/kg/day	2.E-01
				Technical Chlordane	0.44722	mg/kg	3.4E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	4.0E-04	mg/kg/day	5.0E-04	mg/kg/day	8.E-01
				Cadmium	0.026	mg/kg	NC		NC			2.3E-05	mg/kg/day	1.0E-03	mg/kg/day	2.E-02
				Lead	0.38	mg/kg	2.9E-05	mg/kg/day	--			3.4E-04	mg/kg/day			
				Manganese	4.98	mg/kg	NC		NC			4.5E-03	mg/kg/day	1.4E-01	mg/kg/day	3.E-02
				Mercury	0.0349	mg/kg	NC		NC			3.1E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Mercury (methyl)	0.0367	mg/kg	NC		NC			3.3E-05	mg/kg/day	1.0E-04	mg/kg/day	3.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000181	mg/kg	1.4E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-03	1.6E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000604	mg/kg	4.6E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-04	5.4E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-03					4.5.E+01
		EXPOSURE POINT TOTAL									3.E-03					4.5.E+01
	EXPOSURE MEDIUM TOTAL										3.E-03					4.5.E+01
WHOLE BODY TOTAL											3.E-03					4.5.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		3.E-03	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				4.5.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.7.51.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00193	mg/kg	NC		NC			1.0E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	0.000962	mg/kg	8.8E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-07	5.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	0.00119	mg/kg	1.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-08	6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.00065	mg/kg	5.9E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	3.4E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	0.02012	mg/kg	NC		NC			1.1E-05	mg/kg/day	3.0E-02	mg/kg/day	4.E-04
				4,4'-DDD	0.01469	mg/kg	1.3E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	3.E-07	7.8E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDE	0.04451	mg/kg	4.0E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	2.4E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				4,4'-DDT	0.00337	mg/kg	3.1E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-07	1.8E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				alpha-Chlordane	0.02007	mg/kg	1.8E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-07	1.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	0.95861	mg/kg	8.7E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	5.1E-04	mg/kg/day	2.0E-05	mg/kg/day	3.E+01
				beta-BHC	0.0018	mg/kg	1.6E-07	mg/kg/day	1.8E+00	(mg/kg/day)-1	3.E-07	9.6E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				Dieldrin	0.00789	mg/kg	7.2E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	4.2E-06	mg/kg/day	5.0E-05	mg/kg/day	8.E-02
				gamma-Chlordane	0.00859	mg/kg	7.8E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	4.6E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				Heptachlor Epoxide	0.00227	mg/kg	2.1E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-06	1.2E-06	mg/kg/day	1.3E-05	mg/kg/day	9.E-02
				Technical Chlordane	0.44722	mg/kg	4.1E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	2.4E-04	mg/kg/day	5.0E-04	mg/kg/day	5.E-01
				Cadmium	0.026	mg/kg	NC		NC			1.4E-05	mg/kg/day	1.0E-03	mg/kg/day	1.E-02
				Lead	0.38	mg/kg	3.5E-05	mg/kg/day	--			2.0E-04	mg/kg/day			
				Manganese	4.98	mg/kg	NC		NC			2.6E-03	mg/kg/day	1.4E-01	mg/kg/day	2.E-02
				Mercury	0.0349	mg/kg	NC		NC			1.9E-05	mg/kg/day	3.0E-04	mg/kg/day	6.E-02
				Mercury (methyl)	0.0367	mg/kg	NC		NC			1.9E-05	mg/kg/day	1.0E-04	mg/kg/day	2.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000181	mg/kg	1.6E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-03	9.6E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000604	mg/kg	5.5E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-04	3.2E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-03					2.6.E+01
		EXPOSURE POINT TOTAL									4.E-03					2.6.E+01
	EXPOSURE MEDIUM TOTAL										4.E-03					2.6.E+01
WHOLE BODY TOTAL											4.E-03					2.6.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		4.E-03	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				2.6.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.7.53.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00193	mg/kg	NC		NC			1.1E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	0.000962	mg/kg	9.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-07	5.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	0.00119	mg/kg	1.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-08	6.5E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.00065	mg/kg	6.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	3.6E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	0.02012	mg/kg	NC		NC			1.1E-05	mg/kg/day	3.0E-02	mg/kg/day	4.E-04
				4,4'-DDD	0.01469	mg/kg	1.4E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	3.E-07	8.1E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDE	0.04451	mg/kg	4.2E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	2.4E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				4,4'-DDT	0.00337	mg/kg	3.2E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-07	1.9E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				alpha-Chlordane	0.02007	mg/kg	1.9E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-07	1.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	0.95861	mg/kg	9.0E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	5.3E-04	mg/kg/day	2.0E-05	mg/kg/day	3.E+01
				beta-BHC	0.0018	mg/kg	1.7E-07	mg/kg/day	1.8E+00	(mg/kg/day)-1	3.E-07	9.9E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				Dieldrin	0.00789	mg/kg	7.4E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	4.3E-06	mg/kg/day	5.0E-05	mg/kg/day	9.E-02
				gamma-Chlordane	0.00859	mg/kg	8.1E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	4.7E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				Heptachlor Epoxide	0.00227	mg/kg	2.1E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-06	1.2E-06	mg/kg/day	1.1E-05	mg/kg/day	1.E-01
				Technical Chlordane	0.44722	mg/kg	4.2E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	2.5E-04	mg/kg/day	5.0E-04	mg/kg/day	5.E-01
				Cadmium	0.026	mg/kg	NC		NC			1.4E-05	mg/kg/day	1.0E-03	mg/kg/day	1.E-02
				Lead	0.38	mg/kg	3.6E-05	mg/kg/day	--			2.1E-04	mg/kg/day			
				Manganese	4.98	mg/kg	NC		NC			2.7E-03	mg/kg/day	1.4E-01	mg/kg/day	2.E-02
				Mercury	0.0349	mg/kg	NC		NC			1.9E-05	mg/kg/day	3.0E-04	mg/kg/day	6.E-02
				Mercury (methyl)	0.0357	mg/kg	NC		NC			2.0E-05	mg/kg/day	1.0E-04	mg/kg/day	2.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000181	mg/kg	1.7E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-03	1.0E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000604	mg/kg	5.7E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	9.E-04	3.3E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-03					2.7.E+01
		EXPOSURE POINT TOTAL									4.E-03					2.7.E+01
	EXPOSURE MEDIUM TOTAL										4.E-03					2.7.E+01
WHOLE BODY TOTAL											4.E-03					2.7.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		4.E-03	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				2.7.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - *Not carcinogenic by this exposure route.*
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.7.54.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00193	mg/kg	NC		NC			1.7E-06	mg/kg/day	6.0E-02	mg/kg/day	3.E-05
				Benzo(a)pyrene	0.000962	mg/kg	7.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-07	8.6E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(b)fluoranthene	0.00119	mg/kg	9.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-08	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Dibenzo(a,h)anthracene	0.00065	mg/kg	5.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	5.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.02012	mg/kg	NC		NC			1.8E-05	mg/kg/day	3.0E-02	mg/kg/day	6.E-04
				4,4'-DDD	0.01469	mg/kg	1.1E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	3.E-07	1.3E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				4,4'-DDE	0.04451	mg/kg	3.4E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	4.0E-05	mg/kg/day	5.0E-04	mg/kg/day	8.E-02
				4,4'-DDT	0.00337	mg/kg	2.6E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	9.E-08	3.0E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				alpha-Chlordane	0.02007	mg/kg	1.5E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-07	1.8E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				Aroclor-1254	0.95861	mg/kg	7.4E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-04	8.6E-04	mg/kg/day	2.0E-05	mg/kg/day	4.E+01
				beta-BHC	0.0018	mg/kg	1.4E-07	mg/kg/day	1.8E+00	(mg/kg/day)-1	2.E-07	1.6E-06	mg/kg/day	3.0E-04	mg/kg/day	5.E-03
				Dieldrin	0.00789	mg/kg	6.1E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	7.1E-06	mg/kg/day	5.0E-05	mg/kg/day	1.E-01
				gamma-Chlordane	0.00859	mg/kg	6.6E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	7.7E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Heptachlor Epoxide	0.00227	mg/kg	1.7E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-06	2.0E-06	mg/kg/day	1.3E-03	mg/kg/day	2.E-03
				Technical Chlordane	0.44722	mg/kg	3.4E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	4.0E-04	mg/kg/day	5.0E-04	mg/kg/day	8.E-01
				Cadmium	0.026	mg/kg	NC		NC			2.3E-05	mg/kg/day	1.0E-03	mg/kg/day	2.E-02
				Lead	0.38	mg/kg	2.9E-05	mg/kg/day	--			3.4E-04	mg/kg/day			
				Manganese	4.98	mg/kg	NC		NC			4.5E-03	mg/kg/day	1.4E-01	mg/kg/day	3.E-02
				Mercury	0.0349	mg/kg	NC		NC			3.1E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Mercury (methyl)	0.0367	mg/kg	NC		NC			3.3E-05	mg/kg/day	1.0E-04	mg/kg/day	3.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000181	mg/kg	1.4E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-03	1.6E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000604	mg/kg	4.6E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-04	5.4E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-03					4.5.E+01
		EXPOSURE POINT TOTAL									3.E-03					4.5.E+01
	EXPOSURE MEDIUM TOTAL										3.E-03					4.5.E+01
WHOLE BODY TOTAL											3.E-03					4.5.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		3.E-03	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				4.5.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.7.55.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	INGESTION	Acenaphthylene	0.0004	mg/kg	NC		NC			2.1E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				Benzo(a)pyrene	0.000704	mg/kg	2.8E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	3.7E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(b)fluoranthene	0.0008	mg/kg	3.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	4.2E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	0.000703	mg/kg	NC		NC			3.7E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.00038	mg/kg	1.5E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	2.0E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Phenanthrene	0.0014	mg/kg	NC		NC			7.4E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				4,4'-DDE	0.0104	mg/kg	4.1E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-06	5.5E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.002	mg/kg	7.9E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	1.1E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Aroclor-1254	0.2166	mg/kg	8.5E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	1.1E-04	mg/kg/day	2.0E-05	mg/kg/day	6.E+00
				Aroclor-1268	0.0127	mg/kg	5.0E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	6.7E-06	mg/kg/day	2.0E-05	mg/kg/day	3.E-01
				Dieldrin	0.00061	mg/kg	2.4E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	3.2E-07	mg/kg/day	5.0E-05	mg/kg/day	6.E-03
				gamma-Chlordane	0.00086	mg/kg	3.4E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	4.6E-07	mg/kg/day	5.0E-04	mg/kg/day	9.E-04
				Technical Chlordane	0.03671	mg/kg	1.4E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-06	1.9E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				Lead	0.009	mg/kg	3.5E-06	mg/kg/day	--			4.8E-06	mg/kg/day			
				Mercury	0.269	mg/kg	NC		NC			1.4E-04	mg/kg/day	3.0E-04	mg/kg/day	5.E-01
				Mercury (methyl)	0.236	mg/kg	NC		NC			1.3E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.0000315	mg/kg	1.2E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-03	1.7E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners	0.0000109	mg/kg	4.3E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-04	5.8E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-03					8.E+00
		EXPOSURE POINT TOTAL									3.E-03					8.E+00
	EXPOSURE MEDIUM TOTAL										3.E-03					8.E+00
FILLET TOTAL											3.E-03					8.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	3.E-03		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA			7.9.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.56.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	INGESTION	Acenaphthylene	0.0004	mg/kg	NC		NC			2.2E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				Benzo(a)pyrene	0.000704	mg/kg	6.6E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-07	3.9E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(b)fluoranthene	0.0008	mg/kg	7.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	4.4E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	0.000703	mg/kg	NC		NC			3.9E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.00038	mg/kg	3.6E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Phenanthrene	0.0014	mg/kg	NC		NC			7.7E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				4,4'-DDE	0.0104	mg/kg	9.8E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-07	5.7E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.002	mg/kg	1.9E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-08	1.1E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Aroclor-1254	0.2166	mg/kg	2.0E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-05	1.2E-04	mg/kg/day	2.0E-05	mg/kg/day	6.E+00
				Aroclor-1268	0.0127	mg/kg	1.2E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-06	7.0E-06	mg/kg/day	2.0E-05	mg/kg/day	3.E-01
				Dieldrin	0.00061	mg/kg	5.7E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	9.E-07	3.4E-07	mg/kg/day	5.0E-05	mg/kg/day	7.E-03
				gamma-Chlordane	0.00086	mg/kg	8.1E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	4.7E-07	mg/kg/day	5.0E-04	mg/kg/day	9.E-04
				Technical Chlordane	0.03671	mg/kg	3.5E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	2.0E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				Lead	0.009	mg/kg	8.5E-07	mg/kg/day	--			4.9E-06	mg/kg/day			
				Mercury	0.269	mg/kg	NC		NC			1.5E-04	mg/kg/day	3.0E-04	mg/kg/day	5.E-01
				Mercury (methyl)	0.236	mg/kg	NC		NC			1.3E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.0000315	mg/kg	3.0E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-04	1.7E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000109	mg/kg	1.0E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	6.0E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-04					8.E+00
		EXPOSURE POINT TOTAL									6.E-04					8.E+00
	EXPOSURE MEDIUM TOTAL										6.E-04					8.E+00
FILLET TOTAL											6.E-04					8.E+00
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		6.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				8.2.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.57.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	INGESTION	Acenaphthylene	0.0004	mg/kg	NC		NC			3.6E-07	mg/kg/day	6.0E-02	mg/kg/day	6.E-06
				Benzo(a)pyrene	0.000704	mg/kg	5.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	0.0008	mg/kg	6.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	7.2E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	0.000703	mg/kg	NC		NC			6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.00038	mg/kg	2.9E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	3.4E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	0.0014	mg/kg	NC		NC			1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				4,4'-DDE	0.0104	mg/kg	8.0E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-07	9.3E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.002	mg/kg	1.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-08	1.8E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				Aroclor-1254	0.2166	mg/kg	1.7E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-05	1.9E-04	mg/kg/day	2.0E-05	mg/kg/day	1.E+01
				Aroclor-1268	0.0127	mg/kg	9.7E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-06	1.1E-05	mg/kg/day	2.0E-05	mg/kg/day	6.E-01
				Dieldrin	0.00061	mg/kg	4.7E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	7.E-07	5.5E-07	mg/kg/day	5.0E-05	mg/kg/day	1.E-02
				gamma-Chlordane	0.00086	mg/kg	6.6E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	7.7E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Technical Chlordane	0.03671	mg/kg	2.8E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	3.3E-05	mg/kg/day	5.0E-04	mg/kg/day	7.E-02
				Lead	0.009	mg/kg	6.9E-07	mg/kg/day	--			8.1E-06	mg/kg/day			
				Mercury	0.269	mg/kg	NC		NC			2.4E-04	mg/kg/day	3.0E-04	mg/kg/day	8.E-01
				Mercury (methyl)	0.236	mg/kg	NC		NC			2.1E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.0000315	mg/kg	2.4E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-04	2.8E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000109	mg/kg	8.4E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-04	9.8E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-04					1.E+01
		EXPOSURE POINT TOTAL									5.E-04					1.E+01
	EXPOSURE MEDIUM TOTAL										5.E-04					1.E+01
FILLET TOTAL											5.E-04					1.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		5.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.3.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.58.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	INGESTION	Acenaphthylene	0.0004	mg/kg	NC		NC			2.1E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				Benzo(a)pyrene	0.000704	mg/kg	6.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-07	3.7E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(b)fluoranthene	0.0008	mg/kg	7.3E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	4.2E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	0.000703	mg/kg	NC		NC			3.7E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.00038	mg/kg	3.5E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	2.0E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Phenanthrene	0.0014	mg/kg	NC		NC			7.4E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				4,4'-DDE	0.0104	mg/kg	9.5E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-07	5.5E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.002	mg/kg	1.8E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-08	1.1E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Aroclor-1254	0.2166	mg/kg	2.0E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-05	1.1E-04	mg/kg/day	2.0E-05	mg/kg/day	6.E+00
				Aroclor-1268	0.0127	mg/kg	1.2E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-06	6.7E-06	mg/kg/day	2.0E-05	mg/kg/day	3.E-01
				Dieldrin	0.00061	mg/kg	5.5E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	9.E-07	3.2E-07	mg/kg/day	5.0E-05	mg/kg/day	6.E-03
				gamma-Chlordane	0.00086	mg/kg	7.8E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	4.6E-07	mg/kg/day	5.0E-04	mg/kg/day	9.E-04
				Technical Chlordane	0.03671	mg/kg	3.3E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	1.9E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				Lead	0.009	mg/kg	8.2E-07	mg/kg/day	--			4.8E-06	mg/kg/day			
				Mercury	0.269	mg/kg	NC		NC			1.4E-04	mg/kg/day	3.0E-04	mg/kg/day	5.E-01
				Mercury (methyl)	0.236	mg/kg	NC		NC			1.3E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.0000315	mg/kg	2.9E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-04	1.7E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000109	mg/kg	9.9E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-04	5.8E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-04					8.E+00
		EXPOSURE POINT TOTAL									6.E-04					8.E+00
	EXPOSURE MEDIUM TOTAL										6.E-04					8.E+00
FILLET TOTAL											6.E-04					8.E+00
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	6.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				7.9.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.59.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	INGESTION	Acenaphthylene	0.0004	mg/kg	NC		NC			2.2E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				Benzo(a)pyrene	0.000704	mg/kg	6.6E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-07	3.9E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(b)fluoranthene	0.0008	mg/kg	7.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	4.4E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	0.000703	mg/kg	NC		NC			3.9E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.00038	mg/kg	3.6E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Phenanthrene	0.0014	mg/kg	NC		NC			7.7E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				4,4'-DDE	0.0104	mg/kg	9.8E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-07	5.7E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.002	mg/kg	1.9E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-08	1.1E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Aroclor-1254	0.2166	mg/kg	2.0E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-05	1.2E-04	mg/kg/day	2.0E-05	mg/kg/day	6.E+00
				Aroclor-1268	0.0127	mg/kg	1.2E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-06	7.0E-06	mg/kg/day	2.0E-05	mg/kg/day	3.E-01
				Dieldrin	0.00061	mg/kg	5.7E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	9.E-07	3.4E-07	mg/kg/day	5.0E-05	mg/kg/day	7.E-03
				gamma-Chlordane	0.00086	mg/kg	8.1E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	4.7E-07	mg/kg/day	5.0E-04	mg/kg/day	9.E-04
				Technical Chlordane	0.03671	mg/kg	3.5E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	2.0E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				Lead	0.009	mg/kg	8.5E-07	mg/kg/day	--			4.9E-06	mg/kg/day			
				Mercury	0.269	mg/kg	NC		NC			1.5E-04	mg/kg/day	3.0E-04	mg/kg/day	5.E-01
				Mercury (methyl)	0.236	mg/kg	NC		NC			1.3E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.0000315	mg/kg	3.0E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-04	1.7E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000109	mg/kg	1.0E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	6.0E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-04					8.E+00
		EXPOSURE POINT TOTAL									6.E-04					8.E+00
	EXPOSURE MEDIUM TOTAL										6.E-04					8.E+00
FILLET TOTAL											6.E-04					8.E+00
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		6.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				8.2.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.60.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	INGESTION	Acenaphthylene	0.0004	mg/kg	NC		NC			3.6E-07	mg/kg/day	6.0E-02	mg/kg/day	6.E-06
				Benzo(a)pyrene	0.000704	mg/kg	5.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	0.0008	mg/kg	6.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	7.2E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	0.000703	mg/kg	NC		NC			6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.00038	mg/kg	2.9E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	3.4E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	0.0014	mg/kg	NC		NC			1.3E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				4,4'-DDE	0.0104	mg/kg	8.0E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-07	9.3E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.002	mg/kg	1.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-08	1.8E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				Aroclor-1254	0.2166	mg/kg	1.7E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-05	1.9E-04	mg/kg/day	2.0E-05	mg/kg/day	1.E+01
				Aroclor-1268	0.0127	mg/kg	9.7E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-06	1.1E-05	mg/kg/day	2.0E-05	mg/kg/day	6.E-01
				Dieldrin	0.00061	mg/kg	4.7E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	7.E-07	5.5E-07	mg/kg/day	5.0E-05	mg/kg/day	1.E-02
				gamma-Chlordane	0.00086	mg/kg	6.6E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	7.7E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Technical Chlordane	0.03671	mg/kg	2.8E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	3.3E-05	mg/kg/day	5.0E-04	mg/kg/day	7.E-02
				Lead	0.009	mg/kg	6.9E-07	mg/kg/day	--			8.1E-06	mg/kg/day			
				Mercury	0.269	mg/kg	NC		NC			2.4E-04	mg/kg/day	3.0E-04	mg/kg/day	8.E-01
				Mercury (methyl)	0.236	mg/kg	NC		NC			2.1E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.0000315	mg/kg	2.4E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-04	2.8E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000109	mg/kg	8.4E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-04	9.8E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-04					1.E+01
		EXPOSURE POINT TOTAL									5.E-04					1.E+01
	EXPOSURE MEDIUM TOTAL										5.E-04					1.E+01
FILLET TOTAL											5.E-04					1.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		5.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.3.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availalable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.61.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	*WHOLE BODY*	*LYMAN MILL POND*	*INGESTION*	Acenaphthylene	0.00355	mg/kg	NC		NC			1.9E-06	mg/kg/day	6.0E-02	mg/kg/day	3.E-05
				Benzo(a)anthracene	0.00946	mg/kg	3.7E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-06	5.0E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(a)pyrene	0.01469	mg/kg	5.8E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-05	7.8E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				Benzo(b)fluoranthene	0.0067	mg/kg	2.6E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-06	3.6E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(g,h,i)perylene	0.01143	mg/kg	NC		NC			6.1E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Dibenzo(a,h)anthracene	0.0027	mg/kg	1.1E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-06	1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Indeno(1,2,3-cd)pyrene	0.01347	mg/kg	5.3E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-06	7.1E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Phenanthrene	0.0212	mg/kg	NC		NC			1.1E-05	mg/kg/day	3.0E-02	mg/kg/day	4.E-04
				4,4'-DDD	0.00351	mg/kg	2.5E-05	mg/kg/day	2.4E-01	(mg/kg/day)-1	6.E-06	3.4E-05	mg/kg/day	5.0E-04	mg/kg/day	7.E-02
				4,4'-DDE	0.2134	mg/kg	8.4E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-05	1.1E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				4,4'-DDT	0.0052	mg/kg	2.0E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	7.E-07	2.8E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				alpha-Chlordane	0.0469	mg/kg	1.8E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-06	2.5E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				Aroclor-1254	5.21365	mg/kg	2.1E-03	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-03	2.8E-03	mg/kg/day	2.0E-05	mg/kg/day	1.E+02
				Aroclor-1268	0.0437	mg/kg	1.7E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-05	2.3E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Dieldrin	0.00862	mg/kg	3.4E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.E-05	4.6E-06	mg/kg/day	5.0E-05	mg/kg/day	9.E-02
				gamma-Chlordane	0.02921	mg/kg	1.2E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-06	1.6E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Heptachlor Epoxide	0.0017	mg/kg	6.7E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	6.E-06	9.0E-07	mg/kg/day	1.3E-05	mg/kg/day	7.E-02
				Technical Chlordane	2.5751	mg/kg	1.0E-03	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-04	1.4E-03	mg/kg/day	5.0E-04	mg/kg/day	3.E+00
				Arsenic	0.0276	mg/kg	1.1E-05	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-05	1.5E-05	mg/kg/day	3.0E-04	mg/kg/day	5.E-02
				Chromium	0.378	mg/kg	NC		NC			2.0E-04	mg/kg/day	3.0E-03	mg/kg/day	7.E-02
				Lead	0.594	mg/kg	2.3E-04	mg/kg/day	--			3.2E-04	mg/kg/day			
				Mercury	0.118	mg/kg	NC		NC			6.3E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.109	mg/kg	NC		NC			5.8E-05	mg/kg/day	1.0E-04	mg/kg/day	6.E-01
				Toxicity Equivalency (Dioxins/Furans	0.000898	mg/kg	3.5E-07	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-02	4.8E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners	0.0000503	mg/kg	2.0E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-03	2.7E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-02					1.4.E+02
		EXPOSURE POINT TOTAL									6.E-02					1.4.E+02
	EXPOSURE MEDIUM TOTAL										6.E-02					1.4.E+02
WHOLE BODY TOTAL											6.E-02					1.4.E+02
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		6.E-02	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.4.E+02

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; *exposure route not applicable for this chemical/exposure medium.*
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.7.62.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00355	mg/kg	NC		NC			2.0E-06	mg/kg/day	6.0E-02	mg/kg/day	3.E-05
				Benzo(a)anthracene	0.00946	mg/kg	8.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-07	5.2E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(a)pyrene	0.01469	mg/kg	1.4E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-05	8.1E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				Benzo(b)fluoranthene	0.0067	mg/kg	6.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-07	3.7E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(g,h,i)perylene	0.01143	mg/kg	NC		NC			6.3E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Dibenzo(a,h)anthracene	0.0027	mg/kg	2.5E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Indeno(1,2,3-cd)pyrene	0.01347	mg/kg	1.3E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-07	7.4E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Phenanthrene	0.0212	mg/kg	NC		NC			1.2E-05	mg/kg/day	3.0E-02	mg/kg/day	4.E-04
				4,4'-DDD	0.06351	mg/kg	6.0E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-06	3.5E-05	mg/kg/day	5.0E-04	mg/kg/day	7.E-02
				4,4'-DDE	0.2134	mg/kg	2.0E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	7.E-06	1.2E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				4,4'-DDT	0.0052	mg/kg	4.9E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	2.9E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				alpha-Chlordane	0.0469	mg/kg	4.4E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	2.6E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				Aroclor-1254	5.21365	mg/kg	4.9E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-03	2.9E-03	mg/kg/day	2.0E-05	mg/kg/day	1.E+02
				Aroclor-1268	0.0437	mg/kg	4.1E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-06	2.4E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Dieldrin	0.00862	mg/kg	8.1E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	4.7E-06	mg/kg/day	5.0E-05	mg/kg/day	9.E-02
				gamma-Chlordane	0.02921	mg/kg	2.8E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	1.6E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Heptachlor Epoxide	0.0017	mg/kg	1.6E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	1.E-06	9.3E-07	mg/kg/day	1.3E-05	mg/kg/day	7.E-02
				Technical Chlordane	2.5751	mg/kg	2.4E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-05	1.4E-03	mg/kg/day	5.0E-04	mg/kg/day	3.E+00
				Arsenic	0.0276	mg/kg	2.6E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-06	1.5E-05	mg/kg/day	3.0E-04	mg/kg/day	5.E-02
				Chromium	0.378	mg/kg	NC		NC			2.1E-04	mg/kg/day	3.0E-03	mg/kg/day	7.E-02
				Lead	0.594	mg/kg	5.6E-05	mg/kg/day	--			3.3E-04	mg/kg/day			
				Mercury	0.118	mg/kg	NC		NC			6.5E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.109	mg/kg	NC		NC			6.0E-05	mg/kg/day	1.0E-04	mg/kg/day	6.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000898	mg/kg	8.5E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-02	4.9E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000503	mg/kg	4.7E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-04	2.8E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-02					1.5.E+02
		EXPOSURE POINT TOTAL									1.E-02					1.5.E+02
	EXPOSURE MEDIUM TOTAL										1.E-02					1.5.E+02
WHOLE BODY TOTAL											1.E-02					1.5.E+02
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											1.E-02					1.5.E+02

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.7.63.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00355	mg/kg	NC		NC			3.2E-06	mg/kg/day	6.0E-02	mg/kg/day	5.E-05
				Benzo(a)anthracene	0.00946	mg/kg	7.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-07	8.5E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				Benzo(a)pyrene	0.01469	mg/kg	1.1E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-06	1.3E-05	mg/kg/day	3.0E-02	mg/kg/day	4.E-04
				Benzo(b)fluoranthene	0.0067	mg/kg	5.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	6.0E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(g,h,i)perylene	0.01143	mg/kg	NC		NC			1.0E-05	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				Dibenzo(a,h)anthracene	0.0027	mg/kg	2.1E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	2.4E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				Indeno(1,2,3-cd)pyrene	0.01347	mg/kg	1.0E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-07	1.2E-05	mg/kg/day	3.0E-02	mg/kg/day	4.E-04
				Phenanthrene	0.0212	mg/kg	NC		NC			1.9E-05	mg/kg/day	3.0E-02	mg/kg/day	6.E-04
				4,4'-DDD	0.06351	mg/kg	4.9E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-06	5.7E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				4,4'-DDE	0.2134	mg/kg	1.6E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	6.E-06	1.9E-04	mg/kg/day	5.0E-04	mg/kg/day	4.E-01
				4,4'-DDT	0.0052	mg/kg	4.0E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-07	4.7E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				alpha-Chlordane	0.0469	mg/kg	3.6E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	4.2E-05	mg/kg/day	5.0E-04	mg/kg/day	8.E-02
				Aroclor-1254	5.21365	mg/kg	4.0E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-04	4.7E-03	mg/kg/day	2.0E-05	mg/kg/day	2.E+02
				Aroclor-1268	0.0437	mg/kg	3.4E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-06	3.9E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Dieldrin	0.00862	mg/kg	6.6E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	7.7E-06	mg/kg/day	5.0E-05	mg/kg/day	2.E-01
				gamma-Chlordane	0.02921	mg/kg	2.2E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-07	2.6E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				Heptachlor Epoxide	0.0017	mg/kg	1.3E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	1.E-06	1.5E-06	mg/kg/day	1.3E-05	mg/kg/day	1.E-01
				Technical Chlordane	2.5751	mg/kg	2.0E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-05	2.3E-03	mg/kg/day	5.0E-04	mg/kg/day	5.E+00
				Arsenic	0.0276	mg/kg	2.1E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-06	2.5E-05	mg/kg/day	3.0E-04	mg/kg/day	8.E-02
				Chromium	0.378	mg/kg	NC		NC			3.4E-04	mg/kg/day	3.0E-03	mg/kg/day	1.E-01
				Lead	0.594	mg/kg	4.6E-05	mg/kg/day	--			5.3E-04	mg/kg/day			
				Mercury	0.118	mg/kg	NC		NC			1.1E-04	mg/kg/day	3.0E-04	mg/kg/day	4.E-01
				Mercury (methyl)	0.109	mg/kg	NC		NC			9.8E-05	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000898	mg/kg	6.9E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-02	8.0E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000503	mg/kg	3.9E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-04	4.5E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-02					2.4.E+02
		EXPOSURE POINT TOTAL									1.E-02					2.4.E+02
	EXPOSURE MEDIUM TOTAL										1.E-02					2.4.E+02
WHOLE BODY TOTAL											1.E-02					2.4.E+02
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		1.E-02	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				2.4.E+02

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.7.64.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00355	mg/kg	NC		NC			1.9E-06	mg/kg/day	6.0E-02	mg/kg/day	3.E-05
				Benzo(a)anthracene	0.00946	mg/kg	8.6E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-07	5.0E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(a)pyrene	0.01469	mg/kg	1.3E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-05	7.8E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				Benzo(b)fluoranthene	0.0067	mg/kg	6.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	3.6E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(g,h,i)perylene	0.01143	mg/kg	NC		NC			6.1E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Dibenzo(a,h)anthracene	0.0027	mg/kg	2.5E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Indeno(1,2,3-cd)pyrene	0.01347	mg/kg	1.2E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-07	7.1E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Phenanthrene	0.0212	mg/kg	NC		NC			1.1E-05	mg/kg/day	3.0E-02	mg/kg/day	4.E-04
				4,4'-DDD	0.06351	mg/kg	5.8E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-06	3.4E-05	mg/kg/day	5.0E-04	mg/kg/day	7.E-02
				4,4'-DDE	0.2134	mg/kg	1.9E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	7.E-06	1.1E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				4,4'-DDT	0.0052	mg/kg	4.7E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	2.8E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				alpha-Chlordane	0.0469	mg/kg	4.3E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	2.5E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				Aroclor-1254	5.21365	mg/kg	4.7E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-04	2.8E-03	mg/kg/day	2.0E-05	mg/kg/day	1.E+02
				Aroclor-1268	0.0437	mg/kg	4.0E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-06	2.3E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Dieldrin	0.00862	mg/kg	7.8E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	4.6E-06	mg/kg/day	5.0E-05	mg/kg/day	9.E-02
				gamma-Chlordane	0.02921	mg/kg	2.7E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-07	1.6E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Heptachlor Epoxide	0.0017	mg/kg	1.5E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	1.E-06	9.0E-07	mg/kg/day	1.3E-05	mg/kg/day	7.E-02
				Technical Chlordane	2.5751	mg/kg	2.3E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-05	1.4E-03	mg/kg/day	5.0E-04	mg/kg/day	3.E+00
				Arsenic	0.0276	mg/kg	2.5E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-06	1.5E-05	mg/kg/day	3.0E-04	mg/kg/day	5.E-02
				Chromium	0.378	mg/kg	NC		NC			2.0E-04	mg/kg/day	3.0E-03	mg/kg/day	7.E-02
				Lead	0.594	mg/kg	5.4E-05	mg/kg/day	--			3.2E-04	mg/kg/day			
				Mercury	0.118	mg/kg	NC		NC			6.3E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.109	mg/kg	NC		NC			5.8E-05	mg/kg/day	1.0E-04	mg/kg/day	6.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000898	mg/kg	8.2E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-02	4.8E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners	0.0000503	mg/kg	4.6E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-04	2.7E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-02					1.4.E+02
		EXPOSURE POINT TOTAL									1.E-02					1.4.E+02
	EXPOSURE MEDIUM TOTAL										1.E-02					1.4.E+02
WHOLE BODY TOTAL											1.E-02					1.4.E+02
TOTAL RECEPTOR RISK ACROSS ALL MEDIA											1.E-02	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.4.E+02

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.7.65.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00355	mg/kg	NC		NC			2.0E-06	mg/kg/day	6.0E-02	mg/kg/day	3.E-05
				Benzo(a)anthracene	0.00946	mg/kg	8.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-07	5.2E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(a)pyrene	0.01469	mg/kg	1.4E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-05	8.1E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				Benzo(b)fluoranthene	0.0067	mg/kg	6.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-07	3.7E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(g,h,i)perylene	0.01143	mg/kg	NC		NC			6.3E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Dibenzo(a,h)anthracene	0.0027	mg/kg	2.5E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Indeno(1,2,3-cd)pyrene	0.01347	mg/kg	1.3E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-07	7.4E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Phenanthrene	0.0212	mg/kg	NC		NC			1.2E-05	mg/kg/day	3.0E-02	mg/kg/day	4.E-04
				4,4'-DDD	0.06351	mg/kg	6.0E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-06	3.5E-05	mg/kg/day	5.0E-04	mg/kg/day	7.E-02
				4,4'-DDE	0.2134	mg/kg	2.0E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	7.E-06	1.2E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				4,4'-DDT	0.0052	mg/kg	4.9E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	2.9E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				alpha-Chlordane	0.0469	mg/kg	4.4E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	2.6E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				Aroclor-1254	5.21365	mg/kg	4.9E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-03	2.9E-03	mg/kg/day	2.0E-05	mg/kg/day	1.E+02
				Aroclor-1268	0.0437	mg/kg	4.1E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-06	2.4E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Dieldrin	0.00862	mg/kg	8.1E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	4.7E-06	mg/kg/day	5.0E-05	mg/kg/day	9.E-02
				gamma-Chlordane	0.02921	mg/kg	2.8E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	1.6E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Heptachlor Epoxide	0.0017	mg/kg	1.6E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	1.E-06	9.3E-07	mg/kg/day	1.3E-05	mg/kg/day	7.E-02
				Technical Chlordane	2.5751	mg/kg	2.4E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-05	1.4E-03	mg/kg/day	5.0E-04	mg/kg/day	3.E+00
				Arsenic	0.0276	mg/kg	2.6E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-06	1.5E-05	mg/kg/day	3.0E-04	mg/kg/day	5.E-02
				Chromium	0.378	mg/kg	NC		NC			2.1E-04	mg/kg/day	3.0E-03	mg/kg/day	7.E-02
				Lead	0.594	mg/kg	5.6E-05	mg/kg/day	--			3.3E-04	mg/kg/day			
				Mercury	0.118	mg/kg	NC		NC			6.5E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.109	mg/kg	NC		NC			6.0E-05	mg/kg/day	1.0E-04	mg/kg/day	6.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000898	mg/kg	8.5E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-02	4.9E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000503	mg/kg	4.7E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-04	2.8E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-02					1.5.E+02
		EXPOSURE POINT TOTAL									1.E-02					1.5.E+02
	EXPOSURE MEDIUM TOTAL										1.E-02					1.5.E+02
WHOLE BODY TOTAL											1.E-02					1.5.E+02
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	1.E-02		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		1.5.E+02

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalaialble from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
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BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00355	mg/kg	NC		NC			3.2E-06	mg/kg/day	6.0E-02	mg/kg/day	5.E-05
				Benzo(a)anthracene	0.00946	mg/kg	7.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-07	8.5E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				Benzo(a)pyrene	0.01469	mg/kg	1.1E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-06	1.3E-05	mg/kg/day	3.0E-02	mg/kg/day	4.E-04
				Benzo(b)fluoranthene	0.0067	mg/kg	5.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	6.0E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				Benzo(g,h,i)perylene	0.0143	mg/kg	NC		NC			1.0E-05	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				Dibenzo(a,h)anthracene	*0.0027*	mg/kg	*2.1E-07*	*mg/kg/day*	*7.3E+00*	*(mg/kg/day)-1*	*2.E-06*	*2.4E-06*	*mg/kg/day*	*3.0E-02*	*mg/kg/day*	*8.E-05*
				Indeno(1,2,3-cd)pyrene	0.01347	mg/kg	1.0E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-07	1.2E-05	mg/kg/day	3.0E-02	mg/kg/day	4.E-04
				Phenanthrene	0.0212	mg/kg	NC		NC			1.9E-05	mg/kg/day	3.0E-02	mg/kg/day	6.E-04
				4,4'-DDD	0.06351	mg/kg	4.9E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-06	5.7E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				4,4'-DDE	0.2134	mg/kg	1.6E-05	mg/kg/day	3.4E-01	(mg/kg/day)-1	6.E-06	1.9E-04	mg/kg/day	5.0E-04	mg/kg/day	4.E-01
				4,4'-DDT	0.0052	mg/kg	4.0E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-07	4.7E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				alpha-Chlordane	0.0469	mg/kg	3.6E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	4.2E-05	mg/kg/day	5.0E-04	mg/kg/day	8.E-02
				Aroclor-1254	5.21365	mg/kg	4.0E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-04	4.7E-03	mg/kg/day	2.0E-05	mg/kg/day	2.E+02
				Aroclor-1268	0.0437	mg/kg	3.4E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-06	3.9E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Dieldrin	0.00862	mg/kg	6.6E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	7.7E-06	mg/kg/day	5.0E-05	mg/kg/day	2.E-01
				gamma-Chlordane	0.02921	mg/kg	2.2E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-07	2.6E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				Heptachlor Epoxide	0.0017	mg/kg	1.3E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	1.E-06	1.5E-06	mg/kg/day	1.3E-05	mg/kg/day	1.E-01
				Technical Chlordane	2.5751	mg/kg	2.0E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-05	2.3E-03	mg/kg/day	5.0E-04	mg/kg/day	5.E+00
				Arsenic	0.0276	mg/kg	2.1E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-06	2.5E-05	mg/kg/day	3.0E-04	mg/kg/day	8.E-02
				Chromium	0.378	mg/kg	NC		NC			3.4E-04	mg/kg/day	3.0E-03	mg/kg/day	1.E-01
				Lead	0.594	mg/kg	4.6E-05	mg/kg/day	--			*5.3E-04*	*mg/kg/day*			
				Mercury	0.118	mg/kg	NC		NC			1.1E-04	mg/kg/day	3.0E-04	mg/kg/day	4.E-01
				Mercury (methyl)	0.109	mg/kg	NC		NC			9.8E-05	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000898	mg/kg	6.9E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-02	8.0E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners	0.0000503	mg/kg	3.9E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-04	4.5E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-02					2.4.E+02
		EXPOSURE POINT TOTAL									1.E-02					2.4.E+02
	EXPOSURE MEDIUM TOTAL										1.E-02					2.4.E+02
WHOLE BODY TOTAL											1.E-02					2.4.E+02
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		1.E-02	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				2.4.E+02

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.7.67.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	MANTON POND	INGESTION	Acenaphthylene	0.00041	mg/kg	NC		NC			2.2E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				Dibenzo(a,h)anthracene	0.000226	mg/kg	8.9E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-07	1.2E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Phenanthrene	0.00498	mg/kg	NC		NC			2.6E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				4,4'-DDE	0.01235	mg/kg	4.9E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	6.6E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.00263	mg/kg	1.0E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-07	1.4E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Aroclor-1254	0.22052	mg/kg	8.7E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	1.2E-04	mg/kg/day	2.0E-05	mg/kg/day	6.E+00
				Aroclor-1268	0.06755	mg/kg	2.7E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-05	3.6E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Dieldrin	0.00057	mg/kg	2.2E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	3.0E-07	mg/kg/day	5.0E-05	mg/kg/day	6.E-03
				Endosulfan Sulfate	0.0019	mg/kg	NC		NC			1.0E-06	mg/kg/day	6.0E-03	mg/kg/day	2.E-04
				gamma-Chlordane	0.00096	mg/kg	3.8E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	5.1E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Technical Chlordane	0.06498	mg/kg	2.6E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-06	3.4E-05	mg/kg/day	5.0E-04	mg/kg/day	7.E-02
				Lead	0.0119	mg/kg	4.7E-06	mg/kg/day	--			6.3E-06	mg/kg/day			
				Mercury	0.259	mg/kg	NC		NC			1.4E-04	mg/kg/day	3.0E-04	mg/kg/day	5.E-01
				Mercury (methyl)	0.278	mg/kg	NC		NC			1.5E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000031	mg/kg	1.2E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-03	1.6E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-03					1.E+01
		EXPOSURE POINT TOTAL									2.E-03					1.E+01
	EXPOSURE MEDIUM TOTAL										2.E-03					1.E+01
FILLET TOTAL											2.E-03					1.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA 2.E-03					TOTAL RECEPTOR HAZARD ACROSS ALL MED 9.7.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.68.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	MANTON POND	INGESTION	Acenaphthylene	0.00041	mg/kg	NC		NC			2.3E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				Dibenzo(a,h)anthracene	0.000226	mg/kg	2.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.2E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Phenanthrene	0.00498	mg/kg	NC		NC			2.7E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				4,4'-DDE	0.01235	mg/kg	1.2E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-07	6.8E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.00263	mg/kg	2.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-08	1.4E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Aroclor-1254	0.22052	mg/kg	2.1E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-05	1.2E-04	mg/kg/day	2.0E-05	mg/kg/day	6.E+00
				Aroclor-1268	0.06755	mg/kg	6.4E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	3.7E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Dieldrin	0.00057	mg/kg	5.4E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	9.E-07	3.1E-07	mg/kg/day	5.0E-05	mg/kg/day	6.E-03
				Endosulfan Sulfate	0.0019	mg/kg	NC		NC			1.0E-06	mg/kg/day	6.0E-03	mg/kg/day	2.E-04
				gamma-Chlordane	0.00096	mg/kg	9.0E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	5.3E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Technical Chlordane	0.00498	mg/kg	4.1E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	2.8E-05	mg/kg/day	5.0E-04	mg/kg/day	7.E-02
				Lead	0.0119	mg/kg	1.1E-06	mg/kg/day	--			6.5E-06	mg/kg/day			
				Mercury	0.259	mg/kg	NC		NC			1.4E-04	mg/kg/day	3.0E-04	mg/kg/day	5.E-01
				Mercury (methyl)	0.278	mg/kg	NC		NC			1.5E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000031	mg/kg	2.9E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-04	1.7E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-04					*1.E+01*
		EXPOSURE POINT TOTAL									5.E-04					1.E+01
	EXPOSURE MEDIUM TOTAL										5.E-04					1.E+01
FILLET TOTAL											5.E-04					1.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**5.E-04**		**TOTAL RECEPTOR HAZARD ACROSS ALL MED**		**1.0.E+01**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by:	KJA
Checked by:	RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.69.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
LARGEMOUTH BASS	FILLET	MANTON POND	INGESTION	Acenaphthylene	0.00041	mg/kg	NC		NC			3.7E-07	mg/kg/day	6.0E-02	mg/kg/day	6.E-06
				Dibenzo(a,h)anthracene	0.000226	mg/kg	1.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	2.0E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Phenanthrene	0.00498	mg/kg	NC		NC			4.5E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDE	0.01235	mg/kg	9.5E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-07	1.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.00263	mg/kg	2.0E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-08	2.4E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				Aroclor-1254	0.22052	mg/kg	1.7E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-05	2.0E-04	mg/kg/day	2.0E-05	mg/kg/day	1.E+01
				Aroclor-1268	0.06755	mg/kg	5.2E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	6.0E-05	mg/kg/day	2.0E-05	mg/kg/day	3.E+00
				Dieldrin	0.00057	mg/kg	4.4E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	7.E-07	5.1E-07	mg/kg/day	5.0E-05	mg/kg/day	1.E-02
				Endosulfan Sulfate	0.0019	mg/kg	NC		NC			1.7E-06	mg/kg/day	6.0E-03	mg/kg/day	3.E-04
				gamma-Chlordane	0.00096	mg/kg	7.4E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	8.6E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Technical Chlordane	0.06498	mg/kg	5.0E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	5.8E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Lead	0.0119	mg/kg	9.1E-07	mg/kg/day	--			1.1E-05	mg/kg/day			
				Mercury	0.259	mg/kg	NC		NC			2.3E-04	mg/kg/day	3.0E-04	mg/kg/day	8.E-01
				Mercury (methyl)	0.278	mg/kg	NC		NC			2.5E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000031	mg/kg	2.4E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-04	2.8E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-04					2.E+01
		EXPOSURE POINT TOTAL									4.E-04					2.E+01
	EXPOSURE MEDIUM TOTAL										4.E-04					2.E+01
FILLET TOTAL											4.E-04					2.E+01
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	4.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MED				1.6.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.70.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	MANTON POND	INGESTION	Acenaphthylene	0.00041	mg/kg	NC		NC			2.2E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				Dibenzo(a,h)anthracene	0.000226	mg/kg	2.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.2E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Phenanthrene	0.00498	mg/kg	NC		NC			2.6E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				4,4'-DDE	0.01235	mg/kg	1.1E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-07	6.6E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.00263	mg/kg	2.4E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-08	1.4E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Aroclor-1254	0.22052	mg/kg	2.0E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-05	1.2E-04	mg/kg/day	2.0E-05	mg/kg/day	6.E+00
				Aroclor-1268	0.06755	mg/kg	6.1E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	3.6E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Dieldrin	0.00057	mg/kg	5.2E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	8.E-07	3.0E-07	mg/kg/day	5.0E-05	mg/kg/day	6.E-03
				Endosulfan Sulfate	0.0019	mg/kg	NC		NC			1.0E-06	mg/kg/day	6.0E-03	mg/kg/day	2.E-04
				gamma-Chlordane	0.00096	mg/kg	8.7E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	5.1E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Technical Chlordane	0.06498	mg/kg	5.9E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	3.4E-05	mg/kg/day	5.0E-04	mg/kg/day	7.E-02
				Lead	0.0119	mg/kg	1.1E-06	mg/kg/day	--			6.3E-06	mg/kg/day			
				Mercury	0.259	mg/kg	NC		NC			1.4E-04	mg/kg/day	3.0E-04	mg/kg/day	5.E-01
				Mercury (methyl)	0.278	mg/kg	NC		NC			1.5E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000031	mg/kg	2.8E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-04	1.6E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-04					1.E+01
		EXPOSURE POINT TOTAL									5.E-04					1.E+01
	EXPOSURE MEDIUM TOTAL										5.E-04					1.E+01
FILLET TOTAL											5.E-04					1.E+01
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	5.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MED				9.7.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.7I.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
LARGEMOUTH BASS	FILLET	MANTON POND	INGESTION	Acenaphthylene	0.00041	mg/kg	NC		NC			2.3E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				Dibenzo(a,h)anthracene	0.000226	mg/kg	2.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.2E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Phenanthrene	0.00498	mg/kg	NC		NC			2.7E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				4,4'-DDE	0.01235	mg/kg	1.2E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-07	6.8E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.00263	mg/kg	2.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-08	1.4E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Aroclor-1254	0.22052	mg/kg	2.1E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-05	1.2E-04	mg/kg/day	2.0E-05	mg/kg/day	6.E+00
				Aroclor-1268	0.06755	mg/kg	6.4E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	3.7E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Dieldrin	0.00057	mg/kg	5.4E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	9.E-07	3.1E-07	mg/kg/day	5.0E-05	mg/kg/day	6.E-03
				Endosulfan Sulfate	0.0019	mg/kg	NC		NC			1.0E-06	mg/kg/day	6.0E-03	mg/kg/day	2.E-04
				gamma-Chlordane	0.00096	mg/kg	9.0E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	5.3E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Technical Chlordane	0.06498	mg/kg	6.1E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	3.6E-05	mg/kg/day	5.0E-04	mg/kg/day	7.E-02
				Lead	0.0119	mg/kg	1.1E-06	mg/kg/day	--			6.5E-06	mg/kg/day			
				Mercury	0.259	mg/kg	NC		NC			1.4E-04	mg/kg/day	3.0E-04	mg/kg/day	5.E-01
				Mercury (methyl)	0.278	mg/kg	NC		NC			1.5E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000031	mg/kg	2.9E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-04	1.7E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-04					1.E+01
		EXPOSURE POINT TOTAL									5.E-04					1.E+01
	EXPOSURE MEDIUM TOTAL										5.E-04					1.E+01
FILLET TOTAL											5.E-04					1.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	5.E-04				TOTAL RECEPTOR HAZARD ACROSS ALL MED	1.0.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availalable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.7.2.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	MANTON POND	INGESTION	Acenaphthylene	0.00041	mg/kg	NC		NC			3.7E-07	mg/kg/day	6.0E-02	mg/kg/day	6.E-06
				Dibenzo(a,h)anthracene	0.000226	mg/kg	1.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	2.0E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Phenanthrene	0.00498	mg/kg	NC		NC			4.5E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDE	0.01235	mg/kg	9.5E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-07	1.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.00263	mg/kg	2.0E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-08	2.4E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				Aroclor-1254	0.22052	mg/kg	1.7E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-05	2.0E-04	mg/kg/day	2.0E-05	mg/kg/day	1.E+01
				Aroclor-1268	0.06755	mg/kg	5.2E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	6.0E-05	mg/kg/day	2.0E-05	mg/kg/day	3.E+00
				Dieldrin	0.00057	mg/kg	4.4E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	7.E-07	5.1E-07	mg/kg/day	5.0E-05	mg/kg/day	1.E-02
				Endosulfan Sulfate	0.0019	mg/kg	NC		NC			1.7E-06	mg/kg/day	6.0E-03	mg/kg/day	3.E-04
				gamma-Chlordane	0.00096	mg/kg	7.4E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	8.6E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Technical Chlordane	0.06498	mg/kg	5.0E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	5.8E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Lead	0.0119	mg/kg	9.1E-07	ug/kg/day	--			1.1E-05	mg/kg/day			
				Mercury	0.259	mg/kg	NC		NC			2.3E-04	mg/kg/day	3.0E-04	mg/kg/day	8.E-01
				Mercury (methyl)	0.278	mg/kg	NC		NC			2.5E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000031	mg/kg	2.4E-09	ug/kg/day	1.5E+05	(mg/kg/day)-1	4.E-04	2.8E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-04					2.E+01
		EXPOSURE POINT TOTAL									4.E-04					2.E+01
	EXPOSURE MEDIUM TOTAL										4.E-04					2.E+01
FILLET TOTAL											4.E-04					2.E+01
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	4.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MED				1.6.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.73.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	INGESTION	Acenaphthylene	0.00094	mg/kg	NC		NC			5.0E-07	mg/kg/day	6.0E-02	mg/kg/day	8.E-06
				Dibenzo(a,h)anthracene	0.00017	mg/kg	6.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-07	9.0E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Phenanthrene	0.00632	mg/kg	NC		NC			3.4E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDD	0.04068	mg/kg	1.6E-05	mg/kg/day	2.4E-01	(mg/kg/day)-1	4.E-06	2.2E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				4,4'-DDE	0.01474	mg/kg	5.8E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	7.8E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDT	0.01467	mg/kg	5.8E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	7.8E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.01914	mg/kg	7.5E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-06	1.0E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	0.4495	mg/kg	1.8E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-04	2.4E-04	mg/kg/day	2.0E-05	mg/kg/day	1.E+01
				Dieldrin	0.01086	mg/kg	4.3E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	7.E-05	5.8E-06	mg/kg/day	5.0E-05	mg/kg/day	1.E-01
				gamma-Chlordane	0.0068	mg/kg	2.7E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-07	3.6E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				Heptachlor Epoxide	0.00228	mg/kg	9.0E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	8.E-06	1.2E-06	mg/kg/day	1.3E-05	mg/kg/day	9.E-02
				Technical Chlordane	0.38798	mg/kg	1.5E-04	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-05	2.1E-04	mg/kg/day	5.0E-04	mg/kg/day	4.E-01
				Cadmium	0.261	mg/kg	NC		NC			1.4E-04	mg/kg/day	1.0E-03	mg/kg/day	1.E-01
				Lead	0.562	mg/kg	2.2E-04	mg/kg/day	--			3.0E-04	mg/kg/day			
				Manganese	23	mg/kg	NC		NC			1.2E-02	mg/kg/day	1.4E-01	mg/kg/day	9.E-02
				Mercury	0.113	mg/kg	NC		NC			6.0E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.122	mg/kg	NC		NC			6.5E-05	mg/kg/day	1.0E-04	mg/kg/day	6.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0000757	mg/kg	3.0E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-03	4.0E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-03					1.4.E+01
		EXPOSURE POINT TOTAL									5.E-03					1.4.E+01
	EXPOSURE MEDIUM TOTAL										5.E-03					1.4.E+01
WHOLE BODY TOTAL											5.E-03					1.4.E+01
TOTAL RECEPTOR RISK ACROSS ALL MEDIA											5.E-03	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.4.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: AWS

US EPA ARCHIVE DOCUMENT

TABLE G.7.74.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	INGESTION	Acenaphthylene	0.00094	mg/kg	NC		NC			5.2E-07	mg/kg/day	6.0E-02	mg/kg/day	9.E-06
				Dibenzo(a,h)anthracene	0.00017	mg/kg	1.6E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	9.3E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Phenanthrene	0.00632	mg/kg	NC		NC			3.5E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDD	0.04068	mg/kg	3.8E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	9.E-07	2.2E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				4,4'-DDE	0.01474	mg/kg	1.4E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-07	8.1E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDT	0.01467	mg/kg	1.4E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-07	8.1E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.01914	mg/kg	1.8E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-07	1.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	0.4495	mg/kg	4.2E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-05	2.5E-04	mg/kg/day	2.0E-05	mg/kg/day	1.E+01
				Dieldrin	0.01086	mg/kg	1.0E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-05	6.0E-06	mg/kg/day	5.0E-05	mg/kg/day	1.E-01
				gamma-Chlordane	0.0068	mg/kg	6.4E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	3.7E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				Heptachlor Epoxide	0.00228	mg/kg	2.1E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-06	1.3E-06	mg/kg/day	1.3E-05	mg/kg/day	1.E-01
				Technical Chlordane	0.38798	mg/kg	3.7E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	2.1E-04	mg/kg/day	5.0E-04	mg/kg/day	4.E-01
				Cadmium	0.261	mg/kg	NC		NC			1.4E-04	mg/kg/day	1.0E-03	mg/kg/day	1.E-01
				Lead	0.562	mg/kg	5.3E-05	mg/kg/day	--			3.1E-04	mg/kg/day			
				Manganese	23	mg/kg	NC		NC			1.3E-02	mg/kg/day	1.4E-01	mg/kg/day	9.E-02
				Mercury	0.113	mg/kg	NC		NC			6.2E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.122	mg/kg	NC		NC			6.7E-05	mg/kg/day	1.0E-04	mg/kg/day	7.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0000757	mg/kg	7.1E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-03	4.2E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-03					1.4.E+01
		EXPOSURE POINT TOTAL									1.E-03					1.4.E+01
	EXPOSURE MEDIUM TOTAL										1.E-03					1.4.E+01
WHOLE BODY TOTAL											1.E-03					1.4.E+01
TOTAL RECEPTOR RISK ACROSS ALL MEDIA											1.E-03	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.4.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: AWS

US EPA ARCHIVE DOCUMENT

TABLE G.7.7S.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	INGESTION	Acenaphthylene	0.00094	mg/kg	NC		NC			8.4E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.00017	mg/kg	1.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Phenanthrene	0.00632	mg/kg	NC		NC			5.7E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDD	0.04068	mg/kg	3.1E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	7.E-07	3.6E-05	mg/kg/day	5.0E-04	mg/kg/day	7.E-02
				4,4'-DDE	0.01474	mg/kg	1.1E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-07	1.3E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				4,4'-DDT	0.01467	mg/kg	1.1E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-07	1.3E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				alpha-Chlordane	0.01914	mg/kg	1.5E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-07	1.7E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Aroclor-1254	0.4495	mg/kg	3.4E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-05	4.0E-04	mg/kg/day	2.0E-05	mg/kg/day	2.E+01
				Dieldrin	0.01056	mg/kg	8.3E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	9.7E-06	mg/kg/day	5.0E-05	mg/kg/day	2.E-01
				gamma-Chlordane	0.0068	mg/kg	5.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	6.1E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Heptachlor Epoxide	0.00228	mg/kg	1.7E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-06	2.0E-06	mg/kg/day	1.3E-05	mg/kg/day	2.E-01
				Technical Chlordane	0.38798	mg/kg	3.0E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	3.5E-04	mg/kg/day	5.0E-04	mg/kg/day	7.E-01
				Cadmium	0.261	mg/kg	NC		NC			2.3E-04	mg/kg/day	1.0E-03	mg/kg/day	2.E-01
				Lead	0.562	mg/kg	4.3E-05	mg/kg/day	--			5.0E-04	mg/kg/day			
				Manganese	23	mg/kg	NC		NC			2.1E-02	mg/kg/day	1.4E-01	mg/kg/day	1.E-01
				Mercury	0.113	mg/kg	NC		NC			1.0E-04	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				Mercury (methyl)	0.122	mg/kg	NC		NC			1.1E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.0000757	mg/kg	5.8E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	9.E-04	6.8E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-03					2.3.E+01
		EXPOSURE POINT TOTAL									1.E-03					2.3.E+01
	EXPOSURE MEDIUM TOTAL										1.E-03					2.3.E+01
WHOLE BODY TOTAL											1.E-03					2.3.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	1.E-03		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		2.3.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: AWS

US EPA ARCHIVE DOCUMENT

TABLE G.7.76.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	INGESTION	Acenaphthylene	0.00094	mg/kg	NC		NC			5.0E-07	mg/kg/day	6.0E-02	mg/kg/day	8.E-06
				Dibenzo(a,h)anthracene	0.00017	mg/kg	1.5E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	9.0E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Phenanthrene	0.00632	mg/kg	NC		NC			3.4E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDD	0.04068	mg/kg	3.7E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	9.E-07	2.2E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				4,4'-DDE	0.01474	mg/kg	1.3E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-07	7.8E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDT	0.01467	mg/kg	1.3E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-07	7.8E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.01914	mg/kg	1.7E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-07	1.0E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	0.4495	mg/kg	4.1E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-05	2.4E-04	mg/kg/day	2.0E-05	mg/kg/day	1.E+01
				Dieldrin	0.01086	mg/kg	9.9E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-05	5.8E-06	mg/kg/day	5.0E-05	mg/kg/day	1.E-01
				gamma-Chlordane	0.0068	mg/kg	6.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	3.6E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				Heptachlor Epoxide	0.00228	mg/kg	2.1E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-06	1.2E-06	mg/kg/day	1.3E-05	mg/kg/day	9.E-02
				Technical Chlordane	0.38798	mg/kg	3.5E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	2.1E-04	mg/kg/day	5.0E-04	mg/kg/day	4.E-01
				Cadmium	0.261	mg/kg	NC		NC			1.4E-04	mg/kg/day	1.0E-03	mg/kg/day	1.E-01
				Lead	0.562	mg/kg	5.1E-05	mg/kg/day	--			3.0E-04	mg/kg/day			
				Manganese	23	mg/kg	NC		NC			1.2E-02	mg/kg/day	1.4E-01	mg/kg/day	9.E-02
				Mercury	0.113	mg/kg	NC		NC			6.0E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.122	mg/kg	NC		NC			6.5E-05	mg/kg/day	1.0E-04	mg/kg/day	6.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0000757	mg/kg	6.9E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-03	4.0E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-03					1.4.E+01
		EXPOSURE POINT TOTAL									1.E-03					1.4.E+01
	EXPOSURE MEDIUM TOTAL										1.E-03					1.4.E+01
WHOLE BODY TOTAL											1.E-03					1.4.E+01
TOTAL RECEPTOR RISK ACROSS ALL MEDIA											1.E-03	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.4.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: AWS

US EPA ARCHIVE DOCUMENT

TABLE G.7.77.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	INGESTION	Acenaphthylene	0.00094	mg/kg	NC		NC			5.2E-07	mg/kg/day	6.0E-02	mg/kg/day	9.E-06
				Dibenzo(a,h)anthracene	0.00017	mg/kg	1.6E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	9.3E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Phenanthrene	0.00632	mg/kg	NC		NC			3.5E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDD	0.04668	mg/kg	3.8E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	9.E-07	2.2E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				4,4'-DDE	0.01474	mg/kg	1.4E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-07	8.1E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDT	0.01467	mg/kg	1.4E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-07	8.1E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.01914	mg/kg	1.8E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-07	1.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	0.4495	mg/kg	4.2E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-05	2.5E-04	mg/kg/day	2.0E-05	mg/kg/day	1.E+01
				Dieldrin	0.01086	mg/kg	1.0E-06	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-05	6.0E-06	mg/kg/day	5.0E-05	mg/kg/day	1.E-01
				gamma-Chlordane	0.0068	mg/kg	6.4E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	3.7E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				Heptachlor Epoxide	0.00228	mg/kg	2.1E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-06	1.3E-06	mg/kg/day	1.3E-05	mg/kg/day	1.E-01
				Technical Chlordane	0.38798	mg/kg	3.7E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	2.1E-04	mg/kg/day	5.0E-04	mg/kg/day	4.E-01
				Cadmium	0.261	mg/kg	NC		NC			1.4E-04	mg/kg/day	1.0E-03	mg/kg/day	1.E-01
				Lead	0.562	mg/kg	5.3E-05	mg/kg/day	--			3.1E-04	mg/kg/day			
				Manganese	23	mg/kg	NC		NC			1.3E-02	mg/kg/day	1.4E-01	mg/kg/day	9.E-02
				Mercury	0.113	mg/kg	NC		NC			6.2E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.122	mg/kg	NC		NC			6.7E-05	mg/kg/day	1.0E-04	mg/kg/day	7.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0000757	mg/kg	7.1E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-03	4.2E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-03					1.4.E+01
		EXPOSURE POINT TOTAL									1.E-03					1.4.E+01
	EXPOSURE MEDIUM TOTAL										1.E-03					1.4.E+01
WHOLE BODY TOTAL											1.E-03					1.4.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											1.E-03					1.4.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: AWS

US EPA ARCHIVE DOCUMENT

TABLE G.7.7B.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	INGESTION	Acenaphthylene	0.00094	mg/kg	NC		NC			8.4E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.00017	mg/kg	1.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Phenanthrene	0.00632	mg/kg	NC		NC			5.7E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDD	0.04068	mg/kg	3.1E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	7.E-07	3.6E-05	mg/kg/day	5.0E-04	mg/kg/day	7.E-02
				4,4'-DDE	0.01474	mg/kg	1.1E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-07	1.3E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				4,4'-DDT	0.01467	mg/kg	1.1E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-07	1.3E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				alpha-Chlordane	0.01914	mg/kg	1.5E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-07	1.7E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Aroclor-1254	0.4495	mg/kg	3.4E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-05	4.0E-04	mg/kg/day	2.0E-05	mg/kg/day	2.E+01
				Dieldrin	0.01086	mg/kg	8.3E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-05	9.7E-06	mg/kg/day	5.0E-05	mg/kg/day	2.E-01
				gamma-Chlordane	0.0068	mg/kg	5.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	6.1E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Heptachlor Epoxide	0.00228	mg/kg	1.7E-07	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-06	2.0E-06	mg/kg/day	1.3E-05	mg/kg/day	2.E-01
				Technical Chlordane	0.38798	mg/kg	3.0E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-05	3.5E-04	mg/kg/day	5.0E-04	mg/kg/day	7.E-01
				Cadmium	0.261	mg/kg	NC		NC			2.3E-04	mg/kg/day	1.0E-03	mg/kg/day	2.E-01
				Lead	0.562	mg/kg	4.3E-05	mg/kg/day	--			5.0E-04	mg/kg/day			
				Manganese	23	mg/kg	NC		NC			2.1E-02	mg/kg/day	1.4E-01	mg/kg/day	1.E-01
				Mercury	0.113	mg/kg	NC		NC			1.0E-04	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				Mercury (methyl)	0.122	mg/kg	NC		NC			1.1E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.0000757	mg/kg	5.8E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	9.E-04	6.8E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-03					2.3.E+01
		EXPOSURE POINT TOTAL									1.E-03					2.3.E+01
	EXPOSURE MEDIUM TOTAL										1.E-03					2.3.E+01
WHOLE BODY TOTAL											1.E-03					2.3.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	1.E-03		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		2.3.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: AWS

US EPA ARCHIVE DOCUMENT

TABLE G.7.1.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - AMERICAN EEL - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.000943	mg/kg	NC		NC			2.0E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Phenanthrene	0.00246	mg/kg	NC		NC			5.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				4,4'-DDD	0.00461	mg/kg	1.7E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	4.E-08	1.0E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				4,4'-DDE	0.0176	mg/kg	6.5E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	3.8E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				alpha-Chlordane	0.0025	mg/kg	9.3E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	5.4E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Aroclor-1254	0.03178	mg/kg	1.2E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-06	6.9E-06	mg/kg/day	2.0E-05	mg/kg/day	3.E-01
				Dieldrin	0.0013	mg/kg	4.8E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	8.E-07	2.8E-07	mg/kg/day	5.0E-05	mg/kg/day	6.E-03
				gamma-Chlordane	0.00089	mg/kg	3.3E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	1.9E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Heptachlor Epoxide	0.00077	mg/kg	2.9E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.E-07	1.7E-07	mg/kg/day	1.3E-05	mg/kg/day	1.E-02
				Technical Chlordane	0.11622	mg/kg	4.3E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	2.5E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				Lead	0.0466	mg/kg	1.7E-06	mg/kg/day				1.0E-05	mg/kg/day			
				Mercury	0.0926	mg/kg	NC		NC			2.0E-05	mg/kg/day	3.0E-04	mg/kg/day	7.E-02
				Mercury (methyl)	0.0889	mg/kg	NC		NC			1.9E-05	mg/kg/day	1.0E-04	mg/kg/day	2.E-01
				Zinc	16.9	mg/kg	NC		NC			3.7E-03	mg/kg/day	3.0E-01	mg/kg/day	1.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.00000056	mg/kg	2.1E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-06	1.2E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								8.E-06					7.0.E-01
		EXPOSURE POINT TOTAL									8.E-06					7.0.E-01
	EXPOSURE MEDIUM TOTAL										8.E-06					7.0.E-01
WHOLE BODY TOTAL											8.E-06					7.0.E-01
TOTAL RECEPTOR RISK ACROSS ALL MEDIA											8.E-06	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				7.0.E-01

NOTES:
(1) - Blank cells *indicate that an RfD or RfC is not availalable from the sources used to obtain dose-response data for this risk assessment.*
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.2.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - AMERICAN EEL - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.000943	mg/kg	NC		NC			1.6E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Phenanthrene	0.00246	mg/kg	NC		NC			4.2E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				4,4'-DDD	0.00461	mg/kg	1.3E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	3.E-08	7.8E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				4,4'-DDE	0.0176	mg/kg	5.1E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	3.0E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				alpha-Chlordane	0.0025	mg/kg	7.3E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	4.2E-07	mg/kg/day	5.0E-04	mg/kg/day	8.E-04
				Aroclor-1254	0.03178	mg/kg	9.2E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-06	5.4E-06	mg/kg/day	2.0E-05	mg/kg/day	3.E-01
				Dieldrin	0.0013	mg/kg	3.8E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	6.E-07	2.2E-07	mg/kg/day	5.0E-05	mg/kg/day	4.E-03
				gamma-Chlordane	0.00089	mg/kg	2.6E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-09	1.5E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Heptachlor Epoxide	0.00077	mg/kg	2.2E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-07	1.3E-07	mg/kg/day	1.3E-05	mg/kg/day	1.E-02
				Technical Chlordane	0.11622	mg/kg	3.4E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	2.0E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				Lead	0.0466	mg/kg	1.4E-06	mg/kg/day				7.9E-06	mg/kg/day			
				Mercury	0.0926	mg/kg	NC		NC			1.6E-05	mg/kg/day	3.0E-04	mg/kg/day	5.E-02
				Mercury (methyl)	0.0889	mg/kg	NC		NC			1.5E-05	mg/kg/day	1.0E-04	mg/kg/day	2.E-01
				Zinc	16.9	mg/kg	NC		NC			2.9E-03	mg/kg/day	3.0E-01	mg/kg/day	1.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.00000056	mg/kg	1.6E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-06	9.5E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								7.E-06					5.4.E-01
		EXPOSURE POINT TOTAL									7.E-06					5.4.E-01
	EXPOSURE MEDIUM TOTAL										7.E-06					5.4.E-01
WHOLE BODY TOTAL											7.E-06					5.4.E-01
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	7.E-06	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				5.4.E-01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availalable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.3.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - AMERICAN EEL - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.000943	mg/kg	NC		NC			3.4E-07	mg/kg/day	6.0E-02	mg/kg/day	6.E-06
				Phenanthrene	0.00246	mg/kg	NC		NC			8.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				4,4'-DDD	0.00461	mg/kg	1.4E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	3.E-08	1.7E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				4,4'-DDE	0.0176	mg/kg	5.4E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	6.3E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.0025	mg/kg	7.7E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	9.0E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Aroclor-1254	0.03178	mg/kg	9.8E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-06	1.1E-05	mg/kg/day	2.0E-05	mg/kg/day	6.E-01
				Dieldrin	0.0013	mg/kg	4.0E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	6.E-07	4.7E-07	mg/kg/day	5.0E-05	mg/kg/day	9.E-03
				gamma-Chlordane	0.00089	mg/kg	2.7E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	3.2E-07	mg/kg/day	5.0E-04	mg/kg/day	6.E-04
				Heptachlor Epoxide	0.00077	mg/kg	2.4E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-07	2.8E-07	mg/kg/day	1.3E-05	mg/kg/day	2.E-02
				Technical Chlordane	0.11622	mg/kg	3.6E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	4.2E-05	mg/kg/day	5.0E-04	mg/kg/day	8.E-02
				Lead	0.0466	mg/kg	1.4E-06	mg/kg/day				1.7E-05	mg/kg/day			
				Mercury	0.0926	mg/kg	NC		NC			3.3E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Mercury (methyl)	0.0889	mg/kg	NC		NC			3.2E-05	mg/kg/day	1.0E-04	mg/kg/day	3.E-01
				Zinc	16.9	mg/kg	NC		NC			6.1E-03	mg/kg/day	3.0E-01	mg/kg/day	2.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.00000056	mg/kg	1.7E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-06	2.0E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								7.E-06					1.2.E+00
		EXPOSURE POINT TOTAL									7.E-06					1.2.E+00
	EXPOSURE MEDIUM TOTAL										7.E-06					1.2.E+00
WHOLE BODY TOTAL											7.E-06					1.2.E+00
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	7.E-06	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.2.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availaliable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
--- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.4.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - AMERICAN EEL - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.000943	mg/kg	NC		NC			2.0E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Phenanthrene	0.00246	mg/kg	NC		NC			5.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				4,4'-DDD	0.00461	mg/kg	1.3E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	3.E-08	1.0E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				4,4'-DDE	0.0176	mg/kg	4.9E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	3.8E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				alpha-Chlordane	0.0025	mg/kg	7.0E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	5.4E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Aroclor-1254	0.03178	mg/kg	8.8E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-06	6.9E-06	mg/kg/day	2.0E-05	mg/kg/day	3.E-01
				Dieldrin	0.0013	mg/kg	3.6E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	6.E-07	2.8E-07	mg/kg/day	5.0E-05	mg/kg/day	6.E-03
				gamma-Chlordane	0.00089	mg/kg	2.5E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-09	1.9E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Heptachlor Epoxide	0.00077	mg/kg	2.1E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-07	1.7E-07	mg/kg/day	1.3E-05	mg/kg/day	1.E-02
				Technical Chlordane	0.11622	mg/kg	3.2E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	2.5E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				Lead	0.0466	mg/kg	1.3E-06	mg/kg/day				1.0E-05	mg/kg/day			
				Mercury	0.0926	mg/kg	NC		NC			2.0E-05	mg/kg/day	3.0E-04	mg/kg/day	7.E-02
				Mercury (methyl)	0.0889	mg/kg	NC		NC			1.9E-05	mg/kg/day	1.0E-04	mg/kg/day	2.E-01
				Zinc	16.9	mg/kg	NC		NC			3.7E-03	mg/kg/day	3.0E-01	mg/kg/day	1.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.00000056	mg/kg	1.6E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-06	1.2E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-06					7.0E-01
		EXPOSURE POINT TOTAL									6.E-06					7.0E-01
	EXPOSURE MEDIUM TOTAL										6.E-06					7.0E-01
WHOLE BODY TOTAL											6.E-06					7.0E-01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											6.E-06					7.0E-01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availaltable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.5.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - AMERICAN EEL - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
							INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
					VALUE	UNITS	VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.000943	mg/kg	NC		NC			1.6E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Phenanthrene	0.00246	mg/kg	NC		NC			4.2E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				4,4'-DDD	0.00461	mg/kg	1.0E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	2.E-08	7.8E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				4,4'-DDE	0.0176	mg/kg	3.8E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-07	3.0E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				alpha-Chlordane	0.0025	mg/kg	5.4E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	4.2E-07	mg/kg/day	5.0E-04	mg/kg/day	8.E-04
				Aroclor-1254	0.03178	mg/kg	6.9E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-06	5.4E-06	mg/kg/day	2.0E-05	mg/kg/day	3.E-01
				Dieldrin	0.0013	mg/kg	2.8E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.E-07	2.2E-07	mg/kg/day	5.0E-05	mg/kg/day	4.E-03
				gamma-Chlordane	0.00089	mg/kg	1.9E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-09	1.5E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Heptachlor Epoxide	0.00077	mg/kg	1.7E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-07	1.3E-07	mg/kg/day	1.3E-05	mg/kg/day	1.E-02
				Technical Chlordane	0.11622	mg/kg	2.5E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-07	2.0E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				Lead	0.0466	mg/kg	1.0E-06	mg/kg/day				7.9E-06	mg/kg/day			
				Mercury	0.0926	mg/kg	NC		NC			1.6E-05	mg/kg/day	3.0E-04	mg/kg/day	5.E-02
				Mercury (methyl)	0.0889	mg/kg	NC		NC			1.5E-05	mg/kg/day	1.0E-04	mg/kg/day	2.E-01
				Zinc	16.9	mg/kg	NC		NC			2.9E-03	mg/kg/day	3.0E-01	mg/kg/day	1.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.00000056	mg/kg	1.2E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-06	9.5E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-06					5.4.E-01
		EXPOSURE POINT TOTAL									5.E-06					5.4.E-01
	EXPOSURE MEDIUM TOTAL										5.E-06					5.4.E-01
WHOLE BODY TOTAL											5.E-06					5.4.E-01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	5.E-06		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		5.4.E-01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.6.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - AMERICAN EEL - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.000943	mg/kg	NC		NC			3.4E-07	mg/kg/day	6.0E-02	mg/kg/day	6 E-06
				Phenanthrene	0.00246	mg/kg	NC		NC			8.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				4,4'-DDD	0.00461	mg/kg	1.4E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	3.E-08	1.7E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				4,4'-DDE	0.0176	mg/kg	5.4E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	6.3E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.0025	mg/kg	7.7E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	9.0E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Aroclor-1254	0.03178	mg/kg	9.8E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-06	1.1E-05	mg/kg/day	2.0E-05	mg/kg/day	6.E-01
				Dieldrin	0.0013	mg/kg	4.0E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	6.E-07	4.7E-07	mg/kg/day	5.0E-05	mg/kg/day	9.E-03
				gamma-Chlordane	0.00089	mg/kg	2.7E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	3.2E-07	mg/kg/day	5.0E-04	mg/kg/day	6.E-04
				Heptachlor Epoxide	0.00077	mg/kg	2.4E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-07	2.8E-07	mg/kg/day	1.3E-05	mg/kg/day	2.E-02
				Technical Chlordane	0.11622	mg/kg	3.6E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-06	4.2E-05	mg/kg/day	5.0E-04	mg/kg/day	8.E-02
				Lead	0.0466	mg/kg	1.4E-06	mg/kg/day				1.7E-05	mg/kg/day			
				Mercury	0.0926	mg/kg	NC		NC			3.3E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Mercury (methyl)	0.0889	mg/kg	NC		NC			3.2E-05	mg/kg/day	1.0E-04	mg/kg/day	3.E-01
				Zinc	16.9	mg/kg	NC		NC			6.1E-03	mg/kg/day	3.0E-01	mg/kg/day	2.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.00000056	mg/kg	1.7E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-06	2.0E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								7.E-06					1 2.E+00
		EXPOSURE POINT TOTAL									7.E-06					1 2.E+00
	EXPOSURE MEDIUM TOTAL										7.E-06					1 2.E+00
WHOLE BODY TOTAL											7.E-06					1.2.E+00
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		7.E-06	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.2.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availalible from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by:	RAR
Checked by:	KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.7.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - LARGEMOUTH BASS - FILLET - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.0003	mg/kg	NC		NC			6.5E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				Benzo(a)pyrene	0.000849	mg/kg	3.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.8E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Phenanthrene	0.00108	mg/kg	NC		NC			2.3E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				4,4'-DDE	0.00467	mg/kg	1.7E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	6.E-08	1.0E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				alpha-Chlordane	0.00031	mg/kg	1.2E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-09	6.7E-08	mg/kg/day	5.0E-04	mg/kg/day	1.E-04
				Mercury	0.254	mg/kg	NC		NC			5.5E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.3	mg/kg	NC		NC			6.5E-05	mg/kg/day	1.0E-04	mg/kg/day	6.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.00000182	mg/kg	6.8E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-05	3.9E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					8.E-01
		EXPOSURE POINT TOTAL									1.E-05					8.E-01
	EXPOSURE MEDIUM TOTAL										1.E-05					8.E-01
FILLET TOTAL											1.E-05					8.E-01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											1.E-05					8.3.E-01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; *exposure route not applicable for this chemical/exposure medium.*

-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.8.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - LARGEMOUTH BASS - FILLET - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.0003	mg/kg	NC		NC			5.1E-08	mg/kg/day	6.0E-02	mg/kg/day	8.E-07
				Benzo(a)pyrene	0.000849	mg/kg	2.5E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.4E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Phenanthrene	0.00108	mg/kg	NC		NC			1.8E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				4,4'-DDE	0.00467	mg/kg	1.4E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-08	7.9E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				alpha-Chlordane	0.00031	mg/kg	9.0E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-09	5.2E-08	mg/kg/day	5.0E-04	mg/kg/day	1.E-04
				Mercury	0.254	mg/kg	NC		NC			4.3E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Mercury (methyl)	0.3	mg/kg	NC		NC			5.1E-05	mg/kg/day	1.0E-04	mg/kg/day	5.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.00000182	mg/kg	5.3E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-06	3.1E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								8.E-06					7.E-01
		EXPOSURE POINT TOTAL									8.E-06					7.E-01
	EXPOSURE MEDIUM TOTAL										8.E-06					7.E-01
FILLET TOTAL											8.E-06					7.E-01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	8.E-06		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA			6.5.E-01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availalble from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.9.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - LARGEMOUTH BASS - FILLET - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.0003	mg/kg	NC		NC			1.1E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				Benzo(a)pyrene	0.000849	mg/kg	2.6E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	3.1E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	0.00108	mg/kg	NC		NC			3.9E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				4,4'-DDE	0.00467	mg/kg	1.4E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-08	1.7E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				alpha-Chlordane	0.00031	mg/kg	9.6E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-09	1.1E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-04
				Mercury	0.254	mg/kg	NC		NC			9.1E-05	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				Mercury (methyl)	0.3	mg/kg	NC		NC			1.1E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.00000182	mg/kg	5.6E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-06	6.6E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								9.E-06					1.E+00
		EXPOSURE POINT TOTAL									9.E-06					1.E+00
	EXPOSURE MEDIUM TOTAL										9.E-06					1.E+00
FILLET TOTAL											9.E-06					1.E+00
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	9.E-06				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	1.4.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.10.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - LARGEMOUTH BASS - FILLET - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.0003	mg/kg	NC		NC			6.5E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				Benzo(a)pyrene	0.000849	mg/kg	2.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.8E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Phenanthrene	0.00108	mg/kg	NC		NC			2.3E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				4,4'-DDE	0.00467	mg/kg	1.3E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-08	1.0E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				alpha-Chlordane	0.00031	mg/kg	8.6E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-09	6.7E-08	mg/kg/day	5.0E-04	mg/kg/day	1.E-04
				Mercury	0.254	mg/kg	NC		NC			5.5E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.3	mg/kg	NC		NC			6.5E-05	mg/kg/day	1.0E-04	mg/kg/day	6.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.00000182	mg/kg	5.1E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-06	3.9E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								8.E-06					8.E-01
		EXPOSURE POINT TOTAL									8.E-06					8.E-01
	EXPOSURE MEDIUM TOTAL										8.E-06					8.E-01
FILLET TOTAL											8.E-06					8.E-01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	8.E-06		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		8.3.E-01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.11.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - LARGEMOUTH BASS - FILLET - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	INGESTION	Acenapithylene	0.0003	mg/kg	NC		NC			5.1E-08	mg/kg/day	6.0E-02	mg/kg/day	8.E-07
				Benzo(a)pyrene	0.000849	mg/kg	1.8E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	1.4E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Phenanthrene	0.00108	mg/kg	NC		NC			1.8E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				4,4'-DDE	0.00467	mg/kg	1.0E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-08	7.9E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				alpha-Chlordane	0.00031	mg/kg	6.7E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-09	5.2E-08	mg/kg/day	5.0E-04	mg/kg/day	1.E-04
				Mercury	0.254	mg/kg	NC		NC			4.3E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Mercury (methyl)	0.3	mg/kg	NC		NC			5.1E-05	mg/kg/day	1.0E-04	mg/kg/day	5.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.00000182	mg/kg	4.0E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-06	3.1E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-06					7.E-01
		EXPOSURE POINT TOTAL									6.E-06					7.E-01
	EXPOSURE MEDIUM TOTAL										6.E-06					7.E-01
FILLET TOTAL											6.E-06					7.E-01
TOTAL RECEPTOR RISK ACROSS ALL MEDIA											6.E-06	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				6.5.E-01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.12.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - LARGEMOUTH BASS - FILLET - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.0003	mg/kg	NC		NC			1.1E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				Benzo(a)pyrene	0.000849	mg/kg	2.6E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	3.1E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	0.00108	mg/kg	NC		NC			3.9E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				4,4'-DDE	0.00467	mg/kg	1.4E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-08	1.7E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				alpha-Chlordane	0.00031	mg/kg	9.6E-09	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-09	1.1E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-04
				Mercury	0.254	mg/kg	NC		NC			9.1E-05	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				Mercury (methyl)	0.3	mg/kg	NC		NC			1.1E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.00000182	mg/kg	5.6E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-06	6.6E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								9.E-06					1.E+00
		EXPOSURE POINT TOTAL									9.E-06					1.E+00
	EXPOSURE MEDIUM TOTAL										9.E-06					1.E+00
FILLET TOTAL											9.E-06					1.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	9.E-06				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	1.4.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by:	RAR
Checked by:	KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.13.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - BROWN BULLHEAD - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00091	mg/kg	NC		NC			2.0E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Benzo(a)anthracene	0.00334	mg/kg	1.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-08	7.2E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	0.00329	mg/kg	1.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-07	7.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	0.004177	mg/kg	1.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	9.0E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(g,h,i)perylene	0.00219	mg/kg	NC		NC			4.7E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.00108	mg/kg	4.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	2.3E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Indeno(1,2,3-cd)pyrene	0.00283	mg/kg	1.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-08	6.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.0071	mg/kg	NC		NC			1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				4,4'-DDE	0.0127	mg/kg	4.7E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	2.7E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				alpha-Chlordane	0.00174	mg/kg	6.5E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	3.8E-07	mg/kg/day	5.0E-04	mg/kg/day	8.E-04
				gamma-Chlordane	0.00094	mg/kg	3.5E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	2.0E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Lead	0.0894	mg/kg	3.3E-06	mg/kg/day				1.9E-05	mg/kg/day			
				Mercury	0.077	mg/kg	NC		NC			1.7E-05	mg/kg/day	3.0E-04	mg/kg/day	6.E-02
				Mercury (methyl)	0.0775	mg/kg	NC		NC			1.7E-05	mg/kg/day	1.0E-04	mg/kg/day	2.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.00000216	mg/kg	8.0E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-05	4.7E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					2.3.E-01
		EXPOSURE POINT TOTAL									1.E-05					2.3.E-01
	EXPOSURE MEDIUM TOTAL										1.E-05					2.3.E-01
WHOLE BODY TOTAL											1.E-05					2.3.E-01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											1.E-05					2.3.E-01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.14.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - BROWN BULLHEAD - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00091	mg/kg	NC		NC			1.5E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Benzo(a)anthracene	0.00334	mg/kg	9.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-08	5.7E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	0.00329	mg/kg	9.5E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-07	5.6E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	0.004177	mg/kg	1.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-08	7.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	0.00219	mg/kg	NC		NC			3.7E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.00108	mg/kg	3.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.8E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Indeno(1,2,3-cd)pyrene	0.00283	mg/kg	8.2E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	4.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.0071	mg/kg	NC		NC			1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				4,4'-DDE	0.0127	mg/kg	3.7E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-07	2.1E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				alpha-Chlordane	0.00174	mg/kg	5.0E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	2.9E-07	mg/kg/day	5.0E-04	mg/kg/day	6.E-04
				gamma-Chlordane	0.00094	mg/kg	2.7E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	1.6E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Lead	0.0894	mg/kg	2.6E-06	mg/kg/day				1.5E-05	mg/kg/day			
				Mercury	0.077	mg/kg	NC		NC			1.3E-05	mg/kg/day	3.0E-04	mg/kg/day	4.E-02
				Mercury (methyl)	0.0775	mg/kg	NC		NC			1.3E-05	mg/kg/day	1.0E-04	mg/kg/day	1.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.00000216	mg/kg	6.3E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	9.E-06	3.7E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					1.8.E-01
		EXPOSURE POINT TOTAL									1.E-05					1.8.E-01
	EXPOSURE MEDIUM TOTAL										1.E-05					1.8.E-01
WHOLE BODY TOTAL											***1.E-05***					***1.8.E-01***
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	1.E-05				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	1.8.E-01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
--- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.15.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - BROWN BULLHEAD - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00091	mg/kg	NC		NC			3.3E-07	mg/kg/day	6.0E-02	mg/kg/day	5.E-06
				Benzo(a)anthracene	0.00334	mg/kg	1.0E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-08	1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(a)pyrene	0.00329	mg/kg	1.0E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-07	1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(b)fluoranthene	0.004177	mg/kg	1.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-08	1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(g,h,i)perylene	0.00219	mg/kg	NC		NC			7.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Dibenzo(a,h)anthracene	0.00108	mg/kg	3.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	3.9E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Indeno(1,2,3-cd)pyrene	0.00283	mg/kg	8.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	1.0E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Phenanthrene	0.0071	mg/kg	NC		NC			2.6E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				4,4'-DDE	0.0127	mg/kg	3.9E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-07	4.6E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				alpha-Chlordane	0.00174	mg/kg	5.4E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	6.3E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				gamma-Chlordane	0.00094	mg/kg	2.9E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	3.4E-07	mg/kg/day	5.0E-04	mg/kg/day	7.E-04
				Lead	0.0894	mg/kg	2.8E-06	mg/kg/day				3.2E-05	mg/kg/day			
				Mercury	0.077	mg/kg	NC		NC			2.8E-05	mg/kg/day	3.0E-04	mg/kg/day	9.E-02
				Mercury (methyl)	0.0775	mg/kg	NC		NC			2.8E-05	mg/kg/day	1.0E-04	mg/kg/day	3.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.00000216	mg/kg	6.7E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-05	7.8E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					3.8.E-01
		EXPOSURE POINT TOTAL									1.E-05					3.8.E-01
	EXPOSURE MEDIUM TOTAL										1.E-05					3.8.E-01
WHOLE BODY TOTAL											1.E-05					3.8.E-01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											1.E-05					3.8.E-01

NOTES.
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by:	RAR
Checked by:	KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.16.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - BROWN BULLHEAD - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00091	mg/kg	NC		NC			2.0E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Benzo(a)anthracene	0.00334	mg/kg	9.3E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-08	7.2E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	0.00329	mg/kg	9.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-07	7.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	0.004177	mg/kg	1.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-08	9.0E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(g,h,i)perylene	0.00219	mg/kg	NC		NC			4.7E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.00108	mg/kg	3.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	2.3E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Indeno(1,2,3-cd)pyrene	0.00283	mg/kg	7.9E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	6.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.0071	mg/kg	NC		NC			1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				4,4'-DDE	0.0127	mg/kg	3.5E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-07	2.7E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				alpha-Chlordane	0.00174	mg/kg	4.8E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	3.8E-07	mg/kg/day	5.0E-04	mg/kg/day	8.E-04
				gamma-Chlordane	0.00094	mg/kg	2.6E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-09	2.0E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Lead	0.0894	mg/kg	2.5E-06	mg/kg/day				1.9E-05	mg/kg/day			
				Mercury	0.077	mg/kg	NC		NC			1.7E-05	mg/kg/day	3.0E-04	mg/kg/day	6.E-02
				Mercury (methyl)	0.0775	mg/kg	NC		NC			1.7E-05	mg/kg/day	1.0E-04	mg/kg/day	2.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.00000216	mg/kg	6.0E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	9.E-06	4.7E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					2.3.E-01
		EXPOSURE POINT TOTAL									1.E-05					2.3.E-01
	EXPOSURE MEDIUM TOTAL										1.E-05					2.3.E-01
WHOLE BODY TOTAL											1.E-05					2.3.E-01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		1.E-05	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				2.3.E-01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.17.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - BROWN BULLHEAD - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00091	mg/kg	NC		NC			1.5E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Benzo(a)anthracene	0.00334	mg/kg	7.3E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	5.7E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	0.00329	mg/kg	7.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-07	5.6E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	0.004177	mg/kg	9.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-08	7.1E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	0.00219	mg/kg	NC		NC			3.7E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.00108	mg/kg	2.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.8E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Indeno(1,2,3-cd)pyrene	0.00283	mg/kg	6.2E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	4.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.0071	mg/kg	NC		NC			1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				4,4'-DDE	0.0127	mg/kg	2.8E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	9.E-08	2.1E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				alpha-Chlordane	0.00174	mg/kg	3.8E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	2.9E-07	mg/kg/day	5.0E-04	mg/kg/day	6.E-04
				gamma-Chlordane	0.00094	mg/kg	2.0E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-09	1.6E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Lead	0.0894	mg/kg	1.9E-06	mg/kg/day				1.5E-05	mg/kg/day			
				Mercury	0.077	mg/kg	NC		NC			1.3E-05	mg/kg/day	3.0E-04	mg/kg/day	4.E-02
				Mercury (methyl)	0.0775	mg/kg	NC		NC			1.3E-05	mg/kg/day	1.0E-04	mg/kg/day	1.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.00000216	mg/kg	4.7E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-06	3.7E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								8.E-06					1.8.E-01
		EXPOSURE POINT TOTAL									8.E-06					1.8.E-01
	EXPOSURE MEDIUM TOTAL										8.E-06					1.8.E-01
WHOLE BODY TOTAL											8.E-06					1.8.E-01
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	8.E-06	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.8.E-01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.18.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - BROWN BULLHEAD - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	INGESTION	Acenaphthylene	0.00091	mg/kg	NC		NC			3.3E-07	mg/kg/day	6.0E-02	mg/kg/day	5.E-06
				Benzo(a)anthracene	0.00334	mg/kg	1.0E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-08	1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(a)pyrene	0.00329	mg/kg	1.0E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-07	1.2E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(b)fluoranthene	0.004177	mg/kg	1.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-08	1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(g,h,i)perylene	0.00219	mg/kg	NC		NC			7.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Dibenzo(a,h)anthracene	0.00108	mg/kg	3.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	3.9E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Indeno(1,2,3-cd)pyrene	0.00283	mg/kg	8.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	1.0E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Phenanthrene	0.0071	mg/kg	NC		NC			2.6E-06	mg/kg/day	3.0E-02	mg/kg/day	9.E-05
				4,4'-DDE	0.0127	mg/kg	3.9E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-07	4.6E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				alpha-Chlordane	0.00174	mg/kg	5.4E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	6.3E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				gamma-Chlordane	0.00094	mg/kg	2.9E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	3.4E-07	mg/kg/day	5.0E-04	mg/kg/day	7.E-04
				Lead	0.0894	mg/kg	2.8E-06	mg/kg/day				3.2E-05	mg/kg/day			
				Mercury	0.077	mg/kg	NC		NC			2.8E-05	mg/kg/day	3.0E-04	mg/kg/day	9.E-02
				Mercury (methyl)	0.0775	mg/kg	NC		NC			2.8E-05	mg/kg/day	1.0E-04	mg/kg/day	3.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.00000216	mg/kg	6.7E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-05	7.8E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					3.8.E-01
		EXPOSURE POINT TOTAL									1.E-05					3.8.E-01
	EXPOSURE MEDIUM TOTAL										1.E-05					3.8.E-01
WHOLE BODY TOTAL											1.E-05					3.8.E-01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	1.E-05		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		3.8.E-01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availalable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.19.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - AMERICAN EEL - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00121	mg/kg	NC		NC			2.6E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				Benzo(a)pyrene	0.00132	mg/kg	4.9E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	2.9E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(b)fluoranthene	0.00149	mg/kg	5.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	3.2E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Dibenz(a,h)anthracene	0.000799	mg/kg	3.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.7E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Indeno(1,2,3-cd)pyrene	0.00132	mg/kg	4.9E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	2.9E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	0.00475	mg/kg	NC		NC			1.0E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				4,4'-DDD	0.015	mg/kg	5.6E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-07	3.2E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				4,4'-DDE	0.03161	mg/kg	1.2E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-07	6.8E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.017	mg/kg	6.3E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	3.7E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				Aroclor-1254	0.25318	mg/kg	9.4E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	5.5E-05	mg/kg/day	2.0E-05	mg/kg/day	3.E+00
				Aroclor-1268	0.1251	mg/kg	4.6E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-06	2.7E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Dieldrin	0.00353	mg/kg	1.3E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-06	7.6E-07	mg/kg/day	5.0E-05	mg/kg/day	2.E-02
				gamma-Chlordane	0.0069	mg/kg	2.6E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-08	1.5E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Heptachlor Epoxide	0.0012	mg/kg	4.5E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	4.E-07	2.6E-07	mg/kg/day	1.3E-05	mg/kg/day	2.E-02
				Technical Chlordane	0.31695	mg/kg	1.2E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-06	6.9E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Lead	0.214	mg/kg	7.9E-06	mg/kg/day				4.6E-05	mg/kg/day			
				Mercury	0.0706	mg/kg	NC		NC			1.5E-05	mg/kg/day	3.0E-04	mg/kg/day	5.E-02
				Mercury (methyl)	0.165	mg/kg	NC		NC			3.6E-05	mg/kg/day	1.0E-04	mg/kg/day	4.E-01
				Zinc	41.5	mg/kg	NC		NC			9.0E-03	mg/kg/day	3.0E-01	mg/kg/day	3.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.000000749	mg/kg	2.8E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-06	1.6E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-05					4.7E+00
		EXPOSURE POINT TOTAL									4.E-05					4.7E+00
	EXPOSURE MEDIUM TOTAL										4.E-05					4.7E+00
WHOLE BODY TOTAL											4.E-05					4.7E+00
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	4.E-05				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	4.7E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.20.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - AMERICAN EEL - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00121	mg/kg	NC		NC			2.0E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Benzo(a)pyrene	0.00132	mg/kg	3.8E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	2.2E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Benzo(b)fluoranthene	0.00149	mg/kg	4.3E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.5E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Dibenzo(a,h)anthracene	0.000799	mg/kg	2.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.4E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Indeno(1,2,3-cd)pyrene	0.00132	mg/kg	3.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.2E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Phenanthrene	0.00475	mg/kg	NC		NC			8.0E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				4,4'-DDD	0.015	mg/kg	4.4E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-07	2.5E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				4,4'-DDE	0.03161	mg/kg	9.2E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-07	5.3E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.017	mg/kg	4.9E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	2.9E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				Aroclor-1254	0.25318	mg/kg	7.3E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	4.3E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Aroclor-1268	0.1251	mg/kg	3.6E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-06	2.1E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Dieldrin	0.00353	mg/kg	1.0E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-06	6.0E-07	mg/kg/day	5.0E-05	mg/kg/day	1.E-02
				gamma-Chlordane	0.0069	mg/kg	2.0E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-08	1.2E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Heptachlor Epoxide	0.0012	mg/kg	3.5E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.E-07	2.0E-07	mg/kg/day	1.3E-05	mg/kg/day	2.E-02
				Technical Chlordane	0.31695	mg/kg	9.2E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-06	5.4E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Lead	0.214	mg/kg	6.2E-06	mg/kg/day				3.6E-05	mg/kg/day			
				Mercury	0.0706	mg/kg	NC		NC			1.2E-05	mg/kg/day	3.0E-04	mg/kg/day	4.E-02
				Mercury (methyl)	0.165	mg/kg	NC		NC			2.8E-05	mg/kg/day	1.0E-04	mg/kg/day	3.E-01
				Zinc	41.5	mg/kg	NC		NC			7.0E-03	mg/kg/day	3.0E-01	mg/kg/day	2.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.000000749	mg/kg	2.2E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-06	1.3E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-05					3.7.E+00
		EXPOSURE POINT TOTAL									3.E-05					3.7.E+00
	EXPOSURE MEDIUM TOTAL										3.E-05					3.7.E+00
WHOLE BODY TOTAL											3.E-05					3.7.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											3.E-05					3.7.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.21.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - AMERICAN EEL - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00121	mg/kg	NC		NC			4.4E-07	mg/kg/day	6.0E-02	mg/kg/day	7.E-06
				Benzo(a)pyrene	0.00132	mg/kg	4.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	4.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	0.00149	mg/kg	4.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	5.4E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.000799	mg/kg	2.5E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	2.9E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Indeno(1,2,3-cd)pyrene	0.00132	mg/kg	4.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	4.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.00475	mg/kg	NC		NC			1.7E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				4,4'-DDD	0.015	mg/kg	4.6E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-07	5.4E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				4,4'-DDE	0.03161	mg/kg	9.8E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-07	1.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.017	mg/kg	5.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	6.1E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Aroclor-1254	0.25318	mg/kg	7.8E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	9.1E-05	mg/kg/day	2.0E-05	mg/kg/day	5.E+00
				Aroclor-1268	0.1251	mg/kg	3.9E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-06	4.5E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Dieldrin	0.00353	mg/kg	1.1E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-06	1.3E-06	mg/kg/day	5.0E-05	mg/kg/day	3.E-02
				gamma-Chlordane	0.0069	mg/kg	2.1E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-08	2.5E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				Heptachlor Epoxide	0.0012	mg/kg	3.7E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.E-07	4.3E-07	mg/kg/day	1.3E-05	mg/kg/day	3.E-02
				Technical Chlordane	0.31695	mg/kg	9.8E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-06	1.1E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Lead	0.214	mg/kg	6.6E-06	mg/kg/day				7.7E-05	mg/kg/day			
				Mercury	0.0706	mg/kg	NC		NC			2.5E-05	mg/kg/day	3.0E-04	mg/kg/day	8.E-02
				Mercury (methyl)	0.165	mg/kg	NC		NC			5.9E-05	mg/kg/day	1.0E-04	mg/kg/day	6.E-01
				Zinc	41.5	mg/kg	NC		NC			1.5E-02	mg/kg/day	3.0E-01	mg/kg/day	5.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.000000749	mg/kg	2.3E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-06	2.7E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-05					7.9 E+00
		EXPOSURE POINT TOTAL									3.E-05					7.9 E+00
	EXPOSURE MEDIUM TOTAL										3.E-05					7.9 E+00
WHOLE BODY TOTAL											3.E-05					7.9 E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	3.E-05			TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	7.9 E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.22.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - AMERICAN EEL - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00121	mg/kg	NC		NC			2.6E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				Benzo(a)pyrene	0.00132	mg/kg	3.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	2.9E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(b)fluoranthene	0.00149	mg/kg	4.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	3.2E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.000799	mg/kg	2.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.7E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Indeno(1,2,3-cd)pyrene	0.00132	mg/kg	3.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.9E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	0.00475	mg/kg	NC		NC			1.0E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				4,4'-DDD	0.015	mg/kg	4.2E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-07	3.2E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				4,4'-DDE	0.03161	mg/kg	8.8E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-07	6.8E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.017	mg/kg	4.7E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	3.7E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				Aroclor-1254	0.25318	mg/kg	7.0E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	5.5E-05	mg/kg/day	2.0E-05	mg/kg/day	3.E+00
				Aroclor-1268	0.1251	mg/kg	3.5E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-06	2.7E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Dieldrin	0.00353	mg/kg	9.8E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-06	7.6E-07	mg/kg/day	5.0E-05	mg/kg/day	2.E-02
				gamma-Chlordane	0.0069	mg/kg	1.9E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-08	1.5E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Heptachlor Epoxide	0.0012	mg/kg	3.3E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.E-07	2.6E-07	mg/kg/day	1.3E-05	mg/kg/day	2.E-02
				Technical Chlordane	0.31695	mg/kg	8.8E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-06	6.9E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Lead	0.214	mg/kg	6.0E-06	mg/kg/day				4.6E-05	mg/kg/day			
				Mercury	0.0706	mg/kg	NC		NC			1.5E-05	mg/kg/day	3.0E-04	mg/kg/day	5.E-02
				Mercury (methyl)	0.165	mg/kg	NC		NC			3.6E-05	mg/kg/day	1.0E-04	mg/kg/day	4.E-01
				Zinc	41.5	mg/kg	NC		NC			9.0E-03	mg/kg/day	3.0E-01	mg/kg/day	3.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.000000749	mg/kg	2.1E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-06	1.6E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-05					4.7.E+00
		EXPOSURE POINT TOTAL									3.E-05					4.7.E+00
	EXPOSURE MEDIUM TOTAL										3.E-05					4.7.E+00
WHOLE BODY TOTAL											3.E-05					4.7.E+00
TOTAL RECEPTOR RISK ACROSS ALL MEDIA											3.E-05	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				4.7.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.23.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - AMERICAN EEL - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00121	mg/kg	NC		NC			2.0E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Benzo(a)pyrene	0.00132	mg/kg	2.9E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	2.2E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Benzo(b)fluoranthene	0.00149	mg/kg	3.2E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	2.5E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Dibenzo(a,h)anthracene	0.000799	mg/kg	1.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	1.4E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Indeno(1,2,3-cd)pyrene	0.00132	mg/kg	2.9E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	2.2E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Phenanthrene	0.00475	mg/kg	NC		NC			8.0E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				4,4'-DDD	0.015	mg/kg	3.3E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	8.E-08	2.5E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				4,4'-DDE	0.03161	mg/kg	6.9E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	5.3E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.017	mg/kg	3.7E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	2.9E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				Aroclor-1254	0.25318	mg/kg	5.5E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	4.3E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Aroclor-1268	0.1251	mg/kg	2.7E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-06	2.1E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Dieldrin	0.00353	mg/kg	7.7E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-06	6.0E-07	mg/kg/day	5.0E-05	mg/kg/day	1.E-02
				gamma-Chlordane	0.0069	mg/kg	1.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-08	1.2E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Heptachlor Epoxide	0.0012	mg/kg	2.6E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-07	2.0E-07	mg/kg/day	1.3E-05	mg/kg/day	2.E-02
				Technical Chlordane	0.31695	mg/kg	6.9E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	5.4E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Lead	0.214	mg/kg	4.7E-06	mg/kg/day				3.6E-05	mg/kg/day			
				Mercury	0.0706	mg/kg	NC		NC			1.2E-05	mg/kg/day	3.0E-04	mg/kg/day	4.E-02
				Mercury (methyl)	0.165	mg/kg	NC		NC			2.8E-05	mg/kg/day	1.0E-04	mg/kg/day	3.E-01
				Zinc	41.5	mg/kg	NC		NC			7.0E-03	mg/kg/day	3.0E-01	mg/kg/day	2.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.000000749	ng/kg	1.6E-11	ng/kg/day	1.5E+05	(mg/kg/day)-1	2.E-06	1.3E-10	ng/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-05					3.7.E+00
		EXPOSURE POINT TOTAL									2.E-05					3.7.E+00
	EXPOSURE MEDIUM TOTAL										2.E-05					3.7.E+00
WHOLE BODY TOTAL											2.E-05					3.7.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	2.E-05				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	3.7.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.24.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - AMERICAN EEL - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00121	mg/kg	NC		NC			4.4E-07	mg/kg/day	6.0E-02	mg/kg/day	7.E-06
				Benzo(a)pyrene	0.00132	mg/kg	4.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	4.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	0.00149	mg/kg	4.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	5.4E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.000799	mg/kg	2.5E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	2.9E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Indeno(1,2,3-cd)pyrene	0.00132	mg/kg	4.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	4.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.00475	mg/kg	NC		NC			1.7E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				4,4'-DDD	0.015	mg/kg	4.6E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-07	5.4E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				4,4'-DDE	0.03161	mg/kg	9.8E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-07	1.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				alpha-Chlordane	0.017	mg/kg	5.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	6.1E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Aroclor-1254	0.25318	mg/kg	7.8E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	9.1E-05	mg/kg/day	2.0E-05	mg/kg/day	5.E+00
				Aroclor-1268	0.1251	mg/kg	3.9E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-06	4.5E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Dieldrin	0.00353	mg/kg	1.1E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-06	1.3E-06	mg/kg/day	5.0E-05	mg/kg/day	3.E-02
				gamma-Chlordane	0.0069	mg/kg	2.1E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-08	2.5E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				Heptachlor Epoxide	0.0012	mg/kg	3.7E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.E-07	4.3E-07	mg/kg/day	1.3E-05	mg/kg/day	3.E-02
				Technical Chlordane	0.31695	mg/kg	9.8E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-06	1.1E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Lead	0.214	mg/kg	6.6E-06	mg/kg/day				7.7E-05	mg/kg/day			
				Mercury	0.0706	mg/kg	NC		NC			2.5E-05	mg/kg/day	3.0E-04	mg/kg/day	8.E-02
				Mercury (methyl)	0.165	mg/kg	NC		NC			5.9E-05	mg/kg/day	1.0E-04	mg/kg/day	6.E-01
				Zinc	41.5	mg/kg	NC		NC			1.5E-02	mg/kg/day	3.0E-01	mg/kg/day	5.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.000000749	mg/kg	2.3E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-06	2.7E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-05					7.9.E+00
		EXPOSURE POINT TOTAL									3.E-05					7.9.E+00
	EXPOSURE MEDIUM TOTAL										3.E-05					7.9.E+00
WHOLE BODY TOTAL											3.E-05					7.9.E+00
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		3.E-05	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				7.9.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.25.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - LARGEMOUTH BASS - FILLET - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.0004	mg/kg	NC		NC			8.7E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				Phenanthrene	0.001	mg/kg	NC		NC			2.2E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				4,4'-DDE	0.0157	mg/kg	5.8E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	3.4E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				alpha-Chlordane	0.00064	mg/kg	2.4E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-09	1.4E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Aroclor-1254	0.0766	mg/kg	2.8E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-06	1.7E-05	mg/kg/day	2.0E-05	mg/kg/day	8.E-01
				Aroclor-1268	0.075	mg/kg	2.8E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-06	1.6E-05	mg/kg/day	2.0E-05	mg/kg/day	8.E-01
				Dieldrin	0.00035	mg/kg	1.3E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-07	7.6E-08	mg/kg/day	5.0E-05	mg/kg/day	2.E-03
				gamma-Chlordane	0.0007	mg/kg	2.6E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-09	1.5E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Technical Chlordane	0.01794	mg/kg	6.7E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	3.9E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				Mercury	0.419	mg/kg	NC		NC			9.1E-05	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				Mercury (methyl)	0.625	mg/kg	NC		NC			1.4E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000000242	mg/kg	9.0E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-06	5.2E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								*1.E-05*					*3.E+00*
		EXPOSURE POINT TOTAL									1.E-05					3.E+00
	EXPOSURE MEDIUM TOTAL										1.E-05					3.E+00
FILLET TOTAL											1.E-05					3.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											1.E-05					3.3.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.26.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - LARGEMOUTH BASS - FILLET - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
LARGEMOUTH BASS	FILLET	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.0004	mg/kg	NC		NC			6.8E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				Phenanthrene	0.001	mg/kg	NC		NC			1.7E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				4,4'-DDE	0.0157	mg/kg	4.6E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	2.7E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				alpha-Chlordane	0.00064	mg/kg	1.9E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-09	1.1E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-04
				Aroclor-1254	0.0766	mg/kg	2.2E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-06	1.3E-05	mg/kg/day	2.0E-05	mg/kg/day	6.E-01
				Aroclor-1268	0.075	mg/kg	2.2E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-06	1.3E-05	mg/kg/day	2.0E-05	mg/kg/day	6.E-01
				Dieldrin	0.00035	mg/kg	1.0E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-07	5.9E-08	mg/kg/day	5.0E-05	mg/kg/day	1.E-03
				gamma-Chlordane	0.0007	mg/kg	2.0E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-09	1.2E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-04
				Technical Chlordane	0.01794	mg/kg	5.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	3.0E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				Mercury	0.419	mg/kg	NC		NC			7.1E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.625	mg/kg	NC		NC			1.1E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000000242	mg/kg	7.0E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-06	4.1E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					3.E+00
		EXPOSURE POINT TOTAL									1.E-05					3.E+00
	EXPOSURE MEDIUM TOTAL										1.E-05					3.E+00
FILLET TOTAL											1.E-05					3.E+00
TOTAL RECEPTOR RISK ACROSS ALL MEDIA											1.E-05	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				2.6.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.27.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - LARGEMOUTH BASS - FILLET - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
LARGEMOUTH BASS	FILLET	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.0004	mg/kg	NC		NC			1.4E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				Phenanthrene	0.001	mg/kg	NC		NC			3.6E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				4,4'-DDE	0.0157	mg/kg	4.8E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	5.7E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.00064	mg/kg	2.0E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-09	2.3E-07	mg/kg/day	5.0E-04	mg/kg/day	5.E-04
				Aroclor-1254	0.0766	mg/kg	2.4E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-06	2.8E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Aroclor-1268	0.075	mg/kg	2.3E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-06	2.7E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Dieldrin	0.00035	mg/kg	1.1E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-07	1.3E-07	mg/kg/day	5.0E-05	mg/kg/day	3.E-03
				gamma-Chlordane	0.0007	mg/kg	2.2E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-09	2.5E-07	mg/kg/day	5.0E-04	mg/kg/day	5.E-04
				Technical Chlordane	0.01794	mg/kg	5.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	6.5E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Mercury	0.419	mg/kg	NC		NC			1.5E-04	mg/kg/day	3.0E-04	mg/kg/day	5.E-01
				Mercury (methyl)	0.625	mg/kg	NC		NC			2.2E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000000242	mg/kg	7.5E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-06	8.7E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					6.E+00
		EXPOSURE POINT TOTAL									1.E-05					6.E+00
	EXPOSURE MEDIUM TOTAL										1.E-05					6.E+00
FILLET TOTAL											1.E-05					6.E+00
TOTAL RECEPTOR RISK ACROSS ALL MEDIA											1.E-05	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				5.5.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.18.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - LARGEMOUTH BASS - FILLET - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.0004	mg/kg	NC		NC			8.7E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				Phenanthrene	0.001	mg/kg	NC		NC			2.2E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				4,4'-DDE	0.0157	mg/kg	4.4E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-07	3.4E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				alpha-Chlordane	0.00064	mg/kg	1.8E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-09	1.4E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Aroclor-1254	0.0766	mg/kg	2.1E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-06	1.7E-05	mg/kg/day	2.0E-05	mg/kg/day	8.E-01
				Aroclor-1268	0.075	mg/kg	2.1E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-06	1.6E-05	mg/kg/day	2.0E-05	mg/kg/day	8.E-01
				Dieldrin	0.00035	mg/kg	9.7E-09	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-07	7.6E-08	mg/kg/day	5.0E-05	mg/kg/day	2.E-03
				gamma-Chlordane	0.0007	mg/kg	1.9E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-09	1.5E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Technical Chlordane	0.01784	mg/kg	5.0E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	3.9E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				Mercury	0.419	mg/kg	NC		NC			9.1E-05	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				Mercury (methyl)	0.625	mg/kg	NC		NC			1.4E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000000242	mg/kg	6.7E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-06	5.2E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					3.E+00
		EXPOSURE POINT TOTAL									1.E-05					3.E+00
	EXPOSURE MEDIUM TOTAL										1.E-05					3.E+00
FILLET TOTAL											1.E-05					3.E+00
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	1.E-05	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				3.3.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availalable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.29.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - LARGEMOUTH BASS - FILLET - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.0004	mg/kg	NC		NC			6.8E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				Phenanthrene	0.001	mg/kg	NC		NC			1.7E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				4,4'-DDE	0.0157	mg/kg	3.4E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-07	2.7E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				alpha-Chlordane	0.00064	mg/kg	1.4E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-09	1.1E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-04
				Aroclor-1254	0.0766	mg/kg	1.7E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-06	1.3E-05	mg/kg/day	2.0E-05	mg/kg/day	6.E-01
				Aroclor-1268	0.075	mg/kg	1.6E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-06	1.3E-05	mg/kg/day	2.0E-05	mg/kg/day	6.E-01
				Dieldrin	0.00035	mg/kg	7.6E-09	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-07	5.9E-08	mg/kg/day	5.0E-05	mg/kg/day	1.E-03
				gamma-Chlordane	0.0007	mg/kg	1.5E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-09	1.2E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-04
				Technical Chlordane	0.01794	mg/kg	3.9E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	3.0E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				Mercury	0.419	mg/kg	NC		NC			7.1E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.625	mg/kg	NC		NC			1.1E-04	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000000242	mg/kg	5.3E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-07	4.1E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								8.E-06					3.E+00
		EXPOSURE POINT TOTAL									8.E-06					3.E+00
	EXPOSURE MEDIUM TOTAL										8.E-06					3.E+00
FILLET TOTAL											8.E-06					3.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	8.E-06				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	2.6.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.30.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - LARGEMOUTH BASS - FILLET - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	GREYSTONE MILL POND	INGESTION	Acenapithylene	0.0004	mg/kg	NC		NC			1.4E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				Phenanthrene	0.001	mg/kg	NC		NC			3.6E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				4,4'-DDE	0.0157	mg/kg	4.8E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	5.7E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				alpha-Chlordane	0.00064	mg/kg	2.0E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-09	2.3E-07	mg/kg/day	5.0E-04	mg/kg/day	5.E-04
				Aroclor-1254	0.0766	mg/kg	2.4E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-06	2.8E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Aroclor-1268	0.075	mg/kg	2.3E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-06	2.7E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Dieldrin	0.00035	mg/kg	1.1E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-07	1.3E-07	mg/kg/day	5.0E-05	mg/kg/day	3.E-03
				gamma-Chlordane	0.0007	mg/kg	2.2E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-09	2.5E-07	mg/kg/day	5.0E-04	mg/kg/day	5.E-04
				Technical Chlordane	0.01794	mg/kg	5.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	6.5E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Mercury	0.419	mg/kg	NC		NC			1.5E-04	mg/kg/day	3.0E-04	mg/kg/day	5.E-01
				Mercury (methyl)	0.625	mg/kg	NC		NC			2.2E-04	mg/kg/day	1.0E-04	mg/kg/day	2.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000000242	mg/kg	7.5E-12	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-06	8.7E-11	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-05					6.E+00
		EXPOSURE POINT TOTAL									1.E-05					6.E+00
	EXPOSURE MEDIUM TOTAL										1.E-05					6.E+00
FILLET TOTAL											1.E-05					6.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	1.E-05				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	5.5.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availaible from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.J1.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - WHITE SUCKER - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00482	mg/kg	NC		NC			1.0E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	0.00112	mg/kg	4.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	2.4E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Benzo(g,h,i)perylene	0.000988	mg/kg	NC		NC			2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Phenanthrene	0.0172	mg/kg	NC		NC			3.7E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDD	0.0218	mg/kg	8.1E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	2.E-07	4.7E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				4,4'-DDE	0.0513	mg/kg	1.9E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	6.E-07	1.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDT	0.00626	mg/kg	2.3E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	8.E-08	1.4E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				alpha-Chlordane	0.02431	mg/kg	9.0E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	5.3E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Aroclor-1254	0.20236	mg/kg	7.5E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	4.4E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Aroclor-1268	0.05512	mg/kg	2.0E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-06	1.2E-05	mg/kg/day	2.0E-05	mg/kg/day	6.E-01
				Dieldrin	0.00417	mg/kg	1.5E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-06	9.0E-07	mg/kg/day	5.0E-05	mg/kg/day	2.E-02
				gamma-Chlordane	0.0112	mg/kg	4.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	2.4E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				Heptachlor Epoxide	0.00081	mg/kg	3.0E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.E-07	1.8E-07	mg/kg/day	1.3E-05	mg/kg/day	1.E-02
				Technical Chlordane	0.282	mg/kg	1.0E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-06	6.1E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Lead	0.012	mg/kg	4.5E-07	mg/kg/day				2.6E-06	mg/kg/day			
				Mercury	0.19	mg/kg	NC		NC			4.1E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Mercury (methyl)	0.193	mg/kg	NC		NC			4.2E-05	mg/kg/day	1.0E-04	mg/kg/day	4.E-01
				Toxicity Equivalency (Dioxins/Furans	0.0000031	mg/kg	1.2E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-05	6.7E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-05					3.5.E+00
		EXPOSURE POINT TOTAL									4.E-05					3.5.E+00
	EXPOSURE MEDIUM TOTAL										4.E-05					3.5.E+00
WHOLE BODY TOTAL											4.E-05					3.5.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	4.E-05		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		3.5.E+00

