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December 28, 2011

SUPERFUND DIVISION

Ms. Diana Engeman
Remedial Project Manager
Superfund Division
U.S. Environmental Protection Agency, Region VII
901 North 5th Street
Kansas City, KS 66101

MWH #1011180.0102

RE: Peoples Natural Gas Site
Dubuque, Iowa

Dear Ms. Engeman:

Enclosed for your use and files are copies of the laboratory analytical reports for groundwater samples collected during November-December 2011 aquifer testing at the former Peoples Natural Gas site in Dubuque, Iowa.

If you have any questions regarding the data, please contact Kevin Dodson of MidAmerican Energy Company at 515-281-2692 or me.

Sincerely,

Kevin G. Armstrong, C.P.G.
Project Manager

/kga:vas

Enclosures

cc: Kevin Dodson, MidAmerican Energy Company (w/o enclosures)

P:\Word Processing\MIDAMERICAN ENERGY\DUBUQUE-PNG SITE\DATA TO EPA\2011\Ltr-12-11-Engeman-PNG-Nov-Dec 2011 Data to EPA.doc

11153 Aurora Avenue
Des Moines, IA 50322-7904

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40359760

Superfund

078P

SE-3 GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA

				Sample Location:	SE-3	SE-3	SE-3	SE-3	SE-3	SE-3
				Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
				Sample Date:	10/19/2011	11/28/11 18:00	11/29/11 12:45	11/29/11 12:50	12/1/11 12:55	12/2/11 12:55
				Remediation						
Analyte	Units	Average	Maximum	Goal						
Benzene	µg/L	2,000	5,000	5	311	329	354	443	528	534
Toluene	µg/L	600	1,500	2,000	4.21	<10.0	12.3	22.1	30.6	28.4
Ethylbenzene	µg/L	200	500	700	273	260	256	320	333	326
Xylenes	µg/L	600	1,500	10,000	247	41.5	73.1	117	144	142
2-Methylnaphthalene	µg/L	2,000	5,000	--	na	10.1	14.4	46.8	56.2	57.8
Acenaphthene	µg/L	400	1,000	--	79.5	73.4	61.0	72.5	76.4	70.1
Acenaphthylene	µg/L	400	1,000	--	<0.870	<0.870	<0.870	<0.870	<8.70	<8.70
Anthracene	µg/L	2,000	5,000	--	0.831	0.805	0.814	0.984	1.03	1.3
Benzo(a)anthracene	µg/L	19	47	0.1	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200
Benzo(a)pyrene	µg/L	20	48	0.2	<0.00800	<0.00800	<0.00800	<0.00800	<0.00800	<0.00800
Benzo(b)fluoranthene	µg/L	19	47	0.2	<0.0280	<0.0280	<0.0280	<0.0280	<0.0280	<0.0280
Benzo(g,h,i)perylene	µg/L	400	1,000	--	<0.00800	<0.00800	<0.00800	<0.00800	<0.00800	<0.00800
Benzo(k)fluoranthene	µg/L	19	47	0.2	<0.00700	<0.00700	<0.00700	<0.00700	<0.00700	<0.00700
Chrysene	µg/L	19	47	0.2	<0.00800	<0.00800	<0.00800	<0.00800	<0.00800	<0.00800
Dibenzo(a,h)anthracene	µg/L	45	65	0.2	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Fluoranthene	µg/L	400	1,000	--	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Fluorene	µg/L	200	500	--	35.9	32.9	27.5	32.5	36.6	36
Indeno(1,2,3cd)pyrene	µg/L	45	65	0.4	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
Naphthalene	µg/L	2,000	5,000	100	21.3	71.6	183	359	464	454
Phenanthrene	µg/L	400	1,000	--	9.14	9.28	8.06	9.72	10.1	9.31
Pyrene	µg/L	400	1,000	--	0.224	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170
Dibenzofuran	µg/L	400	1,000	--	na	na	na	na	na	<50.0
Total PAHs	µg/L	6,000	15,000	--	147	198	295	522	644	629
2,4-Dinitrotoluene	µg/L	400	1,000	--	na	na	na	na	na	<50.0
2,6-Dinitrotoluene	µg/L	400	1,000	--	na	na	na	na	na	<50.0
Nitrobenzene	µg/L	2,000	5,000	--	na	na	na	na	na	<50.0