NOTES:
(I) - Blank cells indicate that an RfD or RfC is not availaible from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.J1.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - WHITE SUCKER - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00482	mg/kg	NC		NC			8.2E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)pyrene	0.00112	mg/kg	3.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.9E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Benzo(g,h,i)perylene	0.000988	mg/kg	NC		NC			1.7E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Phenanthrene	0.0172	mg/kg	NC		NC			2.9E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDD	0.0218	mg/kg	6.3E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	2.E-07	3.7E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				4,4'-DDE	0.0513	mg/kg	1.5E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-07	8.7E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDT	0.00626	mg/kg	1.8E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	6.E-08	1.1E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				alpha-Chlordane	0.02431	mg/kg	7.1E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	4.1E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				Aroclor-1254	0.20236	mg/kg	5.9E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	3.4E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Aroclor-1268	0.05512	mg/kg	1.6E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-06	9.3E-06	mg/kg/day	2.0E-05	mg/kg/day	5.E-01
				Dieldrin	0.00417	mg/kg	1.2E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-06	7.1E-07	mg/kg/day	5.0E-05	mg/kg/day	1.E-02
				gamma-Chlordane	0.0112	mg/kg	3.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	1.9E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				Heptachlor Epoxide	0.00081	mg/kg	2.3E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-07	1.4E-07	mg/kg/day	1.3E-05	mg/kg/day	1.E-02
				Technical Chlordane	0.282	mg/kg	8.2E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-06	4.8E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Lead	0.012	mg/kg	3.5E-07	mg/kg/day				2.0E-06	mg/kg/day			
				Mercury	0.19	mg/kg	NC		NC			3.2E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Mercury (methyl)	0.193	mg/kg	NC		NC			3.3E-05	mg/kg/day	1.0E-04	mg/kg/day	3.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0000031	mg/kg	9.0E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-05	5.2E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-05					2.8.E+00
		EXPOSURE POINT TOTAL									3.E-05					2.8.E+00
	EXPOSURE MEDIUM TOTAL										3.E-05					2.8.E+00
WHOLE BODY TOTAL											3.E-05					2.8.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	3.E-05		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		2.8.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.33.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - WHITE SUCKER - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00482	mg/kg	NC		NC			1.7E-06	mg/kg/day	6.0E-02	mg/kg/day	3.E-05
				Benzo(a)pyrene	0.00112	mg/kg	3.5E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	4.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	0.000988	mg/kg	NC		NC			3.6E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	0.0172	mg/kg	NC		NC			6.2E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDD	0.0218	mg/kg	6.7E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	2.E-07	7.8E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDE	0.0313	mg/kg	1.6E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-07	1.8E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				4,4'-DDT	0.00626	mg/kg	1.9E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	7.E-08	2.3E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				alpha-Chlordane	0.02431	mg/kg	7.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	8.7E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	0.20236	mg/kg	6.2E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	7.3E-05	mg/kg/day	2.0E-05	mg/kg/day	4.E+00
				Aroclor-1268	0.05512	mg/kg	1.7E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-06	2.0E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Dieldrin	0.00417	mg/kg	1.3E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-06	1.5E-06	mg/kg/day	5.0E-05	mg/kg/day	3.E-02
				gamma-Chlordane	0.0112	mg/kg	3.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	4.0E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				Heptachlor Epoxide	0.00081	mg/kg	2.5E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-07	2.9E-07	mg/kg/day	1.3E-05	mg/kg/day	2.E-02
				Technical Chlordane	0.282	mg/kg	8.7E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-06	1.0E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Lead	0.012	mg/kg	3.7E-07	mg/kg/day				4.3E-06	mg/kg/day			
				Mercury	0.19	mg/kg	NC		NC			6.8E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.193	mg/kg	NC		NC			6.9E-05	mg/kg/day	1.0E-04	mg/kg/day	7.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0000031	mg/kg	9.6E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-05	1.1E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-05					5.9.E+00
		EXPOSURE POINT TOTAL									4.E-05					5.9.E+00
	EXPOSURE MEDIUM TOTAL										4.E-05					5.9.E+00
WHOLE BODY TOTAL											4.E-05					5.9.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											4.E-05					5.9.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.34.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - WHITE SUCKER - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00482	mg/kg	NC		NC			1.0E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	0.00112	mg/kg	3.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	2.4E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Benzo(g,h,i)perylene	0.000988	mg/kg	NC		NC			2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Phenanthrene	0.0172	mg/kg	NC		NC			3.7E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDD	0.0218	mg/kg	6.1E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-07	4.7E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				4,4'-DDE	0.0513	mg/kg	1.4E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-07	1.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDT	0.00626	mg/kg	1.7E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	6.E-08	1.4E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				alpha-Chlordane	0.02431	mg/kg	6.8E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	5.3E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Aroclor-1254	0.20236	mg/kg	5.6E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	4.4E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Aroclor-1268	0.05512	mg/kg	1.5E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-06	1.2E-05	mg/kg/day	2.0E-05	mg/kg/day	6.E-01
				Dieldrin	0.00417	mg/kg	1.2E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-06	9.0E-07	mg/kg/day	5.0E-05	mg/kg/day	2.E-02
				gamma-Chlordane	0.0112	mg/kg	3.1E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	2.4E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				Heptachlor Epoxide	0.00081	mg/kg	2.2E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-07	1.8E-07	mg/kg/day	1.3E-05	mg/kg/day	1.E-02
				Technical Chlordane	0.282	mg/kg	7.8E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-06	6.1E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Lead	0.012	mg/kg	3.3E-07	mg/kg/day				2.6E-06	mg/kg/day			
				Mercury	0.19	mg/kg	NC		NC			4.1E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Mercury (methyl)	0.193	mg/kg	NC		NC			4.2E-05	mg/kg/day	1.0E-04	mg/kg/day	4.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0000031	mg/kg	8.6E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-05	6.7E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-05					3.5.E+00
		EXPOSURE POINT TOTAL									3.E-05					3.5.E+00
	EXPOSURE MEDIUM TOTAL										3.E-05					3.5.E+00
WHOLE BODY TOTAL											3.E-05					3.5.E+00
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		3.E-05	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				3.5.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.35.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - WHITE SUCKER - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenaphthylene	0.00482	mg/kg	NC		NC			8.2E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)pyrene	0.00112	mg/kg	2.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.9E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Benzo(g,h,i)perylene	0.000988	mg/kg	NC		NC			1.7E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Phenanthrene	0.0172	mg/kg	NC		NC			2.9E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDD	0.0218	mg/kg	4.7E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-07	3.7E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				4,4'-DDE	0.0513	mg/kg	1.1E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-07	8.7E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDT	0.00626	mg/kg	1.4E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-08	1.1E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				alpha-Chlordane	0.02431	mg/kg	5.3E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	4.1E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				Aroclor-1254	0.20236	mg/kg	4.4E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-06	3.4E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Aroclor-1268	0.05512	mg/kg	1.2E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-06	9.3E-06	mg/kg/day	2.0E-05	mg/kg/day	5.E-01
				Dieldrin	0.00417	mg/kg	9.1E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	1.E-06	7.1E-07	mg/kg/day	5.0E-05	mg/kg/day	1.E-02
				gamma-Chlordane	0.0112	mg/kg	2.4E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-08	1.9E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				Heptachlor Epoxide	0.00081	mg/kg	1.8E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-07	1.4E-07	mg/kg/day	1.3E-05	mg/kg/day	1.E-02
				Technical Chlordane	0.282	mg/kg	6.1E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	4.8E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Lead	0.012	mg/kg	2.6E-07	mg/kg/day				2.0E-06	mg/kg/day			
				Mercury	0.19	mg/kg	NC		NC			3.2E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Mercury (methyl)	0.193	mg/kg	NC		NC			3.3E-05	mg/kg/day	1.0E-04	mg/kg/day	3.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0000031	mg/kg	6.7E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-05	5.2E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-05					2.8.E+00
		EXPOSURE POINT TOTAL									3.E-05					2.8.E+00
	EXPOSURE MEDIUM TOTAL										3.E-05					2.8.E+00
WHOLE BODY TOTAL											3.E-05					2.8.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	3.E-05				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	2.8.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availalible from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.36.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - WHITE SUCKER - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
							INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
					VALUE	UNITS	VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	INGESTION	Acenapthylene	0.00482	mg/kg	NC		NC			1.7E-06	mg/kg/day	6.0E-02	mg/kg/day	3.E-05
				Benzo(a)pyrene	0.00112	mg/kg	3.5E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	4.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	0.000988	mg/kg	NC		NC			3.6E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Phenanthrene	0.0172	mg/kg	NC		NC			6.2E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDD	0.0218	mg/kg	6.7E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	2.E-07	7.8E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDE	0.0513	mg/kg	1.6E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-07	1.8E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				4,4'-DDT	0.00626	mg/kg	1.9E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	7.E-08	2.3E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				alpha-Chlordane	0.02431	mg/kg	7.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	8.7E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	0.20236	mg/kg	6.2E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	7.3E-05	mg/kg/day	2.0E-05	mg/kg/day	4.E+00
				Aroclor-1268	0.05512	mg/kg	1.7E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-06	2.0E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Dieldrin	0.00417	mg/kg	1.3E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-06	1.5E-06	mg/kg/day	5.0E-05	mg/kg/day	3.E-02
				gamma-Chlordane	0.0112	mg/kg	3.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	4.0E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				Heptachlor Epoxide	0.00081	mg/kg	2.5E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-07	2.9E-07	mg/kg/day	1.3E-05	mg/kg/day	2.E-02
				Technical Chlordane	0.282	mg/kg	8.7E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-06	1.0E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Lead	0.012	mg/kg	3.7E-07	mg/kg/day				4.3E-06	mg/kg/day			
				Mercury	0.19	mg/kg	NC		NC			6.8E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.193	mg/kg	NC		NC			6.9E-05	mg/kg/day	1.0E-04	mg/kg/day	7.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0000031	mg/kg	9.6E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-05	1.1E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-05					5.9.E+00
		EXPOSURE POINT TOTAL									4.E-05					5.9.E+00
	EXPOSURE MEDIUM TOTAL										4.E-05					5.9.E+00
WHOLE BODY TOTAL											4.E-05					5.9.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	4.E-05		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		5.9.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.37.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
							INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
					VALUE	UNITS	VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.0013	mg/kg	NC		NC			2.8E-07	mg/kg/day	6.0E-02	mg/kg/day	5.E-06
				Phenanthrene	0.00807	mg/kg	NC		NC			1.7E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				4,4'-DDD	0.0131	mg/kg	4.9E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-07	2.8E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				4,4'-DDE	0.021	mg/kg	7.8E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-07	4.5E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				4,4'-DDT	0.00892	mg/kg	3.3E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-07	1.9E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				alpha-Chlordane	0.0192	mg/kg	7.1E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	4.2E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				Aroclor-1254	0.88187	mg/kg	3.3E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-05	1.9E-04	mg/kg/day	2.0E-05	mg/kg/day	1.E+01
				Aroclor-1268	0.01504	mg/kg	5.6E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-06	3.3E-06	mg/kg/day	2.0E-05	mg/kg/day	2.E-01
				beta-BHC	0.00062	mg/kg	2.3E-08	mg/kg/day	1.8E+00	(mg/kg/day)-1	4.E-08	1.3E-07	mg/kg/day	3.0E-04	mg/kg/day	4.E-04
				Dieldrin	0.00912	mg/kg	3.4E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.E-06	2.0E-06	mg/kg/day	5.0E-05	mg/kg/day	4.E-02
				Endosulfan Sulfate	0.00158	mg/kg	NC		NC			3.4E-07	mg/kg/day	6.0E-03	mg/kg/day	6.E-05
				Endrin Aldehyde	0.001	mg/kg	NC		NC			2.2E-07	mg/kg/day	3.0E-04	mg/kg/day	7.E-04
				gamma-Chlordane	0.00712	mg/kg	2.6E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-08	1.5E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Heptachlor	0.000678	mg/kg	2.5E-08	mg/kg/day	4.5E+00	(mg/kg/day)-1	1.E-07	1.5E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Heptachlor Epoxide	0.0015	mg/kg	5.6E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	5.E-07	3.2E-07	mg/kg/day	1.3E-05	mg/kg/day	2.E-02
				Technical Chlordane	0.2615	mg/kg	9.7E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-06	5.7E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Cadmium	0.0971	mg/kg	NC		NC			2.1E-05	mg/kg/day	1.0E-03	mg/kg/day	2.E-02
				Lead	0.58	mg/kg	2.2E-05	mg/kg/day	--			1.2E-04	mg/kg/day			
				Manganese	5.04	mg/kg	NC		NC			1.1E-03	mg/kg/day	1.4E-01	mg/kg/day	8.E-03
				Mercury	0.153	mg/kg	NC		NC			3.3E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Mercury (methyl)	0.269	mg/kg	NC		NC			5.8E-05	mg/kg/day	1.0E-04	mg/kg/day	6.E-01
				Toxicity Equivalency (Dioxins/Furans	0.000111	mg/kg	4.1E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-04	2.4E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners	0.0000356	mg/kg	1.3E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	7.7E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								9.E-04					1.1.E+01
		EXPOSURE POINT TOTAL									9.E-04					1.1.E+01
	EXPOSURE MEDIUM TOTAL										9.E-04					1.1.E+01
WHOLE BODY TOTAL											9.E-04					1.1.E+01
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	9.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.1.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.38.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.0013	mg/kg	NC		NC			2.2E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				Phenanthrene	0.00807	mg/kg	NC		NC			1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				4,4'-DDD	0.0131	mg/kg	3.8E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	9.E-08	2.2E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				4,4'-DDE	0.021	mg/kg	6.1E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	3.6E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				4,4'-DDT	0.00892	mg/kg	2.6E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	9.E-08	1.5E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				alpha-Chlordane	0.0192	mg/kg	5.6E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	3.2E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				Aroclor-1254	0.88187	mg/kg	2.6E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-05	1.5E-04	mg/kg/day	2.0E-05	mg/kg/day	7.E+00
				Aroclor-1268	0.01504	mg/kg	4.4E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-07	2.5E-06	mg/kg/day	2.0E-05	mg/kg/day	1.E-01
				beta-BHC	0.00062	mg/kg	1.8E-08	mg/kg/day	1.8E+00	(mg/kg/day)-1	3.E-08	1.0E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				Dieldrin	0.00912	mg/kg	2.6E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	1.5E-06	mg/kg/day	5.0E-05	mg/kg/day	3.E-02
				Endosulfan Sulfate	0.00158	mg/kg	NC		NC			2.7E-07	mg/kg/day	6.0E-03	mg/kg/day	4.E-05
				Endrin Aldehyde	0.001	mg/kg	NC		NC			1.7E-07	mg/kg/day	3.0E-04	mg/kg/day	6.E-04
				gamma-Chlordane	0.00712	mg/kg	2.1E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-08	1.2E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Heptachlor	0.000678	mg/kg	2.0E-08	mg/kg/day	4.5E+00	(mg/kg/day)-1	9.E-08	1.1E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-04
				Heptachlor Epoxide	0.0015	mg/kg	4.4E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	4.E-07	2.5E-07	mg/kg/day	1.3E-05	mg/kg/day	2.E-02
				Technical Chlordane	0.2615	mg/kg	7.6E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-06	4.4E-05	mg/kg/day	5.0E-04	mg/kg/day	9.E-02
				Cadmium	0.0971	mg/kg	NC		NC			1.6E-05	mg/kg/day	1.0E-03	mg/kg/day	2.E-02
				Lead	0.58	mg/kg	1.7E-05	mg/kg/day	--			9.8E-05	mg/kg/day			
				Manganese	5.04	mg/kg	NC		NC			8.5E-04	mg/kg/day	1.4E-01	mg/kg/day	6.E-03
				Mercury	0.153	mg/kg	NC		NC			2.6E-05	mg/kg/day	3.0E-04	mg/kg/day	9.E-02
				Mercury (methyl)	0.269	mg/kg	NC		NC			4.6E-05	mg/kg/day	1.0E-04	mg/kg/day	5.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000111	mg/kg	3.2E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-04	1.9E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000356	mg/kg	1.0E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	6.0E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								7.E-04					8.3.E+00
		EXPOSURE POINT TOTAL									7.E-04					8.3.E+00
	EXPOSURE MEDIUM TOTAL										7.E-04					8.3.E+00
WHOLE BODY TOTAL											7.E-04					8.3.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	7.E-04			TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	8.3.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.39.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.0013	mg/kg	NC		NC			4.7E-07	mg/kg/day	6.0E-02	mg/kg/day	8.E-06
				Phenanthrene	0.00807	mg/kg	NC		NC			2.9E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDD	0.0131	mg/kg	4.0E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-07	4.7E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				4,4'-DDE	0.021	mg/kg	6.5E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	7.6E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDT	0.00892	mg/kg	2.8E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	9.E-08	3.2E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				alpha-Chlordane	0.0192	mg/kg	5.9E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	6.9E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Aroclor-1254	0.88187	mg/kg	2.7E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-05	3.2E-04	mg/kg/day	2.0E-05	mg/kg/day	2.E+01
				Aroclor-1268	0.01504	mg/kg	4.6E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-07	5.4E-06	mg/kg/day	2.0E-05	mg/kg/day	3.E-01
				beta-BHC	0.00062	mg/kg	1.9E-08	mg/kg/day	1.8E+00	(mg/kg/day)-1	3.E-08	2.2E-07	mg/kg/day	3.0E-04	mg/kg/day	7.E-04
				Dieldrin	0.00912	mg/kg	2.8E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.E-06	3.3E-06	mg/kg/day	5.0E-05	mg/kg/day	7.E-02
				Endosulfan Sulfate	0.00158	mg/kg	NC		NC			5.7E-07	mg/kg/day	6.0E-03	mg/kg/day	9.E-05
				Endrin Aldehyde	0.001	mg/kg	NC		NC			3.6E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				gamma-Chlordane	0.00712	mg/kg	2.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-08	2.6E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				Heptachlor	0.000678	mg/kg	2.1E-08	mg/kg/day	4.5E+00	(mg/kg/day)-1	9.E-08	2.4E-07	mg/kg/day	5.0E-04	mg/kg/day	5.E-04
				Heptachlor Epoxide	0.0015	mg/kg	4.6E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	4.E-07	5.4E-07	mg/kg/day	1.3E-05	mg/kg/day	4.E-02
				Technical Chlordane	0.2615	mg/kg	8.1E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-06	9.4E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Cadmium	0.0971	mg/kg	NC		NC			3.5E-05	mg/kg/day	1.0E-03	mg/kg/day	3.E-02
				Lead	0.58	mg/kg	1.8E-05	mg/kg/day	--			2.1E-04	mg/kg/day			
				Manganese	5.04	mg/kg	NC		NC			1.8E-03	mg/kg/day	1.4E-01	mg/kg/day	1.E-02
				Mercury	0.153	mg/kg	NC		NC			5.5E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.269	mg/kg	NC		NC			9.7E-05	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans	0.000111	mg/kg	3.4E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-04	4.0E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners	0.0000356	mg/kg	1.1E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	1.3E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								7.E-04					1.8.E+01
		EXPOSURE POINT TOTAL									7.E-04					1.8.E+01
	EXPOSURE MEDIUM TOTAL										7.E-04					1.8.E+01
WHOLE BODY TOTAL											7.E-04					1.8.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	7.E-04				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	1.8.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.40.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.0013	mg/kg	NC		NC			2.8E-07	mg/kg/day	6.0E-02	mg/kg/day	5.E-06
				Phenanthrene	0.00807	mg/kg	NC		NC			1.7E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				4,4'-DDD	0.0131	mg/kg	3.6E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	9.E-08	2.8E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				4,4'-DDE	0.021	mg/kg	5.8E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	4.5E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				4,4'-DDT	0.00892	mg/kg	2.5E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	8.E-08	1.9E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				alpha-Chlordane	0.0192	mg/kg	5.3E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	4.2E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				Aroclor-1254	0.88187	mg/kg	2.5E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-05	1.9E-04	mg/kg/day	2.0E-05	mg/kg/day	1.E+01
				Aroclor-1268	0.01504	mg/kg	4.2E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-07	3.3E-06	mg/kg/day	2.0E-05	mg/kg/day	2.E-01
				beta-BHC	0.00062	mg/kg	1.7E-08	mg/kg/day	1.8E+00	(mg/kg/day)-1	3.E-08	1.3E-07	mg/kg/day	3.0E-04	mg/kg/day	4.E-04
				Dieldrin	0.00912	mg/kg	2.5E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	2.0E-06	mg/kg/day	5.0E-05	mg/kg/day	4.E-02
				Endosulfan Sulfate	0.00158	mg/kg	NC		NC			3.4E-07	mg/kg/day	6.0E-03	mg/kg/day	6.E-05
				Endrin Aldehyde	0.001	mg/kg	NC		NC			2.2E-07	mg/kg/day	3.0E-04	mg/kg/day	7.E-04
				gamma-Chlordane	0.00712	mg/kg	2.0E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-08	1.5E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Heptachlor	0.000678	mg/kg	1.9E-08	mg/kg/day	4.5E+00	(mg/kg/day)-1	8.E-08	1.5E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Heptachlor Epoxide	0.0015	mg/kg	4.2E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	4.E-07	3.2E-07	mg/kg/day	1.3E-05	mg/kg/day	2.E-02
				Technical Chlordane	0.2615	mg/kg	7.3E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-06	5.7E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Cadmium	0.0971	mg/kg	NC		NC			2.1E-05	mg/kg/day	1.0E-03	mg/kg/day	2.E-02
				Lead	0.58	mg/kg	1.6E-05	mg/kg/day	--			1.3E-04	mg/kg/day			
				Manganese	5.04	mg/kg	NC		NC			1.1E-03	mg/kg/day	1.4E-01	mg/kg/day	8.E-03
				Mercury	0.153	mg/kg	NC		NC			3.3E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Mercury (methyl)	0.269	mg/kg	NC		NC			5.8E-05	mg/kg/day	1.0E-04	mg/kg/day	6.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000111	mg/kg	3.1E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-04	2.4E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000356	mg/kg	9.9E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-04	7.7E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								7.E-04					1.1.E+01
		EXPOSURE POINT TOTAL									7.E-04					1.1.E+01
	EXPOSURE MEDIUM TOTAL										7.E-04					1.1.E+01
WHOLE BODY TOTAL											7.E-04					1.1.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA 1.1.E+01
											7.E-04					

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.41.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.0013	mg/kg	NC		NC			2.2E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				Phenanthrene	0.00807	mg/kg	NC		NC			1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				4,4'-DDD	0.0131	mg/kg	2.8E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	7.E-08	2.2E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				4,4'-DDE	0.021	mg/kg	4.6E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	3.6E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				4,4'-DDT	0.00892	mg/kg	1.9E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	7.E-08	1.5E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				alpha-Chlordane	0.0192	mg/kg	4.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	3.2E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				Aroclor-1254	0.88187	mg/kg	1.9E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-05	1.5E-04	mg/kg/day	2.0E-05	mg/kg/day	7.E+00
				Aroclor-1268	0.01504	mg/kg	3.3E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-07	2.5E-06	mg/kg/day	2.0E-05	mg/kg/day	1.E-01
				beta-BHC	0.00062	mg/kg	1.3E-08	mg/kg/day	1.8E+00	(mg/kg/day)-1	2.E-08	1.0E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				Dieldrin	0.00912	mg/kg	2.0E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.E-06	1.5E-06	mg/kg/day	5.0E-05	mg/kg/day	3.E-02
				Endosulfan Sulfate	0.00158	mg/kg	NC		NC			2.7E-07	mg/kg/day	6.0E-03	mg/kg/day	4.E-05
				Endrin Aldehyde	0.001	mg/kg	NC		NC			1.7E-07	mg/kg/day	3.0E-04	mg/kg/day	6.E-04
				gamma-Chlordane	0.00712	mg/kg	1.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-08	1.2E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Heptachlor	0.000678	mg/kg	1.5E-08	mg/kg/day	4.5E+00	(mg/kg/day)-1	7.E-08	1.1E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-04
				Heptachlor Epoxide	0.0035	mg/kg	3.3E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.E-07	2.5E-07	mg/kg/day	1.3E-05	mg/kg/day	2.E-02
				Technical Chlordane	0.2615	mg/kg	5.7E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	4.4E-05	mg/kg/day	5.0E-04	mg/kg/day	9.E-02
				Cadmium	0.0971	mg/kg	NC		NC			1.6E-05	mg/kg/day	1.0E-03	mg/kg/day	2.E-02
				Lead	0.58	mg/kg	1.3E-05	mg/kg/day	--			9.8E-05	mg/kg/day			
				Manganese	5.04	mg/kg	NC		NC			8.5E-04	mg/kg/day	1.4E-01	mg/kg/day	6.E-03
				Mercury	0.153	mg/kg	NC		NC			2.6E-05	mg/kg/day	3.0E-04	mg/kg/day	9.E-02
				Mercury (methyl)	0.269	mg/kg	NC		NC			4.6E-05	mg/kg/day	1.0E-04	mg/kg/day	5.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000111	mg/kg	2.4E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-04	1.9E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000356	mg/kg	7.7E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-04	6.0E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-04					8.3.E+00
		EXPOSURE POINT TOTAL									5.E-04					8.3.E+00
	EXPOSURE MEDIUM TOTAL										5.E-04					8.3.E+00
WHOLE BODY TOTAL											5.E-04					8.3.E+00
TOTAL RECEPTOR RISK ACROSS ALL MEDIA											5.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				8.3.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.42.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.0013	mg/kg	NC		NC			4.7E-07	mg/kg/day	6.0E-02	mg/kg/day	8.E-06
				Phenanthrene	0.00807	mg/kg	NC		NC			2.9E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDD	0.0131	mg/kg	4.0E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-07	4.7E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				4,4'-DDE	0.021	mg/kg	6.5E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	7.6E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDT	0.00892	mg/kg	2.8E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	9.E-08	3.2E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				alpha-Chlordane	0.0192	mg/kg	5.9E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	6.9E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Aroclor-1254	0.88187	mg/kg	2.7E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-05	3.2E-04	mg/kg/day	2.0E-05	mg/kg/day	2.E+01
				Aroclor-1268	0.01504	mg/kg	4.6E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-07	5.4E-06	mg/kg/day	2.0E-05	mg/kg/day	3.E-01
				beta-BHC	0.00062	mg/kg	1.9E-08	mg/kg/day	1.8E+00	(mg/kg/day)-1	3.E-08	2.2E-07	mg/kg/day	3.0E-04	mg/kg/day	7.E-04
				Dieldrin	0.00912	mg/kg	2.8E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.E-06	3.3E-06	mg/kg/day	5.0E-05	mg/kg/day	7.E-02
				Endosulfan Sulfate	0.00158	mg/kg	NC		NC			5.7E-07	mg/kg/day	6.0E-03	mg/kg/day	9.E-05
				Endrin Aldehyde	0.001	mg/kg	NC		NC			3.6E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				gamma-Chlordane	0.00712	mg/kg	2.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-08	2.6E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				Heptachlor	0.000678	mg/kg	2.1E-08	mg/kg/day	4.5E+00	(mg/kg/day)-1	9.E-08	2.4E-07	mg/kg/day	5.0E-04	mg/kg/day	5.E-04
				Heptachlor Epoxide	0.0015	mg/kg	4.6E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	4.E-07	5.4E-07	mg/kg/day	1.3E-05	mg/kg/day	4.E-02
				Technical Chlordane	0.2615	mg/kg	8.1E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-06	9.4E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Cadmium	0.0971	mg/kg	NC		NC			3.5E-05	mg/kg/day	1.0E-03	mg/kg/day	3.E-02
				Lead	0.58	mg/kg	1.8E-05	mg/kg/day	--			2.1E-04	mg/kg/day			
				Manganese	5.04	mg/kg	NC		NC			1.8E-03	mg/kg/day	1.4E-01	mg/kg/day	1.E-02
				Mercury	0.153	mg/kg	NC		NC			5.5E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.269	mg/kg	NC		NC			9.7E-05	mg/kg/day	1.0E-04	mg/kg/day	1.E+00
				Toxicity Equivalency (Dioxins/Furans)	0.000111	mg/kg	3.4E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-04	4.0E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000356	mg/kg	1.1E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	1.3E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								7.E-04					1.8.E+01
		EXPOSURE POINT TOTAL									7.E-04					1.8.E+01
	EXPOSURE MEDIUM TOTAL										7.E-04					1.8.E+01
WHOLE BODY TOTAL											7.E-04					1.8.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	7.E-04		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		1.8.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAB

US EPA ARCHIVE DOCUMENT

TABLE G.7.43.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.00268	mg/kg	NC		NC			5.8E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)anthracene	0.0022	mg/kg	8.2E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	4.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	0.0024	mg/kg	8.9E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-07	5.2E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	0.0025	mg/kg	9.3E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-08	5.4E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	0.000632	mg/kg	NC		NC			1.4E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Dibenzo(a,h)anthracene	0.0004	mg/kg	1.5E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	8.7E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Indeno(1,2,3-cd)pyrene	0.00079	mg/kg	2.9E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	1.7E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Phenanthrene	0.01143	mg/kg	NC		NC			2.5E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				4,4'-DDD	0.0126	mg/kg	4.7E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-07	2.7E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				4,4'-DDE	0.02869	mg/kg	1.1E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-07	6.2E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				4,4'-DDT	0.00686	mg/kg	2.5E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	9.E-08	1.5E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				alpha-Chlordane	0.0236	mg/kg	8.8E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	5.1E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Aroclor-1254	2.8888	mg/kg	1.1E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	6.3E-04	mg/kg/day	2.0E-05	mg/kg/day	3.E+01
				Aroclor-1268	0.03843	mg/kg	1.4E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-06	8.3E-06	mg/kg/day	2.0E-05	mg/kg/day	4.E-01
				Dieldrin	0.00866	mg/kg	3.2E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.E-06	1.9E-06	mg/kg/day	5.0E-05	mg/kg/day	4.E-02
				gamma-Chlordane	0.0089	mg/kg	3.3E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	1.9E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				Heptachlor Epoxide	0.0007	mg/kg	2.6E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-07	1.5E-07	mg/kg/day	1.3E-05	mg/kg/day	1.E-02
				Technical Chlordane	0.674	mg/kg	2.5E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-06	1.5E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				Chromium	0.112	mg/kg	NC		NC			2.4E-05	mg/kg/day	3.0E-03	mg/kg/day	8.E-03
				Lead	0.16	mg/kg	5.9E-06	mg/kg/day	--			3.5E-05	mg/kg/day			
				Mercury	0.136	mg/kg	NC		NC			2.9E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Mercury (methyl)	0.147	mg/kg	NC		NC			3.2E-05	mg/kg/day	1.0E-04	mg/kg/day	3.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000492	mg/kg	1.8E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-03	1.1E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000195	mg/kg	7.2E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-04	4.2E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-03					3.2 E+01
		EXPOSURE POINT TOTAL									3.E-03					3.2.E+01
	EXPOSURE MEDIUM TOTAL										3.E-03					3.2.E+01
WHOLE BODY TOTAL											3.E-03					3.2.E+01
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	3.E-03			TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		3.2.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availalable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G-7.44.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.00268	mg/kg	NC		NC			4.5E-07	mg/kg/day	6.0E-02	mg/kg/day	8.E-06
				Benzo(a)anthracene	0.0022	mg/kg	6.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	3.7E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(a)pyrene	0.0024	mg/kg	7.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-07	4.1E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(b)fluoranthene	0.0025	mg/kg	7.3E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	4.2E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	0.000632	mg/kg	NC		NC			1.1E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Dibenzo(a,h)anthracene	0.0004	mg/kg	1.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-08	6.8E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	0.00079	mg/kg	2.3E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	1.3E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Phenanthrene	0.01143	mg/kg	NC		NC			1.9E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				4,4'-DDD	0.0126	mg/kg	3.7E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	9.E-08	2.1E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				4,4'-DDE	0.02869	mg/kg	8.3E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-07	4.9E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				4,4'-DDT	0.00686	mg/kg	2.0E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	7.E-08	1.2E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				alpha-Chlordane	0.0236	mg/kg	6.8E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	4.0E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				Aroclor-1254	2.8888	mg/kg	8.4E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	4.9E-04	mg/kg/day	2.0E-05	mg/kg/day	2.E+01
				Aroclor-1268	0.03843	mg/kg	1.1E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-06	6.5E-06	mg/kg/day	2.0E-05	mg/kg/day	3.E-01
				Dieldrin	0.00866	mg/kg	2.5E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	1.5E-06	mg/kg/day	5.0E-05	mg/kg/day	3.E-02
				gamma-Chlordane	0.0089	mg/kg	2.6E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-08	1.5E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Heptachlor Epoxide	0.0007	mg/kg	2.0E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-07	1.2E-07	mg/kg/day	1.3E-05	mg/kg/day	9.E-03
				Technical Chlordane	0.674	mg/kg	2.0E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-06	1.1E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Chromium	0.112	mg/kg	NC		NC			1.9E-05	mg/kg/day	3.0E-03	mg/kg/day	6.E-03
				Lead	0.16	mg/kg	4.6E-06	mg/kg/day	--			2.7E-05	mg/kg/day			
				Mercury	0.136	mg/kg	NC		NC			2.3E-05	mg/kg/day	3.0E-04	mg/kg/day	8.E-02
				Mercury (methyl)	0.147	mg/kg	NC		NC			2.5E-05	mg/kg/day	1.0E-04	mg/kg/day	2.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000492	mg/kg	1.4E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-03	8.3E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000195	mg/kg	5.7E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-05	3.3E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-03					2.5.E+01
		EXPOSURE POINT TOTAL									2.E-03					2.5.E+01
	EXPOSURE MEDIUM TOTAL										2.E-03					2.5.E+01
WHOLE BODY TOTAL											2.E-03					2.5.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		2.E-03	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				2.5.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.45.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.00268	mg/kg	NC		NC			9.6E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Benzo(a)anthracene	0.0022	mg/kg	6.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	7.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(a)pyrene	0.0024	mg/kg	7.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-07	8.6E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(b)fluoranthene	0.0025	mg/kg	7.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	9.0E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(g,h,i)perylene	0.000632	mg/kg	NC		NC			2.3E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Dibenzo(a,h)anthracene	0.0004	mg/kg	1.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-08	1.4E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Indeno(1,2,3-cd)pyrene	0.00079	mg/kg	2.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	2.8E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				Phenanthrene	0.01143	mg/kg	NC		NC			4.1E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDD	0.0126	mg/kg	3.9E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	9.E-08	4.5E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				4,4'-DDE	0.02869	mg/kg	8.9E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-07	1.0E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDT	0.00686	mg/kg	2.1E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	7.E-08	2.5E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				alpha-Chlordane	0.0236	mg/kg	7.3E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	8.5E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	2.8888	mg/kg	8.9E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	1.0E-03	mg/kg/day	2.0E-05	mg/kg/day	5 E+01
				Aroclor-1268	0.03843	mg/kg	1.2E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-06	1.4E-05	mg/kg/day	2.0E-05	mg/kg/day	7.E-01
				Dieldrin	0.00866	mg/kg	2.7E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	3.1E-06	mg/kg/day	5.0E-05	mg/kg/day	6.E-02
				gamma-Chlordane	0.0089	mg/kg	2.7E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	3.2E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				Heptachlor Epoxide	0.0007	mg/kg	2.2E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-07	2.5E-07	mg/kg/day	1.3E-05	mg/kg/day	2.E-02
				Technical Chlordane	0.674	mg/kg	2.1E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-06	2.4E-04	mg/kg/day	5.0E-04	mg/kg/day	5.E-01
				Chromium	0.112	mg/kg	NC		NC			4.0E-05	mg/kg/day	3.0E-03	mg/kg/day	1.E-02
				Lead	0.16	mg/kg	4.9E-06	mg/kg/day	--			5.8E-05	mg/kg/day			
				Mercury	0.136	mg/kg	NC		NC			4.9E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.147	mg/kg	NC		NC			5.3E-05	mg/kg/day	1.0E-04	mg/kg/day	5.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000492	mg/kg	1.5E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-03	1.8E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000195	mg/kg	6.0E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	9.E-05	7.0E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-03					5.4.E+01
		EXPOSURE POINT TOTAL									3.E-03					5.4.E+01
	EXPOSURE MEDIUM TOTAL										3.E-03					5.4.E+01
WHOLE BODY TOTAL											3.E-03					5.4.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		3.E-03	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				5.4.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.46.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.00268	mg/kg	NC		NC			5.8E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)anthracene	0.0022	mg/kg	6.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	4.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(a)pyrene	0.0024	mg/kg	6.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-07	5.2E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(b)fluoranthene	0.0025	mg/kg	7.0E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	5.4E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Benzo(g,h,i)perylene	0.000632	mg/kg	NC		NC			1.4E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Dibenzo(a,h)anthracene	0.0004	mg/kg	1.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-08	8.7E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Indeno(1,2,3-cd)pyrene	0.00079	mg/kg	2.2E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	1.7E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Phenanthrene	0.01143	mg/kg	NC		NC			2.5E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				4,4'-DDD	0.0126	mg/kg	3.5E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	8.E-08	2.7E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				4,4'-DDE	0.02869	mg/kg	8.0E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-07	6.2E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				4,4'-DDT	0.00686	mg/kg	1.9E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	6.E-08	1.5E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				alpha-Chlordane	0.0236	mg/kg	6.6E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	5.1E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Aroclor-1254	2.8888	mg/kg	8.0E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	6.3E-04	mg/kg/day	2.0E-05	mg/kg/day	3.E+01
				Aroclor-1268	0.03843	mg/kg	1.1E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-06	8.3E-06	mg/kg/day	2.0E-05	mg/kg/day	4.E-01
				Dieldrin	0.00866	mg/kg	2.4E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	1.9E-06	mg/kg/day	5.0E-05	mg/kg/day	4.E-02
				gamma-Chlordane	0.0089	mg/kg	2.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-08	1.9E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				Heptachlor Epoxide	0.0007	mg/kg	1.9E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-07	1.5E-07	mg/kg/day	1.3E-05	mg/kg/day	1.E-02
				Technical Chlordane	0.674	mg/kg	1.9E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-06	1.5E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				Chromium	0.112	mg/kg	NC		NC			2.4E-05	mg/kg/day	3.0E-03	mg/kg/day	8.E-03
				Lead	0.16	mg/kg	4.5E-06	mg/kg/day	--			3.5E-05	mg/kg/day			
				Mercury	0.136	mg/kg	NC		NC			2.9E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Mercury (methyl)	0.147	mg/kg	NC		NC			3.2E-05	mg/kg/day	1.0E-04	mg/kg/day	3.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000492	mg/kg	1.4E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-03	1.1E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000195	mg/kg	5.4E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-05	4.2E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-03					3.2.E+01
		EXPOSURE POINT TOTAL									2.E-03					3.2.E+01
	EXPOSURE MEDIUM TOTAL										2.E-03					3.2.E+01
WHOLE BODY TOTAL											2.E-03					3.2.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		2.E-03	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				3.2.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: AWS

US EPA ARCHIVE DOCUMENT

TABLE G.7.47.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.00268	mg/kg	NC		NC			4.5E-07	mg/kg/day	6.0E-02	mg/kg/day	8.E-06
WHITE SUCKER				Benzo(a)anthracene	0.0022	mg/kg	4.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	3.7E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(a)pyrene	0.0024	mg/kg	5.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	4.1E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(b)fluoranthene	0.0025	mg/kg	5.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	4.2E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	0.000632	mg/kg	NC		NC			1.1E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Dibenzo(a,h)anthracene	0.0004	mg/kg	8.7E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-08	6.8E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Indeno(1,2,3-cd)pyrene	0.00079	mg/kg	1.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	1.3E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Phenanthrene	0.01143	mg/kg	NC		NC			1.9E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				4,4'-DDD	0.0126	mg/kg	2.7E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	7.E-08	2.1E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				4,4'-DDE	0.02869	mg/kg	6.2E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	4.9E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				4,4'-DDT	0.00686	mg/kg	1.5E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-08	1.2E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				alpha-Chlordane	0.0236	mg/kg	5.1E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	4.0E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				Aroclor-1254	2.8888	mg/kg	6.3E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-04	4.9E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E+01
				Aroclor-1268	0.03843	mg/kg	8.4E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-06	6.5E-06	mg/kg/day	2.0E-02	mg/kg/day	3.E-01
				Dieldrin	0.00856	mg/kg	1.9E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.E-06	1.5E-06	mg/kg/day	5.0E-05	mg/kg/day	3.E-02
				gamma-Chlordane	0.0089	mg/kg	1.9E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-08	1.5E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Heptachlor Epoxide	0.0007	mg/kg	1.5E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	1.E-07	1.2E-07	mg/kg/day	1.3E-05	mg/kg/day	9.E-03
				Technical Chlordane	0.674	mg/kg	1.5E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-06	1.1E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Chromium	0.112	mg/kg	NC		NC			1.9E-05	mg/kg/day	3.0E-03	mg/kg/day	6.E-03
				Lead	0.16	mg/kg	3.5E-06	mg/kg/day	--			2.7E-05	mg/kg/day			
				Mercury	0.136	mg/kg	NC		NC			2.3E-05	mg/kg/day	3.0E-04	mg/kg/day	8.E-02
				Mercury (methyl)	0.147	mg/kg	NC		NC			2.5E-05	mg/kg/day	1.0E-04	mg/kg/day	2.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000492	mg/kg	1.1E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-03	8.3E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000195	mg/kg	4.2E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-05	3.3E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-03					2.5 E+01
		EXPOSURE POINT TOTAL									2.E-03					2.5 E+01
	EXPOSURE MEDIUM TOTAL										2.E-03					2.5 E+01
WHOLE BODY TOTAL											2.E-03					2.5 E+01
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	2.E-03			TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		2.5.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availalible from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: AWS

US EPA ARCHIVE DOCUMENT

TABLE G.7.48.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	INGESTION	Acenaphthylene	0.00268	mg/kg	NC		NC			9.0E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Benzo(a)anthracene	0.0022	mg/kg	6.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	7.9E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(a)pyrene	0.0024	mg/kg	7.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-07	8.6E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(b)fluoranthene	0.0025	mg/kg	7.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	9.0E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(g,h,i)perylene	0.000632	mg/kg	NC		NC			2.3E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Dibenzo(a,h)anthracene	0.0004	mg/kg	1.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-08	1.4E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Indeno(1,2,3-cd)pyrene	0.00079	mg/kg	2.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	2.8E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				Phenanthrene	0.01143	mg/kg	NC		NC			4.1E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDD	0.0126	mg/kg	3.9E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	9.E-08	4.5E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				4,4'-DDE	0.02869	mg/kg	8.9E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-07	1.0E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDT	0.00686	mg/kg	2.1E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	7.E-08	2.5E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				alpha-Chlordane	0.0236	mg/kg	7.3E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	8.5E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	2.8888	mg/kg	8.9E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	1.0E-03	mg/kg/day	2.0E-05	mg/kg/day	5.E+01
				Aroclor-1268	0.03843	mg/kg	1.2E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-06	1.4E-05	mg/kg/day	2.0E-05	mg/kg/day	7.E-01
				Dieldrin	0.00866	mg/kg	2.7E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	3.1E-06	mg/kg/day	5.0E-05	mg/kg/day	6.E-02
				gamma-Chlordane	0.0089	mg/kg	2.7E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	3.2E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				Heptachlor Epoxide	0.0007	mg/kg	2.2E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	2.E-07	2.5E-07	mg/kg/day	1.3E-05	mg/kg/day	2.E-02
				Technical Chlordane	0.674	mg/kg	2.1E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-06	2.4E-04	mg/kg/day	5.0E-04	mg/kg/day	5.E-01
				Chromium	0.112	mg/kg	NC		NC			4.0E-05	mg/kg/day	3.0E-03	mg/kg/day	1.E-02
				Lead	0.16	mg/kg	4.9E-06	mg/kg/day	--			5.8E-05	mg/kg/day			
				Mercury	0.136	mg/kg	NC		NC			4.9E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.147	mg/kg	NC		NC			5.3E-05	mg/kg/day	1.0E-04	mg/kg/day	5.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000492	mg/kg	1.5E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-03	1.8E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000195	mg/kg	6.0E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	9.E-05	7.0E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-03					5.4.E+01
		EXPOSURE POINT TOTAL									3.E-03					5.4.E+01
	EXPOSURE MEDIUM TOTAL										3.E-03					5.4.E+01
WHOLE BODY TOTAL											3.E-03					5.4.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		3.E-03	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				5.4.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: AWS

US EPA ARCHIVE DOCUMENT

TABLE G.7.49.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00193	mg/kg	NC		NC			4.2E-07	mg/kg/day	6.0E-02	mg/kg/day	7.E-06
				Benzo(a)pyrene	0.000962	mg/kg	3.6E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Benzo(b)fluoranthene	0.00119	mg/kg	4.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.6E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				Dibenzo(a,h)anthracene	0.00065	mg/kg	2.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.4E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Phenanthrene	0.02012	mg/kg	NC		NC			4.4E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDD	0.01469	mg/kg	5.5E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-07	3.2E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				4,4'-DDE	0.04451	mg/kg	1.7E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	6.E-07	9.6E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDT	0.00337	mg/kg	1.3E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-08	7.3E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				alpha-Chlordane	0.02007	mg/kg	7.4E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	4.3E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				Aroclor-1254	0.95861	mg/kg	3.6E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-05	2.1E-04	mg/kg/day	2.0E-05	mg/kg/day	1.E+01
				beta-BHC	0.0018	mg/kg	6.7E-08	mg/kg/day	1.8E+00	(mg/kg/day)-1	1.E-07	3.9E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Dieldrin	0.00789	mg/kg	2.9E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.E-06	1.7E-06	mg/kg/day	5.0E-05	mg/kg/day	3.E-02
				gamma-Chlordane	0.00859	mg/kg	3.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	1.9E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				Heptachlor Epoxide	0.00227	mg/kg	8.4E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	8.E-07	4.9E-07	mg/kg/day	1.3E-05	mg/kg/day	4.E-02
				Technical Chlordane	0.44722	mg/kg	1.7E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-06	9.7E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Cadmium	0.026	mg/kg	NC		NC			5.6E-06	mg/kg/day	1.0E-03	mg/kg/day	6.E-03
				Lead	0.38	mg/kg	1.4E-05	mg/kg/day	--			8.2E-05	mg/kg/day			
				Manganese	4.98	mg/kg	NC		NC			1.1E-03	mg/kg/day	1.4E-01	mg/kg/day	8.E-03
				Mercury	0.0349	mg/kg	NC		NC			7.6E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-02
				Mercury (methyl)	0.0367	mg/kg	NC		NC			7.9E-06	mg/kg/day	1.0E-04	mg/kg/day	8.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.000181	mg/kg	6.7E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-03	3.9E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000323	mg/kg	1.2E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	7.0E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-03					1.1E+01
		EXPOSURE POINT TOTAL									1.E-03					1.1E+01
	EXPOSURE MEDIUM TOTAL										1.E-03					1.1E+01
WHOLE BODY TOTAL											1.E-03					1.1E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	1.E-03				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	1.1E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.50.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00193	mg/kg	NC		NC			3.3E-07	mg/kg/day	6.0E-02	mg/kg/day	5.E-06
				Benzo(a)pyrene	0.000962	mg/kg	2.8E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.6E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Benzo(b)fluoranthene	0.00119	mg/kg	3.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.0E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Dibenzo(a,h)anthracene	0.00065	mg/kg	1.9E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	1.1E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Phenanthrene	0.02012	mg/kg	NC		NC			3.4E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDD	0.01469	mg/kg	4.3E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-07	2.5E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				4,4'-DDE	0.04451	mg/kg	1.3E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-07	7.5E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDT	0.00337	mg/kg	9.8E-08	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-08	5.7E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				alpha-Chlordane	0.02007	mg/kg	5.8E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	3.4E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				Aroclor-1254	0.95861	mg/kg	2.8E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-05	1.6E-04	mg/kg/day	2.0E-05	mg/kg/day	8.E+00
				beta-BHC	0.0018	mg/kg	5.2E-08	mg/kg/day	1.8E+00	(mg/kg/day)-1	9.E-08	3.0E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Dieldrin	0.00789	mg/kg	2.3E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	1.3E-06	mg/kg/day	5.0E-05	mg/kg/day	3.E-02
				gamma-Chlordane	0.00859	mg/kg	2.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-08	1.5E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Heptachlor Epoxide	0.00227	mg/kg	6.6E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	6.E-07	3.8E-07	mg/kg/day	1.3E-05	mg/kg/day	3.E-02
				Technical Chlordane	0.44722	mg/kg	1.3E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-06	7.6E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Cadmium	0.026	mg/kg	NC		NC			4.4E-06	mg/kg/day	1.0E-03	mg/kg/day	4.E-03
				Lead	0.38	mg/kg	1.1E-05	mg/kg/day	--			6.4E-05	mg/kg/day			
				Manganese	4.98	mg/kg	NC		NC			8.4E-04	mg/kg/day	1.4E-01	mg/kg/day	6.E-03
				Mercury	0.0349	mg/kg	NC		NC			5.9E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
				Mercury (methyl)	0.0367	mg/kg	NC		NC			6.2E-06	mg/kg/day	1.0E-04	mg/kg/day	6.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.000181	mg/kg	5.2E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-04	3.1E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000323	mg/kg	9.4E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-04	5.5E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-03					8.4.E+00
		EXPOSURE POINT TOTAL									1.E-03					8.4.E+00
	EXPOSURE MEDIUM TOTAL										1.E-03					8.4.E+00
WHOLE BODY TOTAL											1.E-03					8.4.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											1.E-03					8.4.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.51.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00193	mg/kg	NC		NC			6.9E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)pyrene	0.000962	mg/kg	3.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	3.5E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(b)fluoranthene	0.00119	mg/kg	3.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	4.3E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.00065	mg/kg	2.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	2.3E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Phenanthrene	0.02012	mg/kg	NC		NC			7.2E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDD	0.01469	mg/kg	4.5E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-07	5.3E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				4,4'-DDE	0.04451	mg/kg	1.4E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-07	1.6E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				4,4'-DDT	0.00337	mg/kg	1.0E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-08	1.2E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				alpha-Chlordane	0.02007	mg/kg	6.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	7.2E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Aroclor-1254	0.95861	mg/kg	3.0E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-05	3.5E-04	mg/kg/day	2.0E-05	mg/kg/day	2.E+01
				beta-BHC	0.0018	mg/kg	5.6E-08	mg/kg/day	1.8E+00	(mg/kg/day)-1	1.E-07	6.5E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Dieldrin	0.00789	mg/kg	2.4E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	2.8E-06	mg/kg/day	5.0E-05	mg/kg/day	6.E-02
				gamma-Chlordane	0.00859	mg/kg	2.6E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-08	3.1E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				Heptachlor Epoxide	0.00227	mg/kg	7.0E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	6.E-07	8.2E-07	mg/kg/day	1.3E-05	mg/kg/day	6.E-02
				Technical Chlordane	0.44722	mg/kg	1.4E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-06	1.6E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				Cadmium	0.026	mg/kg	NC		NC			9.4E-06	mg/kg/day	1.0E-03	mg/kg/day	9.E-03
				Lead	0.38	mg/kg	1.2E-05	mg/kg/day	--			1.4E-04	mg/kg/day			
				Manganese	4.98	mg/kg	NC		NC			1.8E-03	mg/kg/day	1.4E-01	mg/kg/day	1.E-02
				Mercury	0.0349	mg/kg	NC		NC			1.3E-05	mg/kg/day	3.0E-04	mg/kg/day	4.E-02
				Mercury (methyl)	0.0367	mg/kg	NC		NC			1.3E-05	mg/kg/day	1.0E-04	mg/kg/day	1.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0001181	mg/kg	5.6E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-04	6.5E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000323	mg/kg	1.0E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-04	1.2E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-03					1.8.E+01
		EXPOSURE POINT TOTAL									1.E-03					1.8.E+01
	EXPOSURE MEDIUM TOTAL										1.E-03					1.8.E+01
WHOLE BODY TOTAL											1.E-03					1.8.E+01
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	1.E-03	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.8.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.52.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00193	mg/kg	NC		NC			4.2E-07	mg/kg/day	6.0E-02	mg/kg/day	7.E-06
				Benzo(a)pyrene	0.000962	mg/kg	2.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	2.1E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Benzo(b)fluoranthene	0.00119	mg/kg	3.3E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	2.6E-07	mg/kg/day	3.0E-02	mg/kg/day	9.E-06
				Dibenzo(a,h)anthracene	0.00065	mg/kg	1.8E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	1.4E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Phenanthrene	0.02012	mg/kg	NC		NC			4.4E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDD	0.01469	mg/kg	4.1E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-07	3.2E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				4,4'-DDE	0.04451	mg/kg	1.2E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-07	9.6E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDT	0.00337	mg/kg	9.4E-08	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-08	7.3E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				alpha-Chlordane	0.02007	mg/kg	5.6E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	4.3E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				Aroclor-1254	0.95861	mg/kg	2.7E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-05	2.1E-04	mg/kg/day	2.0E-05	mg/kg/day	1.E+01
				beta-BHC	0.0018	mg/kg	5.0E-08	mg/kg/day	1.8E+00	(mg/kg/day)-1	9.E-08	3.9E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Dieldrin	0.00789	mg/kg	2.2E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	1.7E-06	mg/kg/day	5.0E-05	mg/kg/day	3.E-02
				gamma-Chlordane	0.00859	mg/kg	2.4E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-08	1.9E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				Heptachlor Epoxide	0.00227	mg/kg	6.3E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	6.E-07	4.9E-07	mg/kg/day	1.3E-05	mg/kg/day	4.E-02
				Technical Chlordane	0.44722	mg/kg	1.2E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-06	9.7E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Cadmium	0.026	mg/kg	NC		NC			5.6E-06	mg/kg/day	4.0E-03	mg/kg/day	6.E-03
				Lead	0.38	mg/kg	1.1E-05	mg/kg/day	--			8.2E-05	mg/kg/day			
				Manganese	4.98	mg/kg	NC		NC			1.1E-03	mg/kg/day	1.4E-01	mg/kg/day	8.E-03
				Mercury	0.0349	mg/kg	NC		NC			7.6E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-02
				Mercury (methyl)	0.0367	mg/kg	NC		NC			7.9E-06	mg/kg/day	1.0E-04	mg/kg/day	8.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.000181	mg/kg	5.0E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-04	3.9E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000323	mg/kg	9.0E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-04	7.0E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-03					1.1E+01
		EXPOSURE POINT TOTAL									1.E-03					1.1E+01
	EXPOSURE MEDIUM TOTAL										1.E-03					1.1E+01
WHOLE BODY TOTAL											1.E-03					1.1E+01
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	1.E-03	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.1E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.53.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00193	mg/kg	NC		NC			3.3E-07	mg/kg/day	6.0E-02	mg/kg/day	5.E-06
				Benzo(a)pyrene	0.000962	mg/kg	2.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.6E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Benzo(b)fluoranthene	0.00119	mg/kg	2.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	2.0E-07	mg/kg/day	3.0E-02	mg/kg/day	7.E-06
				Dibenzo(a,h)anthracene	0.00065	mg/kg	1.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	1.1E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Phenanthrene	0.02012	mg/kg	NC		NC			3.4E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDD	0.01460	mg/kg	3.2E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	8.E-08	2.5E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				4,4'-DDE	0.04451	mg/kg	9.7E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-07	7.5E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDT	0.00337	mg/kg	7.3E-08	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-08	5.7E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				alpha-Chlordane	0.02007	mg/kg	4.4E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	3.4E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				Aroclor-1254	0.95861	mg/kg	2.1E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-05	1.6E-04	mg/kg/day	2.0E-05	mg/kg/day	8.E+00
				beta-BHC	0.0018	mg/kg	3.9E-08	mg/kg/day	1.8E+00	(mg/kg/day)-1	7.E-08	3.0E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Dieldrin	0.00789	mg/kg	1.7E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.E-06	1.3E-06	mg/kg/day	5.0E-05	mg/kg/day	3.E-02
				gamma-Chlordane	0.00859	mg/kg	1.9E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-08	1.5E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				Heptachlor Epoxide	0.00227	mg/kg	4.9E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	4.E-07	3.8E-07	mg/kg/day	1.3E-05	mg/kg/day	3.E-02
				Technical Chlordane	0.44722	mg/kg	9.7E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-06	7.6E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Cadmium	0.026	mg/kg	NC		NC			4.4E-06	mg/kg/day	1.0E-03	mg/kg/day	4.E-03
				Lead	0.38	mg/kg	8.3E-06	mg/kg/day	--			6.4E-05	mg/kg/day			
				Manganese	4.98	mg/kg	NC		NC			8.4E-04	mg/kg/day	1.4E-01	mg/kg/day	6.E-03
				Mercury	0.0349	mg/kg	NC		NC			5.9E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
				Mercury (methyl)	0.0367	mg/kg	NC		NC			6.2E-06	mg/kg/day	1.0E-04	mg/kg/day	6.E-02
				Toxicity Equivalency (Dioxins/Furans)	0.000181	mg/kg	3.9E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-04	3.1E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000323	mg/kg	7.0E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-04	5.5E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								7.E-04					8.4.E+00
		EXPOSURE POINT TOTAL									7.E-04					8.4.E+00
	EXPOSURE MEDIUM TOTAL										7.E-04					8.4.E+00
WHOLE BODY TOTAL											7.E-04					8.4.E+00
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		7.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				8.4.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
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TABLE G.7.54.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00193	mg/kg	NC		NC			6.9E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)pyrene	0.000962	mg/kg	3.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	3.5E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(b)fluoranthene	0.00119	mg/kg	3.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	4.3E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Dibenzo(a,h)anthracene	0.00065	mg/kg	2.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	2.3E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Phenanthrene	0.02012	mg/kg	NC		NC			7.2E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDD	0.01469	mg/kg	4.5E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	1.E-07	5.3E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				4,4'-DDE	0.04451	mg/kg	1.4E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-07	1.6E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				4,4'-DDT	0.00337	mg/kg	1.0E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-08	1.2E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				alpha-Chlordane	0.02007	mg/kg	6.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	7.2E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Aroclor-1254	0.95861	mg/kg	3.0E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-05	3.5E-04	mg/kg/day	2.0E-05	mg/kg/day	2.E+01
				beta-BHC	0.0018	mg/kg	5.6E-08	mg/kg/day	1.8E+00	(mg/kg/day)-1	1.E-07	6.5E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Dieldrin	0.00789	mg/kg	2.4E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	2.8E-06	mg/kg/day	5.0E-05	mg/kg/day	6.E-02
				gamma-Chlordane	0.00859	mg/kg	2.6E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-08	3.1E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				Heptachlor Epoxide	0.00227	mg/kg	7.0E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	6.E-07	8.2E-07	mg/kg/day	1.3E-05	mg/kg/day	6.E-02
				Technical Chlordane	0.44722	mg/kg	1.4E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-06	1.6E-04	mg/kg/day	5.0E-04	mg/kg/day	3.E-01
				Cadmium	0.026	mg/kg	NC		NC			9.4E-06	mg/kg/day	1.0E-03	mg/kg/day	9.E-03
				Lead	0.38	mg/kg	1.2E-05	mg/kg/day	--			1.4E-04	mg/kg/day			
				Manganese	4.98	mg/kg	NC		NC			1.8E-03	mg/kg/day	1.4E-01	mg/kg/day	1.E-02
				Mercury	0.0349	mg/kg	NC		NC			1.3E-05	mg/kg/day	3.0E-04	mg/kg/day	4.E-02
				Mercury (methyl)	0.0367	mg/kg	NC		NC			1.3E-05	mg/kg/day	1.0E-04	mg/kg/day	1.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000181	mg/kg	5.6E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-04	6.5E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000323	mg/kg	1.0E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-04	1.2E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-03					1.8.E+01
		EXPOSURE POINT TOTAL									1.E-03					1.8.E+01
	EXPOSURE MEDIUM TOTAL										1.E-03					1.8.E+01
WHOLE BODY TOTAL											1.E-03					1.8.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		1.E-03	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.8.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availalable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.55.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	INGESTION	Acenaphthylene	0.0004	mg/kg	NC		NC			8.7E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				Benzo(a)pyrene	0.000704	mg/kg	2.6E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Benzo(b)fluoranthene	0.0008	mg/kg	3.0E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	1.7E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Benzo(g,h,i)perylene	0.000703	mg/kg	NC		NC			1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Dibenzo(a,h)anthracene	0.00038	mg/kg	1.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	8.2E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Phenanthrene	0.0014	mg/kg	NC		NC			3.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				4,4'-DDE	0.0104	mg/kg	3.9E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-07	2.3E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				alpha-Chlordane	0.002	mg/kg	7.4E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-08	4.3E-07	mg/kg/day	5.0E-04	mg/kg/day	9.E-04
				Aroclor-1254	0.2165	mg/kg	8.0E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	4.7E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Aroclor-1268	0.0127	mg/kg	4.7E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-07	2.7E-06	mg/kg/day	2.0E-05	mg/kg/day	1.E-01
				Dieldrin	0.00061	mg/kg	2.3E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-07	1.3E-07	mg/kg/day	5.0E-05	mg/kg/day	3.E-03
				gamma-Chlordane	0.00086	mg/kg	3.2E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	1.9E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Technical Chlordane	0.03671	mg/kg	1.4E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-07	7.9E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Lead	0.009	mg/kg	3.3E-07	mg/kg/day	--			1.9E-06	mg/kg/day			
				Mercury	0.269	mg/kg	NC		NC			5.8E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.236	mg/kg	NC		NC			5.1E-05	mg/kg/day	1.0E-04	mg/kg/day	5.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0000315	mg/kg	1.2E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	6.8E-09	mg/kg/day			
				Toxicity Equivalency (PCB Congeners	0.00000453	mg/kg	1.7E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-05	9.8E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-04					3.E+00
		EXPOSURE POINT TOTAL									2.E-04					3.E+00
	EXPOSURE MEDIUM TOTAL										2.E-04					3.E+00
FILLET TOTAL											2.E-04					3.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	2.E-04		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA			3.2.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.56.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	INGESTION	Acenaphthylene	0.0004	mg/kg	NC		NC			6.8E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				Benzo(a)pyrene	0.000704	mg/kg	2.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	1.2E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Benzo(b)fluoranthene	0.0008	mg/kg	2.3E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	1.4E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Benzo(g,h,i)perylene	0.000703	mg/kg	NC		NC			1.2E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Dibenzo(a,h)anthracene	0.00038	mg/kg	1.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-08	6.4E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Phenanthrene	0.0014	mg/kg	NC		NC			2.4E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				4,4'-DDE	0.0104	mg/kg	3.0E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-07	1.8E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				alpha-Chlordane	0.002	mg/kg	5.8E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	3.4E-07	mg/kg/day	5.0E-04	mg/kg/day	7.E-04
				Aroclor-1254	0.2166	mg/kg	6.3E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	3.7E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Aroclor-1268	0.0127	mg/kg	3.7E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-07	2.1E-06	mg/kg/day	2.0E-05	mg/kg/day	1.E-01
				Dieldrin	0.00061	mg/kg	1.8E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.E-07	1.0E-07	mg/kg/day	5.0E-05	mg/kg/day	2.E-03
				gamma-Chlordane	0.00086	mg/kg	2.5E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-09	1.5E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Technical Chlordane	0.03671	mg/kg	1.1E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-07	6.2E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Lead	0.009	mg/kg	2.6E-07	mg/kg/day	--			1.5E-06	mg/kg/day			
				Mercury	0.269	mg/kg	NC		NC			4.6E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.236	mg/kg	NC		NC			4.0E-05	mg/kg/day	1.0E-04	mg/kg/day	4.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0000315	mg/kg	9.1E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-04	5.3E-09	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.00000453	mg/kg	1.3E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-05	7.7E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-04					3.E+00
		EXPOSURE POINT TOTAL									2.E-04					3.E+00
	EXPOSURE MEDIUM TOTAL										2.E-04					3.E+00
FILLET TOTAL											2.E-04					3.E+00
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	2.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				2.5.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.57.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	INGESTION	Acenaphthylene	0.0004	mg/kg	NC		NC			1.4E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				Benzo(a)pyrene	0.000704	mg/kg	2.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	2.5E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Benzo(b)fluoranthene	0.0008	mg/kg	2.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	2.9E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	0.000703	mg/kg	NC		NC			2.5E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Dibenzo(a,h)anthracene	0.00038	mg/kg	1.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-08	1.4E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Phenanthrene	0.0014	mg/kg	NC		NC			5.0E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				4,4'-DDE	0.0104	mg/kg	3.2E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-07	3.7E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				alpha-Chlordane	0.002	mg/kg	6.2E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	7.2E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Aroclor-1254	0.2166	mg/kg	6.7E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	7.8E-05	mg/kg/day	2.0E-05	mg/kg/day	4.E+00
				Aroclor-1268	0.0127	mg/kg	3.9E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-07	4.6E-06	mg/kg/day	2.0E-05	mg/kg/day	2.E-01
				Dieldrin	0.00061	mg/kg	1.9E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.E-07	2.2E-07	mg/kg/day	5.0E-05	mg/kg/day	4.E-03
				gamma-Chlordane	0.00086	mg/kg	2.7E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-09	3.1E-07	mg/kg/day	5.0E-04	mg/kg/day	6.E-04
				Technical Chlordane	0.03671	mg/kg	1.1E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-07	1.3E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Lead	0.009	mg/kg	2.8E-07	mg/kg/day	--			3.2E-06	mg/kg/day			
				Mercury	0.269	mg/kg	NC		NC			9.7E-05	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				Mercury (methyl)	0.236	mg/kg	NC		NC			8.5E-03	mg/kg/day	1.0E-04	mg/kg/day	8.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0000315	mg/kg	9.7E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-04	1.1E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.00000453	mg/kg	1.4E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-05	1.6E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-04					5.E+00
		EXPOSURE POINT TOTAL									2.E-04					5.E+00
	EXPOSURE MEDIUM TOTAL										2.E-04					5.E+00
FILLET TOTAL											2.E-04					5.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	2.E-04		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		5.3.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.58.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	INGESTION	Acenaphthylene	0.0004	mg/kg	NC		NC			8.7E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				Benzo(a)pyrene	0.000704	mg/kg	2.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Benzo(b)fluoranthene	0.0008	mg/kg	2.2E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	1.7E-07	mg/kg/day	3.0E-02	mg/kg/day	6.E-06
				Benzo(g,h,i)perylene	0.000703	mg/kg	NC		NC			1.5E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Dibenzo(a,h)anthracene	0.00038	mg/kg	1.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-08	8.2E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Phenanthrene	0.0014	mg/kg	NC		NC			3.0E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				4,4'-DDE	0.0104	mg/kg	2.9E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-07	2.3E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				alpha-Chlordane	0.002	mg/kg	5.6E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	4.3E-07	mg/kg/day	5.0E-04	mg/kg/day	9.E-04
				Aroclor-1254	0.2166	mg/kg	6.0E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	4.7E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Aroclor-1268	0.0127	mg/kg	3.5E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-07	2.7E-06	mg/kg/day	2.0E-05	mg/kg/day	1.E-01
				Dieldrin	0.00061	mg/kg	1.7E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.E-07	1.3E-07	mg/kg/day	5.0E-05	mg/kg/day	3.E-03
				gamma-Chlordane	0.00086	mg/kg	2.4E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	8.E-09	1.9E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Technical Chlordane	0.03671	mg/kg	1.0E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-07	7.9E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Lead	0.009	mg/kg	2.5E-07	mg/kg/day	--			1.9E-06	mg/kg/day			
				Mercury	0.269	mg/kg	NC		NC			5.8E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.236	mg/kg	NC		NC			5.1E-05	mg/kg/day	1.0E-04	mg/kg/day	5.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0000315	mg/kg	8.8E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-04	6.8E-09	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.00000453	mg/kg	1.3E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-05	9.8E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-04					3.E+00
		EXPOSURE POINT TOTAL									2.E-04					3.E+00
	EXPOSURE MEDIUM TOTAL										2.E-04					3.E+00
FILLET TOTAL											2.E-04					3.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	2.E-04		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA			3.2.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.59.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		R/D/R/C (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	INGESTION	Acenaphthylene	0.0004	mg/kg	NC		NC			6.8E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				Benzo(a)pyrene	0.000704	mg/kg	1.5E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	1.2E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Benzo(b)fluoranthene	0.0008	mg/kg	1.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	1.4E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Benzo(g,h,i)perylene	0.000703	mg/kg	NC		NC			1.2E-07	mg/kg/day	3.0E-02	mg/kg/day	4.E-06
				Dibenzo(a,h)anthracene	0.00038	mg/kg	8.3E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-08	6.4E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Phenanthrene	0.0014	mg/kg	NC		NC			2.4E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				4,4'-DDE	0.0104	mg/kg	2.3E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	8.E-08	1.8E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				alpha-Chlordane	0.002	mg/kg	4.4E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	3.4E-07	mg/kg/day	5.0E-04	mg/kg/day	7.E-04
				Aroclor-1254	0.2166	mg/kg	4.7E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-06	3.7E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Aroclor-1268	0.0127	mg/kg	2.8E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	6.E-07	2.1E-06	mg/kg/day	2.0E-05	mg/kg/day	1.E-01
				Dieldrin	0.00061	mg/kg	1.3E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-07	1.0E-07	mg/kg/day	5.0E-05	mg/kg/day	2.E-03
				gamma-Chlordane	0.00086	mg/kg	1.9E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-09	1.5E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Technical Chlordane	0.03671	mg/kg	8.0E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	6.2E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Lead	0.009	mg/kg	2.0E-07	mg/kg/day	--			1.5E-06	mg/kg/day			
				Mercury	0.269	mg/kg	NC		NC			4.6E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.236	mg/kg	NC		NC			4.0E-05	mg/kg/day	1.0E-04	mg/kg/day	4.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0000315	mg/kg	6.9E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-04	5.3E-09	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.00000453	mg/kg	9.9E-11	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-05	7.7E-10	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					3.E+00
		EXPOSURE POINT TOTAL									1.E-04					3.E+00
	EXPOSURE MEDIUM TOTAL										1.E-04					3.E+00
FILLET TOTAL											1.E-04					3.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	1.E-04			TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		2.5.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.60.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	INGESTION	Acenaphthylene	0.0004	mg/kg	NC		NC			1.4E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				Benzo(a)pyrene	0.000704	mg/kg	2.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	2.5E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Benzo(b)fluoranthene	0.0008	mg/kg	2.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	2.9E-07	mg/kg/day	3.0E-02	mg/kg/day	1.E-05
				Benzo(g,h,i)perylene	0.000703	mg/kg	NC		NC			2.5E-07	mg/kg/day	3.0E-02	mg/kg/day	8.E-06
				Dibenzo(a,h)anthracene	0.00038	mg/kg	1.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-08	1.4E-07	mg/kg/day	3.0E-02	mg/kg/day	5.E-06
				Phenanthrene	0.0014	mg/kg	NC		NC			5.0E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				4,4'-DDE	0.0104	mg/kg	3.2E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-07	3.7E-06	mg/kg/day	5.0E-04	mg/kg/day	7.E-03
				alpha-Chlordane	0.002	mg/kg	6.2E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	7.2E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Aroclor-1254	0.2166	mg/kg	6.7E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-05	7.8E-05	mg/kg/day	2.0E-05	mg/kg/day	4.E+00
				Aroclor-1268	0.0127	mg/kg	3.9E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-07	4.6E-06	mg/kg/day	2.0E-05	mg/kg/day	2.E-01
				Dieldrin	0.00061	mg/kg	1.9E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.E-07	2.2E-07	mg/kg/day	5.0E-05	mg/kg/day	4.E-03
				gamma-Chlordane	0.00086	mg/kg	2.7E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	9.E-09	3.1E-07	mg/kg/day	5.0E-04	mg/kg/day	6.E-04
				Technical Chlordane	0.02671	mg/kg	1.1E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-07	1.3E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Lead	0.009	mg/kg	2.8E-07	mg/kg/day	--			3.2E-06	mg/kg/day			
				Mercury	0.269	mg/kg	NC		NC			9.7E-05	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				Mercury (methyl)	0.236	mg/kg	NC		NC			8.5E-05	mg/kg/day	1.0E-04	mg/kg/day	8.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0000315	mg/kg	9.7E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-04	1.1E-08	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.00000453	mg/kg	1.4E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-05	1.6E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-04					5.E+00
		EXPOSURE POINT TOTAL									2.E-04					5.E+00
	EXPOSURE MEDIUM TOTAL										2.E-04					5.E+00
FILLET TOTAL											2.E-04					5.E+00
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	2.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				5.3.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.61.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00355	mg/kg	NC		NC			7.7E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)anthracene	0.00946	mg/kg	3.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	2.0E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(a)pyrene	0.0049	mg/kg	1.8E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(b)fluoranthene	0.0067	mg/kg	2.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(g,h,i)perylene	0.00376	mg/kg	NC		NC			8.1E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Dibenzo(a,h)anthracene	0.0027	mg/kg	1.0E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-07	5.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Indeno(1,2,3-cd)pyrene	0.0043	mg/kg	1.6E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	9.3E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Phenanthrene	0.0212	mg/kg	NC		NC			4.6E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDD	0.06351	mg/kg	2.4E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	6.E-07	1.4E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				4,4'-DDE	0.2134	mg/kg	7.9E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	3.E-06	4.6E-05	mg/kg/day	5.0E-04	mg/kg/day	9.E-02
				4,4'-DDT	0.0052	mg/kg	1.9E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	7.E-08	1.1E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				alpha-Chlordane	0.0469	mg/kg	1.7E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-07	1.0E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	5.21365	mg/kg	1.9E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	4.E-04	1.1E-03	mg/kg/day	2.0E-05	mg/kg/day	6.E+01
				Aroclor-1268	0.0437	mg/kg	1.6E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-06	9.5E-06	mg/kg/day	2.0E-05	mg/kg/day	5.E-01
				Dieldrin	0.00862	mg/kg	3.2E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.E-06	1.9E-06	mg/kg/day	5.0E-05	mg/kg/day	4.E-02
				gamma-Chlordane	0.02921	mg/kg	1.1E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-07	6.3E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Heptachlor Epoxide	0.0017	mg/kg	6.3E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	6.E-07	3.7E-07	mg/kg/day	1.3E-05	mg/kg/day	3.E-02
				Technical Chlordane	2.5751	mg/kg	9.6E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-05	5.6E-04	mg/kg/day	5.0E-04	mg/kg/day	1.E+00
				Arsenic	0.0276	mg/kg	1.0E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-06	6.0E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
				Chromium	0.378	mg/kg	NC		NC			8.2E-05	mg/kg/day	3.0E-03	mg/kg/day	3.E-02
				Lead	0.594	mg/kg	2.2E-05	mg/kg/day	--			1.3E-04	mg/kg/day			
				Mercury	0.1175	mg/kg	NC		NC			2.5E-05	mg/kg/day	3.0E-04	mg/kg/day	8.E-02
				Mercury (methyl)	0.1087	mg/kg	NC		NC			2.4E-05	mg/kg/day	1.0E-04	mg/kg/day	2.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000898	mg/kg	3.3E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-03	1.9E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000401	mg/kg	1.5E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	8.7E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-03					5.9.E+01
		EXPOSURE POINT TOTAL									6.E-03					5.9.E+01
	EXPOSURE MEDIUM TOTAL										6.E-03					5.9.E+01
WHOLE BODY TOTAL											6.E-03					5.9.E+01
TOTAL RECEPTOR RISK ACROSS ALL MEDIA											6.E-03	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				5.9.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.62.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	R/D/R/C (1) VALUE	R/D/R/C (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00355	mg/kg	NC		NC			6.0E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)anthracene	0.00946	mg/kg	2.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.6E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(a)pyrene	0.0049	mg/kg	1.4E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	8.3E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(b)fluoranthene	0.0067	mg/kg	1.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(g,h,i)perylene	0.00376	mg/kg	NC		NC			6.4E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.0027	mg/kg	7.8E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-07	4.6E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Indeno(1,2,3-cd)pyrene	0.0043	mg/kg	1.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-08	7.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.0212	mg/kg	NC		NC			3.6E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDD	0.06351	mg/kg	1.8E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	4.E-07	1.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDE	0.2134	mg/kg	6.2E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	3.6E-05	mg/kg/day	5.0E-04	mg/kg/day	7.E-02
				4,4'-DDT	0.0052	mg/kg	1.5E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-08	8.8E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				alpha-Chlordane	0.0469	mg/kg	1.4E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-07	7.9E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	5.21365	mg/kg	1.5E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-04	8.8E-04	mg/kg/day	2.0E-05	mg/kg/day	4.E+01
				Aroclor-1268	0.0437	mg/kg	1.3E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-06	7.4E-06	mg/kg/day	2.0E-05	mg/kg/day	4.E-01
				Dieldrin	0.00862	mg/kg	2.5E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	1.5E-06	mg/kg/day	5.0E-05	mg/kg/day	3.E-02
				gamma-Chlordane	0.02921	mg/kg	8.5E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	4.9E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Heptachlor Epoxide	0.0017	mg/kg	4.9E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	4.E-07	2.9E-07	mg/kg/day	1.3E-05	mg/kg/day	2.E-02
				Technical Chlordane	2.5751	mg/kg	7.5E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-05	4.4E-04	mg/kg/day	5.0E-04	mg/kg/day	9.E-01
				Arsenic	0.0276	mg/kg	8.0E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	4.7E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
				Chromium	0.378	mg/kg	NC		NC			6.4E-05	mg/kg/day	3.0E-03	mg/kg/day	2.E-02
				Lead	0.594	mg/kg	1.7E-05	mg/kg/day	--			1.0E-04	mg/kg/day			
				Mercury	0.1175	mg/kg	NC		NC			2.0E-05	mg/kg/day	3.0E-04	mg/kg/day	7.E-02
				Mercury (methyl)	0.1087	mg/kg	NC		NC			1.8E-05	mg/kg/day	1.0E-04	mg/kg/day	2.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000898	mg/kg	2.6E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-03	1.5E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000401	mg/kg	1.2E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	6.8E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-03					4.6.E+01
		EXPOSURE POINT TOTAL									4.E-03					4.6.E+01
	EXPOSURE MEDIUM TOTAL										4.E-03					4.6.E+01
WHOLE BODY TOTAL											4.E-03					4.6.E+01
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		4.E-03	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				4.6.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by:

US EPA ARCHIVE DOCUMENT

TABLE G.7.63.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	R/D/R/C (1) VALUE	R/D/R/C (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00355	mg/kg	NC		NC			1.3E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Benzo(a)anthracene	0.00946	mg/kg	2.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	3.4E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(a)pyrene	0.0049	mg/kg	1.5E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	1.8E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Benzo(b)fluoranthene	0.0067	mg/kg	2.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	2.4E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				Benzo(g,h,i)perylene	0.00376	mg/kg	NC		NC			1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Dibenzo(a,h)anthracene	0.0027	mg/kg	8.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-07	9.7E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Indeno(1,2,3-cd)pyrene	0.0043	mg/kg	1.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Phenanthrene	0.0212	mg/kg	NC		NC			7.6E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				4,4'-DDD	0.06351	mg/kg	2.0E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	5.E-07	2.3E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				4,4'-DDE	0.2134	mg/kg	6.6E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	7.7E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				4,4'-DDT	0.0052	mg/kg	1.6E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-08	1.9E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				alpha-Chlordane	0.0469	mg/kg	1.4E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-07	1.7E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Aroclor-1254	5.21365	mg/kg	1.6E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-04	1.9E-03	mg/kg/day	2.0E-05	mg/kg/day	9.E+01
				Aroclor-1268	0.0437	mg/kg	1.3E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-06	1.6E-05	mg/kg/day	2.0E-05	mg/kg/day	8.E-01
				Dieldrin	0.00862	mg/kg	2.7E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	3.1E-06	mg/kg/day	5.0E-05	mg/kg/day	6.E-02
				gamma-Chlordane	0.02921	mg/kg	9.0E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	1.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Heptachlor Epoxide	0.0017	mg/kg	5.2E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	5.E-07	6.1E-07	mg/kg/day	1.3E-05	mg/kg/day	5.E-02
				Technical Chlordane	2.5751	mg/kg	7.9E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-05	9.3E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E+00
				Arsenic	0.0276	mg/kg	8.5E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	9.9E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-02
				Chromium	0.378	mg/kg	NC		NC			1.4E-04	mg/kg/day	3.0E-03	mg/kg/day	5.E-02
				Lead	0.594	mg/kg	1.8E-05	mg/kg/day	--			2.1E-04	mg/kg/day			
				Mercury	0.1175	mg/kg	NC		NC			4.2E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Mercury (methyl)	0.1087	mg/kg	NC		NC			3.9E-05	mg/kg/day	1.0E-04	mg/kg/day	4.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000898	mg/kg	2.8E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-03	3.2E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000401	mg/kg	1.2E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	1.4E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-03					9.7.E+01
		EXPOSURE POINT TOTAL									5.E-03					9.7.E+01
	EXPOSURE MEDIUM TOTAL										5.E-03					9.7.E+01
WHOLE BODY TOTAL											5.E-03					9.7.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	5.E-03				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	9.7.E+01

NOTES:
(1) - Blank cells indicate that an R/D or R/C is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.7.64.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00355	mg/kg	NC		NC			7.7E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)anthracene	0.00946	mg/kg	2.6E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	2.0E-06	mg/kg/day	3.0E-02	mg/kg/day	7.E-05
				Benzo(a)pyrene	0.0049	mg/kg	1.4E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(b)fluoranthene	0.0067	mg/kg	1.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(g,h,i)perylene	0.00376	mg/kg	NC		NC			8.1E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Dibenzo(a,h)anthracene	0.0027	mg/kg	7.5E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-07	5.8E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Indeno(1,2,3-cd)pyrene	0.0043	mg/kg	1.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-08	9.3E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Phenanthrene	0.0212	mg/kg	NC		NC			4.6E-06	mg/kg/day	3.0E-02	mg/kg/day	2.E-04
				4,4'-DDD	0.06351	mg/kg	1.8E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	4.E-07	1.4E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				4,4'-DDE	0.2134	mg/kg	5.9E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	4.6E-05	mg/kg/day	5.0E-04	mg/kg/day	9.E-02
				4,4'-DDT	0.0052	mg/kg	1.4E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-08	1.1E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				alpha-Chlordane	0.0469	mg/kg	1.3E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-07	1.0E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	5.21365	mg/kg	1.5E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-04	1.1E-03	mg/kg/day	2.0E-05	mg/kg/day	6.E+01
				Aroclor-1268	0.0437	mg/kg	1.2E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-06	9.5E-06	mg/kg/day	2.0E-05	mg/kg/day	5.E-01
				Dieldrin	0.00862	mg/kg	2.4E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	1.9E-06	mg/kg/day	5.0E-05	mg/kg/day	4.E-02
				gamma-Chlordane	0.02921	mg/kg	8.1E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	6.3E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Heptachlor Epoxide	0.0017	mg/kg	4.7E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	4.E-07	3.7E-07	mg/kg/day	1.3E-05	mg/kg/day	3.E-02
				Technical Chlordane	2.5751	mg/kg	7.2E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-05	5.6E-04	mg/kg/day	5.0E-04	mg/kg/day	1.E+00
				Arsenic	0.0276	mg/kg	7.7E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	6.0E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
				Chromium	0.378	mg/kg	NC		NC			8.2E-05	mg/kg/day	3.0E-03	mg/kg/day	3.E-02
				Lead	0.594	mg/kg	1.7E-05	mg/kg/day	--			1.3E-04	mg/kg/day			
				Mercury	0.1175	mg/kg	NC		NC			2.5E-05	mg/kg/day	3.0E-04	mg/kg/day	8.E-02
				Mercury (methyl)	0.1087	mg/kg	NC		NC			2.4E-05	mg/kg/day	1.0E-04	mg/kg/day	2.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000898	mg/kg	2.5E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-03	1.9E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000401	mg/kg	1.1E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	8.7E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-03					5.9.E+01
		EXPOSURE POINT TOTAL									4.E-03					5.9.E+01
	EXPOSURE MEDIUM TOTAL										4.E-03					5.9.E+01
WHOLE BODY TOTAL											4.E-03					5.9.E+01
TOTAL RECEPTOR RISK ACROSS ALL MEDIA											4.E-03	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				5.9.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: AWS

US EPA ARCHIVE DOCUMENT

TABLE G.7.65.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00355	mg/kg	NC		NC			6.0E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Benzo(a)anthracene	0.00946	mg/kg	2.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	1.6E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Benzo(a)pyrene	0.0049	mg/kg	1.1E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-07	8.3E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Benzo(b)fluoranthene	0.0067	mg/kg	1.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				Benzo(ghi)perylene	0.00376	mg/kg	NC		NC			6.4E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Dibenzo(a,h)anthracene	0.0027	mg/kg	5.9E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	4.6E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Indeno(1,2,3-cd)pyrene	0.0043	mg/kg	9.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-08	7.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				Phenanthrene	0.0212	mg/kg	NC		NC			3.6E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				4,4'-DDD	0.06351	mg/kg	1.4E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	3.E-07	1.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDE	0.2134	mg/kg	4.6E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	3.6E-05	mg/kg/day	5.0E-04	mg/kg/day	7.E-02
				4,4'-DDT	0.0052	mg/kg	1.1E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	4.E-08	8.8E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				alpha-Chlordane	0.0469	mg/kg	1.0E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-07	7.9E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Aroclor-1254	5.21365	mg/kg	1.1E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-04	8.8E-04	mg/kg/day	2.0E-05	mg/kg/day	4.E+01
				Aroclor-1268	0.0437	mg/kg	9.5E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-06	7.4E-06	mg/kg/day	2.0E-05	mg/kg/day	4.E-01
				Dieldrin	0.00862	mg/kg	1.9E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.E-06	1.5E-06	mg/kg/day	5.0E-05	mg/kg/day	3.E-02
				gamma-Chlordane	0.02921	mg/kg	6.4E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	4.9E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Heptachlor Epoxide	0.0017	mg/kg	3.7E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.E-07	2.9E-07	mg/kg/day	1.3E-05	mg/kg/day	2.E-02
				Technical Chlordane	2.5751	mg/kg	5.6E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-05	4.4E-04	mg/kg/day	5.0E-04	mg/kg/day	9.E-01
				Arsenic	0.0276	mg/kg	6.0E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	9.E-07	4.7E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
				Chromium	0.378	mg/kg	NC		NC			6.4E-05	mg/kg/day	3.0E-03	mg/kg/day	2.E-02
				Lead	0.594	mg/kg	1.3E-05	mg/kg/day	--			1.0E-04	mg/kg/day			
				Mercury	0.1175	mg/kg	NC		NC			2.0E-05	mg/kg/day	3.0E-04	mg/kg/day	7.E-02
				Mercury (methyl)	0.1087	mg/kg	NC		NC			1.8E-05	mg/kg/day	1.0E-04	mg/kg/day	2.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.000898	mg/kg	2.0E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-03	1.5E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000401	mg/kg	8.7E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-04	6.8E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-03					4.6.E+01
		EXPOSURE POINT TOTAL									*3.E-03*					*4.6.E+01*
	EXPOSURE MEDIUM TOTAL										3.E-03					4.6.E+01
WHOLE BODY TOTAL											3.E-03					4.6.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	3.E-03		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		4.6.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: AWS

US EPA ARCHIVE DOCUMENT

TABLE G.7.66.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	INGESTION	Acenaphthylene	0.00355	mg/kg	NC		NC			1.3E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Benzo(a)anthracene	0.00946	mg/kg	2.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	3.4E-06	mg/kg/day	3.0E-02	mg/kg/day	1.E-04
				Benzo(a)pyrene	0.0049	mg/kg	1.5E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	1.8E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				Benzo(b)fluoranthene	0.0067	mg/kg	2.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	2.4E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				Benzo(g,h,i)perylene	0.00376	mg/kg	NC		NC			1.4E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Dibenzo(a,h)anthracene	0.0027	mg/kg	8.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-07	9.7E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				Indeno(1,2,3-cd)pyrene	0.0043	mg/kg	1.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	1.5E-06	mg/kg/day	3.0E-02	mg/kg/day	5.E-05
				Phenanthrene	0.0212	mg/kg	NC		NC			7.6E-06	mg/kg/day	3.0E-02	mg/kg/day	3.E-04
				4,4'-DDD	0.06351	mg/kg	2.0E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	5.E-07	2.3E-05	mg/kg/day	5.0E-04	mg/kg/day	5.E-02
				4,4'-DDE	0.2134	mg/kg	6.6E-06	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-06	7.7E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				4,4'-DDT	0.0052	mg/kg	1.6E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	5.E-08	1.9E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				alpha-Chlordane	0.0469	mg/kg	1.4E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-07	1.7E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Aroclor-1254	5.21365	mg/kg	1.6E-04	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-04	1.9E-03	mg/kg/day	2.0E-05	mg/kg/day	9.E+01
				Aroclor-1268	0.0437	mg/kg	1.3E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-06	1.6E-05	mg/kg/day	2.0E-05	mg/kg/day	8.E-01
				Dieldrin	0.00862	mg/kg	2.7E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	3.1E-06	mg/kg/day	5.0E-05	mg/kg/day	6.E-02
				gamma-Chlordane	0.02921	mg/kg	9.0E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	1.1E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Heptachlor Epoxide	0.0017	mg/kg	5.2E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	5.E-07	6.1E-07	mg/kg/day	1.3E-05	mg/kg/day	5.E-02
				Technical Chlordane	2.5751	mg/kg	7.9E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-05	9.3E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E+00
				Arsenic	0.0276	mg/kg	8.5E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	9.9E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-02
				Chromium	0.378	mg/kg	NC		NC			1.4E-04	mg/kg/day	3.0E-03	mg/kg/day	5.E-02
				Lead	0.594	mg/kg	1.8E-05	mg/kg/day	--			2.1E-04	mg/kg/day			
				Mercury	0.1175	mg/kg	NC		NC			4.2E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Mercury (methyl)	0.1087	mg/kg	NC		NC			3.9E-05	mg/kg/day	1.0E-04	mg/kg/day	4.E-01
				Toxicity Equivalency (Dioxins/furans)	0.000898	mg/kg	2.8E-08	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-03	3.2E-07	mg/kg/day			
				Toxicity Equivalency (PCB Congeners)	0.0000401	mg/kg	1.2E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	1.4E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-03					9.7.E+01
		EXPOSURE POINT TOTAL									5.E-03					9.7.E+01
	EXPOSURE MEDIUM TOTAL										5.E-03					9.7.E+01
WHOLE BODY TOTAL											5.E-03					9.7.E+01
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	5.E-03				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	9.7.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: AWS

US EPA ARCHIVE DOCUMENT

TABLE G.7.67.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
LARGEMOUTH BASS	FILLET	MANTON POND	INGESTION	Acenaphthylene	0.0003	mg/kg	NC		NC			6.5E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				Dibenzo(a,h)anthracene	0.00022	mg/kg	8.2E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-08	4.8E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Phenanthrene	0.00293	mg/kg	NC		NC			6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				4,4'-DDE	0.00886	mg/kg	3.3E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-07	1.9E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				alpha-Chlordane	0.0014	mg/kg	5.2E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	3.0E-07	mg/kg/day	5.0E-04	mg/kg/day	6.E-04
				Aroclor-1254	0.1247	mg/kg	4.6E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	9.E-06	2.7E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Aroclor-1268	0.03292	mg/kg	1.2E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-06	7.1E-06	mg/kg/day	2.0E-05	mg/kg/day	4.E-01
				Dieldrin	0.00052	mg/kg	1.9E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.E-07	1.1E-07	mg/kg/day	5.0E-05	mg/kg/day	2.E-03
				Endosulfan Sulfate	0.00096	mg/kg	NC		NC			2.1E-07	mg/kg/day	6.0E-03	mg/kg/day	3.E-05
				gamma-Chlordane	0.00052	mg/kg	1.9E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-09	1.1E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-04
				Technical Chlordane	0.04062	mg/kg	1.5E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-07	8.8E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Lead	0.0113	mg/kg	4.2E-07	mg/kg/day	--			2.4E-06	mg/kg/day			
				Mercury	0.185	mg/kg	NC		NC			4.0E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Mercury (methyl)	0.149	mg/kg	NC		NC			3.2E-05	mg/kg/day	1.0E-04	mg/kg/day	3.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0000186	mg/kg	6.9E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-04	4.0E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					2.E+00
		EXPOSURE POINT TOTAL									1.E-04					2.E+00
	EXPOSURE MEDIUM TOTAL										1.E-04					2.E+00
FILLET TOTAL											1.E-04					2.E+00
TOTAL RECEPTOR RISK ACROSS ALL MEDIA											1.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MED				2.2.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.68.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	MANTON POND	INGESTION	Acenaphthylene	0.0003	mg/kg	NC		NC			5.1E-08	mg/kg/day	6.0E-02	mg/kg/day	8.E-07
				Dibenzo(a,h)anthracene	0.00022	mg/kg	6.4E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-08	3.7E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Phenanthrene	0.00293	mg/kg	NC		NC			5.0E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				4,4'-DDE	0.00886	mg/kg	2.6E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	9.E-08	1.5E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				alpha-Chlordane	0.0014	mg/kg	4.1E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	2.4E-07	mg/kg/day	5.0E-04	mg/kg/day	5.E-04
				Aroclor-1254	0.1247	mg/kg	3.6E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-06	2.1E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Aroclor-1268	0.03292	mg/kg	9.5E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-06	5.6E-06	mg/kg/day	2.0E-05	mg/kg/day	3.E-01
				Dieldrin	0.00052	mg/kg	1.5E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-07	8.8E-08	mg/kg/day	5.0E-05	mg/kg/day	2.E-03
				Endosulfan Sulfate	0.00096	mg/kg	NC		NC			1.6E-07	mg/kg/day	6.0E-03	mg/kg/day	3.E-05
				gamma-Chlordane	0.00052	mg/kg	1.5E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-09	8.8E-08	mg/kg/day	5.0E-04	mg/kg/day	2.E-04
				Technical Chlordane	0.04062	mg/kg	1.2E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-07	6.9E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Lead	0.0113	mg/kg	3.3E-07	mg/kg/day	--			1.9E-06	mg/kg/day			
				Mercury	0.185	mg/kg	NC		NC			3.1E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Mercury (methyl)	0.149	mg/kg	NC		NC			2.5E-05	mg/kg/day	1.0E-04	mg/kg/day	3.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0000186	mg/kg	5.4E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-05	3.1E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								9.E-05					2.E+00
		EXPOSURE POINT TOTAL									9.E-05					2.E+00
	EXPOSURE MEDIUM TOTAL										9.E-05					2.E+00
FILLET TOTAL											9.E-05					2.E+00
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		9.E-05	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				1.7.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.69.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
LARGEMOUTH BASS	FILLET	MANTON POND	INGESTION	Acenaphthylene	0.0003	mg/kg	NC		NC			1.1E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				Dibenzo(a,h)anthracene	0.00022	mg/kg	6.8E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-08	7.9E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Phenanthrene	0.00293	mg/kg	NC		NC			1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				4,4'-DDE	0.00886	mg/kg	2.7E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	9.E-08	3.2E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				alpha-Chlordane	0.0014	mg/kg	4.3E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	5.0E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Aroclor-1254	0.1247	mg/kg	3.8E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-06	4.5E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Aroclor-1268	0.03292	mg/kg	1.0E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-06	1.2E-05	mg/kg/day	2.0E-05	mg/kg/day	6.E-01
				Dieldrin	0.00052	mg/kg	1.6E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.E-07	1.9E-07	mg/kg/day	5.0E-05	mg/kg/day	4.E-03
				Endosulfan Sulfate	0.00096	mg/kg	NC		NC			3.5E-07	mg/kg/day	6.0E-03	mg/kg/day	6.E-05
				gamma-Chlordane	0.00052	mg/kg	1.6E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-09	1.9E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Technical Chlordane	0.04062	mg/kg	1.3E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-07	1.5E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Lead	0.0113	mg/kg	3.5E-07	mg/kg/day	--			4.1E-06	mg/kg/day			
				Mercury	0.185	mg/kg	NC		NC			6.7E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.149	mg/kg	NC		NC			5.4E-05	mg/kg/day	1.0E-04	mg/kg/day	5.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0000186	mg/kg	5.7E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	9.E-05	6.7E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					4.E+00
		EXPOSURE POINT TOTAL									1.E-04					4.E+00
	EXPOSURE MEDIUM TOTAL										1.E-04					4.E+00
FILLET TOTAL											1.E-04					4.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	1.E-04				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	3.6.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.70.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	MANTON POND	INGESTION	Acenaphthylene	0.0003	mg/kg	NC		NC			6.5E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				Dibenzo(a,h)anthracene	0.00022	mg/kg	6.1E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-08	4.8E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Phenanthrene	0.00293	mg/kg	NC		NC			6.3E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				4,4'-DDE	0.00886	mg/kg	2.5E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	8.E-08	1.9E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				alpha-Chlordane	0.0014	mg/kg	3.9E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	3.0E-07	mg/kg/day	5.0E-04	mg/kg/day	6.E-04
				Aroclor-1254	0.1247	mg/kg	3.5E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	7.E-06	2.7E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Aroclor-1268	0.03292	mg/kg	9.2E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-06	7.1E-06	mg/kg/day	2.0E-05	mg/kg/day	4.E-01
				Dieldrin	0.00052	mg/kg	1.4E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-07	1.1E-07	mg/kg/day	5.0E-05	mg/kg/day	2.E-03
				Endosulfan Sulfate	0.00096	mg/kg	NC		NC			2.1E-07	mg/kg/day	6.0E-03	mg/kg/day	3.E-05
				gamma-Chlordane	0.00052	mg/kg	1.4E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	5.E-09	1.1E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-04
				Technical Chlordane	0.04062	mg/kg	1.1E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-07	8.8E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				Lead	0.0113	mg/kg	3.1E-07	mg/kg/day	--			2.4E-06	mg/kg/day			
				Mercury	0.185	mg/kg	NC		NC			4.0E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Mercury (methyl)	0.149	mg/kg	NC		NC			3.2E-05	mg/kg/day	1.0E-04	mg/kg/day	3.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0000186	mg/kg	5.2E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-05	4.0E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								9.E-05					2.E+00
		EXPOSURE POINT TOTAL									9.E-05					2.E+00
	EXPOSURE MEDIUM TOTAL										9.E-05					2.E+00
FILLET TOTAL											9.E-05					2.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA: 9.E-05					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA: 2.2.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availaible from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.71.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
LARGEMOUTH BASS	FILLET	MANTON POND	INGESTION	Acenaphthylene	0.0003	mg/kg	NC		NC			5.1E-08	mg/kg/day	6.0E-02	mg/kg/day	8.E-07
				Dibenzo(a,h)anthracene	0.00022	mg/kg	4.8E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-08	3.7E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Phenanthrene	0.00293	mg/kg	NC		NC			5.0E-07	mg/kg/day	3.0E-02	mg/kg/day	2.E-05
				4,4'-DDE	0.00886	mg/kg	1.9E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	7.E-08	1.5E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				alpha-Chlordane	0.0014	mg/kg	3.0E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-08	2.4E-07	mg/kg/day	5.0E-04	mg/kg/day	5.E-04
				Aroclor-1254	0.1247	mg/kg	2.7E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	5.E-06	2.1E-05	mg/kg/day	2.0E-05	mg/kg/day	1.E+00
				Aroclor-1268	0.03292	mg/kg	7.2E-07	mg/kg/day	2.0E+00	(mg/kg/day)-1	1.E-06	5.6E-06	mg/kg/day	2.0E-05	mg/kg/day	3.E-01
				Dieldrin	0.00052	mg/kg	1.1E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	2.E-07	8.8E-08	mg/kg/day	5.0E-05	mg/kg/day	2.E-03
				Endosulfan Sulfate	0.00096	mg/kg	NC		NC			1.6E-07	mg/kg/day	6.0E-03	mg/kg/day	3.E-05
				gamma-Chlordane	0.00052	mg/kg	1.1E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-09	8.8E-08	mg/kg/day	5.0E-04	mg/kg/day	2.E-04
				Technical Chlordane	0.04062	mg/kg	8.8E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-07	6.9E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Lead	0.0113	mg/kg	2.5E-07	mg/kg/day	--			1.9E-06	mg/kg/day			
				Mercury	0.185	mg/kg	NC		NC			3.1E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Mercury (methyl)	0.149	mg/kg	NC		NC			2.5E-05	mg/kg/day	1.0E-04	mg/kg/day	3.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0000186	mg/kg	4.0E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-05	3.1E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								7.E-05					2.E+00
		EXPOSURE POINT TOTAL									7.E-05					2.E+00
	EXPOSURE MEDIUM TOTAL										7.E-05					2.E+00
FILLET TOTAL											7.E-05					2.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	7.E-05		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		1.7.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.72.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
LARGEMOUTH BASS	FILLET	MANTON POND	INGESTION	Acenaphthylene	0.0003	mg/kg	NC		NC			1.1E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				Dibenzo(a,h)anthracene	0.00022	mg/kg	6.8E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-08	7.9E-08	mg/kg/day	3.0E-02	mg/kg/day	3.E-06
				Phenanthrene	0.00293	mg/kg	NC		NC			1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				4,4'-DDE	0.00886	mg/kg	2.7E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	9.E-08	3.2E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				alpha-Chlordane	0.0014	mg/kg	4.3E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-08	5.0E-07	mg/kg/day	5.0E-04	mg/kg/day	1.E-03
				Aroclor-1254	0.1247	mg/kg	3.8E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	8.E-06	4.5E-05	mg/kg/day	2.0E-05	mg/kg/day	2.E+00
				Aroclor-1268	0.03292	mg/kg	1.0E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-06	1.2E-05	mg/kg/day	2.0E-05	mg/kg/day	6.E-01
				Dieldrin	0.00052	mg/kg	1.6E-08	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.E-07	1.9E-07	mg/kg/day	5.0E-05	mg/kg/day	4.E-03
				Endosulfan Sulfate	0.00096	mg/kg	NC		NC			3.5E-07	mg/kg/day	6.0E-03	mg/kg/day	6.E-05
				gamma-Chlordane	0.00052	mg/kg	1.6E-08	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-09	1.9E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Technical Chlordane	0.04062	mg/kg	1.3E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-07	1.5E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				Lead	0.0113	mg/kg	3.5E-07	mg/kg/day	--			4.1E-06	mg/kg/day			
				Mercury	0.185	mg/kg	NC		NC			6.7E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Mercury (methyl)	0.149	mg/kg	NC		NC			5.4E-05	mg/kg/day	1.0E-04	mg/kg/day	5.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0000186	mg/kg	5.7E-10	mg/kg/day	1.5E+05	(mg/kg/day)-1	9.E-05	6.7E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-04					4.E+00
		EXPOSURE POINT TOTAL									1.E-04					4.E+00
	EXPOSURE MEDIUM TOTAL										1.E-04					4.E+00
FILLET TOTAL											1.E-04					4.E+00
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		1.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				3.6.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.7.73.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	INGESTION	Acenaphthylene	0.00076	mg/kg	NC		NC			1.6E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Dibenzo(a,h)anthracene	0.00017	mg/kg	6.3E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-08	3.7E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Phenanthrene	0.0049	mg/kg	NC		NC			1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				4,4'-DDD	0.03543	mg/kg	1.3E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	3.E-07	7.7E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDE	0.011	mg/kg	4.1E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-07	2.4E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				4,4'-DDT	0.0119	mg/kg	4.4E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	2.E-07	2.6E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				alpha-Chlordane	0.0144	mg/kg	5.3E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	3.1E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				Aroclor-1254	0.37026	mg/kg	1.4E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	3.E-05	8.0E-05	mg/kg/day	2.0E-05	mg/kg/day	4.E+00
				Dieldrin	0.00852	mg/kg	3.2E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	5.E-06	1.8E-06	mg/kg/day	5.0E-05	mg/kg/day	4.E-02
				gamma-Chlordane	0.00574	mg/kg	2.1E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	7.E-08	1.2E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Heptachlor Epoxide	0.0018	mg/kg	6.7E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	6.E-07	3.9E-07	mg/kg/day	1.3E-05	mg/kg/day	3.E-02
				Technical Chlordane	0.31008	mg/kg	1.2E-05	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-06	6.7E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Cadmium	0.157	mg/kg	NC		NC			3.4E-05	mg/kg/day	1.0E-03	mg/kg/day	3.E-02
				Lead	0.341	mg/kg	1.3E-05	mg/kg/day	--			7.4E-05	mg/kg/day			
				Manganese	12.6	mg/kg	NC		NC			2.7E-03	mg/kg/day	1.4E-01	mg/kg/day	2.E-02
				Mercury	0.102	mg/kg	NC		NC			2.2E-05	mg/kg/day	3.0E-04	mg/kg/day	7.E-02
				Mercury (methyl)	0.117	mg/kg	NC		NC			2.5E-05	mg/kg/day	1.0E-04	mg/kg/day	3.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0000522	mg/kg	1.9E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	3.E-04	1.1E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-04					4.6.E+00
		EXPOSURE POINT TOTAL									3.E-04					4.6.E+00
	EXPOSURE MEDIUM TOTAL										3.E-04					4.6.E+00
WHOLE BODY TOTAL											3.E-04					4.6.E+00
TOTAL RECEPTOR RISK ACROSS ALL MEDIA											3.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				4.6.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.7.74.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
							INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
					VALUE	UNITS	VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	INGESTION	Acenaphthylene	0.00076	mg/kg	NC		NC			1.3E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				Dibenzo(a,h)anthracene	0.00017	mg/kg	4.9E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-08	2.9E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Phenanthrene	0.0049	mg/kg	NC		NC			8.3E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				4,4'-DDD	0.03543	mg/kg	1.0E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	2.E-07	6.0E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				4,4'-DDE	0.011	mg/kg	3.2E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-07	1.9E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				4,4'-DDT	0.0119	mg/kg	3.5E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-07	2.0E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				alpha-Chlordane	0.0144	mg/kg	4.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	2.4E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				Aroclor-1254	0.37026	mg/kg	1.1E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	6.3E-05	mg/kg/day	2.0E-05	mg/kg/day	3.E+00
				Dieldrin	0.00852	mg/kg	2.5E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	1.4E-06	mg/kg/day	5.0E-05	mg/kg/day	3.E-02
				gamma-Chlordane	0.00574	mg/kg	1.7E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-08	9.7E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Heptachlor Epoxide	0.0018	mg/kg	5.2E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	5.E-07	3.0E-07	mg/kg/day	1.3E-05	mg/kg/day	2.E-02
				Technical Chlordane	0.31006	mg/kg	9.0E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-06	5.2E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Cadmium	0.157	mg/kg	NC		NC			2.7E-05	mg/kg/day	1.0E-03	mg/kg/day	3.E-02
				Lead	0.341	mg/kg	9.9E-06	mg/kg/day	--			5.8E-05	mg/kg/day			
				Manganese	12.6	mg/kg	NC		NC			2.1E-03	mg/kg/day	1.4E-01	mg/kg/day	2.E-02
				Mercury	0.102	mg/kg	NC		NC			1.7E-05	mg/kg/day	3.0E-04	mg/kg/day	6.E-02
				Mercury (methyl)	0.117	mg/kg	NC		NC			2.0E-05	mg/kg/day	1.0E-04	mg/kg/day	2.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0000522	mg/kg	1.5E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	8.8E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-04					3.6.E+00
		EXPOSURE POINT TOTAL									3.E-04					3.6.E+00
	EXPOSURE MEDIUM TOTAL										3.E-04					3.6.E+00
WHOLE BODY TOTAL											3.E-04					3.6.E+00
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	3.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				3.6.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.7.75.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
WHOLE BODY TOTAL											0.E+00					0.0.E+00
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	INGESTION	Acenaphthylene	0.00076	mg/kg	NC		NC			2.7E-07	mg/kg/day	6.0E-02	mg/kg/day	5.E-06
				Dibenzo(a,h)anthracene	0.00017	mg/kg	5.2E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-08	6.1E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Phenanthrene	0.0049	mg/kg	NC		NC			1.8E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				4,4'-DDD	0.03543	mg/kg	1.1E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	3.E-07	1.3E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				4,4'-DDE	0.011	mg/kg	3.4E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-07	4.0E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				4,4'-DDT	0.0119	mg/kg	3.7E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-07	4.3E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				alpha-Chlordane	0.0144	mg/kg	4.4E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	5.2E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Aroclor-1254	0.37026	mg/kg	1.1E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	1.3E-04	mg/kg/day	2.0E-05	mg/kg/day	7.E+00
				Dieldrin	0.00852	mg/kg	2.6E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	3.1E-06	mg/kg/day	5.0E-05	mg/kg/day	6.E-02
				gamma-Chlordane	0.00574	mg/kg	1.8E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-08	2.1E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				Heptachlor Epoxide	0.0018	mg/kg	5.6E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	5.E-07	6.5E-07	mg/kg/day	1.3E-05	mg/kg/day	5.E-02
				Technical Chlordane	0.31006	mg/kg	9.6E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-06	1.1E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Cadmium	0.157	mg/kg	NC		NC			5.7E-05	mg/kg/day	1.0E-03	mg/kg/day	6.E-02
				Lead	0.341	mg/kg	1.1E-05	mg/kg/day	--			1.2E-04	mg/kg/day			
				Manganese	12.6	mg/kg	NC		NC			4.5E-03	mg/kg/day	1.4E-01	mg/kg/day	3.E-02
				Mercury	0.102	mg/kg	NC		NC			3.7E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Mercury (methyl)	0.117	mg/kg	NC		NC			4.2E-05	mg/kg/day	1.0E-04	mg/kg/day	4.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0000522	mg/kg	1.6E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	1.9E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-04					7.7.E+00
		EXPOSURE POINT TOTAL									3.E-04					7.7.E+00
	EXPOSURE MEDIUM TOTAL										3.E-04					7.7.E+00
WHOLE BODY TOTAL											3.E-04					7.7.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	3.E-04		TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA		7.7.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.7.76.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
							INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
					VALUE	UNITS	VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	INGESTION	Acenaphthylene	0.00076	mg/kg	NC		NC			1.6E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Dibenzo(a,h)anthracene	0.00017	mg/kg	4.7E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-08	3.7E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Phenanthrene	0.0049	mg/kg	NC		NC			1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	4.E-05
				4,4'-DDD	0.03543	mg/kg	9.9E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	2.E-07	7.7E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-02
				4,4'-DDE	0.011	mg/kg	3.1E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-07	2.4E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				4,4'-DDT	0.0119	mg/kg	3.3E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-07	2.6E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				alpha-Chlordane	0.0144	mg/kg	4.0E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	3.1E-06	mg/kg/day	5.0E-04	mg/kg/day	6.E-03
				Aroclor-1254	0.37026	mg/kg	1.0E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	8.0E-05	mg/kg/day	2.0E-05	mg/kg/day	4.E+00
				Dieldrin	0.00852	mg/kg	2.4E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	1.8E-06	mg/kg/day	5.0E-05	mg/kg/day	4.E-02
				gamma-Chlordane	0.00574	mg/kg	1.6E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-08	1.2E-06	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Heptachlor Epoxide	0.0018	mg/kg	5.0E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	5.E-07	3.9E-07	mg/kg/day	1.3E-05	mg/kg/day	3.E-02
				Technical Chlordane	0.31006	mg/kg	8.6E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-06	6.7E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Cadmium	0.157	mg/kg	NC		NC			3.4E-05	mg/kg/day	1.0E-03	mg/kg/day	3.E-02
				Lead	0.341	mg/kg	9.5E-06	mg/kg/day	--			7.4E-05	mg/kg/day			
				Manganese	12.6	mg/kg	NC		NC			2.7E-03	mg/kg/day	1.4E-01	mg/kg/day	2.E-02
				Mercury	0.102	mg/kg	NC		NC			2.2E-05	mg/kg/day	3.0E-04	mg/kg/day	7.E-02
				Mercury (methyl)	0.117	mg/kg	NC		NC			2.5E-05	mg/kg/day	1.0E-04	mg/kg/day	3.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0000522	mg/kg	1.5E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	1.1E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-04					4.6.E+00
		EXPOSURE POINT TOTAL									2.E-04					4.6.E+00
	EXPOSURE MEDIUM TOTAL										2.E-04					4.6.E+00
WHOLE BODY TOTAL											2.E-04					4.6.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA
											2.E-04					4.6.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.7.77.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	INGESTION	Acenaphthylene	0.00076	mg/kg	NC		NC			1.3E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				Dibenzo(a,h)anthracene	0.00017	mg/kg	3.7E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-08	2.9E-08	mg/kg/day	3.0E-02	mg/kg/day	1.E-06
				Phenanthrene	0.0049	mg/kg	NC		NC			8.3E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				4,4'-DDD	0.03543	mg/kg	7.7E-07	mg/kg/day	2.4E-01	(mg/kg/day)-1	2.E-07	6.0E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				4,4'-DDE	0.011	mg/kg	2.4E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	8.E-08	1.9E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				4,4'-DDT	0.0119	mg/kg	2.6E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	9.E-08	2.0E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				alpha-Chlordane	0.0144	mg/kg	3.1E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	1.E-07	2.4E-06	mg/kg/day	5.0E-04	mg/kg/day	5.E-03
				Aroclor-1254	0.37026	mg/kg	8.1E-06	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	6.3E-05	mg/kg/day	2.0E-05	mg/kg/day	3.E+00
				Dieldrin	0.00852	mg/kg	1.9E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	3.E-06	1.4E-06	mg/kg/day	5.0E-05	mg/kg/day	3.E-02
				gamma-Chlordane	0.00574	mg/kg	1.2E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	4.E-08	9.7E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				Heptachlor Epoxide	0.0018	mg/kg	3.9E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	4.E-07	3.0E-07	mg/kg/day	1.3E-05	mg/kg/day	2.E-02
				Technical Chlordane	0.31006	mg/kg	6.7E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-06	5.2E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				Cadmium	0.157	mg/kg	NC		NC			2.7E-05	mg/kg/day	1.0E-03	mg/kg/day	3.E-02
				Lead	0.341	mg/kg	7.4E-06	mg/kg/day	--			5.8E-05	mg/kg/day			
				Manganese	12.6	mg/kg	NC		NC			2.1E-03	mg/kg/day	1.4E-01	mg/kg/day	2.E-02
				Mercury	0.102	mg/kg	NC		NC			1.7E-05	mg/kg/day	3.0E-04	mg/kg/day	6.E-02
				Mercury (methyl)	0.117	mg/kg	NC		NC			2.0E-05	mg/kg/day	1.0E-04	mg/kg/day	2.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0000522	mg/kg	1.1E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	8.8E-09	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-04					3.E+00
		EXPOSURE POINT TOTAL									2.E-04					3.E+00
	EXPOSURE MEDIUM TOTAL										2.E-04					3.E+00
WHOLE BODY TOTAL											2.E-04					3.E+00
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	2.E-04				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	3.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.7.78.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
							INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK			INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
					VALUE	UNITS	VALUE	UNITS	VALUE	UNITS	CANCER RISK	VALUE	UNITS	VALUE	UNITS	
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	INGESTION	Acenaphthylene	0.00076	mg/kg	NC		NC			2.7E-07	mg/kg/day	6.0E-02	mg/kg/day	5.E-06
				Dibenzo(a,h)anthracene	0.00017	mg/kg	5.2E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-08	6.1E-08	mg/kg/day	3.0E-02	mg/kg/day	2.E-06
				Phenanthrene	0.0049	mg/kg	NC		NC			1.8E-06	mg/kg/day	3.0E-02	mg/kg/day	6.E-05
				4,4'-DDD	0.03543	mg/kg	1.1E-06	mg/kg/day	2.4E-01	(mg/kg/day)-1	3.E-07	1.3E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				4,4'-DDE	0.011	mg/kg	3.4E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-07	4.0E-06	mg/kg/day	5.0E-04	mg/kg/day	8.E-03
				4,4'-DDT	0.0119	mg/kg	3.7E-07	mg/kg/day	3.4E-01	(mg/kg/day)-1	1.E-07	4.3E-06	mg/kg/day	5.0E-04	mg/kg/day	9.E-03
				alpha-Chlordane	0.0144	mg/kg	4.4E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	2.E-07	5.2E-06	mg/kg/day	5.0E-04	mg/kg/day	1.E-02
				Aroclor-1254	0.37026	mg/kg	1.1E-05	mg/kg/day	2.0E+00	(mg/kg/day)-1	2.E-05	1.3E-04	mg/kg/day	2.0E-05	mg/kg/day	7.E+00
				Dieldrin	0.00852	mg/kg	2.6E-07	mg/kg/day	1.6E+01	(mg/kg/day)-1	4.E-06	3.1E-06	mg/kg/day	5.0E-05	mg/kg/day	6.E-02
				gamma-Chlordane	0.00574	mg/kg	1.8E-07	mg/kg/day	3.5E-01	(mg/kg/day)-1	6.E-08	2.1E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				Heptachlor Epoxide	0.0018	mg/kg	5.6E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	5.E-07	6.5E-07	mg/kg/day	1.3E-05	mg/kg/day	5.E-02
				Technical Chlordane	0.31006	mg/kg	9.6E-06	mg/kg/day	3.5E-01	(mg/kg/day)-1	3.E-06	1.1E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				Cadmium	0.157	mg/kg	NC		NC			5.7E-05	mg/kg/day	1.0E-03	mg/kg/day	6.E-02
				Lead	0.341	mg/kg	1.1E-05	mg/kg/day	--			1.2E-04	mg/kg/day			
				Manganese	12.6	mg/kg	NC		NC			4.5E-03	mg/kg/day	1.4E-01	mg/kg/day	3.E-02
				Mercury	0.102	mg/kg	NC		NC			3.7E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Mercury (methyl)	0.117	mg/kg	NC		NC			4.2E-05	mg/kg/day	1.0E-04	mg/kg/day	4.E-01
				Toxicity Equivalency (Dioxins/Furans)	0.0000522	mg/kg	1.6E-09	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-04	1.9E-08	mg/kg/day			
			EXPOSURE ROUTE TOTAL								3.E-04					7.7.E+00
		EXPOSURE POINT TOTAL									3.E-04					7.7.E+00
	EXPOSURE MEDIUM TOTAL										3.E-04					7.7.E+00
WHOLE BODY TOTAL											3.E-04					7.7.E+00
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA	3.E-04				TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA	7.7.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - AMERICAN EEL - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.6E-05	NA	NA	1.6E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.5E-04	NA	NA	1.5E-04
			4,4'-DDD	7.8E-07	NA	NA	NA	7.8E-07	Liver	8.8E-03	NA	NA	8.8E-03
			4,4'-DDE	5.0E-06	NA	NA	NA	5.0E-06	Liver	4.0E-02	NA	NA	4.0E-02
			alpha-Chlordane	6.7E-07	NA	NA	NA	6.7E-07	Liver	5.2E-03	NA	NA	5.2E-03
			Aroclor-1254	8.1E-05	NA	NA	NA	8.1E-05	Immune system	2.7E+00	NA	NA	2.7E+00
			Dieldrin	1.6E-05	NA	NA	NA	1.6E-05	Liver	2.6E-02	NA	NA	2.6E-02
			gamma-Chlordane	2.6E-07	NA	NA	NA	2.6E-07	Liver	2.0E-03	NA	NA	2.0E-03
			Heptachlor Epoxide	5.0E-06	NA	NA	NA	5.0E-06	Liver	5.6E-02	NA	NA	5.6E-02
			Technical Chlordane	2.2E-05	NA	NA	NA	2.2E-05	Liver	1.7E-01	NA	NA	1.7E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.5E-01	NA	NA	2.5E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	7.3E-01	NA	NA	7.3E-01
			Zinc	NC	NA	NA	NA		Hematological system	4.6E-02	NA	NA	4.6E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.1E-04	NA	NA	NA	1.1E-04		--	NA	NA	
			CHEMICAL TOTAL	2.4E-04	--	--	--	2E-04		4.0E+00	0.0E+00	--	4.0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-04					4.0E+00
	EXPOSURE MEDIUM TOTAL							2E-04					4.0E+00
WHOLE BODY TOTAL								2E-04					4.0E+00
RECEPTOR TOTAL								2E-04					4.0E+00
			TOTAL RISK ACROSS ALL MEDIA					2E-04	TOTAL HAZARD ACROSS ALL MEDIA				4.0E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	7.3E-01
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	4.6E-02
TOTAL IMMUNE SYSTEM HI =	3.0E+00
TOTAL KIDNEY HI =	1.5E-04
TOTAL LIVER HI =	3.1E-01
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US EPA ARCHIVE DOCUMENT

TABLE G.9.2.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - AMERICAN EEL - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.6E-05	NA	NA	1.6E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.6E-04	NA	NA	1.6E-04
			4,4'-DDD	1.9E-07	NA	NA	NA	1.9E-07	Liver	9.1E-03	NA	NA	9.1E-03
			4,4'-DDE	1.2E-06	NA	NA	NA	1.2E-06	Liver	4.1E-02	NA	NA	4.1E-02
			alpha-Chlordane	1.6E-07	NA	NA	NA	1.6E-07	Liver	5.4E-03	NA	NA	5.4E-03
			Aroclor-1254	1.9E-05	NA	NA	NA	1.9E-05	Immune system	2.8E+00	NA	NA	2.8E+00
			Dieldrin	3.7E-06	NA	NA	NA	3.7E-06	Liver	2.7E-02	NA	NA	2.7E-02
			gamma-Chlordane	6.1E-08	NA	NA	NA	6.1E-08	Liver	2.0E-03	NA	NA	2.0E-03
			Heptachlor Epoxide	1.2E-06	NA	NA	NA	1.2E-06	Liver	5.8E-02	NA	NA	5.8E-02
			Technical Chlordane	5.3E-06	NA	NA	NA	5.3E-06	Liver	1.8E-01	NA	NA	1.8E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.6E-01	NA	NA	2.6E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	7.5E-01	NA	NA	7.5E-01
			Zinc	NC	NA	NA	NA		Hematological system	4.8E-02	NA	NA	4.8E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.5E-05	NA	NA	NA	2.5E-05		--	NA	NA	
			CHEMICAL TOTAL	5.6E-05	--	--	--	6E-05		4.2E+00	0.0E+00	--	4.2E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-05					4.2E+00
	EXPOSURE MEDIUM TOTAL							*6E-05*					*4.2E+00*
WHOLE BODY TOTAL								6E-05					4.2E+00
RECEPTOR TOTAL								6E-05					4.2E+00
			TOTAL RISK ACROSS ALL MEDIA					6E-05	**TOTAL HAZARD ACROSS ALL MEDIA**				4.2E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

	--
TOTAL CARDIOVASCULAR SYSTEM HI =	1.0E-07
TOTAL DEVELOPMENTAL TOXICITY HI =	7.5E-01
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	--
TOTAL HEMATOLOGICAL SYSTEM HI =	4.8E-02
TOTAL IMMUNE SYSTEM HI =	3.1E+00
TOTAL KIDNEY HI =	2.3E-04
TOTAL LIVER HI =	3.2E-01
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TOTAL NOAEL HI =	2.4E-03
	--
TOTAL SKIN HI =	1.0E-03
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US EPA ARCHIVE DOCUMENT

TABLE G.9.3.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - AMERICAN EEL - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.7E-05	NA	NA	2.7E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	2.6E-04	NA	NA	2.6E-04
			4,4'-DDD	1.5E-07	NA	NA	NA	1.5E-07	Liver	1.5E-02	NA	NA	1.5E-02
			4,4'-DDE	9.7E-07	NA	NA	NA	9.7E-07	Liver	6.7E-02	NA	NA	6.7E-02
			alpha-Chlordane	1.3E-07	NA	NA	NA	1.3E-07	Liver	8.7E-03	NA	NA	8.7E-03
			Aroclor-1254	1.6E-05	NA	NA	NA	1.6E-05	Immune system	4.6E+00	NA	NA	4.6E+00
			Dieldrin	3.0E-06	NA	NA	NA	3.0E-06	Liver	4.4E-02	NA	NA	4.4E-02
			gamma-Chlordane	5.0E-08	NA	NA	NA	5.0E-08	Liver	3.3E-03	NA	NA	3.3E-03
			Heptachlor Epoxide	9.6E-07	NA	NA	NA	9.6E-07	Liver	9.5E-02	NA	NA	9.5E-02
			Technical Chlordane	4.3E-06	NA	NA	NA	4.3E-06	Liver	2.9E-01	NA	NA	2.9E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	4.2E-01	NA	NA	4.2E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.2E+00	NA	NA	1.2E+00
			Zinc	NC	NA	NA	NA		Hematological system	7.8E-02	NA	NA	7.8E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.0E-05	NA	NA	NA	2.0E-05		--	NA	NA	
			CHEMICAL TOTAL	4.6E-05	--	--	--	5E-05		6.8E+00	0.0E+00	--	6.8E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-05					6.8E+00
	EXPOSURE MEDIUM TOTAL							5E-05					6.8E+00
WHOLE BODY TOTAL								5E-05					6.8E+00
RECEPTOR TOTAL								5E-05					6.8E+00
							TOTAL RISK ACROSS ALL MEDIA	5E-05	TOTAL HAZARD ACROSS ALL MEDIA				6.8E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.2E+00
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TOTAL HEMATOLOGICAL SYSTEM HI =	7.8E-02
TOTAL IMMUNE SYSTEM HI =	5.0E+00
TOTAL KIDNEY HI =	2.6E-04
TOTAL LIVER HI =	5.2E-01
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US EPA ARCHIVE DOCUMENT

TABLE G.9.4.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - AMERICAN EEL - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.6E-05	NA	NA	1.6E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.5E-04	NA	NA	1.5E-04
			4,4'-DDD	1.8E-07	NA	NA	NA	1.8E-07	Liver	8.8E-03	NA	NA	8.8E-03
			4,4'-DDE	1.2E-06	NA	NA	NA	1.2E-06	Liver	4.0E-02	NA	NA	4.0E-02
			alpha-Chlordane	1.6E-07	NA	NA	NA	1.6E-07	Liver	5.2E-03	NA	NA	5.2E-03
			Aroclor-1254	1.9E-05	NA	NA	NA	1.9E-05	Immune system	2.7E+00	NA	NA	2.7E+00
			Dieldrin	3.6E-06	NA	NA	NA	3.6E-06	Liver	2.6E-02	NA	NA	2.6E-02
			gamma-Chlordane	5.9E-08	NA	NA	NA	5.9E-08	Liver	2.0E-03	NA	NA	2.0E-03
			Heptachlor Epoxide	1.1E-06	NA	NA	NA	1.1E-06	Liver	5.6E-02	NA	NA	5.6E-02
			Technical Chlordane	5.1E-06	NA	NA	NA	5.1E-06	Liver	1.7E-01	NA	NA	1.7E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.5E-01	NA	NA	2.5E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	7.3E-01	NA	NA	7.3E-01
			Zinc	NC	NA	NA	NA		Hematological system	4.6E-02	NA	NA	4.6E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.4E-05	NA	NA	NA	2.4E-05		--	NA	NA	
			CHEMICAL TOTAL	5.4E-05	--	--	--	5E-05		4.0E+00	0.0E+00	--	4.0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-05					4.0E+00
	EXPOSURE MEDIUM TOTAL							5E-05					4.0E+00
WHOLE BODY TOTAL								5E-05					4.0E+00
RECEPTOR TOTAL								5E-05					4.0E+00
			TOTAL RISK ACROSS ALL MEDIA					5E-05	TOTAL HAZARD ACROSS ALL MEDIA				4.0E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	7.3E-01
	--
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	--
TOTAL HEMATOLOGICAL SYSTEM HI =	4.6E-02
TOTAL IMMUNE SYSTEM HI =	3.0E+00
TOTAL KIDNEY HI =	1.5E-04
TOTAL LIVER HI =	3.1E-01
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Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.9.5.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - AMERICAN EEL - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.6E-05	NA	NA	1.6E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.6E-04	NA	NA	1.6E-04
			4,4'-DDD	1.9E-07	NA	NA	NA	1.9E-07	Liver	9.1E-03	NA	NA	9.1E-03
			4,4'-DDE	1.2E-06	NA	NA	NA	1.2E-06	Liver	4.1E-02	NA	NA	4.1E-02
			alpha-Chlordane	1.6E-07	NA	NA	NA	1.6E-07	Liver	5.4E-03	NA	NA	5.4E-03
			Aroclor-1254	1.9E-05	NA	NA	NA	1.9E-05	Immune system	2.8E+00	NA	NA	2.8E+00
			Dieldrin	3.7E-06	NA	NA	NA	3.7E-06	Liver	2.7E-02	NA	NA	2.7E-02
			gamma-Chlordane	6.1E-08	NA	NA	NA	6.1E-08	Liver	2.0E-03	NA	NA	2.0E-03
			Heptachlor Epoxide	1.2E-06	NA	NA	NA	1.2E-06	Liver	5.8E-02	NA	NA	5.8E-02
			Technical Chlordane	5.3E-06	NA	NA	NA	5.3E-06	Liver	1.8E-01	NA	NA	1.8E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.6E-01	NA	NA	2.6E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	7.5E-01	NA	NA	7.5E-01
			Zinc	NC	NA	NA	NA		Hematological system	4.8E-02	NA	NA	4.8E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.5E-05	NA	NA	NA	2.5E-05		--	NA	NA	
			CHEMICAL TOTAL	5.6E-05	--	--	--	6E-05		4.2E+00	0.0E+00	--	4.2E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-05					4.2E+00
	EXPOSURE MEDIUM TOTAL							6E-05					4.2E+00
WHOLE BODY TOTAL								6E-05					4.2E+00
RECEPTOR TOTAL								**6E-05**					**4.2E+00**
			TOTAL RISK ACROSS ALL MEDIA					**6E-05**	**TOTAL HAZARD ACROSS ALL MEDIA**				**4.2E+00**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	7.5E-01
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	4.8E-02
TOTAL IMMUNE SYSTEM HI =	3.1E+00
TOTAL KIDNEY HI =	1.6E-04
TOTAL LIVER HI =	3.2E-01
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US EPA ARCHIVE DOCUMENT

TABLE G.9.6.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - AMERICAN EEL - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.7E-05	NA	NA	2.7E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	2.6E-04	NA	NA	2.6E-04
			4,4'-DDD	1.5E-07	NA	NA	NA	1.5E-07	Liver	1.5E-02	NA	NA	1.5E-02
			4,4'-DDE	9.7E-07	NA	NA	NA	9.7E-07	Liver	6.7E-02	NA	NA	6.7E-02
			alpha-Chlordane	1.3E-07	NA	NA	NA	1.3E-07	Liver	8.7E-03	NA	NA	8.7E-03
			Aroclor-1254	1.6E-05	NA	NA	NA	1.6E-05	Immune system	4.6E+00	NA	NA	4.6E+00
			Dieldrin	3.0E-06	NA	NA	NA	3.0E-06	Liver	4.4E-02	NA	NA	4.4E-02
			gamma-Chlordane	5.0E-08	NA	NA	NA	5.0E-08	Liver	3.3E-03	NA	NA	3.3E-03
			Heptachlor Epoxide	9.6E-07	NA	NA	NA	9.6E-07	Liver	9.5E-02	NA	NA	9.5E-02
			Technical Chlordane	4.3E-06	NA	NA	NA	4.3E-06	Liver	2.9E-01	NA	NA	2.9E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	4.2E-01	NA	NA	4.2E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.2E+00	NA	NA	1.2E+00
			Zinc	NC	NA	NA	NA		Hematological system	7.8E-02	NA	NA	7.8E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.0E-05	NA	NA	NA	2.0E-05		--	NA	NA	
			CHEMICAL TOTAL	4.6E-05	--	--	--	5E-05		6.8E+00	0.0E+00	--	6.8E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-05					6.8E+00
	EXPOSURE MEDIUM TOTAL							5E-05					6.8E+00
WHOLE BODY TOTAL								5E-05					6.8E+00

RECEPTOR TOTAL	5E-05		6.8E+00
TOTAL RISK ACROSS ALL MEDIA	5E-05	TOTAL HAZARD ACROSS ALL MEDIA	6.8E+00

NOTES.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	1.2E+00
	--
	--
	--
TOTAL HEMATOLOGICAL SYSTEM HI =	7.8E-02
TOTAL IMMUNE SYSTEM HI =	5.0E+00
TOTAL KIDNEY HI =	2.6E-04
TOTAL LIVER HI =	5.2E-01
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Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.9.7.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - LARGEMOUTH BASS - FILLET - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.8E-06	NA	NA	2.8E-06
			Benzo(a)pyrene	3.7E-06	NA	NA	NA	3.7E-06	Kidney	2.3E-05	NA	NA	2.3E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	2.1E-05	NA	NA	2.1E-05
			4,4'-DDE	1.2E-06	NA	NA	NA	1.2E-06	Liver	9.9E-03	NA	NA	9.9E-03
			alpha-Chlordane	4.3E-08	NA	NA	NA	4.3E-08	Liver	3.3E-04	NA	NA	3.3E-04
			Mercury	NC	NA	NA	NA		Immune system	5.6E-01	NA	NA	5.6E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.0E+00	NA	NA	2.0E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.6E-04	NA	NA	NA	1.6E-04		--	NA	NA	
			CHEMICAL TOTAL	1.7E-04	--	--	--	2E-04		2.6E+00	0.0E+00	--	3E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-04					3E+00
	EXPOSURE MEDIUM TOTAL							2E-04					3E+00
FILLET TOTAL								2E-04					3E+00
RECEPTOR TOTAL								2E-04					2.6E+00
							TOTAL RISK ACROSS ALL MEDIA	2E-04	TOTAL HAZARD ACROSS ALL MEDIA				2.6E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	2.0E+00
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	--
TOTAL IMMUNE SYSTEM HI =	5.6E-01
TOTAL KIDNEY HI =	4.4E-05
TOTAL LIVER HI =	1.0E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.8.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - LARGEMOUTH BASS - FILLET - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.9E-06	NA	NA	2.9E-06
			Benzo(a)pyrene	8.8E-07	NA	NA	NA	8.8E-07	Kidney	2.3E-05	NA	NA	2.3E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	2.2E-05	NA	NA	2.2E-05
			4,4'-DDE	3.0E-07	NA	NA	NA	3.0E-07	Liver	1.0E-02	NA	NA	1.0E-02
			alpha-Chlordane	1.0E-08	NA	NA	NA	1.0E-08	Liver	3.4E-04	NA	NA	3.4E-04
			Mercury	NC	NA	NA	NA		Immune system	5.8E-01	NA	NA	5.8E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.1E+00	NA	NA	2.1E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.9E-05	NA	NA	NA	3.9E-05		--	NA	NA	
			CHEMICAL TOTAL	4.1E-05	--	--	--	4E-05		2.7E+00	0.0E+00	--	3E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-05					3E+00
	EXPOSURE MEDIUM TOTAL							4E-05					3E+00
FILLET TOTAL								4E-05					3E+00
RECEPTOR TOTAL								4E-05					2.7E+00
							TOTAL RISK ACROSS ALL MEDIA	4E-05	TOTAL HAZARD ACROSS ALL MEDIA				2.7E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	2.1E+00
	--
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	--
TOTAL IMMUNE SYSTEM HI =	5.8E-01
TOTAL KIDNEY HI =	4.5E-05
TOTAL LIVER HI =	1.1E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.9.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - LARGEMOUTH BASS - FILLET - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK: INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	NON-CARCINOGENIC HAZARD QUOTIENT: PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.8E-06	NA	NA	4.8E-06
			Benzo(a)pyrene	7.2E-07	NA	NA	NA	7.2E-07	Kidney	3.8E-05	NA	NA	3.8E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	3.6E-05	NA	NA	3.6E-05
			4,4'-DDE	2.4E-07	NA	NA	NA	2.4E-07	Liver	1.7E-02	NA	NA	1.7E-02
			alpha-Chlordane	8.3E-09	NA	NA	NA	8.3E-09	Liver	5.5E-04	NA	NA	5.5E-04
			Mercury	NC	NA	NA	NA		Immune system	9.4E-01	NA	NA	9.4E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	3.4E+00	NA	NA	3.4E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.2E-05	NA	NA	NA	3.2E-05		--	NA	NA	
			CHEMICAL TOTAL	3.3E-05	--	--	--	3E-05		4.3E+00	0.0E+00	--	4E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-05					4E+00
	EXPOSURE MEDIUM TOTAL							3E-05					4E+00
FILLET TOTAL								3E-05					4E+00
RECEPTOR TOTAL								3E-05					4.3E+00
							TOTAL RISK ACROSS ALL MEDIA	3E-05	TOTAL HAZARD ACROSS ALL MEDIA				4.3E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	3.4E+00
	--
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	--
	--
TOTAL IMMUNE SYSTEM HI =	9.4E-01
TOTAL KIDNEY HI =	7.4E-05
TOTAL LIVER HI =	1.7E-02
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Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.9.10.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - LARGEMOUTH BASS - FILLET - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.8E-06	NA	NA	2.8E-06
			Benzo(a)pyrene	8.5E-07	NA	NA	NA	8.5E-07	Kidney	2.3E-05	NA	NA	2.3E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	2.1E-05	NA	NA	2.1E-05
			4,4'-DDE	2.9E-07	NA	NA	NA	2.9E-07	Liver	9.9E-03	NA	NA	9.9E-03
			alpha-Chlordane	9.9E-09	NA	NA	NA	9.9E-09	Liver	3.3E-04	NA	NA	3.3E-04
			Mercury	NC	NA	NA	NA		Immune system	5.6E-01	NA	NA	5.6E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.0E+00	NA	NA	2.0E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.8E-05	NA	NA	NA	3.8E-05		--	NA	NA	
			CHEMICAL TOTAL	3.9E-05	--	--	--	4E-05		2.6E+00	0.0E+00	--	3E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-05					3E+00
	EXPOSURE MEDIUM TOTAL							4E-05					3E+00
FILLET TOTAL								4E-05					3E+00
RECEPTOR TOTAL								4E-05					2.6E+00
							TOTAL RISK ACROSS ALL MEDIA	4E-05	TOTAL HAZARD ACROSS ALL MEDIA				2.6E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	2.0E+00
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TOTAL IMMUNE SYSTEM HI =	5.6E-01
TOTAL KIDNEY HI =	4.4E-05
TOTAL LIVER HI =	1.0E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.11.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - LARGEMOUTH BASS - FILLET - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.9E-06	NA	NA	2.9E-06
			Benzo(a)pyrene	8.8E-07	NA	NA	NA	8.8E-07	Kidney	2.3E-05	NA	NA	2.3E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	2.2E-05	NA	NA	2.2E-05
			4,4'-DDE	3.0E-07	NA	NA	NA	3.0E-07	Liver	1.0E-02	NA	NA	1.0E-02
			alpha-Chlordane	1.0E-08	NA	NA	NA	1.0E-08	Liver	3.4E-04	NA	NA	3.4E-04
			Mercury	NC	NA	NA	NA		Immune system	5.8E-01	NA	NA	5.8E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.1E+00	NA	NA	2.1E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.9E-05	NA	NA	NA	3.9E-05		--	NA	NA	
			CHEMICAL TOTAL	4.1E-05	--	--	--	4E-05		2.7E+00	0.0E+00	--	3E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-05					3E+00
	EXPOSURE MEDIUM TOTAL							4E-05					3E+00
FILLET TOTAL								4E-05					3E+00
RECEPTOR TOTAL								4E-05					2.7E+00
							TOTAL RISK ACROSS ALL MEDIA	4E-05	TOTAL HAZARD ACROSS ALL MEDIA				2.7E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	2.1E+00
	--
	--
	--
TOTAL IMMUNE SYSTEM HI =	5.8E-01
TOTAL KIDNEY HI =	4.5E-05
TOTAL LIVER HI =	1.1E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.12.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - LARGEMOUTH BASS - FILLET - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.8E-06	NA	NA	4.8E-06
			Benzo(a)pyrene	7.2E-07	NA	NA	NA	7.2E-07	Kidney	3.8E-05	NA	NA	3.8E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	3.6E-05	NA	NA	3.6E-05
			4,4'-DDE	2.4E-07	NA	NA	NA	2.4E-07	Liver	1.7E-02	NA	NA	1.7E-02
			alpha-Chlordane	8.3E-09	NA	NA	NA	8.3E-09	Liver	5.5E-04	NA	NA	5.5E-04
			Mercury	NC	NA	NA	NA		Immune system	9.4E-01	NA	NA	9.4E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	3.4E+00	NA	NA	3.4E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.2E-05	NA	NA	NA	3.2E-05		--	NA	NA	
			CHEMICAL TOTAL	3.3E-05	--	--	--	3E-05		4.3E+00	0.0E+00	--	4E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-05					4E+00
	EXPOSURE MEDIUM TOTAL							3E-05					4E+00
FILLET TOTAL								3E-05					4E+00

RECEPTOR TOTAL	3E-05		4.3E+00
TOTAL RISK ACROSS ALL MEDIA	3E-05	TOTAL HAZARD ACROSS ALL MEDIA	4.3E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	3.4E+00
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	--
	--
TOTAL IMMUNE SYSTEM HI =	9.4E-01
TOTAL KIDNEY HI =	7.4E-05
TOTAL LIVER HI =	1.7E-02
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Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.13.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - BROWN BULLHEAD - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.1E-05	NA	NA	1.1E-05
			Benzo(a)anthracene	2.3E-06	NA	NA	NA	2.3E-06	Kidney	1.4E-04	NA	NA	1.4E-04
			Benzo(a)pyrene	2.3E-05	NA	NA	NA	2.3E-05	Kidney	1.4E-04	NA	NA	1.4E-04
			Benzo(b)fluoranthene	3.0E-06	NA	NA	NA	3.0E-06	Kidney	1.9E-04	NA	NA	1.9E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	8.2E-05	NA	NA	8.2E-05
			Dibenzo(a,h)anthracene	3.7E-06	NA	NA	NA	3.7E-06	Kidney	2.3E-05	NA	NA	2.3E-05
			Indeno(1,2,3-cd)pyrene	1.9E-06	NA	NA	NA	1.9E-06	Kidney	1.2E-04	NA	NA	1.2E-04
			Phenanthrene	NC	NA	NA	NA		Kidney	1.4E-04	NA	NA	1.4E-04
			4,4'-DDE	3.2E-06	NA	NA	NA	3.2E-06	Liver	2.5E-02	NA	NA	2.5E-02
			alpha-Chlordane	4.0E-07	NA	NA	NA	4.0E-07	Liver	3.1E-03	NA	NA	3.1E-03
			gamma-Chlordane	1.8E-07	NA	NA	NA	1.8E-07	Liver	1.4E-03	NA	NA	1.4E-03
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.4E-01	NA	NA	2.4E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	7.7E-01	NA	NA	7.7E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.5E-04	NA	NA	NA	1.5E-04		--	NA	NA	
			CHEMICAL TOTAL	1.9E-04	--	--	--	2E-04		1.0E+00	0.0E+00	--	1.0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-04					1.0E+00
	EXPOSURE MEDIUM TOTAL							2E-04					1.0E+00
WHOLE BODY TOTAL								2E-04					1.0E+00
			TOTAL RISK ACROSS ALL MEDIA					**2E-04**	TOTAL HAZARD ACROSS ALL MEDIA				**1.0E+00**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL DEVELOPMENTAL TOXICITY HI =	7.7E-01
TOTAL IMMUNE SYSTEM HI =	2.4E-01
TOTAL KIDNEY HI =	8.3E-04
TOTAL LIVER HI =	3.0E-02

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE 9.14.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - BROWN BULLHEAD - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.1E-05	NA	NA	1.1E-05
			Benzo(a)anthracene	5.6E-07	NA	NA	NA	5.6E-07	Kidney	1.5E-04	NA	NA	1.5E-04
			Benzo(a)pyrene	5.4E-06	NA	NA	NA	5.4E-06	Kidney	1.4E-04	NA	NA	1.4E-04
			Benzo(b)fluoranthene	7.3E-07	NA	NA	NA	7.3E-07	Kidney	1.9E-04	NA	NA	1.9E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	8.5E-05	NA	NA	8.5E-05
			Dibenzo(a,h)anthracene	8.9E-07	NA	NA	NA	8.9E-07	Kidney	2.4E-05	NA	NA	2.4E-05
			Indeno(1,2,3-cd)pyrene	4.5E-07	NA	NA	NA	4.5E-07	Kidney	1.2E-04	NA	NA	1.2E-04
			Phenanthrene	NC	NA	NA	NA		Kidney	1.4E-04	NA	NA	1.4E-04
			4,4'-DDE	7.6E-07	NA	NA	NA	7.6E-07	Liver	2.6E-02	NA	NA	2.6E-02
			alpha-Chlordane	9.5E-08	NA	NA	NA	9.5E-08	Liver	3.2E-03	NA	NA	3.2E-03
			gamma-Chlordane	4.3E-08	NA	NA	NA	4.3E-08	Liver	1.4E-03	NA	NA	1.4E-03
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.5E-01	NA	NA	2.5E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	8.0E-01	NA	NA	8.0E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.6E-05	NA	NA	NA	3.6E-05		--	NA	NA	
			CHEMICAL TOTAL	4.5E-05	--	--	--	5E-05		1.1E+00	0.0E+00	--	1.1E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-05					1.1E+00
	EXPOSURE MEDIUM TOTAL							5E-05					1.1E+00
WHOLE BODY TOTAL								5E-05					1.1E+00
RECEPTOR TOTAL								5E-05					1.1E+00
							TOTAL RISK ACROSS ALL MEDIA	5E-05	TOTAL HAZARD ACROSS ALL MEDIA				1.1E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	8.0E-01
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	--
TOTAL IMMUNE SYSTEM HI =	2.5E-01
TOTAL KIDNEY HI =	8.6E-04
TOTAL LIVER HI =	3.1E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.15.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - BROWN BULLHEAD - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.8E-05	NA	NA	1.8E-05
			Benzo(a)anthracene	4.5E-07	NA	NA	NA	4.5E-07	Kidney	2.4E-04	NA	NA	2.4E-04
			Benzo(a)pyrene	4.4E-06	NA	NA	NA	4.4E-06	Kidney	2.4E-04	NA	NA	2.4E-04
			Benzo(b)fluoranthene	5.9E-07	NA	NA	NA	5.9E-07	Kidney	3.2E-04	NA	NA	3.2E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.4E-04	NA	NA	1.4E-04
			Dibenzo(a,h)anthracene	7.2E-07	NA	NA	NA	7.2E-07	Kidney	3.8E-05	NA	NA	3.8E-05
			Indeno(1,2,3-cd)pyrene	3.7E-07	NA	NA	NA	3.7E-07	Kidney	1.9E-04	NA	NA	1.9E-04
			Phenanthrene	NC	NA	NA	NA		Kidney	2.3E-04	NA	NA	2.3E-04
			4,4'-DDE	6.2E-07	NA	NA	NA	6.2E-07	Liver	4.2E-02	NA	NA	4.2E-02
			alpha-Chlordane	7.7E-08	NA	NA	NA	7.7E-08	Liver	5.2E-03	NA	NA	5.2E-03
			gamma-Chlordane	3.5E-08	NA	NA	NA	3.5E-08	Liver	2.3E-03	NA	NA	2.3E-03
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	4.1E-01	NA	NA	4.1E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.3E+00	NA	NA	1.3E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.0E-05	NA	NA	NA	3.0E-05		--	NA	NA	
			CHEMICAL TOTAL	3.7E-05	--	--	--	4E-05		1.8E+00	0.0E+00	--	1.8E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-05					1.8E+00
	EXPOSURE MEDIUM TOTAL							4E-05					1.8E+00
WHOLE BODY TOTAL								4E-05					1.8E+00
RECEPTOR TOTAL								4E-05					1.8E+00
							TOTAL RISK ACROSS ALL MEDIA	4E-05	TOTAL HAZARD ACROSS ALL MEDIA				1.8E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.3E+00
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TOTAL IMMUNE SYSTEM HI =	4.1E-01
TOTAL KIDNEY HI =	1.4E-03
TOTAL LIVER HI =	5.0E-02
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Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.9.16.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - BROWN BULLHEAD - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.1E-05	NA	NA	1.1E-05
			Benzo(a)anthracene	5.4E-07	NA	NA	NA	5.4E-07	Kidney	1.4E-04	NA	NA	1.4E-04
			Benzo(a)pyrene	5.3E-06	NA	NA	NA	5.3E-06	Kidney	1.4E-04	NA	NA	1.4E-04
			Benzo(b)fluoranthene	7.0E-07	NA	NA	NA	7.0E-07	Kidney	1.9E-04	NA	NA	1.9E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	8.2E-05	NA	NA	8.2E-05
			Dibenzo(a,h)anthracene	8.6E-07	NA	NA	NA	8.6E-07	Kidney	2.3E-05	NA	NA	2.3E-05
			Indeno(1,2,3-cd)pyrene	4.3E-07	NA	NA	NA	4.3E-07	Kidney	1.2E-04	NA	NA	1.2E-04
			Phenanthrene	NC	NA	NA	NA		Kidney	1.4E-04	NA	NA	1.4E-04
			4,4'-DDE	7.3E-07	NA	NA	NA	7.3E-07	Liver	2.5E-02	NA	NA	2.5E-02
			alpha-Chlordane	9.2E-08	NA	NA	NA	9.2E-08	Liver	3.1E-03	NA	NA	3.1E-03
			gamma-Chlordane	4.1E-08	NA	NA	NA	4.1E-08	Liver	1.4E-03	NA	NA	1.4E-03
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.4E-01	NA	NA	2.4E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	7.7E-01	NA	NA	7.7E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.5E-05	NA	NA	NA	3.5E-05		--	NA	NA	
			CHEMICAL TOTAL	4.4E-05	--	--	--	4E-05		1.0E+00	0.0E+00	--	1.0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-05					1.0E+00
	EXPOSURE MEDIUM TOTAL							4E-05					1.0E+00
WHOLE BODY TOTAL								4E-05					1.0E+00
			TOTAL RISK ACROSS ALL MEDIA					4E-05	TOTAL HAZARD ACROSS ALL MEDIA				1.0E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	7.7E-01
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TOTAL IMMUNE SYSTEM HI =	2.4E-01
TOTAL KIDNEY HI =	8.3E-04
TOTAL LIVER HI =	3.0E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.17.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - BROWN BULLHEAD - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.1E-05	NA	NA	1.1E-05
			Benzo(a)anthracene	5.6E-07	NA	NA	NA	5.6E-07	Kidney	1.5E-04	NA	NA	1.5E-04
			Benzo(a)pyrene	5.4E-06	NA	NA	NA	5.4E-06	Kidney	1.4E-04	NA	NA	1.4E-04
			Benzo(b)fluoranthene	7.3E-07	NA	NA	NA	7.3E-07	Kidney	1.9E-04	NA	NA	1.9E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	8.5E-05	NA	NA	8.5E-05
			Dibenzo(a,h)anthracene	8.9E-07	NA	NA	NA	8.9E-07	Kidney	2.4E-05	NA	NA	2.4E-05
			Indeno(1,2,3-cd)pyrene	4.5E-07	NA	NA	NA	4.5E-07	Kidney	1.2E-04	NA	NA	1.2E-04
			Phenanthrene	NC	NA	NA	NA		Kidney	1.4E-04	NA	NA	1.4E-04
			4,4'-DDE	7.6E-07	NA	NA	NA	7.6E-07	Liver	2.6E-02	NA	NA	2.6E-02
			alpha-Chlordane	9.5E-08	NA	NA	NA	9.5E-08	Liver	3.2E-03	NA	NA	3.2E-03
			gamma-Chlordane	4.3E-08	NA	NA	NA	4.3E-08	Liver	1.4E-03	NA	NA	1.4E-03
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.5E-01	NA	NA	2.5E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	8.0E-01	NA	NA	8.0E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.6E-05	NA	NA	NA	3.6E-05		--	NA	NA	
			CHEMICAL TOTAL	4.5E-05	--	--	--	5E-05		1.1E+00	0.0E+00	--	1.1E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-05					1.1E+00
	EXPOSURE MEDIUM TOTAL							5E-05					1.1E+00
WHOLE BODY TOTAL								5E-05					1.1E+00
RECEPTOR TOTAL								5E-05					1.1E+00
			TOTAL RISK ACROSS ALL MEDIA					5E-05	TOTAL HAZARD ACROSS ALL MEDIA				1.1E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	8.0E-01
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TOTAL IMMUNE SYSTEM HI =	2.5E-01
TOTAL KIDNEY HI =	8.6E-04
TOTAL LIVER HI =	3.1E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.18.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - BROWN BULLHEAD - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.8E-05	NA	NA	1.8E-05
			Benzo(a)anthracene	4.5E-07	NA	NA	NA	4.5E-07	Kidney	2.4E-04	NA	NA	2.4E-04
			Benzo(a)pyrene	4.4E-06	NA	NA	NA	4.4E-06	Kidney	2.4E-04	NA	NA	2.4E-04
			Benzo(b)fluoranthene	5.9E-07	NA	NA	NA	5.9E-07	Kidney	3.2E-04	NA	NA	3.2E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.4E-04	NA	NA	1.4E-04
			Dibenzo(a,h)anthracene	7.2E-07	NA	NA	NA	7.2E-07	Kidney	3.8E-05	NA	NA	3.8E-05
			Indeno(1,2,3-cd)pyrene	3.7E-07	NA	NA	NA	3.7E-07	Kidney	1.9E-04	NA	NA	1.9E-04
			Phenanthrene	NC	NA	NA	NA		Kidney	2.3E-04	NA	NA	2.3E-04
			4,4'-DDE	6.2E-07	NA	NA	NA	6.2E-07	Liver	4.2E-02	NA	NA	4.2E-02
			alpha-Chlordane	7.7E-08	NA	NA	NA	7.7E-08	Liver	5.2E-03	NA	NA	5.2E-03
			gamma-Chlordane	3.5E-08	NA	NA	NA	3.5E-08	Liver	2.3E-03	NA	NA	2.3E-03
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	4.1E-01	NA	NA	4.1E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.3E+00	NA	NA	1.3E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.0E-05	NA	NA	NA	3.0E-05		--	NA	NA	
			CHEMICAL TOTAL	3.7E-05	--	--	--	4E-05		1.8E+00	0.0E+00	--	1.8E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-05					1.8E+00
	EXPOSURE MEDIUM TOTAL							4E-05					1.8E+00
WHOLE BODY TOTAL								4E-05					1.8E+00
RECEPTOR TOTAL								4E-05					1.8E+00
							TOTAL RISK ACROSS ALL MEDIA	4E-05	TOTAL HAZARD ACROSS ALL MEDIA				1.8E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.3E+00
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TOTAL IMMUNE SYSTEM HI =	4.1E-01
TOTAL KIDNEY HI =	1.4E-03
TOTAL LIVER HI =	5.0E-02
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Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.9.19.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - AMERICAN EEL - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.1E-05	NA	NA	1.1E-05
			Benzo(a)pyrene	3.8E-06	NA	NA	NA	3.8E-06	Kidney	2.3E-05	NA	NA	2.3E-05
			Benzo(b)fluoranthene	4.3E-07	NA	NA	NA	4.3E-07	Kidney	2.6E-05	NA	NA	2.6E-05
			Dibenzo(a,h)anthracene	2.3E-06	NA	NA	NA	2.3E-06	Kidney	1.4E-05	NA	NA	1.4E-05
			Indeno(1,2,3-cd)pyrene	3.8E-07	NA	NA	NA	3.8E-07	Kidney	2.3E-05	NA	NA	2.3E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	8.4E-05	NA	NA	8.4E-05
			4,4'-DDD	1.4E-06	NA	NA	NA	1.4E-06	Liver	1.6E-02	NA	NA	1.6E-02
			4,4'-DDE	4.2E-06	NA	NA	NA	4.2E-06	Liver	3.4E-02	NA	NA	3.4E-02
			alpha-Chlordane	2.3E-06	NA	NA	NA	2.3E-06	Liver	1.8E-02	NA	NA	1.8E-02
			Aroclor-1254	2.0E-04	NA	NA	NA	2.0E-04	Immune system	6.7E+00	NA	NA	6.7E+00
			Aroclor-1268	9.9E-05	NA	NA	NA	9.9E-05	Immune system	3.3E+00	NA	NA	3.3E+00
			Dieldrin	2.2E-05	NA	NA	NA	2.2E-05	Liver	3.7E-02	NA	NA	3.7E-02
			gamma-Chlordane	9.5E-07	NA	NA	NA	9.5E-07	Liver	7.3E-03	NA	NA	7.3E-03
			Heptachlor Epoxide	4.3E-06	NA	NA	NA	4.3E-06	Liver	4.9E-02	NA	NA	4.9E-02
			Technical Chlordane	4.4E-05	NA	NA	NA	4.4E-05	Liver	3.4E-01	NA	NA	3.4E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.2E-01	NA	NA	1.2E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	8.8E-01	NA	NA	8.8E-01
			Zinc	NC	NA	NA	NA		Hematological system	7.3E-02	NA	NA	7.3E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.4E-05	NA	NA	NA	4.4E-05		--	NA	NA	
			CHEMICAL TOTAL	4.3E-04	--	--	--	4E-04		1.2E+01	0.0E+00	--	1.2E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-04					1.2E+01
	EXPOSURE MEDIUM TOTAL							4E-04					1.2E+01
WHOLE BODY TOTAL								4E-04					1.2E+01
RECEPTOR TOTAL								4E-04					1.2E+01
							TOTAL RISK ACROSS ALL MEDIA	4E-04	TOTAL HAZARD ACROSS ALL MEDIA				1.2E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	8.8E-01
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TOTAL HEMATOLOGICAL SYSTEM HI =	7.3E-02
TOTAL IMMUNE SYSTEM HI =	1.0E+01
TOTAL KIDNEY HI =	1.7E-04
TOTAL LIVER HI =	5.0E-01
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US EPA ARCHIVE DOCUMENT

TABLE G.9.20.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - AMERICAN EEL - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.1E-05	NA	NA	1.1E-05
			Benzo(a)pyrene	9.1E-07	NA	NA	NA	9.1E-07	Kidney	2.4E-05	NA	NA	2.4E-05
			Benzo(b)fluoranthene	1.0E-07	NA	NA	NA	1.0E-07	Kidney	2.7E-05	NA	NA	2.7E-05
			Dibenzo(a,h)anthracene	5.5E-07	NA	NA	NA	5.5E-07	Kidney	1.5E-05	NA	NA	1.5E-05
			Indeno(1,2,3-cd)pyrene	9.1E-08	NA	NA	NA	9.1E-08	Kidney	2.4E-05	NA	NA	2.4E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	8.7E-05	NA	NA	8.7E-05
			4,4'-DDD	3.4E-07	NA	NA	NA	3.4E-07	Liver	1.6E-02	NA	NA	1.6E-02
			4,4'-DDE	1.0E-06	NA	NA	NA	1.0E-06	Liver	3.5E-02	NA	NA	3.5E-02
			alpha-Chlordane	5.6E-07	NA	NA	NA	5.6E-07	Liver	1.9E-02	NA	NA	1.9E-02
			Aroclor-1254	4.8E-05	NA	NA	NA	4.8E-05	Immune system	7.0E+00	NA	NA	7.0E+00
			Aroclor-1268	2.4E-05	NA	NA	NA	2.4E-05	Immune system	3.4E+00	NA	NA	3.4E+00
			Dieldrin	5.3E-06	NA	NA	NA	5.3E-06	Liver	3.9E-02	NA	NA	3.9E-02
			gamma-Chlordane	2.3E-07	NA	NA	NA	2.3E-07	Liver	7.6E-03	NA	NA	7.6E-03
			Heptachlor Epoxide	1.0E-06	NA	NA	NA	1.0E-06	Liver	5.1E-02	NA	NA	5.1E-02
			Technical Chlordane	1.0E-05	NA	NA	NA	1.0E-05	Liver	3.5E-01	NA	NA	3.5E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.3E-01	NA	NA	1.3E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	9.1E-01	NA	NA	9.1E-01
			Zinc	NC	NA	NA	NA		Hematological system	7.6E-02	NA	NA	7.6E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.1E-05	NA	NA	NA	1.1E-05		--	NA	NA	
			CHEMICAL TOTAL	1.0E-04	--	--	--	1E-04		1.2E+01	0.0E+00	--	1.2E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					1.2E+01
	EXPOSURE MEDIUM TOTAL							1E-04					1.2E+01
WHOLE BODY TOTAL								1E-04					1.2E+01
RECEPTOR TOTAL								1E-04					1.2E+01
			TOTAL RISK ACROSS ALL MEDIA					1E-04	TOTAL HAZARD ACROSS ALL MEDIA				1.2E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	9.1E-01
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TOTAL HEMATOLOGICAL SYSTEM HI =	7.6E-02
TOTAL IMMUNE SYSTEM HI =	1.1E+01
TOTAL KIDNEY HI =	1.8E-04
TOTAL LIVER HI =	5.2E-01
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US EPA ARCHIVE DOCUMENT

TABLE G.9.21.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - AMERICAN EEL - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.8E-05	NA	NA	1.8E-05
			Benzo(a)pyrene	7.4E-07	NA	NA	NA	7.4E-07	Kidney	3.9E-05	NA	NA	3.9E-05
			Benzo(b)fluoranthene	8.3E-08	NA	NA	NA	8.3E-08	Kidney	4.4E-05	NA	NA	4.4E-05
			Dibenzo(a,h)anthracene	4.5E-07	NA	NA	NA	4.5E-07	Kidney	2.4E-05	NA	NA	2.4E-05
			Indeno(1,2,3-cd)pyrene	7.4E-08	NA	NA	NA	7.4E-08	Kidney	3.9E-05	NA	NA	3.9E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.4E-04	NA	NA	1.4E-04
			4,4'-DDD	2.8E-07	NA	NA	NA	2.8E-07	Liver	2.7E-02	NA	NA	2.7E-02
			4,4'-DDE	8.2E-07	NA	NA	NA	8.2E-07	Liver	5.7E-02	NA	NA	5.7E-02
			alpha-Chlordane	4.6E-07	NA	NA	NA	4.6E-07	Liver	3.0E-02	NA	NA	3.0E-02
			Aroclor-1254	3.9E-05	NA	NA	NA	3.9E-05	Immune system	1.1E+01	NA	NA	1.1E+01
			Aroclor-1268	1.9E-05	NA	NA	NA	1.9E-05	Immune system	5.6E+00	NA	NA	5.6E+00
			Dieldrin	4.3E-06	NA	NA	NA	4.3E-06	Liver	6.3E-02	NA	NA	6.3E-02
			gamma-Chlordane	1.9E-07	NA	NA	NA	1.9E-07	Liver	1.2E-02	NA	NA	1.2E-02
			Heptachlor Epoxide	8.4E-07	NA	NA	NA	8.4E-07	Liver	8.3E-02	NA	NA	8.3E-02
			Technical Chlordane	8.5E-06	NA	NA	NA	8.5E-06	Liver	5.7E-01	NA	NA	5.7E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.1E-01	NA	NA	2.1E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.5E+00	NA	NA	1.5E+00
			Zinc	NC	NA	NA	NA		Hematological system	1.2E-01	NA	NA	1.2E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	8.6E-06	NA	NA	NA	8.6E-06		--	NA	NA	
			CHEMICAL TOTAL	8.3E-05	--	--	--	8E-05		2.0E+01	0.0E+00	--	2.0E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						8E-05					2.0E+01
	EXPOSURE MEDIUM TOTAL							8E-05					2.0E+01
WHOLE BODY TOTAL								8E-05					2.0E+01
RECEPTOR TOTAL								8E-05					2.0E+01
							TOTAL RISK ACROSS ALL MEDIA	8E-05	TOTAL HAZARD ACROSS ALL MEDIA				2.0E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.5E+00
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TOTAL HEMATOLOGICAL SYSTEM HI =	1.2E-01
TOTAL IMMUNE SYSTEM HI =	1.7E+01
TOTAL KIDNEY HI =	2.9E-04
TOTAL LIVER HI =	8.4E-01
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US EPA ARCHIVE DOCUMENT

TABLE G.9.22.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - AMERICAN EEL - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.1E-05	NA	NA	1.1E-05
			Benzo(a)pyrene	8.8E-07	NA	NA	NA	8.8E-07	Kidney	2.3E-05	NA	NA	2.3E-05
			Benzo(b)fluoranthene	9.9E-08	NA	NA	NA	9.9E-08	Kidney	2.6E-05	NA	NA	2.6E-05
			Dibenzo(a,h)anthracene	5.3E-07	NA	NA	NA	5.3E-07	Kidney	1.4E-05	NA	NA	1.4E-05
			Indeno(1,2,3-cd)pyrene	8.8E-08	NA	NA	NA	8.8E-08	Kidney	2.3E-05	NA	NA	2.3E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	8.4E-05	NA	NA	8.4E-05
			4,4'-DDD	3.3E-07	NA	NA	NA	3.3E-07	Liver	1.6E-02	NA	NA	1.6E-02
			4,4'-DDE	9.8E-07	NA	NA	NA	9.8E-07	Liver	3.4E-02	NA	NA	3.4E-02
			alpha-Chlordane	5.4E-07	NA	NA	NA	5.4E-07	Liver	1.8E-02	NA	NA	1.8E-02
			Aroclor-1254	4.6E-05	NA	NA	NA	4.6E-05	Immune system	6.7E+00	NA	NA	6.7E+00
			Aroclor-1268	2.3E-05	NA	NA	NA	2.3E-05	Immune system	3.3E+00	NA	NA	3.3E+00
			Dieldrin	5.1E-06	NA	NA	NA	5.1E-06	Liver	3.7E-02	NA	NA	3.7E-02
			gamma-Chlordane	2.2E-07	NA	NA	NA	2.2E-07	Liver	7.3E-03	NA	NA	7.3E-03
			Heptachlor Epoxide	9.9E-07	NA	NA	NA	9.9E-07	Liver	4.9E-02	NA	NA	4.9E-02
			Technical Chlordane	1.0E-05	NA	NA	NA	1.0E-05	Liver	3.4E-01	NA	NA	3.4E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.2E-01	NA	NA	1.2E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	8.8E-01	NA	NA	8.8E-01
			Zinc	NC	NA	NA	NA		Hematological system	7.3E-02	NA	NA	7.3E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.0E-05	NA	NA	NA	1.0E-05		--	NA	NA	
			CHEMICAL TOTAL	9.9E-05	--	--	--	1E-04		1.2E+01	0.0E+00	--	1.2E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					1.2E+01
	EXPOSURE MEDIUM TOTAL							1E-04					1.2E+01
WHOLE BODY TOTAL								1E-04					1.2E+01
RECEPTOR TOTAL								1E-04					1.2E+01
			TOTAL RISK ACROSS ALL MEDIA					1E-04	TOTAL HAZARD ACROSS ALL MEDIA				1.2E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	8.8E-01
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TOTAL HEMATOLOGICAL SYSTEM HI =	7.3E-02
TOTAL IMMUNE SYSTEM HI =	1.0E+01
TOTAL KIDNEY HI =	1.7E-04
TOTAL LIVER HI =	5.0E-01
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Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.9.23.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - AMERICAN EEL - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.1E-05	NA	NA	1.1E-05
			Benzo(a)pyrene	9.1E-07	NA	NA	NA	9.1E-07	Kidney	2.4E-05	NA	NA	2.4E-05
			Benzo(b)fluoranthene	1.0E-07	NA	NA	NA	1.0E-07	Kidney	2.7E-05	NA	NA	2.7E-05
			Dibenzo(a,h)anthracene	5.5E-07	NA	NA	NA	5.5E-07	Kidney	1.5E-05	NA	NA	1.5E-05
			Indeno(1,2,3-cd)pyrene	9.1E-08	NA	NA	NA	9.1E-08	Kidney	2.4E-05	NA	NA	2.4E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	8.7E-05	NA	NA	8.7E-05
			4,4'-DDD	3.4E-07	NA	NA	NA	3.4E-07	Liver	1.6E-02	NA	NA	1.6E-02
			4,4'-DDE	1.0E-06	NA	NA	NA	1.0E-06	Liver	3.5E-02	NA	NA	3.5E-02
			alpha-Chlordane	5.6E-07	NA	NA	NA	5.6E-07	Liver	1.9E-02	NA	NA	1.9E-02
			Aroclor-1254	4.8E-05	NA	NA	NA	4.8E-05	Immune system	7.0E+00	NA	NA	7.0E+00
			Aroclor-1268	2.4E-05	NA	NA	NA	2.4E-05	Immune system	3.4E+00	NA	NA	3.4E+00
			Dieldrin	5.3E-06	NA	NA	NA	5.3E-06	Liver	3.9E-02	NA	NA	3.9E-02
			gamma-Chlordane	2.3E-07	NA	NA	NA	2.3E-07	Liver	7.6E-03	NA	NA	7.6E-03
			Heptachlor Epoxide	1.0E-06	NA	NA	NA	1.0E-06	Liver	5.1E-02	NA	NA	5.1E-02
			Technical Chlordane	1.0E-05	NA	NA	NA	1.0E-05	Liver	3.5E-01	NA	NA	3.5E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.3E-01	NA	NA	1.3E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	9.1E-01	NA	NA	9.1E-01
			Zinc	NC	NA	NA	NA		Hematological system	7.6E-02	NA	NA	7.6E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.1E-05	NA	NA	NA	1.1E-05		--	NA	NA	
			CHEMICAL TOTAL	1.0E-04	--	--	--	1E-04		1.2E+01	0.0E+00	--	1.2E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					1.2E+01
	EXPOSURE MEDIUM TOTAL							1E-04					1.2E+01
WHOLE BODY TOTAL								1E-04					1.2E+01
RECEPTOR TOTAL								1E-04					1.2E+01
			TOTAL RISK ACROSS ALL MEDIA					1E-04	TOTAL HAZARD ACROSS ALL MEDIA				1.2E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	9.1E-01
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TOTAL HEMATOLOGICAL SYSTEM HI =	7.6E-02
TOTAL IMMUNE SYSTEM HI =	1.1E+01
TOTAL KIDNEY HI =	1.8E-04
TOTAL LIVER HI =	5.2E-01
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Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.9.24.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - AMERICAN EEL - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.8E-05	NA	NA	1.8E-05
			Benzo(a)pyrene	7.4E-07	NA	NA	NA	7.4E-07	Kidney	3.9E-05	NA	NA	3.9E-05
			Benzo(b)fluoranthene	8.3E-08	NA	NA	NA	8.3E-08	Kidney	4.4E-05	NA	NA	4.4E-05
			Dibenzo(a,h)anthracene	4.5E-07	NA	NA	NA	4.5E-07	Kidney	2.4E-05	NA	NA	2.4E-05
			Indeno(1,2,3-cd)pyrene	7.4E-08	NA	NA	NA	7.4E-08	Kidney	3.9E-05	NA	NA	3.9E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.4E-04	NA	NA	1.4E-04
			4,4'-DDD	2.8E-07	NA	NA	NA	2.8E-07	Liver	2.7E-02	NA	NA	2.7E-02
			4,4'-DDE	8.2E-07	NA	NA	NA	8.2E-07	Liver	5.7E-02	NA	NA	5.7E-02
			alpha-Chlordane	4.6E-07	NA	NA	NA	4.6E-07	Liver	3.0E-02	NA	NA	3.0E-02
			Aroclor-1254	3.9E-05	NA	NA	NA	3.9E-05	Immune system	1.1E+01	NA	NA	1.1E+01
			Aroclor-1268	1.9E-05	NA	NA	NA	1.9E-05	Immune system	5.6E+00	NA	NA	5.6E+00
			Dieldrin	4.3E-06	NA	NA	NA	4.3E-06	Liver	6.3E-02	NA	NA	6.3E-02
			gamma-Chlordane	1.9E-07	NA	NA	NA	1.9E-07	Liver	1.2E-02	NA	NA	1.2E-02
			Heptachlor Epoxide	8.4E-07	NA	NA	NA	8.4E-07	Liver	8.3E-02	NA	NA	8.3E-02
			Technical Chlordane	8.5E-06	NA	NA	NA	8.5E-06	Liver	5.7E-01	NA	NA	5.7E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.1E-01	NA	NA	2.1E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.5E+00	NA	NA	1.5E+00
			Zinc	NC	NA	NA	NA		Hematological system	1.2E-01	NA	NA	1.2E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	8.6E-06	NA	NA	NA	8.6E-06		--	NA	NA	
			CHEMICAL TOTAL	8.3E-05	--	--	--	8E-05		2.0E+01	0.0E+00	--	2.0E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						8E-05					2.0E+01
	EXPOSURE MEDIUM TOTAL							8E-05					2.0E+01
WHOLE BODY TOTAL								8E-05					2.0E+01

RECEPTOR TOTAL			2.0E+01
	TOTAL RISK ACROSS ALL MEDIA	TOTAL HAZARD ACROSS ALL MEDIA	2.0E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.5E+00
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TOTAL HEMATOLOGICAL SYSTEM HI =	1.2E-01
TOTAL IMMUNE SYSTEM HI =	1.7E+01
TOTAL KIDNEY HI =	2.9E-04
TOTAL LIVER HI =	8.4E-01
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US EPA ARCHIVE DOCUMENT

TABLE G.9.25.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - LARGEMOUTH BASS - FILLET - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.2E-06	NA	NA	4.2E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.8E-05	NA	NA	1.8E-05
			4,4'-DDE	2.1E-06	NA	NA	NA	2.1E-06	Liver	1.7E-02	NA	NA	1.7E-02
			alpha-Chlordane	8.8E-08	NA	NA	NA	8.8E-08	Liver	6.8E-04	NA	NA	6.8E-04
			Aroclor-1254	6.0E-05	NA	NA	NA	6.0E-05	Immune system	2.0E+00	NA	NA	2.0E+00
			Aroclor-1268	5.9E-05	NA	NA	NA	5.9E-05	Immune system	2.0E+00	NA	NA	2.0E+00
			Dieldrin	2.2E-06	NA	NA	NA	2.2E-06	Liver	3.7E-03	NA	NA	3.7E-03
			gamma-Chlordane	9.7E-08	NA	NA	NA	9.7E-08	Liver	7.4E-04	NA	NA	7.4E-04
			Technical Chlordane	2.5E-06	NA	NA	NA	2.5E-06	Liver	1.9E-02	NA	NA	1.9E-02
			Mercury	NC	NA	NA	NA		Immune system	7.4E-01	NA	NA	7.4E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	3.3E+00	NA	NA	3.3E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.4E-05	NA	NA	NA	1.4E-05		--	NA	NA	
			CHEMICAL TOTAL	1.4E-04	--	--	--	1E-04		8.1E+00	0.0E+00	--	8E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					8E+00
	EXPOSURE MEDIUM TOTAL							1E-04					8E+00
FILLET TOTAL								1E-04					8E+00
RECEPTOR TOTAL								1E-04					8.1E+00
			TOTAL RISK ACROSS ALL MEDIA					1E-04	TOTAL HAZARD ACROSS ALL MEDIA				8.1E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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TOTAL DEVELOPMENTAL TOXICITY HI =	3.3E+00
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TOTAL IMMUNE SYSTEM HI =	4.8E+00
TOTAL KIDNEY HI =	1.8E-05
TOTAL LIVER HI =	4.1E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.26.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - LARGEMOUTH BASS - FILLET - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.3E-06	NA	NA	4.3E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.8E-05	NA	NA	1.8E-05
			4,4'-DDE	5.0E-07	NA	NA	NA	5.0E-07	Liver	1.7E-02	NA	NA	1.7E-02
			alpha-Chlordane	2.1E-08	NA	NA	NA	2.1E-08	Liver	7.0E-04	NA	NA	7.0E-04
			Aroclor-1254	1.4E-05	NA	NA	NA	1.4E-05	Immune system	2.1E+00	NA	NA	2.1E+00
			Aroclor-1268	1.4E-05	NA	NA	NA	1.4E-05	Immune system	2.1E+00	NA	NA	2.1E+00
			Dieldrin	5.3E-07	NA	NA	NA	5.3E-07	Liver	3.8E-03	NA	NA	3.8E-03
			gamma-Chlordane	2.3E-08	NA	NA	NA	2.3E-08	Liver	7.7E-04	NA	NA	7.7E-04
			Technical Chlordane	5.9E-07	NA	NA	NA	5.9E-07	Liver	2.0E-02	NA	NA	2.0E-02
			Mercury	NC	NA	NA	NA		Immune system	7.7E-01	NA	NA	7.7E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	3.4E+00	NA	NA	3.4E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.4E-06	NA	NA	NA	3.4E-06		--	NA	NA	
			CHEMICAL TOTAL	3.4E-05	--	--	--	3E-05		8.4E+00	0.0E+00	--	8E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-05					8E+00
	EXPOSURE MEDIUM TOTAL							3E-05					8E+00
FILLET TOTAL								3E-05					8E+00
RECEPTOR TOTAL								3E-05					8.4E+00
							TOTAL RISK ACROSS ALL MEDIA	3E-05	TOTAL HAZARD ACROSS ALL MEDIA				8.4E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	3.4E+00
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	--
TOTAL IMMUNE SYSTEM HI =	4.9E+00
TOTAL KIDNEY HI =	1.8E-05
TOTAL LIVER HI =	4.2E-02
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Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.9.27.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - LARGEMOUTH BASS - FILLET - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	7.0E-06	NA	NA	7.0E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	3.0E-05	NA	NA	3.0E-05
			4,4'-DDE	4.1E-07	NA	NA	NA	4.1E-07	Liver	2.8E-02	NA	NA	2.8E-02
			alpha-Chlordane	1.7E-08	NA	NA	NA	1.7E-08	Liver	1.1E-03	NA	NA	1.1E-03
			Aroclor-1254	1.2E-05	NA	NA	NA	1.2E-05	Immune system	3.4E+00	NA	NA	3.4E+00
			Aroclor-1268	1.2E-05	NA	NA	NA	1.2E-05	Immune system	3.4E+00	NA	NA	3.4E+00
			Dieldrin	4.3E-07	NA	NA	NA	4.3E-07	Liver	6.3E-03	NA	NA	6.3E-03
			gamma-Chlordane	1.9E-08	NA	NA	NA	1.9E-08	Liver	1.3E-03	NA	NA	1.3E-03
			Technical Chlordane	4.8E-07	NA	NA	NA	4.8E-07	Liver	3.2E-02	NA	NA	3.2E-02
			Mercury	NC	NA	NA	NA		Immune system	1.2E+00	NA	NA	1.2E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.6E+00	NA	NA	5.6E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.8E-06	NA	NA	NA	2.8E-06		--	NA	NA	
			CHEMICAL TOTAL	2.7E-05	--	--	--	3E-05		1.4E+01	0.0E+00	--	1E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-05					1E+01
	EXPOSURE MEDIUM TOTAL							3E-05					1E+01
FILLET TOTAL								3E-05					1E+01
RECEPTOR TOTAL								3E-05					1.4E+01
							TOTAL RISK ACROSS ALL MEDIA	3E-05	TOTAL HAZARD ACROSS ALL MEDIA				1.4E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	5.6E+00
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	--
TOTAL IMMUNE SYSTEM HI =	6.8E+00
TOTAL KIDNEY HI =	3.0E-05
TOTAL LIVER HI =	6.9E-02
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Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.28.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - LARGEMOUTH BASS - FILLET - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.2E-06	NA	NA	4.2E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.8E-05	NA	NA	1.8E-05
			4,4'-DDE	4.9E-07	NA	NA	NA	4.9E-07	Liver	1.7E-02	NA	NA	1.7E-02
			alpha-Chlordane	2.0E-08	NA	NA	NA	2.0E-08	Liver	6.8E-04	NA	NA	6.8E-04
			Aroclor-1254	1.4E-05	NA	NA	NA	1.4E-05	Immune system	2.0E+00	NA	NA	2.0E+00
			Aroclor-1268	1.4E-05	NA	NA	NA	1.4E-05	Immune system	2.0E+00	NA	NA	2.0E+00
			Dieldrin	5.1E-07	NA	NA	NA	5.1E-07	Liver	3.7E-03	NA	NA	3.7E-03
			gamma-Chlordane	2.2E-08	NA	NA	NA	2.2E-08	Liver	7.4E-04	NA	NA	7.4E-04
			Technical Chlordane	5.7E-07	NA	NA	NA	5.7E-07	Liver	1.9E-02	NA	NA	1.9E-02
			Mercury	NC	NA	NA	NA		Immune system	7.4E-01	NA	NA	7.4E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	3.3E+00	NA	NA	3.3E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.3E-06	NA	NA	NA	3.3E-06		--	NA	NA	
			CHEMICAL TOTAL	3.2E-05	--	--	--	3E-05		8.1E+00	0.0E+00	--	8E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-05					8E+00
	EXPOSURE MEDIUM TOTAL							3E-05					8E+00
FILLET TOTAL								3E-05					8E+00
RECEPTOR TOTAL								3E-05					8.1E+00
							TOTAL RISK ACROSS ALL MEDIA	3E-05	TOTAL HAZARD ACROSS ALL MEDIA				8.1E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	3.3E+00
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TOTAL IMMUNE SYSTEM HI =	4.8E+00
TOTAL KIDNEY HI =	1.8E-05
TOTAL LIVER HI =	4.1E-02
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Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.9.29.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - LARGEMOUTH BASS - FILLET - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.3E-06	NA	NA	4.3E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.8E-05	NA	NA	1.8E-05
			4,4'-DDE	5.0E-07	NA	NA	NA	5.0E-07	Liver	1.7E-02	NA	NA	1.7E-02
			alpha-Chlordane	2.1E-08	NA	NA	NA	2.1E-08	Liver	7.0E-04	NA	NA	7.0E-04
			Aroclor-1254	1.4E-05	NA	NA	NA	1.4E-05	Immune system	2.1E+00	NA	NA	2.1E+00
			Aroclor-1268	1.4E-05	NA	NA	NA	1.4E-05	Immune system	2.1E+00	NA	NA	2.1E+00
			Dieldrin	5.3E-07	NA	NA	NA	5.3E-07	Liver	3.8E-03	NA	NA	3.8E-03
			gamma-Chlordane	2.3E-08	NA	NA	NA	2.3E-08	Liver	7.7E-04	NA	NA	7.7E-04
			Technical Chlordane	5.9E-07	NA	NA	NA	5.9E-07	Liver	2.0E-02	NA	NA	2.0E-02
			Mercury	NC	NA	NA	NA		Immune system	7.7E-01	NA	NA	7.7E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	3.4E+00	NA	NA	3.4E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.4E-06	NA	NA	NA	3.4E-06		--	NA	NA	
			CHEMICAL TOTAL	3.4E-05	--	--	--	3E-05		8.4E+00	0.0E+00	--	8E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-05					8E+00
	EXPOSURE MEDIUM TOTAL							3E-05					8E+00
FILLET TOTAL								3E-05					8E+00
RECEPTOR TOTAL								3E-05					8.4E+00
							TOTAL RISK ACROSS ALL MEDIA	3E-05	TOTAL HAZARD ACROSS ALL MEDIA				8.4E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	3.4E+00
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TOTAL IMMUNE SYSTEM HI =	4.9E+00
TOTAL KIDNEY HI =	1.8E-05
TOTAL LIVER HI =	4.2E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.30.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - LARGEMOUTH BASS - FILLET - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	7.0E-06	NA	NA	7.0E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	3.0E-05	NA	NA	3.0E-05
			4,4'-DDE	4.1E-07	NA	NA	NA	4.1E-07	Liver	2.8E-02	NA	NA	2.8E-02
			alpha-Chlordane	1.7E-08	NA	NA	NA	1.7E-08	Liver	1.1E-03	NA	NA	1.1E-03
			Aroclor-1254	1.2E-05	NA	NA	NA	1.2E-05	Immune system	3.4E+00	NA	NA	3.4E+00
			Aroclor-1268	1.2E-05	NA	NA	NA	1.2E-05	Immune system	3.4E+00	NA	NA	3.4E+00
			Dieldrin	4.3E-07	NA	NA	NA	4.3E-07	Liver	6.3E-03	NA	NA	6.3E-03
			gamma-Chlordane	1.9E-08	NA	NA	NA	1.9E-08	Liver	1.3E-03	NA	NA	1.3E-03
			Technical Chlordane	4.8E-07	NA	NA	NA	4.8E-07	Liver	3.2E-02	NA	NA	3.2E-02
			Mercury	NC	NA	NA	NA		Immune system	1.2E+00	NA	NA	1.2E+00
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.6E+00	NA	NA	5.6E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.8E-06	NA	NA	NA	2.8E-06		--	NA	NA	
			CHEMICAL TOTAL	2.7E-05	--	--	--	3E-05		1.4E+01	0.0E+00	--	1E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-05					1E+01
	EXPOSURE MEDIUM TOTAL							3E-05					1E+01
FILLET TOTAL								3E-05					1E+01
RECEPTOR TOTAL								3E-05					1.4E+01
							TOTAL RISK ACROSS ALL MEDIA	3E-05	TOTAL HAZARD ACROSS ALL MEDIA				1.4E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	5.6E+00
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	--
TOTAL IMMUNE SYSTEM HI =	8.0E+00
TOTAL KIDNEY HI =	3.0E-05
TOTAL LIVER HI =	6.9E-02
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Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.9.31.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - WHITE SUCKER - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.3E-05	NA	NA	4.3E-05
			Benzo(a)pyrene	3.2E-06	NA	NA	NA	3.2E-06	Kidney	2.0E-05	NA	NA	2.0E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.7E-05	NA	NA	1.7E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	3.0E-04	NA	NA	3.0E-04
			4,4'-DDD	2.1E-06	NA	NA	NA	2.1E-06	Liver	2.3E-02	NA	NA	2.3E-02
			4,4'-DDE	6.9E-06	NA	NA	NA	6.9E-06	Liver	5.4E-02	NA	NA	5.4E-02
			4,4'-DDT	8.4E-07	NA	NA	NA	8.4E-07	Liver	6.6E-03	NA	NA	6.6E-03
			alpha-Chlordane	3.4E-06	NA	NA	NA	3.4E-06	Liver	2.6E-02	NA	NA	2.6E-02
			Aroclor-1254	1.6E-04	NA	NA	NA	1.6E-04	Immune system	5.4E+00	NA	NA	5.4E+00
			Aroclor-1268	4.3E-05	NA	NA	NA	4.3E-05	Immune system	1.5E+00	NA	NA	1.5E+00
			Dieldrin	2.6E-05	NA	NA	NA	2.6E-05	Liver	4.4E-02	NA	NA	4.4E-02
			gamma-Chlordane	1.5E-06	NA	NA	NA	1.5E-06	Liver	1.2E-02	NA	NA	1.2E-02
			Heptachlor Epoxide	2.9E-06	NA	NA	NA	2.9E-06	Liver	3.3E-02	NA	NA	3.3E-02
			Technical Chlordane	3.9E-05	NA	NA	NA	3.9E-05	Liver	3.0E-01	NA	NA	3.0E-01
			Lead	--	NA	NA	NA		--		NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	3.4E-01	NA	NA	3.4E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.0E+00	NA	NA	1.0E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.8E-04	NA	NA	NA	1.8E-04		--	NA	NA	
			CHEMICAL TOTAL	4.7E-04	--	--	--	5E-04		8.7E+00	0.0E+00	--	8.7E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-04					8.7E+00
	EXPOSURE MEDIUM TOTAL							5E-04					8.7E+00
WHOLE BODY TOTAL								5E-04					8.7E+00
			TOTAL RISK ACROSS ALL MEDIA					5E-04	TOTAL HAZARD ACROSS ALL MEDIA				8.7E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.0E+00
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TOTAL IMMUNE SYSTEM HI =	7.2E+00
TOTAL KIDNEY HI =	3.4E-04
TOTAL LIVER HI =	5.0E-01
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US EPA ARCHIVE DOCUMENT

TABLE G.9.32.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER- OLDER CHILD - WHITE SUCKER - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.4E-05	NA	NA	4.4E-05
			Benzo(a)pyrene	7.7E-07	NA	NA	NA	7.7E-07	Kidney	2.1E-05	NA	NA	2.1E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.8E-05	NA	NA	1.8E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	3.2E-04	NA	NA	3.2E-04
			4,4'-DDD	4.9E-07	NA	NA	NA	4.9E-07	Liver	2.4E-02	NA	NA	2.4E-02
			4,4'-DDE	1.6E-06	NA	NA	NA	1.6E-06	Liver	5.6E-02	NA	NA	5.6E-02
			4,4'-DDT	2.0E-07	NA	NA	NA	2.0E-07	Liver	6.9E-03	NA	NA	6.9E-03
			alpha-Chlordane	8.0E-07	NA	NA	NA	8.0E-07	Liver	2.7E-02	NA	NA	2.7E-02
			Aroclor-1254	3.8E-05	NA	NA	NA	3.8E-05	Immune system	5.6E+00	NA	NA	5.6E+00
			Aroclor-1268	1.0E-05	NA	NA	NA	1.0E-05	Immune system	1.5E+00	NA	NA	1.5E+00
			Dieldrin	6.3E-06	NA	NA	NA	6.3E-06	Liver	4.6E-02	NA	NA	4.6E-02
			gamma-Chlordane	3.7E-07	NA	NA	NA	3.7E-07	Liver	1.2E-02	NA	NA	1.2E-02
			Heptachlor Epoxide	6.9E-07	NA	NA	NA	6.9E-07	Liver	3.4E-02	NA	NA	3.4E-02
			Technical Chlordane	9.3E-06	NA	NA	NA	9.3E-06	Liver	3.1E-01	NA	NA	3.1E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	3.5E-01	NA	NA	3.5E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.1E+00	NA	NA	1.1E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.4E-05	NA	NA	NA	4.4E-05		--	NA	NA	
			CHEMICAL TOTAL	1.1E-04	--	--	--	1E-04		9.0E+00	0.0E+00	--	9.0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					9.0E+00
	EXPOSURE MEDIUM TOTAL							1E-04					9.0E+00
WHOLE BODY TOTAL								1E-04					9.0E+00
RECEPTOR TOTAL								1E-04					9.0E+00
			TOTAL RISK ACROSS ALL MEDIA					1E-04	TOTAL HAZARD ACROSS ALL MEDIA				9.0E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.1E+00
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TOTAL IMMUNE SYSTEM HI =	7.4E+00
TOTAL KIDNEY HI =	3.5E-04
TOTAL LIVER HI =	5.2E-01
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US EPA ARCHIVE DOCUMENT

TABLE G.9.33.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - WHITE SUCKER - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	7.2E-05	NA	NA	7.2E-05
			Benzo(a)pyrene	6.3E-07	NA	NA	NA	6.3E-07	Kidney	3.3E-05	NA	NA	3.3E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	2.9E-05	NA	NA	2.9E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	5.1E-04	NA	NA	5.1E-04
			4,4'-DDD	4.0E-07	NA	NA	NA	4.0E-07	Liver	3.9E-02	NA	NA	3.9E-02
			4,4'-DDE	1.3E-06	NA	NA	NA	1.3E-06	Liver	9.2E-02	NA	NA	9.2E-02
			4,4'-DDT	1.6E-07	NA	NA	NA	1.6E-07	Liver	1.1E-02	NA	NA	1.1E-02
			alpha-Chlordane	6.5E-07	NA	NA	NA	6.5E-07	Liver	4.4E-02	NA	NA	4.4E-02
			Aroclor-1254	3.1E-05	NA	NA	NA	3.1E-05	Immune system	9.1E+00	NA	NA	9.1E+00
			Aroclor-1268	8.5E-06	NA	NA	NA	8.5E-06	Immune system	2.5E+00	NA	NA	2.5E+00
			Dieldrin	5.1E-06	NA	NA	NA	5.1E-06	Liver	7.5E-02	NA	NA	7.5E-02
			gamma-Chlordane	3.0E-07	NA	NA	NA	3.0E-07	Liver	2.0E-02	NA	NA	2.0E-02
			Heptachlor Epoxide	5.7E-07	NA	NA	NA	5.7E-07	Liver	5.6E-02	NA	NA	5.6E-02
			Technical Chlordane	7.6E-06	NA	NA	NA	7.6E-06	Liver	5.0E-01	NA	NA	5.0E-01
			Lead	--	NA	NA	NA		--	--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	5.7E-01	NA	NA	5.7E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.7E+00	NA	NA	1.7E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.6E-05	NA	NA	NA	3.6E-05		--	NA	NA	
			CHEMICAL TOTAL	9.2E-05	--	--	--	9E-05		1.5E+01	0.0E+00	--	1.5E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						9E-05					1.5E+01
	EXPOSURE MEDIUM TOTAL							9E-05					1.5E+01
WHOLE BODY TOTAL								9E-05					1.5E+01
RECEPTOR TOTAL								9E-05					1.5E+01
							TOTAL RISK ACROSS ALL MEDIA	9E-05	TOTAL HAZARD ACROSS ALL MEDIA				1.5E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.7E+00
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TOTAL IMMUNE SYSTEM HI =	1.2E+01
TOTAL KIDNEY HI =	5.8E-04
TOTAL LIVER HI =	8.4E-01
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Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.9.34.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - WHITE SUCKER - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.3E-05	NA	NA	4.3E-05
			Benzo(a)pyrene	7.4E-07	NA	NA	NA	7.4E-07	Kidney	2.0E-05	NA	NA	2.0E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.7E-05	NA	NA	1.7E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	3.0E-04	NA	NA	3.0E-04
			4,4'-DDD	4.8E-07	NA	NA	NA	4.8E-07	Liver	2.3E-02	NA	NA	2.3E-02
			4,4'-DDE	1.6E-06	NA	NA	NA	1.6E-06	Liver	5.4E-02	NA	NA	5.4E-02
			4,4'-DDT	1.9E-07	NA	NA	NA	1.9E-07	Liver	6.6E-03	NA	NA	6.6E-03
			alpha-Chlordane	7.7E-07	NA	NA	NA	7.7E-07	Liver	2.6E-02	NA	NA	2.6E-02
			Aroclor-1254	3.7E-05	NA	NA	NA	3.7E-05	Immune system	5.4E+00	NA	NA	5.4E+00
			Aroclor-1268	1.0E-05	NA	NA	NA	1.0E-05	Immune system	1.5E+00	NA	NA	1.5E+00
			Dieldrin	6.1E-06	NA	NA	NA	6.1E-06	Liver	4.4E-02	NA	NA	4.4E-02
			gamma-Chlordane	3.6E-07	NA	NA	NA	3.6E-07	Liver	1.2E-02	NA	NA	1.2E-02
			Heptachlor Epoxide	6.7E-07	NA	NA	NA	6.7E-07	Liver	3.3E-02	NA	NA	3.3E-02
			Technical Chlordane	9.0E-06	NA	NA	NA	9.0E-06	Liver	3.0E-01	NA	NA	3.0E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	3.4E-01	NA	NA	3.4E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.0E+00	NA	NA	1.0E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.2E-05	NA	NA	NA	4.2E-05		--	NA	NA	
			CHEMICAL TOTAL	1.1E-04	--	--	--	1E-04		8.7E+00	0.0E+00	--	8.7E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					8.7E+00
	EXPOSURE MEDIUM TOTAL							1E-04					8.7E+00
WHOLE BODY TOTAL								1E-04					8.7E+00
			TOTAL RISK ACROSS ALL MEDIA					1E-04	TOTAL HAZARD ACROSS ALL MEDIA				8.7E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.0E+00
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TOTAL IMMUNE SYSTEM HI =	7.2E+00
TOTAL KIDNEY HI =	3.4E-04
TOTAL LIVER HI =	5.0E-01
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US EPA ARCHIVE DOCUMENT

TABLE G.9.35.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - WHITE SUCKER - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.4E-05	NA	NA	4.4E-05
			Benzo(a)pyrene	7.7E-07	NA	NA	NA	7.7E-07	Kidney	2.1E-05	NA	NA	2.1E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.8E-05	NA	NA	1.8E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	3.2E-04	NA	NA	3.2E-04
			4,4'-DDD	4.9E-07	NA	NA	NA	4.9E-07	Liver	2.4E-02	NA	NA	2.4E-02
			4,4'-DDE	1.6E-06	NA	NA	NA	1.6E-06	Liver	5.6E-02	NA	NA	5.6E-02
			4,4'-DDT	2.0E-07	NA	NA	NA	2.0E-07	Liver	6.9E-03	NA	NA	6.9E-03
			alpha-Chlordane	8.0E-07	NA	NA	NA	8.0E-07	Liver	2.7E-02	NA	NA	2.7E-02
			Aroclor-1254	3.8E-05	NA	NA	NA	3.8E-05	Immune system	5.6E+00	NA	NA	5.6E+00
			Aroclor-1268	1.0E-05	NA	NA	NA	1.0E-05	Immune system	1.5E+00	NA	NA	1.5E+00
			Dieldrin	6.3E-06	NA	NA	NA	6.3E-06	Liver	4.6E-02	NA	NA	4.6E-02
			gamma-Chlordane	3.7E-07	NA	NA	NA	3.7E-07	Liver	1.2E-02	NA	NA	1.2E-02
			Heptachlor Epoxide	6.9E-07	NA	NA	NA	6.9E-07	Liver	3.4E-02	NA	NA	3.4E-02
			Technical Chlordane	9.3E-06	NA	NA	NA	9.3E-06	Liver	3.1E-01	NA	NA	3.1E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	3.5E-01	NA	NA	3.5E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.1E+00	NA	NA	1.1E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.4E-05	NA	NA	NA	4.4E-05		--	NA	NA	
			CHEMICAL TOTAL	1.1E-04	--	--	--	1E-04		9.0E+00	0.0E+00	--	9.0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					9.0E+00
	EXPOSURE MEDIUM TOTAL							1E-04					9.0E+00
WHOLE BODY TOTAL								1E-04					9.0E+00
RECEPTOR TOTAL								1E-04					9.0E+00
							TOTAL RISK ACROSS ALL MEDIA	1E-04	TOTAL HAZARD ACROSS ALL MEDIA				9.0E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.1E+00
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TOTAL IMMUNE SYSTEM HI =	7.4E+00
TOTAL KIDNEY HI =	3.5E-04
TOTAL LIVER HI =	5.2E-01
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US EPA ARCHIVE DOCUMENT

TABLE G.9.36.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - WHITE SUCKER - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	7.2E-05	NA	NA	7.2E-05
			Benzo(a)pyrene	6.3E-07	NA	NA	NA	6.3E-07	Kidney	3.3E-05	NA	NA	3.3E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	2.9E-05	NA	NA	2.9E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	5.1E-04	NA	NA	5.1E-04
			4,4'-DDD	4.0E-07	NA	NA	NA	4.0E-07	Liver	3.9E-02	NA	NA	3.9E-02
			4,4'-DDE	1.3E-06	NA	NA	NA	1.3E-06	Liver	9.2E-02	NA	NA	9.2E-02
			4,4'-DDT	1.6E-07	NA	NA	NA	1.6E-07	Liver	1.1E-02	NA	NA	1.1E-02
			alpha-Chlordane	6.5E-07	NA	NA	NA	6.5E-07	Liver	4.4E-02	NA	NA	4.4E-02
			Aroclor-1254	3.1E-05	NA	NA	NA	3.1E-05	Immune system	9.1E+00	NA	NA	9.1E+00
			Aroclor-1268	8.5E-06	NA	NA	NA	8.5E-06	Immune system	2.5E+00	NA	NA	2.5E+00
			Dieldrin	5.1E-06	NA	NA	NA	5.1E-06	Liver	7.5E-02	NA	NA	7.5E-02
			gamma-Chlordane	3.0E-07	NA	NA	NA	3.0E-07	Liver	2.0E-02	NA	NA	2.0E-02
			Heptachlor Epoxide	5.7E-07	NA	NA	NA	5.7E-07	Liver	5.6E-02	NA	NA	5.6E-02
			Technical Chlordane	7.6E-06	NA	NA	NA	7.6E-06	Liver	5.0E-01	NA	NA	5.0E-01
			Lead	--	NA	NA	NA		--	--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	5.7E-01	NA	NA	5.7E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.7E+00	NA	NA	1.7E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.6E-05	NA	NA	NA	3.6E-05		--	NA	NA	
			CHEMICAL TOTAL	9.2E-05	--	--	--	9E-05		1.5E+01	0.0E+00	--	1.5E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						9E-05					1.5E+01
	EXPOSURE MEDIUM TOTAL							9E-05					1.5E+01
WHOLE BODY TOTAL								9E-05					1.5E+01
RECEPTOR TOTAL								9E-05					1.5E+01
							TOTAL RISK ACROSS ALL MEDIA	9E-05	TOTAL HAZARD ACROSS ALL MEDIA				1.5E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.7E+00
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TOTAL IMMUNE SYSTEM HI =	1.2E+01
TOTAL KIDNEY HI =	5.8E-04
TOTAL LIVER HI =	8.4E-01
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US EPA ARCHIVE DOCUMENT

TABLE G.9.37.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.1E-05	NA	NA	1.1E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.4E-04	NA	NA	1.4E-04
			4,4'-DDD	1.2E-06	NA	NA	NA	1.2E-06	Liver	1.4E-02	NA	NA	1.4E-02
			4,4'-DDE	2.8E-06	NA	NA	NA	2.8E-06	Liver	2.2E-02	NA	NA	2.2E-02
			4,4'-DDT	1.2E-06	NA	NA	NA	1.2E-06	Liver	9.5E-03	NA	NA	9.5E-03
			alpha-Chlordane	2.6E-06	NA	NA	NA	2.6E-06	Liver	2.0E-02	NA	NA	2.0E-02
			Aroclor-1254	7.0E-04	NA	NA	NA	7.0E-04	Immune system	2.3E+01	NA	NA	2.3E+01
			Aroclor-1268	1.2E-05	NA	NA	NA	1.2E-05	Immune system	4.0E-01	NA	NA	4.0E-01
			beta-BHC	4.4E-07	NA	NA	NA	4.4E-07	Liver / Kidney	1.1E-03	NA	NA	1.1E-03
			Dieldrin	5.8E-05	NA	NA	NA	5.8E-05	Liver	9.7E-02	NA	NA	9.7E-02
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	1.4E-04	NA	NA	1.4E-04
			Endrin Aldehyde	NC	NA	NA	NA		Nervous system	1.8E-03	NA	NA	1.8E-03
			gamma-Chlordane	9.8E-07	NA	NA	NA	9.8E-07	Liver	7.6E-03	NA	NA	7.6E-03
			Heptachlor	1.2E-06	NA	NA	NA	1.2E-06	Liver	7.2E-04	NA	NA	7.2E-04
			Heptachlor Epoxide	5.4E-06	NA	NA	NA	5.4E-06	Liver	6.1E-02	NA	NA	6.1E-02
			Technical Chlordane	3.6E-05	NA	NA	NA	3.6E-05	Liver	2.8E-01	NA	NA	2.8E-01
			Cadmium	NC	NA	NA	NA		Kidney	5.2E-02	NA	NA	5.2E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	1.9E-02	NA	NA	1.9E-02
			Mercury	NC	NA	NA	NA		Immune system	2.7E-01	NA	NA	2.7E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.4E+00	NA	NA	1.4E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	6.6E-03	NA	NA	NA	6.6E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	2.5E-03	NA	NA	NA	2.5E-03		--	NA	NA	
			CHEMICAL TOTAL	9.9E-03	--	--	--	1E-02		2.6E+01	0.0E+00	--	2.6E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-02					2.6E+01
	EXPOSURE MEDIUM TOTAL							1E-02					2.6E+01
WHOLE BODY TOTAL								1E-02					2.6E+01
RECEPTOR TOTAL								1E-02					2.6E+01
							TOTAL RISK ACROSS ALL MEDIA	1E-02	TOTAL HAZARD ACROSS ALL MEDIA				2.6E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

	--
	--
TOTAL DEVELOPMENTAL TOXICITY HI =	1.4E+00
	--
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	--
TOTAL IMMUNE SYSTEM HI =	2.4E+01
TOTAL KIDNEY HI =	5.3E-02
TOTAL LIVER HI =	5.1E-01
	--
TOTAL NERVOUS SYSTEM HI =	1.8E-03
TOTAL NOAEL HI =	1.9E-02
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	--
	--

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.9.38.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.2E-05	NA	NA	1.2E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.5E-04	NA	NA	1.5E-04
			4,4'-DDD	3.0E-07	NA	NA	NA	3.0E-07	Liver	1.4E-02	NA	NA	1.4E-02
			4,4'-DDE	6.7E-07	NA	NA	NA	6.7E-07	Liver	2.3E-02	NA	NA	2.3E-02
			4,4'-DDT	2.9E-07	NA	NA	NA	2.9E-07	Liver	9.8E-03	NA	NA	9.8E-03
			alpha-Chlordane	6.3E-07	NA	NA	NA	6.3E-07	Liver	2.1E-02	NA	NA	2.1E-02
			Aroclor-1254	1.7E-04	NA	NA	NA	1.7E-04	Immune system	2.4E+01	NA	NA	2.4E+01
			Aroclor-1268	2.8E-06	NA	NA	NA	2.8E-06	Immune system	4.1E-01	NA	NA	4.1E-01
			beta-BHC	1.1E-07	NA	NA	NA	1.1E-07	Liver / Kidney	1.1E-03	NA	NA	1.1E-03
			Dieldrin	1.4E-05	NA	NA	NA	1.4E-05	Liver	1.0E-01	NA	NA	1.0E-01
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	1.4E-04	NA	NA	1.4E-04
			Endrin Aldehyde	NC	NA	NA	NA		Nervous system	1.8E-03	NA	NA	1.8E-03
			gamma-Chlordane	2.3E-07	NA	NA	NA	2.3E-07	Liver	7.8E-03	NA	NA	7.8E-03
			Heptachlor	2.9E-07	NA	NA	NA	2.9E-07	Liver	7.5E-04	NA	NA	7.5E-04
			Heptachlor Epoxide	1.3E-06	NA	NA	NA	1.3E-06	Liver	6.3E-02	NA	NA	6.3E-02
			Technical Chlordane	8.6E-06	NA	NA	NA	8.6E-06	Liver	2.9E-01	NA	NA	2.9E-01
			Cadmium	NC	NA	NA	NA		Kidney	5.3E-02	NA	NA	5.3E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	2.0E-02	NA	NA	2.0E-02
			Mercury	NC	NA	NA	NA		Immune system	2.8E-01	NA	NA	2.8E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.5E+00	NA	NA	1.5E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.6E-03	NA	NA	NA	1.6E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	5.9E-04	NA	NA	NA	5.9E-04		--	NA	NA	
			CHEMICAL TOTAL	2.4E-03	--	--	--	2E-03		2.7E+01	0.0E+00	--	2.7E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-03					2.7E+01
	EXPOSURE MEDIUM TOTAL							2E-03					2.7E+01
WHOLE BODY TOTAL								2E-03					2.7E+01
RECEPTOR TOTAL								2E-03					2.7E+01
			TOTAL RISK ACROSS ALL MEDIA					2E-03	TOTAL HAZARD ACROSS ALL MEDIA				2.7E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

	--
	--
TOTAL DEVELOPMENTAL TOXICITY HI =	1.5E+00
	--
	--
	--
TOTAL IMMUNE SYSTEM HI =	2.5E+01
TOTAL KIDNEY HI =	5.5E-02
TOTAL LIVER HI =	5.3E-01
	--
TOTAL NERVOUS SYSTEM HI =	1.8E-03
TOTAL NOAEL HI =	2.0E-02
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	--
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Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.9.39.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.9E-05	NA	NA	1.9E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	2.4E-04	NA	NA	2.4E-04
			4,4'-DDD	2.4E-07	NA	NA	NA	2.4E-07	Liver	2.3E-02	NA	NA	2.3E-02
			4,4'-DDE	5.5E-07	NA	NA	NA	5.5E-07	Liver	3.8E-02	NA	NA	3.8E-02
			4,4'-DDT	2.3E-07	NA	NA	NA	2.3E-07	Liver	1.6E-02	NA	NA	1.6E-02
			alpha-Chlordane	5.2E-07	NA	NA	NA	5.2E-07	Liver	3.4E-02	NA	NA	3.4E-02
			Aroclor-1254	1.4E-04	NA	NA	NA	1.4E-04	Immune system	3.9E+01	NA	NA	3.9E+01
			Aroclor-1268	2.3E-06	NA	NA	NA	2.3E-06	Immune system	6.7E-01	NA	NA	6.7E-01
			beta-BHC	8.6E-08	NA	NA	NA	8.6E-08	Liver / Kidney	1.8E-03	NA	NA	1.8E-03
			Dieldrin	1.1E-05	NA	NA	NA	1.1E-05	Liver	1.6E-01	NA	NA	1.6E-01
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	2.4E-04	NA	NA	2.4E-04
			Endrin Aldehyde	NC	NA	NA	NA		Nervous system	3.0E-03	NA	NA	3.0E-03
			gamma-Chlordane	1.9E-07	NA	NA	NA	1.9E-07	Liver	1.3E-02	NA	NA	1.3E-02
			Heptachlor	2.3E-07	NA	NA	NA	2.3E-07	Liver	1.2E-03	NA	NA	1.2E-03
			Heptachlor Epoxide	1.0E-06	NA	NA	NA	1.0E-06	Liver	1.0E-01	NA	NA	1.0E-01
			Technical Chlordane	7.0E-06	NA	NA	NA	7.0E-06	Liver	4.7E-01	NA	NA	4.7E-01
			Cadmium	NC	NA	NA	NA		Kidney	8.7E-02	NA	NA	8.7E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	3.2E-02	NA	NA	3.2E-02
			Mercury	NC	NA	NA	NA		Immune system	4.6E-01	NA	NA	4.6E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.4E+00	NA	NA	2.4E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.3E-03	NA	NA	NA	1.3E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	4.8E-04	NA	NA	NA	4.8E-04		--	NA	NA	
			CHEMICAL TOTAL	1.9E-03	--	--	--	2E-03		4.4E+01	0.0E+00	--	4.4E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-03					4.4E+01
	EXPOSURE MEDIUM TOTAL							2E-03					4.4E+01
WHOLE BODY TOTAL								2E-03					4.4E+01
RECEPTOR TOTAL								2E-03					4.4E+01
			TOTAL RISK ACROSS ALL MEDIA					2E-03	TOTAL HAZARD ACROSS ALL MEDIA				4.4E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	2.4E+00
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	--
	--
TOTAL IMMUNE SYSTEM HI =	4.1E+01
TOTAL KIDNEY HI =	8.9E-02
TOTAL LIVER HI =	8.6E-01
	--
TOTAL NERVOUS SYSTEM HI =	3.0E-03
TOTAL NOAEL HI =	3.2E-02
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	--
	--

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.9.40.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.1E-05	NA	NA	1.1E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.4E-04	NA	NA	1.4E-04
			4,4'-DDD	2.9E-07	NA	NA	NA	2.9E-07	Liver	1.4E-02	NA	NA	1.4E-02
			4,4'-DDE	6.5E-07	NA	NA	NA	6.5E-07	Liver	2.2E-02	NA	NA	2.2E-02
			4,4'-DDT	2.8E-07	NA	NA	NA	2.8E-07	Liver	9.5E-03	NA	NA	9.5E-03
			alpha-Chlordane	6.1E-07	NA	NA	NA	6.1E-07	Liver	2.0E-02	NA	NA	2.0E-02
			Aroclor-1254	1.6E-04	NA	NA	NA	1.6E-04	Immune system	2.3E+01	NA	NA	2.3E+01
			Aroclor-1268	2.7E-06	NA	NA	NA	2.7E-06	Immune system	4.0E-01	NA	NA	4.0E-01
			beta-BHC	1.0E-07	NA	NA	NA	1.0E-07	Liver / Kidney	1.1E-03	NA	NA	1.1E-03
			Dieldrin	1.3E-05	NA	NA	NA	1.3E-05	Liver	9.7E-02	NA	NA	9.7E-02
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	1.4E-04	NA	NA	1.4E-04
			Endrin Aldehyde	NC	NA	NA	NA		Nervous system	1.8E-03	NA	NA	1.8E-03
			gamma-Chlordane	2.3E-07	NA	NA	NA	2.3E-07	Liver	7.6E-03	NA	NA	7.6E-03
			Heptachlor	2.8E-07	NA	NA	NA	2.8E-07	Liver	7.2E-04	NA	NA	7.2E-04
			Heptachlor Epoxide	1.2E-06	NA	NA	NA	1.2E-06	Liver	6.1E-02	NA	NA	6.1E-02
			Technical Chlordane	8.3E-06	NA	NA	NA	8.3E-06	Liver	2.8E-01	NA	NA	2.8E-01
			Cadmium	NC	NA	NA	NA		Kidney	5.2E-02	NA	NA	5.2E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	1.9E-02	NA	NA	1.9E-02
			Mercury	NC	NA	NA	NA		Immune system	2.7E-01	NA	NA	2.7E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.4E+00	NA	NA	1.4E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.5E-03	NA	NA	NA	1.5E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	5.7E-04	NA	NA	NA	5.7E-04		--	NA	NA	
			CHEMICAL TOTAL	2.3E-03	--	--	--	2E-03		2.6E+01	0.0E+00	--	2.6E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-03					2.6E+01
	EXPOSURE MEDIUM TOTAL							2E-03					2.6E+01
WHOLE BODY TOTAL								2E-03					2.6E+01
RECEPTOR TOTAL								2E-03					2.6E+01
							TOTAL RISK ACROSS ALL MEDIA	2E-03	TOTAL HAZARD ACROSS ALL MEDIA				2.6E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	1.4E+00
	--
	--
	--
	--
TOTAL IMMUNE SYSTEM HI =	2.4E+01
TOTAL KIDNEY HI =	5.3E-02
TOTAL LIVER HI =	5.1E-01
	--
TOTAL NERVOUS SYSTEM HI =	1.8E-03
TOTAL NOAEL HI =	1.9E-02
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Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.9.41.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.2E-05	NA	NA	1.2E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.5E-04	NA	NA	1.5E-04
			4,4'-DDD	3.0E-07	NA	NA	NA	3.0E-07	Liver	1.4E-02	NA	NA	1.4E-02
			4,4'-DDE	6.7E-07	NA	NA	NA	6.7E-07	Liver	2.3E-02	NA	NA	2.3E-02
			4,4'-DDT	2.9E-07	NA	NA	NA	2.9E-07	Liver	9.8E-03	NA	NA	9.8E-03
			alpha-Chlordane	6.3E-07	NA	NA	NA	6.3E-07	Liver	2.1E-02	NA	NA	2.1E-02
			Aroclor-1254	1.7E-04	NA	NA	NA	1.7E-04	Immune system	2.4E+01	NA	NA	2.4E+01
			Aroclor-1268	2.8E-06	NA	NA	NA	2.8E-06	Immune system	4.1E-01	NA	NA	4.1E-01
			beta-BHC	1.1E-07	NA	NA	NA	1.1E-07	Liver / Kidney	1.1E-03	NA	NA	1.1E-03
			Dieldrin	1.4E-05	NA	NA	NA	1.4E-05	Liver	1.0E-01	NA	NA	1.0E-01
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	1.4E-04	NA	NA	1.4E-04
			Endrin Aldehyde	NC	NA	NA	NA		Nervous system	1.8E-03	NA	NA	1.8E-03
			gamma-Chlordane	2.3E-07	NA	NA	NA	2.3E-07	Liver	7.8E-03	NA	NA	7.8E-03
			Heptachlor	2.9E-07	NA	NA	NA	2.9E-07	Liver	7.5E-04	NA	NA	7.5E-04
			Heptachlor Epoxide	1.3E-06	NA	NA	NA	1.3E-06	Liver	6.3E-02	NA	NA	6.3E-02
			Technical Chlordane	8.6E-06	NA	NA	NA	8.6E-06	Liver	2.9E-01	NA	NA	2.9E-01
			Cadmium	NC	NA	NA	NA		Kidney	5.3E-02	NA	NA	5.3E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	2.0E-02	NA	NA	2.0E-02
			Mercury	NC	NA	NA	NA		Immune system	2.8E-01	NA	NA	2.8E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.5E+00	NA	NA	1.5E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.6E-03	NA	NA	NA	1.6E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	5.9E-04	NA	NA	NA	5.9E-04		--	NA	NA	
			CHEMICAL TOTAL	2.4E-03	--	--	--	2E-03		2.7E+01	0.0E+00	--	2.7E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-03					2.7E+01
	EXPOSURE MEDIUM TOTAL							2E-03					2.7E+01
WHOLE BODY TOTAL								2E-03					2.7E+01
RECEPTOR TOTAL								2E-03					2.7E+01
			TOTAL RISK ACROSS ALL MEDIA					2E-03	TOTAL HAZARD ACROSS ALL MEDIA				2.7E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.5E+00
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	--
TOTAL IMMUNE SYSTEM HI =	2.5E+01
TOTAL KIDNEY HI =	5.5E-02
TOTAL LIVER HI =	5.3E-01
	--
TOTAL NERVOUS SYSTEM HI =	1.8E-03
TOTAL NOAEL HI =	2.0E-02
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	--

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.9.42.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.9E-05	NA	NA	1.9E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	2.4E-04	NA	NA	2.4E-04
			4,4'-DDD	2.4E-07	NA	NA	NA	2.4E-07	Liver	2.3E-02	NA	NA	2.3E-02
			4,4'-DDE	5.5E-07	NA	NA	NA	5.5E-07	Liver	3.8E-02	NA	NA	3.8E-02
			4,4'-DDT	2.3E-07	NA	NA	NA	2.3E-07	Liver	1.6E-02	NA	NA	1.6E-02
			alpha-Chlordane	5.2E-07	NA	NA	NA	5.2E-07	Liver	3.4E-02	NA	NA	3.4E-02
			Aroclor-1254	1.4E-04	NA	NA	NA	1.4E-04	Immune system	3.9E+01	NA	NA	3.9E+01
			Aroclor-1268	2.3E-06	NA	NA	NA	2.3E-06	Immune system	6.7E-01	NA	NA	6.7E-01
			beta-BHC	8.6E-08	NA	NA	NA	8.6E-08	Liver / Kidney	1.8E-03	NA	NA	1.8E-03
			Dieldrin	1.1E-05	NA	NA	NA	1.1E-05	Liver	1.6E-01	NA	NA	1.6E-01
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	2.4E-04	NA	NA	2.4E-04
			Endrin Aldehyde	NC	NA	NA	NA		Nervous system	3.0E-03	NA	NA	3.0E-03
			gamma-Chlordane	1.9E-07	NA	NA	NA	1.9E-07	Liver	1.3E-02	NA	NA	1.3E-02
			Heptachlor	2.3E-07	NA	NA	NA	2.3E-07	Liver	1.2E-03	NA	NA	1.2E-03
			Heptachlor Epoxide	1.0E-06	NA	NA	NA	1.0E-06	Liver	1.0E-01	NA	NA	1.0E-01
			Technical Chlordane	7.0E-06	NA	NA	NA	7.0E-06	Liver	4.7E-01	NA	NA	4.7E-01
			Cadmium	NC	NA	NA	NA		Kidney	8.7E-02	NA	NA	8.7E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	3.2E-02	NA	NA	3.2E-02
			Mercury	NC	NA	NA	NA		Immune system	4.6E-01	NA	NA	4.6E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.4E+00	NA	NA	2.4E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.3E-03	NA	NA	NA	1.3E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	4.8E-04	NA	NA	NA	4.8E-04		--	NA	NA	
			CHEMICAL TOTAL	1.9E-03	--	--	--	2E-03		4.4E+01	0.0E+00	--	4.4E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-03					4.4E+01
	EXPOSURE MEDIUM TOTAL							2E-03					4.4E+01
WHOLE BODY TOTAL								2E-03					4.4E+01
RECEPTOR TOTAL								2E-03					4.4E+01
			TOTAL RISK ACROSS ALL MEDIA					2E-03	TOTAL HAZARD ACROSS ALL MEDIA				4.4E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL DEVELOPMENTAL TOXICITY HI =	2.4E+00
TOTAL IMMUNE SYSTEM HI =	4.1E+01
TOTAL KIDNEY HI =	8.9E-02
TOTAL LIVER HI =	8.6E-01
TOTAL NERVOUS SYSTEM HI =	3.0E-03
TOTAL NOAEL HI =	3.2E-02

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.9.43.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.4E-05	NA	NA	2.4E-05
			Benzo(a)anthracene	6.3E-07	NA	NA	NA	6.3E-07	Kidney	3.9E-05	NA	NA	3.9E-05
			Benzo(a)pyrene	6.9E-06	NA	NA	NA	6.9E-06	Kidney	4.2E-05	NA	NA	4.2E-05
			Benzo(b)fluoranthene	7.2E-07	NA	NA	NA	7.2E-07	Kidney	4.4E-05	NA	NA	4.4E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.1E-05	NA	NA	1.1E-05
			Dibenzo(a,h)anthracene	1.2E-06	NA	NA	NA	1.2E-06	Kidney	7.1E-06	NA	NA	7.1E-06
			Indeno(1,2,3-cd)pyrene	2.3E-07	NA	NA	NA	2.3E-07	Kidney	1.4E-05	NA	NA	1.4E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	2.0E-04	NA	NA	2.0E-04
			4,4'-DDD	1.2E-06	NA	NA	NA	1.2E-06	Liver	1.3E-02	NA	NA	1.3E-02
			4,4'-DDE	3.8E-06	NA	NA	NA	3.8E-06	Liver	3.0E-02	NA	NA	3.0E-02
			4,4'-DDT	9.2E-07	NA	NA	NA	9.2E-07	Liver	7.3E-03	NA	NA	7.3E-03
			alpha-Chlordane	3.3E-06	NA	NA	NA	3.3E-06	Liver	2.5E-02	NA	NA	2.5E-02
			Aroclor-1254	2.3E-03	NA	NA	NA	2.3E-03	Immune system	7.7E+01	NA	NA	7.7E+01
			Aroclor-1268	3.0E-05	NA	NA	NA	3.0E-05	Immune system	1.0E+00	NA	NA	1.0E+00
			Dieldrin	5.5E-05	NA	NA	NA	5.5E-05	Liver	9.2E-02	NA	NA	9.2E-02
			gamma-Chlordane	1.2E-06	NA	NA	NA	1.2E-06	Liver	9.4E-03	NA	NA	9.4E-03
			Heptachlor Epoxide	2.5E-06	NA	NA	NA	2.5E-06	Liver	2.9E-02	NA	NA	2.9E-02
			Technical Chlordane	9.3E-05	NA	NA	NA	9.3E-05	Liver	7.2E-01	NA	NA	7.2E-01
			Chromium	NC	NA	NA	NA		NOAEL	2.0E-02	NA	NA	2.0E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.4E-01	NA	NA	2.4E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	7.8E-01	NA	NA	7.8E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.9E-02	NA	NA	NA	2.9E-02		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	1.3E-03	NA	NA	NA	1.3E-03		--	NA	NA	
			CHEMICAL TOTAL	3.3E-02	--	--	--	3E-02		8.0E+01	0.0E+00	--	8.0E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-02					8.0E+01
	EXPOSURE MEDIUM TOTAL							3E-02					8.0E+01
WHOLE BODY TOTAL								3E-02					8.0E+01

RECEPTOR TOTAL	3E-02		8.0E+01
TOTAL RISK ACROSS ALL MEDIA	3E-02	TOTAL HAZARD ACROSS ALL MEDIA	8.0E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	7.8E-01
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	--
TOTAL IMMUNE SYSTEM HI =	7.8E+01
TOTAL KIDNEY HI =	*3.6E-04*
TOTAL LIVER HI =	9.2E-01
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	--
TOTAL NOAEL HI =	2.0E-02

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.9.44.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.5E-05	NA	NA	2.5E-05
			Benzo(a)anthracene	1.5E-07	NA	NA	NA	1.5E-07	Kidney	4.0E-05	NA	NA	4.0E-05
			Benzo(a)pyrene	1.7E-06	NA	NA	NA	1.7E-06	Kidney	4.4E-05	NA	NA	4.4E-05
			Benzo(b)fluoranthene	1.7E-07	NA	NA	NA	1.7E-07	Kidney	4.6E-05	NA	NA	4.6E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.2E-05	NA	NA	1.2E-05
			Dibenzo(a,h)anthracene	2.8E-07	NA	NA	NA	2.8E-07	Kidney	7.3E-06	NA	NA	7.3E-06
			Indeno(1,2,3-cd)pyrene	5.4E-08	NA	NA	NA	5.4E-08	Kidney	1.4E-05	NA	NA	1.4E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	2.1E-04	NA	NA	2.1E-04
			4,4'-DDD	2.9E-07	NA	NA	NA	2.9E-07	Liver	1.4E-02	NA	NA	1.4E-02
			4,4'-DDE	9.2E-07	NA	NA	NA	9.2E-07	Liver	3.2E-02	NA	NA	3.2E-02
			4,4'-DDT	2.2E-07	NA	NA	NA	2.2E-07	Liver	7.5E-03	NA	NA	7.5E-03
			alpha-Chlordane	7.8E-07	NA	NA	NA	7.8E-07	Liver	2.6E-02	NA	NA	2.6E-02
			Aroclor-1254	5.4E-04	NA	NA	NA	5.4E-04	Immune system	7.9E+01	NA	NA	7.9E+01
			Aroclor-1268	7.2E-06	NA	NA	NA	7.2E-06	Immune system	1.1E+00	NA	NA	1.1E+00
			Dieldrin	1.3E-05	NA	NA	NA	1.3E-05	Liver	9.5E-02	NA	NA	9.5E-02
			gamma-Chlordane	2.9E-07	NA	NA	NA	2.9E-07	Liver	9.8E-03	NA	NA	9.8E-03
			Heptachlor Epoxide	6.0E-07	NA	NA	NA	6.0E-07	Liver	3.0E-02	NA	NA	3.0E-02
			Technical Chlordane	2.2E-05	NA	NA	NA	2.2E-05	Liver	7.4E-01	NA	NA	7.4E-01
			Chromium	NC	NA	NA	NA		NOAEL	2.1E-02	NA	NA	2.1E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.5E-01	NA	NA	2.5E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	8.1E-01	NA	NA	8.1E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	7.0E-03	NA	NA	NA	7.0E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	3.0E-04	NA	NA	NA	3.0E-04		--	NA	NA	
			CHEMICAL TOTAL	7.9E-03	--	--	--	8E-03		8.2E+01	0.0E+00	--	8.2E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						8E-03					8.2E+01
	EXPOSURE MEDIUM TOTAL							8E-03					8.2E+01
WHOLE BODY TOTAL								8E-03					8.2E+01
RECEPTOR TOTAL								8E-03					8.2E+01
							TOTAL RISK ACROSS ALL MEDIA	8E-03	TOTAL HAZARD ACROSS ALL MEDIA				8.2E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	8.1E-01
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	--
TOTAL IMMUNE SYSTEM HI =	8.1E+01
TOTAL KIDNEY HI =	3.7E-04
TOTAL LIVER HI =	9.5E-01
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TOTAL NOAEL HI =	2.1E-02
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Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.9.45.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.0E-05	NA	NA	4.0E-05
			Benzo(a)anthracene	1.2E-07	NA	NA	NA	1.2E-07	Kidney	6.6E-05	NA	NA	6.6E-05
			Benzo(a)pyrene	1.3E-06	NA	NA	NA	1.3E-06	Kidney	7.2E-05	NA	NA	7.2E-05
			Benzo(b)fluoranthene	1.4E-07	NA	NA	NA	1.4E-07	Kidney	7.5E-05	NA	NA	7.5E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.9E-05	NA	NA	1.9E-05
			Dibenzo(a,h)anthracene	2.2E-07	NA	NA	NA	2.2E-07	Kidney	1.2E-05	NA	NA	1.2E-05
			Indeno(1,2,3-cd)pyrene	4.4E-08	NA	NA	NA	4.4E-08	Kidney	2.4E-05	NA	NA	2.4E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	3.4E-04	NA	NA	3.4E-04
			4,4'-DDD	2.3E-07	NA	NA	NA	2.3E-07	Liver	2.3E-02	NA	NA	2.3E-02
			4,4'-DDE	7.5E-07	NA	NA	NA	7.5E-07	Liver	5.1E-02	NA	NA	5.1E-02
			4,4'-DDT	1.8E-07	NA	NA	NA	1.8E-07	Liver	1.2E-02	NA	NA	1.2E-02
			alpha-Chlordane	6.3E-07	NA	NA	NA	6.3E-07	Liver	4.2E-02	NA	NA	4.2E-02
			Aroclor-1254	4.4E-04	NA	NA	NA	4.4E-04	Immune system	1.3E+02	NA	NA	1.3E+02
			Aroclor-1268	5.9E-06	NA	NA	NA	5.9E-06	Immune system	1.7E+00	NA	NA	1.7E+00
			Dieldrin	1.1E-05	NA	NA	NA	1.1E-05	Liver	1.6E-01	NA	NA	1.6E-01
			gamma-Chlordane	2.4E-07	NA	NA	NA	2.4E-07	Liver	1.6E-02	NA	NA	1.6E-02
			Heptachlor Epoxide	4.9E-07	NA	NA	NA	4.9E-07	Liver	4.8E-02	NA	NA	4.8E-02
			Technical Chlordane	1.8E-05	NA	NA	NA	1.8E-05	Liver	1.2E+00	NA	NA	1.2E+00
			Chromium	NC	NA	NA	NA		NOAEL	3.3E-02	NA	NA	3.3E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	4.1E-01	NA	NA	4.1E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.3E+00	NA	NA	1.3E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	5.7E-03	NA	NA	NA	5.7E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	2.5E-04	NA	NA	NA	2.5E-04		--	NA	NA	
			CHEMICAL TOTAL	6.4E-03	--	--	--	6E-03		1.3E+02	0.0E+00	--	1.3E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-03					1.3E+02
	EXPOSURE MEDIUM TOTAL							6E-03					1.3E+02
WHOLE BODY TOTAL								6E-03					1.3E+02
RECEPTOR TOTAL								6E-03					1.3E+02
			TOTAL RISK ACROSS ALL MEDIA					6E-03	TOTAL HAZARD ACROSS ALL MEDIA				1.3E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	1.3E+00
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	--
TOTAL IMMUNE SYSTEM HI =	1.3E+02
TOTAL KIDNEY HI =	6.1E-04
TOTAL LIVER HI =	1.6E+00
	--
	--
TOTAL NOAEL HI =	3.3E-02
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Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.9.46.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.4E-05	NA	NA	2.4E-05
			Benzo(a)anthracene	1.5E-07	NA	NA	NA	1.5E-07	Kidney	3.9E-05	NA	NA	3.9E-05
			Benzo(a)pyrene	1.6E-06	NA	NA	NA	1.6E-06	Kidney	4.2E-05	NA	NA	4.2E-05
			Benzo(b)fluoranthene	1.7E-07	NA	NA	NA	1.7E-07	Kidney	4.4E-05	NA	NA	4.4E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.1E-05	NA	NA	1.1E-05
			Dibenzo(a,h)anthracene	2.7E-07	NA	NA	NA	2.7E-07	Kidney	7.1E-06	NA	NA	7.1E-06
			Indeno(1,2,3-cd)pyrene	5.2E-08	NA	NA	NA	5.2E-08	Kidney	1.4E-05	NA	NA	1.4E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	2.0E-04	NA	NA	2.0E-04
			4,4'-DDD	2.8E-07	NA	NA	NA	2.8E-07	Liver	1.3E-02	NA	NA	1.3E-02
			4,4'-DDE	8.9E-07	NA	NA	NA	8.9E-07	Liver	3.0E-02	NA	NA	3.0E-02
			4,4'-DDT	2.1E-07	NA	NA	NA	2.1E-07	Liver	7.3E-03	NA	NA	7.3E-03
			alpha-Chlordane	7.5E-07	NA	NA	NA	7.5E-07	Liver	2.5E-02	NA	NA	2.5E-02
			Aroclor-1254	5.3E-04	NA	NA	NA	5.3E-04	Immune system	7.7E+01	NA	NA	7.7E+01
			Aroclor-1268	7.0E-06	NA	NA	NA	7.0E-06	Immune system	1.0E+00	NA	NA	1.0E+00
			Dieldrin	1.3E-05	NA	NA	NA	1.3E-05	Liver	9.2E-02	NA	NA	9.2E-02
			gamma-Chlordane	2.8E-07	NA	NA	NA	2.8E-07	Liver	9.4E-03	NA	NA	9.4E-03
			Heptachlor Epoxide	5.8E-07	NA	NA	NA	5.8E-07	Liver	2.9E-02	NA	NA	2.9E-02
			Technical Chlordane	2.1E-05	NA	NA	NA	2.1E-05	Liver	7.2E-01	NA	NA	7.2E-01
			Chromium	NC	NA	NA	NA		NOAEL	2.0E-02	NA	NA	2.0E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.4E-01	NA	NA	2.4E-01
			Mercury (methyl)	NC	NA	NA	NA		*Developmental toxicity*	*7.8E-01*	NA	NA	*7.8E-01*
			Toxicity Equivalency (Dioxins/Furans) - Mam	6.7E-03	NA	NA	NA	6.7E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	2.9E-04	NA	NA	NA	2.9E-04		--	NA	NA	
			CHEMICAL TOTAL	7.6E-03	--	--	--	8E-03		8.0E+01	0.0E+00	--	8.0E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						8E-03					8.0E+01
	EXPOSURE MEDIUM TOTAL							8E-03					8.0E+01
WHOLE BODY TOTAL								8E-03					8.0E+01
RECEPTOR TOTAL								8E-03					8.0E+01
							TOTAL RISK ACROSS ALL MEDIA	8E-03	TOTAL HAZARD ACROSS ALL MEDIA				8.0E+01

NOTES.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

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TOTAL DEVELOPMENTAL TOXICITY HI =	7.8E-01
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TOTAL IMMUNE SYSTEM HI =	7.8E+01
TOTAL KIDNEY HI =	3.6E-04
TOTAL LIVER HI =	9.2E-01
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TOTAL NOAEL HI =	2.0E-02

US EPA ARCHIVE DOCUMENT

TABLE G.9.47.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.5E-05	NA	NA	2.5E-05
			Benzo(a)anthracene	1.5E-07	NA	NA	NA	1.5E-07	Kidney	4.0E-05	NA	NA	4.0E-05
			Benzo(a)pyrene	1.7E-06	NA	NA	NA	1.7E-06	Kidney	4.4E-05	NA	NA	4.4E-05
			Benzo(b)fluoranthene	1.7E-07	NA	NA	NA	1.7E-07	Kidney	4.6E-05	NA	NA	4.6E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.2E-05	NA	NA	1.2E-05
			Dibenzo(a,h)anthracene	2.8E-07	NA	NA	NA	2.8E-07	Kidney	7.3E-06	NA	NA	7.3E-06
			Indeno(1,2,3-cd)pyrene	5.4E-08	NA	NA	NA	5.4E-08	Kidney	1.4E-05	NA	NA	1.4E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	2.1E-04	NA	NA	2.1E-04
			4,4'-DDD	2.9E-07	NA	NA	NA	2.9E-07	Liver	1.4E-02	NA	NA	1.4E-02
			4,4'-DDE	9.2E-07	NA	NA	NA	9.2E-07	Liver	3.2E-02	NA	NA	3.2E-02
			4,4'-DDT	2.2E-07	NA	NA	NA	2.2E-07	Liver	7.5E-03	NA	NA	7.5E-03
			alpha-Chlordane	7.8E-07	NA	NA	NA	7.8E-07	Liver	2.6E-02	NA	NA	2.6E-02
			Aroclor-1254	5.4E-04	NA	NA	NA	5.4E-04	Immune system	7.9E+01	NA	NA	7.9E+01
			Aroclor-1268	7.2E-06	NA	NA	NA	7.2E-06	Immune system	1.1E+00	NA	NA	1.1E+00
			Dieldrin	1.3E-05	NA	NA	NA	1.3E-05	Liver	9.5E-02	NA	NA	9.5E-02
			gamma-Chlordane	2.9E-07	NA	NA	NA	2.9E-07	Liver	9.8E-03	NA	NA	9.8E-03
			Heptachlor Epoxide	6.0E-07	NA	NA	NA	6.0E-07	Liver	3.0E-02	NA	NA	3.0E-02
			Technical Chlordane	2.2E-05	NA	NA	NA	2.2E-05	Liver	7.4E-01	NA	NA	7.4E-01
			Chromium	NC	NA	NA	NA		NOAEL	2.1E-02	NA	NA	2.1E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.5E-01	NA	NA	2.5E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	8.1E-01	NA	NA	8.1E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	7.0E-03	NA	NA	NA	7.0E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	3.0E-04	NA	NA	NA	3.0E-04		--	NA	NA	
			CHEMICAL TOTAL	7.9E-03	--	--	--	8E-03		8.2E+01	0.0E+00	--	8.2E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						8E-03					8.2E+01
	EXPOSURE MEDIUM TOTAL							8E-03					8.2E+01
WHOLE BODY TOTAL								8E-03					8.2E+01

RECEPTOR TOTAL	8E-03		8.2E+01
TOTAL RISK ACROSS ALL MEDIA	8E-03	TOTAL HAZARD ACROSS ALL MEDIA	8.2E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	8.1E-01
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TOTAL IMMUNE SYSTEM HI =	8.1E+01
TOTAL KIDNEY HI =	3.7E-04
TOTAL LIVER HI =	9.5E-01
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	--
TOTAL NOAEL HI =	2.1E-02

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.48.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.0E-05	NA	NA	4.0E-05
			Benzo(a)anthracene	1.2E-07	NA	NA	NA	1.2E-07	Kidney	6.6E-05	NA	NA	6.6E-05
			Benzo(a)pyrene	1.3E-06	NA	NA	NA	1.3E-06	Kidney	7.2E-05	NA	NA	7.2E-05
			Benzo(b)fluoranthene	1.4E-07	NA	NA	NA	1.4E-07	Kidney	7.5E-05	NA	NA	7.5E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.9E-05	NA	NA	1.9E-05
			Dibenzo(a,h)anthracene	2.2E-07	NA	NA	NA	2.2E-07	Kidney	1.2E-05	NA	NA	1.2E-05
			Indeno(1,2,3-cd)pyrene	4.4E-08	NA	NA	NA	4.4E-08	Kidney	2.4E-05	NA	NA	2.4E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	3.4E-04	NA	NA	3.4E-04
			4,4'-DDD	2.3E-07	NA	NA	NA	2.3E-07	Liver	2.3E-02	NA	NA	2.3E-02
			4,4'-DDE	7.5E-07	NA	NA	NA	7.5E-07	Liver	5.1E-02	NA	NA	5.1E-02
			4,4'-DDT	1.8E-07	NA	NA	NA	1.8E-07	Liver	1.2E-02	NA	NA	1.2E-02
			alpha-Chlordane	6.3E-07	NA	NA	NA	6.3E-07	Liver	4.2E-02	NA	NA	4.2E-02
			Aroclor-1254	4.4E-04	NA	NA	NA	4.4E-04	Immune system	1.3E+02	NA	NA	1.3E+02
			Aroclor-1268	5.9E-06	NA	NA	NA	5.9E-06	Immune system	1.7E+00	NA	NA	1.7E+00
			Dieldrin	1.1E-05	NA	NA	NA	1.1E-05	Liver	1.6E-01	NA	NA	1.6E-01
			gamma-Chlordane	2.4E-07	NA	NA	NA	2.4E-07	Liver	1.6E-02	NA	NA	1.6E-02
			Heptachlor Epoxide	4.9E-07	NA	NA	NA	4.9E-07	Liver	4.8E-02	NA	NA	4.8E-02
			Technical Chlordane	1.8E-05	NA	NA	NA	1.8E-05	Liver	1.2E+00	NA	NA	1.2E+00
			Chromium	NC	NA	NA	NA		NOAEL	3.3E-02	NA	NA	3.3E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	4.1E-01	NA	NA	4.1E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.3E+00	NA	NA	1.3E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	5.7E-03	NA	NA	NA	5.7E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	2.5E-04	NA	NA	NA	2.5E-04		--	NA	NA	
			CHEMICAL TOTAL	6.4E-03	--	--	--	6E-03		1.3E+02	0.0E+00	--	1.3E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-03					1.3E+02
	EXPOSURE MEDIUM TOTAL							6E-03					1.3E+02
WHOLE BODY TOTAL								6E-03					1.3E+02
RECEPTOR TOTAL								6E-03					1.3E+02
			TOTAL RISK ACROSS ALL MEDIA					6E-03	TOTAL HAZARD ACROSS ALL MEDIA				1.3E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.3E+00
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TOTAL IMMUNE SYSTEM HI =	1.3E+02
TOTAL KIDNEY HI =	6.1E-04
TOTAL LIVER HI =	1.6E+00
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	--
TOTAL NOAEL HI =	3.3E-02

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.9.49.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.7E-05	NA	NA	1.7E-05
			Benzo(a)pyrene	2.8E-06	NA	NA	NA	2.8E-06	Kidney	1.7E-05	NA	NA	1.7E-05
			Benzo(b)fluoranthene	3.4E-07	NA	NA	NA	3.4E-07	Kidney	2.1E-05	NA	NA	2.1E-05
			Dibenzo(a,h)anthracene	1.9E-06	NA	NA	NA	1.9E-06	Kidney	1.1E-05	NA	NA	1.1E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	3.6E-04	NA	NA	3.6E-04
			4,4'-DDD	1.4E-06	NA	NA	NA	1.4E-06	Liver	1.6E-02	NA	NA	1.6E-02
			4,4'-DDE	6.0E-06	NA	NA	NA	6.0E-06	Liver	4.7E-02	NA	NA	4.7E-02
			4,4'-DDT	4.5E-07	NA	NA	NA	4.5E-07	Liver	3.6E-03	NA	NA	3.6E-03
			alpha-Chlordane	2.8E-06	NA	NA	NA	2.8E-06	Liver	2.1E-02	NA	NA	2.1E-02
			Aroclor-1254	7.6E-04	NA	NA	NA	7.6E-04	Immune system	2.5E+01	NA	NA	2.5E+01
			beta-BHC	1.3E-06	NA	NA	NA	1.3E-06	Liver / Kidney	3.2E-03	NA	NA	3.2E-03
			Dieldrin	5.0E-05	NA	NA	NA	5.0E-05	Liver	8.4E-02	NA	NA	8.4E-02
			gamma-Chlordane	1.2E-06	NA	NA	NA	1.2E-06	Liver	9.1E-03	NA	NA	9.1E-03
			Heptachlor Epoxide	8.1E-06	NA	NA	NA	8.1E-06	Liver	9.3E-02	NA	NA	9.3E-02
			Technical Chlordane	6.2E-05	NA	NA	NA	6.2E-05	Liver	4.7E-01	NA	NA	4.7E-01
			Cadmium	NC	NA	NA	NA		Kidney	1.4E-02	NA	NA	1.4E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	1.9E-02	NA	NA	1.9E-02
			Mercury	NC	NA	NA	NA		Immune system	6.2E-02	NA	NA	6.2E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.9E-01	NA	NA	1.9E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.1E-02	NA	NA	NA	1.1E-02		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	3.6E-03	NA	NA	NA	3.6E-03		--	NA	NA	
			CHEMICAL TOTAL	1.5E-02	--	--	--	2E-02		2.6E+01	0.0E+00	--	2.6E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-02					2.6E+01
	EXPOSURE MEDIUM TOTAL							2E-02					2.6E+01
WHOLE BODY TOTAL								2E-02					2.6E+01
RECEPTOR TOTAL								2E-02					2.6E+01
			TOTAL RISK ACROSS ALL MEDIA					2E-02	TOTAL HAZARD ACROSS ALL MEDIA				2.6E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.9E-01
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TOTAL IMMUNE SYSTEM HI =	2.5E+01
TOTAL KIDNEY HI =	1.7E-02
TOTAL LIVER HI =	7.5E-01
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TOTAL NOAEL HI =	1.9E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.50.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.8E-05	NA	NA	1.8E-05
			Benzo(a)pyrene	6.6E-07	NA	NA	NA	6.6E-07	Kidney	1.8E-05	NA	NA	1.8E-05
			Benzo(b)fluoranthene	8.2E-08	NA	NA	NA	8.2E-08	Kidney	2.2E-05	NA	NA	2.2E-05
			Dibenzo(a,h)anthracene	4.5E-07	NA	NA	NA	4.5E-07	Kidney	1.2E-05	NA	NA	1.2E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	3.7E-04	NA	NA	3.7E-04
			4,4'-DDD	3.3E-07	NA	NA	NA	3.3E-07	Liver	1.6E-02	NA	NA	1.6E-02
			4,4'-DDE	1.4E-06	NA	NA	NA	1.4E-06	Liver	4.9E-02	NA	NA	4.9E-02
			4,4'-DDT	1.1E-07	NA	NA	NA	1.1E-07	Liver	3.7E-03	NA	NA	3.7E-03
			alpha-Chlordane	6.6E-07	NA	NA	NA	6.6E-07	Liver	2.2E-02	NA	NA	2.2E-02
			Aroclor-1254	1.8E-04	NA	NA	NA	1.8E-04	Immune system	2.6E+01	NA	NA	2.6E+01
			beta-BHC	3.1E-07	NA	NA	NA	3.1E-07	Liver / Kidney	3.3E-03	NA	NA	3.3E-03
			Dieldrin	1.2E-05	NA	NA	NA	1.2E-05	Liver	8.7E-02	NA	NA	8.7E-02
			gamma-Chlordane	2.8E-07	NA	NA	NA	2.8E-07	Liver	9.4E-03	NA	NA	9.4E-03
			Heptachlor Epoxide	1.9E-06	NA	NA	NA	1.9E-06	Liver	9.6E-02	NA	NA	9.6E-02
			Technical Chlordane	1.5E-05	NA	NA	NA	1.5E-05	Liver	4.9E-01	NA	NA	4.9E-01
			Cadmium	NC	NA	NA	NA		Kidney	1.4E-02	NA	NA	1.4E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	2.0E-02	NA	NA	2.0E-02
			Mercury	NC	NA	NA	NA		Immune system	6.4E-02	NA	NA	6.4E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.0E-01	NA	NA	2.0E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.6E-03	NA	NA	NA	2.6E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	8.5E-04	NA	NA	NA	8.5E-04		--	NA	NA	
			CHEMICAL TOTAL	3.6E-03	--	--	--	4E-03		2.7E+01	0.0E+00	--	2.7E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-03					2.7E+01
	EXPOSURE MEDIUM TOTAL							4E-03					2.7E+01
WHOLE BODY TOTAL								4E-03					2.7E+01
RECEPTOR TOTAL								4E-03					2.7E+01
			TOTAL RISK ACROSS ALL MEDIA					4E-03	TOTAL HAZARD ACROSS ALL MEDIA				2.7E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	2.0E-01
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	--
TOTAL IMMUNE SYSTEM HI =	2.6E+01
TOTAL KIDNEY HI =	1.8E-02
TOTAL LIVER HI =	7.8E-01
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TOTAL NOAEL HI =	2.0E-02
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Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.9.S1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.9E-05	NA	NA	2.9E-05
			Benzo(a)pyrene	5.4E-07	NA	NA	NA	5.4E-07	Kidney	2.9E-05	NA	NA	2.9E-05
			Benzo(b)fluoranthene	6.7E-08	NA	NA	NA	6.7E-08	Kidney	3.6E-05	NA	NA	3.6E-05
			Dibenzo(a,h)anthracene	3.6E-07	NA	NA	NA	3.6E-07	Kidney	1.9E-05	NA	NA	1.9E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	6.0E-04	NA	NA	6.0E-04
			4,4'-DDD	2.7E-07	NA	NA	NA	2.7E-07	Liver	2.6E-02	NA	NA	2.6E-02
			4,4'-DDE	1.2E-06	NA	NA	NA	1.2E-06	Liver	8.0E-02	NA	NA	8.0E-02
			4,4'-DDT	8.8E-08	NA	NA	NA	8.8E-08	Liver	6.0E-03	NA	NA	6.0E-03
			alpha-Chlordane	5.4E-07	NA	NA	NA	5.4E-07	Liver	3.6E-02	NA	NA	3.6E-02
			Aroclor-1254	1.5E-04	NA	NA	NA	1.5E-04	Immune system	4.3E+01	NA	NA	4.3E+01
			beta-BHC	2.5E-07	NA	NA	NA	2.5E-07	Liver / Kidney	5.4E-03	NA	NA	5.4E-03
			Dieldrin	9.7E-06	NA	NA	NA	9.7E-06	Liver	1.4E-01	NA	NA	1.4E-01
			gamma-Chlordane	2.3E-07	NA	NA	NA	2.3E-07	Liver	1.5E-02	NA	NA	1.5E-02
			Heptachlor Epoxide	1.6E-06	NA	NA	NA	1.6E-06	Liver	1.6E-01	NA	NA	1.6E-01
			Technical Chlordane	1.2E-05	NA	NA	NA	1.2E-05	Liver	8.0E-01	NA	NA	8.0E-01
			Cadmium	NC	NA	NA	NA		Kidney	2.3E-02	NA	NA	2.3E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	3.2E-02	NA	NA	3.2E-02
			Mercury	NC	NA	NA	NA		Immune system	1.0E-01	NA	NA	1.0E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	3.3E-01	NA	NA	3.3E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.1E-03	NA	NA	NA	2.1E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	7.0E-04	NA	NA	NA	7.0E-04		--	NA	NA	
			CHEMICAL TOTAL	3.0E-03	--	--	--	3E-03		4.5E+01	0.0E+00	--	4.5E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-03					4.5E+01
	EXPOSURE MEDIUM TOTAL							3E-03					4.5E+01
WHOLE BODY TOTAL								3E-03					4.5E+01
RECEPTOR TOTAL								3E-03					4.5E+01
			TOTAL RISK ACROSS ALL MEDIA					3E-03	**TOTAL HAZARD ACROSS ALL MEDIA**				4.5E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	3.3E-01
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	--
TOTAL IMMUNE SYSTEM HI =	4.3E+01
TOTAL KIDNEY HI =	2.9E-02
TOTAL LIVER HI =	1.3E+00
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TOTAL NOAEL HI =	3.2E-02
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Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.9.52.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.7E-05	NA	NA	1.7E-05
			Benzo(a)pyrene	6.4E-07	NA	NA	NA	6.4E-07	Kidney	1.7E-05	NA	NA	1.7E-05
			Benzo(b)fluoranthene	7.9E-08	NA	NA	NA	7.9E-08	Kidney	2.1E-05	NA	NA	2.1E-05
			Dibenzo(a,h)anthracene	4.3E-07	NA	NA	NA	4.3E-07	Kidney	1.1E-05	NA	NA	1.1E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	3.6E-04	NA	NA	3.6E-04
			4,4'-DDD	3.2E-07	NA	NA	NA	3.2E-07	Liver	1.6E-02	NA	NA	1.6E-02
			4,4'-DDE	1.4E-06	NA	NA	NA	1.4E-06	Liver	4.7E-02	NA	NA	4.7E-02
			4,4'-DDT	1.0E-07	NA	NA	NA	1.0E-07	Liver	3.6E-03	NA	NA	3.6E-03
			alpha-Chlordane	6.4E-07	NA	NA	NA	6.4E-07	Liver	2.1E-02	NA	NA	2.1E-02
			Aroclor-1254	1.7E-04	NA	NA	NA	1.7E-04	Immune system	2.5E+01	NA	NA	2.5E+01
			beta-BHC	2.9E-07	NA	NA	NA	2.9E-07	Liver / Kidney	3.2E-03	NA	NA	3.2E-03
			Dieldrin	1.1E-05	NA	NA	NA	1.1E-05	Liver	8.4E-02	NA	NA	8.4E-02
			gamma-Chlordane	2.7E-07	NA	NA	NA	2.7E-07	Liver	9.1E-03	NA	NA	9.1E-03
			Heptachlor Epoxide	1.9E-06	NA	NA	NA	1.9E-06	Liver	9.3E-02	NA	NA	9.3E-02
			Technical Chlordane	1.4E-05	NA	NA	NA	1.4E-05	Liver	4.7E-01	NA	NA	4.7E-01
			Cadmium	NC	NA	NA	NA		Kidney	1.4E-02	NA	NA	1.4E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	1.9E-02	NA	NA	1.9E-02
			Mercury	NC	NA	NA	NA		Immune system	6.2E-02	NA	NA	6.2E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.9E-01	NA	NA	1.9E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.5E-03	NA	NA	NA	2.5E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	8.2E-04	NA	NA	NA	8.2E-04		--	NA	NA	
			CHEMICAL TOTAL	3.5E-03	--	--	--	4E-03		2.6E+01	0.0E+00	--	2.6E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-03					2.6E+01
	EXPOSURE MEDIUM TOTAL							4E-03					2.6E+01
WHOLE BODY TOTAL								4E-03					2.6E+01
RECEPTOR TOTAL								4E-03					2.6E+01
			TOTAL RISK ACROSS ALL MEDIA					4E-03	TOTAL HAZARD ACROSS ALL MEDIA				2.6E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.9E-01
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	--
TOTAL IMMUNE SYSTEM HI =	2.5E+01
TOTAL KIDNEY HI =	1.7E-02
TOTAL LIVER HI =	7.5E-01
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	--
TOTAL NOAEL HI =	1.9E-02
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Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.9.S3.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.8E-05	NA	NA	1.8E-05
			Benzo(a)pyrene	6.6E-07	NA	NA	NA	6.6E-07	Kidney	1.8E-05	NA	NA	1.8E-05
			Benzo(b)fluoranthene	8.2E-08	NA	NA	NA	8.2E-08	Kidney	2.2E-05	NA	NA	2.2E-05
			Dibenzo(a,h)anthracene	4.5E-07	NA	NA	NA	4.5E-07	Kidney	1.2E-05	NA	NA	1.2E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	3.7E-04	NA	NA	3.7E-04
			4,4'-DDD	3.3E-07	NA	NA	NA	3.3E-07	Liver	1.6E-02	NA	NA	1.6E-02
			4,4'-DDE	1.4E-06	NA	NA	NA	1.4E-06	Liver	4.9E-02	NA	NA	4.9E-02
			4,4'-DDT	1.1E-07	NA	NA	NA	1.1E-07	Liver	3.7E-03	NA	NA	3.7E-03
			alpha-Chlordane	6.6E-07	NA	NA	NA	6.6E-07	Liver	2.2E-02	NA	NA	2.2E-02
			Aroclor-1254	1.8E-04	NA	NA	NA	1.8E-04	Immune system	2.6E+01	NA	NA	2.6E+01
			beta-BHC	3.1E-07	NA	NA	NA	3.1E-07	Liver / Kidney	3.3E-03	NA	NA	3.3E-03
			Dieldrin	1.2E-05	NA	NA	NA	1.2E-05	Liver	8.7E-02	NA	NA	8.7E-02
			gamma-Chlordane	2.8E-07	NA	NA	NA	2.8E-07	Liver	9.4E-03	NA	NA	9.4E-03
			Heptachlor Epoxide	1.9E-06	NA	NA	NA	1.9E-06	Liver	9.6E-02	NA	NA	9.6E-02
			Technical Chlordane	1.5E-05	NA	NA	NA	1.5E-05	Liver	4.9E-01	NA	NA	4.9E-01
			Cadmium	NC	NA	NA	NA		Kidney	1.4E-02	NA	NA	1.4E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	2.0E-02	NA	NA	2.0E-02
			Mercury	NC	NA	NA	NA		Immune system	6.4E-02	NA	NA	6.4E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.0E-01	NA	NA	2.0E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.6E-03	NA	NA	NA	2.6E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	8.5E-04	NA	NA	NA	8.5E-04		--	NA	NA	
			CHEMICAL TOTAL	3.6E-03	--	--	--	4E-03		2.7E+01	0.0E+00	--	2.7E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-03					2.7E+01
	EXPOSURE MEDIUM TOTAL							4E-03					2.7E+01
WHOLE BODY TOTAL								4E-03					2.7E+01
RECEPTOR TOTAL								4E-03					2.7E+01
			TOTAL RISK ACROSS ALL MEDIA					4E-03	TOTAL HAZARD ACROSS ALL MEDIA				2.7E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	2.0E-01
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	--
TOTAL IMMUNE SYSTEM HI =	2.6E+01
TOTAL KIDNEY HI =	1.8E-02
TOTAL LIVER HI =	7.8E-01
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TOTAL NOAEL HI =	2.0E-02
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Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.9.54.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.9E-05	NA	NA	2.9E-05
			Benzo(a)pyrene	5.4E-07	NA	NA	NA	5.4E-07	Kidney	2.9E-05	NA	NA	2.9E-05
			Benzo(b)fluoranthene	6.7E-08	NA	NA	NA	6.7E-08	Kidney	3.6E-05	NA	NA	3.6E-05
			Dibenzo(a,h)anthracene	3.6E-07	NA	NA	NA	3.6E-07	Kidney	1.9E-05	NA	NA	1.9E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	6.0E-04	NA	NA	6.0E-04
			4,4'-DDD	2.7E-07	NA	NA	NA	2.7E-07	Liver	2.6E-02	NA	NA	2.6E-02
			4,4'-DDE	1.2E-06	NA	NA	NA	1.2E-06	Liver	8.0E-02	NA	NA	8.0E-02
			4,4'-DDT	8.8E-08	NA	NA	NA	8.8E-08	Liver	6.0E-03	NA	NA	6.0E-03
			alpha-Chlordane	5.4E-07	NA	NA	NA	5.4E-07	Liver	3.6E-02	NA	NA	3.6E-02
			Aroclor-1254	1.5E-04	NA	NA	NA	1.5E-04	Immune system	4.3E+01	NA	NA	4.3E+01
			beta-BHC	2.5E-07	NA	NA	NA	2.5E-07	Liver / Kidney	5.4E-03	NA	NA	5.4E-03
			Dieldrin	9.7E-06	NA	NA	NA	9.7E-06	Liver	1.4E-01	NA	NA	1.4E-01
			gamma-Chlordane	2.3E-07	NA	NA	NA	2.3E-07	Liver	1.5E-02	NA	NA	1.5E-02
			Heptachlor Epoxide	1.6E-06	NA	NA	NA	1.6E-06	Liver	1.6E-01	NA	NA	1.6E-01
			Technical Chlordane	1.2E-05	NA	NA	NA	1.2E-05	Liver	8.0E-01	NA	NA	8.0E-01
			Cadmium	NC	NA	NA	NA		Kidney	2.3E-02	NA	NA	2.3E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	3.2E-02	NA	NA	3.2E-02
			Mercury	NC	NA	NA	NA		Immune system	1.0E-01	NA	NA	1.0E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	3.3E-01	NA	NA	3.3E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.1E-03	NA	NA	NA	2.1E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	7.0E-04	NA	NA	NA	7.0E-04		--	NA	NA	
			CHEMICAL TOTAL	3.0E-03	--	--	--	3E-03		4.5E+01	0.0E+00	--	4.5E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-03					4.5E+01
	EXPOSURE MEDIUM TOTAL							3E-03					4.5E+01
WHOLE BODY TOTAL								3E-03					4.5E+01
RECEPTOR TOTAL								3E-03					4.5E+01
			TOTAL RISK ACROSS ALL MEDIA					3E-03	TOTAL HAZARD ACROSS ALL MEDIA				4.5E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	3.3E-01
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TOTAL IMMUNE SYSTEM HI =	4.3E+01
TOTAL KIDNEY HI =	2.9E-02
TOTAL LIVER HI =	1.3E+00
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TOTAL NOAEL HI =	3.2E-02
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Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.9.55.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER- ADULT - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	3.5E-06	NA	NA	3.5E-06
			Benzo(a)pyrene	2.0E-06	NA	NA	NA	2.0E-06	Kidney	1.2E-05	NA	NA	1.2E-05
			Benzo(b)fluoranthene	2.3E-07	NA	NA	NA	2.3E-07	Kidney	1.4E-05	NA	NA	1.4E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.2E-05	NA	NA	1.2E-05
			Dibenzo(a,h)anthracene	1.1E-06	NA	NA	NA	1.1E-06	Kidney	6.7E-06	NA	NA	6.7E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	2.5E-05	NA	NA	2.5E-05
			4,4'-DDE	1.4E-06	NA	NA	NA	1.4E-06	Liver	1.1E-02	NA	NA	1.1E-02
			alpha-Chlordane	2.8E-07	NA	NA	NA	2.8E-07	Liver	2.1E-03	NA	NA	2.1E-03
			Aroclor-1254	1.7E-04	NA	NA	NA	1.7E-04	Immune system	5.7E+00	NA	NA	5.7E+00
			Aroclor-1268	1.0E-05	NA	NA	NA	1.0E-05	Immune system	3.4E-01	NA	NA	3.4E-01
			Dieldrin	3.8E-06	NA	NA	NA	3.8E-06	Liver	6.5E-03	NA	NA	6.5E-03
			gamma-Chlordane	1.2E-07	NA	NA	NA	1.2E-07	Liver	9.1E-04	NA	NA	9.1E-04
			Technical Chlordane	5.1E-06	NA	NA	NA	5.1E-06	Liver	3.9E-02	NA	NA	3.9E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	4.8E-01	NA	NA	4.8E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.3E+00	NA	NA	1.3E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.9E-03	NA	NA	NA	1.9E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	6.4E-04	NA	NA	NA	6.4E-04		--	NA	NA	
			CHEMICAL TOTAL	2.7E-03	--	--	--	3E-03		7.9E+00	0.0E+00	--	8E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-03					8E+00
	EXPOSURE MEDIUM TOTAL							3E-03					8E+00
FILLET TOTAL								3E-03					8E+00
RECEPTOR TOTAL								3E-03					7.9E+00
			TOTAL RISK ACROSS ALL MEDIA					3E-03	TOTAL HAZARD ACROSS ALL MEDIA				7.9E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	1.3E+00
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	--
TOTAL IMMUNE SYSTEM HI =	6.6E+00
TOTAL KIDNEY HI =	7.1E-05
TOTAL LIVER HI =	6.0E-02
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Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.56.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	3.7E-06	NA	NA	3.7E-06
			Benzo(a)pyrene	4.8E-07	NA	NA	NA	4.8E-07	Kidney	1.3E-05	NA	NA	1.3E-05
			Benzo(b)fluoranthene	5.5E-08	NA	NA	NA	5.5E-08	Kidney	1.5E-05	NA	NA	1.5E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.3E-05	NA	NA	1.3E-05
			Dibenzo(a,h)anthracene	2.6E-07	NA	NA	NA	2.6E-07	Kidney	7.0E-06	NA	NA	7.0E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	2.6E-05	NA	NA	2.6E-05
			4,4'-DDE	3.3E-07	NA	NA	NA	3.3E-07	Liver	1.1E-02	NA	NA	1.1E-02
			alpha-Chlordane	6.6E-08	NA	NA	NA	6.6E-08	Liver	2.2E-03	NA	NA	2.2E-03
			Aroclor-1254	4.1E-05	NA	NA	NA	4.1E-05	Immune system	6.0E+00	NA	NA	6.0E+00
			Aroclor-1268	2.4E-06	NA	NA	NA	2.4E-06	Immune system	3.5E-01	NA	NA	3.5E-01
			Dieldrin	9.2E-07	NA	NA	NA	9.2E-07	Liver	6.7E-03	NA	NA	6.7E-03
			gamma-Chlordane	2.8E-08	NA	NA	NA	2.8E-08	Liver	9.5E-04	NA	NA	9.5E-04
			Technical Chlordane	1.2E-06	NA	NA	NA	1.2E-06	Liver	4.0E-02	NA	NA	4.0E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	4.9E-01	NA	NA	4.9E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.3E+00	NA	NA	1.3E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.5E-04	NA	NA	NA	4.5E-04		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	1.5E-04	NA	NA	NA	1.5E-04		--	NA	NA	
			CHEMICAL TOTAL	6.5E-04	--	--	--	6E-04		8.2E+00	0.0E+00	--	8E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-04					8E+00
	EXPOSURE MEDIUM TOTAL							6E-04					8E+00
FILLET TOTAL								6E-04					8E+00
RECEPTOR TOTAL								6E-04					8.2E+00
							TOTAL RISK ACROSS ALL MEDIA	6E-04	TOTAL HAZARD ACROSS ALL MEDIA				8.2E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

	--
	--
TOTAL DEVELOPMENTAL TOXICITY HI =	1.3E+00
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	--
TOTAL IMMUNE SYSTEM HI =	6.8E+00
TOTAL KIDNEY HI =	7.3E-05
TOTAL LIVER HI =	6.2E-02
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Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.57.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	6.0E-06	NA	NA	6.0E-06
			Benzo(a)pyrene	3.9E-07	NA	NA	NA	3.9E-07	Kidney	2.1E-05	NA	NA	2.1E-05
			Benzo(b)fluoranthene	4.5E-08	NA	NA	NA	4.5E-08	Kidney	2.4E-05	NA	NA	2.4E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	2.1E-05	NA	NA	2.1E-05
			Dibenzo(a,h)anthracene	2.1E-07	NA	NA	NA	2.1E-07	Kidney	1.1E-05	NA	NA	1.1E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	4.2E-05	NA	NA	4.2E-05
			4,4'-DDE	2.7E-07	NA	NA	NA	2.7E-07	Liver	1.9E-02	NA	NA	1.9E-02
			alpha-Chlordane	5.4E-08	NA	NA	NA	5.4E-08	Liver	3.6E-03	NA	NA	3.6E-03
			Aroclor-1254	3.3E-05	NA	NA	NA	3.3E-05	Immune system	9.7E+00	NA	NA	9.7E+00
			Aroclor-1268	1.9E-06	NA	NA	NA	1.9E-06	Immune system	5.7E-01	NA	NA	5.7E-01
			Dieldrin	7.5E-07	NA	NA	NA	7.5E-07	Liver	1.1E-02	NA	NA	1.1E-02
			gamma-Chlordane	2.3E-08	NA	NA	NA	2.3E-08	Liver	1.5E-03	NA	NA	1.5E-03
			Technical Chlordane	9.9E-07	NA	NA	NA	9.9E-07	Liver	6.6E-02	NA	NA	6.6E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	8.0E-01	NA	NA	8.0E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.1E+00	NA	NA	2.1E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.6E-04	NA	NA	NA	3.6E-04		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	1.3E-04	NA	NA	NA	1.3E-04		--	NA	NA	
			CHEMICAL TOTAL	5.3E-04	--	--	--	5E-04		1.3E+01	0.0E+00	--	1E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-04					1E+01
	EXPOSURE MEDIUM TOTAL							5E-04					1E+01
FILLET TOTAL								5E-04					1E+01
RECEPTOR TOTAL								5E-04					1.3E+01
							TOTAL RISK ACROSS ALL MEDIA	5E-04	TOTAL HAZARD ACROSS ALL MEDIA				1.3E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

	--
	--
TOTAL DEVELOPMENTAL TOXICITY HI =	2.1E+00
	--
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	--
	--
TOTAL IMMUNE SYSTEM HI =	1.1E+01
TOTAL KIDNEY HI =	1.2E-04
TOTAL LIVER HI =	1.0E-01
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US EPA ARCHIVE DOCUMENT

TABLE G.9.58.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	3.5E-06	NA	NA	3.5E-06
			Benzo(a)pyrene	4.7E-07	NA	NA	NA	4.7E-07	Kidney	1.2E-05	NA	NA	1.2E-05
			Benzo(b)fluoranthene	5.3E-08	NA	NA	NA	5.3E-08	Kidney	1.4E-05	NA	NA	1.4E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.2E-05	NA	NA	1.2E-05
			Dibenzo(a,h)anthracene	2.5E-07	NA	NA	NA	2.5E-07	Kidney	6.7E-06	NA	NA	6.7E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	2.5E-05	NA	NA	2.5E-05
			4,4'-DDE	3.2E-07	NA	NA	NA	3.2E-07	Liver	1.1E-02	NA	NA	1.1E-02
			alpha-Chlordane	6.4E-08	NA	NA	NA	6.4E-08	Liver	2.1E-03	NA	NA	2.1E-03
			Aroclor-1254	3.9E-05	NA	NA	NA	3.9E-05	Immune system	5.7E+00	NA	NA	5.7E+00
			Aroclor-1268	2.3E-06	NA	NA	NA	2.3E-06	Immune system	3.4E-01	NA	NA	3.4E-01
			Dieldrin	8.9E-07	NA	NA	NA	8.9E-07	Liver	6.5E-03	NA	NA	6.5E-03
			gamma-Chlordane	2.7E-08	NA	NA	NA	2.7E-08	Liver	9.1E-04	NA	NA	9.1E-04
			Technical Chlordane	1.2E-06	NA	NA	NA	1.2E-06	Liver	3.9E-02	NA	NA	3.9E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	4.8E-01	NA	NA	4.8E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.3E+00	NA	NA	1.3E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.3E-04	NA	NA	NA	4.3E-04		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	1.5E-04	NA	NA	NA	1.5E-04		--	NA	NA	
			CHEMICAL TOTAL	6.2E-04	--	--	--	6E-04		7.9E+00	0.0E+00	--	8E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-04					8E+00
	EXPOSURE MEDIUM TOTAL							6E-04					8E+00
FILLET TOTAL								6E-04					8E+00
RECEPTOR TOTAL								6E-04					7.9E+00
							TOTAL RISK ACROSS ALL MEDIA	6E-04	TOTAL HAZARD ACROSS ALL MEDIA				7.9E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

	--
	--
TOTAL DEVELOPMENTAL TOXICITY HI =	1.3E+00
	--
	--
	--
	--
TOTAL IMMUNE SYSTEM HI =	6.6E+00
TOTAL KIDNEY HI =	7.1E-05
TOTAL LIVER HI =	6.0E-02
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Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.59.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	3.7E-06	NA	NA	3.7E-06
			Benzo(a)pyrene	4.8E-07	NA	NA	NA	4.8E-07	Kidney	1.3E-05	NA	NA	1.3E-05
			Benzo(b)fluoranthene	5.5E-08	NA	NA	NA	5.5E-08	Kidney	1.5E-05	NA	NA	1.5E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.3E-05	NA	NA	1.3E-05
			Dibenzo(a,h)anthracene	2.6E-07	NA	NA	NA	2.6E-07	Kidney	7.0E-06	NA	NA	7.0E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	2.6E-05	NA	NA	2.6E-05
			4,4'-DDE	3.3E-07	NA	NA	NA	3.3E-07	Liver	1.1E-02	NA	NA	1.1E-02
			alpha-Chlordane	6.6E-08	NA	NA	NA	6.6E-08	Liver	2.2E-03	NA	NA	2.2E-03
			Aroclor-1254	4.1E-05	NA	NA	NA	4.1E-05	Immune system	6.0E+00	NA	NA	6.0E+00
			Aroclor-1268	2.4E-06	NA	NA	NA	2.4E-06	Immune system	3.5E-01	NA	NA	3.5E-01
			Dieldrin	9.2E-07	NA	NA	NA	9.2E-07	Liver	6.7E-03	NA	NA	6.7E-03
			gamma-Chlordane	2.8E-08	NA	NA	NA	2.8E-08	Liver	9.5E-04	NA	NA	9.5E-04
			Technical Chlordane	1.2E-06	NA	NA	NA	1.2E-06	Liver	4.0E-02	NA	NA	4.0E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	4.9E-01	NA	NA	4.9E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.3E+00	NA	NA	1.3E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.5E-04	NA	NA	NA	4.5E-04		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	1.5E-04	NA	NA	NA	1.5E-04		--	NA	NA	
			CHEMICAL TOTAL	6.5E-04	--	--	--	6E-04		8.2E+00	0.0E+00	--	8E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-04					8E+00
	EXPOSURE MEDIUM TOTAL							6E-04					8E+00
FILLET TOTAL								6E-04					8E+00
RECEPTOR TOTAL								6E-04					8.2E+00
							TOTAL RISK ACROSS ALL MEDIA	6E-04	TOTAL HAZARD ACROSS ALL MEDIA				8.2E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL DEVELOPMENTAL TOXICITY HI =	1.3E+00
TOTAL IMMUNE SYSTEM HI =	6.8E+00
TOTAL KIDNEY HI =	7.3E-05
TOTAL LIVER HI =	6.2E-02

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.60.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	6.0E-06	NA	NA	6.0E-06
			Benzo(a)pyrene	3.9E-07	NA	NA	NA	3.9E-07	Kidney	2.1E-05	NA	NA	2.1E-05
			Benzo(b)fluoranthene	4.5E-08	NA	NA	NA	4.5E-08	Kidney	2.4E-05	NA	NA	2.4E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	2.1E-05	NA	NA	2.1E-05
			Dibenzo(a,h)anthracene	2.1E-07	NA	NA	NA	2.1E-07	Kidney	1.1E-05	NA	NA	1.1E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	4.2E-05	NA	NA	4.2E-05
			4,4'-DDE	2.7E-07	NA	NA	NA	2.7E-07	Liver	1.9E-02	NA	NA	1.9E-02
			alpha-Chlordane	5.4E-08	NA	NA	NA	5.4E-08	Liver	3.6E-03	NA	NA	3.6E-03
			Aroclor-1254	3.3E-05	NA	NA	NA	3.3E-05	Immune system	9.7E+00	NA	NA	9.7E+00
			Aroclor-1268	1.9E-06	NA	NA	NA	1.9E-06	Immune system	5.7E-01	NA	NA	5.7E-01
			Dieldrin	7.5E-07	NA	NA	NA	7.5E-07	Liver	1.1E-02	NA	NA	1.1E-02
			gamma-Chlordane	2.3E-08	NA	NA	NA	2.3E-08	Liver	1.5E-03	NA	NA	1.5E-03
			Technical Chlordane	9.9E-07	NA	NA	NA	9.9E-07	Liver	6.6E-02	NA	NA	6.6E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	8.0E-01	NA	NA	8.0E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.1E+00	NA	NA	2.1E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.6E-04	NA	NA	NA	3.6E-04		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	1.3E-04	NA	NA	NA	1.3E-04		--	NA	NA	
			CHEMICAL TOTAL	5.3E-04	--	--	--	5E-04		1.3E+01	0.0E+00	--	1E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-04					1E+01
	EXPOSURE MEDIUM TOTAL							5E-04					1E+01
FILLET TOTAL								5E-04					1E+01
RECEPTOR TOTAL								5E-04					1.3E+01
							TOTAL RISK ACROSS ALL MEDIA	5E-04	TOTAL HAZARD ACROSS ALL MEDIA				1.3E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	2.1E+00
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	--
	--
TOTAL IMMUNE SYSTEM HI =	1.1E+01
TOTAL KIDNEY HI =	1.2E-04
TOTAL LIVER HI =	1.0E-01
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Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.6I.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	3.1E-05	NA	NA	3.1E-05
			Benzo(a)anthracene	2.7E-06	NA	NA	NA	2.7E-06	Kidney	1.7E-04	NA	NA	1.7E-04
			Benzo(a)pyrene	4.2E-05	NA	NA	NA	4.2E-05	Kidney	2.6E-04	NA	NA	2.6E-04
			Benzo(b)fluoranthene	1.9E-06	NA	NA	NA	1.9E-06	Kidney	1.2E-04	NA	NA	1.2E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	2.0E-04	NA	NA	2.0E-04
			Dibenzo(a,h)anthracene	7.8E-06	NA	NA	NA	7.8E-06	Kidney	4.8E-05	NA	NA	4.8E-05
			Indeno(1,2,3-cd)pyrene	3.9E-06	NA	NA	NA	3.9E-06	Kidney	2.4E-04	NA	NA	2.4E-04
			Phenanthrene	NC	NA	NA	NA		Kidney	3.8E-04	NA	NA	3.8E-04
			4,4'-DDD	6.0E-06	NA	NA	NA	6.0E-06	Liver	6.7E-02	NA	NA	6.7E-02
			4,4'-DDE	2.9E-05	NA	NA	NA	2.9E-05	Liver	2.3E-01	NA	NA	2.3E-01
			4,4'-DDT	7.0E-07	NA	NA	NA	7.0E-07	Liver	5.5E-03	NA	NA	5.5E-03
			alpha-Chlordane	6.5E-06	NA	NA	NA	6.5E-06	Liver	5.0E-02	NA	NA	5.0E-02
			Aroclor-1254	4.1E-03	NA	NA	NA	4.1E-03	Immune system	1.4E+02	NA	NA	1.4E+02
			Aroclor-1268	3.4E-05	NA	NA	NA	3.4E-05	Immune system	1.2E+00	NA	NA	1.2E+00
			Dieldrin	5.4E-05	NA	NA	NA	5.4E-05	Liver	9.1E-02	NA	NA	9.1E-02
			gamma-Chlordane	4.0E-06	NA	NA	NA	4.0E-06	Liver	3.1E-02	NA	NA	3.1E-02
			Heptachlor Epoxide	6.1E-06	NA	NA	NA	6.1E-06	Liver	6.9E-02	NA	NA	6.9E-02
			Technical Chlordane	3.6E-04	NA	NA	NA	3.6E-04	Liver	2.7E+00	NA	NA	2.7E+00
			Arsenic	1.6E-05	NA	NA	NA	1.6E-05	Skin	4.9E-02	NA	NA	4.9E-02
			Chromium	NC	NA	NA	NA		NOAEL	6.7E-02	NA	NA	6.7E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.1E-01	NA	NA	2.1E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.8E-01	NA	NA	5.8E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	5.3E-02	NA	NA	NA	5.3E-02		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	3.0E-03	NA	NA	NA	3.0E-03		--	NA	NA	
			CHEMICAL TOTAL	6.1E-02	--	--	--	6E-02		1.4E+02	0.0E+00	--	1.4E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-02					1.4E+02
	EXPOSURE MEDIUM TOTAL							6E-02					1.4E+02
WHOLE BODY TOTAL								6E-02					1.4E+02
RECEPTOR TOTAL								6E-02					1E+02
			TOTAL RISK ACROSS ALL MEDIA					6E-02	TOTAL HAZARD ACROSS ALL MEDIA				1.4E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	5.8E-01
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	--
TOTAL IMMUNE SYSTEM HI =	1.4E+02
TOTAL KIDNEY HI =	1.4E-03
TOTAL LIVER HI =	3.3E+00
	--
	--
TOTAL NOAEL HI =	6.7E-02
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TOTAL SKIN HI =	4.9E-02
	--

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.9.61.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	3.3E-05	NA	NA	3.3E-05
			Benzo(a)anthracene	6.5E-07	NA	NA	NA	6.5E-07	Kidney	1.7E-04	NA	NA	1.7E-04
			Benzo(a)pyrene	1.0E-05	NA	NA	NA	1.0E-05	Kidney	2.7E-04	NA	NA	2.7E-04
			Benzo(b)fluoranthene	4.6E-07	NA	NA	NA	4.6E-07	Kidney	1.2E-04	NA	NA	1.2E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	2.1E-04	NA	NA	2.1E-04
			Dibenzo(a,h)anthracene	1.9E-06	NA	NA	NA	1.9E-06	Kidney	4.9E-05	NA	NA	4.9E-05
			Indeno(1,2,3-cd)pyrene	9.3E-07	NA	NA	NA	9.3E-07	Kidney	2.5E-04	NA	NA	2.5E-04
			Phenanthrene	NC	NA	NA	NA		Kidney	3.9E-04	NA	NA	3.9E-04
			4,4'-DDD	1.4E-06	NA	NA	NA	1.4E-06	Liver	7.0E-02	NA	NA	7.0E-02
			4,4'-DDE	6.8E-06	NA	NA	NA	6.8E-06	Liver	2.3E-01	NA	NA	2.3E-01
			4,4'-DDT	1.7E-07	NA	NA	NA	1.7E-07	Liver	5.7E-03	NA	NA	5.7E-03
			alpha-Chlordane	1.5E-06	NA	NA	NA	1.5E-06	Liver	5.2E-02	NA	NA	5.2E-02
			Aroclor-1254	9.8E-04	NA	NA	NA	9.8E-04	Immune system	1.4E+02	NA	NA	1.4E+02
			Aroclor-1268	8.2E-06	NA	NA	NA	8.2E-06	Immune system	1.2E+00	NA	NA	1.2E+00
			Dieldrin	1.3E-05	NA	NA	NA	1.3E-05	Liver	9.5E-02	NA	NA	9.5E-02
			gamma-Chlordane	9.6E-07	NA	NA	NA	9.6E-07	Liver	3.2E-02	NA	NA	3.2E-02
			Heptachlor Epoxide	1.5E-06	NA	NA	NA	1.5E-06	Liver	7.2E-02	NA	NA	7.2E-02
			Technical Chlordane	8.5E-05	NA	NA	NA	8.5E-05	Liver	2.8E+00	NA	NA	2.8E+00
			Arsenic	3.9E-06	NA	NA	NA	3.9E-06	Skin	5.1E-02	NA	NA	5.1E-02
			Chromium	NC	NA	NA	NA		NOAEL	6.9E-02	NA	NA	6.9E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.2E-01	NA	NA	2.2E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	6.0E-01	NA	NA	6.0E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.3E-02	NA	NA	NA	1.3E-02		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	7.1E-04	NA	NA	NA	7.1E-04		--	NA	NA	
			CHEMICAL TOTAL	1.5E-02	--	--	--	1E-02		1.5E+02	0.0E+00	--	1.5E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-02					1.5E+02
	EXPOSURE MEDIUM TOTAL							1E-02					1.5E+02
WHOLE BODY TOTAL								1E-02					1.5E+02
RECEPTOR TOTAL								1E-02					1.5E+02
							TOTAL RISK ACROSS ALL MEDIA	1E-02	TOTAL HAZARD ACROSS ALL MEDIA				1.5E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	6.0E-01
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	--
TOTAL IMMUNE SYSTEM HI =	1.4E+02
TOTAL KIDNEY HI =	1.5E-03
TOTAL LIVER HI =	3.4E+00
	--
	--
TOTAL NOAEL HI =	6.9E-02
	--
TOTAL SKIN HI =	5.1E-02

Prepared by: KJA
Checked by: MJM

MACTEC Engineering and Consulting, Inc.
51226.25

3/17/2004

US EPA ARCHIVE DOCUMENT

TABLE G.9.63.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE- CURRENT/FUTURE- RECREATIONAL ANGLER- CHILD - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	5.3E-05	NA	NA	5.3E-05
			Benzo(a)anthracene	5.3E-07	NA	NA	NA	5.3E-07	Kidney	2.8E-04	NA	NA	2.8E-04
			Benzo(a)pyrene	8.2E-06	NA	NA	NA	8.2E-06	Kidney	4.4E-04	NA	NA	4.4E-04
			Benzo(b)fluoranthene	3.8E-07	NA	NA	NA	3.8E-07	Kidney	2.0E-04	NA	NA	2.0E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	3.4E-04	NA	NA	3.4E-04
			Dibenzo(a,h)anthracene	1.5E-06	NA	NA	NA	1.5E-06	Kidney	8.1E-05	NA	NA	8.1E-05
			Indeno(1,2,3-cd)pyrene	7.5E-07	NA	NA	NA	7.5E-07	Kidney	4.0E-04	NA	NA	4.0E-04
			Phenanthrene	NC	NA	NA	NA		Kidney	6.3E-04	NA	NA	6.3E-04
			4,4'-DDD	1.2E-06	NA	NA	NA	1.2E-06	Liver	1.1E-01	NA	NA	1.1E-01
			4,4'-DDE	5.6E-06	NA	NA	NA	5.6E-06	Liver	3.8E-01	NA	NA	3.8E-01
			4,4'-DDT	1.4E-07	NA	NA	NA	1.4E-07	Liver	9.3E-03	NA	NA	9.3E-03
			alpha-Chlordane	1.3E-06	NA	NA	NA	1.3E-06	Liver	8.4E-02	NA	NA	8.4E-02
			Aroclor-1254	8.0E-04	NA	NA	NA	8.0E-04	Immune system	2.3E+02	NA	NA	2.3E+02
			Aroclor-1268	6.7E-06	NA	NA	NA	6.7E-06	Immune system	2.0E+00	NA	NA	2.0E+00
			Dieldrin	1.1E-05	NA	NA	NA	1.1E-05	Liver	1.5E-01	NA	NA	1.5E-01
			gamma-Chlordane	7.8E-07	NA	NA	NA	7.8E-07	Liver	5.2E-02	NA	NA	5.2E-02
			Heptachlor Epoxide	1.2E-06	NA	NA	NA	1.2E-06	Liver	1.2E-01	NA	NA	1.2E-01
			Technical Chlordane	6.9E-05	NA	NA	NA	6.9E-05	Liver	4.6E+00	NA	NA	4.6E+00
			Arsenic	3.2E-06	NA	NA	NA	3.2E-06	Skin	8.2E-02	NA	NA	8.2E-02
			Chromium	NC	NA	NA	NA		NOAEL	1.1E-01	NA	NA	1.1E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	3.5E-01	NA	NA	3.5E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	9.8E-01	NA	NA	9.8E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.0E-02	NA	NA	NA	1.0E-02		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	5.8E-04	NA	NA	NA	5.8E-04		--	NA	NA	
			CHEMICAL TOTAL	1.2E-02	--	--	--	1E-02		2.4E+02	0.0E+00	--	2.4E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-02					2.4E+02
	EXPOSURE MEDIUM TOTAL							1E-02					2.4E+02
WHOLE BODY TOTAL								1E-02					2.4E+02
RECEPTOR TOTAL								1E-02					2.4E+02
			TOTAL RISK ACROSS ALL MEDIA					1E-02	TOTAL HAZARD ACROSS ALL MEDIA				2.4E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	9.8E-01
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	--
TOTAL IMMUNE SYSTEM HI =	2.4E+02
TOTAL KIDNEY HI =	2.4E-03
TOTAL LIVER HI =	5.5E+00
	--
	--
TOTAL NOAEL HI =	1.1E-01
	--
TOTAL SKIN HI =	8.2E-02
	--

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.9.64.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	3.1E-05	NA	NA	3.1E-05
			Benzo(a)anthracene	6.3E-07	NA	NA	NA	6.3E-07	Kidney	1.7E-04	NA	NA	1.7E-04
			Benzo(a)pyrene	9.8E-06	NA	NA	NA	9.8E-06	Kidney	2.6E-04	NA	NA	2.6E-04
			Benzo(b)fluoranthene	4.4E-07	NA	NA	NA	4.4E-07	Kidney	1.2E-04	NA	NA	1.2E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	2.0E-04	NA	NA	2.0E-04
			Dibenzo(a,h)anthracene	1.8E-06	NA	NA	NA	1.8E-06	Kidney	4.8E-05	NA	NA	4.8E-05
			Indeno(1,2,3-cd)pyrene	8.9E-07	NA	NA	NA	8.9E-07	Kidney	2.4E-04	NA	NA	2.4E-04
			Phenanthrene	NC	NA	NA	NA		Kidney	3.8E-04	NA	NA	3.8E-04
			4,4'-DDD	1.4E-06	NA	NA	NA	1.4E-06	Liver	6.7E-02	NA	NA	6.7E-02
			4,4'-DDE	6.6E-06	NA	NA	NA	6.6E-06	Liver	2.3E-01	NA	NA	2.3E-01
			4,4'-DDT	1.6E-07	NA	NA	NA	1.6E-07	Liver	5.5E-03	NA	NA	5.5E-03
			alpha-Chlordane	1.5E-06	NA	NA	NA	1.5E-06	Liver	5.0E-02	NA	NA	5.0E-02
			Aroclor-1254	9.5E-04	NA	NA	NA	9.5E-04	Immune system	1.4E+02	NA	NA	1.4E+02
			Aroclor-1268	8.0E-06	NA	NA	NA	8.0E-06	Immune system	1.2E+00	NA	NA	1.2E+00
			Dieldrin	1.3E-05	NA	NA	NA	1.3E-05	Liver	9.1E-02	NA	NA	9.1E-02
			gamma-Chlordane	9.3E-07	NA	NA	NA	9.3E-07	Liver	3.1E-02	NA	NA	3.1E-02
			Heptachlor Epoxide	1.4E-06	NA	NA	NA	1.4E-06	Liver	6.9E-02	NA	NA	6.9E-02
			Technical Chlordane	8.2E-05	NA	NA	NA	8.2E-05	Liver	2.7E+00	NA	NA	2.7E+00
			Arsenic	3.8E-06	NA	NA	NA	3.8E-06	Skin	4.9E-02	NA	NA	4.9E-02
			Chromium	NC	NA	NA	NA		NOAEL	6.7E-02	NA	NA	6.7E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.1E-01	NA	NA	2.1E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.8E-01	NA	NA	5.8E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.2E-02	NA	NA	NA	1.2E-02		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	6.9E-04	NA	NA	NA	6.9E-04		--	NA	NA	
			CHEMICAL TOTAL	1.4E-02	--	--	--	1E-02		1.4E+02	0.0E+00	--	1.4E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-02					1.4E+02
	EXPOSURE MEDIUM TOTAL							1E-02					1.4E+02
WHOLE BODY TOTAL								1E-02					1.4E+02
RECEPTOR TOTAL								**1E-02**					**1.4E+02**
							TOTAL RISK ACROSS ALL MEDIA	**1E-02**	**TOTAL HAZARD ACROSS ALL MEDIA**				**1.4E+02**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	5.8E-01
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	--
TOTAL IMMUNE SYSTEM HI =	1.4E+02
TOTAL KIDNEY HI =	1.4E-03
TOTAL LIVER HI =	3.3E+00
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	--
TOTAL NOAEL HI =	6.7E-02
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TOTAL SKIN HI =	4.9E-02
	--

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.9.65.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	3.3E-05	NA	NA	3.3E-05
			Benzo(a)anthracene	6.5E-07	NA	NA	NA	6.5E-07	Kidney	1.7E-04	NA	NA	1.7E-04
			Benzo(a)pyrene	1.0E-05	NA	NA	NA	1.0E-05	Kidney	2.7E-04	NA	NA	2.7E-04
			Benzo(b)fluoranthene	4.6E-07	NA	NA	NA	4.6E-07	Kidney	1.2E-04	NA	NA	1.2E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	2.1E-04	NA	NA	2.1E-04
			Dibenzo(a,h)anthracene	1.9E-06	NA	NA	NA	1.9E-06	Kidney	4.9E-05	NA	NA	4.9E-05
			Indeno(1,2,3-cd)pyrene	9.3E-07	NA	NA	NA	9.3E-07	Kidney	2.5E-04	NA	NA	2.5E-04
			Phenanthrene	NC	NA	NA	NA		Kidney	3.9E-04	NA	NA	3.9E-04
			4,4'-DDD	1.4E-06	NA	NA	NA	1.4E-06	Liver	7.0E-02	NA	NA	7.0E-02
			4,4'-DDE	6.8E-06	NA	NA	NA	6.8E-06	Liver	2.3E-01	NA	NA	2.3E-01
			4,4'-DDT	1.7E-07	NA	NA	NA	1.7E-07	Liver	5.7E-03	NA	NA	5.7E-03
			alpha-Chlordane	1.5E-06	NA	NA	NA	1.5E-06	Liver	5.2E-02	NA	NA	5.2E-02
			Aroclor-1254	9.8E-04	NA	NA	NA	9.8E-04	Immune system	1.4E+02	NA	NA	1.4E+02
			Aroclor-1268	8.2E-06	NA	NA	NA	8.2E-06	Immune system	1.2E+00	NA	NA	1.2E+00
			Dieldrin	1.3E-05	NA	NA	NA	1.3E-05	Liver	9.5E-02	NA	NA	9.5E-02
			gamma-Chlordane	9.6E-07	NA	NA	NA	9.6E-07	Liver	3.2E-02	NA	NA	3.2E-02
			Heptachlor Epoxide	1.5E-06	NA	NA	NA	1.5E-06	Liver	7.2E-02	NA	NA	7.2E-02
			Technical Chlordane	8.5E-05	NA	NA	NA	8.5E-05	Liver	2.8E+00	NA	NA	2.8E+00
			Arsenic	3.9E-06	NA	NA	NA	3.9E-06	Skin	5.1E-02	NA	NA	5.1E-02
			Chromium	NC	NA	NA	NA		NOAEL	6.9E-02	NA	NA	6.9E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.2E-01	NA	NA	2.2E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	6.0E-01	NA	NA	6.0E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.3E-02	NA	NA	NA	1.3E-02		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	7.1E-04	NA	NA	NA	7.1E-04		--	NA	NA	
			CHEMICAL TOTAL	1.5E-02	--	--	--	1E-02		1.5E+02	0.0E+00	--	1.5E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-02					1.5E+02
	EXPOSURE MEDIUM TOTAL							1E-02					1.5E+02
WHOLE BODY TOTAL								1E-02					1.5E+02
RECEPTOR TOTAL								1E-02					1.5E+02
							TOTAL RISK ACROSS ALL MEDIA	1E-02	TOTAL HAZARD ACROSS ALL MEDIA				1.5E+02

NOTES
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	6.0E-01
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	--
TOTAL IMMUNE SYSTEM HI =	1.4E+02
TOTAL KIDNEY HI =	1.5E-03
TOTAL LIVER HI =	3.4E+00
	--
	--
TOTAL NOAEL HI =	6.9E-02
	--
TOTAL SKIN HI =	5.1E-02

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.9.66.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	5.3E-05	NA	NA	5.3E-05
			Benzo(a)anthracene	5.3E-07	NA	NA	NA	5.3E-07	Kidney	2.8E-04	NA	NA	2.8E-04
			Benzo(a)pyrene	8.2E-06	NA	NA	NA	8.2E-06	Kidney	4.4E-04	NA	NA	4.4E-04
			Benzo(b)fluoranthene	3.8E-07	NA	NA	NA	3.8E-07	Kidney	2.0E-04	NA	NA	2.0E-04
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	3.4E-04	NA	NA	3.4E-04
			Dibenzo(a,h)anthracene	1.5E-06	NA	NA	NA	1.5E-06	Kidney	8.1E-05	NA	NA	8.1E-05
			Indeno(1,2,3-cd)pyrene	7.5E-07	NA	NA	NA	7.5E-07	Kidney	4.0E-04	NA	NA	4.0E-04
			Phenanthrene	NC	NA	NA	NA		Kidney	6.3E-04	NA	NA	6.3E-04
			4,4'-DDD	1.2E-06	NA	NA	NA	1.2E-06	Liver	1.1E-01	NA	NA	1.1E-01
			4,4'-DDE	5.6E-06	NA	NA	NA	5.6E-06	Liver	3.8E-01	NA	NA	3.8E-01
			4,4'-DDT	1.4E-07	NA	NA	NA	1.4E-07	Liver	9.3E-03	NA	NA	9.3E-03
			alpha-Chlordane	1.3E-06	NA	NA	NA	1.3E-06	Liver	8.4E-02	NA	NA	8.4E-02
			Aroclor-1254	8.0E-04	NA	NA	NA	8.0E-04	Immune system	2.3E+02	NA	NA	2.3E+02
			Aroclor-1268	6.7E-06	NA	NA	NA	6.7E-06	Immune system	2.0E+00	NA	NA	2.0E+00
			Dieldrin	1.1E-05	NA	NA	NA	1.1E-05	Liver	1.5E-01	NA	NA	1.5E-01
			gamma-Chlordane	7.8E-07	NA	NA	NA	7.8E-07	Liver	5.2E-02	NA	NA	5.2E-02
			Heptachlor Epoxide	1.2E-06	NA	NA	NA	1.2E-06	Liver	1.2E-01	NA	NA	1.2E-01
			Technical Chlordane	6.9E-05	NA	NA	NA	6.9E-05	Liver	4.6E+00	NA	NA	4.6E+00
			Arsenic	3.2E-06	NA	NA	NA	3.2E-06	Skin	8.2E-02	NA	NA	8.2E-02
			Chromium	NC	NA	NA	NA		NOAEL	1.1E-01	NA	NA	1.1E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	3.5E-01	NA	NA	3.5E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	9.8E-01	NA	NA	9.8E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.0E-02	NA	NA	NA	1.0E-02		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	5.8E-04	NA	NA	NA	5.8E-04		--	NA	NA	
			CHEMICAL TOTAL	1.2E-02	--	--	--	1E-02		2.4E+02	0.0E+00	--	2.4E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-02					2.4E+02
	EXPOSURE MEDIUM TOTAL							1E-02					2.4E+02
WHOLE BODY TOTAL								1E-02					2.4E+02
RECEPTOR TOTAL								1E-02					2.4E+02
			TOTAL RISK ACROSS ALL MEDIA					1E-02	TOTAL HAZARD ACROSS ALL MEDIA				2.4E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	9.8E-01
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	--
TOTAL IMMUNE SYSTEM HI =	2.4E+02
TOTAL KIDNEY HI =	2.4E-03
TOTAL LIVER HI =	5.5E+00
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	--
TOTAL NOAEL HI =	1.1E-01
	--
TOTAL SKIN HI =	8.2E-02

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.9.67.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	Acenaphthylene	NC	NA	NA	NA		Liver	3.6E-06	NA	NA	3.6E-06
			Dibenzo(a,h)anthracene	6.5E-07	NA	NA	NA	6.5E-07	Kidney	4.0E-06	NA	NA	4.0E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	8.8E-05	NA	NA	8.8E-05
			4,4'-DDE	1.7E-06	NA	NA	NA	1.7E-06	Liver	1.3E-02	NA	NA	1.3E-02
			alpha-Chlordane	3.6E-07	NA	NA	NA	3.6E-07	Liver	2.8E-03	NA	NA	2.8E-03
			Aroclor-1254	1.7E-04	NA	NA	NA	1.7E-04	Immune system	5.9E+00	NA	NA	5.9E+00
			Aroclor-1268	5.3E-05	NA	NA	NA	5.3E-05	Immune system	1.8E+00	NA	NA	1.8E+00
			Dieldrin	3.6E-06	NA	NA	NA	3.6E-06	Liver	6.0E-03	NA	NA	6.0E-03
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	1.7E-04	NA	NA	1.7E-04
			gamma-Chlordane	1.3E-07	NA	NA	NA	1.3E-07	Liver	1.0E-03	NA	NA	1.0E-03
			Technical Chlordane	9.0E-06	NA	NA	NA	9.0E-06	Liver	6.9E-02	NA	NA	6.9E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	4.6E-01	NA	NA	4.6E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.5E+00	NA	NA	1.5E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.8E-03	NA	NA	NA	1.8E-03		--	NA	NA	
			CHEMICAL TOTAL	2.1E-03	--	--	--	2E-03		9.7E+00	0.0E+00	--	1E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-03					1E+01
	EXPOSURE MEDIUM TOTAL							2E-03					1E+01
FILLET TOTAL								2E-03					1E+01
RECEPTOR TOTAL								2E-03					9.7E+00
							TOTAL RISK ACROSS ALL MEDIA	2E-03	TOTAL HAZARD ACROSS ALL MEDIA				9.7E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.5E+00
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TOTAL IMMUNE SYSTEM HI =	8.1E+00
TOTAL KIDNEY HI =	2.6E-04
TOTAL LIVER HI =	9.2E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.68.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	Acenaphthylene	NC	NA	NA	NA		Liver	3.8E-06	NA	NA	3.8E-06
			Dibenzo(a,h)anthracene	1.6E-07	NA	NA	NA	1.6E-07	Kidney	4.1E-06	NA	NA	4.1E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	9.1E-05	NA	NA	9.1E-05
			4,4'-DDE	4.0E-07	NA	NA	NA	4.0E-07	Liver	1.4E-02	NA	NA	1.4E-02
			alpha-Chlordane	8.7E-08	NA	NA	NA	8.7E-08	Liver	2.9E-03	NA	NA	2.9E-03
			Aroclor-1254	4.2E-05	NA	NA	NA	4.2E-05	Immune system	6.1E+00	NA	NA	6.1E+00
			Aroclor-1268	1.3E-05	NA	NA	NA	1.3E-05	Immune system	1.9E+00	NA	NA	1.9E+00
			Dieldrin	8.6E-07	NA	NA	NA	8.6E-07	Liver	6.3E-03	NA	NA	6.3E-03
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	1.7E-04	NA	NA	1.7E-04
			gamma-Chlordane	3.2E-08	NA	NA	NA	3.2E-08	Liver	1.1E-03	NA	NA	1.1E-03
			Technical Chlordane	2.1E-06	NA	NA	NA	2.1E-06	Liver	7.1E-02	NA	NA	7.1E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	4.7E-01	NA	NA	4.7E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.5E+00	NA	NA	1.5E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.4E-04	NA	NA	NA	4.4E-04		--	NA	NA	
			CHEMICAL TOTAL	5.0E-04	--	--	--	5E-04		1.0E+01	0.0E+00	--	1E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-04					1E+01
	EXPOSURE MEDIUM TOTAL							5E-04					1E+01
FILLET TOTAL								5E-04					1E+01
RECEPTOR TOTAL								5E-04					1.0E+01
							TOTAL RISK ACROSS ALL MEDIA	5E-04	TOTAL HAZARD ACROSS ALL MEDIA				1.0E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	1.5E+00
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	--
TOTAL IMMUNE SYSTEM HI =	8.4E+00
TOTAL KIDNEY HI =	2.7E-04
TOTAL LIVER HI =	9.5E-02
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Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.69.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	Acenaphthylene	NC	NA	NA	NA		Liver	6.1E-06	NA	NA	6.1E-06
			Dibenzo(a,h)anthracene	1.3E-07	NA	NA	NA	1.3E-07	Kidney	6.7E-06	NA	NA	6.7E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.5E-04	NA	NA	1.5E-04
			4,4'-DDE	3.2E-07	NA	NA	NA	3.2E-07	Liver	2.2E-02	NA	NA	2.2E-02
			alpha-Chlordane	7.1E-08	NA	NA	NA	7.1E-08	Liver	4.7E-03	NA	NA	4.7E-03
			Aroclor-1254	3.4E-05	NA	NA	NA	3.4E-05	Immune system	9.9E+00	NA	NA	9.9E+00
			Aroclor-1268	1.0E-05	NA	NA	NA	1.0E-05	Immune system	3.0E+00	NA	NA	3.0E+00
			Dieldrin	7.0E-07	NA	NA	NA	7.0E-07	Liver	1.0E-02	NA	NA	1.0E-02
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	2.8E-04	NA	NA	2.8E-04
			gamma-Chlordane	2.6E-08	NA	NA	NA	2.6E-08	Liver	1.7E-03	NA	NA	1.7E-03
			Technical Chlordane	1.7E-06	NA	NA	NA	1.7E-06	Liver	1.2E-01	NA	NA	1.2E-01
			Lead	--	NA	NA	NA		--		NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	7.7E-01	NA	NA	7.7E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.5E+00	NA	NA	2.5E+00
			Toxicity Equivalency (Dioxins/Furans) - Mamm	3.6E-04	NA	NA	NA	3.6E-04		--	NA	NA	
			CHEMICAL TOTAL	4.0E-04	--	--	--	4E-04		1.6E+01	0.0E+00	--	2E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-04					2E+01
	EXPOSURE MEDIUM TOTAL							4E-04					2E+01
FILLET TOTAL								4E-04					2E+01
RECEPTOR TOTAL								4E-04					1.6E+01
			TOTAL RISK ACROSS ALL MEDIA					4E-04	TOTAL HAZARD ACROSS ALL MEDIA				1.6E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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TOTAL DEVELOPMENTAL TOXICITY HI =	2.5E+00
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	--
TOTAL IMMUNE SYSTEM HI =	1.4E+01
TOTAL KIDNEY HI =	4.4E-04
TOTAL LIVER HI =	1.6E-01
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US EPA ARCHIVE DOCUMENT

TABLE G.9.70.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	Acenaphthylene	NC	NA	NA	NA		Liver	3.6E-06	NA	NA	3.6E-06
			Dibenzo(a,h)anthracene	1.5E-07	NA	NA	NA	1.5E-07	Kidney	4.0E-06	NA	NA	4.0E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	8.8E-05	NA	NA	8.8E-05
			4,4'-DDE	3.8E-07	NA	NA	NA	3.8E-07	Liver	1.3E-02	NA	NA	1.3E-02
			alpha-Chlordane	8.4E-08	NA	NA	NA	8.4E-08	Liver	2.8E-03	NA	NA	2.8E-03
			Aroclor-1254	4.0E-05	NA	NA	NA	4.0E-05	Immune system	5.9E+00	NA	NA	5.9E+00
			Aroclor-1268	1.2E-05	NA	NA	NA	1.2E-05	Immune system	1.8E+00	NA	NA	1.8E+00
			Dieldrin	8.3E-07	NA	NA	NA	8.3E-07	Liver	6.0E-03	NA	NA	6.0E-03
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	1.7E-04	NA	NA	1.7E-04
			gamma-Chlordane	3.1E-08	NA	NA	NA	3.1E-08	Liver	1.0E-03	NA	NA	1.0E-03
			Technical Chlordane	2.1E-06	NA	NA	NA	2.1E-06	Liver	6.9E-02	NA	NA	6.9E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	4.6E-01	NA	NA	4.6E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.5E+00	NA	NA	1.5E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.2E-04	NA	NA	NA	4.2E-04		--	NA	NA	
			CHEMICAL TOTAL	4.8E-04	--	--	--	5E-04		9.7E+00	0.0E+00	--	1E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-04					1E+01
	EXPOSURE MEDIUM TOTAL							5E-04					1E+01
FILLET TOTAL								5E-04					1E+01
RECEPTOR TOTAL								5E-04					9.7E+00
							TOTAL RISK ACROSS ALL MEDIA	5E-04	TOTAL HAZARD ACROSS ALL MEDIA				9.7E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.5E+00
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TOTAL IMMUNE SYSTEM HI =	8.1E+00
TOTAL KIDNEY HI =	2.6E-04
TOTAL LIVER HI =	9.2E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.71.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	Acenaphthylene	NC	NA	NA	NA		Liver	3.8E-06	NA	NA	3.8E-06
			Dibenzo(a,h)anthracene	1.6E-07	NA	NA	NA	1.6E-07	Kidney	4.1E-06	NA	NA	4.1E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	9.1E-05	NA	NA	9.1E-05
			4,4'-DDE	4.0E-07	NA	NA	NA	4.0E-07	Liver	1.4E-02	NA	NA	1.4E-02
			alpha-Chlordane	8.7E-08	NA	NA	NA	8.7E-08	Liver	2.9E-03	NA	NA	2.9E-03
			Aroclor-1254	4.2E-05	NA	NA	NA	4.2E-05	Immune system	6.1E+00	NA	NA	6.1E+00
			Aroclor-1268	1.3E-05	NA	NA	NA	1.3E-05	Immune system	1.9E+00	NA	NA	1.9E+00
			Dieldrin	8.6E-07	NA	NA	NA	8.6E-07	Liver	6.3E-03	NA	NA	6.3E-03
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	1.7E-04	NA	NA	1.7E-04
			gamma-Chlordane	3.2E-08	NA	NA	NA	3.2E-08	Liver	1.1E-03	NA	NA	1.1E-03
			Technical Chlordane	2.1E-06	NA	NA	NA	2.1E-06	Liver	7.1E-02	NA	NA	7.1E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	4.7E-01	NA	NA	4.7E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.5E+00	NA	NA	1.5E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.4E-04	NA	NA	NA	4.4E-04		--	NA	NA	
			CHEMICAL TOTAL	5.0E-04	--	--	--	5E-04		1.0E+01	0.0E+00	--	1E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-04					1E+01
	EXPOSURE MEDIUM TOTAL							5E-04					1E+01
FILLET TOTAL								5E-04					1E+01
RECEPTOR TOTAL								5E-04					1.0E+01
			TOTAL RISK ACROSS ALL MEDIA					5E-04	TOTAL HAZARD ACROSS ALL MEDIA				1.0E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	1.5E+00
	--
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	--
TOTAL IMMUNE SYSTEM HI =	8.4E+00
TOTAL KIDNEY HI =	2.7E-04
TOTAL LIVER HI =	9.5E-02
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Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.72.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	Acenaphthylene	NC	NA	NA	NA		Liver	6.1E-06	NA	NA	6.1E-06
			Dibenzo(a,h)anthracene	1.3E-07	NA	NA	NA	1.3E-07	Kidney	6.7E-06	NA	NA	6.7E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.5E-04	NA	NA	1.5E-04
			4,4'-DDE	3.2E-07	NA	NA	NA	3.2E-07	Liver	2.2E-02	NA	NA	2.2E-02
			alpha-Chlordane	7.1E-08	NA	NA	NA	7.1E-08	Liver	4.7E-03	NA	NA	4.7E-03
			Aroclor-1254	3.4E-05	NA	NA	NA	3.4E-05	Immune system	9.9E+00	NA	NA	9.9E+00
			Aroclor-1268	1.0E-05	NA	NA	NA	1.0E-05	Immune system	3.0E+00	NA	NA	3.0E+00
			Dieldrin	7.0E-07	NA	NA	NA	7.0E-07	Liver	1.0E-02	NA	NA	1.0E-02
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	2.8E-04	NA	NA	2.8E-04
			gamma-Chlordane	2.6E-08	NA	NA	NA	2.6E-08	Liver	1.7E-03	NA	NA	1.7E-03
			Technical Chlordane	1.7E-06	NA	NA	NA	1.7E-06	Liver	1.2E-01	NA	NA	1.2E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	7.7E-01	NA	NA	7.7E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.5E+00	NA	NA	2.5E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.6E-04	NA	NA	NA	3.6E-04		--	NA	NA	
			CHEMICAL TOTAL	4.0E-04	--	--	--	4E-04		1.6E+01	0.0E+00	--	2E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-04					2E+01
	EXPOSURE MEDIUM TOTAL							4E-04					2E+01
FILLET TOTAL								4E-04					2E+01
RECEPTOR TOTAL								4E-04					1.6E+01
							TOTAL RISK ACROSS ALL MEDIA	4E-04	TOTAL HAZARD ACROSS ALL MEDIA				1.6E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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TOTAL DEVELOPMENTAL TOXICITY HI =	2.5E+00
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	--
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	--
TOTAL IMMUNE SYSTEM HI =	1.4E+01
TOTAL KIDNEY HI =	4.4E-04
TOTAL LIVER HI =	1.6E-01
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US EPA ARCHIVE DOCUMENT

TABLE G.9.73.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	Acenaphthylene	NC	NA	NA	NA		Liver	8.3E-06	NA	NA	8.3E-06
			Dibenzo(a,h)anthracene	4.9E-07	NA	NA	NA	4.9E-07	Kidney	3.0E-06	NA	NA	3.0E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.1E-04	NA	NA	1.1E-04
			4,4'-DDD	3.8E-06	NA	NA	NA	3.8E-06	Liver	4.3E-02	NA	NA	4.3E-02
			4,4'-DDE	2.0E-06	NA	NA	NA	2.0E-06	Liver	1.6E-02	NA	NA	1.6E-02
			4,4'-DDT	2.0E-06	NA	NA	NA	2.0E-06	Liver	1.6E-02	NA	NA	1.6E-02
			alpha-Chlordane	2.6E-06	NA	NA	NA	2.6E-06	Liver	2.0E-02	NA	NA	2.0E-02
			Aroclor-1254	3.5E-04	NA	NA	NA	3.5E-04	Immune system	1.2E+01	NA	NA	1.2E+01
			Dieldrin	6.9E-05	NA	NA	NA	6.9E-05	Liver	1.2E-01	NA	NA	1.2E-01
			gamma-Chlordane	9.4E-07	NA	NA	NA	9.4E-07	Liver	7.2E-03	NA	NA	7.2E-03
			Heptachlor Epoxide	8.2E-06	NA	NA	NA	8.2E-06	Liver	9.3E-02	NA	NA	9.3E-02
			Technical Chlordane	5.4E-05	NA	NA	NA	5.4E-05	Liver	4.1E-01	NA	NA	4.1E-01
			Cadmium	NC	NA	NA	NA		Kidney	1.4E-01	NA	NA	1.4E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	8.7E-02	NA	NA	8.7E-02
			Mercury	NC	NA	NA	NA		Immune system	2.0E-01	NA	NA	2.0E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	6.5E-01	NA	NA	6.5E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.5E-03	NA	NA	NA	4.5E-03		--	NA	NA	
			CHEMICAL TOTAL	5.0E-03	--	--	--	5E-03		1.4E+01	0.0E+00	--	1.4E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-03					1.4E+01
	EXPOSURE MEDIUM TOTAL							5E-03					1.4E+01
WHOLE BODY TOTAL								5E-03					1.4E+01
RECEPTOR TOTAL								5E-03					1.4E+01
							TOTAL RISK ACROSS ALL MEDIA	5E-03	TOTAL HAZARD ACROSS ALL MEDIA				1.4E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	6.5E-01
	--
	--
	--
	--
TOTAL IMMUNE SYSTEM HI =	1.2E+01
TOTAL KIDNEY HI =	1.4E-01
TOTAL LIVER HI =	7.2E-01
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	--
TOTAL NOAEL HI =	8.7E-02
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Prepared by: KJA
Checked by: AWS

US EPA ARCHIVE DOCUMENT

TABLE G.9.74.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	Acenaphthylene	NC	NA	NA	NA		Liver	8.6E-06	NA	NA	8.6E-06
			Dibenzo(a,h)anthracene	1.2E-07	NA	NA	NA	1.2E-07	Kidney	3.1E-06	NA	NA	3.1E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.2E-04	NA	NA	1.2E-04
			4,4'-DDD	9.2E-07	NA	NA	NA	9.2E-07	Liver	4.5E-02	NA	NA	4.5E-02
			4,4'-DDE	4.7E-07	NA	NA	NA	4.7E-07	Liver	1.6E-02	NA	NA	1.6E-02
			4,4'-DDT	4.7E-07	NA	NA	NA	4.7E-07	Liver	1.6E-02	NA	NA	1.6E-02
			alpha-Chlordane	6.3E-07	NA	NA	NA	6.3E-07	Liver	2.1E-02	NA	NA	2.1E-02
			Aroclor-1254	8.5E-05	NA	NA	NA	8.5E-05	Immune system	1.2E+01	NA	NA	1.2E+01
			Dieldrin	1.6E-05	NA	NA	NA	1.6E-05	Liver	1.2E-01	NA	NA	1.2E-01
			gamma-Chlordane	2.2E-07	NA	NA	NA	2.2E-07	Liver	7.5E-03	NA	NA	7.5E-03
			Heptachlor Epoxide	2.0E-06	NA	NA	NA	2.0E-06	Liver	9.6E-02	NA	NA	9.6E-02
			Technical Chlordane	1.3E-05	NA	NA	NA	1.3E-05	Liver	4.3E-01	NA	NA	4.3E-01
			Cadmium	NC	NA	NA	NA		Kidney	1.4E-01	NA	NA	1.4E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	9.0E-02	NA	NA	9.0E-02
			Mercury	NC	NA	NA	NA		Immune system	2.1E-01	NA	NA	2.1E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	6.7E-01	NA	NA	6.7E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.1E-03	NA	NA	NA	1.1E-03		--	NA	NA	
			CHEMICAL TOTAL	1.2E-03	--	--	--	1E-03		1.4E+01	0.0E+00	--	1.4E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-03					1.4E+01
	EXPOSURE MEDIUM TOTAL							1E-03					1.4E+01
WHOLE BODY TOTAL								1E-03					1.4E+01
RECEPTOR TOTAL								1E-03					1.4E+01
			TOTAL RISK ACROSS ALL MEDIA					1E-03	TOTAL HAZARD ACROSS ALL MEDIA				1.4E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	6.7E-01
	--
	--
	--
	--
TOTAL IMMUNE SYSTEM HI =	1.3E+01
TOTAL KIDNEY HI =	1.4E-01
TOTAL LIVER HI =	7.5E-01
	--
	--
TOTAL NOAEL HI =	9.0E-02
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	--
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Prepared by: KJA
Checked by: AWS

US EPA ARCHIVE DOCUMENT

TABLE G.9.7S.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.4E-05	NA	NA	1.4E-05
			Dibenzo(a,h)anthracene	9.5E-08	NA	NA	NA	9.5E-08	Kidney	5.1E-06	NA	NA	5.1E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.9E-04	NA	NA	1.9E-04
			4,4'-DDD	7.5E-07	NA	NA	NA	7.5E-07	Liver	7.3E-02	NA	NA	7.3E-02
			4,4'-DDE	3.8E-07	NA	NA	NA	3.8E-07	Liver	2.6E-02	NA	NA	2.6E-02
			4,4'-DDT	3.8E-07	NA	NA	NA	3.8E-07	Liver	2.6E-02	NA	NA	2.6E-02
			alpha-Chlordane	5.1E-07	NA	NA	NA	5.1E-07	Liver	3.4E-02	NA	NA	3.4E-02
			Aroclor-1254	6.9E-05	NA	NA	NA	6.9E-05	Immune system	2.0E+01	NA	NA	2.0E+01
			Dieldrin	1.3E-05	NA	NA	NA	1.3E-05	Liver	1.9E-01	NA	NA	1.9E-01
			gamma-Chlordane	1.8E-07	NA	NA	NA	1.8E-07	Liver	1.2E-02	NA	NA	1.2E-02
			Heptachlor Epoxide	1.6E-06	NA	NA	NA	1.6E-06	Liver	1.6E-01	NA	NA	1.6E-01
			Technical Chlordane	1.0E-05	NA	NA	NA	1.0E-05	Liver	6.9E-01	NA	NA	6.9E-01
			Cadmium	NC	NA	NA	NA		Kidney	2.3E-01	NA	NA	2.3E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	1.5E-01	NA	NA	1.5E-01
			Mercury	NC	NA	NA	NA		Immune system	3.4E-01	NA	NA	3.4E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.1E+00	NA	NA	1.1E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	8.7E-04	NA	NA	NA	8.7E-04		--	NA	NA	
			CHEMICAL TOTAL	9.7E-04	--	--	--	1E-03		2.3E+01	0.0E+00	--	2.3E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-03					2.3E+01
	EXPOSURE MEDIUM TOTAL							1E-03					2.3E+01
WHOLE BODY TOTAL								1E-03					2.3E+01
RECEPTOR TOTAL								1E-03					2.3E+01
			TOTAL RISK ACROSS ALL MEDIA					1E-03	TOTAL HAZARD ACROSS ALL MEDIA				2.3E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	1.1E+00
	--
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	--
	--
TOTAL IMMUNE SYSTEM HI =	2.0E+01
TOTAL KIDNEY HI =	2.3E-01
TOTAL LIVER HI =	1.2E+00
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	--
TOTAL NOAEL HI =	1.5E-01
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Prepared by: KJA
Checked by: AWS

US EPA ARCHIVE DOCUMENT

TABLE G.9.76.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	Acenaphthylene	NC	NA	NA	NA		Liver	8.3E-06	NA	NA	8.3E-06
			Dibenzo(a,h)anthracene	1.1E-07	NA	NA	NA	1.1E-07	Kidney	3.0E-06	NA	NA	3.0E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.1E-04	NA	NA	1.1E-04
			4,4'-DDD	8.9E-07	NA	NA	NA	8.9E-07	Liver	4.3E-02	NA	NA	4.3E-02
			4,4'-DDE	4.6E-07	NA	NA	NA	4.6E-07	Liver	1.6E-02	NA	NA	1.6E-02
			4,4'-DDT	4.5E-07	NA	NA	NA	4.5E-07	Liver	1.6E-02	NA	NA	1.6E-02
			alpha-Chlordane	6.1E-07	NA	NA	NA	6.1E-07	Liver	2.0E-02	NA	NA	2.0E-02
			Aroclor-1254	8.2E-05	NA	NA	NA	8.2E-05	Immune system	1.2E+01	NA	NA	1.2E+01
			Dieldrin	1.6E-05	NA	NA	NA	1.6E-05	Liver	1.2E-01	NA	NA	1.2E-01
			gamma-Chlordane	2.2E-07	NA	NA	NA	2.2E-07	Liver	7.2E-03	NA	NA	7.2E-03
			Heptachlor Epoxide	1.9E-06	NA	NA	NA	1.9E-06	Liver	9.3E-02	NA	NA	9.3E-02
			Technical Chlordane	1.2E-05	NA	NA	NA	1.2E-05	Liver	4.1E-01	NA	NA	4.1E-01
			Cadmium	NC	NA	NA	NA		Kidney	1.4E-01	NA	NA	1.4E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	8.7E-02	NA	NA	8.7E-02
			Mercury	NC	NA	NA	NA		Immune system	2.0E-01	NA	NA	2.0E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	6.5E-01	NA	NA	6.5E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.0E-03	NA	NA	NA	1.0E-03		--	NA	NA	
			CHEMICAL TOTAL	1.1E-03	--	--	--	1E-03		1.4E+01	0.0E+00	--	1.4E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-03					1.4E+01
	EXPOSURE MEDIUM TOTAL							1E-03					1.4E+01
WHOLE BODY TOTAL								1E-03					1.4E+01
RECEPTOR TOTAL								1E-03					1.4E+01
			TOTAL RISK ACROSS ALL MEDIA					1E-03	TOTAL HAZARD ACROSS ALL MEDIA				1.4E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
--- Not calculated, dose-response data and/or dermal absorption values are not available.

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	6.5E-01
	--
	--
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	--
TOTAL IMMUNE SYSTEM HI =	1.2E+01
TOTAL KIDNEY HI =	1.4E-01
TOTAL LIVER HI =	7.2E-01
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	--
TOTAL NOAEL HI =	8.7E-02
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	--
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Prepared by: KJA
Checked by: AWS

US EPA ARCHIVE DOCUMENT

TABLE G.9.77.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	Acenaphthylene	NC	NA	NA	NA		Liver	8.6E-06	NA	NA	8.6E-06
			Dibenzo(a,h)anthracene	1.2E-07	NA	NA	NA	1.2E-07	Kidney	3.1E-06	NA	NA	3.1E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.2E-04	NA	NA	1.2E-04
			4,4'-DDD	9.2E-07	NA	NA	NA	9.2E-07	Liver	4.5E-02	NA	NA	4.5E-02
			4,4'-DDE	4.7E-07	NA	NA	NA	4.7E-07	Liver	1.6E-02	NA	NA	1.6E-02
			4,4'-DDT	4.7E-07	NA	NA	NA	4.7E-07	Liver	1.6E-02	NA	NA	1.6E-02
			alpha-Chlordane	6.3E-07	NA	NA	NA	6.3E-07	Liver	2.1E-02	NA	NA	2.1E-02
			Aroclor-1254	8.5E-05	NA	NA	NA	8.5E-05	Immune system	1.2E+01	NA	NA	1.2E+01
			Dieldrin	1.6E-05	NA	NA	NA	1.6E-05	Liver	1.2E-01	NA	NA	1.2E-01
			gamma-Chlordane	2.2E-07	NA	NA	NA	2.2E-07	Liver	7.5E-03	NA	NA	7.5E-03
			Heptachlor Epoxide	2.0E-06	NA	NA	NA	2.0E-06	Liver	9.6E-02	NA	NA	9.6E-02
			Technical Chlordane	1.3E-05	NA	NA	NA	1.3E-05	Liver	4.3E-01	NA	NA	4.3E-01
			Cadmium	NC	NA	NA	NA		Kidney	1.4E-01	NA	NA	1.4E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	9.0E-02	NA	NA	9.0E-02
			Mercury	NC	NA	NA	NA		Immune system	2.1E-01	NA	NA	2.1E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	6.7E-01	NA	NA	6.7E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.1E-03	NA	NA	NA	1.1E-03		--	NA	NA	
			CHEMICAL TOTAL	1.2E-03	--	--	--	1E-03		1.4E+01	0.0E+00	--	1.4E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-03					1.4E+01
	EXPOSURE MEDIUM TOTAL							1E-03					1.4E+01
WHOLE BODY TOTAL								1E-03					1.4E+01
RECEPTOR TOTAL								1E-03					1.4E+01
							TOTAL RISK ACROSS ALL MEDIA	1E-03	TOTAL HAZARD ACROSS ALL MEDIA				1.4E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	6.7E-01
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	--
TOTAL IMMUNE SYSTEM HI =	1.3E+01
TOTAL KIDNEY HI =	1.4E-01
TOTAL LIVER HI =	7.5E-01
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	--
TOTAL NOAEL HI =	9.0E-02
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	--
	--

Prepared by: KJA
Checked by: AWS

US EPA ARCHIVE DOCUMENT

TABLE G.9.78.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.4E-05	NA	NA	1.4E-05
			Dibenzo(a,h)anthracene	9.5E-08	NA	NA	NA	9.5E-08	Kidney	5.1E-06	NA	NA	5.1E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.9E-04	NA	NA	1.9E-04
			4,4'-DDD	7.5E-07	NA	NA	NA	7.5E-07	Liver	7.3E-02	NA	NA	7.3E-02
			4,4'-DDE	3.8E-07	NA	NA	NA	3.8E-07	Liver	2.6E-02	NA	NA	2.6E-02
			4,4'-DDT	3.8E-07	NA	NA	NA	3.8E-07	Liver	2.6E-02	NA	NA	2.6E-02
			alpha-Chlordane	5.1E-07	NA	NA	NA	5.1E-07	Liver	3.4E-02	NA	NA	3.4E-02
			Aroclor-1254	6.9E-05	NA	NA	NA	6.9E-05	Immune system	2.0E+01	NA	NA	2.0E+01
			Dieldrin	1.3E-05	NA	NA	NA	1.3E-05	Liver	1.9E-01	NA	NA	1.9E-01
			gamma-Chlordane	1.8E-07	NA	NA	NA	1.8E-07	Liver	1.2E-02	NA	NA	1.2E-02
			Heptachlor Epoxide	1.6E-06	NA	NA	NA	1.6E-06	Liver	1.6E-01	NA	NA	1.6E-01
			Technical Chlordane	1.0E-05	NA	NA	NA	1.0E-05	Liver	6.9E-01	NA	NA	6.9E-01
			Cadmium	NC	NA	NA	NA		Kidney	2.3E-01	NA	NA	2.3E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	1.5E-01	NA	NA	1.5E-01
			Mercury	NC	NA	NA	NA		Immune system	3.4E-01	NA	NA	3.4E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.1E+00	NA	NA	1.1E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	8.7E-04	NA	NA	NA	8.7E-04		--	NA	NA	
			CHEMICAL TOTAL	9.7E-04	--	--	--	1E-03		2.3E+01	0.0E+00	--	2.3E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-03					2.3E+01
	EXPOSURE MEDIUM TOTAL							1E-03					2.3E+01
WHOLE BODY TOTAL								1E-03					2.3E+01
RECEPTOR TOTAL								1E-03					2.3E+01
			TOTAL RISK ACROSS ALL MEDIA					1E-03	TOTAL HAZARD ACROSS ALL MEDIA				2.3E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

	--
	--
TOTAL DEVELOPMENTAL TOXICITY HI =	1.1E+00
	--
	--
	--
	--
TOTAL IMMUNE SYSTEM HI =	2.0E+01
TOTAL KIDNEY HI =	2.3E-01
TOTAL LIVER HI =	1.2E+00
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TOTAL NOAEL HI =	1.5E-01
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	--
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Prepared by: KJA
Checked by: AWS

US EPA ARCHIVE DOCUMENT

TABLE G.9.1.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - AMERICAN EEL - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	3.4E-06	NA	NA	3.4E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.8E-05	NA	NA	1.8E-05
			4,4'-DDD	4.1E-08	NA	NA	NA	4.1E-08	Liver	2.0E-03	NA	NA	2.0E-03
			4,4'-DDE	2.2E-07	NA	NA	NA	2.2E-07	Liver	7.6E-03	NA	NA	7.6E-03
			alpha-Chlordane	3.2E-08	NA	NA	NA	3.2E-08	Liver	1.1E-03	NA	NA	1.1E-03
			Aroclor-1254	2.4E-06	NA	NA	NA	2.4E-06	Immune system	3.4E-01	NA	NA	3.4E-01
			Dieldrin	7.7E-07	NA	NA	NA	7.7E-07	Liver	5.6E-03	NA	NA	5.6E-03
			gamma-Chlordane	1.2E-08	NA	NA	NA	1.2E-08	Liver	3.9E-04	NA	NA	3.9E-04
			Heptachlor Epoxide	2.6E-07	NA	NA	NA	2.6E-07	Liver	1.3E-02	NA	NA	1.3E-02
			Technical Chlordane	1.5E-06	NA	NA	NA	1.5E-06	Liver	5.0E-02	NA	NA	5.0E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	6.7E-02	NA	NA	6.7E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.9E-01	NA	NA	1.9E-01
			Zinc	NC	NA	NA	NA		Hematological system	1.2E-02	NA	NA	1.2E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.1E-06	NA	NA	NA	3.1E-06		--	NA	NA	
			CHEMICAL TOTAL	8.3E-06	--	--	--	8E-06		7.0E-01	0.0E+00	--	7.0E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						8E-06					7.0E-01
	EXPOSURE MEDIUM TOTAL							8E-06					7.0E-01
WHOLE BODY TOTAL								8E-06					7.0E-01
RECEPTOR TOTAL								8E-06					7.0E-01
			TOTAL RISK ACROSS ALL MEDIA					8E-06	TOTAL HAZARD ACROSS ALL MEDIA				7.0E-01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	1.9E-01
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	--
TOTAL HEMATOLOGICAL SYSTEM HI =	1.2E-02
TOTAL IMMUNE SYSTEM HI =	4.1E-01
TOTAL KIDNEY HI =	1.8E-05
TOTAL LIVER HI =	8.0E-02
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Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.2.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - AMERICAN EEL - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.7E-06	NA	NA	2.7E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.4E-05	NA	NA	1.4E-05
			4,4'-DDD	3.2E-08	NA	NA	NA	3.2E-08	Liver	1.6E-03	NA	NA	1.6E-03
			4,4'-DDE	1.7E-07	NA	NA	NA	1.7E-07	Liver	6.0E-03	NA	NA	6.0E-03
			alpha-Chlordane	2.5E-08	NA	NA	NA	2.5E-08	Liver	8.5E-04	NA	NA	8.5E-04
			Aroclor-1254	1.8E-06	NA	NA	NA	1.8E-06	Immune system	2.7E-01	NA	NA	2.7E-01
			Dieldrin	6.0E-07	NA	NA	NA	6.0E-07	Liver	4.4E-03	NA	NA	4.4E-03
			gamma-Chlordane	9.0E-09	NA	NA	NA	9.0E-09	Liver	3.0E-04	NA	NA	3.0E-04
			Heptachlor Epoxide	2.0E-07	NA	NA	NA	2.0E-07	Liver	1.0E-02	NA	NA	1.0E-02
			Technical Chlordane	1.2E-06	NA	NA	NA	1.2E-06	Liver	3.9E-02	NA	NA	3.9E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	5.2E-02	NA	NA	5.2E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.5E-01	NA	NA	1.5E-01
			Zinc	NC	NA	NA	NA		Hematological system	9.5E-03	NA	NA	9.5E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.4E-06	NA	NA	NA	2.4E-06		--	NA	NA	
			CHEMICAL TOTAL	6.5E-06	--	--	--	7E-06		5.4E-01	0.0E+00	--	5.4E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-06					5.4E-01
	EXPOSURE MEDIUM TOTAL							7E-06					5.4E-01
WHOLE BODY TOTAL								7E-06					5.4E-01
RECEPTOR TOTAL								7E-06					5.4E-01
			TOTAL RISK ACROSS ALL MEDIA					7E-06	TOTAL HAZARD ACROSS ALL MEDIA				5.4E-01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	1.5E-01
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	--
TOTAL HEMATOLOGICAL SYSTEM HI =	9.5E-03
TOTAL IMMUNE SYSTEM HI =	3.2E-01
TOTAL KIDNEY HI =	1.4E-05
TOTAL LIVER HI =	6.2E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.3.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - AMERICAN EEL - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	5.7E-06	NA	NA	5.7E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	3.0E-05	NA	NA	3.0E-05
			4,4'-DDD	3.4E-08	NA	NA	NA	3.4E-08	Liver	3.3E-03	NA	NA	3.3E-03
			4,4'-DDE	1.8E-07	NA	NA	NA	1.8E-07	Liver	1.3E-02	NA	NA	1.3E-02
			alpha-Chlordane	2.7E-08	NA	NA	NA	2.7E-08	Liver	1.8E-03	NA	NA	1.8E-03
			Aroclor-1254	2.0E-06	NA	NA	NA	2.0E-06	Immune system	5.7E-01	NA	NA	5.7E-01
			Dieldrin	6.4E-07	NA	NA	NA	6.4E-07	Liver	9.4E-03	NA	NA	9.4E-03
			gamma-Chlordane	9.6E-09	NA	NA	NA	9.6E-09	Liver	6.4E-04	NA	NA	6.4E-04
			Heptachlor Epoxide	2.2E-07	NA	NA	NA	2.2E-07	Liver	2.1E-02	NA	NA	2.1E-02
			Technical Chlordane	1.3E-06	NA	NA	NA	1.3E-06	Liver	8.4E-02	NA	NA	8.4E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.1E-01	NA	NA	1.1E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	3.2E-01	NA	NA	3.2E-01
			Zinc	NC	NA	NA	NA		Hematological system	2.0E-02	NA	NA	2.0E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.6E-06	NA	NA	NA	2.6E-06		--	NA	NA	
			CHEMICAL TOTAL	6.9E-06	--	--	--	7E-06		1.2E+00	0.0E+00	--	1.2E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-06					1.2E+00
	EXPOSURE MEDIUM TOTAL							7E-06					1.2E+00
WHOLE BODY TOTAL								7E-06					1.2E+00
RECEPTOR TOTAL								7E-06					1.2E+00
			TOTAL RISK ACROSS ALL MEDIA					7E-06	TOTAL HAZARD ACROSS ALL MEDIA				1.2E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	3.2E-01
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	--
TOTAL HEMATOLOGICAL SYSTEM HI =	2.0E-02
TOTAL IMMUNE SYSTEM HI =	6.8E-01
TOTAL KIDNEY HI =	3.0E-05
TOTAL LIVER HI =	1.3E-01
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Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.9.4.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - AMERICAN EEL - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	3.4E-06	NA	NA	3.4E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.8E-05	NA	NA	1.8E-05
			4,4'-DDD	3.1E-08	NA	NA	NA	3.1E-08	Liver	2.0E-03	NA	NA	2.0E-03
			4,4'-DDE	1.7E-07	NA	NA	NA	1.7E-07	Liver	7.6E-03	NA	NA	7.6E-03
			alpha-Chlordane	2.4E-08	NA	NA	NA	2.4E-08	Liver	1.1E-03	NA	NA	1.1E-03
			Aroclor-1254	1.8E-06	NA	NA	NA	1.8E-06	Immune system	3.4E-01	NA	NA	3.4E-01
			Dieldrin	5.8E-07	NA	NA	NA	5.8E-07	Liver	5.6E-03	NA	NA	5.6E-03
			gamma-Chlordane	8.7E-09	NA	NA	NA	8.7E-09	Liver	3.9E-04	NA	NA	3.9E-04
			Heptachlor Epoxide	1.9E-07	NA	NA	NA	1.9E-07	Liver	1.3E-02	NA	NA	1.3E-02
			Technical Chlordane	1.1E-06	NA	NA	NA	1.1E-06	Liver	5.0E-02	NA	NA	5.0E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	6.7E-02	NA	NA	6.7E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.9E-01	NA	NA	1.9E-01
			Zinc	NC	NA	NA	NA		Hematological system	1.2E-02	NA	NA	1.2E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.3E-06	NA	NA	NA	2.3E-06		--	NA	NA	
			CHEMICAL TOTAL	6.2E-06	--	--	--	6E-06		7.0E-01	0.0E+00	--	7.0E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-06					7.0E-01
	EXPOSURE MEDIUM TOTAL							6E-06					7.0E-01
WHOLE BODY TOTAL								6E-06					7.0E-01
RECEPTOR TOTAL								6E-06					7.0E-01
			TOTAL RISK ACROSS ALL MEDIA					6E-06	TOTAL HAZARD ACROSS ALL MEDIA				7.0E-01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.9E-01
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	--
TOTAL HEMATOLOGICAL SYSTEM HI =	1.2E-02
TOTAL IMMUNE SYSTEM HI =	4.1E-01
TOTAL KIDNEY HI =	1.8E-05
TOTAL LIVER HI =	8.0E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.5.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - AMERICAN EEL - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.7E-06	NA	NA	2.7E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.4E-05	NA	NA	1.4E-05
			4,4'-DDD	2.4E-08	NA	NA	NA	2.4E-08	Liver	1.6E-03	NA	NA	1.6E-03
			4,4'-DDE	1.3E-07	NA	NA	NA	1.3E-07	Liver	6.0E-03	NA	NA	6.0E-03
			alpha-Chlordane	1.9E-08	NA	NA	NA	1.9E-08	Liver	8.5E-04	NA	NA	8.5E-04
			Aroclor-1254	1.4E-06	NA	NA	NA	1.4E-06	Immune system	2.7E-01	NA	NA	2.7E-01
			Dieldrin	4.5E-07	NA	NA	NA	4.5E-07	Liver	4.4E-03	NA	NA	4.4E-03
			gamma-Chlordane	6.8E-09	NA	NA	NA	6.8E-09	Liver	3.0E-04	NA	NA	3.0E-04
			Heptachlor Epoxide	1.5E-07	NA	NA	NA	1.5E-07	Liver	1.0E-02	NA	NA	1.0E-02
			Technical Chlordane	8.8E-07	NA	NA	NA	8.8E-07	Liver	3.9E-02	NA	NA	3.9E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	5.2E-02	NA	NA	5.2E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.5E-01	NA	NA	1.5E-01
			Zinc	NC	NA	NA	NA		Hematological system	9.5E-03	NA	NA	9.5E-03
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.8E-06	NA	NA	NA	1.8E-06		--	NA	NA	
			CHEMICAL TOTAL	4.9E-06	--	--	--	5E-06		5.4E-01	0.0E+00	--	5.4E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-06					5.4E-01
	EXPOSURE MEDIUM TOTAL							5E-06					5.4E-01
WHOLE BODY TOTAL								5E-06					5.4E-01
RECEPTOR TOTAL								5E-06					5.4E-01
			TOTAL RISK ACROSS ALL MEDIA					5E-06	TOTAL HAZARD ACROSS ALL MEDIA				5.4E-01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.5E-01
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TOTAL HEMATOLOGICAL SYSTEM HI =	9.5E-03
TOTAL IMMUNE SYSTEM HI =	3.2E-01
TOTAL KIDNEY HI =	1.4E-05
TOTAL LIVER HI =	6.2E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.6.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - AMERICAN EEL - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	5.7E-06	NA	NA	5.7E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	3.0E-05	NA	NA	3.0E-05
			4,4'-DDD	3.4E-08	NA	NA	NA	3.4E-08	Liver	3.3E-03	NA	NA	3.3E-03
			4,4'-DDE	1.8E-07	NA	NA	NA	1.8E-07	Liver	1.3E-02	NA	NA	1.3E-02
			alpha-Chlordane	2.7E-08	NA	NA	NA	2.7E-08	Liver	1.8E-03	NA	NA	1.8E-03
			Aroclor-1254	2.0E-06	NA	NA	NA	2.0E-06	Immune system	5.7E-01	NA	NA	5.7E-01
			Dieldrin	6.4E-07	NA	NA	NA	6.4E-07	Liver	9.4E-03	NA	NA	9.4E-03
			gamma-Chlordane	9.6E-09	NA	NA	NA	9.6E-09	Liver	6.4E-04	NA	NA	6.4E-04
			Heptachlor Epoxide	2.2E-07	NA	NA	NA	2.2E-07	Liver	2.1E-02	NA	NA	2.1E-02
			Technical Chlordane	1.3E-06	NA	NA	NA	1.3E-06	Liver	8.4E-02	NA	NA	8.4E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.1E-01	NA	NA	1.1E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	3.2E-01	NA	NA	3.2E-01
			Zinc	NC	NA	NA	NA		Hematological system	2.0E-02	NA	NA	2.0E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.6E-06	NA	NA	NA	2.6E-06		--	NA	NA	
			CHEMICAL TOTAL	6.9E-06	--	--	--	7E-06		1.2E+00	0.0E+00	--	1.2E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-06					1.2E+00
	EXPOSURE MEDIUM TOTAL							7E-06					1.2E+00
WHOLE BODY TOTAL								7E-06					1.2E+00
RECEPTOR TOTAL								7E-06					1.2E+00
							TOTAL RISK ACROSS ALL MEDIA	7E-06	TOTAL HAZARD ACROSS ALL MEDIA				1.2E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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TOTAL DEVELOPMENTAL TOXICITY HI =	3.2E-01
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	--
TOTAL HEMATOLOGICAL SYSTEM HI =	2.0E-02
TOTAL IMMUNE SYSTEM HI =	6.8E-01
TOTAL KIDNEY HI =	3.0E-05
TOTAL LIVER HI =	1.3E-01
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US EPA ARCHIVE DOCUMENT

TABLE G.9.7.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - LARGEMOUTH BASS - FILLET - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.1E-06	NA	NA	1.1E-06
			Benzo(a)pyrene	2.3E-07	NA	NA	NA	2.3E-07	Kidney	6.1E-06	NA	NA	6.1E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	7.8E-06	NA	NA	7.8E-06
			4,4'-DDE	5.9E-08	NA	NA	NA	5.9E-08	Liver	2.0E-03	NA	NA	2.0E-03
			alpha-Chlordane	4.0E-09	NA	NA	NA	4.0E-09	Liver	1.3E-04	NA	NA	1.3E-04
			Mercury	NC	NA	NA	NA		Immune system	1.8E-01	NA	NA	1.8E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	6.5E-01	NA	NA	6.5E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.0E-05	NA	NA	NA	1.0E-05		--	NA	NA	
			CHEMICAL TOTAL	1.0E-05	--	--	--	1E-05		8.3E-01	0.0E+00	--	8E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-05					8E-01
	EXPOSURE MEDIUM TOTAL							1E-05					8E-01
FILLET TOTAL								1E-05					8E-01
RECEPTOR TOTAL								*1E-05*					*8.3E-01*
							TOTAL RISK ACROSS ALL MEDIA	1E-05	TOTAL HAZARD ACROSS ALL MEDIA				8.3E-01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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TOTAL DEVELOPMENTAL TOXICITY HI =	6.5E-01
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TOTAL IMMUNE SYSTEM HI =	1.8E-01
TOTAL KIDNEY HI =	1.4E-05
TOTAL LIVER HI =	2.2E-03
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US EPA ARCHIVE DOCUMENT

TABLE G.9.8.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - LARGEMOUTH BASS - FILLET - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	8.5E-07	NA	NA	8.5E-07
			Benzo(a)pyrene	1.8E-07	NA	NA	NA	1.8E-07	Kidney	4.8E-06	NA	NA	4.8E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	6.1E-06	NA	NA	6.1E-06
			4,4'-DDE	4.6E-08	NA	NA	NA	4.6E-08	Liver	1.6E-03	NA	NA	1.6E-03
			alpha-Chlordane	3.1E-09	NA	NA	NA	3.1E-09	Liver	1.0E-04	NA	NA	1.0E-04
			Mercury	NC	NA	NA	NA		Immune system	1.4E-01	NA	NA	1.4E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.1E-01	NA	NA	5.1E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	7.9E-06	NA	NA	NA	7.9E-06		--	NA	NA	
			CHEMICAL TOTAL	8.1E-06	--	--	--	8E-06		6.5E-01	0.0E+00	--	7E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						8E-06					7E-01
	EXPOSURE MEDIUM TOTAL							8E-06					7E-01
FILLET TOTAL								8E-06					7E-01

RECEPTOR TOTAL		8E-06	6.5E-01
	TOTAL RISK ACROSS ALL MEDIA	8E-06	TOTAL HAZARD ACROSS ALL MEDIA 6.5E-01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	5.1E-01
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TOTAL IMMUNE SYSTEM HI =	1.4E-01
TOTAL KIDNEY HI =	1.1E-05
TOTAL LIVER HI =	1.7E-03
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US EPA ARCHIVE DOCUMENT

TABLE G.9.9.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - LARGEMOUTH BASS - FILLET - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.8E-06	NA	NA	1.8E-06
			Benzo(a)pyrene	1.9E-07	NA	NA	NA	1.9E-07	Kidney	1.0E-05	NA	NA	1.0E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.3E-05	NA	NA	1.3E-05
			4,4'-DDE	4.9E-08	NA	NA	NA	4.9E-08	Liver	3.4E-03	NA	NA	3.4E-03
			alpha-Chlordane	3.3E-09	NA	NA	NA	3.3E-09	Liver	2.2E-04	NA	NA	2.2E-04
			Mercury	NC	NA	NA	NA		Immune system	3.0E-01	NA	NA	3.0E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.1E+00	NA	NA	1.1E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	8.4E-06	NA	NA	NA	8.4E-06		--	NA	NA	
			CHEMICAL TOTAL	8.7E-06	--	--	--	9E-06		1.4E+00	0.0E+00	--	1E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						9E-06					1E+00
	EXPOSURE MEDIUM TOTAL							9E-06					1E+00
FILLET TOTAL								9E-06					1E+00
RECEPTOR TOTAL								9E-06					1.4E+00
							TOTAL RISK ACROSS ALL MEDIA	9E-06	TOTAL HAZARD ACROSS ALL MEDIA				1.4E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.1E+00
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TOTAL IMMUNE SYSTEM HI =	3.0E-01
TOTAL KIDNEY HI =	2.3E-05
TOTAL LIVER HI =	3.6E-03
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US EPA ARCHIVE DOCUMENT

TABLE G.9.10.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - LARGEMOUTH BASS - FILLET - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.1E-06	NA	NA	1.1E-06
			Benzo(a)pyrene	1.7E-07	NA	NA	NA	1.7E-07	Kidney	6.1E-06	NA	NA	6.1E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	7.8E-06	NA	NA	7.8E-06
			4,4'-DDE	4.4E-08	NA	NA	NA	4.4E-08	Liver	2.0E-03	NA	NA	2.0E-03
			alpha-Chlordane	3.0E-09	NA	NA	NA	3.0E-09	Liver	1.3E-04	NA	NA	1.3E-04
			Mercury	NC	NA	NA	NA		Immune system	1.8E-01	NA	NA	1.8E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	6.5E-01	NA	NA	6.5E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	7.6E-06	NA	NA	NA	7.6E-06		--	NA	NA	
			CHEMICAL TOTAL	7.8E-06	--	--	--	8E-06		8.3E-01	0.0E+00	--	8E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						8E-06					8E-01
	EXPOSURE MEDIUM TOTAL							8E-06					8E-01
FILLET TOTAL								8E-06					8E-01
RECEPTOR TOTAL								8E-06					8.3E-01
			TOTAL RISK ACROSS ALL MEDIA					8E-06	TOTAL HAZARD ACROSS ALL MEDIA				8.3E-01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	6.5E-01
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TOTAL IMMUNE SYSTEM HI =	1.8E-01
TOTAL KIDNEY HI =	1.4E-05
TOTAL LIVER HI =	2.2E-03
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Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.9.11.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - LARGEMOUTH BASS - FILLET - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	8.5E-07	NA	NA	8.5E-07
			Benzo(a)pyrene	1.3E-07	NA	NA	NA	1.3E-07	Kidney	4.8E-06	NA	NA	4.8E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	6.1E-06	NA	NA	6.1E-06
			4,4'-DDE	3.5E-08	NA	NA	NA	3.5E-08	Liver	1.6E-03	NA	NA	1.6E-03
			alpha-Chlordane	2.4E-09	NA	NA	NA	2.4E-09	Liver	1.0E-04	NA	NA	1.0E-04
			Mercury	NC	NA	NA	NA		Immune system	1.4E-01	NA	NA	1.4E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.1E-01	NA	NA	5.1E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	5.9E-06	NA	NA	NA	5.9E-06		--	NA	NA	
			CHEMICAL TOTAL	6.1E-06	--	--	--	6E-06		6.5E-01	0.0E+00	--	7E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-06					7E-01
	EXPOSURE MEDIUM TOTAL							6E-06					7E-01
FILLET TOTAL								6E-06					7E-01
RECEPTOR TOTAL								6E-06					6.5E-01
							TOTAL RISK ACROSS ALL MEDIA	6E-06	TOTAL HAZARD ACROSS ALL MEDIA				6.5E-01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	5.1E-01
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TOTAL IMMUNE SYSTEM HI =	1.4E-01
TOTAL KIDNEY HI =	1.1E-05
TOTAL LIVER HI =	1.7E-03
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US EPA ARCHIVE DOCUMENT

TABLE G.9.12.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - LARGEMOUTH BASS - FILLET - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.8E-06	NA	NA	1.8E-06
			Benzo(a)pyrene	1.9E-07	NA	NA	NA	1.9E-07	Kidney	1.0E-05	NA	NA	1.0E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.3E-05	NA	NA	1.3E-05
			4,4'-DDE	4.9E-08	NA	NA	NA	4.9E-08	Liver	3.4E-03	NA	NA	3.4E-03
			alpha-Chlordane	3.3E-09	NA	NA	NA	3.3E-09	Liver	2.2E-04	NA	NA	2.2E-04
			Mercury	NC	NA	NA	NA		Immune system	3.0E-01	NA	NA	3.0E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.1E+00	NA	NA	1.1E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	8.4E-06	NA	NA	NA	8.4E-06		--	NA	NA	
			CHEMICAL TOTAL	8.7E-06	--	--	--	9E-06		1.4E+00	0.0E+00	--	1E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						9E-06					1E+00
	EXPOSURE MEDIUM TOTAL							9E-06					1E+00
FILLET TOTAL								9E-06					1E+00
RECEPTOR TOTAL								9E-06					1.4E+00
							TOTAL RISK ACROSS ALL MEDIA	9E-06	TOTAL HAZARD ACROSS ALL MEDIA				1.4E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.1E+00
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TOTAL IMMUNE SYSTEM HI =	3.0E-01
TOTAL KIDNEY HI =	2.3E-05
TOTAL LIVER HI =	3.6E-03
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Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.9.13.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - BROWN BULLHEAD - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	3.3E-06	NA	NA	3.3E-06
			Benzo(a)anthracene	9.0E-08	NA	NA	NA	9.0E-08	Kidney	2.4E-05	NA	NA	2.4E-05
			Benzo(a)pyrene	8.9E-07	NA	NA	NA	8.9E-07	Kidney	2.4E-05	NA	NA	2.4E-05
			Benzo(b)fluoranthene	1.1E-07	NA	NA	NA	1.1E-07	Kidney	3.0E-05	NA	NA	3.0E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.6E-05	NA	NA	1.6E-05
			Dibenzo(a,h)anthracene	2.9E-07	NA	NA	NA	2.9E-07	Kidney	7.8E-06	NA	NA	7.8E-06
			Indeno(1,2,3-cd)pyrene	*7.7E-08*	NA	NA	NA	*7.7E-08*	Kidney	2.0E-05	NA	NA	2.0E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	5.1E-05	NA	NA	5.1E-05
			4,4'-DDE	1.6E-07	NA	NA	NA	1.6E-07	Liver	5.5E-03	NA	NA	5.5E-03
			alpha-Chlordane	2.3E-08	NA	NA	NA	2.3E-08	Liver	7.5E-04	NA	NA	7.5E-04
			gamma-Chlordane	1.2E-08	NA	NA	NA	1.2E-08	Liver	4.1E-04	NA	NA	4.1E-04
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	5.6E-02	NA	NA	5.6E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.7E-01	NA	NA	1.7E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.2E-05	NA	NA	NA	1.2E-05		--	NA	NA	
			CHEMICAL TOTAL	*1.4E-05*	--	--	--	*1E-05*		*2.3E-01*	*0.0E+00*	--	*2.3E-01*
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-05					2.3E-01
	EXPOSURE MEDIUM TOTAL							1E-05					2.3E-01
WHOLE BODY TOTAL								*1E-05*					*2.3E-01*
RECEPTOR TOTAL								**1E-05**					**2.3E-01**
			TOTAL RISK ACROSS ALL MEDIA					**1E-05**	**TOTAL HAZARD ACROSS ALL MEDIA**				**2.3E-01**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.7E-01
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TOTAL IMMUNE SYSTEM HI =	5.6E-02
TOTAL KIDNEY HI =	1.7E-04
TOTAL LIVER HI =	6.7E-03
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US EPA ARCHIVE DOCUMENT

TABLE G.9.14.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - BROWN BULLHEAD - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.6E-06	NA	NA	2.6E-06
			Benzo(a)anthracene	7.1E-08	NA	NA	NA	7.1E-08	Kidney	1.9E-05	NA	NA	1.9E-05
			Benzo(a)pyrene	7.0E-07	NA	NA	NA	7.0E-07	Kidney	1.9E-05	NA	NA	1.9E-05
			Benzo(b)fluoranthene	8.8E-08	NA	NA	NA	8.8E-08	Kidney	2.4E-05	NA	NA	2.4E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.2E-05	NA	NA	1.2E-05
			Dibenzo(a,h)anthracene	2.3E-07	NA	NA	NA	2.3E-07	Kidney	6.1E-06	NA	NA	6.1E-06
			Indeno(1,2,3-cd)pyrene	6.0E-08	NA	NA	NA	6.0E-08	Kidney	1.6E-05	NA	NA	1.6E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	4.0E-05	NA	NA	4.0E-05
			4,4'-DDE	1.3E-07	NA	NA	NA	1.3E-07	Liver	4.3E-03	NA	NA	4.3E-03
			alpha-Chlordane	1.8E-08	NA	NA	NA	1.8E-08	Liver	5.9E-04	NA	NA	5.9E-04
			gamma-Chlordane	9.5E-09	NA	NA	NA	9.5E-09	Liver	3.2E-04	NA	NA	3.2E-04
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	4.3E-02	NA	NA	4.3E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.3E-01	NA	NA	1.3E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	9.4E-06	NA	NA	NA	9.4E-06		--	NA	NA	
			CHEMICAL TOTAL	1.1E-05	--	--	--	1E-05		1.8E-01	0.0E+00	--	1.8E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-05					1.8E-01
	EXPOSURE MEDIUM TOTAL							1E-05					1.8E-01
WHOLE BODY TOTAL								1E-05					1.8E-01
RECEPTOR TOTAL								1E-05					1.8E-01
			TOTAL RISK ACROSS ALL MEDIA					1E-05	TOTAL HAZARD ACROSS ALL MEDIA				1.8E-01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.3E-01
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	--
TOTAL IMMUNE SYSTEM HI =	4.3E-02
TOTAL KIDNEY HI =	1.4E-04
TOTAL LIVER HI =	5.2E-03
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US EPA ARCHIVE DOCUMENT

TABLE G.9.15.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - BROWN BULLHEAD - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	5.5E-06	NA	NA	5.5E-06
			Benzo(a)anthracene	7.5E-08	NA	NA	NA	7.5E-08	Kidney	4.0E-05	NA	NA	4.0E-05
			Benzo(a)pyrene	7.4E-07	NA	NA	NA	7.4E-07	Kidney	3.9E-05	NA	NA	3.9E-05
			Benzo(b)fluoranthene	9.4E-08	NA	NA	NA	9.4E-08	Kidney	5.0E-05	NA	NA	5.0E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	2.6E-05	NA	NA	2.6E-05
			Dibenzo(a,h)anthracene	2.4E-07	NA	NA	NA	2.4E-07	Kidney	1.3E-05	NA	NA	1.3E-05
			Indeno(1,2,3-cd)pyrene	6.4E-08	NA	NA	NA	6.4E-08	Kidney	3.4E-05	NA	NA	3.4E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	8.5E-05	NA	NA	8.5E-05
			4,4'-DDE	1.3E-07	NA	NA	NA	1.3E-07	Liver	9.1E-03	NA	NA	9.1E-03
			alpha-Chlordane	1.9E-08	NA	NA	NA	1.9E-08	Liver	1.3E-03	NA	NA	1.3E-03
			gamma-Chlordane	1.0E-08	NA	NA	NA	1.0E-08	Liver	6.8E-04	NA	NA	6.8E-04
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	9.2E-02	NA	NA	9.2E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.8E-01	NA	NA	2.8E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.0E-05	NA	NA	NA	1.0E-05		--	NA	NA	
			CHEMICAL TOTAL	1.1E-05	--	--	--	1E-05		3.8E-01	0.0E+00	--	3.8E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-05					3.8E-01
	EXPOSURE MEDIUM TOTAL							1E-05					3.8E-01
WHOLE BODY TOTAL								1E-05					3.8E-01
RECEPTOR TOTAL								1E-05					3.8E-01
			TOTAL RISK ACROSS ALL MEDIA					1E-05	TOTAL HAZARD ACROSS ALL MEDIA				3.8E-01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	2.8E-01
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	--
TOTAL IMMUNE SYSTEM HI =	9.2E-02
TOTAL KIDNEY HI =	2.9E-04
TOTAL LIVER HI =	1.1E-02
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Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.9.16.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - BROWN BULLHEAD - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	3.3E-06	NA	NA	3.3E-06
			Benzo(a)anthracene	6.8E-08	NA	NA	NA	6.8E-08	Kidney	2.4E-05	NA	NA	2.4E-05
			Benzo(a)pyrene	6.7E-07	NA	NA	NA	6.7E-07	Kidney	2.4E-05	NA	NA	2.4E-05
			Benzo(b)fluoranthene	8.5E-08	NA	NA	NA	8.5E-08	Kidney	3.0E-05	NA	NA	3.0E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.6E-05	NA	NA	1.6E-05
			Dibenzo(a,h)anthracene	2.2E-07	NA	NA	NA	2.2E-07	Kidney	7.8E-06	NA	NA	7.8E-06
			Indeno(1,2,3-cd)pyrene	5.7E-08	NA	NA	NA	5.7E-08	Kidney	2.0E-05	NA	NA	2.0E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	5.1E-05	NA	NA	5.1E-05
			4,4'-DDE	1.2E-07	NA	NA	NA	1.2E-07	Liver	5.5E-03	NA	NA	5.5E-03
			alpha-Chlordane	1.7E-08	NA	NA	NA	1.7E-08	Liver	7.5E-04	NA	NA	7.5E-04
			gamma-Chlordane	9.2E-09	NA	NA	NA	9.2E-09	Liver	4.1E-04	NA	NA	4.1E-04
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	5.6E-02	NA	NA	5.6E-02
			Mercury (methyl)	NC	NA	NA	NA		*Developmental toxicity*	1.7E-01	NA	NA	1.7E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	9.0E-06	NA	NA	NA	9.0E-06		--	NA	NA	
			CHEMICAL TOTAL	1.0E-05	--	--	--	1E-05		2.3E-01	0.0E+00	--	2.3E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-05					2.3E-01
	EXPOSURE MEDIUM TOTAL							1E-05					2.3E-01
WHOLE BODY TOTAL								1E-05					2.3E-01
RECEPTOR TOTAL								1E-05					2.3E-01
			TOTAL RISK ACROSS ALL MEDIA					1E-05	TOTAL HAZARD ACROSS ALL MEDIA				2.3E-01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.7E-01
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	--
TOTAL IMMUNE SYSTEM HI =	5.6E-02
TOTAL KIDNEY HI =	1.7E-04
TOTAL LIVER HI =	6.7E-03
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Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.9.17.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - BROWN BULLHEAD - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.6E-06	NA	NA	2.6E-06
			Benzo(a)anthracene	5.3E-08	NA	NA	NA	5.3E-08	Kidney	1.9E-05	NA	NA	1.9E-05
			Benzo(a)pyrene	5.2E-07	NA	NA	NA	5.2E-07	Kidney	1.9E-05	NA	NA	1.9E-05
			Benzo(b)fluoranthene	6.6E-08	NA	NA	NA	6.6E-08	Kidney	2.4E-05	NA	NA	2.4E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.2E-05	NA	NA	1.2E-05
			Dibenzo(a,h)anthracene	1.7E-07	NA	NA	NA	1.7E-07	Kidney	6.1E-06	NA	NA	6.1E-06
			Indeno(1,2,3-cd)pyrene	4.5E-08	NA	NA	NA	4.5E-08	Kidney	1.6E-05	NA	NA	1.6E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	4.0E-05	NA	NA	4.0E-05
			4,4'-DDE	9.4E-08	NA	NA	NA	9.4E-08	Liver	4.3E-03	NA	NA	4.3E-03
			alpha-Chlordane	1.3E-08	NA	NA	NA	1.3E-08	Liver	5.9E-04	NA	NA	5.9E-04
			gamma-Chlordane	7.2E-09	NA	NA	NA	7.2E-09	Liver	3.2E-04	NA	NA	3.2E-04
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	4.3E-02	NA	NA	4.3E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.3E-01	NA	NA	1.3E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	7.0E-06	NA	NA	NA	7.0E-06		--	NA	NA	
			CHEMICAL TOTAL	*8.0E-06*	--	--	--	*8E-06*		*1.8E-01*	*0.0E+00*	--	*1.8E-01*
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						8E-06					1.8E-01
	EXPOSURE MEDIUM TOTAL							8E-06					1.8E-01
WHOLE BODY TOTAL								*8E-06*					*1.8E-01*
RECEPTOR TOTAL								**8E-06**					**1.8E-01**
			TOTAL RISK ACROSS ALL MEDIA					**8E-06**	**TOTAL HAZARD ACROSS ALL MEDIA**				**1.8E-01**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.3E-01
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TOTAL IMMUNE SYSTEM HI =	4.3E-02
TOTAL KIDNEY HI =	1.4E-04
TOTAL LIVER HI =	5.2E-03
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US EPA ARCHIVE DOCUMENT

TABLE G.9.18.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - BROWN BULLHEAD - ASSAPUMPSET
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
BROWN BULLHEAD	WHOLE BODY	ASSAPUMPSET POND	Acenaphthylene	NC	NA	NA	NA		Liver	5.5E-06	NA	NA	5.5E-06
			Benzo(a)anthracene	7.5E-08	NA	NA	NA	7.5E-08	Kidney	4.0E-05	NA	NA	4.0E-05
			Benzo(a)pyrene	7.4E-07	NA	NA	NA	7.4E-07	Kidney	3.9E-05	NA	NA	3.9E-05
			Benzo(b)fluoranthene	9.4E-08	NA	NA	NA	9.4E-08	Kidney	5.0E-05	NA	NA	5.0E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	2.6E-05	NA	NA	2.6E-05
			Dibenzo(a,h)anthracene	2.4E-07	NA	NA	NA	2.4E-07	Kidney	1.3E-05	NA	NA	1.3E-05
			Indeno(1,2,3-cd)pyrene	6.4E-08	NA	NA	NA	6.4E-08	Kidney	3.4E-05	NA	NA	3.4E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	8.5E-05	NA	NA	8.5E-05
			4,4'-DDE	1.3E-07	NA	NA	NA	1.3E-07	Liver	9.1E-03	NA	NA	9.1E-03
			alpha-Chlordane	1.9E-08	NA	NA	NA	1.9E-08	Liver	1.3E-03	NA	NA	1.3E-03
			gamma-Chlordane	1.0E-08	NA	NA	NA	1.0E-08	Liver	6.8E-04	NA	NA	6.8E-04
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	9.2E-02	NA	NA	9.2E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.8E-01	NA	NA	2.8E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.0E-05	NA	NA	NA	1.0E-05		--	NA	NA	
			CHEMICAL TOTAL	1.1E-05	--	--	--	1E-05		3.8E-01	0.0E+00	--	3.8E-01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-05					3.8E-01
	EXPOSURE MEDIUM TOTAL							1E-05					3.8E-01
WHOLE BODY TOTAL								1E-05					3.8E-01
RECEPTOR TOTAL								1E-05					3.8E-01
			TOTAL RISK ACROSS ALL MEDIA					1E-05	TOTAL HAZARD ACROSS ALL MEDIA				3.8E-01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	2.8E-01
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TOTAL IMMUNE SYSTEM HI =	9.2E-02
TOTAL KIDNEY HI =	2.9E-04
TOTAL LIVER HI =	1.1E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.19.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - AMERICAN EEL - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.4E-06	NA	NA	4.4E-06
			Benzo(a)pyrene	3.6E-07	NA	NA	NA	3.6E-07	Kidney	9.5E-06	NA	NA	9.5E-06
			Benzo(b)fluoranthene	4.0E-08	NA	NA	NA	4.0E-08	Kidney	1.1E-05	NA	NA	1.1E-05
			Dibenzo(a,h)anthracene	2.2E-07	NA	NA	NA	2.2E-07	Kidney	5.8E-06	NA	NA	5.8E-06
			Indeno(1,2,3-cd)pyrene	3.6E-08	NA	NA	NA	3.6E-08	Kidney	9.5E-06	NA	NA	9.5E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	3.4E-05	NA	NA	3.4E-05
			4,4'-DDD	1.3E-07	NA	NA	NA	1.3E-07	Liver	6.5E-03	NA	NA	6.5E-03
			4,4'-DDE	4.0E-07	NA	NA	NA	4.0E-07	Liver	1.4E-02	NA	NA	1.4E-02
			alpha-Chlordane	2.2E-07	NA	NA	NA	2.2E-07	Liver	7.4E-03	NA	NA	7.4E-03
			Aroclor-1254	1.9E-05	NA	NA	NA	1.9E-05	Immune system	2.7E+00	NA	NA	2.7E+00
			Aroclor-1268	9.3E-06	NA	NA	NA	9.3E-06	Immune system	1.4E+00	NA	NA	1.4E+00
			Dieldrin	2.1E-06	NA	NA	NA	2.1E-06	Liver	1.5E-02	NA	NA	1.5E-02
			gamma-Chlordane	9.0E-08	NA	NA	NA	9.0E-08	Liver	3.0E-03	NA	NA	3.0E-03
			Heptachlor Epoxide	4.1E-07	NA	NA	NA	4.1E-07	Liver	2.0E-02	NA	NA	2.0E-02
			Technical Chlordane	4.1E-06	NA	NA	NA	4.1E-06	Liver	1.4E-01	NA	NA	1.4E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		*Immune system*	5.1E-02	NA	NA	5.1E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	3.6E-01	NA	NA	3.6E-01
			Zinc	NC	NA	NA	NA		Hematological system	3.0E-02	NA	NA	3.0E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.2E-06	NA	NA	NA	4.2E-06		--	NA	NA	
			CHEMICAL TOTAL	4.0E-05	--	--	--	4E-05		4.7E+00	0.0E+00	--	4.7E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-05					4.7E+00
	EXPOSURE MEDIUM TOTAL							4E-05					4.7E+00
WHOLE BODY TOTAL								4E-05					4.7E+00
RECEPTOR TOTAL								4E-05					4.7E+00
			TOTAL RISK ACROSS ALL MEDIA					4E-05	TOTAL HAZARD ACROSS ALL MEDIA				4.7E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	3.6E-01
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TOTAL HEMATOLOGICAL SYSTEM HI =	3.0E-02
TOTAL IMMUNE SYSTEM HI =	4.1E+00
TOTAL KIDNEY HI =	7.0E-05
TOTAL LIVER HI =	2.0E-01
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Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.20.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - AMERICAN EEL - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	3.4E-06	NA	NA	3.4E-06
			Benzo(a)pyrene	2.8E-07	NA	NA	NA	2.8E-07	Kidney	7.4E-06	NA	NA	7.4E-06
			Benzo(b)fluoranthene	3.2E-08	NA	NA	NA	3.2E-08	Kidney	8.4E-06	NA	NA	8.4E-06
			Dibenzo(a,h)anthracene	1.7E-07	NA	NA	NA	1.7E-07	Kidney	4.5E-06	NA	NA	4.5E-06
			Indeno(1,2,3-cd)pyrene	2.8E-08	NA	NA	NA	2.8E-08	Kidney	7.4E-06	NA	NA	7.4E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	2.7E-05	NA	NA	2.7E-05
			4,4'-DDD	1.0E-07	NA	NA	NA	1.0E-07	Liver	5.1E-03	NA	NA	5.1E-03
			4,4'-DDE	3.1E-07	NA	NA	NA	3.1E-07	Liver	1.1E-02	NA	NA	1.1E-02
			alpha-Chlordane	1.7E-07	NA	NA	NA	1.7E-07	Liver	5.8E-03	NA	NA	5.8E-03
			Aroclor-1254	1.5E-05	NA	NA	NA	1.5E-05	Immune system	2.1E+00	NA	NA	2.1E+00
			Aroclor-1268	7.3E-06	NA	NA	NA	7.3E-06	Immune system	1.1E+00	NA	NA	1.1E+00
			Dieldrin	1.6E-06	NA	NA	NA	1.6E-06	Liver	1.2E-02	NA	NA	1.2E-02
			gamma-Chlordane	7.0E-08	NA	NA	NA	7.0E-08	Liver	2.3E-03	NA	NA	2.3E-03
			Heptachlor Epoxide	3.2E-07	NA	NA	NA	3.2E-07	Liver	1.6E-02	NA	NA	1.6E-02
			Technical Chlordane	3.2E-06	NA	NA	NA	3.2E-06	Liver	1.1E-01	NA	NA	1.1E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	4.0E-02	NA	NA	4.0E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.8E-01	NA	NA	2.8E-01
			Zinc	NC	NA	NA	NA		Hematological system	2.3E-02	NA	NA	2.3E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.3E-06	NA	NA	NA	3.3E-06		--	NA	NA	
			CHEMICAL TOTAL	3.2E-05	--	--	--	3E-05		3.7E+00	0.0E+00	--	3.7E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-05					3.7E+00
	EXPOSURE MEDIUM TOTAL							3E-05					3.7E+00
WHOLE BODY TOTAL								3E-05					3.7E+00
RECEPTOR TOTAL								3E-05					3.7E+00
			TOTAL RISK ACROSS ALL MEDIA					3E-05	TOTAL HAZARD ACROSS ALL MEDIA				3.7E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL DEVELOPMENTAL TOXICITY HI =	2.8E-01
TOTAL HEMATOLOGICAL SYSTEM HI =	2.3E-02
TOTAL IMMUNE SYSTEM HI =	3.1E+00
TOTAL KIDNEY HI =	5.5E-05
TOTAL LIVER HI =	1.6E-01

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.21.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - AMERICAN EEL - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	7.3E-06	NA	NA	7.3E-06
			Benzo(a)pyrene	3.0E-07	NA	NA	NA	3.0E-07	Kidney	1.6E-05	NA	NA	1.6E-05
			Benzo(b)fluoranthene	3.4E-08	NA	NA	NA	3.4E-08	Kidney	1.8E-05	NA	NA	1.8E-05
			Dibenzo(a,h)anthracene	1.8E-07	NA	NA	NA	1.8E-07	Kidney	9.6E-06	NA	NA	9.6E-06
			Indeno(1,2,3-cd)pyrene	3.0E-08	NA	NA	NA	3.0E-08	Kidney	1.6E-05	NA	NA	1.6E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	5.7E-05	NA	NA	5.7E-05
			4,4'-DDD	1.1E-07	NA	NA	NA	1.1E-07	Liver	1.1E-02	NA	NA	1.1E-02
			4,4'-DDE	3.3E-07	NA	NA	NA	3.3E-07	Liver	2.3E-02	NA	NA	2.3E-02
			alpha-Chlordane	1.8E-07	NA	NA	NA	1.8E-07	Liver	1.2E-02	NA	NA	1.2E-02
			Aroclor-1254	1.6E-05	NA	NA	NA	1.6E-05	Immune system	4.6E+00	NA	NA	4.6E+00
			Aroclor-1268	7.7E-06	NA	NA	NA	7.7E-06	Immune system	2.3E+00	NA	NA	2.3E+00
			Dieldrin	1.7E-06	NA	NA	NA	1.7E-06	Liver	2.5E-02	NA	NA	2.5E-02
			gamma-Chlordane	7.5E-08	NA	NA	NA	7.5E-08	Liver	5.0E-03	NA	NA	5.0E-03
			Heptachlor Epoxide	3.4E-07	NA	NA	NA	3.4E-07	Liver	3.3E-02	NA	NA	3.3E-02
			Technical Chlordane	3.4E-06	NA	NA	NA	3.4E-06	Liver	2.3E-01	NA	NA	2.3E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	8.5E-02	NA	NA	8.5E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.9E-01	NA	NA	5.9E-01
			Zinc	NC	NA	NA	NA		Hematological system	5.0E-02	NA	NA	5.0E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.5E-06	NA	NA	NA	3.5E-06		--	NA	NA	
			CHEMICAL TOTAL	3.4E-05	--	--	--	3E-05		7.9E+00	0.0E+00	--	7.9E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-05					7.9E+00
	EXPOSURE MEDIUM TOTAL							3E-05					7.9E+00
WHOLE BODY TOTAL								3E-05					7.9E+00
RECEPTOR TOTAL								3E-05					7.9E+00
			TOTAL RISK ACROSS ALL MEDIA					3E-05	TOTAL HAZARD ACROSS ALL MEDIA				7.9E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	5.9E-01
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TOTAL HEMATOLOGICAL SYSTEM HI =	5.0E-02
TOTAL IMMUNE SYSTEM HI =	6.9E+00
TOTAL KIDNEY HI =	1.2E-04
TOTAL LIVER HI =	3.4E-01
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Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.22.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - AMERICAN EEL - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.4E-06	NA	NA	4.4E-06
			Benzo(a)pyrene	2.7E-07	NA	NA	NA	2.7E-07	Kidney	9.5E-06	NA	NA	9.5E-06
			Benzo(b)fluoranthene	3.0E-08	NA	NA	NA	3.0E-08	Kidney	1.1E-05	NA	NA	1.1E-05
			Dibenzo(a,h)anthracene	1.6E-07	NA	NA	NA	1.6E-07	Kidney	5.8E-06	NA	NA	5.8E-06
			Indeno(1,2,3-cd)pyrene	2.7E-08	NA	NA	NA	2.7E-08	Kidney	9.5E-06	NA	NA	9.5E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	3.4E-05	NA	NA	3.4E-05
			4,4'-DDD	1.0E-07	NA	NA	NA	1.0E-07	Liver	6.5E-03	NA	NA	6.5E-03
			4,4'-DDE	3.0E-07	NA	NA	NA	3.0E-07	Liver	1.4E-02	NA	NA	1.4E-02
			alpha-Chlordane	1.7E-07	NA	NA	NA	1.7E-07	Liver	7.4E-03	NA	NA	7.4E-03
			Aroclor-1254	1.4E-05	NA	NA	NA	1.4E-05	Immune system	2.7E+00	NA	NA	2.7E+00
			Aroclor-1268	7.0E-06	NA	NA	NA	7.0E-06	Immune system	1.4E+00	NA	NA	1.4E+00
			Dieldrin	1.6E-06	NA	NA	NA	1.6E-06	Liver	1.5E-02	NA	NA	1.5E-02
			gamma-Chlordane	6.7E-08	NA	NA	NA	6.7E-08	Liver	3.0E-03	NA	NA	3.0E-03
			Heptachlor Epoxide	3.0E-07	NA	NA	NA	3.0E-07	Liver	2.0E-02	NA	NA	2.0E-02
			Technical Chlordane	3.1E-06	NA	NA	NA	3.1E-06	Liver	1.4E-01	NA	NA	1.4E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	5.1E-02	NA	NA	5.1E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	3.6E-01	NA	NA	3.6E-01
			Zinc	NC	NA	NA	NA		Hematological system	3.0E-02	NA	NA	3.0E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.1E-06	NA	NA	NA	3.1E-06		--	NA	NA	
			CHEMICAL TOTAL	3.0E-05	--	--	--	3E-05		4.7E+00	0.0E+00	--	4.7E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-05					4.7E+00
	EXPOSURE MEDIUM TOTAL							3E-05					4.7E+00
WHOLE BODY TOTAL								3E-05					4.7E+00
RECEPTOR TOTAL								3E-05					4.7E+00
							TOTAL RISK ACROSS ALL MEDIA	3E-05	TOTAL HAZARD ACROSS ALL MEDIA				4.7E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	3.6E-01
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TOTAL HEMATOLOGICAL SYSTEM HI =	3.0E-02
TOTAL IMMUNE SYSTEM HI =	4.1E+00
TOTAL KIDNEY HI =	7.0E-05
TOTAL LIVER HI =	2.0E-01
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Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.23.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - AMERICAN EEL - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	3.4E-06	NA	NA	3.4E-06
			Benzo(a)pyrene	2.1E-07	NA	NA	NA	2.1E-07	Kidney	7.4E-06	NA	NA	7.4E-06
			Benzo(b)fluoranthene	2.4E-08	NA	NA	NA	2.4E-08	Kidney	8.4E-06	NA	NA	8.4E-06
			Dibenzo(a,h)anthracene	1.3E-07	NA	NA	NA	1.3E-07	Kidney	4.5E-06	NA	NA	4.5E-06
			Indeno(1,2,3-cd)pyrene	2.1E-08	NA	NA	NA	2.1E-08	Kidney	7.4E-06	NA	NA	7.4E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	2.7E-05	NA	NA	2.7E-05
			4,4'-DDD	7.8E-08	NA	NA	NA	7.8E-08	Liver	5.1E-03	NA	NA	5.1E-03
			4,4'-DDE	2.3E-07	NA	NA	NA	2.3E-07	Liver	1.1E-02	NA	NA	1.1E-02
			alpha-Chlordane	1.3E-07	NA	NA	NA	1.3E-07	Liver	5.8E-03	NA	NA	5.8E-03
			Aroclor-1254	1.1E-05	NA	NA	NA	1.1E-05	Immune system	2.1E+00	NA	NA	2.1E+00
			Aroclor-1268	5.4E-06	NA	NA	NA	5.4E-06	Immune system	1.1E+00	NA	NA	1.1E+00
			Dieldrin	1.2E-06	NA	NA	NA	1.2E-06	Liver	1.2E-02	NA	NA	1.2E-02
			gamma-Chlordane	5.3E-08	NA	NA	NA	5.3E-08	Liver	2.3E-03	NA	NA	2.3E-03
			Heptachlor Epoxide	2.4E-07	NA	NA	NA	2.4E-07	Liver	1.6E-02	NA	NA	1.6E-02
			Technical Chlordane	2.4E-06	NA	NA	NA	2.4E-06	Liver	1.1E-01	NA	NA	1.1E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	4.0E-02	NA	NA	4.0E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.8E-01	NA	NA	2.8E-01
			Zinc	NC	NA	NA	NA		Hematological system	2.3E-02	NA	NA	2.3E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.4E-06	NA	NA	NA	2.4E-06		--	NA	NA	
			CHEMICAL TOTAL	2.4E-05	--	--	--	2E-05		3.7E+00	0.0E+00	--	3.7E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-05					3.7E+00
	EXPOSURE MEDIUM TOTAL							2E-05					3.7E+00
WHOLE BODY TOTAL								2E-05					3.7E+00
RECEPTOR TOTAL								2E-05					3.7E+00
			TOTAL RISK ACROSS ALL MEDIA					2E-05	TOTAL HAZARD ACROSS ALL MEDIA				3.7E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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TOTAL DEVELOPMENTAL TOXICITY HI =	2.8E-01
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TOTAL HEMATOLOGICAL SYSTEM HI =	2.3E-02
TOTAL IMMUNE SYSTEM HI =	3.2E+00
TOTAL KIDNEY HI =	5.5E-05
TOTAL LIVER HI =	1.6E-01
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US EPA ARCHIVE DOCUMENT

TABLE G.9.24.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - AMERICAN EEL - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	7.3E-06	NA	NA	7.3E-06
			Benzo(a)pyrene	3.0E-07	NA	NA	NA	3.0E-07	Kidney	1.6E-05	NA	NA	1.6E-05
			Benzo(b)fluoranthene	3.4E-08	NA	NA	NA	3.4E-08	Kidney	1.8E-05	NA	NA	1.8E-05
			Dibenzo(a,h)anthracene	1.8E-07	NA	NA	NA	1.8E-07	Kidney	9.6E-06	NA	NA	9.6E-06
			Indeno(1,2,3-cd)pyrene	3.0E-08	NA	NA	NA	3.0E-08	Kidney	1.6E-05	NA	NA	1.6E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	5.7E-05	NA	NA	5.7E-05
			4,4'-DDD	1.1E-07	NA	NA	NA	1.1E-07	Liver	1.1E-02	NA	NA	1.1E-02
			4,4'-DDE	3.3E-07	NA	NA	NA	3.3E-07	Liver	2.3E-02	NA	NA	2.3E-02
			alpha-Chlordane	1.8E-07	NA	NA	NA	1.8E-07	Liver	1.2E-02	NA	NA	1.2E-02
			Aroclor-1254	1.6E-05	NA	NA	NA	1.6E-05	Immune system	4.6E+00	NA	NA	4.6E+00
			Aroclor-1268	7.7E-06	NA	NA	NA	7.7E-06	Immune system	2.3E+00	NA	NA	2.3E+00
			Dieldrin	1.7E-06	NA	NA	NA	1.7E-06	Liver	2.5E-02	NA	NA	2.5E-02
			gamma-Chlordane	7.5E-08	NA	NA	NA	7.5E-08	Liver	5.0E-03	NA	NA	5.0E-03
			Heptachlor Epoxide	3.4E-07	NA	NA	NA	3.4E-07	Liver	3.3E-02	NA	NA	3.3E-02
			Technical Chlordane	3.4E-06	NA	NA	NA	3.4E-06	Liver	2.3E-01	NA	NA	2.3E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	8.5E-02	NA	NA	8.5E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.9E-01	NA	NA	5.9E-01
			Zinc	NC	NA	NA	NA		Hematological system	5.0E-02	NA	NA	5.0E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.5E-06	NA	NA	NA	3.5E-06		--	NA	NA	
			CHEMICAL TOTAL	3.4E-05	--	--	--	3E-05		7.9E+00	0.0E+00	--	7.9E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-05					7.9E+00
	EXPOSURE MEDIUM TOTAL							3E-05					7.9E+00
WHOLE BODY TOTAL								3E-05					7.9E+00
RECEPTOR TOTAL								3E-05					7.9E+00
							TOTAL RISK ACROSS ALL MEDIA	3E-05	TOTAL HAZARD ACROSS ALL MEDIA				7.9E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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TOTAL DEVELOPMENTAL TOXICITY HI =	5.9E-01
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TOTAL HEMATOLOGICAL SYSTEM HI =	5.0E-02
TOTAL IMMUNE SYSTEM HI =	6.9E+00
TOTAL KIDNEY HI =	1.2E-04
TOTAL LIVER HI =	3.4E-01
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US EPA ARCHIVE DOCUMENT

TABLE G.9.25.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - LARGEMOUTH BASS - FILLET - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.4E-06	NA	NA	1.4E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	7.2E-06	NA	NA	7.2E-06
			4,4'-DDE	2.0E-07	NA	NA	NA	2.0E-07	Liver	6.8E-03	NA	NA	6.8E-03
			alpha-Chlordane	8.3E-09	NA	NA	NA	8.3E-09	Liver	2.8E-04	NA	NA	2.8E-04
			Aroclor-1254	5.7E-06	NA	NA	NA	5.7E-06	Immune system	8.3E-01	NA	NA	8.3E-01
			Aroclor-1268	5.6E-06	NA	NA	NA	5.6E-06	Immune system	8.1E-01	NA	NA	8.1E-01
			Dieldrin	2.1E-07	NA	NA	NA	2.1E-07	Liver	1.5E-03	NA	NA	1.5E-03
			gamma-Chlordane	9.1E-09	NA	NA	NA	9.1E-09	Liver	3.0E-04	NA	NA	3.0E-04
			Technical Chlordane	2.3E-07	NA	NA	NA	2.3E-07	Liver	7.8E-03	NA	NA	7.8E-03
			Mercury	NC	NA	NA	NA		Immune system	3.0E-01	NA	NA	3.0E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.4E+00	NA	NA	1.4E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.3E-06	NA	NA	NA	1.3E-06		--	NA	NA	
			CHEMICAL TOTAL	1.3E-05	--	--	--	1E-05		3.3E+00	0.0E+00	--	3E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-05					3E+00
	EXPOSURE MEDIUM TOTAL							1E-05					3E+00
FILLET TOTAL								1E-05					3E+00

RECEPTOR TOTAL			1E-05				3.3E+00
	TOTAL RISK ACROSS ALL MEDIA		1E-05	TOTAL HAZARD ACROSS ALL MEDIA			3.3E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.4E+00
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TOTAL IMMUNE SYSTEM HI =	1.9E+00
TOTAL KIDNEY HI =	7.2E-06
TOTAL LIVER HI =	1.7E-02
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Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.26.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - LARGEMOUTH BASS - FILLET - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.1E-06	NA	NA	1.1E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	5.6E-06	NA	NA	5.6E-06
			4,4'-DDE	1.5E-07	NA	NA	NA	1.5E-07	Liver	5.3E-03	NA	NA	5.3E-03
			alpha-Chlordane	6.5E-09	NA	NA	NA	6.5E-09	Liver	2.2E-04	NA	NA	2.2E-04
			Aroclor-1254	4.4E-06	NA	NA	NA	4.4E-06	Immune system	6.5E-01	NA	NA	6.5E-01
			Aroclor-1268	4.4E-06	NA	NA	NA	4.4E-06	Immune system	6.3E-01	NA	NA	6.3E-01
			Dieldrin	1.6E-07	NA	NA	NA	1.6E-07	Liver	1.2E-03	NA	NA	1.2E-03
			gamma-Chlordane	7.1E-09	NA	NA	NA	7.1E-09	Liver	2.4E-04	NA	NA	2.4E-04
			Technical Chlordane	1.8E-07	NA	NA	NA	1.8E-07	Liver	6.1E-03	NA	NA	6.1E-03
			Mercury	NC	NA	NA	NA		Immune system	2.4E-01	NA	NA	2.4E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.1E+00	NA	NA	1.1E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.1E-06	NA	NA	NA	1.1E-06		--	NA	NA	
			CHEMICAL TOTAL	1.0E-05	--	--	--	1E-05		2.6E+00	0.0E+00	--	3E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-05					3E+00
	EXPOSURE MEDIUM TOTAL							1E-05					3E+00
FILLET TOTAL								1E-05					3E+00
RECEPTOR TOTAL								1E-05					2.6E+00
							TOTAL RISK ACROSS ALL MEDIA	1E-05	TOTAL HAZARD ACROSS ALL MEDIA				2.6E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.1E+00
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TOTAL IMMUNE SYSTEM HI =	1.5E+00
TOTAL KIDNEY HI =	5.6E-06
TOTAL LIVER HI =	1.3E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.27.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - LARGEMOUTH BASS - FILLET - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.4E-06	NA	NA	2.4E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.2E-05	NA	NA	1.2E-05
			4,4'-DDE	1.6E-07	NA	NA	NA	1.6E-07	Liver	1.1E-02	NA	NA	1.1E-02
			alpha-Chlordane	6.9E-09	NA	NA	NA	6.9E-09	Liver	4.6E-04	NA	NA	4.6E-04
			Aroclor-1254	4.7E-06	NA	NA	NA	4.7E-06	Immune system	1.4E+00	NA	NA	1.4E+00
			Aroclor-1268	4.6E-06	NA	NA	NA	4.6E-06	Immune system	1.3E+00	NA	NA	1.3E+00
			Dieldrin	1.7E-07	NA	NA	NA	1.7E-07	Liver	2.5E-03	NA	NA	2.5E-03
			gamma-Chlordane	7.6E-09	NA	NA	NA	7.6E-09	Liver	5.0E-04	NA	NA	5.0E-04
			Technical Chlordane	1.9E-07	NA	NA	NA	1.9E-07	Liver	1.3E-02	NA	NA	1.3E-02
			Mercury	NC	NA	NA	NA		Immune system	5.0E-01	NA	NA	5.0E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.2E+00	NA	NA	2.2E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.1E-06	NA	NA	NA	1.1E-06		--	NA	NA	
			CHEMICAL TOTAL	1.1E-05	--	--	--	1E-05		5.5E+00	0.0E+00	--	6E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-05					6E+00
	EXPOSURE MEDIUM TOTAL							1E-05					6E+00
FILLET TOTAL								1E-05					6E+00
RECEPTOR TOTAL								1E-05					5.5E+00
			TOTAL RISK ACROSS ALL MEDIA					1E-05	TOTAL HAZARD ACROSS ALL MEDIA				5.5E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	2.2E+00
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TOTAL IMMUNE SYSTEM HI =	3.2E+00
TOTAL KIDNEY HI =	1.2E-05
TOTAL LIVER HI =	2.8E-02
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Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.28.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - LARGEMOUTH BASS - FILLET - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.4E-06	NA	NA	1.4E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	7.2E-06	NA	NA	7.2E-06
			4,4'-DDE	1.5E-07	NA	NA	NA	1.5E-07	Liver	6.8E-03	NA	NA	6.8E-03
			alpha-Chlordane	6.2E-09	NA	NA	NA	6.2E-09	Liver	2.8E-04	NA	NA	2.8E-04
			Aroclor-1254	4.3E-06	NA	NA	NA	4.3E-06	Immune system	8.3E-01	NA	NA	8.3E-01
			Aroclor-1268	4.2E-06	NA	NA	NA	4.2E-06	Immune system	8.1E-01	NA	NA	8.1E-01
			Dieldrin	1.6E-07	NA	NA	NA	1.6E-07	Liver	1.5E-03	NA	NA	1.5E-03
			gamma-Chlordane	6.8E-09	NA	NA	NA	6.8E-09	Liver	3.0E-04	NA	NA	3.0E-04
			Technical Chlordane	1.7E-07	NA	NA	NA	1.7E-07	Liver	7.8E-03	NA	NA	7.8E-03
			Mercury	NC	NA	NA	NA		Immune system	3.0E-01	NA	NA	3.0E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.4E+00	NA	NA	1.4E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.0E-06	NA	NA	NA	1.0E-06		--	NA	NA	
			CHEMICAL TOTAL	9.9E-06	--	--	--	1E-05		3.3E+00	0.0E+00	--	3E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-05					3E+00
	EXPOSURE MEDIUM TOTAL							1E-05					3E+00
FILLET TOTAL								1E-05					3E+00
RECEPTOR TOTAL								1E-05					3.3E+00
							TOTAL RISK ACROSS ALL MEDIA	1E-05	TOTAL HAZARD ACROSS ALL MEDIA				3.3E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.4E+00
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TOTAL IMMUNE SYSTEM HI =	1.9E+00
TOTAL KIDNEY HI =	7.2E-06
TOTAL LIVER HI =	1.7E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.29.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - LARGEMOUTH BASS - FILLET - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.1E-06	NA	NA	1.1E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	5.6E-06	NA	NA	5.6E-06
			4,4'-DDE	1.2E-07	NA	NA	NA	1.2E-07	Liver	5.3E-03	NA	NA	5.3E-03
			alpha-Chlordane	4.9E-09	NA	NA	NA	4.9E-09	Liver	2.2E-04	NA	NA	2.2E-04
			Aroclor-1254	3.3E-06	NA	NA	NA	3.3E-06	Immune system	6.5E-01	NA	NA	6.5E-01
			Aroclor-1268	3.3E-06	NA	NA	NA	3.3E-06	Immune system	6.3E-01	NA	NA	6.3E-01
			Dieldrin	1.2E-07	NA	NA	NA	1.2E-07	Liver	1.2E-03	NA	NA	1.2E-03
			gamma-Chlordane	5.3E-09	NA	NA	NA	5.3E-09	Liver	2.4E-04	NA	NA	2.4E-04
			Technical Chlordane	1.4E-07	NA	NA	NA	1.4E-07	Liver	6.1E-03	NA	NA	6.1E-03
			Mercury	NC	NA	NA	NA		Immune system	2.4E-01	NA	NA	2.4E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.1E+00	NA	NA	1.1E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	7.9E-07	NA	NA	NA	7.9E-07		--	NA	NA	
			CHEMICAL TOTAL	7.8E-06	--	--	--	8E-06		2.6E+00	0.0E+00	--	3E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						8E-06					3E+00
	EXPOSURE MEDIUM TOTAL							8E-06					3E+00
FILLET TOTAL								8E-06					3E+00
RECEPTOR TOTAL								8E-06					2.6E+00
			TOTAL RISK ACROSS ALL MEDIA					8E-06	TOTAL HAZARD ACROSS ALL MEDIA				2.6E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.1E+00
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TOTAL IMMUNE SYSTEM HI =	1.5E+00
TOTAL KIDNEY HI =	5.6E-06
TOTAL LIVER HI =	1.3E-02
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Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.9.30.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - LARGEMOUTH BASS - FILLET - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.4E-06	NA	NA	2.4E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.2E-05	NA	NA	1.2E-05
			4,4'-DDE	1.6E-07	NA	NA	NA	1.6E-07	Liver	1.1E-02	NA	NA	1.1E-02
			alpha-Chlordane	6.9E-09	NA	NA	NA	6.9E-09	Liver	4.6E-04	NA	NA	4.6E-04
			Aroclor-1254	4.7E-06	NA	NA	NA	4.7E-06	Immune system	1.4E+00	NA	NA	1.4E+00
			Aroclor-1268	4.6E-06	NA	NA	NA	4.6E-06	Immune system	1.3E+00	NA	NA	1.3E+00
			Dieldrin	1.7E-07	NA	NA	NA	1.7E-07	Liver	2.5E-03	NA	NA	2.5E-03
			gamma-Chlordane	7.6E-09	NA	NA	NA	7.6E-09	Liver	5.0E-04	NA	NA	5.0E-04
			Technical Chlordane	1.9E-07	NA	NA	NA	1.9E-07	Liver	1.3E-02	NA	NA	1.3E-02
			Mercury	NC	NA	NA	NA		Immune system	5.0E-01	NA	NA	5.0E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.2E+00	NA	NA	2.2E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.1E-06	NA	NA	NA	1.1E-06		--	NA	NA	
			CHEMICAL TOTAL	1.1E-05	--	--	--	1E-05		5.5E+00	0.0E+00	--	6E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-05					6E+00
	EXPOSURE MEDIUM TOTAL							1E-05					6E+00
FILLET TOTAL								1E-05					6E+00
RECEPTOR TOTAL								1E-05					5.5E+00
							TOTAL RISK ACROSS ALL MEDIA	1E-05	TOTAL HAZARD ACROSS ALL MEDIA				5.5E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	2.2E+00
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TOTAL IMMUNE SYSTEM HI =	3.2E+00
TOTAL KIDNEY HI =	1.2E-05
TOTAL LIVER HI =	2.8E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.31.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - WHITE SUCKER - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.7E-05	NA	NA	1.7E-05
			Benzo(a)pyrene	3.0E-07	NA	NA	NA	3.0E-07	Kidney	8.1E-06	NA	NA	8.1E-06
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	7.1E-06	NA	NA	7.1E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.2E-04	NA	NA	1.2E-04
			4,4'-DDD	1.9E-07	NA	NA	NA	1.9E-07	Liver	9.4E-03	NA	NA	9.4E-03
			4,4'-DDE	6.5E-07	NA	NA	NA	6.5E-07	Liver	2.2E-02	NA	NA	2.2E-02
			4,4'-DDT	7.9E-08	NA	NA	NA	7.9E-08	Liver	2.7E-03	NA	NA	2.7E-03
			alpha-Chlordane	3.2E-07	NA	NA	NA	3.2E-07	Liver	1.1E-02	NA	NA	1.1E-02
			Aroclor-1254	1.5E-05	NA	NA	NA	1.5E-05	Immune system	2.2E+00	NA	NA	2.2E+00
			Aroclor-1268	4.1E-06	NA	NA	NA	4.1E-06	Immune system	6.0E-01	NA	NA	6.0E-01
			Dieldrin	2.5E-06	NA	NA	NA	2.5E-06	Liver	1.8E-02	NA	NA	1.8E-02
			gamma-Chlordane	1.5E-07	NA	NA	NA	1.5E-07	Liver	4.8E-03	NA	NA	4.8E-03
			Heptachlor Epoxide	2.7E-07	NA	NA	NA	2.7E-07	Liver	1.3E-02	NA	NA	1.3E-02
			Technical Chlordane	3.7E-06	NA	NA	NA	3.7E-06	Liver	1.2E-01	NA	NA	1.2E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.4E-01	NA	NA	1.4E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	4.2E-01	NA	NA	4.2E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.7E-05	NA	NA	NA	1.7E-05		--	NA	NA	
			CHEMICAL TOTAL	4.4E-05	--	--	--	4E-05		3.5E+00	0.0E+00	--	3.5E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-05					3.5E+00
	EXPOSURE MEDIUM TOTAL							4E-05					3.5E+00
WHOLE BODY TOTAL								4E-05					3.5E+00
RECEPTOR TOTAL								4E-05					3.5E+00
			TOTAL RISK ACROSS ALL MEDIA					4E-05	TOTAL HAZARD ACROSS ALL MEDIA				3.5E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	4.2E-01
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TOTAL IMMUNE SYSTEM HI =	2.9E+00
TOTAL KIDNEY HI =	1.4E-04
TOTAL LIVER HI =	2.0E-01
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Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.9.32.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - WHITE SUCKER - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.4E-05	NA	NA	1.4E-05
			Benzo(a)pyrene	2.4E-07	NA	NA	NA	2.4E-07	Kidney	6.3E-06	NA	NA	6.3E-06
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	5.6E-06	NA	NA	5.6E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	9.7E-05	NA	NA	9.7E-05
			4,4'-DDD	1.5E-07	NA	NA	NA	1.5E-07	Liver	7.4E-03	NA	NA	7.4E-03
			4,4'-DDE	5.1E-07	NA	NA	NA	5.1E-07	Liver	1.7E-02	NA	NA	1.7E-02
			4,4'-DDT	6.2E-08	NA	NA	NA	6.2E-08	Liver	2.1E-03	NA	NA	2.1E-03
			alpha-Chlordane	2.5E-07	NA	NA	NA	2.5E-07	Liver	8.2E-03	NA	NA	8.2E-03
			Aroclor-1254	1.2E-05	NA	NA	NA	1.2E-05	Immune system	1.7E+00	NA	NA	1.7E+00
			Aroclor-1268	3.2E-06	NA	NA	NA	3.2E-06	Immune system	4.7E-01	NA	NA	4.7E-01
			Dieldrin	1.9E-06	NA	NA	NA	1.9E-06	Liver	1.4E-02	NA	NA	1.4E-02
			gamma-Chlordane	1.1E-07	NA	NA	NA	1.1E-07	Liver	3.8E-03	NA	NA	3.8E-03
			Heptachlor Epoxide	2.1E-07	NA	NA	NA	2.1E-07	Liver	1.1E-02	NA	NA	1.1E-02
			Technical Chlordane	2.9E-06	NA	NA	NA	2.9E-06	Liver	9.5E-02	NA	NA	9.5E-02
			Lead	--	NA	NA	NA		--		NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.1E-01	NA	NA	1.1E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	3.3E-01	NA	NA	3.3E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.3E-05	NA	NA	NA	1.3E-05		--	NA	NA	
			CHEMICAL TOTAL	3.5E-05	--	--	--	3E-05		2.8E+00	0.0E+00	--	2.8E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-05					2.8E+00
	EXPOSURE MEDIUM TOTAL							3E-05					2.8E+00
WHOLE BODY TOTAL								3E-05					2.8E+00
RECEPTOR TOTAL								3E-05					2.8E+00
			TOTAL RISK ACROSS ALL MEDIA					3E-05	TOTAL HAZARD ACROSS ALL MEDIA				2.8E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	3.3E-01
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TOTAL IMMUNE SYSTEM HI =	2.3E+00
TOTAL KIDNEY HI =	1.1E-04
TOTAL LIVER HI =	1.6E-01
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Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.9.33.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - WHITE SUCKER - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.9E-05	NA	NA	2.9E-05
			Benzo(a)pyrene	2.5E-07	NA	NA	NA	2.5E-07	Kidney	1.3E-05	NA	NA	1.3E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.2E-05	NA	NA	1.2E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	2.1E-04	NA	NA	2.1E-04
			4,4'-DDD	1.6E-07	NA	NA	NA	1.6E-07	Liver	1.6E-02	NA	NA	1.6E-02
			4,4'-DDE	5.4E-07	NA	NA	NA	5.4E-07	Liver	3.7E-02	NA	NA	3.7E-02
			4,4'-DDT	6.6E-08	NA	NA	NA	6.6E-08	Liver	4.5E-03	NA	NA	4.5E-03
			alpha-Chlordane	2.6E-07	NA	NA	NA	2.6E-07	Liver	1.7E-02	NA	NA	1.7E-02
			Aroclor-1254	1.2E-05	NA	NA	NA	1.2E-05	Immune system	3.6E+00	NA	NA	3.6E+00
			Aroclor-1268	3.4E-06	NA	NA	NA	3.4E-06	Immune system	9.9E-01	NA	NA	9.9E-01
			Dieldrin	2.1E-06	NA	NA	NA	2.1E-06	Liver	3.0E-02	NA	NA	3.0E-02
			gamma-Chlordane	1.2E-07	NA	NA	NA	1.2E-07	Liver	8.1E-03	NA	NA	8.1E-03
			Heptachlor Epoxide	2.3E-07	NA	NA	NA	2.3E-07	Liver	2.2E-02	NA	NA	2.2E-02
			Technical Chlordane	3.0E-06	NA	NA	NA	3.0E-06	Liver	2.0E-01	NA	NA	2.0E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.3E-01	NA	NA	2.3E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	6.9E-01	NA	NA	6.9E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.4E-05	NA	NA	NA	1.4E-05		--	NA	NA	
			CHEMICAL TOTAL	3.7E-05	--	--	--	4E-05		5.9E+00	0.0E+00	--	5.9E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-05					5.9E+00
	EXPOSURE MEDIUM TOTAL							4E-05					5.9E+00
WHOLE BODY TOTAL								4E-05					5.9E+00
RECEPTOR TOTAL								4E-05					5.9E+00
			TOTAL RISK ACROSS ALL MEDIA					4E-05	TOTAL HAZARD ACROSS ALL MEDIA				5.9E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	6.9E-01
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TOTAL IMMUNE SYSTEM HI =	4.9E+00
TOTAL KIDNEY HI =	2.3E-04
TOTAL LIVER HI =	3.4E-01
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Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.9.34.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - WHITE SUCKER - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.7E-05	NA	NA	1.7E-05
			Benzo(a)pyrene	2.3E-07	NA	NA	NA	2.3E-07	Kidney	8.1E-06	NA	NA	8.1E-06
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	7.1E-06	NA	NA	7.1E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.2E-04	NA	NA	1.2E-04
			4,4'-DDD	1.5E-07	NA	NA	NA	1.5E-07	Liver	9.4E-03	NA	NA	9.4E-03
			4,4'-DDE	4.9E-07	NA	NA	NA	4.9E-07	Liver	2.2E-02	NA	NA	2.2E-02
			4,4'-DDT	5.9E-08	NA	NA	NA	5.9E-08	Liver	2.7E-03	NA	NA	2.7E-03
			alpha-Chlordane	2.4E-07	NA	NA	NA	2.4E-07	Liver	1.1E-02	NA	NA	1.1E-02
			Aroclor-1254	1.1E-05	NA	NA	NA	1.1E-05	*Immune system*	2.2E+00	NA	NA	2.2E+00
			Aroclor-1268	3.1E-06	NA	NA	NA	3.1E-06	Immune system	6.0E-01	NA	NA	6.0E-01
			Dieldrin	1.9E-06	NA	NA	NA	1.9E-06	Liver	1.8E-02	NA	NA	1.8E-02
			gamma-Chlordane	1.1E-07	NA	NA	NA	1.1E-07	Liver	4.8E-03	NA	NA	4.8E-03
			Heptachlor Epoxide	2.1E-07	NA	NA	NA	2.1E-07	Liver	1.3E-02	NA	NA	1.3E-02
			Technical Chlordane	2.7E-06	NA	NA	NA	2.7E-06	Liver	1.2E-01	NA	NA	1.2E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.4E-01	NA	NA	1.4E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	4.2E-01	NA	NA	4.2E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.3E-05	NA	NA	NA	1.3E-05		--	NA	NA	
			CHEMICAL TOTAL	3.3E-05	--	--	--	3E-05		3.5E+00	0.0E+00	--	3.5E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-05					3.5E+00
	EXPOSURE MEDIUM TOTAL							3E-05					3.5E+00
WHOLE BODY TOTAL								3E-05					3.5E+00
RECEPTOR TOTAL								3E-05					3.5E+00
			TOTAL RISK ACROSS ALL MEDIA					3E-05	**TOTAL HAZARD ACROSS ALL MEDIA**				3.5E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	4.2E-01
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TOTAL IMMUNE SYSTEM HI =	2.9E+00
TOTAL KIDNEY HI =	1.4E-04
TOTAL LIVER HI =	2.0E-01
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US EPA ARCHIVE DOCUMENT

TABLE G.9.35.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - WHITE SUCKER - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.4E-05	NA	NA	1.4E-05
			Benzo(a)pyrene	1.8E-07	NA	NA	NA	1.8E-07	Kidney	6.3E-06	NA	NA	6.3E-06
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	5.6E-06	NA	NA	5.6E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	9.7E-05	NA	NA	9.7E-05
			4,4'-DDD	1.1E-07	NA	NA	NA	1.1E-07	Liver	7.4E-03	NA	NA	7.4E-03
			4,4'-DDE	3.8E-07	NA	NA	NA	3.8E-07	Liver	1.7E-02	NA	NA	1.7E-02
			4,4'-DDT	4.6E-08	NA	NA	NA	4.6E-08	Liver	2.1E-03	NA	NA	2.1E-03
			alpha-Chlordane	1.9E-07	NA	NA	NA	1.9E-07	Liver	8.2E-03	NA	NA	8.2E-03
			Aroclor-1254	8.8E-06	NA	NA	NA	8.8E-06	Immune system	1.7E+00	NA	NA	1.7E+00
			Aroclor-1268	2.4E-06	NA	NA	NA	2.4E-06	Immune system	4.7E-01	NA	NA	4.7E-01
			Dieldrin	1.5E-06	NA	NA	NA	1.5E-06	Liver	1.4E-02	NA	NA	1.4E-02
			gamma-Chlordane	8.5E-08	NA	NA	NA	8.5E-08	Liver	3.8E-03	NA	NA	3.8E-03
			Heptachlor Epoxide	1.6E-07	NA	NA	NA	1.6E-07	Liver	1.1E-02	NA	NA	1.1E-02
			Technical Chlordane	2.1E-06	NA	NA	NA	2.1E-06	Liver	9.5E-02	NA	NA	9.5E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.1E-01	NA	NA	1.1E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	3.3E-01	NA	NA	3.3E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.0E-05	NA	NA	NA	1.0E-05		--	NA	NA	
			CHEMICAL TOTAL	2.6E-05	--	--	--	3E-05		2.8E+00	0.0E+00	--	2.8E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-05					2.8E+00
	EXPOSURE MEDIUM TOTAL							3E-05					2.8E+00
WHOLE BODY TOTAL								3E-05					2.8E+00
RECEPTOR TOTAL								3E-05					2.8E+00
			TOTAL RISK ACROSS ALL MEDIA					3E-05	TOTAL HAZARD ACROSS ALL MEDIA				2.8E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	3.3E-01
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TOTAL IMMUNE SYSTEM HI =	2.3E+00
TOTAL KIDNEY HI =	1.1E-04
TOTAL LIVER HI =	1.6E-01
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Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.9.36.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - WHITE SUCKER - GREYSTONE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	GREYSTONE MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.9E-05	NA	NA	2.9E-05
			Benzo(a)pyrene	2.5E-07	NA	NA	NA	2.5E-07	Kidney	1.3E-05	NA	NA	1.3E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	1.2E-05	NA	NA	1.2E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	2.1E-04	NA	NA	2.1E-04
			4,4'-DDD	1.6E-07	NA	NA	NA	1.6E-07	Liver	1.6E-02	NA	NA	1.6E-02
			4,4'-DDE	5.4E-07	NA	NA	NA	5.4E-07	Liver	3.7E-02	NA	NA	3.7E-02
			4,4'-DDT	6.6E-08	NA	NA	NA	6.6E-08	Liver	4.5E-03	NA	NA	4.5E-03
			alpha-Chlordane	2.6E-07	NA	NA	NA	2.6E-07	Liver	1.7E-02	NA	NA	1.7E-02
			Aroclor-1254	1.2E-05	NA	NA	NA	1.2E-05	Immune system	3.6E+00	NA	NA	3.6E+00
			Aroclor-1268	3.4E-06	NA	NA	NA	3.4E-06	Immune system	9.9E-01	NA	NA	9.9E-01
			Dieldrin	2.1E-06	NA	NA	NA	2.1E-06	Liver	3.0E-02	NA	NA	3.0E-02
			gamma-Chlordane	1.2E-07	NA	NA	NA	1.2E-07	Liver	8.1E-03	NA	NA	8.1E-03
			Heptachlor Epoxide	2.3E-07	NA	NA	NA	2.3E-07	Liver	2.2E-02	NA	NA	2.2E-02
			Technical Chlordane	3.0E-06	NA	NA	NA	3.0E-06	Liver	2.0E-01	NA	NA	2.0E-01
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.3E-01	NA	NA	2.3E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	6.9E-01	NA	NA	6.9E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.4E-05	NA	NA	NA	1.4E-05		--	NA	NA	
			CHEMICAL TOTAL	3.7E-05	--	--	--	4E-05		5.9E+00	0.0E+00	--	5.9E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-05					5.9E+00
	EXPOSURE MEDIUM TOTAL							4E-05					5.9E+00
WHOLE BODY TOTAL								4E-05					5.9E+00
RECEPTOR TOTAL								4E-05					5.9E+00
							TOTAL RISK ACROSS ALL MEDIA	4E-05	TOTAL HAZARD ACROSS ALL MEDIA				5.9E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	6.9E-01
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TOTAL IMMUNE SYSTEM HI =	4.9E+00
TOTAL KIDNEY HI =	2.3E-04
TOTAL LIVER HI =	3.4E-01
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US EPA ARCHIVE DOCUMENT

TABLE G.9.37.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.7E-06	NA	NA	4.7E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	5.8E-05	NA	NA	5.8E-05
			4,4'-DDD	1.2E-07	NA	NA	NA	1.2E-07	Liver	5.7E-03	NA	NA	5.7E-03
			4,4'-DDE	2.6E-07	NA	NA	NA	2.6E-07	Liver	9.1E-03	NA	NA	9.1E-03
			4,4'-DDT	1.1E-07	NA	NA	NA	1.1E-07	Liver	3.9E-03	NA	NA	3.9E-03
			alpha-Chlordane	2.5E-07	NA	NA	NA	2.5E-07	Liver	8.3E-03	NA	NA	8.3E-03
			Aroclor-1254	6.5E-05	NA	NA	NA	6.5E-05	Immune system	9.5E+00	NA	NA	9.5E+00
			Aroclor-1268	1.1E-06	NA	NA	NA	1.1E-06	Immune system	1.6E-01	NA	NA	1.6E-01
			beta-BHC	4.1E-08	NA	NA	NA	4.1E-08	Liver / Kidney	4.5E-04	NA	NA	4.5E-04
			Dieldrin	5.4E-06	NA	NA	NA	5.4E-06	Liver	3.9E-02	NA	NA	3.9E-02
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	5.7E-05	NA	NA	5.7E-05
			Endrin Aldehyde	NC	NA	NA	NA		Nervous system	7.2E-04	NA	NA	7.2E-04
			gamma-Chlordane	9.2E-08	NA	NA	NA	9.2E-08	Liver	3.1E-03	NA	NA	3.1E-03
			Heptachlor	1.1E-07	NA	NA	NA	1.1E-07	Liver	2.9E-04	NA	NA	2.9E-04
			Heptachlor Epoxide	5.1E-07	NA	NA	NA	5.1E-07	Liver	2.5E-02	NA	NA	2.5E-02
			Technical Chlordane	3.4E-06	NA	NA	NA	3.4E-06	Liver	1.1E-01	NA	NA	1.1E-01
			Cadmium	NC	NA	NA	NA		Kidney	2.1E-02	NA	NA	2.1E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	7.8E-03	NA	NA	7.8E-03
			Mercury	NC	NA	NA	NA		Immune system	1.1E-01	NA	NA	1.1E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.8E-01	NA	NA	5.8E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	6.2E-04	NA	NA	NA	6.2E-04		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	2.0E-04	NA	NA	NA	2.0E-04		--	NA	NA	
			CHEMICAL TOTAL	8.9E-04	--	--	--	9E-04		1.1E+01	0.0E+00	--	1.1E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						9E-04					1.1E+01
	EXPOSURE MEDIUM TOTAL							9E-04					1.1E+01
WHOLE BODY TOTAL								9E-04					1.1E+01
RECEPTOR TOTAL								9E-04					1.1E+01
			TOTAL RISK ACROSS ALL MEDIA					9E-04	TOTAL HAZARD ACROSS ALL MEDIA				1.1E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	5.8E-01
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TOTAL IMMUNE SYSTEM HI =	9.8E+00
TOTAL KIDNEY HI =	2.2E-02
TOTAL LIVER HI =	2.1E-01
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TOTAL NERVOUS SYSTEM HI =	7.2E-04
TOTAL NOAEL HI =	7.8E-03
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Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.38.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	3.7E-06	NA	NA	3.7E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	4.6E-05	NA	NA	4.6E-05
			4,4'-DDD	9.1E-08	NA	NA	NA	9.1E-08	Liver	4.4E-03	NA	NA	4.4E-03
			4,4'-DDE	2.1E-07	NA	NA	NA	2.1E-07	Liver	7.1E-03	NA	NA	7.1E-03
			4,4'-DDT	8.8E-08	NA	NA	NA	8.8E-08	Liver	3.0E-03	NA	NA	3.0E-03
			alpha-Chlordane	1.9E-07	NA	NA	NA	1.9E-07	Liver	6.5E-03	NA	NA	6.5E-03
			Aroclor-1254	5.1E-05	NA	NA	NA	5.1E-05	Immune system	7.5E+00	NA	NA	7.5E+00
			Aroclor-1268	8.7E-07	NA	NA	NA	8.7E-07	Immune system	1.3E-01	NA	NA	1.3E-01
			beta-BHC	3.2E-08	NA	NA	NA	3.2E-08	Liver / Kidney	3.5E-04	NA	NA	3.5E-04
			Dieldrin	4.2E-06	NA	NA	NA	4.2E-06	Liver	3.1E-02	NA	NA	3.1E-02
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	4.5E-05	NA	NA	4.5E-05
			Endrin Aldehyde	NC	NA	NA	NA		Nervous system	5.6E-04	NA	NA	5.6E-04
			gamma-Chlordane	7.2E-08	NA	NA	NA	7.2E-08	Liver	2.4E-03	NA	NA	2.4E-03
			Heptachlor	8.8E-08	NA	NA	NA	8.8E-08	Liver	2.3E-04	NA	NA	2.3E-04
			Heptachlor Epoxide	4.0E-07	NA	NA	NA	4.0E-07	Liver	2.0E-02	NA	NA	2.0E-02
			Technical Chlordane	2.7E-06	NA	NA	NA	2.7E-06	Liver	8.8E-02	NA	NA	8.8E-02
			Cadmium	NC	NA	NA	NA		Kidney	1.6E-02	NA	NA	1.6E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	6.1E-03	NA	NA	6.1E-03
			Mercury	NC	NA	NA	NA		Immune system	8.6E-02	NA	NA	8.6E-02
			Mercury (methyl)	NC	NA	NA	NA		*Developmental toxicity*	*4.6E-01*	NA	NA	*4.6E-01*
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.8E-04	NA	NA	NA	4.8E-04		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	1.5E-04	NA	NA	NA	1.5E-04		--	NA	NA	
			CHEMICAL TOTAL	7.0E-04	--	--	--	7E-04		8.3E+00	0.0E+00	--	8.3E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-04					8.3E+00
	EXPOSURE MEDIUM TOTAL							7E-04					8.3E+00
WHOLE BODY TOTAL								7E-04					8.3E+00
RECEPTOR TOTAL								7E-04					8.3E+00
			TOTAL RISK ACROSS ALL MEDIA					7E-04	TOTAL HAZARD ACROSS ALL MEDIA				8.3E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	4.6E-01
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TOTAL IMMUNE SYSTEM HI =	7.7E+00
TOTAL KIDNEY HI =	1.7E-02
TOTAL LIVER HI =	1.6E-01
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TOTAL NERVOUS SYSTEM HI =	5.6E-04
TOTAL NOAEL HI =	6.1E-03

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.39.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	7.8E-06	NA	NA	7.8E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	9.7E-05	NA	NA	9.7E-05
			4,4'-DDD	9.7E-08	NA	NA	NA	9.7E-08	Liver	9.4E-03	NA	NA	9.4E-03
			4,4'-DDE	2.2E-07	NA	NA	NA	2.2E-07	Liver	1.5E-02	NA	NA	1.5E-02
			4,4'-DDT	9.4E-08	NA	NA	NA	9.4E-08	Liver	6.4E-03	NA	NA	6.4E-03
			alpha-Chlordane	2.1E-07	NA	NA	NA	2.1E-07	Liver	1.4E-02	NA	NA	1.4E-02
			Aroclor-1254	5.4E-05	NA	NA	NA	5.4E-05	Immune system	1.6E+01	NA	NA	1.6E+01
			Aroclor-1268	9.3E-07	NA	NA	NA	9.3E-07	Immune system	2.7E-01	NA	NA	2.7E-01
			beta-BHC	3.4E-08	NA	NA	NA	3.4E-08	Liver / Kidney	7.4E-04	NA	NA	7.4E-04
			Dieldrin	4.5E-06	NA	NA	NA	4.5E-06	Liver	6.6E-02	NA	NA	6.6E-02
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	9.5E-05	NA	NA	9.5E-05
			Endrin Aldehyde	NC	NA	NA	NA		Nervous system	1.2E-03	NA	NA	1.2E-03
			gamma-Chlordane	7.7E-08	NA	NA	NA	7.7E-08	Liver	5.1E-03	NA	NA	5.1E-03
			Heptachlor	9.4E-08	NA	NA	NA	9.4E-08	Liver	4.9E-04	NA	NA	4.9E-04
			Heptachlor Epoxide	4.2E-07	NA	NA	NA	4.2E-07	Liver	4.2E-02	NA	NA	4.2E-02
			Technical Chlordane	2.8E-06	NA	NA	NA	2.8E-06	Liver	1.9E-01	NA	NA	1.9E-01
			Cadmium	NC	NA	NA	NA		Kidney	3.5E-02	NA	NA	3.5E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	1.3E-02	NA	NA	1.3E-02
			Mercury	NC	NA	NA	NA		Immune system	1.8E-01	NA	NA	1.8E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	9.7E-01	NA	NA	9.7E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	5.1E-04	NA	NA	NA	5.1E-04		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	1.6E-04	NA	NA	NA	1.6E-04		--	NA	NA	
			CHEMICAL TOTAL	7.4E-04	--	--	--	7E-04		1.8E+01	0.0E+00	--	1.8E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-04					1.8E+01
	EXPOSURE MEDIUM TOTAL							7E-04					1.8E+01
WHOLE BODY TOTAL								7E-04					1.8E+01
RECEPTOR TOTAL								7E-04					1.8E+01
							TOTAL RISK ACROSS ALL MEDIA	7E-04	TOTAL HAZARD ACROSS ALL MEDIA				1.8E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	9.7E-01
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TOTAL IMMUNE SYSTEM HI =	1.6E+01
TOTAL KIDNEY HI =	3.6E-02
TOTAL LIVER HI =	3.5E-01
	--
TOTAL NERVOUS SYSTEM HI =	1.2E-03
TOTAL NOAEL HI =	1.3E-02
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Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.40.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.7E-06	NA	NA	4.7E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	5.8E-05	NA	NA	5.8E-05
			4,4'-DDD	8.7E-08	NA	NA	NA	8.7E-08	Liver	5.7E-03	NA	NA	5.7E-03
			4,4'-DDE	2.0E-07	NA	NA	NA	2.0E-07	Liver	9.1E-03	NA	NA	9.1E-03
			4,4'-DDT	8.4E-08	NA	NA	NA	8.4E-08	Liver	3.9E-03	NA	NA	3.9E-03
			alpha-Chlordane	1.9E-07	NA	NA	NA	1.9E-07	Liver	8.3E-03	NA	NA	8.3E-03
			Aroclor-1254	4.9E-05	NA	NA	NA	4.9E-05	Immune system	9.5E+00	NA	NA	9.5E+00
			Aroclor-1268	8.4E-07	NA	NA	NA	8.4E-07	Immune system	1.6E-01	NA	NA	1.6E-01
			beta-BHC	3.1E-08	NA	NA	NA	3.1E-08	Liver / Kidney	4.5E-04	NA	NA	4.5E-04
			Dieldrin	4.1E-06	NA	NA	NA	4.1E-06	Liver	3.9E-02	NA	NA	3.9E-02
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	5.7E-05	NA	NA	5.7E-05
			Endrin Aldehyde	NC	NA	NA	NA		Nervous system	7.2E-04	NA	NA	7.2E-04
			gamma-Chlordane	6.9E-08	NA	NA	NA	6.9E-08	Liver	3.1E-03	NA	NA	3.1E-03
			Heptachlor	8.5E-08	NA	NA	NA	8.5E-08	Liver	2.9E-04	NA	NA	2.9E-04
			Heptachlor Epoxide	3.8E-07	NA	NA	NA	3.8E-07	Liver	2.5E-02	NA	NA	2.5E-02
			Technical Chlordane	2.5E-06	NA	NA	NA	2.5E-06	Liver	1.1E-01	NA	NA	1.1E-01
			Cadmium	NC	NA	NA	NA		Kidney	2.1E-02	NA	NA	2.1E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	7.8E-03	NA	NA	7.8E-03
			Mercury	NC	NA	NA	NA		Immune system	1.1E-01	NA	NA	1.1E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.8E-01	NA	NA	5.8E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.6E-04	NA	NA	NA	4.6E-04		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	1.5E-04	NA	NA	NA	1.5E-04		--	NA	NA	
			CHEMICAL TOTAL	6.7E-04	--	--	--	7E-04		1.1E+01	0.0E+00	--	1.1E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-04					1.1E+01
	EXPOSURE MEDIUM TOTAL							7E-04					1.1E+01
WHOLE BODY TOTAL								7E-04					1.1E+01
RECEPTOR TOTAL								7E-04					1.1E+01
			TOTAL RISK ACROSS ALL MEDIA					7E-04	TOTAL HAZARD ACROSS ALL MEDIA				1.1E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	5.8E-01
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	--
TOTAL IMMUNE SYSTEM HI =	9.8E+00
TOTAL KIDNEY HI =	2.2E-02
TOTAL LIVER HI =	2.1E-01
	--
TOTAL NERVOUS SYSTEM HI =	7.2E-04
TOTAL NOAEL HI =	7.8E-03

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.41.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	3.7E-06	NA	NA	3.7E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	4.6E-05	NA	NA	4.6E-05
			4,4'-DDD	6.8E-08	NA	NA	NA	6.8E-08	Liver	4.4E-03	NA	NA	4.4E-03
			4,4'-DDE	1.6E-07	NA	NA	NA	1.6E-07	Liver	7.1E-03	NA	NA	7.1E-03
			4,4'-DDT	6.6E-08	NA	NA	NA	6.6E-08	Liver	3.0E-03	NA	NA	3.0E-03
			alpha-Chlordane	1.5E-07	NA	NA	NA	1.5E-07	Liver	6.5E-03	NA	NA	6.5E-03
			Aroclor-1254	3.8E-05	NA	NA	NA	3.8E-05	Immune system	7.5E+00	NA	NA	7.5E+00
			Aroclor-1268	6.5E-07	NA	NA	NA	6.5E-07	Immune system	1.3E-01	NA	NA	1.3E-01
			beta-BHC	2.4E-08	NA	NA	NA	2.4E-08	Liver / Kidney	3.5E-04	NA	NA	3.5E-04
			Dieldrin	3.2E-06	NA	NA	NA	3.2E-06	Liver	3.1E-02	NA	NA	3.1E-02
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	4.5E-05	NA	NA	4.5E-05
			Endrin Aldehyde	NC	NA	NA	NA		Nervous system	5.6E-04	NA	NA	5.6E-04
			gamma-Chlordane	5.4E-08	NA	NA	NA	5.4E-08	Liver	2.4E-03	NA	NA	2.4E-03
			Heptachlor	6.6E-08	NA	NA	NA	6.6E-08	Liver	2.3E-04	NA	NA	2.3E-04
			Heptachlor Epoxide	3.0E-07	NA	NA	NA	3.0E-07	Liver	2.0E-02	NA	NA	2.0E-02
			Technical Chlordane	2.0E-06	NA	NA	NA	2.0E-06	Liver	8.8E-02	NA	NA	8.8E-02
			Cadmium	NC	NA	NA	NA		Kidney	1.6E-02	NA	NA	1.6E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	6.1E-03	NA	NA	6.1E-03
			Mercury	NC	NA	NA	NA		Immune system	8.6E-02	NA	NA	8.6E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	4.6E-01	NA	NA	4.6E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.6E-04	NA	NA	NA	3.6E-04		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	1.2E-04	NA	NA	NA	1.2E-04		--	NA	NA	
			CHEMICAL TOTAL	5.2E-04	--	--	--	5E-04		8.3E+00	0.0E+00	--	8.3E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-04					8.3E+00
	EXPOSURE MEDIUM TOTAL							5E-04					8.3E+00
WHOLE BODY TOTAL								5E-04					8.3E+00
RECEPTOR TOTAL								5E-04					8.3E+00
			TOTAL RISK ACROSS ALL MEDIA					5E-04	TOTAL HAZARD ACROSS ALL MEDIA				8.3E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	4.6E-01
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TOTAL IMMUNE SYSTEM HI =	7.7E+00
TOTAL KIDNEY HI =	1.7E-02
TOTAL LIVER HI =	1.6E-01
	--
TOTAL NERVOUS SYSTEM HI =	5.6E-04
TOTAL NOAEL HI =	6.1E-03

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.42.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	7.8E-06	NA	NA	7.8E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	9.7E-05	NA	NA	9.7E-05
			4,4'-DDD	9.7E-08	NA	NA	NA	9.7E-08	Liver	9.4E-03	NA	NA	9.4E-03
			4,4'-DDE	2.2E-07	NA	NA	NA	2.2E-07	Liver	1.5E-02	NA	NA	1.5E-02
			4,4'-DDT	9.4E-08	NA	NA	NA	9.4E-08	Liver	6.4E-03	NA	NA	6.4E-03
			alpha-Chlordane	2.1E-07	NA	NA	NA	2.1E-07	Liver	1.4E-02	NA	NA	1.4E-02
			Aroclor-1254	5.4E-05	NA	NA	NA	5.4E-05	Immune system	1.6E+01	NA	NA	1.6E+01
			Aroclor-1268	9.3E-07	NA	NA	NA	9.3E-07	Immune system	2.7E-01	NA	NA	2.7E-01
			beta-BHC	3.4E-08	NA	NA	NA	3.4E-08	Liver / Kidney	7.4E-04	NA	NA	7.4E-04
			Dieldrin	4.5E-06	NA	NA	NA	4.5E-06	Liver	6.6E-02	NA	NA	6.6E-02
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	9.5E-05	NA	NA	9.5E-05
			Endrin Aldehyde	NC	NA	NA	NA		Nervous system	1.2E-03	NA	NA	1.2E-03
			gamma-Chlordane	7.7E-08	NA	NA	NA	7.7E-08	Liver	5.1E-03	NA	NA	5.1E-03
			Heptachlor	9.4E-08	NA	NA	NA	9.4E-08	Liver	4.9E-04	NA	NA	4.9E-04
			Heptachlor Epoxide	4.2E-07	NA	NA	NA	4.2E-07	Liver	4.2E-02	NA	NA	4.2E-02
			Technical Chlordane	2.8E-06	NA	NA	NA	2.8E-06	Liver	1.9E-01	NA	NA	1.9E-01
			Cadmium	NC	NA	NA	NA		Kidney	3.5E-02	NA	NA	3.5E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	1.3E-02	NA	NA	1.3E-02
			Mercury	NC	NA	NA	NA		Immune system	1.8E-01	NA	NA	1.8E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	9.7E-01	NA	NA	9.7E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	5.1E-04	NA	NA	NA	5.1E-04		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	1.6E-04	NA	NA	NA	1.6E-04		--	NA	NA	
			CHEMICAL TOTAL	7.4E-04	--	--	--	7E-04		1.8E+01	0.0E+00	--	1.8E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-04					1.8E+01
	EXPOSURE MEDIUM TOTAL							7E-04					1.8E+01
WHOLE BODY TOTAL								7E-04					1.8E+01
RECEPTOR TOTAL								7E-04					1.8E+01
							TOTAL RISK ACROSS ALL MEDIA	7E-04	TOTAL HAZARD ACROSS ALL MEDIA				1.8E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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TOTAL DEVELOPMENTAL TOXICITY HI =	9.7E-01
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TOTAL IMMUNE SYSTEM HI =	1.6E+01
TOTAL KIDNEY HI =	3.6E-02
TOTAL LIVER HI =	3.5E-01
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TOTAL NERVOUS SYSTEM HI =	1.2E-03
TOTAL NOAEL HI =	1.3E-02

US EPA ARCHIVE DOCUMENT

TABLE G.9.43.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	9.7E-06	NA	NA	9.7E-06
			Benzo(a)anthracene	6.0E-08	NA	NA	NA	6.0E-08	Kidney	1.6E-05	NA	NA	1.6E-05
			Benzo(a)pyrene	6.5E-07	NA	NA	NA	6.5E-07	Kidney	1.7E-05	NA	NA	1.7E-05
			Benzo(b)fluoranthene	6.8E-08	NA	NA	NA	6.8E-08	Kidney	1.8E-05	NA	NA	1.8E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	4.6E-06	NA	NA	4.6E-06
			Dibenzo(a,h)anthracene	1.1E-07	NA	NA	NA	1.1E-07	Kidney	2.9E-06	NA	NA	2.9E-06
			Indeno(1,2,3-cd)pyrene	2.1E-08	NA	NA	NA	2.1E-08	Kidney	5.7E-06	NA	NA	5.7E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	8.2E-05	NA	NA	8.2E-05
			4,4'-DDD	1.1E-07	NA	NA	NA	1.1E-07	Liver	5.5E-03	NA	NA	5.5E-03
			4,4'-DDE	3.6E-07	NA	NA	NA	3.6E-07	Liver	1.2E-02	NA	NA	1.2E-02
			4,4'-DDT	8.7E-08	NA	NA	NA	8.7E-08	Liver	3.0E-03	NA	NA	3.0E-03
			alpha-Chlordane	3.1E-07	NA	NA	NA	3.1E-07	Liver	1.0E-02	NA	NA	1.0E-02
			Aroclor-1254	2.1E-04	NA	NA	NA	2.1E-04	Immune system	3.1E+01	NA	NA	3.1E+01
			Aroclor-1268	2.9E-06	NA	NA	NA	2.9E-06	Immune system	4.2E-01	NA	NA	4.2E-01
			Dieldrin	5.1E-06	NA	NA	NA	5.1E-06	Liver	3.7E-02	NA	NA	3.7E-02
			gamma-Chlordane	1.2E-07	NA	NA	NA	1.2E-07	Liver	3.9E-03	NA	NA	3.9E-03
			Heptachlor Epoxide	2.4E-07	NA	NA	NA	2.4E-07	Liver	1.2E-02	NA	NA	1.2E-02
			Technical Chlordane	8.8E-06	NA	NA	NA	8.8E-06	Liver	2.9E-01	NA	NA	2.9E-01
			Chromium	NC	NA	NA	NA		NOAEL	8.1E-03	NA	NA	8.1E-03
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	9.8E-02	NA	NA	9.8E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	3.2E-01	NA	NA	3.2E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.7E-03	NA	NA	NA	2.7E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	1.1E-04	NA	NA	NA	1.1E-04		--	NA	NA	
			CHEMICAL TOTAL	3.1E-03	--	--	--	3E-03		3.2E+01	0.0E+00	--	3.2E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-03					3.2E+01
	EXPOSURE MEDIUM TOTAL							3E-03					3.2E+01
WHOLE BODY TOTAL								3E-03					3.2E+01
RECEPTOR TOTAL								3E-03					3.2E+01
							TOTAL RISK ACROSS ALL MEDIA	3E-03	TOTAL HAZARD ACROSS ALL MEDIA				3.2E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	3.2E-01
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TOTAL IMMUNE SYSTEM HI =	3.2E+01
TOTAL KIDNEY HI =	1.5E-04
TOTAL LIVER HI =	3.8E-01
	--
	--
TOTAL NOAEL HI =	8.1E-03

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.9.44.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	7.6E-06	NA	NA	7.6E-06
			Benzo(a)anthracene	4.7E-08	NA	NA	NA	4.7E-08	Kidney	1.2E-05	NA	NA	1.2E-05
			Benzo(a)pyrene	5.1E-07	NA	NA	NA	5.1E-07	Kidney	1.4E-05	NA	NA	1.4E-05
			Benzo(b)fluoranthene	5.3E-08	NA	NA	NA	5.3E-08	Kidney	1.4E-05	NA	NA	1.4E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	3.6E-06	NA	NA	3.6E-06
			Dibenzo(a,h)anthracene	8.5E-08	NA	NA	NA	8.5E-08	Kidney	2.3E-06	NA	NA	2.3E-06
			Indeno(1,2,3-cd)pyrene	1.7E-08	NA	NA	NA	1.7E-08	Kidney	4.5E-06	NA	NA	4.5E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	6.4E-05	NA	NA	6.4E-05
			4,4'-DDD	8.8E-08	NA	NA	NA	8.8E-08	Liver	4.3E-03	NA	NA	4.3E-03
			4,4'-DDE	2.8E-07	NA	NA	NA	2.8E-07	Liver	9.7E-03	NA	NA	9.7E-03
			4,4'-DDT	6.8E-08	NA	NA	NA	6.8E-08	Liver	2.3E-03	NA	NA	2.3E-03
			alpha-Chlordane	2.4E-07	NA	NA	NA	2.4E-07	Liver	8.0E-03	NA	NA	8.0E-03
			Aroclor-1254	1.7E-04	NA	NA	NA	1.7E-04	Immune system	2.4E+01	NA	NA	2.4E+01
			Aroclor-1268	2.2E-06	NA	NA	NA	2.2E-06	*Immune system*	*3.3E-01*	NA	NA	*3.3E-01*
			Dieldrin	4.0E-06	NA	NA	NA	4.0E-06	Liver	2.9E-02	NA	NA	2.9E-02
			gamma-Chlordane	9.0E-08	NA	NA	NA	9.0E-08	Liver	3.0E-03	NA	NA	3.0E-03
			Heptachlor Epoxide	1.8E-07	NA	NA	NA	1.8E-07	Liver	9.1E-03	NA	NA	9.1E-03
			Technical Chlordane	6.8E-06	NA	NA	NA	6.8E-06	Liver	2.3E-01	NA	NA	2.3E-01
			Chromium	NC	NA	NA	NA		NOAEL	6.3E-03	NA	NA	6.3E-03
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	7.7E-02	NA	NA	7.7E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.5E-01	NA	NA	2.5E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.1E-03	NA	NA	NA	2.1E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	8.5E-05	NA	NA	NA	8.5E-05		--	NA	NA	
			CHEMICAL TOTAL	2.4E-03	--	--	--	2E-03		2.5E+01	0.0E+00	--	2.5E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-03					2.5E+01
	EXPOSURE MEDIUM TOTAL							2E-03					2.5E+01
WHOLE BODY TOTAL								2E-03					2.5E+01
RECEPTOR TOTAL								2E-03					2.5E+01
							TOTAL RISK ACROSS ALL MEDIA	2E-03	TOTAL HAZARD ACROSS ALL MEDIA				2.5E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - *Not applicable; exposure route not applicable for this chemical/exposure medium.*
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	2.5E-01
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	--
TOTAL IMMUNE SYSTEM HI =	2.5E+01
TOTAL KIDNEY HI =	1.1E-04
TOTAL LIVER HI =	2.9E-01
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	--
TOTAL NOAEL HI =	6.3E-03

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.9.45.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.6E-05	NA	NA	1.6E-05
			Benzo(a)anthracene	5.0E-08	NA	NA	NA	5.0E-08	Kidney	2.6E-05	NA	NA	2.6E-05
			Benzo(a)pyrene	5.4E-07	NA	NA	NA	5.4E-07	Kidney	2.9E-05	NA	NA	2.9E-05
			Benzo(b)fluoranthene	5.6E-08	NA	NA	NA	5.6E-08	Kidney	3.0E-05	NA	NA	3.0E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	7.6E-06	NA	NA	7.6E-06
			Dibenzo(a,h)anthracene	9.0E-08	NA	NA	NA	9.0E-08	Kidney	4.8E-06	NA	NA	4.8E-06
			Indeno(1,2,3-cd)pyrene	1.8E-08	NA	NA	NA	1.8E-08	Kidney	9.5E-06	NA	NA	9.5E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.4E-04	NA	NA	1.4E-04
			4,4'-DDD	9.3E-08	NA	NA	NA	9.3E-08	Liver	9.1E-03	NA	NA	9.1E-03
			4,4'-DDE	3.0E-07	NA	NA	NA	3.0E-07	Liver	2.1E-02	NA	NA	2.1E-02
			4,4'-DDT	7.2E-08	NA	NA	NA	7.2E-08	Liver	4.9E-03	NA	NA	4.9E-03
			alpha-Chlordane	2.5E-07	NA	NA	NA	2.5E-07	Liver	1.7E-02	NA	NA	1.7E-02
			Aroclor-1254	1.8E-04	NA	NA	NA	1.8E-04	Immune system	5.2E+01	NA	NA	5.2E+01
			Aroclor-1268	2.4E-06	NA	NA	NA	2.4E-06	Immune system	6.9E-01	NA	NA	6.9E-01
			Dieldrin	4.3E-06	NA	NA	NA	4.3E-06	Liver	6.2E-02	NA	NA	6.2E-02
			gamma-Chlordane	9.6E-08	NA	NA	NA	9.6E-08	Liver	6.4E-03	NA	NA	6.4E-03
			Heptachlor Epoxide	2.0E-07	NA	NA	NA	2.0E-07	Liver	1.9E-02	NA	NA	1.9E-02
			Technical Chlordane	7.3E-06	NA	NA	NA	7.3E-06	Liver	4.9E-01	NA	NA	4.9E-01
			Chromium	NC	NA	NA	NA		NOAEL	1.3E-02	NA	NA	1.3E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.6E-01	NA	NA	1.6E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.3E-01	NA	NA	5.3E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.3E-03	NA	NA	NA	2.3E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	9.0E-05	NA	NA	NA	9.0E-05		--	NA	NA	
			CHEMICAL TOTAL	2.6E-03	--	--	--	3E-03		5.4E+01	0.0E+00	--	5.4E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-03					5.4E+01
	EXPOSURE MEDIUM TOTAL							3E-03					5.4E+01
WHOLE BODY TOTAL								3E-03					5.4E+01
RECEPTOR TOTAL								3E-03					5.4E+01
							TOTAL RISK ACROSS ALL MEDIA	3E-03	TOTAL HAZARD ACROSS ALL MEDIA				5.4E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	5.3E-01
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	--
TOTAL IMMUNE SYSTEM HI =	5.3E+01
TOTAL KIDNEY HI =	2.4E-04
TOTAL LIVER HI =	6.2E-01
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TOTAL NOAEL HI =	1.3E-02
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Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.9.46.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	9.7E-06	NA	NA	9.7E-06
			Benzo(a)anthracene	4.5E-08	NA	NA	NA	4.5E-08	Kidney	1.6E-05	NA	NA	1.6E-05
			Benzo(a)pyrene	4.9E-07	NA	NA	NA	4.9E-07	Kidney	1.7E-05	NA	NA	1.7E-05
			Benzo(b)fluoranthene	5.1E-08	NA	NA	NA	5.1E-08	Kidney	1.8E-05	NA	NA	1.8E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	4.6E-06	NA	NA	4.6E-06
			Dibenzo(a,h)anthracene	8.1E-08	NA	NA	NA	8.1E-08	Kidney	2.9E-06	NA	NA	2.9E-06
			Indeno(1,2,3-cd)pyrene	1.6E-08	NA	NA	NA	1.6E-08	Kidney	5.7E-06	NA	NA	5.7E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	8.2E-05	NA	NA	8.2E-05
			4,4'-DDD	8.4E-08	NA	NA	NA	8.4E-08	Liver	5.5E-03	NA	NA	5.5E-03
			4,4'-DDE	2.7E-07	NA	NA	NA	2.7E-07	Liver	1.2E-02	NA	NA	1.2E-02
			4,4'-DDT	6.5E-08	NA	NA	NA	6.5E-08	Liver	3.0E-03	NA	NA	3.0E-03
			alpha-Chlordane	2.3E-07	NA	NA	NA	2.3E-07	Liver	1.0E-02	NA	NA	1.0E-02
			Aroclor-1254	1.6E-04	NA	NA	NA	1.6E-04	Immune system	3.1E+01	NA	NA	3.1E+01
			Aroclor-1268	2.1E-06	NA	NA	NA	2.1E-06	Immune system	4.2E-01	NA	NA	4.2E-01
			Dieldrin	3.9E-06	NA	NA	NA	3.9E-06	Liver	3.7E-02	NA	NA	3.7E-02
			gamma-Chlordane	8.7E-08	NA	NA	NA	8.7E-08	Liver	3.9E-03	NA	NA	3.9E-03
			Heptachlor Epoxide	1.8E-07	NA	NA	NA	1.8E-07	Liver	1.2E-02	NA	NA	1.2E-02
			Technical Chlordane	6.6E-06	NA	NA	NA	6.6E-06	Liver	2.9E-01	NA	NA	2.9E-01
			Chromium	NC	NA	NA	NA		NOAEL	8.1E-03	NA	NA	8.1E-03
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	9.8E-02	NA	NA	9.8E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	3.2E-01	NA	NA	3.2E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.1E-03	NA	NA	NA	2.1E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	8.1E-05	NA	NA	NA	8.1E-05		--	NA	NA	
			CHEMICAL TOTAL	2.3E-03	--	--	--	2E-03		3.2E+01	0.0E+00	--	3.2E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-03					3.2E+01
	EXPOSURE MEDIUM TOTAL							2E-03					3.2E+01
WHOLE BODY TOTAL								2E-03					3.2E+01
RECEPTOR TOTAL								2E-03					3.2E+01
			TOTAL RISK ACROSS ALL MEDIA					2E-03	TOTAL HAZARD ACROSS ALL MEDIA				3.2E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	3.2E-01
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	--
TOTAL IMMUNE SYSTEM HI =	3.2E+01
TOTAL KIDNEY HI =	1.5E-04
TOTAL LIVER HI =	3.8E-01
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	--
TOTAL NOAEL HI =	8.1E-03

Prepared by: KJA
Checked by: AWS

US EPA ARCHIVE DOCUMENT

TABLE G.9.47.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	7.6E-06	NA	NA	7.6E-06
			Benzo(a)anthracene	3.5E-08	NA	NA	NA	3.5E-08	Kidney	1.2E-05	NA	NA	1.2E-05
			Benzo(a)pyrene	3.8E-07	NA	NA	NA	3.8E-07	Kidney	1.4E-05	NA	NA	1.4E-05
			Benzo(b)fluoranthene	4.0E-08	NA	NA	NA	4.0E-08	Kidney	1.4E-05	NA	NA	1.4E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	3.6E-06	NA	NA	3.6E-06
			Dibenzo(a,h)anthracene	6.4E-08	NA	NA	NA	6.4E-08	Kidney	2.3E-06	NA	NA	2.3E-06
			Indeno(1,2,3-cd)pyrene	1.3E-08	NA	NA	NA	1.3E-08	Kidney	4.5E-06	NA	NA	4.5E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	6.4E-05	NA	NA	6.4E-05
			4,4'-DDD	6.6E-08	NA	NA	NA	6.6E-08	Liver	4.3E-03	NA	NA	4.3E-03
			4,4'-DDE	2.1E-07	NA	NA	NA	2.1E-07	Liver	9.7E-03	NA	NA	9.7E-03
			4,4'-DDT	5.1E-08	NA	NA	NA	5.1E-08	Liver	2.3E-03	NA	NA	2.3E-03
			alpha-Chlordane	1.8E-07	NA	NA	NA	1.8E-07	Liver	8.0E-03	NA	NA	8.0E-03
			Aroclor-1254	1.3E-04	NA	NA	NA	1.3E-04	Immune system	2.4E+01	NA	NA	2.4E+01
			Aroclor-1268	1.7E-06	NA	NA	NA	1.7E-06	Immune system	3.3E-01	NA	NA	3.3E-01
			Dieldrin	3.0E-06	NA	NA	NA	3.0E-06	Liver	2.9E-02	NA	NA	2.9E-02
			gamma-Chlordane	6.8E-08	NA	NA	NA	6.8E-08	Liver	3.0E-03	NA	NA	3.0E-03
			Heptachlor Epoxide	1.4E-07	NA	NA	NA	1.4E-07	Liver	9.1E-03	NA	NA	9.1E-03
			Technical Chlordane	5.1E-06	NA	NA	NA	5.1E-06	Liver	2.3E-01	NA	NA	2.3E-01
			Chromium	NC	NA	NA	NA		NOAEL	6.3E-03	NA	NA	6.3E-03
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	7.7E-02	NA	NA	7.7E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.5E-01	NA	NA	2.5E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.6E-03	NA	NA	NA	1.6E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	6.4E-05	NA	NA	NA	6.4E-05		--	NA	NA	
			CHEMICAL TOTAL	1.8E-03	--	--	--	2E-03		2.5E+01	0.0E+00	--	2.5E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-03					2.5E+01
	EXPOSURE MEDIUM TOTAL							2E-03					2.5E+01
WHOLE BODY TOTAL								2E-03					2.5E+01

RECEPTOR TOTAL			2.5E+01
TOTAL RISK ACROSS ALL MEDIA	2E-03	TOTAL HAZARD ACROSS ALL MEDIA	2.5E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: AWS

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TOTAL DEVELOPMENTAL TOXICITY HI =	2.5E-01
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	--
TOTAL IMMUNE SYSTEM HI =	2.5E+01
TOTAL KIDNEY HI =	1.1E-04
TOTAL LIVER HI =	2.9E-01
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	--
TOTAL NOAEL HI =	6.3E-03

US EPA ARCHIVE DOCUMENT

TABLE G.9.48.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.6E-05	NA	NA	1.6E-05
			Benzo(a)anthracene	5.0E-08	NA	NA	NA	5.0E-08	Kidney	2.6E-05	NA	NA	2.6E-05
			Benzo(a)pyrene	5.4E-07	NA	NA	NA	5.4E-07	Kidney	2.9E-05	NA	NA	2.9E-05
			Benzo(b)fluoranthene	5.6E-08	NA	NA	NA	5.6E-08	Kidney	3.0E-05	NA	NA	3.0E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	7.6E-06	NA	NA	7.6E-06
			Dibenzo(a,h)anthracene	9.0E-08	NA	NA	NA	9.0E-08	Kidney	4.8E-06	NA	NA	4.8E-06
			Indeno(1,2,3-cd)pyrene	1.8E-08	NA	NA	NA	1.8E-08	Kidney	9.5E-06	NA	NA	9.5E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.4E-04	NA	NA	1.4E-04
			4,4'-DDD	9.3E-08	NA	NA	NA	9.3E-08	Liver	9.1E-03	NA	NA	9.1E-03
			4,4'-DDE	3.0E-07	NA	NA	NA	3.0E-07	Liver	2.1E-02	NA	NA	2.1E-02
			4,4'-DDT	7.2E-08	NA	NA	NA	7.2E-08	Liver	4.9E-03	NA	NA	4.9E-03
			alpha-Chlordane	2.5E-07	NA	NA	NA	2.5E-07	Liver	1.7E-02	NA	NA	1.7E-02
			Aroclor-1254	1.8E-04	NA	NA	NA	1.8E-04	Immune system	5.2E+01	NA	NA	5.2E+01
			Aroclor-1268	2.4E-06	NA	NA	NA	2.4E-06	Immune system	6.9E-01	NA	NA	6.9E-01
			Dieldrin	4.3E-06	NA	NA	NA	4.3E-06	Liver	6.2E-02	NA	NA	6.2E-02
			gamma-Chlordane	9.6E-08	NA	NA	NA	9.6E-08	Liver	6.4E-03	NA	NA	6.4E-03
			Heptachlor Epoxide	2.0E-07	NA	NA	NA	2.0E-07	Liver	1.9E-02	NA	NA	1.9E-02
			Technical Chlordane	7.3E-06	NA	NA	NA	7.3E-06	Liver	4.9E-01	NA	NA	4.9E-01
			Chromium	NC	NA	NA	NA		NOAEL	1.3E-02	NA	NA	1.3E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.6E-01	NA	NA	1.6E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.3E-01	NA	NA	5.3E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.3E-03	NA	NA	NA	2.3E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	9.0E-05	NA	NA	NA	9.0E-05		--	NA	NA	
			CHEMICAL TOTAL	2.6E-03	--	--	--	3E-03		5.4E+01	0.0E+00	--	5.4E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-03					5.4E+01
	EXPOSURE MEDIUM TOTAL							3E-03					5.4E+01
WHOLE BODY TOTAL								3E-03					5.4E+01
RECEPTOR TOTAL								3E-03					5.4E+01
			TOTAL RISK ACROSS ALL MEDIA					3E-03	TOTAL HAZARD ACROSS ALL MEDIA				5.4E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	5.3E-01
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TOTAL IMMUNE SYSTEM HI =	5.3E+01
TOTAL KIDNEY HI =	2.4E-04
TOTAL LIVER HI =	6.2E-01
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	--
TOTAL NOAEL HI =	1.3E-02

Prepared by: KJA
Checked by: AWS

US EPA ARCHIVE DOCUMENT

TABLE G.9.49.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	7.0E-06	NA	NA	7.0E-06
			Benzo(a)pyrene	2.6E-07	NA	NA	NA	2.6E-07	Kidney	6.9E-06	NA	NA	6.9E-06
			Benzo(b)fluoranthene	3.2E-08	NA	NA	NA	3.2E-08	Kidney	8.6E-06	NA	NA	8.6E-06
			Dibenzo(a,h)anthracene	1.8E-07	NA	NA	NA	1.8E-07	Kidney	4.7E-06	NA	NA	4.7E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.5E-04	NA	NA	1.5E-04
			4,4'-DDD	1.3E-07	NA	NA	NA	1.3E-07	Liver	6.4E-03	NA	NA	6.4E-03
			4,4'-DDE	5.6E-07	NA	NA	NA	5.6E-07	Liver	1.9E-02	NA	NA	1.9E-02
			4,4'-DDT	4.3E-08	NA	NA	NA	4.3E-08	Liver	1.5E-03	NA	NA	1.5E-03
			alpha-Chlordane	2.6E-07	NA	NA	NA	2.6E-07	Liver	8.7E-03	NA	NA	8.7E-03
			Aroclor-1254	7.1E-05	NA	NA	NA	7.1E-05	Immune system	1.0E+01	NA	NA	1.0E+01
			beta-BHC	1.2E-07	NA	NA	NA	1.2E-07	Liver / Kidney	1.3E-03	NA	NA	1.3E-03
			Dieldrin	4.7E-06	NA	NA	NA	4.7E-06	Liver	3.4E-02	NA	NA	3.4E-02
			gamma-Chlordane	1.1E-07	NA	NA	NA	1.1E-07	Liver	3.7E-03	NA	NA	3.7E-03
			Heptachlor Epoxide	7.7E-07	NA	NA	NA	7.7E-07	Liver	3.8E-02	NA	NA	3.8E-02
			Technical Chlordane	5.8E-06	NA	NA	NA	5.8E-06	Liver	1.9E-01	NA	NA	1.9E-01
			Cadmium	NC	NA	NA	NA		Kidney	5.6E-03	NA	NA	5.6E-03
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	7.7E-03	NA	NA	7.7E-03
			Mercury	NC	NA	NA	NA		Immune system	2.5E-02	NA	NA	2.5E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	7.9E-02	NA	NA	7.9E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.0E-03	NA	NA	NA	1.0E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	1.8E-04	NA	NA	NA	1.8E-04		--	NA	NA	
			CHEMICAL TOTAL	1.3E-03	--	--	--	1E-03		1.1E+01	0.0E+00	--	1.1E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-03					1.1E+01
	EXPOSURE MEDIUM TOTAL							1E-03					1.1E+01
WHOLE BODY TOTAL								1E-03					1.1E+01
RECEPTOR TOTAL								1E-03					1.1E+01
			TOTAL RISK ACROSS ALL MEDIA					1E-03	TOTAL HAZARD ACROSS ALL MEDIA				1.1E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	7.9E-02
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TOTAL IMMUNE SYSTEM HI =	1.0E+01
TOTAL KIDNEY HI =	7.1E-03
TOTAL LIVER HI =	3.1E-01
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	--
TOTAL NOAEL HI =	7.7E-03
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Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.50.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	5.4E-06	NA	NA	5.4E-06
			Benzo(a)pyrene	2.0E-07	NA	NA	NA	2.0E-07	Kidney	5.4E-06	NA	NA	5.4E-06
			Benzo(b)fluoranthene	2.5E-08	NA	NA	NA	2.5E-08	Kidney	6.7E-06	NA	NA	6.7E-06
			Dibenzo(a,h)anthracene	1.4E-07	NA	NA	NA	1.4E-07	Kidney	3.7E-06	NA	NA	3.7E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.1E-04	NA	NA	1.1E-04
			4,4'-DDD	1.0E-07	NA	NA	NA	1.0E-07	Liver	5.0E-03	NA	NA	5.0E-03
			4,4'-DDE	4.4E-07	NA	NA	NA	4.4E-07	Liver	1.5E-02	NA	NA	1.5E-02
			4,4'-DDT	3.3E-08	NA	NA	NA	3.3E-08	Liver	1.1E-03	NA	NA	1.1E-03
			alpha-Chlordane	2.0E-07	NA	NA	NA	2.0E-07	Liver	6.8E-03	NA	NA	6.8E-03
			Aroclor-1254	5.6E-05	NA	NA	NA	5.6E-05	Immune system	8.1E+00	NA	NA	8.1E+00
			beta-BHC	9.4E-08	NA	NA	NA	9.4E-08	Liver / Kidney	1.0E-03	NA	NA	1.0E-03
			Dieldrin	3.7E-06	NA	NA	NA	3.7E-06	Liver	2.7E-02	NA	NA	2.7E-02
			gamma-Chlordane	8.7E-08	NA	NA	NA	8.7E-08	Liver	2.9E-03	NA	NA	2.9E-03
			Heptachlor Epoxide	6.0E-07	NA	NA	NA	6.0E-07	Liver	3.0E-02	NA	NA	3.0E-02
			Technical Chlordane	4.5E-06	NA	NA	NA	4.5E-06	Liver	1.5E-01	NA	NA	1.5E-01
			Cadmium	NC	NA	NA	NA		Kidney	4.4E-03	NA	NA	4.4E-03
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	6.0E-03	NA	NA	6.0E-03
			Mercury	NC	NA	NA	NA		Immune system	2.0E-02	NA	NA	2.0E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	6.2E-02	NA	NA	6.2E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	7.9E-04	NA	NA	NA	7.9E-04		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	1.4E-04	NA	NA	NA	1.4E-04		--	NA	NA	
			CHEMICAL TOTAL	9.9E-04	--	--	--	1E-03		8.4E+00	0.0E+00	--	8.4E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-03					8.4E+00
	EXPOSURE MEDIUM TOTAL							1E-03					8.4E+00
WHOLE BODY TOTAL								1E-03					8.4E+00
RECEPTOR TOTAL								1E-03					8.4E+00
			TOTAL RISK ACROSS ALL MEDIA					1E-03	TOTAL HAZARD ACROSS ALL MEDIA				8.4E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	6.2E-02
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	--
TOTAL IMMUNE SYSTEM HI =	8.1E+00
TOTAL KIDNEY HI =	5.5E-03
TOTAL LIVER HI =	2.4E-01
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TOTAL NOAEL HI =	6.0E-03
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Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.51.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.2E-05	NA	NA	1.2E-05
			Benzo(a)pyrene	2.2E-07	NA	NA	NA	2.2E-07	Kidney	1.2E-05	NA	NA	1.2E-05
			Benzo(b)fluoranthene	2.7E-08	NA	NA	NA	2.7E-08	Kidney	1.4E-05	NA	NA	1.4E-05
			Dibenzo(a,h)anthracene	1.5E-07	NA	NA	NA	1.5E-07	Kidney	7.8E-06	NA	NA	7.8E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	2.4E-04	NA	NA	2.4E-04
			4,4'-DDD	1.1E-07	NA	NA	NA	1.1E-07	Liver	1.1E-02	NA	NA	1.1E-02
			4,4'-DDE	4.7E-07	NA	NA	NA	4.7E-07	Liver	3.2E-02	NA	NA	3.2E-02
			4,4'-DDT	3.5E-08	NA	NA	NA	3.5E-08	Liver	2.4E-03	NA	NA	2.4E-03
			alpha-Chlordane	2.2E-07	NA	NA	NA	2.2E-07	Liver	1.4E-02	NA	NA	1.4E-02
			Aroclor-1254	5.9E-05	NA	NA	NA	5.9E-05	Immune system	1.7E+01	NA	NA	1.7E+01
			beta-BHC	1.0E-07	NA	NA	NA	1.0E-07	Liver / Kidney	2.2E-03	NA	NA	2.2E-03
			Dieldrin	3.9E-06	NA	NA	NA	3.9E-06	Liver	5.7E-02	NA	NA	5.7E-02
			gamma-Chlordane	9.3E-08	NA	NA	NA	9.3E-08	Liver	6.2E-03	NA	NA	6.2E-03
			Heptachlor Epoxide	6.4E-07	NA	NA	NA	6.4E-07	Liver	6.3E-02	NA	NA	6.3E-02
			Technical Chlordane	4.8E-06	NA	NA	NA	4.8E-06	Liver	3.2E-01	NA	NA	3.2E-01
			Cadmium	NC	NA	NA	NA		Kidney	9.4E-03	NA	NA	9.4E-03
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	1.3E-02	NA	NA	1.3E-02
			Mercury	NC	NA	NA	NA		Immune system	4.2E-02	NA	NA	4.2E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.3E-01	NA	NA	1.3E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	8.4E-04	NA	NA	NA	8.4E-04		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	1.5E-04	NA	NA	NA	1.5E-04		--	NA	NA	
			CHEMICAL TOTAL	1.1E-03	--	--	--	1E-03		1.8E+01	0.0E+00	--	1.8E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-03					1.8E+01
	EXPOSURE MEDIUM TOTAL							1E-03					1.8E+01
WHOLE BODY TOTAL								1E-03					1.8E+01
RECEPTOR TOTAL								1E-03					1.8E+01
			TOTAL RISK ACROSS ALL MEDIA					1E-03	TOTAL HAZARD ACROSS ALL MEDIA				1.8E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.3E-01
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TOTAL IMMUNE SYSTEM HI =	1.7E+01
TOTAL KIDNEY HI =	1.2E-02
TOTAL LIVER HI =	5.1E-01
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TOTAL NOAEL HI =	1.3E-02
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Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.52.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	7.0E-06	NA	NA	7.0E-06
			Benzo(a)pyrene	2.0E-07	NA	NA	NA	2.0E-07	Kidney	6.9E-06	NA	NA	6.9E-06
			Benzo(b)fluoranthene	2.4E-08	NA	NA	NA	2.4E-08	Kidney	8.6E-06	NA	NA	8.6E-06
			Dibenzo(a,h)anthracene	1.3E-07	NA	NA	NA	1.3E-07	Kidney	4.7E-06	NA	NA	4.7E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.5E-04	NA	NA	1.5E-04
			4,4'-DDD	9.8E-08	NA	NA	NA	9.8E-08	Liver	6.4E-03	NA	NA	6.4E-03
			4,4'-DDE	4.2E-07	NA	NA	NA	4.2E-07	Liver	1.9E-02	NA	NA	1.9E-02
			4,4'-DDT	3.2E-08	NA	NA	NA	3.2E-08	Liver	1.5E-03	NA	NA	1.5E-03
			alpha-Chlordane	2.0E-07	NA	NA	NA	2.0E-07	Liver	8.7E-03	NA	NA	8.7E-03
			Aroclor-1254	5.3E-05	NA	NA	NA	5.3E-05	Immune system	1.0E+01	NA	NA	1.0E+01
			beta-BHC	9.0E-08	NA	NA	NA	9.0E-08	Liver / Kidney	1.3E-03	NA	NA	1.3E-03
			Dieldrin	3.5E-06	NA	NA	NA	3.5E-06	Liver	3.4E-02	NA	NA	3.4E-02
			gamma-Chlordane	8.4E-08	NA	NA	NA	8.4E-08	Liver	3.7E-03	NA	NA	3.7E-03
			Heptachlor Epoxide	5.7E-07	NA	NA	NA	5.7E-07	Liver	3.8E-02	NA	NA	3.8E-02
			Technical Chlordane	4.4E-06	NA	NA	NA	4.4E-06	Liver	1.9E-01	NA	NA	1.9E-01
			Cadmium	NC	NA	NA	NA		Kidney	5.6E-03	NA	NA	5.6E-03
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	7.7E-03	NA	NA	7.7E-03
			Mercury	NC	NA	NA	NA		Immune system	2.5E-02	NA	NA	2.5E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	7.9E-02	NA	NA	7.9E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	7.6E-04	NA	NA	NA	7.6E-04		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	1.3E-04	NA	NA	NA	1.3E-04		--	NA	NA	
			CHEMICAL TOTAL	9.5E-04	--	--	--	1E-03		1.1E+01	0.0E+00	--	1.1E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-03					1.1E+01
	EXPOSURE MEDIUM TOTAL							1E-03					1.1E+01
WHOLE BODY TOTAL								1E-03					1.1E+01
RECEPTOR TOTAL								1E-03					1.1E+01
			TOTAL RISK ACROSS ALL MEDIA					1E-03	TOTAL HAZARD ACROSS ALL MEDIA				1.1E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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TOTAL DEVELOPMENTAL TOXICITY HI =	7.9E-02
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	--
TOTAL IMMUNE SYSTEM HI =	1.0E+01
TOTAL KIDNEY HI =	7.1E-03
TOTAL LIVER HI =	3.1E-01
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	--
TOTAL NOAEL HI =	7.7E-03
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US EPA ARCHIVE DOCUMENT

TABLE G.9.53.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	5.4E-06	NA	NA	5.4E-06
			Benzo(a)pyrene	1.5E-07	NA	NA	NA	1.5E-07	Kidney	5.4E-06	NA	NA	5.4E-06
			Benzo(b)fluoranthene	1.9E-08	NA	NA	NA	1.9E-08	Kidney	6.7E-06	NA	NA	6.7E-06
			Dibenzo(a,h)anthracene	1.0E-07	NA	NA	NA	1.0E-07	Kidney	3.7E-06	NA	NA	3.7E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.1E-04	NA	NA	1.1E-04
			4,4'-DDD	7.7E-08	NA	NA	NA	7.7E-08	Liver	5.0E-03	NA	NA	5.0E-03
			4,4'-DDE	3.3E-07	NA	NA	NA	3.3E-07	Liver	1.5E-02	NA	NA	1.5E-02
			4,4'-DDT	2.5E-08	NA	NA	NA	2.5E-08	Liver	1.1E-03	NA	NA	1.1E-03
			alpha-Chlordane	1.5E-07	NA	NA	NA	1.5E-07	Liver	6.8E-03	NA	NA	6.8E-03
			Aroclor-1254	4.2E-05	NA	NA	NA	4.2E-05	Immune system	8.1E+00	NA	NA	8.1E+00
			beta-BHC	7.0E-08	NA	NA	NA	7.0E-08	Liver / Kidney	1.0E-03	NA	NA	1.0E-03
			Dieldrin	2.7E-06	NA	NA	NA	2.7E-06	Liver	2.7E-02	NA	NA	2.7E-02
			gamma-Chlordane	6.5E-08	NA	NA	NA	6.5E-08	Liver	2.9E-03	NA	NA	2.9E-03
			Heptachlor Epoxide	4.5E-07	NA	NA	NA	4.5E-07	Liver	3.0E-02	NA	NA	3.0E-02
			Technical Chlordane	3.4E-06	NA	NA	NA	3.4E-06	Liver	1.5E-01	NA	NA	1.5E-01
			Cadmium	NC	NA	NA	NA		Kidney	4.4E-03	NA	NA	4.4E-03
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	6.0E-03	NA	NA	6.0E-03
			Mercury	NC	NA	NA	NA		Immune system	2.0E-02	NA	NA	2.0E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	6.2E-02	NA	NA	6.2E-02
			Toxicity Equivalency (Dioxins/Furans) - Mam	5.9E-04	NA	NA	NA	5.9E-04		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	1.1E-04	NA	NA	NA	1.1E-04		--	NA	NA	
			CHEMICAL TOTAL	7.5E-04	--	--	--	7E-04		8.4E+00	0.0E+00	--	8.4E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-04					8.4E+00
	EXPOSURE MEDIUM TOTAL							7E-04					8.4E+00
WHOLE BODY TOTAL								7E-04					8.4E+00
RECEPTOR TOTAL								7E-04					8.4E+00
							TOTAL RISK ACROSS ALL MEDIA	7E-04	TOTAL HAZARD ACROSS ALL MEDIA				8.4E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	6.2E-02
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	--
TOTAL IMMUNE SYSTEM HI =	8.1E+00
TOTAL KIDNEY HI =	5.5E-03
TOTAL LIVER HI =	2.4E-01
	--
	--
TOTAL NOAEL HI =	6.0E-03
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Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.54.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.2E-05	NA	NA	1.2E-05
			Benzo(a)pyrene	2.2E-07	NA	NA	NA	2.2E-07	Kidney	1.2E-05	NA	NA	1.2E-05
			Benzo(b)fluoranthene	2.7E-08	NA	NA	NA	2.7E-08	Kidney	1.4E-05	NA	NA	1.4E-05
			Dibenzo(a,h)anthrucene	1.5E-07	NA	NA	NA	1.5E-07	Kidney	7.8E-06	NA	NA	7.8E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	2.4E-04	NA	NA	2.4E-04
			4,4'-DDD	1.1E-07	NA	NA	NA	1.1E-07	Liver	1.1E-02	NA	NA	1.1E-02
			4,4'-DDE	4.7E-07	NA	NA	NA	4.7E-07	Liver	3.2E-02	NA	NA	3.2E-02
			4,4'-DDT	3.5E-08	NA	NA	NA	3.5E-08	Liver	2.4E-03	NA	NA	2.4E-03
			alpha-Chlordane	2.2E-07	NA	NA	NA	2.2E-07	Liver	1.4E-02	NA	NA	1.4E-02
			Aroclor-1254	5.9E-05	NA	NA	NA	5.9E-05	Immune system	1.7E+01	NA	NA	1.7E+01
			beta-BHC	1.0E-07	NA	NA	NA	1.0E-07	Liver / Kidney	2.2E-03	NA	NA	2.2E-03
			Dieldrin	3.9E-06	NA	NA	NA	3.9E-06	Liver	5.7E-02	NA	NA	5.7E-02
			gamma-Chlordane	9.3E-08	NA	NA	NA	9.3E-08	Liver	6.2E-03	NA	NA	6.2E-03
			Heptachlor Epoxide	6.4E-07	NA	NA	NA	6.4E-07	Liver	6.3E-02	NA	NA	6.3E-02
			Technical Chlordane	4.8E-06	NA	NA	NA	4.8E-06	Liver	3.2E-01	NA	NA	3.2E-01
			Cadmium	NC	NA	NA	NA		Kidney	9.4E-03	NA	NA	9.4E-03
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	1.3E-02	NA	NA	1.3E-02
			Mercury	NC	NA	NA	NA		Immune system	4.2E-02	NA	NA	4.2E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.3E-01	NA	NA	1.3E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	8.4E-04	NA	NA	NA	8.4E-04		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	1.5E-04	NA	NA	NA	1.5E-04		--	NA	NA	
			CHEMICAL TOTAL	1.1E-03	--	--	--	1E-03		1.8E+01	0.0E+00	--	1.8E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-03					1.8E+01
	EXPOSURE MEDIUM TOTAL							1E-03					1.8E+01
WHOLE BODY TOTAL								1E-03					1.8E+01
RECEPTOR TOTAL								1E-03					1.8E+01
			TOTAL RISK ACROSS ALL MEDIA					1E-03	TOTAL HAZARD ACROSS ALL MEDIA				1.8E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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	--
TOTAL DEVELOPMENTAL TOXICITY HI =	1.3E-01
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	--
TOTAL IMMUNE SYSTEM HI =	1.7E+01
TOTAL KIDNEY HI =	1.2E-02
TOTAL LIVER HI =	5.1E-01
	--
	--
TOTAL NOAEL HI =	1.3E-02
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Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.55.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.4E-06	NA	NA	1.4E-06
			Benzo(a)pyrene	1.9E-07	NA	NA	NA	1.9E-07	Kidney	5.1E-06	NA	NA	5.1E-06
			Benzo(b)fluoranthene	2.2E-08	NA	NA	NA	2.2E-08	Kidney	5.8E-06	NA	NA	5.8E-06
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	5.1E-06	NA	NA	5.1E-06
			Dibenzo(a,h)anthracene	1.0E-07	NA	NA	NA	1.0E-07	Kidney	2.7E-06	NA	NA	2.7E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.0E-05	NA	NA	1.0E-05
			4,4'-DDE	1.3E-07	NA	NA	NA	1.3E-07	Liver	4.5E-03	NA	NA	4.5E-03
			alpha-Chlordane	2.6E-08	NA	NA	NA	2.6E-08	Liver	8.7E-04	NA	NA	8.7E-04
			Aroclor-1254	1.6E-05	NA	NA	NA	1.6E-05	Immune system	2.3E+00	NA	NA	2.3E+00
			Aroclor-1268	9.4E-07	NA	NA	NA	9.4E-07	Immune system	1.4E-01	NA	NA	1.4E-01
			Dieldrin	3.6E-07	NA	NA	NA	3.6E-07	Liver	2.6E-03	NA	NA	2.6E-03
			gamma-Chlordane	1.1E-08	NA	NA	NA	1.1E-08	Liver	3.7E-04	NA	NA	3.7E-04
			Technical Chlordane	4.8E-07	NA	NA	NA	4.8E-07	Liver	1.6E-02	NA	NA	1.6E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.9E-01	NA	NA	1.9E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.1E-01	NA	NA	5.1E-01
			Toxicity Equivalency (Dioxins/Furans) - Man	1.8E-04	NA	NA	NA	1.8E-04		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Man	2.5E-05	NA	NA	NA	2.5E-05		--	NA	NA	
			CHEMICAL TOTAL	2.2E-04	--	--	--	2E-04		3.2E+00	0.0E+00	--	3E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-04					3E+00
	EXPOSURE MEDIUM TOTAL							2E-04					3E+00
FILLET TOTAL								2E-04					3E+00
RECEPTOR TOTAL								2E-04					3.2E+00
							TOTAL RISK ACROSS ALL MEDIA	2E-04	TOTAL HAZARD ACROSS ALL MEDIA				3.2E+00

NOTES
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	5.1E-01
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	--
TOTAL IMMUNE SYSTEM HI =	2.7E+00
TOTAL KIDNEY HI =	2.9E-05
TOTAL LIVER HI =	2.4E-02
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Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.56.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.1E-06	NA	NA	1.1E-06
			Benzo(a)pyrene	1.5E-07	NA	NA	NA	1.5E-07	Kidney	4.0E-06	NA	NA	4.0E-06
			Benzo(b)fluoranthene	1.7E-08	NA	NA	NA	1.7E-08	Kidney	4.5E-06	NA	NA	4.5E-06
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	4.0E-06	NA	NA	4.0E-06
			Dibenzo(a,h)anthracene	8.0E-08	NA	NA	NA	8.0E-08	Kidney	2.1E-06	NA	NA	2.1E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	7.9E-06	NA	NA	7.9E-06
			4,4'-DDE	1.0E-07	NA	NA	NA	1.0E-07	Liver	3.5E-03	NA	NA	3.5E-03
			alpha-Chlordane	2.0E-08	NA	NA	NA	2.0E-08	Liver	6.8E-04	NA	NA	6.8E-04
			Aroclor-1254	1.3E-05	NA	NA	NA	1.3E-05	Immune system	1.8E+00	NA	NA	1.8E+00
			Aroclor-1268	7.4E-07	NA	NA	NA	7.4E-07	Immune system	1.1E-01	NA	NA	1.1E-01
			Dieldrin	2.8E-07	NA	NA	NA	2.8E-07	Liver	2.1E-03	NA	NA	2.1E-03
			gamma-Chlordane	8.7E-09	NA	NA	NA	8.7E-09	Liver	2.9E-04	NA	NA	2.9E-04
			Technical Chlordane	3.7E-07	NA	NA	NA	3.7E-07	Liver	1.2E-02	NA	NA	1.2E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.5E-01	NA	NA	1.5E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	4.0E-01	NA	NA	4.0E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.4E-04	NA	NA	NA	1.4E-04		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Man	2.0E-05	NA	NA	NA	2.0E-05		--	NA	NA	
			CHEMICAL TOTAL	1.7E-04	--	--	--	2E-04		2.5E+00	0.0E+00	--	3E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-04					3E+00
	EXPOSURE MEDIUM TOTAL							2E-04					3E+00
FILLET TOTAL								2E-04					3E+00
RECEPTOR TOTAL								2E-04					2.5E+00
							TOTAL RISK ACROSS ALL MEDIA	2E-04	TOTAL HAZARD ACROSS ALL MEDIA				2.5E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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TOTAL DEVELOPMENTAL TOXICITY HI =	4.0E-01
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TOTAL IMMUNE SYSTEM HI =	2.1E+00
TOTAL KIDNEY HI =	2.2E-05
TOTAL LIVER HI =	1.9E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.57.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.4E-06	NA	NA	2.4E-06
			Benzo(a)pyrene	1.6E-07	NA	NA	NA	1.6E-07	Kidney	8.4E-06	NA	NA	8.4E-06
			Benzo(b)fluoranthene	1.8E-08	NA	NA	NA	1.8E-08	Kidney	9.6E-06	NA	NA	9.6E-06
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	8.4E-06	NA	NA	8.4E-06
			Dibenzo(a,h)anthracene	8.6E-08	NA	NA	NA	8.6E-08	Kidney	4.6E-06	NA	NA	4.6E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.7E-05	NA	NA	1.7E-05
			4,4'-DDE	1.1E-07	NA	NA	NA	1.1E-07	Liver	7.5E-03	NA	NA	7.5E-03
			alpha-Chlordane	2.2E-08	NA	NA	NA	2.2E-08	Liver	1.4E-03	NA	NA	1.4E-03
			Aroclor-1254	1.3E-05	NA	NA	NA	1.3E-05	Immune system	3.9E+00	NA	NA	3.9E+00
			Aroclor-1268	7.8E-07	NA	NA	NA	7.8E-07	Immune system	2.3E-01	NA	NA	2.3E-01
			Dieldrin	3.0E-07	NA	NA	NA	3.0E-07	Liver	4.4E-03	NA	NA	4.4E-03
			gamma-Chlordane	9.3E-09	NA	NA	NA	9.3E-09	Liver	6.2E-04	NA	NA	6.2E-04
			Technical Chlordane	4.0E-07	NA	NA	NA	4.0E-07	Liver	2.6E-02	NA	NA	2.6E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	3.2E-01	NA	NA	3.2E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	8.5E-01	NA	NA	8.5E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.5E-04	NA	NA	NA	1.5E-04		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	2.1E-05	NA	NA	NA	2.1E-05		--	NA	NA	
			CHEMICAL TOTAL	1.8E-04	--	--	--	2E-04		5.3E+00	0.0E+00	--	5E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-04					5E+00
	EXPOSURE MEDIUM TOTAL							2E-04					5E+00
FILLET TOTAL								2E-04					5E+00
RECEPTOR TOTAL								2E-04					5.3E+00
							TOTAL RISK ACROSS ALL MEDIA	2E-04	TOTAL HAZARD ACROSS ALL MEDIA				5.3E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	8.5E-01
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TOTAL IMMUNE SYSTEM HI =	4.4E+00
TOTAL KIDNEY HI =	4.8E-05
TOTAL LIVER HI =	4.0E-02
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Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.58.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.4E-06	NA	NA	1.4E-06
			Benzo(a)pyrene	1.4E-07	NA	NA	NA	1.4E-07	Kidney	5.1E-06	NA	NA	5.1E-06
			Benzo(b)fluoranthene	1.6E-08	NA	NA	NA	1.6E-08	Kidney	5.8E-06	NA	NA	5.8E-06
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	5.1E-06	NA	NA	5.1E-06
			Dibenzo(a,h)anthracene	7.7E-08	NA	NA	NA	7.7E-08	Kidney	2.7E-06	NA	NA	2.7E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.0E-05	NA	NA	1.0E-05
			4,4'-DDE	9.8E-08	NA	NA	NA	9.8E-08	Liver	4.5E-03	NA	NA	4.5E-03
			alpha-Chlordane	1.9E-08	NA	NA	NA	1.9E-08	Liver	8.7E-04	NA	NA	8.7E-04
			Aroclor-1254	1.2E-05	NA	NA	NA	1.2E-05	Immune system	2.3E+00	NA	NA	2.3E+00
			Aroclor-1268	7.1E-07	NA	NA	NA	7.1E-07	Immune system	1.4E-01	NA	NA	1.4E-01
			Dieldrin	2.7E-07	NA	NA	NA	2.7E-07	Liver	2.6E-03	NA	NA	2.6E-03
			gamma-Chlordane	8.4E-09	NA	NA	NA	8.4E-09	Liver	3.7E-04	NA	NA	3.7E-04
			Technical Chlordane	3.6E-07	NA	NA	NA	3.6E-07	Liver	1.6E-02	NA	NA	1.6E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.9E-01	NA	NA	1.9E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.1E-01	NA	NA	5.1E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.3E-04	NA	NA	NA	1.3E-04		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	1.9E-05	NA	NA	NA	1.9E-05		--	NA	NA	
			CHEMICAL TOTAL	1.6E-04	--	--	--	2E-04		3.2E+00	0.0E+00	--	3E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-04					3E+00
	EXPOSURE MEDIUM TOTAL							2E-04					3E+00
FILLET TOTAL								2E-04					3E+00
RECEPTOR TOTAL								2E-04					3.2E+00
							TOTAL RISK ACROSS ALL MEDIA	2E-04	TOTAL HAZARD ACROSS ALL MEDIA				3.2E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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TOTAL DEVELOPMENTAL TOXICITY HI =	5.1E-01
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TOTAL IMMUNE SYSTEM HI =	2.7E+00
TOTAL KIDNEY HI =	2.9E-05
TOTAL LIVER HI =	2.4E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.59.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.1E-06	NA	NA	1.1E-06
			Benzo(a)pyrene	1.1E-07	NA	NA	NA	1.1E-07	Kidney	4.0E-06	NA	NA	4.0E-06
			Benzo(b)fluoranthene	1.3E-08	NA	NA	NA	1.3E-08	Kidney	4.5E-06	NA	NA	4.5E-06
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	4.0E-06	NA	NA	4.0E-06
			Dibenzo(a,h)anthracene	6.0E-08	NA	NA	NA	6.0E-08	Kidney	2.1E-06	NA	NA	2.1E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	7.9E-06	NA	NA	7.9E-06
			4,4'-DDE	7.7E-08	NA	NA	NA	7.7E-08	Liver	3.5E-03	NA	NA	3.5E-03
			alpha-Chlordane	1.5E-08	NA	NA	NA	1.5E-08	Liver	6.8E-04	NA	NA	6.8E-04
			Aroclor-1254	9.4E-06	NA	NA	NA	9.4E-06	Immune system	1.8E+00	NA	NA	1.8E+00
			Aroclor-1268	5.5E-07	NA	NA	NA	5.5E-07	Immune system	1.1E-01	NA	NA	1.1E-01
			Dieldrin	2.1E-07	NA	NA	NA	2.1E-07	Liver	2.1E-03	NA	NA	2.1E-03
			gamma-Chlordane	6.5E-09	NA	NA	NA	6.5E-09	Liver	2.9E-04	NA	NA	2.9E-04
			Technical Chlordane	2.8E-07	NA	NA	NA	2.8E-07	Liver	1.2E-02	NA	NA	1.2E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.5E-01	NA	NA	1.5E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	4.0E-01	NA	NA	4.0E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.0E-04	NA	NA	NA	1.0E-04		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	1.5E-05	NA	NA	NA	1.5E-05		--	NA	NA	
			CHEMICAL TOTAL	1.3E-04	--	--	--	1E-04		2.5E+00	0.0E+00	--	3E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					3E+00
	EXPOSURE MEDIUM TOTAL							1E-04					3E+00
FILLET TOTAL								1E-04					3E+00
RECEPTOR TOTAL								1E-04					2.5E+00
			TOTAL RISK ACROSS ALL MEDIA					1E-04	TOTAL HAZARD ACROSS ALL MEDIA				2.5E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	4.0E-01
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TOTAL IMMUNE SYSTEM HI =	2.1E+00
TOTAL KIDNEY HI =	2.2E-05
TOTAL LIVER HI =	1.9E-02
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Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.60.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.4E-06	NA	NA	2.4E-06
			Benzo(a)pyrene	1.6E-07	NA	NA	NA	1.6E-07	Kidney	8.4E-06	NA	NA	8.4E-06
			Benzo(b)fluoranthene	1.8E-08	NA	NA	NA	1.8E-08	Kidney	9.6E-06	NA	NA	9.6E-06
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	8.4E-06	NA	NA	8.4E-06
			Dibenzo(a,h)anthracene	8.6E-08	NA	NA	NA	8.6E-08	Kidney	4.6E-06	NA	NA	4.6E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.7E-05	NA	NA	1.7E-05
			4,4'-DDE	1.1E-07	NA	NA	NA	1.1E-07	Liver	7.5E-03	NA	NA	7.5E-03
			alpha-Chlordane	2.2E-08	NA	NA	NA	2.2E-08	Liver	1.4E-03	NA	NA	1.4E-03
			Aroclor-1254	1.3E-05	NA	NA	NA	1.3E-05	Immune system	3.9E+00	NA	NA	3.9E+00
			Aroclor-1268	7.8E-07	NA	NA	NA	7.8E-07	Immune system	2.3E-01	NA	NA	2.3E-01
			Dieldrin	3.0E-07	NA	NA	NA	3.0E-07	Liver	4.4E-03	NA	NA	4.4E-03
			gamma-Chlordane	9.3E-09	NA	NA	NA	9.3E-09	Liver	6.2E-04	NA	NA	6.2E-04
			Technical Chlordane	4.0E-07	NA	NA	NA	4.0E-07	Liver	2.6E-02	NA	NA	2.6E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	3.2E-01	NA	NA	3.2E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	8.5E-01	NA	NA	8.5E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.5E-04	NA	NA	NA	1.5E-04		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	2.1E-05	NA	NA	NA	2.1E-05		--	NA	NA	
			CHEMICAL TOTAL	1.8E-04	--	--	--	2E-04		5.3E+00	0.0E+00	--	5E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-04					5E+00
	EXPOSURE MEDIUM TOTAL							2E-04					5E+00
FILLET TOTAL								2E-04					5E+00

RECEPTOR TOTAL			5.3E+00
TOTAL RISK ACROSS ALL MEDIA	2E-04	TOTAL HAZARD ACROSS ALL MEDIA	5.3E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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TOTAL DEVELOPMENTAL TOXICITY HI =	8.5E-01
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TOTAL IMMUNE SYSTEM HI =	4.4E+00
TOTAL KIDNEY HI =	4.8E-05
TOTAL LIVER HI =	4.0E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.61.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.3E-05	NA	NA	1.3E-05
			Benzo(a)anthracene	2.6E-07	NA	NA	NA	2.6E-07	Kidney	6.8E-05	NA	NA	6.8E-05
			Benzo(a)pyrene	1.3E-06	NA	NA	NA	1.3E-06	Kidney	3.5E-05	NA	NA	3.5E-05
			Benzo(b)fluoranthene	1.8E-07	NA	NA	NA	1.8E-07	Kidney	4.8E-05	NA	NA	4.8E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	2.7E-05	NA	NA	2.7E-05
			Dibenzo(a,h)anthracene	7.3E-07	NA	NA	NA	7.3E-07	Kidney	1.9E-05	NA	NA	1.9E-05
			Indeno(1,2,3-cd)pyrene	1.2E-07	NA	NA	NA	1.2E-07	Kidney	3.1E-05	NA	NA	3.1E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.5E-04	NA	NA	1.5E-04
			4,4'-DDD	5.7E-07	NA	NA	NA	5.7E-07	Liver	2.7E-02	NA	NA	2.7E-02
			4,4'-DDE	2.7E-06	NA	NA	NA	2.7E-06	Liver	9.2E-02	NA	NA	9.2E-02
			4,4'-DDT	6.6E-08	NA	NA	NA	6.6E-08	Liver	2.3E-03	NA	NA	2.3E-03
			alpha-Chlordane	6.1E-07	NA	NA	NA	6.1E-07	Liver	2.0E-02	NA	NA	2.0E-02
			Aroclor-1254	3.9E-04	NA	NA	NA	3.9E-04	Immune system	5.6E+01	NA	NA	5.6E+01
			Aroclor-1268	3.2E-06	NA	NA	NA	3.2E-06	Immune system	4.7E-01	NA	NA	4.7E-01
			Dieldrin	5.1E-06	NA	NA	NA	5.1E-06	Liver	3.7E-02	NA	NA	3.7E-02
			gamma-Chlordane	3.8E-07	NA	NA	NA	3.8E-07	Liver	1.3E-02	NA	NA	1.3E-02
			Heptachlor Epoxide	5.7E-07	NA	NA	NA	5.7E-07	Liver	2.8E-02	NA	NA	2.8E-02
			Technical Chlordane	3.3E-05	NA	NA	NA	3.3E-05	Liver	1.1E+00	NA	NA	1.1E+00
			Arsenic	1.5E-06	NA	NA	NA	1.5E-06	Skin	2.0E-02	NA	NA	2.0E-02
			Chromium	NC	NA	NA	NA		NOAEL	2.7E-02	NA	NA	2.7E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	8.5E-02	NA	NA	8.5E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.4E-01	NA	NA	2.4E-01
			Toxicity Equivalency (Dioxins/Furans) - Man	5.0E-03	NA	NA	NA	5.0E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Man	2.2E-04	NA	NA	NA	2.2E-04		--	NA	NA	
			CHEMICAL TOTAL	5.7E-03	--	--	--	6E-03		5.9E+01	0.0E+00	--	5.9E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-03					5.9E+01
	EXPOSURE MEDIUM TOTAL							6E-03					5.9E+01
WHOLE BODY TOTAL								6E-03					5.9E+01
RECEPTOR TOTAL								6E-03					5.9E+01
			TOTAL RISK ACROSS ALL MEDIA					6E-03	TOTAL HAZARD ACROSS ALL MEDIA				5.9E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	2.4E-01
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TOTAL IMMUNE SYSTEM HI =	5.7E+01
TOTAL KIDNEY HI =	3.8E-04
TOTAL LIVER HI =	1.3E+00
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TOTAL NOAEL HI =	2.7E-02
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TOTAL SKIN HI =	2.0E-02

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.9.62.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.0E-05	NA	NA	1.0E-05
			Benzo(a)anthracene	2.0E-07	NA	NA	NA	2.0E-07	Kidney	5.3E-05	NA	NA	5.3E-05
			Benzo(a)pyrene	1.0E-06	NA	NA	NA	1.0E-06	Kidney	2.8E-05	NA	NA	2.8E-05
			Benzo(b)fluoranthene	1.4E-07	NA	NA	NA	1.4E-07	Kidney	3.8E-05	NA	NA	3.8E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	2.1E-05	NA	NA	2.1E-05
			Dibenzo(a,h)anthracene	5.7E-07	NA	NA	NA	5.7E-07	Kidney	1.5E-05	NA	NA	1.5E-05
			Indeno(1,2,3-cd)pyrene	9.1E-08	NA	NA	NA	9.1E-08	Kidney	2.4E-05	NA	NA	2.4E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.2E-04	NA	NA	1.2E-04
			4,4'-DDD	4.4E-07	NA	NA	NA	4.4E-07	Liver	2.1E-02	NA	NA	2.1E-02
			4,4'-DDE	2.1E-06	NA	NA	NA	2.1E-06	Liver	7.2E-02	NA	NA	7.2E-02
			4,4'-DDT	5.1E-08	NA	NA	NA	5.1E-08	Liver	1.8E-03	NA	NA	1.8E-03
			alpha-Chlordane	4.8E-07	NA	NA	NA	4.8E-07	Liver	1.6E-02	NA	NA	1.6E-02
			Aroclor-1254	3.0E-04	NA	NA	NA	3.0E-04	Immune system	4.4E+01	NA	NA	4.4E+01
			Aroclor-1268	2.5E-06	NA	NA	NA	2.5E-06	Immune system	3.7E-01	NA	NA	3.7E-01
			Dieldrin	4.0E-06	NA	NA	NA	4.0E-06	Liver	2.9E-02	NA	NA	2.9E-02
			gamma-Chlordane	3.0E-07	NA	NA	NA	3.0E-07	Liver	9.9E-03	NA	NA	9.9E-03
			Heptachlor Epoxide	4.5E-07	NA	NA	NA	4.5E-07	Liver	2.2E-02	NA	NA	2.2E-02
			Technical Chlordane	2.6E-05	NA	NA	NA	2.6E-05	Liver	8.7E-01	NA	NA	8.7E-01
			Arsenic	1.2E-06	NA	NA	NA	1.2E-06	Skin	1.6E-02	NA	NA	1.6E-02
			Chromium	NC	NA	NA	NA		NOAEL	2.1E-02	NA	NA	2.1E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	6.6E-02	NA	NA	6.6E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.8E-01	NA	NA	1.8E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.9E-03	NA	NA	NA	3.9E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	1.7E-04	NA	NA	NA	1.7E-04		--	NA	NA	
			CHEMICAL TOTAL	4.4E-03	--	--	--	4E-03		4.6E+01	0.0E+00	--	4.6E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-03					4.6E+01
	EXPOSURE MEDIUM TOTAL							4E-03					4.6E+01
WHOLE BODY TOTAL								4E-03					4.6E+01
RECEPTOR TOTAL								4E-03					4.6E+01
							TOTAL RISK ACROSS ALL MEDIA	4E-03	TOTAL HAZARD ACROSS ALL MEDIA				4.6E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.8E-01
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TOTAL IMMUNE SYSTEM HI =	4.5E+01
TOTAL KIDNEY HI =	3.0E-04
TOTAL LIVER HI =	1.0E+00
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	--
TOTAL NOAEL HI =	2.1E-02
	--
TOTAL SKIN HI =	1.6E-02

US EPA ARCHIVE DOCUMENT

TABLE G.9.63.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.1E-05	NA	NA	2.1E-05
			Benzo(a)anthracene	2.1E-07	NA	NA	NA	2.1E-07	Kidney	1.1E-04	NA	NA	1.1E-04
			Benzo(a)pyrene	1.1E-06	NA	NA	NA	1.1E-06	Kidney	5.9E-05	NA	NA	5.9E-05
			Benzo(b)fluoranthene	1.5E-07	NA	NA	NA	1.5E-07	Kidney	8.0E-05	NA	NA	8.0E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	4.5E-05	NA	NA	4.5E-05
			Dibenzo(a,h)anthracene	6.1E-07	NA	NA	NA	6.1E-07	Kidney	3.2E-05	NA	NA	3.2E-05
			Indeno(1,2,3-cd)pyrene	9.7E-08	NA	NA	NA	9.7E-08	Kidney	5.2E-05	NA	NA	5.2E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	2.5E-04	NA	NA	2.5E-04
			4,4'-DDD	4.7E-07	NA	NA	NA	4.7E-07	Liver	4.6E-02	NA	NA	4.6E-02
			4,4'-DDE	2.2E-06	NA	NA	NA	2.2E-06	Liver	1.5E-01	NA	NA	1.5E-01
			4,4'-DDT	5.5E-08	NA	NA	NA	5.5E-08	Liver	3.7E-03	NA	NA	3.7E-03
			alpha-Chlordane	5.1E-07	NA	NA	NA	5.1E-07	Liver	3.4E-02	NA	NA	3.4E-02
			Aroclor-1254	3.2E-04	NA	NA	NA	3.2E-04	Immune system	9.4E+01	NA	NA	9.4E+01
			Aroclor-1268	2.7E-06	NA	NA	NA	2.7E-06	Immune system	7.9E-01	NA	NA	7.9E-01
			Dieldrin	4.3E-06	NA	NA	NA	4.3E-06	Liver	6.2E-02	NA	NA	6.2E-02
			gamma-Chlordane	3.2E-07	NA	NA	NA	3.2E-07	Liver	2.1E-02	NA	NA	2.1E-02
			Heptachlor Epoxide	4.8E-07	NA	NA	NA	4.8E-07	Liver	4.7E-02	NA	NA	4.7E-02
			Technical Chlordane	2.8E-05	NA	NA	NA	2.8E-05	Liver	1.9E+00	NA	NA	1.9E+00
			Arsenic	1.3E-06	NA	NA	NA	1.3E-06	Skin	3.3E-02	NA	NA	3.3E-02
			Chromium	NC	NA	NA	NA		NOAEL	4.5E-02	NA	NA	4.5E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.4E-01	NA	NA	1.4E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	3.9E-01	NA	NA	3.9E-01
			Toxicity Equivalency (Dioxins/Furans) - Man	4.2E-03	NA	NA	NA	4.2E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Man	1.9E-04	NA	NA	NA	1.9E-04		--	NA	NA	
			CHEMICAL TOTAL	4.7E-03	--	--	--	5E-03		9.7E+01	0.0E+00	--	9.7E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-03					9.7E+01
	EXPOSURE MEDIUM TOTAL							5E-03					9.7E+01
WHOLE BODY TOTAL								5E-03					9.7E+01

RECEPTOR TOTAL	5E-03		9.7E+01
TOTAL RISK ACROSS ALL MEDIA	5E-03	TOTAL HAZARD ACROSS ALL MEDIA	9.7E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	3.9E-01
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TOTAL IMMUNE SYSTEM HI =	9.5E+01
TOTAL KIDNEY HI =	6.4E-04
TOTAL LIVER HI =	2.2E+00
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	--
TOTAL NOAEL HI =	4.5E-02
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TOTAL SKIN HI =	3.3E-02
	--

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE G.9.64.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.3E-05	NA	NA	1.3E-05
			Benzo(a)anthracene	1.9E-07	NA	NA	NA	1.9E-07	Kidney	6.8E-05	NA	NA	6.8E-05
			Benzo(a)pyrene	1.0E-06	NA	NA	NA	1.0E-06	Kidney	3.5E-05	NA	NA	3.5E-05
			Benzo(b)fluoranthene	1.4E-07	NA	NA	NA	1.4E-07	Kidney	4.8E-05	NA	NA	4.8E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	2.7E-05	NA	NA	2.7E-05
			Dibenzo(a,h)anthracene	5.5E-07	NA	NA	NA	5.5E-07	Kidney	1.9E-05	NA	NA	1.9E-05
			Indeno(1,2,3-cd)pyrene	8.7E-08	NA	NA	NA	8.7E-08	Kidney	3.1E-05	NA	NA	3.1E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.5E-04	NA	NA	1.5E-04
			4,4'-DDD	4.2E-07	NA	NA	NA	4.2E-07	Liver	2.7E-02	NA	NA	2.7E-02
			4,4'-DDE	2.0E-06	NA	NA	NA	2.0E-06	Liver	9.2E-02	NA	NA	9.2E-02
			4,4'-DDT	4.9E-08	NA	NA	NA	4.9E-08	Liver	2.3E-03	NA	NA	2.3E-03
			alpha-Chlordane	4.6E-07	NA	NA	NA	4.6E-07	Liver	2.0E-02	NA	NA	2.0E-02
			Aroclor-1254	2.9E-04	NA	NA	NA	2.9E-04	Immune system	5.6E+01	NA	NA	5.6E+01
			Aroclor-1268	2.4E-06	NA	NA	NA	2.4E-06	Immune system	4.7E-01	NA	NA	4.7E-01
			Dieldrin	3.8E-06	NA	NA	NA	3.8E-06	Liver	3.7E-02	NA	NA	3.7E-02
			gamma-Chlordane	2.8E-07	NA	NA	NA	2.8E-07	Liver	1.3E-02	NA	NA	1.3E-02
			Heptachlor Epoxide	4.3E-07	NA	NA	NA	4.3E-07	Liver	2.8E-02	NA	NA	2.8E-02
			Technical Chlordane	2.5E-05	NA	NA	NA	2.5E-05	Liver	1.1E+00	NA	NA	1.1E+00
			Arsenic	1.2E-06	NA	NA	NA	1.2E-06	Skin	2.0E-02	NA	NA	2.0E-02
			Chromium	NC	NA	NA	NA		NOAEL	2.7E-02	NA	NA	2.7E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	8.5E-02	NA	NA	8.5E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.4E-01	NA	NA	2.4E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.7E-03	NA	NA	NA	3.7E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	1.7E-04	NA	NA	NA	1.7E-04		--	NA	NA	
			CHEMICAL TOTAL	4.2E-03	--	--	--	4E-03		5.9E+01	0.0E+00	--	5.9E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-03					5.9E+01
	EXPOSURE MEDIUM TOTAL							4E-03					5.9E+01
WHOLE BODY TOTAL								4E-03					5.9E+01
RECEPTOR TOTAL								4E-03					5.9E+01
			TOTAL RISK ACROSS ALL MEDIA					4E-03	TOTAL HAZARD ACROSS ALL MEDIA				5.9E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: AWS

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TOTAL DEVELOPMENTAL TOXICITY HI =	2.4E-01
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	--
TOTAL IMMUNE SYSTEM HI =	5.7E+01
TOTAL KIDNEY HI =	3.8E-04
TOTAL LIVER HI =	1.3E+00
	--
	--
TOTAL NOAEL HI =	2.7E-02
	--
TOTAL SKIN HI =	2.0E-02

US EPA ARCHIVE DOCUMENT

TABLE G.9.65.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.0E-05	NA	NA	1.0E-05
			Benzo(a)anthracene	1.5E-07	NA	NA	NA	1.5E-07	Kidney	5.3E-05	NA	NA	5.3E-05
			Benzo(a)pyrene	7.8E-07	NA	NA	NA	7.8E-07	Kidney	2.8E-05	NA	NA	2.8E-05
			Benzo(b)fluoranthene	1.1E-07	NA	NA	NA	1.1E-07	Kidney	3.8E-05	NA	NA	3.8E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	2.1E-05	NA	NA	2.1E-05
			Dibenzo(a,h)anthracene	4.3E-07	NA	NA	NA	4.3E-07	Kidney	1.5E-05	NA	NA	1.5E-05
			Indeno(1,2,3-cd)pyrene	6.8E-08	NA	NA	NA	6.8E-08	Kidney	2.4E-05	NA	NA	2.4E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	1.2E-04	NA	NA	1.2E-04
			4,4'-DDD	3.3E-07	NA	NA	NA	3.3E-07	Liver	2.1E-02	NA	NA	2.1E-02
			4,4'-DDE	1.6E-06	NA	NA	NA	1.6E-06	Liver	7.2E-02	NA	NA	7.2E-02
			4,4'-DDT	3.8E-08	NA	NA	NA	3.8E-08	Liver	1.8E-03	NA	NA	1.8E-03
			alpha-Chlordane	3.6E-07	NA	NA	NA	3.6E-07	Liver	1.6E-02	NA	NA	1.6E-02
			Aroclor-1254	2.3E-04	NA	NA	NA	2.3E-04	Immune system	4.4E+01	NA	NA	4.4E+01
			Aroclor-1268	1.9E-06	NA	NA	NA	1.9E-06	Immune system	3.7E-01	NA	NA	3.7E-01
			Dieldrin	3.0E-06	NA	NA	NA	3.0E-06	Liver	2.9E-02	NA	NA	2.9E-02
			gamma-Chlordane	2.2E-07	NA	NA	NA	2.2E-07	Liver	9.9E-03	NA	NA	9.9E-03
			Heptachlor Epoxide	3.4E-07	NA	NA	NA	3.4E-07	Liver	2.2E-02	NA	NA	2.2E-02
			Technical Chlordane	2.0E-05	NA	NA	NA	2.0E-05	Liver	8.7E-01	NA	NA	8.7E-01
			Arsenic	9.0E-07	NA	NA	NA	9.0E-07	Skin	1.6E-02	NA	NA	1.6E-02
			Chromium	NC	NA	NA	NA		NOAEL	2.1E-02	NA	NA	2.1E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	6.6E-02	NA	NA	6.6E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	1.8E-01	NA	NA	1.8E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.9E-03	NA	NA	NA	2.9E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	1.3E-04	NA	NA	NA	1.3E-04		--	NA	NA	
			CHEMICAL TOTAL	3.3E-03	--	--	--	3E-03		4.6E+01	0.0E+00	--	4.6E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-03					4.6E+01
	EXPOSURE MEDIUM TOTAL							3E-03					4.6E+01
WHOLE BODY TOTAL								3E-03					4.6E+01

RECEPTOR TOTAL	3E-03		4.6E+01
TOTAL RISK ACROSS ALL MEDIA	3E-03	TOTAL HAZARD ACROSS ALL MEDIA	4.6E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.8E-01
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	--
TOTAL IMMUNE SYSTEM HI =	4.5E+01
TOTAL KIDNEY HI =	3.0E-04
TOTAL LIVER HI =	1.0E+00
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	--
TOTAL NOAEL HI =	2.1E-02
	--
TOTAL SKIN HI =	1.6E-02

Prepared by: KJA
Checked by: AWS

US EPA ARCHIVE DOCUMENT

TABLE G.9.66.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.1E-05	NA	NA	2.1E-05
			Benzo(a)anthracene	2.1E-07	NA	NA	NA	2.1E-07	Kidney	1.1E-04	NA	NA	1.1E-04
			Benzo(a)pyrene	1.1E-06	NA	NA	NA	1.1E-06	Kidney	5.9E-05	NA	NA	5.9E-05
			Benzo(b)fluoranthene	1.5E-07	NA	NA	NA	1.5E-07	Kidney	8.0E-05	NA	NA	8.0E-05
			Benzo(g,h,i)perylene	NC	NA	NA	NA		Kidney	4.5E-05	NA	NA	4.5E-05
			Dibenzo(a,h)anthracene	6.1E-07	NA	NA	NA	6.1E-07	Kidney	3.2E-05	NA	NA	3.2E-05
			Indeno(1,2,3-cd)pyrene	9.7E-08	NA	NA	NA	9.7E-08	Kidney	5.2E-05	NA	NA	5.2E-05
			Phenanthrene	NC	NA	NA	NA		Kidney	2.5E-04	NA	NA	2.5E-04
			4,4'-DDD	4.7E-07	NA	NA	NA	4.7E-07	Liver	4.6E-02	NA	NA	4.6E-02
			4,4'-DDE	2.2E-06	NA	NA	NA	2.2E-06	Liver	1.5E-01	NA	NA	1.5E-01
			4,4'-DDT	5.5E-08	NA	NA	NA	5.5E-08	Liver	3.7E-03	NA	NA	3.7E-03
			alpha-Chlordane	5.1E-07	NA	NA	NA	5.1E-07	Liver	3.4E-02	NA	NA	3.4E-02
			Aroclor-1254	3.2E-04	NA	NA	NA	3.2E-04	Immune system	9.4E+01	NA	NA	9.4E+01
			Aroclor-1268	2.7E-06	NA	NA	NA	2.7E-06	Immune system	7.9E-01	NA	NA	7.9E-01
			Dieldrin	4.3E-06	NA	NA	NA	4.3E-06	Liver	6.2E-02	NA	NA	6.2E-02
			gamma-Chlordane	3.2E-07	NA	NA	NA	3.2E-07	Liver	2.1E-02	NA	NA	2.1E-02
			Heptachlor Epoxide	4.8E-07	NA	NA	NA	4.8E-07	Liver	4.7E-02	NA	NA	4.7E-02
			Technical Chlordane	2.8E-05	NA	NA	NA	2.8E-05	Liver	1.9E+00	NA	NA	1.9E+00
			Arsenic	1.3E-06	NA	NA	NA	1.3E-06	Skin	3.3E-02	NA	NA	3.3E-02
			Chromium	NC	NA	NA	NA		NOAEL	4.5E-02	NA	NA	4.5E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.4E-01	NA	NA	1.4E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	3.9E-01	NA	NA	3.9E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.2E-03	NA	NA	NA	4.2E-03		--	NA	NA	
			Toxicity Equivalency (PCB Congeners) - Mam	1.9E-04	NA	NA	NA	1.9E-04		--	NA	NA	
			CHEMICAL TOTAL	4.7E-03	--	--	--	5E-03		9.7E+01	0.0E+00	--	9.7E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-03					9.7E+01
	EXPOSURE MEDIUM TOTAL							5E-03					9.7E+01
WHOLE BODY TOTAL								5E-03					9.7E+01

RECEPTOR TOTAL	5E-03		9.7E+01
TOTAL RISK ACROSS ALL MEDIA	5E-03	TOTAL HAZARD ACROSS ALL MEDIA	9.7E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: AWS

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TOTAL DEVELOPMENTAL TOXICITY HI =	3.9E-01
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	--
TOTAL IMMUNE SYSTEM HI =	9.5E+01
TOTAL KIDNEY HI =	6.4E-04
TOTAL LIVER HI =	2.2E+00
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	--
TOTAL NOAEL HI =	4.5E-02
	--
TOTAL SKIN HI =	3.3E-02

US EPA ARCHIVE DOCUMENT

TABLE G.9.67.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.1E-06	NA	NA	1.1E-06
			Dibenzo(a,h)anthracene	6.0E-08	NA	NA	NA	6.0E-08	Kidney	1.6E-06	NA	NA	1.6E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	2.1E-05	NA	NA	2.1E-05
			4,4'-DDE	1.1E-07	NA	NA	NA	1.1E-07	Liver	3.8E-03	NA	NA	3.8E-03
			alpha-Chlordane	1.8E-08	NA	NA	NA	1.8E-08	Liver	6.1E-04	NA	NA	6.1E-04
			Aroclor-1254	9.3E-06	NA	NA	NA	9.3E-06	Immune system	1.3E+00	NA	NA	1.3E+00
			Aroclor-1268	2.4E-06	NA	NA	NA	2.4E-06	Immune system	3.6E-01	NA	NA	3.6E-01
			Dieldrin	3.1E-07	NA	NA	NA	3.1E-07	Liver	2.3E-03	NA	NA	2.3E-03
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	3.5E-05	NA	NA	3.5E-05
			gamma-Chlordane	6.8E-09	NA	NA	NA	6.8E-09	Liver	2.3E-04	NA	NA	2.3E-04
			Technical Chlordane	5.3E-07	NA	NA	NA	5.3E-07	Liver	1.8E-02	NA	NA	1.8E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.3E-01	NA	NA	1.3E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	3.2E-01	NA	NA	3.2E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.0E-04	NA	NA	NA	1.0E-04		--	NA	NA	
			CHEMICAL TOTAL	1.2E-04	--	--	--	1E-04		2.2E+00	0.0E+00	--	2E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					2E+00
	EXPOSURE MEDIUM TOTAL							1E-04					2E+00
FILLET TOTAL								1E-04					2E+00
RECEPTOR TOTAL								1E-04					2.2E+00
							TOTAL RISK ACROSS ALL MEDIA	1E-04	TOTAL HAZARD ACROSS ALL MEDIA				2.2E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	3.2E-01
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TOTAL IMMUNE SYSTEM HI =	1.8E+00
TOTAL KIDNEY HI =	5.7E-05
TOTAL LIVER HI =	2.5E-02
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Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.9.68.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	Acenaphthylene	NC	NA	NA	NA		Liver	8.5E-07	NA	NA	8.5E-07
			Dibenzo(a,h)anthracene	4.7E-08	NA	NA	NA	4.7E-08	Kidney	1.2E-06	NA	NA	1.2E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.7E-05	NA	NA	1.7E-05
			4,4'-DDE	8.7E-08	NA	NA	NA	8.7E-08	Liver	3.0E-03	NA	NA	3.0E-03
			alpha-Chlordane	1.4E-08	NA	NA	NA	1.4E-08	Liver	4.7E-04	NA	NA	4.7E-04
			Aroclor-1254	7.2E-06	NA	NA	NA	7.2E-06	Immune system	1.1E+00	NA	NA	1.1E+00
			Aroclor-1268	1.9E-06	NA	NA	NA	1.9E-06	Immune system	2.8E-01	NA	NA	2.8E-01
			Dieldrin	2.4E-07	NA	NA	NA	2.4E-07	Liver	1.8E-03	NA	NA	1.8E-03
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	2.7E-05	NA	NA	2.7E-05
			gamma-Chlordane	5.3E-09	NA	NA	NA	5.3E-09	Liver	1.8E-04	NA	NA	1.8E-04
			Technical Chlordane	4.1E-07	NA	NA	NA	4.1E-07	Liver	1.4E-02	NA	NA	1.4E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.0E-01	NA	NA	1.0E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.5E-01	NA	NA	2.5E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	8.1E-05	NA	NA	NA	8.1E-05		--	NA	NA	
			CHEMICAL TOTAL	9.1E-05	--	--	--	9E-05		1.7E+00	0.0E+00	--	2E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						9E-05					2E+00
	EXPOSURE MEDIUM TOTAL							9E-05					2E+00
FILLET TOTAL								9E-05					2E+00
RECEPTOR TOTAL								9E-05					1.7E+00
							TOTAL RISK ACROSS ALL MEDIA	9E-05	TOTAL HAZARD ACROSS ALL MEDIA				1.7E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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TOTAL DEVELOPMENTAL TOXICITY HI =	2.5E-01
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TOTAL IMMUNE SYSTEM HI =	1.4E+00
TOTAL KIDNEY HI =	4.5E-05
TOTAL LIVER HI =	1.9E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.69.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.8E-06	NA	NA	1.8E-06
			Dibenzo(a,h)anthracene	5.0E-08	NA	NA	NA	5.0E-08	Kidney	2.6E-06	NA	NA	2.6E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	3.5E-05	NA	NA	3.5E-05
			4,4'-DDE	9.3E-08	NA	NA	NA	9.3E-08	Liver	6.4E-03	NA	NA	6.4E-03
			alpha-Chlordane	1.5E-08	NA	NA	NA	1.5E-08	Liver	1.0E-03	NA	NA	1.0E-03
			Aroclor-1254	7.7E-06	NA	NA	NA	7.7E-06	Immune system	2.2E+00	NA	NA	2.2E+00
			Aroclor-1268	2.0E-06	NA	NA	NA	2.0E-06	Immune system	5.9E-01	NA	NA	5.9E-01
			Dieldrin	2.6E-07	NA	NA	NA	2.6E-07	Liver	3.7E-03	NA	NA	3.7E-03
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	5.8E-05	NA	NA	5.8E-05
			gamma-Chlordane	5.6E-09	NA	NA	NA	5.6E-09	Liver	3.7E-04	NA	NA	3.7E-04
			Technical Chlordane	4.4E-07	NA	NA	NA	4.4E-07	Liver	2.9E-02	NA	NA	2.9E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.2E-01	NA	NA	2.2E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.4E-01	NA	NA	5.4E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	8.6E-05	NA	NA	NA	8.6E-05		--	NA	NA	
			CHEMICAL TOTAL	9.7E-05	--	--	--	1E-04		3.6E+00	0.0E+00	--	4E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					4E+00
	EXPOSURE MEDIUM TOTAL							1E-04					4E+00
FILLET TOTAL								1E-04					4E+00
RECEPTOR TOTAL								1E-04					3.6E+00
							TOTAL RISK ACROSS ALL MEDIA	1E-04	TOTAL HAZARD ACROSS ALL MEDIA				3.6E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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TOTAL DEVELOPMENTAL TOXICITY HI =	5.4E-01
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TOTAL IMMUNE SYSTEM HI =	3.1E+00
TOTAL KIDNEY HI =	9.5E-05
TOTAL LIVER HI =	4.1E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.70.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.1E-06	NA	NA	1.1E-06
			Dibenzo(a,h)anthracene	4.5E-08	NA	NA	NA	4.5E-08	Kidney	1.6E-06	NA	NA	1.6E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	2.1E-05	NA	NA	2.1E-05
			4,4'-DDE	8.4E-08	NA	NA	NA	8.4E-08	Liver	3.8E-03	NA	NA	3.8E-03
			alpha-Chlordane	1.4E-08	NA	NA	NA	1.4E-08	Liver	6.1E-04	NA	NA	6.1E-04
			Aroclor-1254	6.9E-06	NA	NA	NA	6.9E-06	Immune system	1.3E+00	NA	NA	1.3E+00
			Aroclor-1268	1.8E-06	NA	NA	NA	1.8E-06	Immune system	3.6E-01	NA	NA	3.6E-01
			Dieldrin	2.3E-07	NA	NA	NA	2.3E-07	Liver	2.3E-03	NA	NA	2.3E-03
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	3.5E-05	NA	NA	3.5E-05
			gamma-Chlordane	5.1E-09	NA	NA	NA	5.1E-09	Liver	2.3E-04	NA	NA	2.3E-04
			Technical Chlordane	4.0E-07	NA	NA	NA	4.0E-07	Liver	1.8E-02	NA	NA	1.8E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.3E-01	NA	NA	1.3E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	3.2E-01	NA	NA	3.2E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	7.8E-05	NA	NA	NA	7.8E-05		--	NA	NA	
			CHEMICAL TOTAL	8.7E-05	--	--	--	9E-05		2.2E+00	0.0E+00	--	2E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						9E-05					2E+00
	EXPOSURE MEDIUM TOTAL							9E-05					2E+00
FILLET TOTAL								9E-05					2E+00
RECEPTOR TOTAL								9E-05					2.2E+00
							TOTAL RISK ACROSS ALL MEDIA	9E-05	TOTAL HAZARD ACROSS ALL MEDIA				2.2E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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TOTAL DEVELOPMENTAL TOXICITY HI =	3.2E-01
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TOTAL IMMUNE SYSTEM HI =	1.8E+00
TOTAL KIDNEY HI =	5.7E-05
TOTAL LIVER HI =	2.5E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.71.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	Acenaphthylene	NC	NA	NA	NA		Liver	8.5E-07	NA	NA	8.5E-07
			Dibenzo(a,h)anthracene	3.5E-08	NA	NA	NA	3.5E-08	Kidney	1.2E-06	NA	NA	1.2E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	1.7E-05	NA	NA	1.7E-05
			4,4'-DDE	6.6E-08	NA	NA	NA	6.6E-08	Liver	3.0E-03	NA	NA	3.0E-03
			alpha-Chlordane	1.1E-08	NA	NA	NA	1.1E-08	Liver	4.7E-04	NA	NA	4.7E-04
			Aroclor-1254	5.4E-06	NA	NA	NA	5.4E-06	Immune system	1.1E+00	NA	NA	1.1E+00
			Aroclor-1268	1.4E-06	NA	NA	NA	1.4E-06	Immune system	2.8E-01	NA	NA	2.8E-01
			Dieldrin	1.8E-07	NA	NA	NA	1.8E-07	Liver	1.8E-03	NA	NA	1.8E-03
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	2.7E-05	NA	NA	2.7E-05
			gamma-Chlordane	4.0E-09	NA	NA	NA	4.0E-09	Liver	1.8E-04	NA	NA	1.8E-04
			Technical Chlordane	3.1E-07	NA	NA	NA	3.1E-07	Liver	1.4E-02	NA	NA	1.4E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	1.0E-01	NA	NA	1.0E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.5E-01	NA	NA	2.5E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	6.1E-05	NA	NA	NA	6.1E-05		--	NA	NA	
			CHEMICAL TOTAL	6.8E-05	--	--	--	7E-05		1.7E+00	0.0E+00	--	2E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-05					2E+00
	EXPOSURE MEDIUM TOTAL							7E-05					2E+00
FILLET TOTAL								7E-05					2E+00

RECEPTOR TOTAL			1.7E+00
TOTAL RISK ACROSS ALL MEDIA	7E-05	TOTAL HAZARD ACROSS ALL MEDIA	1.7E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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TOTAL DEVELOPMENTAL TOXICITY HI =	2.5E-01
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TOTAL IMMUNE SYSTEM HI =	1.4E+00
TOTAL KIDNEY HI =	4.5E-05
TOTAL LIVER HI =	1.9E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.72.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	Acenaphthylene	NC	NA	NA	NA		Liver	1.8E-06	NA	NA	1.8E-06
			Dibenzo(a,h)anthracene	5.0E-08	NA	NA	NA	5.0E-08	Kidney	2.6E-06	NA	NA	2.6E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	3.5E-05	NA	NA	3.5E-05
			4,4'-DDE	9.3E-08	NA	NA	NA	9.3E-08	Liver	6.4E-03	NA	NA	6.4E-03
			alpha-Chlordane	1.5E-08	NA	NA	NA	1.5E-08	Liver	1.0E-03	NA	NA	1.0E-03
			Aroclor-1254	7.7E-06	NA	NA	NA	7.7E-06	Immune system	2.2E+00	NA	NA	2.2E+00
			Aroclor-1268	2.0E-06	NA	NA	NA	2.0E-06	Immune system	5.9E-01	NA	NA	5.9E-01
			Dieldrin	2.6E-07	NA	NA	NA	2.6E-07	Liver	3.7E-03	NA	NA	3.7E-03
			Endosulfan Sulfate	NC	NA	NA	NA		Kidney	5.8E-05	NA	NA	5.8E-05
			gamma-Chlordane	5.6E-09	NA	NA	NA	5.6E-09	Liver	3.7E-04	NA	NA	3.7E-04
			Technical Chlordane	4.4E-07	NA	NA	NA	4.4E-07	Liver	2.9E-02	NA	NA	2.9E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Mercury	NC	NA	NA	NA		Immune system	2.2E-01	NA	NA	2.2E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	5.4E-01	NA	NA	5.4E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	8.6E-05	NA	NA	NA	8.6E-05		--	NA	NA	
			CHEMICAL TOTAL	9.7E-05	--	--	--	1E-04		3.6E+00	0.0E+00	--	4E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					4E+00
	EXPOSURE MEDIUM TOTAL							1E-04					4E+00
FILLET TOTAL								1E-04					4E+00
RECEPTOR TOTAL								1E-04					3.6E+00
							TOTAL RISK ACROSS ALL MEDIA	1E-04	TOTAL HAZARD ACROSS ALL MEDIA				3.6E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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TOTAL DEVELOPMENTAL TOXICITY HI =	5.4E-01
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TOTAL IMMUNE SYSTEM HI =	3.1E+00
TOTAL KIDNEY HI =	9.5E-05
TOTAL LIVER HI =	4.1E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.73.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.7E-06	NA	NA	2.7E-06
			Dibenzo(a,h)anthracene	4.6E-08	NA	NA	NA	4.6E-08	Kidney	1.2E-06	NA	NA	1.2E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	3.5E-05	NA	NA	3.5E-05
			4,4'-DDD	3.2E-07	NA	NA	NA	3.2E-07	Liver	1.5E-02	NA	NA	1.5E-02
			4,4'-DDE	1.4E-07	NA	NA	NA	1.4E-07	Liver	4.8E-03	NA	NA	4.8E-03
			4,4'-DDT	1.5E-07	NA	NA	NA	1.5E-07	Liver	5.2E-03	NA	NA	5.2E-03
			alpha-Chlordane	1.9E-07	NA	NA	NA	1.9E-07	Liver	6.2E-03	NA	NA	6.2E-03
			Aroclor-1254	2.7E-05	NA	NA	NA	2.7E-05	Immune system	4.0E+00	NA	NA	4.0E+00
			Dieldrin	5.1E-06	NA	NA	NA	5.1E-06	Liver	3.7E-02	NA	NA	3.7E-02
			gamma-Chlordane	7.5E-08	NA	NA	NA	7.5E-08	Liver	2.5E-03	NA	NA	2.5E-03
			Heptachlor Epoxide	6.1E-07	NA	NA	NA	6.1E-07	Liver	3.0E-02	NA	NA	3.0E-02
			Technical Chlordane	4.0E-06	NA	NA	NA	4.0E-06	Liver	1.3E-01	NA	NA	1.3E-01
			Cadmium	NC	NA	NA	NA		Kidney	3.4E-02	NA	NA	3.4E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	1.9E-02	NA	NA	1.9E-02
			Mercury	NC	NA	NA	NA		Immune system	7.4E-02	NA	NA	7.4E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.5E-01	NA	NA	2.5E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.9E-04	NA	NA	NA	2.9E-04		--	NA	NA	
			CHEMICAL TOTAL	3.3E-04	--	--	--	3E-04		4.6E+00	0.0E+00	--	4.6E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-04					4.6E+00
	EXPOSURE MEDIUM TOTAL							3E-04					4.6E+00
WHOLE BODY TOTAL								3E-04					4.6E+00
RECEPTOR TOTAL								3E-04					4.6E+00
							TOTAL RISK ACROSS ALL MEDIA	3E-04	TOTAL HAZARD ACROSS ALL MEDIA				4.6E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

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TOTAL DEVELOPMENTAL TOXICITY HI =	2.5E-01
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	--
TOTAL IMMUNE SYSTEM HI =	4.1E+00
TOTAL KIDNEY HI =	3.4E-02
TOTAL LIVER HI =	2.4E-01
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TOTAL NOAEL HI =	1.9E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.74.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.1E-06	NA	NA	2.1E-06
			Dibenzo(a,h)anthracene	3.6E-08	NA	NA	NA	3.6E-08	Kidney	9.6E-07	NA	NA	9.6E-07
			Phenanthrene	NC	NA	NA	NA		Kidney	2.8E-05	NA	NA	2.8E-05
			4,4'-DDD	2.5E-07	NA	NA	NA	2.5E-07	Liver	1.2E-02	NA	NA	1.2E-02
			4,4'-DDE	1.1E-07	NA	NA	NA	1.1E-07	Liver	3.7E-03	NA	NA	3.7E-03
			4,4'-DDT	1.2E-07	NA	NA	NA	1.2E-07	Liver	4.0E-03	NA	NA	4.0E-03
			alpha-Chlordane	1.5E-07	NA	NA	NA	1.5E-07	Liver	4.9E-03	NA	NA	4.9E-03
			Aroclor-1254	2.1E-05	NA	NA	NA	2.1E-05	Immune system	3.1E+00	NA	NA	3.1E+00
			Dieldrin	4.0E-06	NA	NA	NA	4.0E-06	Liver	2.9E-02	NA	NA	2.9E-02
			gamma-Chlordane	5.8E-08	NA	NA	NA	5.8E-08	Liver	1.9E-03	NA	NA	1.9E-03
			Heptachlor Epoxide	4.8E-07	NA	NA	NA	4.8E-07	Liver	2.3E-02	NA	NA	2.3E-02
			Technical Chlordane	3.1E-06	NA	NA	NA	3.1E-06	Liver	1.0E-01	NA	NA	1.0E-01
			Cadmium	NC	NA	NA	NA		Kidney	2.7E-02	NA	NA	2.7E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	1.5E-02	NA	NA	1.5E-02
			Mercury	NC	NA	NA	NA		Immune system	5.8E-02	NA	NA	5.8E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.0E-01	NA	NA	2.0E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.3E-04	NA	NA	NA	2.3E-04		--	NA	NA	
			CHEMICAL TOTAL	2.6E-04	--	--	--	3E-04		3.6E+00	0.0E+00	--	3.6E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-04					3.6E+00
	EXPOSURE MEDIUM TOTAL							3E-04					3.6E+00
WHOLE BODY TOTAL								3E-04					3.6E+00
RECEPTOR TOTAL								3E-04					3.6E+00
			TOTAL RISK ACROSS ALL MEDIA					3E-04	TOTAL HAZARD ACROSS ALL MEDIA				3.6E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

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TOTAL DEVELOPMENTAL TOXICITY HI =	2.0E-01
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TOTAL IMMUNE SYSTEM HI =	3.2E+00
TOTAL KIDNEY HI =	2.7E-02
TOTAL LIVER HI =	1.8E-01
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TOTAL NOAEL HI =	1.5E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.75.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.6E-06	NA	NA	4.6E-06
			Dibenzo(a,h)anthracene	3.8E-08	NA	NA	NA	3.8E-08	Kidney	2.0E-06	NA	NA	2.0E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	5.9E-05	NA	NA	5.9E-05
			4,4'-DDD	2.6E-07	NA	NA	NA	2.6E-07	Liver	2.6E-02	NA	NA	2.6E-02
			4,4'-DDE	1.2E-07	NA	NA	NA	1.2E-07	Liver	7.9E-03	NA	NA	7.9E-03
			4,4'-DDT	1.2E-07	NA	NA	NA	1.2E-07	Liver	8.6E-03	NA	NA	8.6E-03
			alpha-Chlordane	1.6E-07	NA	NA	NA	1.6E-07	Liver	1.0E-02	NA	NA	1.0E-02
			Aroclor-1254	2.3E-05	NA	NA	NA	2.3E-05	Immune system	6.7E+00	NA	NA	6.7E+00
			Dieldrin	4.2E-06	NA	NA	NA	4.2E-06	Liver	6.1E-02	NA	NA	6.1E-02
			gamma-Chlordane	6.2E-08	NA	NA	NA	6.2E-08	Liver	4.1E-03	NA	NA	4.1E-03
			Heptachlor Epoxide	5.1E-07	NA	NA	NA	5.1E-07	Liver	5.0E-02	NA	NA	5.0E-02
			Technical Chlordane	3.3E-06	NA	NA	NA	3.3E-06	Liver	2.2E-01	NA	NA	2.2E-01
			Cadmium	NC	NA	NA	NA		Kidney	5.7E-02	NA	NA	5.7E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	3.2E-02	NA	NA	3.2E-02
			Mercury	NC	NA	NA	NA		Immune system	1.2E-01	NA	NA	1.2E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	4.2E-01	NA	NA	4.2E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.4E-04	NA	NA	NA	2.4E-04		--	NA	NA	
			CHEMICAL TOTAL	2.7E-04	--	--	--	3E-04		7.7E+00	0.0E+00	--	7.7E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-04					7.7E+00
	EXPOSURE MEDIUM TOTAL							3E-04					7.7E+00
WHOLE BODY TOTAL								3E-04					7.7E+00
RECEPTOR TOTAL								3E-04					7.7E+00
			TOTAL RISK ACROSS ALL MEDIA					3E-04	TOTAL HAZARD ACROSS ALL MEDIA				7.7E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	4.2E-01
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TOTAL IMMUNE SYSTEM HI =	6.8E+00
TOTAL KIDNEY HI =	5.7E-02
TOTAL LIVER HI =	3.9E-01
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TOTAL NOAEL HI =	3.2E-02
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Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.9.76.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.7E-06	NA	NA	2.7E-06
			Dibenzo(a,h)anthracene	3.5E-08	NA	NA	NA	3.5E-08	Kidney	1.2E-06	NA	NA	1.2E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	3.5E-05	NA	NA	3.5E-05
			4,4'-DDD	2.4E-07	NA	NA	NA	2.4E-07	Liver	1.5E-02	NA	NA	1.5E-02
			4,4'-DDE	1.0E-07	NA	NA	NA	1.0E-07	Liver	4.8E-03	NA	NA	4.8E-03
			4,4'-DDT	1.1E-07	NA	NA	NA	1.1E-07	Liver	5.2E-03	NA	NA	5.2E-03
			alpha-Chlordane	1.4E-07	NA	NA	NA	1.4E-07	Liver	6.2E-03	NA	NA	6.2E-03
			Aroclor-1254	2.1E-05	NA	NA	NA	2.1E-05	Immune system	4.0E+00	NA	NA	4.0E+00
			Dieldrin	3.8E-06	NA	NA	NA	3.8E-06	Liver	3.7E-02	NA	NA	3.7E-02
			gamma-Chlordane	5.6E-08	NA	NA	NA	5.6E-08	Liver	2.5E-03	NA	NA	2.5E-03
			Heptachlor Epoxide	4.6E-07	NA	NA	NA	4.6E-07	Liver	3.0E-02	NA	NA	3.0E-02
			Technical Chlordane	3.0E-06	NA	NA	NA	3.0E-06	Liver	1.3E-01	NA	NA	1.3E-01
			Cadmium	NC	NA	NA	NA		Kidney	3.4E-02	NA	NA	3.4E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	1.9E-02	NA	NA	1.9E-02
			Mercury	NC	NA	NA	NA		Immune system	7.4E-02	NA	NA	7.4E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.5E-01	NA	NA	2.5E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.2E-04	NA	NA	NA	2.2E-04		--	NA	NA	
			CHEMICAL TOTAL	2.5E-04	--	--	--	2E-04		4.6E+00	0.0E+00	--	4.6E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-04					4.6E+00
	EXPOSURE MEDIUM TOTAL							2E-04					4.6E+00
WHOLE BODY TOTAL								2E-04					4.6E+00
RECEPTOR TOTAL								2E-04					4.6E+00
			TOTAL RISK ACROSS ALL MEDIA					2E-04	TOTAL HAZARD ACROSS ALL MEDIA				4.6E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
--- Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

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TOTAL DEVELOPMENTAL TOXICITY HI =	2.5E-01
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	--
TOTAL IMMUNE SYSTEM HI =	4.1E+00
TOTAL KIDNEY HI =	3.4E-02
TOTAL LIVER HI =	2.4E-01
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TOTAL NOAEL HI =	1.9E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.77.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	Acenaphthylene	NC	NA	NA	NA		Liver	2.1E-06	NA	NA	2.1E-06
			Dibenzo(a,h)anthracene	2.7E-08	NA	NA	NA	2.7E-08	Kidney	9.6E-07	NA	NA	9.6E-07
			Phenanthrene	NC	NA	NA	NA		Kidney	2.8E-05	NA	NA	2.8E-05
			4,4'-DDD	1.8E-07	NA	NA	NA	1.8E-07	Liver	1.2E-02	NA	NA	1.2E-02
			4,4'-DDE	8.1E-08	NA	NA	NA	8.1E-08	Liver	3.7E-03	NA	NA	3.7E-03
			4,4'-DDT	8.8E-08	NA	NA	NA	8.8E-08	Liver	4.0E-03	NA	NA	4.0E-03
			alpha-Chlordane	1.1E-07	NA	NA	NA	1.1E-07	Liver	4.9E-03	NA	NA	4.9E-03
			Aroclor-1254	1.6E-05	NA	NA	NA	1.6E-05	Immune system	3.1E+00	NA	NA	3.1E+00
			Dieldrin	3.0E-06	NA	NA	NA	3.0E-06	Liver	2.9E-02	NA	NA	2.9E-02
			gamma-Chlordane	4.4E-08	NA	NA	NA	4.4E-08	Liver	1.9E-03	NA	NA	1.9E-03
			Heptachlor Epoxide	3.6E-07	NA	NA	NA	3.6E-07	Liver	2.3E-02	NA	NA	2.3E-02
			Technical Chlordane	2.4E-06	NA	NA	NA	2.4E-06	Liver	1.0E-01	NA	NA	1.0E-01
			Cadmium	NC	NA	NA	NA		Kidney	2.7E-02	NA	NA	2.7E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	1.5E-02	NA	NA	1.5E-02
			Mercury	NC	NA	NA	NA		Immune system	5.8E-02	NA	NA	5.8E-02
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	2.0E-01	NA	NA	2.0E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.7E-04	NA	NA	NA	1.7E-04		--	NA	NA	
			CHEMICAL TOTAL	1.9E-04	--	--	--	2E-04		3.6E+00	0.0E+00	--	3.6E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-04					3.6E+00
	EXPOSURE MEDIUM TOTAL							2E-04					3.6E+00
WHOLE BODY TOTAL								2E-04					3.6E+00
RECEPTOR TOTAL								2E-04					3.6E+00
			TOTAL RISK ACROSS ALL MEDIA					2E-04	TOTAL HAZARD ACROSS ALL MEDIA				3.6E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

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TOTAL DEVELOPMENTAL TOXICITY HI =	2.0E-01
	--
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	--
TOTAL IMMUNE SYSTEM HI =	3.2E+00
TOTAL KIDNEY HI =	2.7E-02
TOTAL LIVER HI =	1.8E-01
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	--
TOTAL NOAEL HI =	1.5E-02
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US EPA ARCHIVE DOCUMENT

TABLE G.9.78.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	Acenaphthylene	NC	NA	NA	NA		Liver	4.6E-06	NA	NA	4.6E-06
			Dibenzo(a,h)anthracene	3.8E-08	NA	NA	NA	3.8E-08	Kidney	2.0E-06	NA	NA	2.0E-06
			Phenanthrene	NC	NA	NA	NA		Kidney	5.9E-05	NA	NA	5.9E-05
			4,4'-DDD	2.6E-07	NA	NA	NA	2.6E-07	Liver	2.6E-02	NA	NA	2.6E-02
			4,4'-DDE	1.2E-07	NA	NA	NA	1.2E-07	Liver	7.9E-03	NA	NA	7.9E-03
			4,4'-DDT	1.2E-07	NA	NA	NA	1.2E-07	Liver	8.6E-03	NA	NA	8.6E-03
			alpha-Chlordane	1.6E-07	NA	NA	NA	1.6E-07	Liver	1.0E-02	NA	NA	1.0E-02
			Aroclor-1254	2.3E-05	NA	NA	NA	2.3E-05	Immune system	6.7E+00	NA	NA	6.7E+00
			Dieldrin	4.2E-06	NA	NA	NA	4.2E-06	Liver	6.1E-02	NA	NA	6.1E-02
			gamma-Chlordane	6.2E-08	NA	NA	NA	6.2E-08	Liver	4.1E-03	NA	NA	4.1E-03
			Heptachlor Epoxide	5.1E-07	NA	NA	NA	5.1E-07	Liver	5.0E-02	NA	NA	5.0E-02
			Technical Chlordane	3.3E-06	NA	NA	NA	3.3E-06	Liver	2.2E-01	NA	NA	2.2E-01
			Cadmium	NC	NA	NA	NA		Kidney	5.7E-02	NA	NA	5.7E-02
			Lead	--	NA	NA	NA			--	NA	NA	
			Manganese	NC	NA	NA	NA		NOAEL	3.2E-02	NA	NA	3.2E-02
			Mercury	NC	NA	NA	NA		Immune system	1.2E-01	NA	NA	1.2E-01
			Mercury (methyl)	NC	NA	NA	NA		Developmental toxicity	4.2E-01	NA	NA	4.2E-01
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.4E-04	NA	NA	NA	2.4E-04		--	NA	NA	
			CHEMICAL TOTAL	2.7E-04	--	--	--	3E-04		7.7E+00	0.0E+00	--	7.7E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-04					7.7E+00
	EXPOSURE MEDIUM TOTAL							3E-04					7.7E+00
WHOLE BODY TOTAL								3E-04					7.7E+00
RECEPTOR TOTAL								3E-04					7.7E+00
			TOTAL RISK ACROSS ALL MEDIA					3E-04	TOTAL HAZARD ACROSS ALL MEDIA				7.7E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	4.2E-01
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	--
TOTAL IMMUNE SYSTEM HI =	6.8E+00
TOTAL KIDNEY HI =	5.7E-02
TOTAL LIVER HI =	3.9E-01
	--
	--
TOTAL NOAEL HI =	3.2E-02
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	--
	--

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.10.37.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	4,4'-DDD	1.2E-06	NA	NA	NA	1.2E-06	Liver	--	NA	NA	
			4,4'-DDE	2.8E-06	NA	NA	NA	2.8E-06	Liver	--	NA	NA	
			4,4'-DDT	1.2E-06	NA	NA	NA	1.2E-06	Liver	--	NA	NA	
			alpha-Chlordane	2.6E-06	NA	NA	NA	2.6E-06	Liver	--	NA	NA	
			Aroclor-1254	7.0E-04	NA	NA	NA	7.0E-04	Immune system	2.3E+01	NA	NA	2.3E+01
			Aroclor-1268	1.2E-05	NA	NA	NA	1.2E-05	Immune system	--	NA	NA	
			Dieldrin	5.8E-05	NA	NA	NA	5.8E-05	Liver	--	NA	NA	
			Heptachlor	1.2E-06	NA	NA	NA	1.2E-06	Liver	--	NA	NA	
			Heptachlor Epoxide	5.4E-06	NA	NA	NA	5.4E-06	Liver	--	NA	NA	
			Technical Chlordane	3.6E-05	NA	NA	NA	3.6E-05	Liver	--	NA	NA	
			Mercury (methyl)				NA		Developmental toxicity	1.4E+00	NA	NA	1.4E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	6.6E-03	NA	NA	NA	6.6E-03					
			Toxicity Equivalency (PCB Congeners) - Mam	2.5E-03	NA	NA	NA	2.5E-03					
			CHEMICAL TOTAL	9.9E-03	--	--	--	1E-02		2.5E+01	0.0E+00	--	2.5E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-02					2.5E+01
	EXPOSURE MEDIUM TOTAL							1E-02					2.5E+01
WHOLE BODY TOTAL								1E-02					2.5E+01
RECEPTOR TOTAL								1E-02					2.5E+01
							TOTAL RISK ACROSS ALL MEDIA	1E-02	TOTAL HAZARD ACROSS ALL MEDIA				2.5E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL DEVELOPMENTAL TOXICITY HI = 1.4E+00

TOTAL IMMUNE SYSTEM HI = 2.3E+01

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.10.38.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	Aroclor-1254	1.7E-04	NA	NA	NA	1.7E-04	Immune system	2.4E+01	NA	NA	2.4E+01
			Aroclor-1268	2.8E-06	NA	NA	NA	2.8E-06	Immune system	--	NA	NA	
			Dieldrin	1.4E-05	NA	NA	NA	1.4E-05	Liver	--	NA	NA	
			Heptachlor Epoxide	1.3E-06	NA	NA	NA	1.3E-06	Liver	--	NA	NA	
			Technical Chlordane	8.6E-06	NA	NA	NA	8.6E-06	Liver	--	NA	NA	
			Mercury (methyl)				NA		Developmental toxicity	1.5E+00	NA	NA	1.5E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.6E-03	NA	NA	NA	1.6E-03					
			Toxicity Equivalency (PCB Congeners) - Mam	5.9E-04	NA	NA	NA	5.9E-04					
			CHEMICAL TOTAL	2.4E-03	--	--	--	2E-03		2.6E+01	0.0E+00	--	2.6E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-03					2.6E+01
	EXPOSURE MEDIUM TOTAL							2E-03					2.6E+01
WHOLE BODY TOTAL								2E-03					2.6E+01
RECEPTOR TOTAL								2E-03					2.6E+01
			TOTAL RISK ACROSS ALL MEDIA					2E-03	TOTAL HAZARD ACROSS ALL MEDIA				2.6E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.5E+00
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TOTAL IMMUNE SYSTEM HI =	2.4E+01
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Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.10.39.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	Aroclor-1254	1.4E-04	NA	NA	NA	1.4E-04	Immune system	3.9E+01	NA	NA	3.9E+01
			Aroclor-1268	2.3E-06	NA	NA	NA	2.3E-06	Immune system	--	NA	NA	
			Dieldrin	1.1E-05	NA	NA	NA	1.1E-05	Liver	--	NA	NA	
			Technical Chlordane	7.0E-06	NA	NA	NA	7.0E-06	Liver	--	NA	NA	
			Mercury (methyl)				NA		Developmental toxicity	2.4E+00	NA	NA	2.4E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.3E-03	NA	NA	NA	1.3E-03					
			Toxicity Equivalency (PCB Congeners) - Mam	4.8E-04	NA	NA	NA	4.8E-04					
			CHEMICAL TOTAL	1.9E-03	--	--	--	2E-03		4.2E+01	0.0E+00	--	4.2E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-03					4.2E+01
	EXPOSURE MEDIUM TOTAL							2E-03					4.2E+01
WHOLE BODY TOTAL								2E-03					4.2E+01
RECEPTOR TOTAL								**2E-03**					**4.2E+01**
			TOTAL RISK ACROSS ALL MEDIA					**2E-03**	**TOTAL HAZARD ACROSS ALL MEDIA**				**4.2E+01**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL DEVELOPMENTAL TOXICITY HI =	2.4E+00
TOTAL IMMUNE SYSTEM HI =	3.9E+01

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.10.40.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	Aroclor-1254	1.6E-04	NA	NA	NA	1.6E-04	Immune system	2.3E+01	NA	NA	2.3E+01
			Aroclor-1268	2.7E-06	NA	NA	NA	2.7E-06	Immune system	--	NA	NA	
			Dieldrin	1.3E-05	NA	NA	NA	1.3E-05	Liver	--	NA	NA	
			Heptachlor Epoxide	1.2E-06	NA	NA	NA	1.2E-06	Liver	--	NA	NA	
			Technical Chlordane	8.3E-06	NA	NA	NA	8.3E-06	Liver	--	NA	NA	
			Mercury (methyl)				NA		Developmental toxicity	1.4E+00	NA	NA	1.4E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.5E-03	NA	NA	NA	1.5E-03					
			Toxicity Equivalency (PCB Congeners) - Mam	5.7E-04	NA	NA	NA	5.7E-04					
			CHEMICAL TOTAL	2.3E-03	--	--	--	2E-03		2.5E+01	0.0E+00	--	2.5E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-03					2.5E+01
	EXPOSURE MEDIUM TOTAL							2E-03					2.5E+01
WHOLE BODY TOTAL								2E-03					2.5E+01
RECEPTOR TOTAL								2E-03					2.5E+01
			TOTAL RISK ACROSS ALL MEDIA					2E-03	TOTAL HAZARD ACROSS ALL MEDIA				2.5E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL DEVELOPMENTAL TOXICITY HI = 1.4E+00

TOTAL IMMUNE SYSTEM HI = 2.3E+01

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.10.41.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	Aroclor-1254	1.7E-04	NA	NA	NA	1.7E-04	Immune system	2.4E+01	NA	NA	2.4E+01
			Aroclor-1268	2.8E-06	NA	NA	NA	2.8E-06	Immune system	--	NA	NA	
			Dieldrin	1.4E-05	NA	NA	NA	1.4E-05	Liver	--	NA	NA	
			Heptachlor Epoxide	1.3E-06	NA	NA	NA	1.3E-06	Liver	--	NA	NA	
			Technical Chlordane	8.6E-06	NA	NA	NA	8.6E-06	Liver	--	NA	NA	
			Mercury (methyl)				NA		Developmental toxicity	1.5E+00	NA	NA	1.5E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.6E-03	NA	NA	NA	1.6E-03					
			Toxicity Equivalency (PCB Congeners) - Mam	5.9E-04	NA	NA	NA	5.9E-04					
			CHEMICAL TOTAL	2.4E-03	--	--	--	2E-03		2.6E+01	0.0E+00	--	2.6E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-03					2.6E+01
	EXPOSURE MEDIUM TOTAL							2E-03					2.6E+01
WHOLE BODY TOTAL								2E-03					2.6E+01
RECEPTOR TOTAL								2E-03					2.6E+01
			TOTAL RISK ACROSS ALL MEDIA					2E-03	TOTAL HAZARD ACROSS ALL MEDIA				2.6E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL DEVELOPMENTAL TOXICITY HI = 1.5E+00

TOTAL IMMUNE SYSTEM HI = 2.4E+01

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.10.42.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	Aroclor-1254	1.4E-04	NA	NA	NA	1.4E-04	Immune system	3.9E+01	NA	NA	3.9E+01
			Aroclor-1268	2.3E-06	NA	NA	NA	2.3E-06	Immune system	--	NA	NA	
			Dieldrin	1.1E-05	NA	NA	NA	1.1E-05	Liver	--	NA	NA	
			Heptachlor Epoxide	1.0E-06	NA	NA	NA	1.0E-06	Liver	--	NA	NA	
			Technical Chlordane	7.0E-06	NA	NA	NA	7.0E-06	Liver	--	NA	NA	
			Mercury (methyl)				NA		Developmental toxicity	2.4E+00	NA	NA	2.4E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.3E-03	NA	NA	NA	1.3E-03					
			Toxicity Equivalency (PCB Congeners) - Mam	4.8E-04	NA	NA	NA	4.8E-04					
			CHEMICAL TOTAL	1.9E-03	--	--	--	2E-03		4.2E+01	0.0E+00	--	4.2E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-03					4.2E+01
	EXPOSURE MEDIUM TOTAL							2E-03					4.2E+01
WHOLE BODY TOTAL								2E-03					4.2E+01
RECEPTOR TOTAL								2E-03					4.2E+01
			TOTAL RISK ACROSS ALL MEDIA					2E-03	TOTAL HAZARD ACROSS ALL MEDIA				4.2E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL DEVELOPMENTAL TOXICITY HI =	2.4E+00
TOTAL IMMUNE SYSTEM HI =	3.9E+01

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.10.43.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	Benzo(a)pyrene	6.9E-06	NA	NA	NA	6.9E-06	Kidney	--	NA	NA	
			Dibenzo(a,h)anthracene	1.2E-06	NA	NA	NA	1.2E-06	Kidney	--	NA	NA	
			4,4'-DDD	1.2E-06	NA	NA	NA	1.2E-06	Liver	--	NA	NA	
			4,4'-DDE	3.8E-06	NA	NA	NA	3.8E-06	Liver	--	NA	NA	
			alpha-Chlordane	3.3E-06	NA	NA	NA	3.3E-06	Liver	--	NA	NA	
			Aroclor-1254	2.3E-03	NA	NA	NA	2.3E-03	Immune system	7.7E+01	NA	NA	7.7E+01
			Aroclor-1268	3.0E-05	NA	NA	NA	3.0E-05	Immune system	1.0E+00	NA	NA	1.0E+00
			Dieldrin	5.5E-05	NA	NA	NA	5.5E-05	Liver	--	NA	NA	
			gamma-Chlordane	1.2E-06	NA	NA	NA	1.2E-06	Liver	--	NA	NA	
			Heptachlor Epoxide	2.5E-06	NA	NA	NA	2.5E-06	Liver	--	NA	NA	
			Technical Chlordane	9.3E-05	NA	NA	NA	9.3E-05	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.9E-02	NA	NA	NA	2.9E-02					
			Toxicity Equivalency (PCB Congeners) - Mam	1.3E-03	NA	NA	NA	1.3E-03					
			CHEMICAL TOTAL	3.3E-02	--	--	--	3E-02		7.8E+01	0.0E+00	--	7.8E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-02					7.8E+01
	EXPOSURE MEDIUM TOTAL							3E-02					7.8E+01
WHOLE BODY TOTAL								3E-02					7.8E+01
RECEPTOR TOTAL								3E-02					7.8E+01
			TOTAL RISK ACROSS ALL MEDIA					3E-02	TOTAL HAZARD ACROSS ALL MEDIA				7.8E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

TOTAL IMMUNE SYSTEM HI = 7.8E+01

US EPA ARCHIVE DOCUMENT

TABLE G.10.44.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	Benzo(a)pyrene	1.7E-06	NA	NA	NA	1.7E-06	Kidney	--	NA	NA	
			Aroclor-1254	5.4E-04	NA	NA	NA	5.4E-04	Immune system	7.9E+01	NA	NA	7.9E+01
			Aroclor-1268	7.2E-06	NA	NA	NA	7.2E-06	Immune system	1.1E+00	NA	NA	1.1E+00
			Dieldrin	1.3E-05	NA	NA	NA	1.3E-05	Liver	--	NA	NA	
			Technical Chlordane	2.2E-05	NA	NA	NA	2.2E-05	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	7.0E-03	NA	NA	NA	7.0E-03					
			Toxicity Equivalency (PCB Congeners) - Mam	3.0E-04	NA	NA	NA	3.0E-04					
			CHEMICAL TOTAL	7.8E-03	--	--	--	8E-03		8.0E+01	0.0E+00	--	8.0E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						8E-03					8.0E+01
	EXPOSURE MEDIUM TOTAL							8E-03					8.0E+01
WHOLE BODY TOTAL								8E-03					8.0E+01
RECEPTOR TOTAL								8E-03					8.0E+01
			TOTAL RISK ACROSS ALL MEDIA					8E-03	TOTAL HAZARD ACROSS ALL MEDIA				8.0E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

TOTAL IMMUNE SYSTEM HI = 8.0E+01

US EPA ARCHIVE DOCUMENT

TABLE G.10.45.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	Aroclor-1254	4.4E-04	NA	NA	NA	4.4E-04	Immune system	1.3E+02	NA	NA	1.3E+02
			Aroclor-1268	5.9E-06	NA	NA	NA	5.9E-06	Immune system	1.7E+00	NA	NA	1.7E+00
			Dieldrin	1.1E-05	NA	NA	NA	1.1E-05	Liver	--	NA	NA	
			Technical Chlordane	1.8E-05	NA	NA	NA	1.8E-05	Liver	1.2E+00	NA	NA	1.2E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	5.7E-03	NA	NA	NA	5.7E-03					
			Toxicity Equivalency (PCB Congeners) - Mam	2.5E-04	NA	NA	NA	2.5E-04					
			CHEMICAL TOTAL	6.4E-03	--	--	--	6E-03		1.3E+02	0.0E+00	--	1.3E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-03					1.3E+02
	EXPOSURE MEDIUM TOTAL							6E-03					1.3E+02
WHOLE BODY TOTAL								6E-03					1.3E+02
RECEPTOR TOTAL								6E-03					1.3E+02
			TOTAL RISK ACROSS ALL MEDIA					6E-03	TOTAL HAZARD ACROSS ALL MEDIA				1.3E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.3E+00
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TOTAL IMMUNE SYSTEM HI =	1.3E+02
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TOTAL LIVER HI =	1.2E+00
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Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.10.46.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	Benzo(a)pyrene	1.6E-06	NA	NA	NA	1.6E-06	Kidney	--	NA	NA	
			Aroclor-1254	5.3E-04	NA	NA	NA	5.3E-04	Immune system	7.7E+01	NA	NA	7.7E+01
			Aroclor-1268	7.0E-06	NA	NA	NA	7.0E-06	Immune system	1.0E+00	NA	NA	1.0E+00
			Dieldrin	1.3E-05	NA	NA	NA	1.3E-05	Liver	--	NA	NA	
			Technical Chlordane	2.1E-05	NA	NA	NA	2.1E-05	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	6.7E-03	NA	NA	NA	6.7E-03					
			Toxicity Equivalency (PCB Congeners) - Mam	2.9E-04	NA	NA	NA	2.9E-04					
			CHEMICAL TOTAL	7.6E-03	--	--	--	8E-03		7.8E+01	0.0E+00	--	7.8E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						8E-03					7.8E+01
	EXPOSURE MEDIUM TOTAL							8E-03					7.8E+01
WHOLE BODY TOTAL								8E-03					7.8E+01
RECEPTOR TOTAL								8E-03					7.8E+01
			TOTAL RISK ACROSS ALL MEDIA					8E-03	TOTAL HAZARD ACROSS ALL MEDIA				7.8E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

TOTAL IMMUNE SYSTEM HI = 7.8E+01

US EPA ARCHIVE DOCUMENT

TABLE G.10.47.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	Benzo(a)pyrene	1.7E-06	NA	NA	NA	1.7E-06	Kidney	--	NA	NA	
			Aroclor-1254	5.4E-04	NA	NA	NA	5.4E-04	Immune system	7.9E+01	NA	NA	7.9E+01
			Aroclor-1268	7.2E-06	NA	NA	NA	7.2E-06	Immune system	1.1E+00	NA	NA	1.1E+00
			Dieldrin	1.3E-05	NA	NA	NA	1.3E-05	Liver	--	NA	NA	
			Technical Chlordane	2.2E-05	NA	NA	NA	2.2E-05	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	7.0E-03	NA	NA	NA	7.0E-03					
			Toxicity Equivalency (PCB Congeners) - Mam	3.0E-04	NA	NA	NA	3.0E-04					
			CHEMICAL TOTAL	7.8E-03	--	--	--	8E-03		8.0E+01	0.0E+00	--	8.0E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						8E-03					8.0E+01
	EXPOSURE MEDIUM TOTAL							8E-03					8.0E+01
WHOLE BODY TOTAL								8E-03					8.0E+01
RECEPTOR TOTAL								8E-03					8.0E+01
			TOTAL RISK ACROSS ALL MEDIA					8E-03	TOTAL HAZARD ACROSS ALL MEDIA				8.0E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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TOTAL IMMUNE SYSTEM HI =	8.0E+01
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US EPA ARCHIVE DOCUMENT

TABLE G.10.48.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	Aroclor-1254	4.4E-04	NA	NA	NA	4.4E-04	Immune system	1.3E+02	NA	NA	1.3E+02
			Aroclor-1268	5.9E-06	NA	NA	NA	5.9E-06	Immune system	1.7E+00	NA	NA	1.7E+00
			Dieldrin	1.1E-05	NA	NA	NA	1.1E-05	Liver	--	NA	NA	
			Technical Chlordane	1.8E-05	NA	NA	NA	1.8E-05	Liver	1.2E+00	NA	NA	1.2E+00
			Mercury (methyl)				NA		Developmental toxicity	1.3E+00	NA	NA	1.3E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	5.7E-03	NA	NA	NA	5.7E-03					
			Toxicity Equivalency (PCB Congeners) - Mam	2.5E-04	NA	NA	NA	2.5E-04					
			CHEMICAL TOTAL	6.4E-03	--	--	--	6E-03		1.3E+02	0.0E+00	--	1.3E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-03					1.3E+02
	EXPOSURE MEDIUM TOTAL							6E-03					1.3E+02
WHOLE BODY TOTAL								6E-03					1.3E+02
RECEPTOR TOTAL								6E-03					1.3E+02
			TOTAL RISK ACROSS ALL MEDIA					6E-03	TOTAL HAZARD ACROSS ALL MEDIA				1.3E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

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TOTAL DEVELOPMENTAL TOXICITY HI =	1.3E+00
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TOTAL IMMUNE SYSTEM HI =	1.3E+02
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TOTAL LIVER HI =	1.2E+00
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Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE G.10.49.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	Benzo(a)pyrene	2.8E-06	NA	NA	NA	2.8E-06	Kidney	--	NA	NA	
			Dibenzo(a,h)anthracene	1.9E-06	NA	NA	NA	1.9E-06	Kidney	--	NA	NA	
			4,4'-DDD	1.4E-06	NA	NA	NA	1.4E-06	Liver	--	NA	NA	
			4,4'-DDE	6.0E-06	NA	NA	NA	6.0E-06	Liver	--	NA	NA	
			alpha-Chlordane	2.8E-06	NA	NA	NA	2.8E-06	Liver	--	NA	NA	
			Aroclor-1254	7.6E-04	NA	NA	NA	7.6E-04	Immune system	2.5E+01	NA	NA	2.5E+01
			beta-BHC	1.3E-06	NA	NA	NA	1.3E-06	Liver / Kidney	--	NA	NA	
			Dieldrin	5.0E-05	NA	NA	NA	5.0E-05	Liver	--	NA	NA	
			gamma-Chlordane	1.2E-06	NA	NA	NA	1.2E-06	Liver	--	NA	NA	
			Heptachlor Epoxide	8.1E-06	NA	NA	NA	8.1E-06	Liver	--	NA	NA	
			Technical Chlordane	6.2E-05	NA	NA	NA	6.2E-05	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.1E-02	NA	NA	NA	1.1E-02					
			Toxicity Equivalency (PCB Congeners) - Mam	3.6E-03	NA	NA	NA	3.6E-03					
			CHEMICAL TOTAL	1.5E-02	--	--	--	2E-02		2.5E+01	0.0E+00	--	2.5E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-02					2.5E+01
	EXPOSURE MEDIUM TOTAL							2E-02					2.5E+01
WHOLE BODY TOTAL								2E-02					2.5E+01
RECEPTOR TOTAL								**2E-02**					**2.5E+01**
			TOTAL RISK ACROSS ALL MEDIA					**2E-02**	**TOTAL HAZARD ACROSS ALL MEDIA**				**2.5E+01**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

TOTAL IMMUNE SYSTEM HI =	2.5E+01

US EPA ARCHIVE DOCUMENT

TABLE G.10.50.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	4,4'-DDE	1.4E-06	NA	NA	NA	1.4E-06	Liver	--	NA	NA	
			Aroclor-1254	1.8E-04	NA	NA	NA	1.8E-04	Immune system	2.6E+01	NA	NA	2.6E+01
			Dieldrin	1.2E-05	NA	NA	NA	1.2E-05	Liver	--	NA	NA	
			Heptachlor Epoxide	1.9E-06	NA	NA	NA	1.9E-06	Liver	--	NA	NA	
			Technical Chlordane	1.5E-05	NA	NA	NA	1.5E-05	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.6E-03	NA	NA	NA	2.6E-03					
			Toxicity Equivalency (PCB Congeners) - Mam	8.5E-04	NA	NA	NA	8.5E-04					
			CHEMICAL TOTAL	3.6E-03	--	--	--	4E-03		2.6E+01	0.0E+00	--	2.6E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-03					2.6E+01
	EXPOSURE MEDIUM TOTAL							4E-03					2.6E+01
WHOLE BODY TOTAL								4E-03					2.6E+01
RECEPTOR TOTAL								4E-03					2.6E+01
			TOTAL RISK ACROSS ALL MEDIA					4E-03	**TOTAL HAZARD ACROSS ALL MEDIA**				2.6E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

TOTAL IMMUNE SYSTEM HI = 2.6E+01

US EPA ARCHIVE DOCUMENT

TABLE G.10.51.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	Aroclor-1254	1.5E-04	NA	NA	NA	1.5E-04	Immune system	4.3E+01	NA	NA	4.3E+01
			Dieldrin	9.7E-06	NA	NA	NA	9.7E-06	Liver	--	NA	NA	
			Technical Chlordane	1.2E-05	NA	NA	NA	1.2E-05	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.1E-03	NA	NA	NA	2.1E-03					
			Toxicity Equivalency (PCB Congeners) - Mam	7.0E-04	NA	NA	NA	7.0E-04					
			CHEMICAL TOTAL	2.9E-03	--	--	--	3E-03		4.3E+01	0.0E+00	--	4.3E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-03					4.3E+01
	EXPOSURE MEDIUM TOTAL							3E-03					4.3E+01
WHOLE BODY TOTAL								3E-03					4.3E+01
RECEPTOR TOTAL								3E-03					4.3E+01
			TOTAL RISK ACROSS ALL MEDIA					3E-03	TOTAL HAZARD ACROSS ALL MEDIA				4.3E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

TOTAL IMMUNE SYSTEM HI = 4.3E+01

US EPA ARCHIVE DOCUMENT

TABLE G.10.52.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	4,4'-DDE	1.4E-06	NA	NA	NA	1.4E-06	Liver	--	NA	NA	
			Aroclor-1254	1.7E-04	NA	NA	NA	1.7E-04	Immune system	2.5E+01	NA	NA	2.5E+01
			Dieldrin	1.1E-05	NA	NA	NA	1.1E-05	Liver	--	NA	NA	
			Heptachlor Epoxide	1.9E-06	NA	NA	NA	1.9E-06	Liver	--	NA	NA	
			Technical Chlordane	1.4E-05	NA	NA	NA	1.4E-05	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.5E-03	NA	NA	NA	2.5E-03					
			Toxicity Equivalency (PCB Congeners) - Mam	8.2E-04	NA	NA	NA	8.2E-04					
			CHEMICAL TOTAL	3.5E-03	--	--	--	3E-03		2.5E+01	0.0E+00	--	2.5E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-03					2.5E+01
	EXPOSURE MEDIUM TOTAL							3E-03					2.5E+01
WHOLE BODY TOTAL								3E-03					2.5E+01
RECEPTOR TOTAL								3E-03					2.5E+01
			TOTAL RISK ACROSS ALL MEDIA					3E-03	TOTAL HAZARD ACROSS ALL MEDIA				2.5E+01

NOTES
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

TOTAL IMMUNE SYSTEM HI = 2.5E+01

US EPA ARCHIVE DOCUMENT

TABLE G.10.53.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	4,4'-DDE	1.4E-06	NA	NA	NA	1.4E-06	Liver	--	NA	NA	
			Aroclor-1254	1.8E-04	NA	NA	NA	1.8E-04	Immune system	2.6E+01	NA	NA	2.6E+01
			Dieldrin	1.2E-05	NA	NA	NA	1.2E-05	Liver	--	NA	NA	
			Heptachlor Epoxide	1.9E-06	NA	NA	NA	1.9E-06	Liver	--	NA	NA	
			Technical Chlordane	1.5E-05	NA	NA	NA	1.5E-05	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.6E-03	NA	NA	NA	2.6E-03					
			Toxicity Equivalency (PCB Congeners) - Mam	8.5E-04	NA	NA	NA	8.5E-04					
			CHEMICAL TOTAL	3.6E-03	--	--	--	4E-03		2.6E+01	0.0E+00	--	2.6E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-03					2.6E+01
	EXPOSURE MEDIUM TOTAL							4E-03					2.6E+01
WHOLE BODY TOTAL								4E-03					2.6E+01
RECEPTOR TOTAL								4E-03					2.6E+01
			TOTAL RISK ACROSS ALL MEDIA					4E-03	TOTAL HAZARD ACROSS ALL MEDIA				2.6E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

TOTAL IMMUNE SYSTEM HI = 2.6E+01

US EPA ARCHIVE DOCUMENT

TABLE G.10.54.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	4,4'-DDE	1.2E-06	NA	NA	NA	1.2E-06	Liver	--	NA	NA	
			Aroclor-1254	1.5E-04	NA	NA	NA	1.5E-04	Immune system	4.3E+01	NA	NA	4.3E+01
			Dieldrin	9.7E-06	NA	NA	NA	9.7E-06	Liver	--	NA	NA	
			Heptachlor Epoxide	1.6E-06	NA	NA	NA	1.6E-06	Liver	--	NA	NA	
			Technical Chlordane	1.2E-05	NA	NA	NA	1.2E-05	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.1E-03	NA	NA	NA	2.1E-03					
			Toxicity Equivalency (PCB Congeners) - Mam	7.0E-04	NA	NA	NA	7.0E-04					
			CHEMICAL TOTAL	2.9E-03	--	--	--	3E-03		4.3E+01	0.0E+00	--	4.3E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-03					4.3E+01
	EXPOSURE MEDIUM TOTAL							3E-03					4.3E+01
WHOLE BODY TOTAL								3E-03					4.3E+01
RECEPTOR TOTAL								3E-03					4.3E+01
			TOTAL RISK ACROSS ALL MEDIA					3E-03	TOTAL HAZARD ACROSS ALL MEDIA				4.3E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

TOTAL IMMUNE SYSTEM HI = 4.3E+01

US EPA ARCHIVE DOCUMENT

TABLE G.10.55.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	Benzo(a)pyrene	2.0E-06	NA	NA	NA	2.0E-06	Kidney	--	NA	NA	
			Dibenzo(a,h)anthracene	1.1E-06	NA	NA	NA	1.1E-06	Kidney	--	NA	NA	
			4,4'-DDE	1.4E-06	NA	NA	NA	1.4E-06	Liver	--	NA	NA	
			Aroclor-1254	1.7E-04	NA	NA	NA	1.7E-04	Immune system	5.7E+00	NA	NA	5.7E+00
			Aroclor-1268	1.0E-05	NA	NA	NA	1.0E-05	Immune system	--	NA	NA	
			Dieldrin	3.8E-06	NA	NA	NA	3.8E-06	Liver	--	NA	NA	
			Technical Chlordane	5.1E-06	NA	NA	NA	5.1E-06	Liver	--	NA	NA	
			Mercury (methyl)				NA		Developmental toxicity	1.3E+00	NA	NA	1.3E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.9E-03	NA	NA	NA	1.9E-03					
			Toxicity Equivalency (PCB Congeners) - Mam	6.4E-04	NA	NA	NA	6.4E-04					
			CHEMICAL TOTAL	2.7E-03	--	--	--	3E-03		7.0E+00	0.0E+00	--	7E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-03					7E+00
	EXPOSURE MEDIUM TOTAL							3E-03					7E+00
FILLET TOTAL								3E-03					7E+00
RECEPTOR TOTAL								3E-03					7.0E+00
			TOTAL RISK ACROSS ALL MEDIA					3E-03	TOTAL HAZARD ACROSS ALL MEDIA				7.0E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL DEVELOPMENTAL TOXICITY HI =	1.3E+00
TOTAL IMMUNE SYSTEM HI =	5.7E+00

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.10.56.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	Aroclor-1254	4.1E-05	NA	NA	NA	4.1E-05	Immune system	6.0E+00	NA	NA	6.0E+00
			Aroclor-1268	2.4E-06	NA	NA	NA	2.4E-06	Immune system	--	NA	NA	
			Mercury (methyl)				NA		Developmental toxicity	1.3E+00	NA	NA	1.3E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.5E-04	NA	NA	NA	4.5E-04					
			Toxicity Equivalency (PCB Congeners) - Mam	1.5E-04	NA	NA	NA	1.5E-04					
			CHEMICAL TOTAL	6.4E-04	--	--	--	6E-04		7.3E+00	0.0E+00	--	7E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-04					7E+00
	EXPOSURE MEDIUM TOTAL							6E-04					7E+00
FILLET TOTAL								6E-04					7E+00
RECEPTOR TOTAL								6E-04					7.3E+00
			TOTAL RISK ACROSS ALL MEDIA					6E-04	TOTAL HAZARD ACROSS ALL MEDIA				7.3E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL DEVELOPMENTAL TOXICITY HI = 1.3E+00

TOTAL IMMUNE SYSTEM HI = 6.0E+00

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.10.57.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: *CURRENT/FUTURE*
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	Aroclor-1254	3.3E-05	NA	NA	NA	3.3E-05	*Immune system*	9.7E+00	NA	NA	9.7E+00
			Mercury (methyl)				NA		Developmental toxicity	2.1E+00	NA	NA	2.1E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.6E-04	NA	NA	NA	3.6E-04					
			Toxicity Equivalency (PCB Congeners) - Mam	1.3E-04	NA	NA	NA	1.3E-04					
			CHEMICAL TOTAL	5.2E-04	--	--	--	5E-04		1.2E+01	0.0E+00	--	1E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-04					1E+01
	EXPOSURE MEDIUM TOTAL							5E-04					1E+01
FILLET TOTAL								5E-04					1E+01
RECEPTOR TOTAL								5E-04					1.2E+01
			TOTAL RISK ACROSS ALL MEDIA					5E-04	TOTAL HAZARD ACROSS ALL MEDIA				1.2E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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TOTAL DEVELOPMENTAL TOXICITY HI =	2.1E+00
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TOTAL IMMUNE SYSTEM HI =	9.7E+00
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US EPA ARCHIVE DOCUMENT

TABLE G.10.58.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	Aroclor-1254	3.9E-05	NA	NA	NA	3.9E-05	Immune system	5.7E+00	NA	NA	5.7E+00
			Aroclor-1268	2.3E-06	NA	NA	NA	2.3E-06	Immune system	--	NA	NA	
			Technical Chlordane	1.2E-06	NA	NA	NA	1.2E-06	Liver	--	NA	NA	
			Mercury (methyl)				NA		Developmental toxicity	1.3E+00	NA	NA	1.3E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.3E-04	NA	NA	NA	4.3E-04					
			Toxicity Equivalency (PCB Congeners) - Mam	1.5E-04	NA	NA	NA	1.5E-04					
			CHEMICAL TOTAL	6.2E-04	--	--	--	6E-04		7.0E+00	0.0E+00	--	7E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-04					7E+00
	EXPOSURE MEDIUM TOTAL							6E-04					7E+00
FILLET TOTAL								6E-04					7E+00
RECEPTOR TOTAL								6E-04					7.0E+00
							TOTAL RISK ACROSS ALL MEDIA	6E-04	TOTAL HAZARD ACROSS ALL MEDIA				7.0E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL DEVELOPMENTAL TOXICITY HI = 1.3E+00

TOTAL IMMUNE SYSTEM HI = 5.7E+00

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.10.59.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	Aroclor-1254	4.1E-05	NA	NA	NA	4.1E-05	Immune system	6.0E+00	NA	NA	6.0E+00
			Aroclor-1268	2.4E-06	NA	NA	NA	2.4E-06	Immune system	--	NA	NA	
			Technical Chlordane	1.2E-06	NA	NA	NA	1.2E-06	Liver	--	NA	NA	
			Mercury (methyl)				NA		*Developmental toxicity*	*1.3E+00*	NA	NA	*1.3E+00*
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.5E-04	NA	NA	NA	4.5E-04					
			Toxicity Equivalency (PCB Congeners) - Mam	1.5E-04	NA	NA	NA	1.5E-04					
			CHEMICAL TOTAL	6.4E-04	--	--	--	6E-04		7.3E+00	0.0E+00	--	7E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-04					7E+00
	EXPOSURE MEDIUM TOTAL							6E-04					7E+00
FILLET TOTAL								6E-04					7E+00
RECEPTOR TOTAL								6E-04					7.3E+00
			TOTAL RISK ACROSS ALL MEDIA					6E-04	TOTAL HAZARD ACROSS ALL MEDIA				7.3E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL DEVELOPMENTAL TOXICITY HI = 1.3E+00

TOTAL IMMUNE SYSTEM HI = 6.0E+00

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.10.60.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	Aroclor-1254	3.3E-05	NA	NA	NA	3.3E-05	Immune system	9.7E+00	NA	NA	9.7E+00
			Aroclor-1268	1.9E-06	NA	NA	NA	1.9E-06	Immune system	--	NA	NA	
			Mercury (methyl)				NA		Developmental toxicity	2.1E+00	NA	NA	2.1E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.6E-04	NA	NA	NA	3.6E-04					
			Toxicity Equivalency (PCB Congeners) - Mam	1.3E-04	NA	NA	NA	1.3E-04					
			CHEMICAL TOTAL	5.2E-04	--	--	--	5E-04		1.2E+01	0.0E+00	--	1E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-04					1E+01
	EXPOSURE MEDIUM TOTAL							5E-04					1E+01
FILLET TOTAL								5E-04					1E+01
RECEPTOR TOTAL								5E-04					1.2E+01
			TOTAL RISK ACROSS ALL MEDIA					5E-04	TOTAL HAZARD ACROSS ALL MEDIA				1.2E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL DEVELOPMENTAL TOXICITY HI = 2.1E+00

TOTAL IMMUNE SYSTEM HI = 9.7E+00

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.10.61.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Benzo(a)anthracene	2.7E-06	NA	NA	NA	2.7E-06	Kidney	--	NA	NA	
			Benzo(a)pyrene	4.2E-05	NA	NA	NA	4.2E-05	Kidney	--	NA	NA	
			Benzo(b)fluoranthene	1.9E-06	NA	NA	NA	1.9E-06	Kidney	--	NA	NA	
			Dibenzo(a,h)anthracene	7.8E-06	NA	NA	NA	7.8E-06	Kidney	--	NA	NA	
			Indeno(1,2,3-cd)pyrene	3.9E-06	NA	NA	NA	3.9E-06	Kidney	--	NA	NA	
			4,4'-DDD	6.0E-06	NA	NA	NA	6.0E-06	Liver	--	NA	NA	
			4,4'-DDE	2.9E-05	NA	NA	NA	2.9E-05	Liver	--	NA	NA	
			alpha-Chlordane	6.5E-06	NA	NA	NA	6.5E-06	Liver	--	NA	NA	
			Aroclor-1254	4.1E-03	NA	NA	NA	4.1E-03	Immune system	1.4E+02	NA	NA	1.4E+02
			Aroclor-1268	3.4E-05	NA	NA	NA	3.4E-05	Immune system	1.2E+00	NA	NA	1.2E+00
			Dieldrin	5.4E-05	NA	NA	NA	5.4E-05	Liver	--	NA	NA	
			gamma-Chlordane	4.0E-06	NA	NA	NA	4.0E-06	Liver	--	NA	NA	
			Heptachlor Epoxide	6.1E-06	NA	NA	NA	6.1E-06	Liver	--	NA	NA	
			Technical Chlordane	3.6E-04	NA	NA	NA	3.6E-04	Liver	2.7E+00	NA	NA	2.7E+00
			Arsenic	1.6E-05	NA	NA	NA	1.6E-05	Skin	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	5.3E-02	NA	NA	NA	5.3E-02					
			Toxicity Equivalency (PCB Congeners) - Mam	3.0E-03	NA	NA	NA	3.0E-03					
			CHEMICAL TOTAL	6.1E-02	--	--	--	6E-02		1.4E+02	0.0E+00	--	1.4E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-02					1.4E+02
	EXPOSURE MEDIUM TOTAL							6E-02					1.4E+02
WHOLE BODY TOTAL								6E-02					1.4E+02
			TOTAL RISK ACROSS ALL MEDIA					6E-02	TOTAL HAZARD ACROSS ALL MEDIA				1.4E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

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TOTAL IMMUNE SYSTEM HI =	1.4E+02
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TOTAL LIVER HI =	2.7E+00
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US EPA ARCHIVE DOCUMENT

TABLE G.10.62.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Benzo(a)pyrene	1.0E-05	NA	NA	NA	1.0E-05	Kidney	--	NA	NA	
			Dibenzo(a,h)anthracene	1.9E-06	NA	NA	NA	1.9E-06	Kidney	--	NA	NA	
			4,4'-DDD	1.4E-06	NA	NA	NA	1.4E-06	Liver	--	NA	NA	
			4,4'-DDE	6.8E-06	NA	NA	NA	6.8E-06	Liver	--	NA	NA	
			alpha-Chlordane	1.5E-06	NA	NA	NA	1.5E-06	Liver	--	NA	NA	
			Aroclor-1254	9.8E-04	NA	NA	NA	9.8E-04	Immune system	1.4E+02	NA	NA	1.4E+02
			Aroclor-1268	8.2E-06	NA	NA	NA	8.2E-06	Immune system	1.2E+00	NA	NA	1.2E+00
			Dieldrin	1.3E-05	NA	NA	NA	1.3E-05	Liver	--	NA	NA	
			Heptachlor Epoxide	1.5E-06	NA	NA	NA	1.5E-06	Liver	--	NA	NA	
			Technical Chlordane	8.5E-05	NA	NA	NA	8.5E-05	Liver	2.8E+00	NA	NA	2.8E+00
			Arsenic	3.9E-06	NA	NA	NA	3.9E-06	Skin	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.3E-02	NA	NA	NA	1.3E-02					
			Toxicity Equivalency (PCB Congeners) - Mam	7.1E-04	NA	NA	NA	7.1E-04					
			CHEMICAL TOTAL	1.5E-02	--	--	--	1E-02		1.5E+02	0.0E+00	--	1.5E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-02					1.5E+02
	EXPOSURE MEDIUM TOTAL							1E-02					1.5E+02
WHOLE BODY TOTAL								1E-02					1.5E+02
RECEPTOR TOTAL								1E-02					1.5E+02
							TOTAL RISK ACROSS ALL MEDIA	1E-02	TOTAL HAZARD ACROSS ALL MEDIA				1.5E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

TOTAL IMMUNE SYSTEM HI = 1.4E+02
TOTAL LIVER HI = 2.8E+00

US EPA ARCHIVE DOCUMENT

TABLE G.10.63.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Benzo(a)pyrene	8.2E-06	NA	NA	NA	8.2E-06	Kidney	--	NA	NA	
			4,4'-DDE	5.6E-06	NA	NA	NA	5.6E-06	Liver	--	NA	NA	
			Aroclor-1254	8.0E-04	NA	NA	NA	8.0E-04	Immune system	2.3E+02	NA	NA	2.3E+02
			Aroclor-1268	6.7E-06	NA	NA	NA	6.7E-06	Immune system	2.0E+00	NA	NA	2.0E+00
			Dieldrin	1.1E-05	NA	NA	NA	1.1E-05	Liver	--	NA	NA	
			Technical Chlordane	6.9E-05	NA	NA	NA	6.9E-05	Liver	4.6E+00	NA	NA	4.6E+00
			Arsenic	3.2E-06	NA	NA	NA	3.2E-06	Skin	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.0E-02	NA	NA	NA	1.0E-02					
			Toxicity Equivalency (PCB Congeners) - Mam	5.8E-04	NA	NA	NA	5.8E-04					
			CHEMICAL TOTAL	1.2E-02	--	--	--	1E-02		2.4E+02	0.0E+00	--	2.4E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-02					2.4E+02
	EXPOSURE MEDIUM TOTAL							1E-02					2.4E+02
WHOLE BODY TOTAL								1E-02					2.4E+02
RECEPTOR TOTAL								1E-02					2.4E+02
							TOTAL RISK ACROSS ALL MEDIA	1E-02	TOTAL HAZARD ACROSS ALL MEDIA				2.4E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

TOTAL IMMUNE SYSTEM HI = 2.4E+02
TOTAL LIVER HI = 4.6E+00

US EPA ARCHIVE DOCUMENT

TABLE G.10.64.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Benzo(a)pyrene	9.8E-06	NA	NA	NA	9.8E-06	Kidney	--	NA	NA	
			Dibenzo(a,h)anthracene	1.8E-06	NA	NA	NA	1.8E-06	Kidney	--	NA	NA	
			4,4'-DDD	1.4E-06	NA	NA	NA	1.4E-06	Liver	--	NA	NA	
			4,4'-DDE	6.6E-06	NA	NA	NA	6.6E-06	Liver	--	NA	NA	
			alpha-Chlordane	1.5E-06	NA	NA	NA	1.5E-06	Liver	--	NA	NA	
			Aroclor-1254	9.5E-04	NA	NA	NA	9.5E-04	Immune system	1.4E+02	NA	NA	1.4E+02
			Aroclor-1268	8.0E-06	NA	NA	NA	8.0E-06	Immune system	1.2E+00	NA	NA	1.2E+00
			Dieldrin	1.3E-05	NA	NA	NA	1.3E-05	Liver	--	NA	NA	
			Heptachlor Epoxide	1.4E-06	NA	NA	NA	1.4E-06	Liver	--	NA	NA	
			Technical Chlordane	8.2E-05	NA	NA	NA	8.2E-05	Liver	2.7E+00	NA	NA	2.7E+00
			Arsenic	3.8E-06	NA	NA	NA	3.8E-06	Skin	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.2E-02	NA	NA	NA	1.2E-02					
			Toxicity Equivalency (PCB Congeners) - Mam	6.9E-04	NA	NA	NA	6.9E-04					
			CHEMICAL TOTAL	*1.4E-02*	--	--	--	1E-02		*1.4E+02*	*0.0E+00*	--	1.4E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-02					1.4E+02
	EXPOSURE MEDIUM TOTAL							1E-02					1.4E+02
WHOLE BODY TOTAL								1E-02					1.4E+02
RECEPTOR TOTAL								**1E-02**					**1.4E+02**
RECEPTOR TOTAL							**TOTAL RISK ACROSS ALL MEDIA**	**1E-02**	**TOTAL HAZARD ACROSS ALL MEDIA**				**1.4E+02**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

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TOTAL IMMUNE SYSTEM HI =	1.4E+02
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TOTAL LIVER HI =	2.7E+00
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US EPA ARCHIVE DOCUMENT

TABLE G.10.65.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE	WHOLE BODY	LYMAN MILL POND	Benzo(a)pyrene	1.0E-05	NA	NA	NA	1.0E-05	Kidney	--	NA	NA	
			Dibenzo(a,h)anthracene	1.9E-06	NA	NA	NA	1.9E-06	Kidney	--	NA	NA	
			4,4'-DDD	1.4E-06	NA	NA	NA	1.4E-06	Liver	--	NA	NA	
			4,4'-DDE	6.8E-06	NA	NA	NA	6.8E-06	Liver	--	NA	NA	
			alpha-Chlordane	1.5E-06	NA	NA	NA	1.5E-06	Liver	--	NA	NA	
			Aroclor-1254	9.8E-04	NA	NA	NA	9.8E-04	Immune system	1.4E+02	NA	NA	1.4E+02
			Aroclor-1268	8.2E-06	NA	NA	NA	8.2E-06	Immune system	1.2E+00	NA	NA	1.2E+00
			Dieldrin	1.3E-05	NA	NA	NA	1.3E-05	Liver	--	NA	NA	
			Heptachlor Epoxide	1.5E-06	NA	NA	NA	1.5E-06	Liver	--	NA	NA	
			Technical Chlordane	8.5E-05	NA	NA	NA	8.5E-05	Liver	2.8E+00	NA	NA	2.8E+00
			Arsenic	3.9E-06	NA	NA	NA	3.9E-06	Skin	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.3E-02	NA	NA	NA	1.3E-02					
			Toxicity Equivalency (PCB Congeners) - Mam	7.1E-04	NA	NA	NA	7.1E-04					
			CHEMICAL TOTAL	1.5E-02	--	--	--	1E-02		1.5E+02	0.0E+00	--	1.5E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-02					1.5E+02
	EXPOSURE MEDIUM TOTAL							1E-02					1.5E+02
WHOLE BODY TOTAL								1E-02					1.5E+02
RECEPTOR TOTAL								1E-02					1.5E+02
			TOTAL RISK ACROSS ALL MEDIA					1E-02	TOTAL HAZARD ACROSS ALL MEDIA				1.5E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

TOTAL IMMUNE SYSTEM HI = 1.4E+02
TOTAL LIVER HI = 2.8E+00

US EPA ARCHIVE DOCUMENT

TABLE G.10.66.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Benzo(a)pyrene	8.2E-06	NA	NA	NA	8.2E-06	Kidney	--	NA	NA	
			Dibenzo(a,h)anthracene	1.5E-06	NA	NA	NA	1.5E-06	Kidney	--	NA	NA	
			4,4'-DDD	1.2E-06	NA	NA	NA	1.2E-06	Liver	--	NA	NA	
			4,4'-DDE	5.6E-06	NA	NA	NA	5.6E-06	Liver	--	NA	NA	
			alpha-Chlordane	1.3E-06	NA	NA	NA	1.3E-06	Liver	--	NA	NA	
			Aroclor-1254	8.0E-04	NA	NA	NA	8.0E-04	Immune system	2.3E+02	NA	NA	2.3E+02
			Aroclor-1268	6.7E-06	NA	NA	NA	6.7E-06	Immune system	2.0E+00	NA	NA	2.0E+00
			Dieldrin	1.1E-05	NA	NA	NA	1.1E-05	Liver	--	NA	NA	
			Heptachlor Epoxide	1.2E-06	NA	NA	NA	1.2E-06	Liver	--	NA	NA	
			Technical Chlordane	6.9E-05	NA	NA	NA	6.9E-05	Liver	4.6E+00	NA	NA	4.6E+00
			Arsenic	3.2E-06	NA	NA	NA	3.2E-06	Skin	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.0E-02	NA	NA	NA	1.0E-02					
			Toxicity Equivalency (PCB Congeners) - Mam	5.8E-04	NA	NA	NA	5.8E-04					
			CHEMICAL TOTAL	1.2E-02	--	--	--	1E-02		2.4E+02	0.0E+00	--	2.4E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-02					2.4E+02
	EXPOSURE MEDIUM TOTAL							1E-02					2.4E+02
WHOLE BODY TOTAL								1E-02					2.4E+02
RECEPTOR TOTAL								1E-02					2.4E+02
			TOTAL RISK ACROSS ALL MEDIA					1E-02	TOTAL HAZARD ACROSS ALL MEDIA				2.4E+02

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

TOTAL IMMUNE SYSTEM HI = 2.4E+02
TOTAL LIVER HI = 4.6E+00

US EPA ARCHIVE DOCUMENT

TABLE G.10.67.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	4,4'-DDE	1.7E-06	NA	NA	NA	1.7E-06	Liver	--	NA	NA	
			Aroclor-1254	1.7E-04	NA	NA	NA	1.7E-04	Immune system	5.9E+00	NA	NA	5.9E+00
			Aroclor-1268	5.3E-05	NA	NA	NA	5.3E-05	Immune system	1.8E+00	NA	NA	1.8E+00
			Dieldrin	3.6E-06	NA	NA	NA	3.6E-06	Liver	--	NA	NA	
			Technical Chlordane	9.0E-06	NA	NA	NA	9.0E-06	Liver	--	NA	NA	
			Mercury (methyl)				NA		Developmental toxicity	1.5E+00	NA	NA	1.5E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.8E-03	NA	NA	NA	1.8E-03					
			CHEMICAL TOTAL	2.1E-03	--	--	--	2E-03		9.1E+00	0.0E+00	--	9E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-03					9E+00
	EXPOSURE MEDIUM TOTAL							2E-03					9E+00
FILLET TOTAL								2E-03					9E+00
RECEPTOR TOTAL								2E-03					9.1E+00
							TOTAL RISK ACROSS ALL MEDIA	2E-03	TOTAL HAZARD ACROSS ALL MEDIA				9.1E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL DEVELOPMENTAL TOXICITY HI =	1.5E+00
TOTAL IMMUNE SYSTEM HI =	7.6E+00

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.10.68.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	Aroclor-1254	4.2E-05	NA	NA	NA	4.2E-05	Immune system	6.1E+00	NA	NA	6.1E+00
			Aroclor-1268	1.3E-05	NA	NA	NA	1.3E-05	Immune system	1.9E+00	NA	NA	1.9E+00
			Technical Chlordane	2.1E-06	NA	NA	NA	2.1E-06	Liver	--	NA	NA	
			Mercury (methyl)				NA		Developmental toxicity	1.5E+00	NA	NA	1.5E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.4E-04	NA	NA	NA	4.4E-04					
			CHEMICAL TOTAL	4.9E-04	--	--	--	5E-04		9.4E+00	0.0E+00	--	9E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-04					9E+00
	EXPOSURE MEDIUM TOTAL							5E-04					9E+00
FILLET TOTAL								5E-04					9E+00
RECEPTOR TOTAL								5E-04					9.4E+00
							TOTAL RISK ACROSS ALL MEDIA	5E-04	TOTAL HAZARD ACROSS ALL MEDIA				9.4E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL DEVELOPMENTAL TOXICITY HI = 1.5E+00

TOTAL IMMUNE SYSTEM HI = 7.9E+00

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.10.69.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK				NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	Aroclor-1254	3.4E-05	NA	NA	NA	3.4E-05	Immune system	9.9E+00	NA	NA	9.9E+00
			Aroclor-1268	1.0E-05	NA	NA	NA	1.0E-05	Immune system	3.0E+00	NA	NA	3.0E+00
			Mercury (methyl)				NA		*Developmental toxicity*	2.5E+00	NA	NA	2.5E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.6E-04	NA	NA	NA	3.6E-04					
			CHEMICAL TOTAL	4.0E-04	--	--	--	4E-04		1.5E+01	0.0E+00	--	2E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-04					2E+01
	EXPOSURE MEDIUM TOTAL							4E-04					2E+01
FILLET TOTAL								4E-04					2E+01
RECEPTOR TOTAL								4E-04					1.5E+01
							TOTAL RISK ACROSS ALL MEDIA	4E-04	TOTAL HAZARD ACROSS ALL MEDIA				1.5E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL DEVELOPMENTAL TOXICITY HI = 2.5E+00

TOTAL *IMMUNE SYSTEM* HI = 1.3E+01

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.10.70.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	Aroclor-1254	4.0E-05	NA	NA	NA	4.0E-05	Immune system	5.9E+00	NA	NA	5.9E+00
			Aroclor-1268	1.2E-05	NA	NA	NA	1.2E-05	Immune system	1.8E+00	NA	NA	1.8E+00
			Technical Chlordane	2.1E-06	NA	NA	NA	2.1E-06	Liver	--	NA	NA	
			Mercury (methyl)				NA		Developmental toxicity	1.5E+00	NA	NA	1.5E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.2E-04	NA	NA	NA	4.2E-04					
			CHEMICAL TOTAL	4.8E-04	--	--	--	5E-04		9.1E+00	0.0E+00	--	9E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-04					9E+00
	EXPOSURE MEDIUM TOTAL							5E-04					9E+00
FILLET TOTAL								5E-04					9E+00
RECEPTOR TOTAL								5E-04					9.1E+00
							TOTAL RISK ACROSS ALL MEDIA	5E-04	TOTAL HAZARD ACROSS ALL MEDIA				9.1E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL DEVELOPMENTAL TOXICITY HI =	1.5E+00
TOTAL IMMUNE SYSTEM HI =	7.6E+00

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.10.71.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	Aroclor-1254	4.2E-05	NA	NA	NA	4.2E-05	Immune system	6.1E+00	NA	NA	6.1E+00
			Aroclor-1268	1.3E-05	NA	NA	NA	1.3E-05	Immune system	1.9E+00	NA	NA	1.9E+00
			Technical Chlordane	2.1E-06	NA	NA	NA	2.1E-06	Liver	--	NA	NA	
			Mercury (methyl)				NA		Developmental toxicity	1.5E+00	NA	NA	1.5E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.4E-04	NA	NA	NA	4.4E-04					
			CHEMICAL TOTAL	4.9E-04	--	--	--	5E-04		9.4E+00	0.0E+00	--	9E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-04					9E+00
	EXPOSURE MEDIUM TOTAL							5E-04					9E+00
FILLET TOTAL								5E-04					9E+00
RECEPTOR TOTAL								5E-04					9.4E+00
							TOTAL RISK ACROSS ALL MEDIA	5E-04	TOTAL HAZARD ACROSS ALL MEDIA				9.4E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL DEVELOPMENTAL TOXICITY HI =	1.5E+00
TOTAL IMMUNE SYSTEM HI =	7.9E+00

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G.10.72.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	Aroclor-1254	3.4E-05	NA	NA	NA	3.4E-05	Immune system	9.9E+00	NA	NA	9.9E+00
			Aroclor-1268	1.0E-05	NA	NA	NA	1.0E-05	Immune system	3.0E+00	NA	NA	3.0E+00
			Technical Chlordane	1.7E-06	NA	NA	NA	1.7E-06	Liver	--	NA	NA	
			Mercury (methyl)				NA		Developmental toxicity	2.5E+00	NA	NA	2.5E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.6E-04	NA	NA	NA	3.6E-04					
			CHEMICAL TOTAL	4.0E-04	--	--	--	4E-04		1.5E+01	0.0E+00	--	2E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-04					2E+01
	EXPOSURE MEDIUM TOTAL							4E-04					2E+01
FILLET TOTAL								4E-04					2E+01
RECEPTOR TOTAL								4E-04					1.5E+01
			TOTAL RISK ACROSS ALL MEDIA					4E-04	TOTAL HAZARD ACROSS ALL MEDIA				1.5E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL DEVELOPMENTAL TOXICITY HI = 2.5E+00

TOTAL IMMUNE SYSTEM HI = 1.3E+01

Prepared by: KJA
Checked by: RAR

US EPA ARCHIVE DOCUMENT

TABLE G-10.73.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	4,4'-DDD	3.8E-06	NA	NA	NA	3.8E-06	Liver	--	NA	NA	
			4,4'-DDE	2.0E-06	NA	NA	NA	2.0E-06	Liver	--	NA	NA	
			4,4'-DDT	2.0E-06	NA	NA	NA	2.0E-06	Liver	--	NA	NA	
			alpha-Chlordane	2.6E-06	NA	NA	NA	2.6E-06	Liver	--	NA	NA	
			Aroclor-1254	3.5E-04	NA	NA	NA	3.5E-04	Immune system	1.2E+01	NA	NA	1.2E+01
			Dieldrin	6.9E-05	NA	NA	NA	6.9E-05	Liver	--	NA	NA	
			Heptachlor Epoxide	8.2E-06	NA	NA	NA	8.2E-06	Liver	--	NA	NA	
			Technical Chlordane	5.4E-05	NA	NA	NA	5.4E-05	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.5E-03	NA	NA	NA	4.5E-03					
			CHEMICAL TOTAL	5.0E-03	--	--	--	5E-03		1.2E+01	0.0E+00	--	1.2E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-03					1.2E+01
	EXPOSURE MEDIUM TOTAL							5E-03					1.2E+01
WHOLE BODY TOTAL								5E-03					1.2E+01
RECEPTOR TOTAL								5E-03					1.2E+01
			TOTAL RISK ACROSS ALL MEDIA					5E-03	TOTAL HAZARD ACROSS ALL MEDIA				1.2E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: AWS

TOTAL IMMUNE SYSTEM HI = 1.2E+01

US EPA ARCHIVE DOCUMENT

TABLE G.10.74.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	Aroclor-1254	8.5E-05	NA	NA	NA	8.5E-05	Immune system	1.2E+01	NA	NA	1.2E+01
			Dieldrin	1.6E-05	NA	NA	NA	1.6E-05	Liver	--	NA	NA	
			Heptachlor Epoxide	2.0E-06	NA	NA	NA	2.0E-06	Liver	--	NA	NA	
			Technical Chlordane	1.3E-05	NA	NA	NA	1.3E-05	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.1E-03	NA	NA	NA	1.1E-03					
			CHEMICAL TOTAL	1.2E-03	--	--	--	1E-03		1.2E+01	0.0E+00	--	1.2E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-03					1.2E+01
	EXPOSURE MEDIUM TOTAL							1E-03					1.2E+01
WHOLE BODY TOTAL								1E-03					1.2E+01
RECEPTOR TOTAL								1E-03					1.2E+01
			TOTAL RISK ACROSS ALL MEDIA					1E-03	TOTAL HAZARD ACROSS ALL MEDIA				1.2E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: AWS

TOTAL IMMUNE SYSTEM HI = 1.2E+01

US EPA ARCHIVE DOCUMENT

TABLE G.10.75.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	Aroclor-1254	6.9E-05	NA	NA	NA	6.9E-05	Immune system	2.0E+01	NA	NA	2.0E+01
			Dieldrin	1.3E-05	NA	NA	NA	1.3E-05	Liver	--	NA	NA	
			Technical Chlordane	1.0E-05	NA	NA	NA	1.0E-05	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	8.7E-04	NA	NA	NA	8.7E-04					
			CHEMICAL TOTAL	9.7E-04	--	--	--	1E-03		2.1E+01	0.0E+00	--	2.1E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-03					2.1E+01
	EXPOSURE MEDIUM TOTAL							1E-03					2.1E+01
WHOLE BODY TOTAL								1E-03					2.1E+01
RECEPTOR TOTAL								1E-03					2.1E+01
			TOTAL RISK ACROSS ALL MEDIA					1E-03	TOTAL HAZARD ACROSS ALL MEDIA				2.1E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

TOTAL DEVELOPMENTAL TOXICITY HI =	1.1E+00
TOTAL IMMUNE SYSTEM HI =	2.0E+01

Prepared by: KJA
Checked by: AWS

US EPA ARCHIVE DOCUMENT

TABLE G.10.76.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	Aroclor-1254	8.2E-05	NA	NA	NA	8.2E-05	Immune system	1.2E+01	NA	NA	1.2E+01
			Dieldrin	1.6E-05	NA	NA	NA	1.6E-05	Liver	--	NA	NA	
			Heptachlor Epoxide	1.9E-06	NA	NA	NA	1.9E-06	Liver	--	NA	NA	
			Technical Chlordane	1.2E-05	NA	NA	NA	1.2E-05	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.0E-03	NA	NA	NA	1.0E-03					
			CHEMICAL TOTAL	1.1E-03	--	--	--	1E-03		1.2E+01	0.0E+00	--	1.2E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-03					1.2E+01
	EXPOSURE MEDIUM TOTAL							1E-03					1.2E+01
WHOLE BODY TOTAL								1E-03					1.2E+01
RECEPTOR TOTAL								1E-03					1.2E+01
			TOTAL RISK ACROSS ALL MEDIA					1E-03	TOTAL HAZARD ACROSS ALL MEDIA				1.2E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: AWS

TOTAL IMMUNE SYSTEM HI = 1.2E+01

US EPA ARCHIVE DOCUMENT

TABLE G.10.77.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	Aroclor-1254	8.5E-05	NA	NA	NA	8.5E-05	immune system	1.2E+01	NA	NA	1.2E+01
			Dieldrin	1.6E-05	NA	NA	NA	1.6E-05	Liver	--	NA	NA	
			Heptachlor Epoxide	2.0E-06	NA	NA	NA	2.0E-06	Liver	--	NA	NA	
			Technical Chlordane	1.3E-05	NA	NA	NA	1.3E-05	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.1E-03	NA	NA	NA	1.1E-03					
			CHEMICAL TOTAL	1.2E-03	--	--	--	1E-03		1.2E+01	0.0E+00	--	1.2E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-03					1.2E+01
	EXPOSURE MEDIUM TOTAL							1E-03					1.2E+01
WHOLE BODY TOTAL								1E-03					1.2E+01
RECEPTOR TOTAL								1E-03					1.2E+01
			TOTAL RISK ACROSS ALL MEDIA					1E-03	TOTAL HAZARD ACROSS ALL MEDIA				1.2E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: AWS

TOTAL IMMUNE SYSTEM HI = 1.2E+01

US EPA ARCHIVE DOCUMENT

TABLE G.10.78.RME
RISK SUMMARY - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	Aroclor-1254	6.9E-05	NA	NA	NA	6.9E-05	Immune system	2.0E+01	NA	NA	2.0E+01
			Dieldrin	1.3E-05	NA	NA	NA	1.3E-05	Liver	--	NA	NA	
			Heptachlor Epoxide	1.6E-06	NA	NA	NA	1.6E-06	Liver	--	NA	NA	
			Technical Chlordane	1.0E-05	NA	NA	NA	1.0E-05	Liver	--	NA	NA	
			Mercury (methyl)				NA		Developmental toxicity	1.1E+00	NA	NA	1.1E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	8.7E-04	NA	NA	NA	8.7E-04					
			CHEMICAL TOTAL	9.7E-04	--	--	--	1E-03		2.1E+01	0.0E+00	--	2.1E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-03					2.1E+01
	EXPOSURE MEDIUM TOTAL							1E-03					2.1E+01
WHOLE BODY TOTAL								1E-03					2.1E+01
RECEPTOR TOTAL								1E-03					2.1E+01
			TOTAL RISK ACROSS ALL MEDIA					1E-03	TOTAL HAZARD ACROSS ALL MEDIA				2.1E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: AWS

TOTAL DEVELOPMENTAL TOXICITY HI = 1.1E+00

TOTAL IMMUNE SYSTEM HI = 2.0E+01

US EPA ARCHIVE DOCUMENT

TABLE G.10.37.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	Aroclor-1254	6.5E-05	NA	NA	NA	6.5E-05	Immune system	9.5E+00	NA	NA	9.5E+00
			Aroclor-1268	1.1E-06	NA	NA	NA	1.1E-06	Immune system	--	NA	NA	
			Dieldrin	5.4E-06	NA	NA	NA	5.4E-06	Liver	--	NA	NA	
			Technical Chlordane	3.4E-06	NA	NA	NA	3.4E-06	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	6.2E-04	NA	NA	NA	6.2E-04					
			Toxicity Equivalency (PCB Congeners) - Mam	2.0E-04	NA	NA	NA	2.0E-04					
			CHEMICAL TOTAL	8.9E-04	--	--	--	9E-04		9.5E+00	0.0E+00	--	9.5E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						9E-04					9.5E+00
	EXPOSURE MEDIUM TOTAL							9E-04					9.5E+00
WHOLE BODY TOTAL								9E-04					9.5E+00
RECEPTOR TOTAL								9E-04					9.5E+00
			TOTAL RISK ACROSS ALL MEDIA					9E-04	TOTAL HAZARD ACROSS ALL MEDIA				9.5E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

TOTAL IMMUNE SYSTEM HI = 9.5E+00

US EPA ARCHIVE DOCUMENT

TABLE G.10.38.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	Aroclor-1254	5.1E-05	NA	NA	NA	5.1E-05	Immune system	7.5E+00	NA	NA	7.5E+00
			Dieldrin	4.2E-06	NA	NA	NA	4.2E-06	Liver	--	NA	NA	
			Technical Chlordane	2.7E-06	NA	NA	NA	2.7E-06	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.8E-04	NA	NA	NA	4.8E-04					
			Toxicity Equivalency (PCB Congeners) - Mam	1.5E-04	NA	NA	NA	1.5E-04					
			CHEMICAL TOTAL	7.0E-04	--	--	--	7E-04		7.5E+00	0.0E+00	--	7.5E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-04					7.5E+00
	EXPOSURE MEDIUM TOTAL							7E-04					7.5E+00
WHOLE BODY TOTAL								7E-04					7.5E+00
RECEPTOR TOTAL								7E-04					7.5E+00
			TOTAL RISK ACROSS ALL MEDIA					7E-04	TOTAL HAZARD ACROSS ALL MEDIA				7.5E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

TOTAL IMMUNE SYSTEM HI = 7.5E+00

US EPA ARCHIVE DOCUMENT

TABLE G.10.39.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN	WHOLE BODY	ALLENDALE POND	Aroclor-1254	2.7E-05	NA	NA	NA	2.7E-05	Immune system	7.9E+00	NA	NA	7.9E+00
			Dieldrin	2.3E-06	NA	NA	NA	2.3E-06	Liver	--	NA	NA	
			Technical Chlordane	1.4E-06	NA	NA	NA	1.4E-06	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.6E-04	NA	NA	NA	2.6E-04					
			Toxicity Equivalency (PCB Congeners) - Man	8.2E-05	NA	NA	NA	8.2E-05					
			CHEMICAL TOTAL	3.7E-04	--	--	--	4E-04		7.9E+00	0.0E+00	--	7.9E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-04					7.9E+00
	EXPOSURE MEDIUM TOTAL							4E-04					7.9E+00
WHOLE BODY TOTAL								4E-04					7.9E+00
RECEPTOR TOTAL								4E-04					7.9E+00
			TOTAL RISK ACROSS ALL MEDIA					4E-04	TOTAL HAZARD ACROSS ALL MEDIA				7.9E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

TOTAL IMMUNE SYSTEM HI = 7.9E+00

US EPA ARCHIVE DOCUMENT

TABLE G.10.40.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN	WHOLE BODY	ALLENDALE POND	Aroclor-1254	4.9E-05	NA	NA	NA	4.9E-05	Immune system	9.5E+00	NA	NA	9.5E+00
			Dieldrin	4.1E-06	NA	NA	NA	4.1E-06	Liver	--	NA	NA	
			Technical Chlordane	2.5E-06	NA	NA	NA	2.5E-06	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.6E-04	NA	NA	NA	4.6E-04					
			Toxicity Equivalency (PCB Congeners) - Mam	1.5E-04	NA	NA	NA	1.5E-04					
			CHEMICAL TOTAL	6.7E-04	--	--	--	7E-04		9.5E+00	0.0E+00	--	9.5E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-04					9.5E+00
	EXPOSURE MEDIUM TOTAL							7E-04					9.5E+00
WHOLE BODY TOTAL								7E-04					9.5E+00
RECEPTOR TOTAL								7E-04					9.5E+00
			TOTAL RISK ACROSS ALL MEDIA					7E-04	TOTAL HAZARD ACROSS ALL MEDIA				9.5E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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TOTAL IMMUNE SYSTEM HI =	9.5E+00
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US EPA ARCHIVE DOCUMENT

TABLE G.10.41.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	Aroclor-1254	3.8E-05	NA	NA	NA	3.8E-05	Immune system	7.5E+00	NA	NA	7.5E+00
			Dieldrin	3.2E-06	NA	NA	NA	3.2E-06	Liver	--	NA	NA	
			Technical Chlordane	2.0E-06	NA	NA	NA	2.0E-06	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.6E-04	NA	NA	NA	3.6E-04					
			Toxicity Equivalency (PCB Congeners) - Mam	1.2E-04	NA	NA	NA	1.2E-04					
			CHEMICAL TOTAL	5.2E-04	--	--	--	5E-04		7.5E+00	0.0E+00	--	7.5E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-04					7.5E+00
	EXPOSURE MEDIUM TOTAL							5E-04					7.5E+00
WHOLE BODY TOTAL								5E-04					7.5E+00
RECEPTOR TOTAL								5E-04					7.5E+00
			TOTAL RISK ACROSS ALL MEDIA					5E-04	TOTAL HAZARD ACROSS ALL MEDIA				7.5E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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TOTAL IMMUNE SYSTEM HI =	7.5E+00
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US EPA ARCHIVE DOCUMENT

TABLE G.10.42.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - AMERICAN EEL - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	ALLENDALE POND	Aroclor-1254	5.4E-05	NA	NA	NA	5.4E-05	Immune system	1.6E+01	NA	NA	1.6E+01
			Dieldrin	4.5E-06	NA	NA	NA	4.5E-06	Liver	--	NA	NA	
			Technical Chlordane	2.8E-06	NA	NA	NA	2.8E-06	*Liver*	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	5.1E-04	NA	NA	NA	5.1E-04					
			Toxicity Equivalency (PCB Congeners) - Mam	1.6E-04	NA	NA	NA	1.6E-04					
			CHEMICAL TOTAL	7.4E-04	--	--	--	7E-04		1.6E+01	0.0E+00	--	1.6E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-04					1.6E+01
	EXPOSURE MEDIUM TOTAL							7E-04					1.6E+01
WHOLE BODY TOTAL								7E-04					1.6E+01
RECEPTOR TOTAL								7E-04					1.6E+01
			TOTAL RISK ACROSS ALL MEDIA					7E-04	TOTAL HAZARD ACROSS ALL MEDIA				1.6E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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TOTAL IMMUNE SYSTEM HI =	1.6E+01
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US EPA ARCHIVE DOCUMENT

TABLE G.10.43.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	Aroclor-1254	2.1E-04	NA	NA	NA	2.1E-04	Immune system	3.1E+01	NA	NA	3.1E+01
			Aroclor-1268	2.9E-06	NA	NA	NA	2.9E-06	Immune system	--	NA	NA	
			Dieldrin	5.1E-06	NA	NA	NA	5.1E-06	Liver	--	NA	NA	
			Technical Chlordane	8.8E-06	NA	NA	NA	8.8E-06	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.7E-03	NA	NA	NA	2.7E-03					
			Toxicity Equivalency (PCB Congeners) - Mam	1.1E-04	NA	NA	NA	1.1E-04					
			CHEMICAL TOTAL	3.1E-03	--	--	--	3E-03		3.1E+01	0.0E+00	--	3.1E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-03					3.1E+01
	EXPOSURE MEDIUM TOTAL							3E-03					3.1E+01
WHOLE BODY TOTAL								3E-03					3.1E+01
RECEPTOR TOTAL								3E-03					3.1E+01
			TOTAL RISK ACROSS ALL MEDIA					3E-03	TOTAL HAZARD ACROSS ALL MEDIA				3.1E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

TOTAL IMMUNE SYSTEM HI = 3.1E+01

US EPA ARCHIVE DOCUMENT

TABLE G.10.44.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	Aroclor-1254	1.7E-04	NA	NA	NA	1.7E-04	Immune system	2.4E+01	NA	NA	2.4E+01
			Aroclor-1268	2.2E-06	NA	NA	NA	2.2E-06	Immune system	--	NA	NA	
			Dieldrin	4.0E-06	NA	NA	NA	4.0E-06	Liver	--	NA	NA	
			Technical Chlordane	6.8E-06	NA	NA	NA	6.8E-06	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.1E-03	NA	NA	NA	2.1E-03					
			Toxicity Equivalency (PCB Congeners) - Mam	8.5E-05	NA	NA	NA	8.5E-05					
			CHEMICAL TOTAL	2.4E-03	--	--	--	2E-03		2.4E+01	0.0E+00	--	2.4E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-03					2.4E+01
	EXPOSURE MEDIUM TOTAL							2E-03					2.4E+01
WHOLE BODY TOTAL								2E-03					2.4E+01
RECEPTOR TOTAL								2E-03					2.4E+01
			TOTAL RISK ACROSS ALL MEDIA					2E-03	TOTAL HAZARD ACROSS ALL MEDIA				2.4E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

TOTAL IMMUNE SYSTEM HI = 2.4E+01

US EPA ARCHIVE DOCUMENT

TABLE G.10.45.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	Aroclor-1254	8.9E-05	NA	NA	NA	8.9E-05	Immune system	2.6E+01	NA	NA	2.6E+01
			Aroclor-1268	1.2E-06	NA	NA	NA	1.2E-06	Immune system	--	NA	NA	
			Dieldrin	2.1E-06	NA	NA	NA	2.1E-06	Liver	--	NA	NA	
			Technical Chlordane	3.6E-06	NA	NA	NA	3.6E-06	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.1E-03	NA	NA	NA	1.1E-03					
			Toxicity Equivalency (PCB Congeners) - Mam	4.5E-05	NA	NA	NA	4.5E-05					
			CHEMICAL TOTAL	1.3E-03	--	--	--	1E-03		2.6E+01	0.0E+00	--	2.6E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-03					2.6E+01
	EXPOSURE MEDIUM TOTAL							1E-03					2.6E+01
WHOLE BODY TOTAL								1E-03					2.6E+01
RECEPTOR TOTAL								1E-03					2.6E+01
			TOTAL RISK ACROSS ALL MEDIA					1E-03	TOTAL HAZARD ACROSS ALL MEDIA				2.6E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

TOTAL IMMUNE SYSTEM HI = 2.6E+01

US EPA ARCHIVE DOCUMENT

TABLE G.10.46.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	Aroclor-1254	1.6E-04	NA	NA	NA	1.6E-04	Immune system	3.1E+01	NA	NA	3.1E+01
			Aroclor-1268	2.1E-06	NA	NA	NA	2.1E-06	Immune system	--	NA	NA	
			Dieldrin	3.9E-06	NA	NA	NA	3.9E-06	Liver	--	NA	NA	
			Technical Chlordane	6.6E-06	NA	NA	NA	6.6E-06	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.1E-03	NA	NA	NA	2.1E-03					
			Toxicity Equivalency (PCB Congeners) - Mam	8.1E-05	NA	NA	NA	8.1E-05					
			CHEMICAL TOTAL	2.3E-03	--	--	--	2E-03		3.1E+01	0.0E+00	--	3.1E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-03					3.1E+01
	EXPOSURE MEDIUM TOTAL							2E-03					3.1E+01
WHOLE BODY TOTAL								2E-03					3.1E+01
RECEPTOR TOTAL								2E-03					3.1E+01
			TOTAL RISK ACROSS ALL MEDIA					2E-03	TOTAL HAZARD ACROSS ALL MEDIA				3.1E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: AWS

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TOTAL IMMUNE SYSTEM HI =	3.1E+01
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US EPA ARCHIVE DOCUMENT

TABLE G.10.47.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	Aroclor-1254	1.3E-04	NA	NA	NA	1.3E-04	Immune system	2.4E+01	NA	NA	2.4E+01
			Aroclor-1268	1.7E-06	NA	NA	NA	1.7E-06	Immune system	--	NA	NA	
			Dieldrin	3.0E-06	NA	NA	NA	3.0E-06	Liver	--	NA	NA	
			Technical Chlordane	5.1E-06	NA	NA	NA	5.1E-06	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.6E-03	NA	NA	NA	1.6E-03					
			Toxicity Equivalency (PCB Congeners) - Mam	6.4E-05	NA	NA	NA	6.4E-05					
			CHEMICAL TOTAL	1.8E-03	--	--	--	2E-03		2.4E+01	0.0E+00	--	2.4E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-03					2.4E+01
	EXPOSURE MEDIUM TOTAL							2E-03					2.4E+01
WHOLE BODY TOTAL								2E-03					2.4E+01
RECEPTOR TOTAL								2E-03					2.4E+01
			TOTAL RISK ACROSS ALL MEDIA					2E-03	TOTAL HAZARD ACROSS ALL MEDIA				2.4E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: AWS

TOTAL IMMUNE SYSTEM HI = 2.4E+01

US EPA ARCHIVE DOCUMENT

TABLE G.10.48.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - WHITE SUCKER - ALLENDALE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	ALLENDALE POND	Aroclor-1254	1.8E-04	NA	NA	NA	1.8E-04	Immune system	5.2E+01	NA	NA	5.2E+01
			Aroclor-1268	2.4E-06	NA	NA	NA	2.4E-06	Immune system	--	NA	NA	
			Dieldrin	4.3E-06	NA	NA	NA	4.3E-06	Liver	--	NA	NA	
			Technical Chlordane	7.3E-06	NA	NA	NA	7.3E-06	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.3E-03	NA	NA	NA	2.3E-03					
			Toxicity Equivalency (PCB Congeners) - Mam	9.0E-05	NA	NA	NA	9.0E-05					
			CHEMICAL TOTAL	2.6E-03	--	--	--	3E-03		5.2E+01	0.0E+00	--	5.2E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-03					5.2E+01
	EXPOSURE MEDIUM TOTAL							3E-03					5.2E+01
WHOLE BODY TOTAL								3E-03					5.2E+01
RECEPTOR TOTAL								3E-03					5.2E+01
			TOTAL RISK ACROSS ALL MEDIA					3E-03	TOTAL HAZARD ACROSS ALL MEDIA				5.2E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: AWS

TOTAL IMMUNE SYSTEM HI = 5.2E+01

US EPA ARCHIVE DOCUMENT

TABLE G.10.49.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	Aroclor-1254	7.1E-05	NA	NA	NA	7.1E-05	*Immune system*	1.0E+01	NA	NA	1.0E+01
			Dieldrin	4.7E-06	NA	NA	NA	4.7E-06	Liver	--	NA	NA	
			Technical Chlordane	5.8E-06	NA	NA	NA	5.8E-06	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.0E-03	NA	NA	NA	1.0E-03					
			Toxicity Equivalency (PCB Congeners) - Mam	1.8E-04	NA	NA	NA	1.8E-04					
			CHEMICAL TOTAL	1.3E-03	--	--	--	1E-03		1.0E+01	0.0E+00	--	1.0E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-03					1.0E+01
	EXPOSURE MEDIUM TOTAL							1E-03					1.0E+01
WHOLE BODY TOTAL								1E-03					1.0E+01
RECEPTOR TOTAL								1E-03					1.0E+01
			TOTAL RISK ACROSS ALL MEDIA					1E-03	TOTAL HAZARD ACROSS ALL MEDIA				1.0E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

TOTAL IMMUNE SYSTEM HI = 1.0E+01

US EPA ARCHIVE DOCUMENT

TABLE G.10.50.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	Aroclor-1254	5.6E-05	NA	NA	NA	5.6E-05	Immune system	8.1E+00	NA	NA	8.1E+00
			Dieldrin	3.7E-06	NA	NA	NA	3.7E-06	Liver	--	NA	NA	
			Technical Chlordane	4.5E-06	NA	NA	NA	4.5E-06	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	7.9E-04	NA	NA	NA	7.9E-04					
			Toxicity Equivalency (PCB Congeners) - Mam	1.4E-04	NA	NA	NA	1.4E-04					
			CHEMICAL TOTAL	9.9E-04	--	--	--	1E-03		8.1E+00	0.0E+00	--	8.1E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-03					8.1E+00
	EXPOSURE MEDIUM TOTAL							1E-03					8.1E+00
WHOLE BODY TOTAL								1E-03					8.1E+00
RECEPTOR TOTAL								1E-03					8.1E+00
			TOTAL RISK ACROSS ALL MEDIA					1E-03	TOTAL HAZARD ACROSS ALL MEDIA				8.1E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

TOTAL IMMUNE SYSTEM HI = 8.1E+00

US EPA ARCHIVE DOCUMENT

TABLE G.10.51.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	Aroclor-1254	3.0E-05	NA	NA	NA	3.0E-05	Immune system	8.6E+00	NA	NA	8.6E+00
			Dieldrin	1.9E-06	NA	NA	NA	1.9E-06	Liver	--	NA	NA	
			Technical Chlordane	2.4E-06	NA	NA	NA	2.4E-06	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.2E-04	NA	NA	NA	4.2E-04					
			Toxicity Equivalency (PCB Congeners) - Mam	7.5E-05	NA	NA	NA	7.5E-05					
			CHEMICAL TOTAL	5.3E-04	--	--	--	5E-04		8.6E+00	0.0E+00	--	8.6E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-04					8.6E+00
	EXPOSURE MEDIUM TOTAL							5E-04					8.6E+00
WHOLE BODY TOTAL								5E-04					8.6E+00
RECEPTOR TOTAL								5E-04					8.6E+00
			TOTAL RISK ACROSS ALL MEDIA					5E-04	TOTAL HAZARD ACROSS ALL MEDIA				8.6E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

TOTAL IMMUNE SYSTEM HI =	8.6E+00

US EPA ARCHIVE DOCUMENT

TABLE G.10.52.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN	WHOLE BODY	LYMAN MILL POND	Aroclor-1254	5.3E-05	NA	NA	NA	5.3E-05	Immune system	1.0E+01	NA	NA	1.0E+01
			Dieldrin	3.5E-06	NA	NA	NA	3.5E-06	Liver	--	NA	NA	
			Technical Chlordane	4.4E-06	NA	NA	NA	4.4E-06	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	7.6E-04	NA	NA	NA	7.6E-04					
			Toxicity Equivalency (PCB Congeners) - Mam	1.3E-04	NA	NA	NA	1.3E-04					
			CHEMICAL TOTAL	9.5E-04	--	--	--	1E-03		1.0E+01	0.0E+00	--	1.0E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-03					1.0E+01
	EXPOSURE MEDIUM TOTAL							1E-03					1.0E+01
WHOLE BODY TOTAL								1E-03					1.0E+01
RECEPTOR TOTAL								1E-03					1.0E+01
			TOTAL RISK ACROSS ALL MEDIA					1E-03	TOTAL HAZARD ACROSS ALL MEDIA				1.0E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

TOTAL IMMUNE SYSTEM HI = 1.0E+01

US EPA ARCHIVE DOCUMENT

TABLE G.10.53.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	Aroclor-1254	4.2E-05	NA	NA	NA	4.2E-05	Immune system	8.1E+00	NA	NA	8.1E+00
			Dieldrin	2.7E-06	NA	NA	NA	2.7E-06	Liver	--	NA	NA	
			Technical Chlordane	3.4E-06	NA	NA	NA	3.4E-06	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	5.9E-04	NA	NA	NA	5.9E-04					
			Toxicity Equivalency (PCB Congeners) - Mam	1.1E-04	NA	NA	NA	1.1E-04					
			CHEMICAL TOTAL	7.4E-04	--	--	--	7E-04		8.1E+00	0.0E+00	--	8.1E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-04					8.1E+00
	EXPOSURE MEDIUM TOTAL							7E-04					8.1E+00
WHOLE BODY TOTAL								7E-04					8.1E+00
RECEPTOR TOTAL								7E-04					8.1E+00
			TOTAL RISK ACROSS ALL MEDIA					7E-04	TOTAL HAZARD ACROSS ALL MEDIA				8.1E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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TOTAL IMMUNE SYSTEM HI =	8.1E+00
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US EPA ARCHIVE DOCUMENT

TABLE G.10.54.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - AMERICAN EEL - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	LYMAN MILL POND	Aroclor-1254	5.9E-05	NA	NA	NA	5.9E-05	Immune system	1.7E+01	NA	NA	1.7E+01
			Dieldrin	3.9E-06	NA	NA	NA	3.9E-06	Liver	--	NA	NA	
			Technical Chlordane	4.8E-06	NA	NA	NA	4.8E-06	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	8.4E-04	NA	NA	NA	8.4E-04					
			Toxicity Equivalency (PCB Congeners) - Mam	1.5E-04	NA	NA	NA	1.5E-04					
			CHEMICAL TOTAL	1.1E-03	--	--	--	1E-03		1.7E+01	0.0E+00	--	1.7E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-03					1.7E+01
	EXPOSURE MEDIUM TOTAL							1E-03					1.7E+01
WHOLE BODY TOTAL								1E-03					1.7E+01
RECEPTOR TOTAL								1E-03					1.7E+01
			TOTAL RISK ACROSS ALL MEDIA					1E-03	TOTAL HAZARD ACROSS ALL MEDIA				1.7E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

TOTAL IMMUNE SYSTEM HI = 1.7E+01

US EPA ARCHIVE DOCUMENT

TABLE G.10.55.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	Aroclor-1254	1.6E-05	NA	NA	NA	1.6E-05	Immune system	2.3E+00	NA	NA	2.3E+00
			Toxicity Equivalency (Dioxins/Furans) - Man	1.8E-04	NA	NA	NA	1.8E-04					
			Toxicity Equivalency (PCB Congeners) - Man	2.5E-05	NA	NA	NA	2.5E-05					
			CHEMICAL TOTAL	2.2E-04	--	--	--	2E-04		2.3E+00	0.0E+00	--	2E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-04					2E+00
	EXPOSURE MEDIUM TOTAL							2E-04					2E+00
FILLET TOTAL								2E-04					2E+00
RECEPTOR TOTAL								2E-04					2.3E+00
			TOTAL RISK ACROSS ALL MEDIA					2E-04	TOTAL HAZARD ACROSS ALL MEDIA				2.3E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

TOTAL IMMUNE SYSTEM HI = 2.3E+00

US EPA ARCHIVE DOCUMENT

TABLE G.10.56.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	Aroclor-1254	1.3E-05	NA	NA	NA	1.3E-05	Immune system	1.8E+00	NA	NA	1.8E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.4E-04	NA	NA	NA	1.4E-04					
			Toxicity Equivalency (PCB Congeners) - Mam	2.0E-05	NA	NA	NA	2.0E-05					
			CHEMICAL TOTAL	1.7E-04	--	--	--	2E-04		1.8E+00	0.0E+00	--	2E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-04					2E+00
	EXPOSURE MEDIUM TOTAL							2E-04					2E+00
FILLET TOTAL								2E-04					2E+00
RECEPTOR TOTAL								2E-04					1.8E+00
			TOTAL RISK ACROSS ALL MEDIA					2E-04	TOTAL HAZARD ACROSS ALL MEDIA				1.8E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

TOTAL IMMUNE SYSTEM HI = 1.8E+00

US EPA ARCHIVE DOCUMENT

TABLE G.10.57.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	Aroclor-1254	6.7E-06	NA	NA	NA	6.7E-06	Immune system	1.9E+00	NA	NA	1.9E+00
			Toxicity Equivalency (Dioxins/Furans) - Man	7.3E-05	NA	NA	NA	7.3E-05					
			Toxicity Equivalency (PCB Congeners) - Man	1.0E-05	NA	NA	NA	1.0E-05					
			CHEMICAL TOTAL	9.0E-05	--	--	--	9E-05		1.9E+00	0.0E+00	--	2E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						9E-05					2E+00
	EXPOSURE MEDIUM TOTAL							9E-05					2E+00
FILLET TOTAL								*9E-05*					*2E+00*
RECEPTOR TOTAL								**9E-05**					**1.9E+00**
							TOTAL RISK ACROSS ALL MEDIA	**9E-05**	**TOTAL HAZARD ACROSS ALL MEDIA**				**1.9E+00**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

TOTAL IMMUNE SYSTEM HI = 1.9E+00

US EPA ARCHIVE DOCUMENT

TABLE G.10.58.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	Aroclor-1254	1.2E-05	NA	NA	NA	1.2E-05	Immune system	2.3E+00	NA	NA	2.3E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.3E-04	NA	NA	NA	1.3E-04					
			Toxicity Equivalency (PCB Congeners) - Mam	1.9E-05	NA	NA	NA	1.9E-05					
			CHEMICAL TOTAL	1.6E-04	--	--	--	2E-04		2.3E+00	0.0E+00	--	2E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-04					2E+00
	EXPOSURE MEDIUM TOTAL							2E-04					2E+00
FILLET TOTAL								2E-04					2E+00
RECEPTOR TOTAL								2E-04					2.3E+00
							TOTAL RISK ACROSS ALL MEDIA	2E-04	TOTAL HAZARD ACROSS ALL MEDIA				2.3E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

TOTAL IMMUNE SYSTEM HI = 2.3E+00

US EPA ARCHIVE DOCUMENT

TABLE G.10.59.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH	FILLET	LYMAN MILL POND	Aroclor-1254	9.4E-06	NA	NA	NA	9.4E-06	Immune system	1.8E+00	NA	NA	1.8E+00
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.0E-04	NA	NA	NA	1.0E-04					
			Toxicity Equivalency (PCB Congeners) - Mam	1.5E-05	NA	NA	NA	1.5E-05					
			CHEMICAL TOTAL	1.3E-04	--	--	--	1E-04		1.8E+00	0.0E+00	--	2E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					2E+00
	EXPOSURE MEDIUM TOTAL							1E-04					2E+00
FILLET TOTAL								1E-04					2E+00
RECEPTOR TOTAL								1E-04					1.8E+00
							TOTAL RISK ACROSS ALL MEDIA	1E-04	TOTAL HAZARD ACROSS ALL MEDIA				1.8E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

TOTAL IMMUNE SYSTEM HI = 1.8E+00

US EPA ARCHIVE DOCUMENT

TABLE G.10.60.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - LARGEMOUTH BASS - FILLET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	LYMAN MILL POND	Aroclor-1254	1.3E-05	NA	NA	NA	1.3E-05	Immune system	3.9E+00	NA	NA	3.9E+00
			Toxicity Equivalency (Dioxins/Furans) - Man	1.5E-04	NA	NA	NA	1.5E-04					
			Toxicity Equivalency (PCB Congeners) - Man	2.1E-05	NA	NA	NA	2.1E-05					
			CHEMICAL TOTAL	1.8E-04	--	--	--	2E-04		3.9E+00	0.0E+00	--	4E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-04					4E+00
	EXPOSURE MEDIUM TOTAL							2E-04					4E+00
FILLET TOTAL								2E-04					4E+00
RECEPTOR TOTAL								2E-04					3.9E+00
							TOTAL RISK ACROSS ALL MEDIA	2E-04	TOTAL HAZARD ACROSS ALL MEDIA				3.9E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

TOTAL IMMUNE SYSTEM HI = 3.9E+00

US EPA ARCHIVE DOCUMENT

TABLE G.10.61.CT
RISK SUMMARY - CENTRAL TENDENCY- CURRENT/FUTURE- RECREATIONAL ANGLER- ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Benzo(a)pyrene	1.3E-06	NA	NA	NA	1.3E-06	Kidney	--	NA	NA	
			4,4'-DDE	2.7E-06	NA	NA	NA	2.7E-06	Liver	--	NA	NA	
			Aroclor-1254	3.9E-04	NA	NA	NA	3.9E-04	Immune system	5.6E+01	NA	NA	5.6E+01
			Aroclor-1268	3.2E-06	NA	NA	NA	3.2E-06	Immune system	--	NA	NA	
			Dieldrin	5.1E-06	NA	NA	NA	5.1E-06	Liver	--	NA	NA	
			Technical Chlordane	3.3E-05	NA	NA	NA	3.3E-05	Liver	1.1E+00	NA	NA	1.1E+00
			Arsenic	1.5E-06	NA	NA	NA	1.5E-06	Skin	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	5.0E-03	NA	NA	NA	5.0E-03					
			Toxicity Equivalency (PCB Congeners) - Mam	2.2E-04	NA	NA	NA	2.2E-04					
			CHEMICAL TOTAL	5.7E-03	--	--	--	6E-03		5.8E+01	0.0E+00	--	5.8E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-03					5.8E+01
	EXPOSURE MEDIUM TOTAL							6E-03					5.8E+01
WHOLE BODY TOTAL								6E-03					5.8E+01
RECEPTOR TOTAL								6E-03					5.8E+01
							TOTAL RISK ACROSS ALL MEDIA	6E-03	TOTAL HAZARD ACROSS ALL MEDIA				5.8E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

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TOTAL IMMUNE SYSTEM HI =	5.6E+01
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TOTAL LIVER HI =	1.1E+00
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US EPA ARCHIVE DOCUMENT

TABLE G.10.62.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Benzo(a)pyrene	1.0E-06	NA	NA	NA	1.0E-06	Kidney	--	NA	NA	
			4,4'-DDE	2.1E-06	NA	NA	NA	2.1E-06	Liver	--	NA	NA	
			Aroclor-1254	3.0E-04	NA	NA	NA	3.0E-04	Immune system	4.4E+01	NA	NA	4.4E+01
			Aroclor-1268	2.5E-06	NA	NA	NA	2.5E-06	Immune system	--	NA	NA	
			Dieldrin	4.0E-06	NA	NA	NA	4.0E-06	Liver	--	NA	NA	
			Technical Chlordane	2.6E-05	NA	NA	NA	2.6E-05	Liver	--	NA	NA	
			Arsenic	1.2E-06	NA	NA	NA	1.2E-06	Skin	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.9E-03	NA	NA	NA	3.9E-03					
			Toxicity Equivalency (PCB Congeners) - Mam	1.7E-04	NA	NA	NA	1.7E-04					
			CHEMICAL TOTAL	4.4E-03	--	--	--	4E-03		4.4E+01	0.0E+00	--	4.4E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-03					4.4E+01
	EXPOSURE MEDIUM TOTAL							4E-03					4.4E+01
WHOLE BODY TOTAL								4E-03					4.4E+01
RECEPTOR TOTAL								4E-03					4.4E+01
							TOTAL RISK ACROSS ALL MEDIA	4E-03	TOTAL HAZARD ACROSS ALL MEDIA				4.4E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

TOTAL IMMUNE SYSTEM HI = 4.4E+01

US EPA ARCHIVE DOCUMENT

TABLE G.10.63.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	4,4'-DDE	1.1E-06	NA	NA	NA	1.1E-06	Liver	--	NA	NA	
			Aroclor-1254	1.6E-04	NA	NA	NA	1.6E-04	Immune system	4.7E+01	NA	NA	4.7E+01
			Aroclor-1268	1.3E-06	NA	NA	NA	1.3E-06	Immune system	--	NA	NA	
			Dieldrin	2.1E-06	NA	NA	NA	2.1E-06	Liver	--	NA	NA	
			Technical Chlordane	1.4E-05	NA	NA	NA	1.4E-05	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.1E-03	NA	NA	NA	2.1E-03					
			Toxicity Equivalency (PCB Congeners) - Mam	9.3E-05	NA	NA	NA	9.3E-05					
			CHEMICAL TOTAL	2.3E-03	--	--	--	2E-03		4.7E+01	0.0E+00	--	4.7E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-03					4.7E+01
	EXPOSURE MEDIUM TOTAL							2E-03					4.7E+01
WHOLE BODY TOTAL								2E-03					4.7E+01
RECEPTOR TOTAL								2E-03					4.7E+01
							TOTAL RISK ACROSS ALL MEDIA	2E-03	TOTAL HAZARD ACROSS ALL MEDIA				4.7E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: RAR
Checked by: KJA

TOTAL IMMUNE SYSTEM HI = 4.7E+01

US EPA ARCHIVE DOCUMENT

TABLE G.10.64.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	4,4'-DDE	2.0E-06	NA	NA	NA	2.0E-06	Liver	--	NA	NA	
			Aroclor-1254	2.9E-04	NA	NA	NA	2.9E-04	Immune system	5.6E+01	NA	NA	5.6E+01
			Aroclor-1268	2.4E-06	NA	NA	NA	2.4E-06	Immune system	--	NA	NA	
			Dieldrin	3.8E-06	NA	NA	NA	3.8E-06	Liver	--	NA	NA	
			Technical Chlordane	2.5E-05	NA	NA	NA	2.5E-05	Liver	1.1E+00	NA	NA	1.1E+00
			Arsenic	1.2E-06	NA	NA	NA	1.2E-06	Skin	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	3.7E-03	NA	NA	NA	3.7E-03					
			Toxicity Equivalency (PCB Congeners) - Mam	1.7E-04	NA	NA	NA	1.7E-04					
			CHEMICAL TOTAL	4.2E-03	--	--	--	4E-03		5.8E+01	0.0E+00	--	5.8E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-03					5.8E+01
	EXPOSURE MEDIUM TOTAL							4E-03					5.8E+01
WHOLE BODY TOTAL								4E-03					5.8E+01
RECEPTOR TOTAL								4E-03					5.8E+01
							TOTAL RISK ACROSS ALL MEDIA	4E-03	TOTAL HAZARD ACROSS ALL MEDIA				5.8E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: AWS

TOTAL IMMUNE SYSTEM HI = 5.6E+01
TOTAL LIVER HI = 1.1E+00

US EPA ARCHIVE DOCUMENT

TABLE G.10.65.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	4,4'-DDE	1.6E-06	NA	NA	NA	1.6E-06	Liver	--	NA	NA	
			Aroclor-1254	2.3E-04	NA	NA	NA	2.3E-04	Immune system	4.4E+01	NA	NA	4.4E+01
			Aroclor-1268	1.9E-06	NA	NA	NA	1.9E-06	Immune system	--	NA	NA	
			Dieldrin	3.0E-06	NA	NA	NA	3.0E-06	Liver	--	NA	NA	
			Technical Chlordane	2.0E-05	NA	NA	NA	2.0E-05	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.9E-03	NA	NA	NA	2.9E-03					
			Toxicity Equivalency (PCB Congeners) - Mam	1.3E-04	NA	NA	NA	1.3E-04					
			CHEMICAL TOTAL	3.3E-03	--	--	--	3E-03		4.4E+01	0.0E+00	--	4.4E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-03					4.4E+01
	EXPOSURE MEDIUM TOTAL							3E-03					4.4E+01
WHOLE BODY TOTAL								3E-03					4.4E+01
RECEPTOR TOTAL								3E-03					4.4E+01
							TOTAL RISK ACROSS ALL MEDIA	3E-03	TOTAL HAZARD ACROSS ALL MEDIA				4.4E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: AWS

TOTAL IMMUNE SYSTEM HI = 4.4E+01

US EPA ARCHIVE DOCUMENT

TABLE G.10.66.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - WHITE SUCKER - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
WHITE SUCKER	WHOLE BODY	LYMAN MILL POND	Benzo(a)pyrene	1.1E-06	NA	NA	NA	1.1E-06	Kidney	--	NA	NA	
			4,4'-DDE	2.2E-06	NA	NA	NA	2.2E-06	Liver	--	NA	NA	
			Aroclor-1254	3.2E-04	NA	NA	NA	3.2E-04	Immune system	9.4E+01	NA	NA	9.4E+01
			Aroclor-1268	2.7E-06	NA	NA	NA	2.7E-06	Immune system	--	NA	NA	
			Dieldrin	4.3E-06	NA	NA	NA	4.3E-06	Liver	--	NA	NA	
			Technical Chlordane	2.8E-05	NA	NA	NA	2.8E-05	Liver	1.9E+00	NA	NA	1.9E+00
			Arsenic	1.3E-06	NA	NA	NA	1.3E-06	Skin	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.2E-03	NA	NA	NA	4.2E-03					
			Toxicity Equivalency (PCB Congeners) - Mam	1.9E-04	NA	NA	NA	1.9E-04					
			CHEMICAL TOTAL	4.7E-03	--	--	--	5E-03		9.6E+01	0.0E+00	--	9.6E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-03					9.6E+01
	EXPOSURE MEDIUM TOTAL							5E-03					9.6E+01
WHOLE BODY TOTAL								5E-03					9.6E+01
RECEPTOR TOTAL								5E-03					9.6E+01
							TOTAL RISK ACROSS ALL MEDIA	5E-03	TOTAL HAZARD ACROSS ALL MEDIA				9.6E+01

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: AWS

TOTAL IMMUNE SYSTEM HI = 9.4E+01
TOTAL LIVER HI = 1.9E+00

US EPA ARCHIVE DOCUMENT

TABLE G.10.67.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	Aroclor-1254	9.3E-06	NA	NA	NA	9.3E-06	Immune system	1.3E+00	NA	NA	1.3E+00
			Aroclor-1268	2.4E-06	NA	NA	NA	2.4E-06	Immune system	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.0E-04	NA	NA	NA	1.0E-04					
			CHEMICAL TOTAL	1.2E-04	--	--	--	1E-04		1.3E+00	0.0E+00	--	1E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					1E+00
	EXPOSURE MEDIUM TOTAL							1E-04					1E+00
FILLET TOTAL								1E-04					1E+00
RECEPTOR TOTAL								1E-04					1.3E+00
			TOTAL RISK ACROSS ALL MEDIA					1E-04	TOTAL HAZARD ACROSS ALL MEDIA				1.3E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

TOTAL IMMUNE SYSTEM HI = 1.3E+00

US EPA ARCHIVE DOCUMENT

TABLE G.10.68.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	Aroclor-1254	7.2E-06	NA	NA	NA	7.2E-06	Immune system	1.1E+00	NA	NA	1.1E+00
			Aroclor-1268	1.9E-06	NA	NA	NA	1.9E-06	Immune system	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	8.1E-05	NA	NA	NA	8.1E-05					
			CHEMICAL TOTAL	9.0E-05	--	--	--	9E-05		1.1E+00	0.0E+00	--	1E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						9E-05					1E+00
	EXPOSURE MEDIUM TOTAL							9E-05					1E+00
FILLET TOTAL								9E-05					1E+00
RECEPTOR TOTAL								9E-05					1.1E+00
			TOTAL RISK ACROSS ALL MEDIA					9E-05	TOTAL HAZARD ACROSS ALL MEDIA				1.1E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

TOTAL IMMUNE SYSTEM HI = 1.1E+00

US EPA ARCHIVE DOCUMENT

TABLE G.10.69.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	Aroclor-1254	3.8E-06	NA	NA	NA	3.8E-06	Immune system	1.1E+00	NA	NA	1.1E+00
			Aroclor-1268	1.0E-06	NA	NA	NA	1.0E-06	Immune system	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	4.3E-05	NA	NA	NA	4.3E-05					
			CHEMICAL TOTAL	4.8E-05	--	--	--	5E-05		1.1E+00	0.0E+00	--	1E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-05					1E+00
	EXPOSURE MEDIUM TOTAL							5E-05					1E+00
FILLET TOTAL								5E-05					1E+00
RECEPTOR TOTAL								5E-05					1.1E+00
			TOTAL RISK ACROSS ALL MEDIA					5E-05	TOTAL HAZARD ACROSS ALL MEDIA				1.1E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

TOTAL IMMUNE SYSTEM HI = 1.1E+00

US EPA ARCHIVE DOCUMENT

TABLE G.10.70.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	Aroclor-1254	6.9E-06	NA	NA	NA	6.9E-06	Immune system	1.3E+00	NA	NA	1.3E+00
			Aroclor-1268	1.8E-06	NA	NA	NA	1.8E-06	Immune system	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	7.8E-05	NA	NA	NA	7.8E-05					
			CHEMICAL TOTAL	8.6E-05	--	--	--	9E-05		1.3E+00	0.0E+00	--	1E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						9E-05					1E+00
	EXPOSURE MEDIUM TOTAL							9E-05					1E+00
FILLET TOTAL								9E-05					1E+00
RECEPTOR TOTAL								9E-05					1.3E+00
							TOTAL RISK ACROSS ALL MEDIA	9E-05	TOTAL HAZARD ACROSS ALL MEDIA				1.3E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

TOTAL IMMUNE SYSTEM HI = 1.3E+00

US EPA ARCHIVE DOCUMENT

TABLE G.10.71.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	Aroclor-1254	5.4E-06	NA	NA	NA	5.4E-06	Immune system	1.1E+00	NA	NA	1.1E+00
			Aroclor-1268	1.4E-06	NA	NA	NA	1.4E-06	Immune system	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	6.1E-05	NA	NA	NA	6.1E-05					
			CHEMICAL TOTAL	6.8E-05	--	--	--	7E-05		1.1E+00	0.0E+00	--	1E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-05					1E+00
	EXPOSURE MEDIUM TOTAL							7E-05					1E+00
FILLET TOTAL								7E-05					1E+00
RECEPTOR TOTAL								7E-05					1.1E+00
			TOTAL RISK ACROSS ALL MEDIA					7E-05	TOTAL HAZARD ACROSS ALL MEDIA				1.1E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

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TOTAL IMMUNE SYSTEM HI =	1.1E+00
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US EPA ARCHIVE DOCUMENT

TABLE G.10.72.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - LARGEMOUTH BASS - FILLET - MANTON
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
LARGEMOUTH BASS	FILLET	MANTON POND	Aroclor-1254	7.7E-06	NA	NA	NA	7.7E-06	Immune system	2.2E+00	NA	NA	2.2E+00
			Aroclor-1268	2.0E-06	NA	NA	NA	2.0E-06	Immune system	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	8.6E-05	NA	NA	NA	8.6E-05					
			CHEMICAL TOTAL	9.6E-05	--	--	--	1E-04		2.2E+00	0.0E+00	--	2E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					2E+00
	EXPOSURE MEDIUM TOTAL							1E-04					2E+00
FILLET TOTAL								1E-04					2E+00
RECEPTOR TOTAL								1E-04					2.2E+00
							TOTAL RISK ACROSS ALL MEDIA	1E-04	TOTAL HAZARD ACROSS ALL MEDIA				2.2E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: RAR

TOTAL IMMUNE SYSTEM HI = 2.2E+00

US EPA ARCHIVE DOCUMENT

TABLE G.10.73.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - ADULT - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	Aroclor-1254	2.7E-05	NA	NA	NA	2.7E-05	Immune system	4.0E+00	NA	NA	4.0E+00
			Dieldrin	5.1E-06	NA	NA	NA	5.1E-06	Liver	--	NA	NA	
			Technical Chlordane	4.0E-06	NA	NA	NA	4.0E-06	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.9E-04	NA	NA	NA	2.9E-04					
			CHEMICAL TOTAL	3.3E-04	--	--	--	3E-04		4.0E+00	0.0E+00	--	4.0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-04					4.0E+00
	EXPOSURE MEDIUM TOTAL							3E-04					4.0E+00
WHOLE BODY TOTAL								3E-04					4.0E+00
RECEPTOR TOTAL								3E-04					4.0E+00
							TOTAL RISK ACROSS ALL MEDIA	3E-04	TOTAL HAZARD ACROSS ALL MEDIA				4.0E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

TOTAL IMMUNE SYSTEM HI = 4.0E+00

US EPA ARCHIVE DOCUMENT

TABLE G.10.74.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - OLDER CHILD - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	Aroclor-1254	2.1E-05	NA	NA	NA	2.1E-05	Immune system	3.1E+00	NA	NA	3.1E+00
			Dieldrin	4.0E-06	NA	NA	NA	4.0E-06	Liver	--	NA	NA	
			Technical Chlordane	3.1E-06	NA	NA	NA	3.1E-06	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.3E-04	NA	NA	NA	2.3E-04					
			CHEMICAL TOTAL	2.6E-04	--	--	--	3E-04		3.1E+00	0.0E+00	--	3.1E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-04					3.1E+00
	EXPOSURE MEDIUM TOTAL							3E-04					3.1E+00
WHOLE BODY TOTAL								3E-04					3.1E+00
RECEPTOR TOTAL								3E-04					3.1E+00
							TOTAL RISK ACROSS ALL MEDIA	3E-04	TOTAL HAZARD ACROSS ALL MEDIA				3.1E+00

NOTES.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

TOTAL IMMUNE SYSTEM HI = 3.1E+00

US EPA ARCHIVE DOCUMENT

TABLE G.10.75.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RECREATIONAL ANGLER - CHILD - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RECREATIONAL ANGLER
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	Aroclor-1254	1.1E-05	NA	NA	NA	1.1E-05	Immune system	3.3E+00	NA	NA	3.3E+00
			Dieldrin	2.1E-06	NA	NA	NA	2.1E-06	Liver	--	NA	NA	
			Technical Chlordane	1.7E-06	NA	NA	NA	1.7E-06	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.2E-04	NA	NA	NA	1.2E-04					
			CHEMICAL TOTAL	1.4E-04	--	--	--	1E-04		3.3E+00	0.0E+00	--	3.3E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-04					3.3E+00
	EXPOSURE MEDIUM TOTAL							1E-04					3.3E+00
WHOLE BODY TOTAL								1E-04					3.3E+00
RECEPTOR TOTAL								1E-04					3.3E+00
			TOTAL RISK ACROSS ALL MEDIA					1E-04	TOTAL HAZARD ACROSS ALL MEDIA				3.3E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

TOTAL IMMUNE SYSTEM HI = 3.3E+00

US EPA ARCHIVE DOCUMENT

TABLE G.10.76.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	Aroclor-1254	2.1E-05	NA	NA	NA	2.1E-05	Immune system	4.0E+00	NA	NA	4.0E+00
			Dieldrin	3.8E-06	NA	NA	NA	3.8E-06	Liver	--	NA	NA	
			Technical Chlordane	3.0E-06	NA	NA	NA	3.0E-06	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.2E-04	NA	NA	NA	2.2E-04					
			CHEMICAL TOTAL	2.5E-04	--	--	--	2E-04		4.0E+00	0.0E+00	--	4.0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-04					4.0E+00
	EXPOSURE MEDIUM TOTAL							2E-04					4.0E+00
WHOLE BODY TOTAL								2E-04					4.0E+00
RECEPTOR TOTAL								2E-04					4.0E+00
			TOTAL RISK ACROSS ALL MEDIA					2E-04	TOTAL HAZARD ACROSS ALL MEDIA				4.0E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

TOTAL IMMUNE SYSTEM HI = 4.0E+00

US EPA ARCHIVE DOCUMENT

TABLE G.10.77.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	Aroclor-1254	1.6E-05	NA	NA	NA	1.6E-05	Immune system	3.1E+00	NA	NA	3.1E+00
			Dieldrin	3.0E-06	NA	NA	NA	3.0E-06	Liver	--	NA	NA	
			Technical Chlordane	2.4E-06	NA	NA	NA	2.4E-06	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	1.7E-04	NA	NA	NA	1.7E-04					
			CHEMICAL TOTAL	1.9E-04	--	--	--	2E-04		3.1E+00	0.0E+00	--	3.1E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-04					3.1E+00
	EXPOSURE MEDIUM TOTAL							2E-04					3.1E+00
WHOLE BODY TOTAL								2E-04					3.1E+00
RECEPTOR TOTAL								2E-04					3.1E+00
			TOTAL RISK ACROSS ALL MEDIA					2E-04	TOTAL HAZARD ACROSS ALL MEDIA				3.1E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

TOTAL IMMUNE SYSTEM HI = 3.1E+00

US EPA ARCHIVE DOCUMENT

TABLE G.10.78.CT
RISK SUMMARY - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - AMERICAN EEL - DYERVILLE
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
AMERICAN EEL	WHOLE BODY	DYERVILLE POND	Aroclor-1254	2.3E-05	NA	NA	NA	2.3E-05	Immune system	6.7E+00	NA	NA	6.7E+00
			Dieldrin	4.2E-06	NA	NA	NA	4.2E-06	Liver	--	NA	NA	
			Technical Chlordane	3.3E-06	NA	NA	NA	3.3E-06	Liver	--	NA	NA	
			Toxicity Equivalency (Dioxins/Furans) - Mam	2.4E-04	NA	NA	NA	2.4E-04					
			CHEMICAL TOTAL	2.7E-04	--	--	--	3E-04		6.7E+00	0.0E+00	--	6.7E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						3E-04					6.7E+00
	EXPOSURE MEDIUM TOTAL							3E-04					6.7E+00
WHOLE BODY TOTAL								3E-04					6.7E+00
RECEPTOR TOTAL								3E-04					6.7E+00
			TOTAL RISK ACROSS ALL MEDIA					3E-04	TOTAL HAZARD ACROSS ALL MEDIA				6.7E+00

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: KJA
Checked by: MJM

TOTAL IMMUNE SYSTEM HI = 6.7E+00

US EPA ARCHIVE DOCUMENT

Table G.11.RME
Risk Assessment Summary

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Assapumpset Pond					
Visiting Recreational Angler	Child (ages 1 through 6)	American Eel	Ingestion	2E-05	3
		Largemouth Bass (F)	Ingestion	2E-05	2
		Brown Bullhead	Ingestion	2E-05	0.9
Visiting Recreational Angler	Older Child (ages 7 through 18)	American Eel	Ingestion	6E-05	4
		Largemouth Bass (F)	Ingestion	4E-05	3
		Brown Bullhead	Ingestion	5E-05	1
Visiting Recreational Angler	Adult (ages 19 and above)	American Eel	Ingestion	2E-04	4
		Largemouth Bass (F)	Ingestion	2E-04	3
		Brown Bullhead	Ingestion	2E-04	1
Resident Living Along the River	Child (ages 1 through 6)	American Eel	Ingestion	5E-05	7
		Largemouth Bass (F)	Ingestion	3E-05	4
		Brown Bullhead	Ingestion	4E-05	2
Resident Living Along the River	Older Child (ages 7 through 18)	American Eel	Ingestion	6E-05	4
		Largemouth Bass (F)	Ingestion	4E-05	3
		Brown Bullhead	Ingestion	5E-05	1
Resident Living Along the River	Adult (ages 19 and above)	American Eel	Ingestion	5E-05	4
		Largemouth Bass (F)	Ingestion	4E-05	3
		Brown Bullhead	Ingestion	4E-05	1

US EPA ARCHIVE DOCUMENT

Table G.11.RME
Risk Assessment Summary

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Greystone Mill Pond					
Visiting Recreational Angler	Child (ages 1 through 6)	American Eel	Ingestion	4E-05	10
		Largemouth Bass (F)	Ingestion	1E-05	7
		White Sucker	Ingestion	5E-05	7
Visiting Recreational Angler	Older Child (ages 7 through 18)	American Eel	Ingestion	1E-04	12
		Largemouth Bass (F)	Ingestion	3E-05	8
		White Sucker	Ingestion	1E-04	9
Visiting Recreational Angler	Adult (ages 19 and above)	American Eel	Ingestion	4E-04	12
		Largemouth Bass (F)	Ingestion	1E-04	8
		White Sucker	Ingestion	5E-04	9
Resident Living Along the River	Child (ages 1 through 6)	American Eel	Ingestion	8E-05	20
		Largemouth Bass (F)	Ingestion	3E-05	14
		White Sucker	Ingestion	9E-05	15
Resident Living Along the River	Older Child (ages 7 through 18)	American Eel	Ingestion	1E-04	12
		Largemouth Bass (F)	Ingestion	3E-05	8
		White Sucker	Ingestion	1E-04	9
Resident Living Along the River	Adult (ages 19 and above)	American Eel	Ingestion	1E-04	12
		Largemouth Bass (F)	Ingestion	3E-05	8
		White Sucker	Ingestion	1E-04	9

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Table G.11.RME
Risk Assessment Summary

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Allendale Pond					
Visiting Recreational Angler	Child (ages 1 through 6)	American Eel	Ingestion	1E-03	22
		White Sucker	Ingestion	6E-03	134
Visiting Recreational Angler	Older Child (ages 7 through 18)	American Eel	Ingestion	2E-03	27
		White Sucker	Ingestion	8E-03	82
Visiting Recreational Angler	Adult (ages 19 and above)	American Eel	Ingestion	1E-02	26
		White Sucker	Ingestion	3E-02	80
Resident Living Along the River	Child (ages 1 through 6)	American Eel	Ingestion	2E-03	44
		White Sucker	Ingestion	6E-03	134
Resident Living Along the River	Older Child (ages 7 through 18)	American Eel	Ingestion	2E-03	27
		White Sucker	Ingestion	8E-03	82
Resident Living Along the River	Adult (ages 19 and above)	American Eel	Ingestion	2E-03	26
		White Sucker	Ingestion	8E-03	80

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Table G.11.RME
Risk Assessment Summary

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Lyman Mill Pond					
Visiting Recreational Angler	Child (ages 1 through 6)	American Eel	Ingestion	1E-03	22
		Largemouth Bass (F)	Ingestion	3E-04	7
		White Sucker	Ingestion	6E-03	121
Visiting Recreational Angler	Older Child (ages 7 through 18)	American Eel	Ingestion	4E-03	27
		Largemouth Bass (F)	Ingestion	6E-04	8
		White Sucker	Ingestion	1E-02	149
Visiting Recreational Angler	Adult (ages 19 and above)	American Eel	Ingestion	2E-02	26
		Largemouth Bass (F)	Ingestion	3E-03	8
		White Sucker	Ingestion	6E-02	144
Resident Living Along the River	Child (ages 1 through 6)	American Eel	Ingestion	3E-03	45
		Largemouth Bass (F)	Ingestion	5E-04	13
		White Sucker	Ingestion	1E-02	242
Resident Living Along the River	Older Child (ages 7 through 18)	American Eel	Ingestion	4E-03	27
		Largemouth Bass (F)	Ingestion	6E-04	8
		White Sucker	Ingestion	1E-02	149
Resident Living Along the River	Adult (ages 19 and above)	American Eel	Ingestion	4E-03	26
		Largemouth Bass (F)	Ingestion	6E-04	8
		White Sucker	Ingestion	1E-02	144

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Table G.11.RME
Risk Assessment Summary

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Manton Pond					
Visiting Recreational Angler	Child (ages 1 through 6)	Largemouth Bass (F)	Ingestion	2E-04	8
Visiting Recreational Angler	Older Child (ages 7 through 18)	Largemouth Bass (F)	Ingestion	5E-04	10
Visiting Recreational Angler	Adult (ages 19 and above)	Largemouth Bass (F)	Ingestion	2E-03	10
Resident Living Along the River	Child (ages 1 through 6)	Largemouth Bass (F)	Ingestion	4E-04	16
Resident Living Along the River	Older Child (ages 7 through 18)	Largemouth Bass (F)	Ingestion	5E-04	10
Resident Living Along the River	Adult (ages 19 and above)	Largemouth Bass (F)	Ingestion	5E-04	10
Current/Future - Dyerville Pond					
Visiting Recreational Angler	Child (ages 1 through 6)	American Eel	Ingestion	5E-04	12
Visiting Recreational Angler	Older Child (ages 7 through 18)	American Eel	Ingestion	1E-03	14
Visiting Recreational Angler	Adult (ages 19 and above)	American Eel	Ingestion	5E-03	14
Resident Living Along the River	Child (ages 1 through 6)	American Eel	Ingestion	1E-03	23
Resident Living Along the River	Older Child (ages 7 through 18)	American Eel	Ingestion	1E-03	14
Resident Living Along the River	Adult (ages 19 and above)	American Eel	Ingestion	1E-03	14

Largemouth Bass (F) - Fillet

(1)Total Risk: = The sum of risks associated with all exposure media for the receptor age-group. This sum includes the value for consumption of only one species of fish (that species with the highest risk).

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Table G.11.CT
Risk Assessment Summary

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Assapumpset Pond					
Visiting Recreational Angler	Child (ages 1 through 6)	American Eel	Ingestion	3E-06	0.6
		Largemouth Bass (F)	Ingestion	4E-06	0.7
		Brown Bullhead	Ingestion	6E-06	0.2
Visiting Recreational Angler	Older Child (ages 7 through 18)	American Eel	Ingestion	7E-06	0.5
		Largemouth Bass (F)	Ingestion	8E-06	0.7
		Brown Bullhead	Ingestion	1E-05	0.2
Visiting Recreational Angler	Adult (ages 19 and above)	American Eel	Ingestion	8E-06	0.7
		Largemouth Bass (F)	Ingestion	1E-05	0.8
		Brown Bullhead	Ingestion	1E-05	0.2
Resident Living Along the River	Child (ages 1 through 6)	American Eel	Ingestion	7E-06	1
		Largemouth Bass (F)	Ingestion	9E-06	1
		Brown Bullhead	Ingestion	1E-05	0.4
Resident Living Along the River	Older Child (ages 7 through 18)	American Eel	Ingestion	5E-06	0.5
		Largemouth Bass (F)	Ingestion	6E-06	0.7
		Brown Bullhead	Ingestion	8E-06	0.2
Resident Living Along the River	Adult (ages 19 and above)	American Eel	Ingestion	6E-06	0.7
		Largemouth Bass (F)	Ingestion	8E-06	0.8
		Brown Bullhead	Ingestion	1E-05	0.2

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Table G.11.CT
Risk Assessment Summary

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Greystone Mill Pond					
Visiting Recreational Angler	Child (ages 1 through 6)	American Eel	Ingestion	2E-05	4
		Largemouth Bass (F)	Ingestion	6E-06	6
		White Sucker	Ingestion	2E-05	3
Visiting Recreational Angler	Older Child (ages 7 through 18)	American Eel	Ingestion	3E-05	4
		Largemouth Bass (F)	Ingestion	1E-05	3
		White Sucker	Ingestion	3E-05	3
Visiting Recreational Angler	Adult (ages 19 and above)	American Eel	Ingestion	4E-05	5
		Largemouth Bass (F)	Ingestion	1E-05	3
		White Sucker	Ingestion	4E-05	4
Resident Living Along the River	Child (ages 1 through 6)	American Eel	Ingestion	3E-05	8
		Largemouth Bass (F)	Ingestion	1E-05	6
		White Sucker	Ingestion	4E-05	6
Resident Living Along the River	Older Child (ages 7 through 18)	American Eel	Ingestion	2E-05	4
		Largemouth Bass (F)	Ingestion	8E-06	3
		White Sucker	Ingestion	3E-05	3
Resident Living Along the River	Adult (ages 19 and above)	American Eel	Ingestion	3E-05	5
		Largemouth Bass (F)	Ingestion	1E-05	3
		White Sucker	Ingestion	3E-05	4

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Table G.11.CT
Risk Assessment Summary

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Allendale Pond					
Visiting Recreational Angler	Child (ages 1 through 6)	American Eel	Ingestion	4E-04	9
		White Sucker	Ingestion	1E-03	27
Visiting Recreational Angler	Older Child (ages 7 through 18)	American Eel	Ingestion	7E-04	8
		White Sucker	Ingestion	2E-03	25
Visiting Recreational Angler	Adult (ages 19 and above)	American Eel	Ingestion	9E-04	11
		White Sucker	Ingestion	3E-03	32
Resident Living Along the River	Child (ages 1 through 6)	American Eel	Ingestion	7E-04	18
		White Sucker	Ingestion	3E-03	54
Resident Living Along the River	Older Child (ages 7 through 18)	American Eel	Ingestion	5E-04	8
		White Sucker	Ingestion	2E-03	25
Resident Living Along the River	Adult (ages 19 and above)	American Eel	Ingestion	7E-04	11
		White Sucker	Ingestion	2E-03	32

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Table G.11.CT
Risk Assessment Summary

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Lyman Mill Pond					
Visiting Recreational Angler	Child (ages 1 through 6)	American Eel	Ingestion	5E-04	9
		Largemouth Bass (F)	Ingestion	9E-05	3
		White Sucker	Ingestion	2E-03	49
Visiting Recreational Angler	Older Child (ages 7 through 18)	American Eel	Ingestion	1E-03	8
		Largemouth Bass (F)	Ingestion	2E-04	3
		White Sucker	Ingestion	4E-03	46
Visiting Recreational Angler	Adult (ages 19 and above)	American Eel	Ingestion	1E-03	11
		Largemouth Bass (F)	Ingestion	2E-04	3
		White Sucker	Ingestion	6E-03	59
Resident Living Along the River	Child (ages 1 through 6)	American Eel	Ingestion	1E-03	18
		Largemouth Bass (F)	Ingestion	2E-04	5
		White Sucker	Ingestion	5E-03	97
Resident Living Along the River	Older Child (ages 7 through 18)	American Eel	Ingestion	7E-04	8
		Largemouth Bass (F)	Ingestion	1E-04	3
		White Sucker	Ingestion	3E-03	46
Resident Living Along the River	Adult (ages 19 and above)	American Eel	Ingestion	1E-03	11
		Largemouth Bass (F)	Ingestion	2E-04	3
		White Sucker	Ingestion	4E-03	59

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Table G.11.CT
Risk Assessment Summary

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Current/Future - Manton Pond					
Visiting Recreational Angler	Child (ages 1 through 6)	Largemouth Bass (F)	Ingestion	5E-05	2
Visiting Recreational Angler	Older Child (ages 7 through 18)	Largemouth Bass (F)	Ingestion	9E-05	2
Visiting Recreational Angler	Adult (ages 19 and above)	Largemouth Bass (F)	Ingestion	1E-04	2
Resident Living Along the River	Child (ages 1 through 6)	Largemouth Bass (F)	Ingestion	1E-04	4
Resident Living Along the River	Older Child (ages 7 through 18)	Largemouth Bass (F)	Ingestion	7E-05	2
Resident Living Along the River	Adult (ages 19 and above)	Largemouth Bass (F)	Ingestion	9E-05	2
Current/Future - Dyerville Pond					
Visiting Recreational Angler	Child (ages 1 through 6)	American Eel	Ingestion	1E-04	4
Visiting Recreational Angler	Older Child (ages 7 through 18)	American Eel	Ingestion	3E-04	4
Visiting Recreational Angler	Adult (ages 19 and above)	American Eel	Ingestion	3E-04	5
Resident Living Along the River	Child (ages 1 through 6)	American Eel	Ingestion	3E-04	8
Resident Living Along the River	Older Child (ages 7 through 18)	American Eel	Ingestion	2E-04	4
Resident Living Along the River	Adult (ages 19 and above)	American Eel	Ingestion	2E-04	5

Largemouth Bass (F) - Fillet

(1)Total Risk: = The sum of risks associated with all exposure media for the receptor age-group. This sum includes the value for consumption of only one species of fish (that species with the highest risk).

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APPENDIX H

EXPOSURE ASSESSMENT AND RISK CHARACTERIZATION FOR HEXACHLOROXANTHENE (HCX)

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1.0 INTRODUCTION

Because of the uncertainty associated with the potential toxicity of the compound hexachloroxanthene (HCX), a compound that has been detected in environmental media at the Centredale Manor Restoration Project Superfund Site, the compound was not evaluated in the main body of the Baseline Human Health Risk Assessment (BHHRA). There are no formal dose-response values published by USEPA for this compound. This appendix has been prepared to assess the potential impact of the exclusion of HCX on the results and conclusions of the BHHRA.

The exposure assessment and risk assessment for hexachloroxanthene (HCX) was conducted in the same manner as for the other chemicals that were included in the main body of the report. No published cancer or noncancer toxicity values currently exist for HCX. Based on preliminary data, HCX is assumed to be a dioxin-like compound with a toxic equivalency factor (TEF) of 0.0002. Maximum and average exposure point concentrations (EPCs) for HCX at each exposure point are summarized in Tables H.3.1.RME and H.3.1.CT.

2.0 DATA PRESENTATION

HCX concentrations detected in sampled media were compared among the site-related reaches of the river and to concentrations detected at the upstream river background location (Greystone Mill) and/or the tributary reference area (Assapumpset), when available. No HCX concentration data were available for the Greystone Mill background location for surface water or for any of the fish media. In addition, HCX concentration data were not available for the Assapumpset reference area for surface water or for the American eel and white sucker fish media.

Mean concentrations of HCX detected in American eel (whole body) were highest at Allendale (5.82E-05 mg/Kg), followed by Lyman Mill (5.71E-05), with the lowest mean concentration occurring at Dyerville (2.96E-05) (Table H.3.1.RME). Mean concentrations of HCX in white sucker were highest at Lyman Mill (5.48E-05 mg/Kg), with similar mean concentrations occurring at Allendale (4.72E-05 mg/Kg).

In general, HCX was detected at lower concentrations in largemouth bass (fillet) than in American eel or white sucker (Table H.3.1.RME). HCX was detected in largemouth bass at a maximum concentration of 6.49E-06 J mg/Kg at Lyman Mill, and at slightly lower maximum concentrations of 5.36E-06 J mg/Kg and 5.35E-06 J mg/Kg at Manton and the Assapumpset reference area, respectively. The mean HCX concentrations in largemouth bass provided in Table H.3.1.RME are higher than the respective maximum concentrations due to inclusion of non-detect values.

HCX was measured in surface water samples collected from Allendale and Lyman Mill, with higher average HCX concentrations occurring at Allendale (2.97E-07 mg/L) than Lyman Mill (4.06E-08 mg/L).

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In sediment samples, average HCX concentrations were highest at Allendale (2.71E-02 mg/Kg) and Lyman Mill (1.35E-02 mg/Kg); these concentrations were 1 to 2 orders of magnitude higher than the average concentrations at Dyerville (1.73E-04 mg/Kg) and Manton (1.17E-04 mg/Kg), and greater than 2 orders of magnitude higher than the average concentrations for the background area Greystone Mill (3.25E-05 mg/Kg) and the reference area Assapumpset Pond and Brook (1.72E-05 mg/Kg).

Bank soil samples analyzed for HCX were collected only from the Greystone Mill background location. In these samples, HCX was detected at an average concentration of 1.93E-04 mg/Kg, and a maximum concentration of 4.17E-04 mg/Kg.

3.0 RISK CALCULATIONS

Total receptor excess lifetime cancer risks are summarized in Tables H.11.RME and H.11.CT. Risks are shown for residents living along the river at Lyman Mill Pond. Because detected concentrations of HCX in environmental media are generally lower in Allendale Pond, Manton Pond, and Dyerville Pond than in Lyman Mill Pond, the HCX risks associated with those areas would be lower than those in Lyman Mill Pond. This exposure scenario was associated with the highest total receptor risk for the chemical exposures evaluated in the main body of the report. Hazard indices were not calculated in Tables H.11.RME and H.11.CT due to the lack of a noncancer toxicity value for HCX.

A total receptor excess lifetime cancer risk of 4E-08 was obtained using mean HCX EPCs (Table H.11.CT), and a total receptor excess lifetime cancer risk of 4E-07 was obtained using HCX RME data (Table H.11.RME). Both of these values are below the USEPA Superfund cancer risk range of 1E-06 to 1E-04.

Total receptor excess lifetime cancer risks for chemicals evaluated in the main body of the report were considerably higher for the same exposure scenario (Resident living along the river at Lyman Mill). These values were 1E-02 using RME data (Table 11.RME) and 1E-03 using CT data (Table 11.CT). Both values are more than 4 orders of magnitude higher than the risk values obtained using only HCX data. Therefore, assuming a TEF of 0.0002, HCX constitutes only a small component of overall cancer risk for the Site.

If it is assumed, in a worst case scenario, that HCX has a TEF of 1, then the excess lifetime cancer risks for the worst case exposure scenario (Resident living along the river at Lyman Mill) would change as follows. Using CT data, the total receptor excess lifetime cancer risk would increase from 4E-08 to 2E-04, slightly exceeding the USEPA Superfund upper cancer risk boundary of 1E-04. If RME data are used, the total receptor excess lifetime cancer risk would change from 4E-07 to 2E-03, exceeding the Superfund cancer risk range by over an order of magnitude. The total receptor excess lifetime cancer risks calculated using HCX data would differ from the analogous values calculated for the Site in the main body of the report by slightly less than an order of magnitude. Therefore, if a TEF of 1 is assumed, HCX would constitute a larger component of the total cancer risk for the Site, but 2,3,7,8-TCDD would remain the predominant cancer risk contributor.

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Table H.2.1
Occurrence and Distribution of HCX as a Chemical of Potential Concern

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Scenario Timeframe: Current/Future

CAS Number	Chemical	Minimum (1) Concentration	Minimum Qualifier	Maximum (1) Concentration	Maximum Qualifier	Units	Sample ID of Maximum Concentration	Detection Frequency	Range of Detection Limits Min-Max	Concentration Used for Screening (2)	Background Value	Screening Toxicity Value (3)	Potential ARAR/TBC Value (4)	Potential ARAR/TBC Source	Retain as COPC?	Rationale for Contaminant Deletion or Selection (5)
Medium: American Eel - Whole body																
38178-99-3	HCX	0.00000774	J	0.00010904	J	MG/KG	APC-AE-4005-0000-01-W	22 / 23	0.00001998 - 0.00001998	0.00010904	N/A	NSA	N/A	N/A	Yes	A
Medium: Largemouth Bass - Fillet																
38178-99-3	HCX	0.00000345	J	0.00000649	J	MG/KG	LPX-LB-4008-0000-01-F	4 / 13	0.00001986 - 0.00007988	0.00000649	N/A	NSA	N/A	N/A	Yes	A
Medium: White Sucker - Whole Body																
38178-99-3	HCX	0.00001474	J	0.00008931	J	MG/KG	APC-WS-4003-0000-01-W	18 / 20	0.00001987 - 0.00001994	0.00008931	N/A	NSA	N/A	N/A	Yes	A
Medium: Surface Water																
38178-99-3	HCX	0.00000001876	J	0.000000398	J	MG/L	CMW-SW-2919-01	6 / 26	-	0.000000398	N/A	NSA	N/A	N/A	Yes	A
Medium: Sediment																
38178-99-3	HCX	0.00000146	J	0.364758	J	MG/KG	SD-23	75 / 94	0.00026132 - 0.005036	0.364758	N/A	NSA	N/A	N/A	Yes	A

(1) Minimum or maximum concentration detected in exposure area. Samples included in data set are provided in Appendix A.
(2) The concentration used for screening is the maximum detected concentration, per USEPA Region I (USEPA, 1995).
(3) Values are the Risk-Based Concentrations (RBCs) obtained from USEPA Region III dated October 9, 2002.
Values used for screening are the fish ingestion RBCs for the lower of cancer risks equal to 1E-06 or non-cancer risks equal to a hazard index of 0.1, per USEPA Region I (USEPA, 1999).
(4) There are no applicable ARAR values for biota.
(5) Analyte is selected as a COPC if the concentration used for screening exceeds the FSG.
S = Concentration used for screening is less than the screening toxicity value; the analyte was not selected as a COPC.
A = Concentration used for screening is greater than the screening toxicity value or no screening value is available; the analyte was selected as a COPC.
E = The analyte is a human essential nutrient, and is not considered to be toxic at the concentration detected; the analyte was not selected as a COPC (*A.D. Little, 1998; USEPA, 1995*).

HCX = hexachlorobenzene as medium specific concentration (not adjusted with a toxic equivalence factor)

NSA = No Screening value Available.
N/A = Not applicable
- Background values are not applicable for selection of COPCs. Risks at the two reference (Background) locations will be characterized and compared to the risks characterized in this assessment.
- Potential ARAR/TBC values are not applicable for selection of COPCs. EPA suggests use of risk-based media concentrations for screening COPCs.

Qualifier definitions:
J = Value is estimated.

MG/KG = milligrams per kilogram
MG/L = milligrams per liter
COPC = chemical of potential concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirements / To Be Considered

Basis of screening toxicl N - Based on non-cancer endpoint
C - Based on cancer endpoint

Prepared by: RAR
Checked by: KJA

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Table H.2.2
Occurrence and Distribution of HCX as a Chemical of Potential Concern - Background/Reference
Background/Reference

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Scenario Timeframe: Current/Future

CAS Number	Chemical	Minimum (1) Concentration	Minimum Qualifier	Maximum (1) Concentration	Maximum Qualifier	Units	Sample ID of Maximum Concentration	Detection Frequency	Range of Detection Limits Min-Max	Concentration Used for Screening (2)	Background Value	Screening Toxicity Value (3)	Potential ARAR/TBC Value (4)	Potential ARAR/TBC Source	Retain as COPC?	Rationale for Contaminant Deletion or Selection (5)
Largemouth Bass - Fillet																
38178-99-3	HCX	0.00000535	J	0.00000535	J	MG/KG	RAB-LB-5001-0000-01-F	1 / 14	0.00001989 - 0.00008059	0.00000535	N/A	NSA	N/A	N/A	Yes	A
Bank Soil																
38178-99-3	HCX	0.00008577	J	0.00041706	J	MG/KG	RWR-PP-5004-0000-01	4 / 4	-	0.00041706	N/A	NSA	N/A	N/A	Yes	A
Sediment																
38178-99-3	HCX	0.00000169	J	0.00015429	J	MG/KG	GMP-SD-5002-0000-01	8 / 14	-	0.00015429	N/A	NSA	N/A	N/A	Yes	A

(1) Minimum or maximum concentration detected in exposure area. Samples included in data set are provided in Appendix A.
(2) The concentration used for screening is the maximum detected concentration, per USEPA Region I (USEPA, 1995).
(3) Values are the Risk-Based Concentrations (RBCs) obtained from USEPA Region III dated October 9, 2002.
Values used for screening are the fish ingestion RBCs for the lesser of cancer risks equal to 1E-06 or non-cancer risks equal to a hazard index of 0.1, per USEPA Region I (USEPA, 1999).
(4) There are no applicable ARAR values for biota.
(5) Analyte is selected as a COPC if the concentration used for screening exceeds the PRG.
S = Concentration used for screening is less than the screening toxicity value; the analyte was not selected as a COPC.
A = Concentration used for screening is greater than the screening toxicity value or no screening value is available; the analyte was selected as a COPC.
E = The analyte is a human essential nutrient, and is not considered to be toxic at the concentration detected; the analyte was not selected as a COPC (A.D. Little, 1998; USEPA, 1995).

HCX = hexachloroxanthene as medium specific concentration (not adjusted with a toxic equivalence factor)

NSA = No Screening value Available.
N/A = Not applicable
- Background values are not applicable for selection of COPCs. Risks at the two reference (Background) locations will be characterized and compared to the risks characterized in this assessment.
- Potential ARAR/TBC values are not applicable for selection of COPCs. EPA suggests use of risk-based media concentrations for screening COPCs.

Qualifier definitions:
J = Value is estimated.

MG/KG = milligrams per kilogram
COPC = chemical of potential concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirements / To Be Considered

Basis of screening toxicity value:
N - Based on non-cancer endpoint
C - Based on cancer endpoint

Prepared by: RAR
Checked by: KJA

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Table H.3.1.RME
Medium-Specific Exposure Point Concentration Summary for HCX - Reasonable Maximum Exposure

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Point	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (distribution)		Maximum Detected Concentration (qualifier)		Exposure Point Concentration			
								Value	Units	Statistic (1)	Rationale
Americal Eel - Whole Body											
Allendale	HCX	MG/KG	0.0000582	0.0000778	N	0.00010904	J	0.0000778	MG/KG	95% UCL-N	(2)
Allendale	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.0000000116	0.0000000156	N	0.0000000218	J	0.0000000156	MG/KG	95% UCL-N	(2)
Lyman Mill	HCX	MG/KG	0.0000571	0.0000805	T	0.00010774	J	0.0000805	MG/KG	95% UCL-T	(3)
Lyman Mill	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.0000000114	0.0000000161	T	0.0000000215	J	0.0000000161	MG/KG	95% UCL-T	(3)
Dyerville	HCX	MG/KG	0.0000296	NC		0.000343	J	0.0000343	MG/KG	Max	(5)
Dyerville	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.00000000592	NC		0.00000006860	J	0.00000000686	MG/KG	Max	(5)
Largemouth Bass- Fillet											
Assapumpset	HCX	MG/KG	0.0000264	NC		0.00000535	J	0.00000535	MG/KG	Max	(5)
Assapumpset	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.00000000529	NC		0.00000000107	J	0.00000000107	MG/KG	Max	(5)
Lyman Mill	HCX	MG/KG	0.0000131	0.0000131	NP	0.00000649	J	0.00000649	MG/KG	Max	(5)
Lyman Mill	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.00000000262	0.00000000262	NP	0.00000000130	J	0.00000000130	MG/KG	Max	(5)
Manton	HCX	MG/KG	0.0000163	NC		0.00000536	J	0.00000536	MG/KG	Max	(5)
Manton	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.00000000325	NC		0.00000000107	J	0.00000000107	MG/KG	Max	(5)
White Sucker - Whole Body											
Allendale	HCX	MG/KG	0.0000472	0.0000615	N	0.00008931	J	0.0000615	MG/KG	95% UCL-N	(2)
Allendale	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.00000000944	0.0000000123	N	0.0000000179	J	0.0000000123	MG/KG	95% UCL-N	(2)
Lyman Mill	HCX	MG/KG	0.0000548	0.0000548	NP	0.0000814	J	0.0000548	MG/KG	95% UCL-NP	(4)
Lyman Mill	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.0000000110	0.0000000110	NP	0.0000000163	J	0.0000000110	MG/KG	95% UCL-NP	(4)
Combined Fish Diet											
Assapumpset	HCX	MG/KG	0.00000842	NC		0.00000535	J	0.00000842	MG/KG	Mean	(6)
Assapumpset	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.00000000168	NC		0.00000000107	J	0.00000000168	MG/KG	Mean	(6)
Allendale	HCX	MG/KG	0.0000696	NC		0.00010904	J	0.0000696	MG/KG	Mean	(6)
Allendale	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.0000000139	NC		0.000000021808	J	0.0000000139	MG/KG	Mean	(6)
Lyman Mill	HCX	MG/KG	0.0000473	NC		0.00010774	J	0.0000473	MG/KG	Mean	(6)
Lyman Mill	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.00000000945	NC		0.000000021548	J	0.00000000945	MG/KG	Mean	(6)
Manton	HCX	MG/KG	0.00000536	NC		0.00000536	J	0.00000536	MG/KG	Mean	(6)
Manton	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.00000000107	NC		0.00000000107	J	0.00000000107	MG/KG	Mean	(6)
Dyerville	HCX	MG/KG	0.0000343	NC		0.000343	J	0.0000343	MG/KG	Mean	(6)
Dyerville	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.00000000686	NC		0.0000000686	J	0.00000000686	MG/KG	Mean	(6)
Surface Water											
Allendale	HCX	MG/L	0.000000297	NC		0.000000398	J	0.000000398	MG/L	Max	(5)
Allendale	Toxicity Equivalency (HCX) - Mammals	MG/L	0.0000000000595	NC		0.0000000000796	J	0.0000000000796	MG/L	Max	(5)
Lyman Mill	HCX	MG/L	0.0000000406	NC		0.0000000809		0.0000000809	MG/L	Max	(5)
Lyman Mill	Toxicity Equivalency (HCX) - Mammals	MG/L	0.00000000000812	NC		0.0000000000162		0.0000000000162	MG/L	Max	(5)

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Table H.3.1.RME
Medium-Specific Exposure Point Concentration Summary for HCX - Reasonable Maximum Exposure

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Point	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (distribution)	Maximum Detected Concentration (qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (1)	Rationale
Sediment									
Assapumpset	HCX	MG/KG	0.0000172	NC	0.00001722 J	0.00001722	MG/KG	Max	(5)
Assapumpset	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.00000000344	NC	0.000000003444 J	0.000000003444	MG/KG	Max	(5)
Greystone Mill	HCX	MG/KG	0.0000325	NC	0.00015429 J	0.00015429	MG/KG	Max	(5)
Greystone Mill	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.00000000650	NC	0.000000030858 J	0.000000030858	MG/KG	Max	(5)
Allendale	HCX	MG/KG	0.0271	6.94 T	0.36476 J	0.364758	MG/KG	Max	(5)
Allendale	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.00000541	0.00139 T	0.000072952 J	0.0000729516	MG/KG	Max	(5)
Lyman Mill	HCX	MG/KG	0.0135	0.0135 NP	0.1665 J	0.0135	MG/KG	95% UCL-NP	(4)
Lyman Mill	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.00000269	0.00000269 NP	0.00003330 J	0.00000269	MG/KG	95% UCL-NP	(4)
Manton	HCX	MG/KG	0.000117	NC	0.000263 J	0.000263	MG/KG	Max	(5)
Manton	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.0000000235	NC	0.0000000526 J	0.0000000526	MG/KG	Max	(5)
Dyerville	HCX	MG/KG	0.000173	NC	0.000448	0.000448	MG/KG	Max	(5)
Dyerville	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.0000000347	NC	0.0000000896	0.0000000896	MG/KG	Max	(5)
Bank Soil									
Greystone Mill	HCX	MG/KG	0.000193	NC	0.00041706 J	0.00041706	MG/KG	Max	(5)
Greystone Mill	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.0000000387	NC	0.000000083412 J	0.000000083412	MG/KG	Max	(5)

(1) Chemicals of potential concern are identified in Table H.2.1 and Table H.2.2 for site exposure areas and reference/background areas respectively.

(2) 95% UCL-N: 95% Upper Concentration Limit on the mean, normal distribution

(3) 95% UCL-T: 95% Upper Concentration Limit on the mean, lognormal distribution

(4) 95% UCL-NP: 95% Upper Concentration Limit on the mean, nonparametric distribution. Arithmetic mean used to approximate the 95% UCL for nonparametric data.

(5) Max: Maximum detected concentration, applied if fewer than 10 samples (95% UCL not calculated), or if the 95% UCL is greater than the maximum concentration.

(6) Mean: Combined Fish Diet EPCs were calculated by averaging the EPC values for each chemical across all sampled species.

T - The Shapiro-Wilk W Test indicates that the data are log-normally distributed.

NP - The Shapiro-Wilk W Test indicates that the data are neither normally nor log-normally distributed. The data are therefore assumed to be non-parametrically distributed.

N - The Shapiro-Wilk W Test indicates that the data are normally distributed.

HCX - Hexachloroxanthene as medium specific concentration (not adjusted with a toxic equivalency factor).

Toxicity Equivalency (HCX) - Hexachloroxanthene as medium specific concentration adjusted with a toxic equivalency factor of 0.0002.

Qualifier Definitions:

J = Value is estimated.

MG/KG = milligrams per kilogram

MG/L = milligrams per liter

NC = Not Calculated

EPC = Exposure Point Concentration

UCL = Upper Confidence Limit on the arithmetic mean

Prepared by: RAR
Checked by: KJA

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Table H.3.1.CT
Medium-Specific Exposure Point Concentration Summary for HCX - Central Tendency

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Point	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (distribution)		Maximum Detected Concentration (qualifier)		Exposure Point Concentration			
								Value	Units	Statistic (1)	Rationale
Americal Eel - Whole Body											
Allendale	HCX	MG/KG	0.0000582	0.0000778	N	0.00010904	J	0.0000778	MG/KG	95% UCL-N	(2)
Allendale	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.0000000116	0.0000000156	N	0.000000021808	J	0.0000000156	MG/KG	95% UCL-N	(2)
Lyman Mill	HCX	MG/KG	0.0000571	0.0000805	T	0.00010774	J	0.0000805	MG/KG	95% UCL-T	(3)
Lyman Mill	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.0000000114	0.0000000161	T	0.000000021548	J	0.0000000161	MG/KG	95% UCL-T	(3)
Dyerville	HCX	MG/KG	0.0000296	NC		0.000343	J	0.0000296	MG/KG	Mean	(5)
Dyerville	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.00000000592	NC		0.0000000686	J	0.00000000592	MG/KG	Mean	(5)
Largemouth Bass- Fillet											
Assapumpset	HCX	MG/KG	0.0000264	NC		0.00000535	J	0.00000535	MG/KG	Max	(6)
Assapumpset	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.00000000529	NC		0.00000000107	J	0.00000000107	MG/KG	Max	(6)
Lyman Mill	HCX	MG/KG	0.0000131	0.0000131	NP	0.00000649	J	0.00000649	MG/KG	Max	(6)
Lyman Mill	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.00000000262	0.00000000262	NP	0.00000000130	J	0.00000000130	MG/KG	Max	(6)
Manton	HCX	MG/KG	0.0000163	NC		0.00000536	J	0.00000536	MG/KG	Max	(6)
Manton	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.00000000325	NC		0.00000000107	J	0.00000000107	MG/KG	Max	(6)
White Sucker - Whole Body											
Allendale	HCX	MG/KG	0.0000472	0.0000615	N	0.00008931	J	0.0000615	MG/KG	95% UCL-N	(2)
Allendale	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.00000000944	0.0000000123	N	0.00000001786	J	0.0000000123	MG/KG	95% UCL-N	(2)
Lyman Mill	HCX	MG/KG	0.0000548	0.0000548	NP	0.0000814	J	0.0000548	MG/KG	95% UCL-NP	(4)
Lyman Mill	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.0000000110	0.0000000110	NP	0.0000000163	J	0.0000000110	MG/KG	95% UCL-NP	(4)
Combined Fish Diet											
Assapumpset	HCX	MG/KG	0.00000842	NC		0.00000535	J	0.00000842	MG/KG	Mean	(7)
Assapumpset	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.00000000168	NC		0.00000000107	J	0.00000000168	MG/KG	Mean	(7)
Allendale	HCX	MG/KG	0.0000696	NC		0.00010904	J	0.0000696	MG/KG	Mean	(7)
Allendale	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.0000000139	NC		0.000000021808	J	0.0000000139	MG/KG	Mean	(7)
Lyman Mill	HCX	MG/KG	0.0000473	NC		0.00010774	J	0.0000473	MG/KG	Mean	(7)
Lyman Mill	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.00000000945	NC		0.000000021548	J	0.00000000945	MG/KG	Mean	(7)
Manton	HCX	MG/KG	0.00000536	NC		0.00000536	J	0.00000536	MG/KG	Mean	(7)
Manton	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.00000000107	NC		0.00000000107	J	0.00000000107	MG/KG	Mean	(7)
Dyerville	HCX	MG/KG	0.0000296	NC		0.000343	J	0.0000296	MG/KG	Mean	(7)
Dyerville	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.00000000592	NC		0.0000000686	J	0.00000000592	MG/KG	Mean	(7)
Surface Water											
Allendale	HCX	MG/L	0.000000297	NC		0.000000398	J	0.00000000564	MG/L	Mean	(5)
Allendale	Toxicity Equivalency (HCX) - Mammals	MG/L	0.0000000000595	NC		0.0000000000796	J	0.00000000000113	MG/L	Mean	(5)
Lyman Mill	HCX	MG/L	0.0000000406	NC		0.0000000809		0.0000000406	MG/L	Mean	(5)
Lyman Mill	Toxicity Equivalency (HCX) - Mammals	MG/L	0.0000000000812	NC		0.0000000000162		0.0000000000812	MG/L	Mean	(5)

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Table H.3.1.CT
Medium-Specific Exposure Point Concentration Summary for HCX - Central Tendency

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Point	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (distribution)	Maximum Detected Concentration (qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (1)	Rationale
Sediment									
Assapumpset	HCX	MG/KG	0.0000172	NC	0.00001722 J	0.0000172	MG/KG	Mean	(5)
Assapumpset	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.00000000344	NC	0.000000003444 J	0.00000000344	MG/KG	Mean	(5)
Greystone Mill	HCX	MG/KG	0.0000325	NC	0.00015429 J	0.0000325	MG/KG	Mean	(5)
Greystone Mill	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.00000000650	NC	0.000000030858 J	0.00000000650	MG/KG	Mean	(5)
Allendale	HCX	MG/KG	0.0271	6.94 T	0.36476 J	0.0271	MG/KG	Mean	(5)
Allendale	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.00000541	0.00139 T	0.000072952 J	0.00000541	MG/KG	Mean	(5)
Lyman Mill	HCX	MG/KG	0.0135	0.0135 NP	0.1665 J	0.0135	MG/KG	95% UCL-NP	(4)
Lyman Mill	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.00000269	0.00000269 NP	0.00003330 J	0.00000269	MG/KG	95% UCL-NP	(4)
Manton	HCX	MG/KG	0.000117	NC	0.000263 J	0.000117	MG/KG	Mean	(5)
Manton	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.0000000235	NC	0.0000000526 J	0.0000000235	MG/KG	Mean	(5)
Dyerville	HCX	MG/KG	0.000173	NC	0.000448	0.000173	MG/KG	Mean	(5)
Dyerville	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.0000000347	NC	0.0000000896	0.0000000347	MG/KG	Mean	(5)
Bank Soil									
Greystone Mill	HCX	MG/KG	0.000193	NC	0.00041706 J	0.000193	MG/KG	Mean	(5)
Greystone Mill	Toxicity Equivalency (HCX) - Mammals	MG/KG	0.0000000387	NC	0.000000083412 J	0.0000000387	MG/KG	Mean	(5)

(1) Chemicals of potential concern are identified in Table H.2.1 and Table H.2.2 for site exposure areas and reference/background areas respectively.

(2) 95% UCL-N: 95% Upper Concentration Limit on the mean, normal distribution

(3) 95% UCL-T: 95% Upper Concentration Limit on the mean, lognormal distribution

(4) 95% UCL-NP: 95% Upper Concentration Limit on the mean, nonparametric distribution. Arithmetic mean used to approximate the 95% UCL for nonparametric data.

(5) Mean: Arithmetic Mean, applied if fewer than 10 samples (95% UCL not calculated), or if the 95% UCL is greater than the maximum concentration.

(6) Max: Maximum, applied in the special case where the arithmetic mean has been selected, but because of elevated detection limits in non-detects, it is greater than the maximum detected concentration.

(7) Mean: Combined Fish Diet EPCs were calculated by averaging the EPC values for each chemical across all sampled species.

T - The Shapiro-Wilk W Test indicates that the data are log-normally distributed.

NP - The Shapiro-Wilk W Test indicates that the data are neither normally nor log-normally distributed. The data are therefore assumed to be non-parametrically distributed.

N - The Shapiro-Wilk W Test indicates that the data are normally distributed.

HCX - Hexachloroxanthene as medium specific concentration (not adjusted with a toxic equivalency factor).

Toxicity Equivalency (HCX) - Hexachloroxanthene as medium specific concentration adjusted with a toxic equivalency factor of 0.0002.

Qualifier Definitions:

J = Value is estimated.

MG/KG = milligrams per kilogram

MG/L = milligrams per liter

NC = Not Calculated

EPC = Exposure Point Concentration

UCL = Upper Confidence Limit on the arithmetic mean

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE H.7.1.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - COMBINED FISH DIET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	LYMAN MILL POND	INGESTION	Toxicity Equivalency (HCX) - Mamm	0.00000269	mg/kg	7.0E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-08	4.1E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-08					--
			DERMAL	Toxicity Equivalency (HCX) - Mamm	0.00000269	mg/kg	7.2E-15	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-09	4.2E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-09					--
		EXPOSURE POINT TOTAL									1.E-08					0.E+00
	EXPOSURE MEDIUM TOTAL										1.E-08					0.E+00
SEDIMENT TOTAL											1.E-08					0.E+00
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	INGESTION	Toxicity Equivalency (HCX) - Mamm	1.62E-11	mg/l	2.8E-16	mg/kg/day	1.5E+05	mg/kg/day	4.E-11	1.6E-15	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-11					--
			DERMAL	Toxicity Equivalency (HCX) - Mamm	1.62E-11	mg/l	3.3E-13	mg/kg/day	1.5E+05	mg/kg/day	5.E-08	1.9E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-08					--
		EXPOSURE POINT TOTAL									5.E-08					0.E+00
	EXPOSURE MEDIUM TOTAL										5.E-08					0.E+00
SURFACE WATER TOTAL											5.E-08					0.E+00
BIOTA	COMBINED FISH DIET	LYMAN MILL POND	INGESTION	Toxicity Equivalency (HCX) - Mamm	9.45E-09	mg/kg	3.1E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-08	1.8E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-08					--
		EXPOSURE POINT TOTAL									5.E-08					0.0E+00
	EXPOSURE MEDIUM TOTAL										5.E-08					0.0E+00
COMBINED FISH DIET TOTAL											5.E-08					0.0E+00
TOTAL RECEPTOR RISK ACROSS ALL MEDIA											1.E-07	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				0.0E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated, dose-response data and/or dermal absorption values are not available.
Toxicity Equivalency (HCX) - Hexachloroxanthene as medium specific concentration adjusted with a toxic equivalency factor of 0.0002.

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE H.7.2.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS – REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - COMBINED FISH DIET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	LYMAN MILL POND	INGESTION	Toxicity Equivalency (HCX) - Mamma	0.00000269	mg/kg	1.1E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-08	6.4E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-08					--
			DERMAL	Toxicity Equivalency (HCX) - Mamma	0.00000269	mg/kg	2.3E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-09	1.4E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-09					--
		EXPOSURE POINT TOTAL									2.E-08					0.E+00
	EXPOSURE MEDIUM TOTAL										2.E-08					0.E+00
SEDIMENT TOTAL											2.E-08					0.E+00
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	INGESTION	Toxicity Equivalency (HCX) - Mamma	1.62E-11	mg/l	4.4E-16	mg/kg/day	1.5E+05	mg/kg/day	7.E-11	2.6E-15	mg/kg/day			
			EXPOSURE ROUTE TOTAL								7.E-11					--
			DERMAL	Toxicity Equivalency (HCX) - Mamma	1.62E-11	mg/l	4.0E-13	mg/kg/day	1.5E+05	mg/kg/day	6.E-08	2.3E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-08					--
		EXPOSURE POINT TOTAL									6.E-08					0.E+00
	EXPOSURE MEDIUM TOTAL										6.E-08					0.E+00
SURFACE WATER TOTAL											6.E-08					0.E+00
BIOTA	COMBINED FISH DIET	LYMAN MILL POND	INGESTION	Toxicity Equivalency (HCX) - Mamma	9.45E-09	mg/kg	3.2E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-08	1.9E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-08					--
		EXPOSURE POINT TOTAL									5.E-08					0.0.E+00
	EXPOSURE MEDIUM TOTAL										5.E-08					0.0.E+00
COMBINED FISH DIET TOTAL											5.E-08					0.0.E+00
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	1.E-07	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				0.0.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.
Toxicity Equivalency (HCX) - Hexachloroxanthene as medium specific concentration adjusted with a toxic equivalency factor of 0.0002.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE H.7.3.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - COMBINED FISH DIET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	LYMAN MILL POND	INGESTION	Toxicity Equivalency (HCX) - Mammal	0.00000269	mg/kg	4.4E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-08	5.1E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								7.E-08					--
			DERMAL	Toxicity Equivalency (HCX) - Mammal	0.00000269	mg/kg	3.7E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-09	4.3E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-09					--
		EXPOSURE POINT TOTAL									7.E-08					0.E+00
	EXPOSURE MEDIUM TOTAL										7.E-08					0.E+00
SEDIMENT TOTAL											7.E-08					0.E+00
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	INGESTION	Toxicity Equivalency (HCX) - Mammal	1.62E-11	mg/l	6.6E-16	mg/kg/day	1.5E+05	mg/kg/day	1.E-10	7.7E-15	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-10					--
			DERMAL	Toxicity Equivalency (HCX) - Mammal	1.62E-11	mg/l	1.1E-13	mg/kg/day	1.5E+05	mg/kg/day	2.E-08	1.3E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-08					--
		EXPOSURE POINT TOTAL									2.E-08					0.E+00
	EXPOSURE MEDIUM TOTAL										2.E-08					0.E+00
SURFACE WATER TOTAL											2.E-08					0.E+00
BIOTA	COMBINED FISH DIET	LYMAN MILL POND	INGESTION	Toxicity Equivalency (HCX) - Mammal	9.45E-09	mg/kg	2.4E-13	mg/kg/day	1.5E+05	(mg/kg/day)-1	4.E-08	2.8E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-08					--
		EXPOSURE POINT TOTAL									4.E-08					0.0.E+00
	EXPOSURE MEDIUM TOTAL										4.E-08					0.0.E+00
COMBINED FISH DIET TOTAL											4.E-08					0.0.E+00
TOTAL RECEPTOR RISK ACROSS ALL MEDIA											1.E-07	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				0.0.E+00

NOTES.
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.
Toxicity Equivalency (HCX) - Hexachloroxanthene as medium specific concentration adjusted with a toxic equivalency factor of 0.0002.

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE II.7.1.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - COMBINED FISH DIET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RFD/RFC (1) VALUE	RFD/RFC (1) UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	LYMAN MILL POND	INGESTION	Toxicity Equivalency (HCX) - Manuru	0.00000269	mg/kg	3.9E-15	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-10	6.8E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								*6.E-10*					--
			DERMAL	Toxicity Equivalency (HCX) - Manuru	0.00000269	mg/kg	1.1E-16	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-11	2.0E-15	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-11					--
		EXPOSURE POINT TOTAL									6.E-10					0.E+00
	EXPOSURE MEDIUM TOTAL										6.E-10					0.E+00
SEDIMENT TOTAL											6.E-10					0.E+00
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	INGESTION	Toxicity Equivalency (HCX) - Manuru	8.12E-12	mg/l	1.2E-17	mg/kg/day	1.5E+05	mg/kg/day	2.E-12	2.1E-16	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-12					--
			DERMAL	Toxicity Equivalency (HCX) - Manuru	8.12E-12	mg/l	2.7E-14	mg/kg/day	1.5E+05	mg/kg/day	4.E-09	4.8E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-09					--
		EXPOSURE POINT TOTAL									4.E-09					0.E+00
	EXPOSURE MEDIUM TOTAL										4.E-09					0.E+00
SURFACE WATER TOTAL											4.E-09					0.E+00
BIOTA	COMBINED FISH DIET	LYMAN MILL POND	INGESTION	Toxicity Equivalency (HCX) - Manuru	9.45E-09	mg/kg	6.6E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	1.E-08	1.2E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-08					--
		EXPOSURE POINT TOTAL									1.E-08					0.0E+00
	EXPOSURE MEDIUM TOTAL										1.E-08					0.0E+00
COMBINED FISH DIET TOTAL											1.E-08					0.0E+00
TOTAL RECEPTOR RISK ACROSS ALL MEDIA											1.E-08	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				0.0E+00

NOTES:
(1) - Blank cells indicate that an RfD or R/C is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.
Toxicity Equivalency (HCX) - Hexachloroxanthene as medium specific concentration adjusted with a toxic equivalency factor of 0.0002.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE H.7.2.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - COMBINED FISH DIET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	LYMAN MILL POND	INGESTION	Toxicity Equivalency (HCX) - Manual	0.00000269	mg/kg	4.6E-15	mg/kg/day	1.5E+05	(mg/kg/day)-1	7.E-10	1.1E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								7.E-10					--
			DERMAL	Toxicity Equivalency (HCX) - Manual	0.00000269	mg/kg	3.9E-16	mg/kg/day	1.5E+05	(mg/kg/day)-1	6.E-11	9.1E-15	mg/kg/day			
			EXPOSURE ROUTE TOTAL								6.E-11					--
		EXPOSURE POINT TOTAL									7.E-10					0.E+00
	EXPOSURE MEDIUM TOTAL										7.E-10					0.E+00
SEDIMENT TOTAL											7.E-10					0.E+00
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	INGESTION	Toxicity Equivalency (HCX) - Manual	8.12E-12	mg/l	1.4E-17	mg/kg/day	1.5E+05	mg/kg/day	2.E-12	3.2E-16	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-12					--
			DERMAL	Toxicity Equivalency (HCX) - Manual	8.12E-12	mg/l	2.5E-14	mg/kg/day	1.5E+05	mg/kg/day	4.E-09	5.8E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-09					--
		EXPOSURE POINT TOTAL									4.E-09					0.E+00
	EXPOSURE MEDIUM TOTAL										4.E-09					0.E+00
SURFACE WATER TOTAL											4.E-09					0.E+00
BIOTA	COMBINED FISH DIET	LYMAN MILL POND	INGESTION	Toxicity Equivalency (HCX) - Manual	9.45E-09	mg/kg	5.1E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-09	1.2E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								8.E-09					--
		EXPOSURE POINT TOTAL									8.E-09					0.0.E+00
	EXPOSURE MEDIUM TOTAL										8.E-09					0.0.E+00
COMBINED FISH DIET TOTAL											8.E-09					0.0.E+00
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	1.E-08	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				0.0.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not available from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.
Toxicity Equivalency (HCX) - Hexachloroxanthene as medium specific concentration adjusted with a toxic equivalency factor of 0.0002.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE H.7.3.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - COMBINED FISH DIET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC VALUE	EPC UNITS	CANCER RISK CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	CSF/UNIT RISK VALUE	CSF/UNIT RISK UNITS	CANCER RISK	NON-CANCER HAZARD CALCULATIONS: INTAKE/EXPOSURE CONCENTRATION VALUE	INTAKE/EXPOSURE CONCENTRATION UNITS	RfD/RfC (1) VALUE	RfD/RfC (1) UNITS	HAZARD QUOTIENT
SEDIMENT	SEDIMENT	LYMAN MILL POND	INGESTION	Toxicity Equivalency (HCX) - Mamma	0.00000269	mg/kg	3.6E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	5.E-09	1.3E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								5.E-09					--
			DERMAL	Toxicity Equivalency (HCX) - Mamma	0.00000269	mg/kg	1.2E-15	mg/kg/day	1.5E+05	(mg/kg/day)-1	2.E-10	4.3E-14	mg/kg/day			
			EXPOSURE ROUTE TOTAL								2.E-10					--
		EXPOSURE POINT TOTAL									6.E-09					0.E+00
	EXPOSURE MEDIUM TOTAL										6.E-09					0.E+00
SEDIMENT TOTAL											6.E-09					0.E+00
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	INGESTION	Toxicity Equivalency (HCX) - Mamma	8.12E-12	mg/l	2.8E-17	mg/kg/day	1.5E+05	mg/kg/day	4.E-12	9.6E-16	mg/kg/day			
			EXPOSURE ROUTE TOTAL								4.E-12					--
			DERMAL	Toxicity Equivalency (HCX) - Mamma	8.12E-12	mg/l	9.5E-15	mg/kg/day	1.5E+05	mg/kg/day	1.E-09	3.3E-13	mg/kg/day			
			EXPOSURE ROUTE TOTAL								1.E-09					--
		EXPOSURE POINT TOTAL									1.E-09					0.E+00
	EXPOSURE MEDIUM TOTAL										1.E-09					0.E+00
SURFACE WATER TOTAL											1.E-09					0.E+00
BIOTA	COMBINED FISH DIET	LYMAN MILL POND	INGESTION	Toxicity Equivalency (HCX) - Mamma	9.45E-09	mg/kg	5.2E-14	mg/kg/day	1.5E+05	(mg/kg/day)-1	8.E-09	1.8E-12	mg/kg/day			
			EXPOSURE ROUTE TOTAL								8.E-09					--
		EXPOSURE POINT TOTAL									8.E-09					0.0.E+00
	EXPOSURE MEDIUM TOTAL										8.E-09					0.0.E+00
COMBINED FISH DIET TOTAL											8.E-09					0.0.E+00
TOTAL RECEPTOR RISK ACROSS ALL MEDIA											1.E-08	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				0.0.E+00

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not availaible from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.
Toxicity Equivalency (HCX) - Hexachloroxanthene as medium specific concentration adjusted with a toxic equivalency factor of 0.0002.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE H.9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - ADULT - COMBINED FISH DIET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	LYMAN MILL POND	Toxicity Equivalency (HCX) - Mammals	1.1E-08	NA	1.1E-09	NA	1.2E-08		--	NA	--	
			CHEMICAL TOTAL	1.1E-08	--	1.1E-09	--	1E-08		--	0.0E+00	--	0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-08					0E+00
	EXPOSURE MEDIUM TOTAL							1E-08					0E+00
SEDIMENT TOTAL								1E-08					0E+00
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	Toxicity Equivalency (HCX) - Mammals	4.2E-11	NA	4.9E-08	NA	4.9E-08		--	NA	--	
			CHEMICAL TOTAL	4.2E-11	--	4.9E-08	--	5E-08		--	0.0E+00	--	0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-08					0E+00
	EXPOSURE MEDIUM TOTAL							5E-08					0E+00
SURFACE WATER TOTAL								5E-08					0E+00
BIOTA	COMBINED FISH DIET	LYMAN MILL POND	Toxicity Equivalency (HCX) - Mammals	4.7E-08	NA	NA	NA	4.7E-08		--	NA	NA	
			CHEMICAL TOTAL	4.7E-08	--	--	--	5E-08		--	0.0E+00	--	0.0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-08					0.0E+00
	EXPOSURE MEDIUM TOTAL							5E-08					0.0E+00
COMBINED FISH DIET TOTAL								5E-08					0.0E+00
RECEPTOR TOTAL								1E-07					--
			TOTAL RISK ACROSS ALL MEDIA					1E-07	TOTAL HAZARD ACROSS ALL MEDIA				--

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.
Toxicity Equivalency (HCX) - Hexachloroxanthene as medium specific concentration adjusted with a toxic equivalency factor of 0.0002.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE H.9.2.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - OLDER CHILD - COMBINED FISH DIET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	LYMAN MILL POND	Toxicity Equivalency (HCX) - Mammals	1.6E-08	NA	3.5E-09	NA	2.0E-08		--	NA	--	
			CHEMICAL TOTAL	1.6E-08	--	3.5E-09	--	2E-08		--	0.0E+00	--	0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-08					0E+00
	EXPOSURE MEDIUM TOTAL							2E-08					0E+00
SEDIMENT TOTAL								2E-08					0E+00
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	Toxicity Equivalency (HCX) - Mammals	6.6E-11	NA	6.0E-08	NA	6.0E-08		--	NA	--	
			CHEMICAL TOTAL	6.6E-11	--	6.0E-08	--	6E-08		--	0.0E+00	--	0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-08					0E+00
	EXPOSURE MEDIUM TOTAL							6E-08					0E+00
SURFACE WATER TOTAL								6E-08					0E+00
BIOTA	COMBINED FISH DIET	LYMAN MILL POND	Toxicity Equivalency (HCX) - Mammals	4.8E-08	NA	NA	NA	4.8E-08		--	NA	NA	
			CHEMICAL TOTAL	4.8E-08	--	--	--	5E-08		--	0.0E+00	--	0.0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						5E-08					0.0E+00
	EXPOSURE MEDIUM TOTAL							5E-08					0.0E+00
COMBINED FISH DIET TOTAL								5E-08					0.0E+00
RECEPTOR TOTAL								1E-07					--
			TOTAL RISK ACROSS ALL MEDIA					1E-07	TOTAL HAZARD ACROSS ALL MEDIA				--

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.
Toxicity Equivalency (HCX) - Hexachloroxanthene as medium specific concentration adjusted with a toxic equivalency factor of 0.0002.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE H.9.3.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - RESIDENT - CHILD - COMBINED FISH DIET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	LYMAN MILL POND	Toxicity Equivalency (HCX) - Mammals	6.6E-08	NA	5.5E-09	NA	7.1E-08		--	NA	--	
			CHEMICAL TOTAL	6.6E-08	--	5.5E-09	--	7E-08		--	0.0E+00	--	0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-08					0E+00
	EXPOSURE MEDIUM TOTAL							7E-08					0E+00
SEDIMENT TOTAL								7E-08					0E+00
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	Toxicity Equivalency (HCX) - Mammals	9.9E-11	NA	1.7E-08	NA	1.7E-08		--	NA	--	
			CHEMICAL TOTAL	9.9E-11	--	1.7E-08	--	2E-08		--	0.0E+00	--	0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						2E-08					0E+00
	EXPOSURE MEDIUM TOTAL							2E-08					0E+00
SURFACE WATER TOTAL								2E-08					0E+00
BIOTA	COMBINED FISH DIET	LYMAN MILL POND	Toxicity Equivalency (HCX) - Mammals	3.7E-08	NA	NA	NA	3.7E-08		--	NA	NA	
			CHEMICAL TOTAL	3.7E-08	--	--	--	4E-08		--	0.0E+00	--	0.0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-08					0.0E+00
	EXPOSURE MEDIUM TOTAL							4E-08					0.0E+00
COMBINED FISH DIET TOTAL								4E-08					0.0E+00
RECEPTOR TOTAL								1E-07					--
			TOTAL RISK ACROSS ALL MEDIA					1E-07	TOTAL HAZARD ACROSS ALL MEDIA				--

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.
Toxicity Equivalency (HCX) - Hexachloroxanthene as medium specific concentration adjusted with a toxic equivalency factor of 0.0002.

Prepared by: KJA
Checked by: MJM

US EPA ARCHIVE DOCUMENT

TABLE H.9.1.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - ADULT - COMBINED FISH DIET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	LYMAN MILL POND	Toxicity Equivalency (HCX) - Mammals	5.9E-10	NA	1.7E-11	NA	6.0E-10		--	NA	--	
			CHEMICAL TOTAL	5.9E-10	--	1.7E-11	--	6E-10		--	0.0E+00	--	0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-10					0E+00
	EXPOSURE MEDIUM TOTAL							6E-10					0E+00
SEDIMENT TOTAL								6E-10					0E+00
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	Toxicity Equivalency (HCX) - Mammals	1.8E-12	NA	4.1E-09	NA	4.1E-09		--	NA	--	
			CHEMICAL TOTAL	1.8E-12	--	4.1E-09	--	4E-09		--	0.0E+00	--	0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-09					0E+00
	EXPOSURE MEDIUM TOTAL							4E-09					0E+00
SURFACE WATER TOTAL								4E-09					0E+00
BIOTA	COMBINED FISH DIET	LYMAN MILL POND	Toxicity Equivalency (HCX) - Mammals	9.9E-09	NA	NA	NA	9.9E-09		--	NA	NA	
			CHEMICAL TOTAL	9.9E-09	--	--	--	1E-08		--	0.0E+00	--	0.0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-08					0.0E+00
	EXPOSURE MEDIUM TOTAL							1E-08					0.0E+00
COMBINED FISH DIET TOTAL								1E-08					0.0E+00
RECEPTOR TOTAL								1E-08					--
			TOTAL RISK ACROSS ALL MEDIA					1E-08	TOTAL HAZARD ACROSS ALL MEDIA				--

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NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.
Toxicity Equivalency (HCX) - Hexachloroxanthene as medium specific concentration adjusted with a toxic equivalency factor of 0.0002.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE H.9.2.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - OLDER CHILD - COMBINED FISH DIET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: OLDER CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	LYMAN MILL POND	Toxicity Equivalency (HCX) - Mammals	6.8E-10	NA	5.9E-11	NA	7.4E-10		--	NA	--	
			CHEMICAL TOTAL	6.8E-10	--	5.9E-11	--	7E-10		--	0.0E+00	--	0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-10					0E+00
	EXPOSURE MEDIUM TOTAL							7E-10					0E+00
SEDIMENT TOTAL								7E-10					0E+00
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	Toxicity Equivalency (HCX) - Mammals	2.1E-12	NA	3.8E-09	NA	3.8E-09		--	NA	--	
			CHEMICAL TOTAL	2.1E-12	--	3.8E-09	--	4E-09		--	0.0E+00	--	0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-09					0E+00
	EXPOSURE MEDIUM TOTAL							4E-09					0E+00
SURFACE WATER TOTAL								4E-09					0E+00
BIOTA	COMBINED FISH DIET	LYMAN MILL POND	Toxicity Equivalency (HCX) - Mammals	7.6E-09	NA	NA	NA	7.6E-09		--	NA	NA	
			CHEMICAL TOTAL	7.6E-09	--	--	--	8E-09		--	0.0E+00	--	0.0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						8E-09					0.0E+00
	EXPOSURE MEDIUM TOTAL							8E-09					0.0E+00
COMBINED FISH DIET TOTAL								8E-09					0.0E+00
RECEPTOR TOTAL								1E-08					--
			TOTAL RISK ACROSS ALL MEDIA					1E-08	TOTAL HAZARD ACROSS ALL MEDIA				--

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable, exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.
Toxicity Equivalency (HCX) - Hexachloroxanthene as medium specific concentration adjusted with a toxic equivalency factor of 0.0002.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

TABLE H.9.3.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CENTRAL TENDENCY - CURRENT/FUTURE - RESIDENT - CHILD - COMBINED FISH DIET - LYMAN MILL
BASELINE HUMAN HEALTH RISK ASSESSMENT - INTERIM FINAL
CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK					NON-CARCINOGENIC HAZARD QUOTIENT				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SEDIMENT	SEDIMENT	LYMAN MILL POND	Toxicity Equivalency (HCX) - Mammals	5.5E-09	NA	1.8E-10	NA	5.7E-09		--	NA	--	
			CHEMICAL TOTAL	5.5E-09	--	1.8E-10	--	6E-09		--	0.0E+00	--	0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						6E-09					0E+00
	EXPOSURE MEDIUM TOTAL							6E-09					0E+00
SEDIMENT TOTAL								6E-09					0E+00
SURFACE WATER	SURFACE WATER	LYMAN MILL POND	Toxicity Equivalency (HCX) - Mammals	4.1E-12	NA	1.4E-09	NA	1.4E-09		--	NA	--	
			CHEMICAL TOTAL	4.1E-12	--	1.4E-09	--	1E-09		--	0.0E+00	--	0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-09					0E+00
	EXPOSURE MEDIUM TOTAL							1E-09					0E+00
SURFACE WATER TOTAL								1E-09					0E+00
BIOTA	COMBINED FISH DIET	LYMAN MILL POND	Toxicity Equivalency (HCX) - Mammals	7.8E-09	NA	NA	NA	7.8E-09		--	NA	NA	
			CHEMICAL TOTAL	7.8E-09	--	--	--	8E-09		--	0.0E+00	--	0.0E+00
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						8E-09					0.0E+00
	EXPOSURE MEDIUM TOTAL							8E-09					0.0E+00
COMBINED FISH DIET TOTAL								8E-09					0.0E+00
RECEPTOR TOTAL								1E-08					--
			TOTAL RISK ACROSS ALL MEDIA					1E-08	TOTAL HAZARD ACROSS ALL MEDIA				--

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.
Toxicity Equivalency (HCX) - Hexachloroxanthene as medium specific concentration adjusted with a toxic equivalency factor of 0.0002.

Prepared by: RAR
Checked by: KJA

US EPA ARCHIVE DOCUMENT

Table H.11.RME
Risk Assessment Summary for Toxicity Equivalency (HCX)

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk TEF = 0.0002	Excess Lifetime Cancer Risk TEF = 1	Hazard Index
Current/Future - Lyman Mill Pond						
Resident Living Along the River	Child (ages 1 through 6)					
		Sediment	Incidental ingestion	7E-08	3E-04	NA
			Dermal contact	6E-09	3E-05	NA
		Surface water	Incidental ingestion	1E-10	5E-07	NA
			Dermal contact	2E-08	8E-05	NA
		Combined Fish Diet	Ingestion	4E-08	2E-04	NA
			Total Risk:	**1E-07**	**6E-04**	**NA**
Resident Living Along the River	Older Child (ages 7 through 18)					
		Sediment	Incidental ingestion	2E-08	8E-05	NA
			Dermal contact	4E-09	2E-05	NA
		Surface water	Incidental ingestion	7E-11	3E-07	NA
			Dermal contact	6E-08	3E-04	NA
		Combined Fish Diet	Ingestion	5E-08	2E-04	NA
			Total Risk:	**1E-07**	**6E-04**	**NA**
Resident Living Along the River	Adult (ages 19 and above)					
		Sediment	Incidental ingestion	1E-08	5E-05	NA
			Dermal contact	1E-09	5E-06	NA
		Surface water	Incidental ingestion	4E-11	2E-07	NA
			Dermal contact	5E-08	2E-04	NA
		Combined Fish Diet	Ingestion	5E-08	2E-04	NA
			Total Risk:	**1E-07**	**5E-04**	**NA**
			Total Receptor Risk:	**4E-07**	**2E-03**	**NC**

NA = Not applicable.
HCX = Hexachloroxanthene

US EPA ARCHIVE DOCUMENT

Table H.11.CT
Risk Assessment Summary for Toxicity Equivalency (HCX)

Baseline Human Health Risk Assessment - Interim Final
Centredale Manor Restoration Project Superfund Site
North Providence, Rhode Island

Exposure Scenario	Receptor	Exposure Point	Exposure Route	Excess Lifetime Cancer Risk TEF = 0.0002	Excess Lifetime Cancer Risk TEF = 1	Hazard Index
Current/Future - Lyman Mill Pond						
Resident Living Along the River	Child (ages 1 through 6)					
		Sediment	Incidental ingestion	5E-09	3E-05	NA
			Dermal contact	2E-10	9E-07	NA
		Surface water	Incidental ingestion	4E-12	2E-08	NA
			Dermal contact	1E-09	7E-06	NA
		Combined Fish Diet	Ingestion	8E-09	4E-05	NA
			Total Risk:	**1E-08**	**7E-05**	**NA**
Resident Living Along the River	Older Child (ages 7 through 18)					
		Sediment	Incidental ingestion	7E-10	3E-06	NA
			Dermal contact	6E-11	3E-07	NA
		Surface water	Incidental ingestion	2E-12	1E-08	NA
			Dermal contact	4E-09	2E-05	NA
		Combined Fish Diet	Ingestion	8E-09	4E-05	NA
			Total Risk:	**1E-08**	**6E-05**	**NA**
Resident Living Along the River	Adult (ages 19 and above)					
		Sediment	Incidental ingestion	6E-10	3E-06	NA
			Dermal contact	2E-11	9E-08	NA
		Surface water	Incidental ingestion	2E-12	9E-09	NA
			Dermal contact	4E-09	2E-05	NA
		Combined Fish Diet	Ingestion	1E-08	5E-05	NA
			Total Risk:	**1E-08**	**7E-05**	**NA**
			Total Receptor Risk:	**4E-08**	**2E-04**	**NC**

NA = Not applicable.
HCX = Hexachloroxanthene