SE-3 GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA

				Sample Location:	SE-3	SE-3	SE-3	SE-3	SE-3	SE-3	
				Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	
				Sample Date:	10/19/2011	11/28/11 18:00	11/29/11 12:45	11/29/11 12:50	12/1/11 12:55	12/2/11 12:55	
				Remediation							
Analyte	Units	Average	Maximum	Goal							
2,4-Dimethylphenol	µg/L	2,000	5,000	--	na	na	na	na	na	<50.0	RL1
2,4-Dinitrophenol	µg/L	400	1,000	--	na	na	na	na	na	<100	RL1
4,6-Dinitro-2-methylphenol	µg/L	400	1,000	--	na	na	na	na	na	<50.0	RL1
2-Nitrophenol	µg/L	400	1,000	--	na	na	na	na	na	<50.0	RL1
4-Nitrophenol	µg/L	400	1,000	--	na	na	na	na	na	<50.0	RL1
Phenol	µg/L	2,000	5,000	--	na	na	na	na	na	<50.0	RL1
Total Phenolic Compounds	µg/L	4,000	10,000	--	na	na	na	na	na	ND	
Chromium, Total	mg/L	--	--	--	na	na	na	na	na	<0.0200	
Copper, Total	mg/L	--	--	--	na	na	na	na	na	<0.0200	
Iron, Total	mg/L	--	--	--	na	na	na	na	na	68.8	
Lead, Total	mg/L	400	1,000	--	na	na	na	na	na	<0.100	
Manganese, Total	mg/L	--	--	--	na	na	na	na	na	4.21	
Nickel, Total	mg/L	--	--	--	na	na	na	na	na	<0.0500	
Zinc, Total	mg/L	1,000	2,500	--	na	na	na	na	na	<0.100	IE
Cyanide, Total	mg/L	500	1,250	--	na	na	na	na	na	0.848	pH<12
TPH as Gasoline	mg/L	--	--	--	na	na	na	na	na	5.45	
Hardness, Total	mg/L	--	--	--	na	na	na	na	na	1920	pH>2
Cyanide (amenable)	mg/L	500	1,250	--	na	na	na	na	na	0.039	pH<12
pH	s.u.	--	--	--	6.49	6.31	6.50	6.37	6.09	6.80	

Notes:

-- = Remediation Goal or Permit Limit not established.

BOC = Below top of casing.

na = Not analyzed.

ND = Not Detected.

s.u. = Standard Units.

RL1 = Reporting limit raised due to sample matrix effects.

IE = Elevated reporting limit due to interelement interference.

pH<12 = Sample received at pH<12. It was adjusted correctly prior to analysis.

pH>2 = Sample received at pH>2. It was adjusted correctly prior to analysis.

µg/l = Microgram(s) per liter.

mg/L = Milligram(s) per liter.

October 27, 2011

Client:

MWH - DES MOINES
11153 Aurora Avenue
Des Moines, IA 50322

Work Order: CUJ1301
Project Name: MEC - Dubuque FMGP
Project Number: 101180

Attn: Kevin Armstrong

Date Received: 10/20/11

The Chain(s) of Custody, 2 pages, are included and are an integral part of this report.

If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-(800)750-2401

SAMPLE IDENTIFICATION	LAB NUMBER	COLLECTION DATE AND TIME
SE3-GW-1011	CUJ1301-01	10/19/11 11:45
Trip Blank	CUJ1301-02	10/19/11

Samples were received into laboratory at a temperature of 3.10 °C.

NELAC states that samples which require thermal preservation shall be considered acceptable if the arrival temperature is within 2 degrees C of the required temperature or the method specified range. For samples with a temperature requirement of 4 degrees C, an arrival temperature from 0 degrees C to 6 degrees C meets specifications. Samples that are delivered to the laboratory on the same day that they are collected may not meet these criteria. In these cases, the samples are considered acceptable if there is evidence that the chilling process has begun, such as arrival on ice.

Please refer to the Temperature and Sample Receipt form that is included with this report for additional information regarding the condition of samples at the time of receipt by the laboratory.

The reported results were obtained in compliance with the 2003 NELAC standards unless otherwise noted.

Reproduction of this analytical report is permitted only in its entirety. This report shall not be reproduced except in full without the written approval of the laboratory.

TestAmerica Laboratories, Inc. certifies that the analytical results contained herein apply only to the specific sample analyzed.

Approved By:



TestAmerica Cedar Falls

Angela Muehling
Project Coordinator

MWH - DES MOINES
11153 Aurora Avenue
Des Moines, IA 50322
Kevin Armstrong

Work Order: CUJ1301
Project: MEC - Dubuque FMGP
Project Number: 101180

Received: 10/20/11
Reported: 10/27/11 15:59

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	MRL	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CUJ1301-01 (SE3-GW-1011 - Ground Water)						Sampled: 10/19/11 11:45		Recvd: 10/20/11 09:05		
Sampled By: Tim Wineland			Phone (515) 253-0830							
UST Volatile Compounds by GC/MS										
Benzene	311		ug/L		1.00	1	10/26/11 09:27	FMK	11J1364	SW 8260B/OA-1
Toluene	4.21		ug/L		1.00	1	10/26/11 09:27	FMK	11J1364	SW 8260B/OA-1
Ethylbenzene	273		ug/L		1.00	1	10/26/11 09:27	FMK	11J1364	SW 8260B/OA-1
Xylenes, total	247		ug/L		3.00	1	10/26/11 09:27	FMK	11J1364	SW 8260B/OA-1
Surr: Dibromofluoromethane (75-120%)	104 %									
Surr: Toluene-d8 (80-120%)	99 %									
Surr: 4-Bromofluorobenzene (75-110%)	100 %									
VOC Preservation Check										
pH	>2		units		2.00	1	10/26/11 16:29	eee	11J1377	SW
PNA compounds by HPLC										
Acenaphthene	79.5		ug/L	0.220	1.90	10.1	10/25/11 16:26	TCH	11J1054	SW 8310
Acenaphthylene	<0.870		ug/L	0.870	1.90	10.1	10/25/11 16:26	TCH	11J1054	SW 8310
Anthracene	0.831		ug/L	0.0100	0.190	1.01	10/21/11 16:17	TCH	11J1054	SW 8310
Benzo (a) anthracene	<0.0200		ug/L	0.0200	0.130	1.01	10/21/11 16:17	TCH	11J1054	SW 8310
Benzo (b) fluoranthene	<0.0280		ug/L	0.0280	0.100	1.01	10/21/11 16:17	TCH	11J1054	SW 8310
Benzo (k) fluoranthene	<0.00700		ug/L	0.00700	0.140	1.01	10/21/11 16:17	TCH	11J1054	SW 8310
Benzo (a) pyrene	<0.00800		ug/L	0.00800	0.190	1.01	10/21/11 16:17	TCH	11J1054	SW 8310
Benzo (g,h,i) perylene	<0.00800		ug/L	0.00800	0.100	1.01	10/21/11 16:17	TCH	11J1054	SW 8310
Chrysene	<0.00800		ug/L	0.00800	0.100	1.01	10/21/11 16:17	TCH	11J1054	SW 8310
Dibenzo (a,h) anthracene	<0.0100		ug/L	0.0100	0.100	1.01	10/21/11 16:17	TCH	11J1054	SW 8310
Fluoranthene	<0.0100		ug/L	0.0100	0.190	1.01	10/21/11 16:17	TCH	11J1054	SW 8310
Fluorene	35.9		ug/L	0.160	1.90	10.1	10/25/11 16:26	TCH	11J1054	SW 8310
Indeno (1,2,3-cd) pyrene	<0.00600		ug/L	0.00600	0.100	1.01	10/21/11 16:17	TCH	11J1054	SW 8310
Naphthalene	21.3		ug/L	0.460	1.00	10.1	10/25/11 16:26	TCH	11J1054	SW 8310
Phenanthrene	9.14		ug/L	0.0500	1.00	10.1	10/25/11 16:26	TCH	11J1054	SW 8310
Pyrene	0.224		ug/L	0.0170	0.190	1.01	10/21/11 16:17	TCH	11J1054	SW 8310
Surr: 2-Fluorobiphenyl (45-100%)	83 %									

MWH - DES MOINES
11153 Aurora Avenue
Des Moines, IA 50322
Kevin Armstrong

Work Order: CUJ1301
Project: MEC - Dubuque FMGP
Project Number: 101180

Received: 10/20/11
Reported: 10/27/11 15:59

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	MRL	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CUJ1301-02 (Trip Blank - Water)						Sampled: 10/19/11		Recvd: 10/20/11 09:05		
Sampled By: Tim Wineland			Phone (515) 253-0830							
UST Volatile Compounds by GC/MS										
Benzene	<1.00		ug/L		1.00	1	10/26/11 06:12	FMK	11J1364	SW 8260B/OA-1
Toluene	<1.00		ug/L		1.00	1	10/26/11 06:12	FMK	11J1364	SW 8260B/OA-1
Ethylbenzene	<1.00		ug/L		1.00	1	10/26/11 06:12	FMK	11J1364	SW 8260B/OA-1
Xylenes, total	<3.00		ug/L		3.00	1	10/26/11 06:12	FMK	11J1364	SW 8260B/OA-1
Surr: Dibromofluoromethane (75-120%)	106 %									
	99 %									
	94 %									
VOC Preservation Check										
pH	>2		units		2.00	1	10/26/11 16:29	eee	11J1377	SW

MWH - DES MOINES
11153 Aurora Avenue
Des Moines, IA 50322
Kevin Armstrong

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Reported: 10/27/11 15:59

SAMPLE EXTRACTION DATA

Parameter	Batch	Lab Number	Wt/Vol Extracted	Extracted Vol	Date	Analyst	Extraction Method
PNA compounds by HPLC							
SW 8310	11J1054	CUJ1301-01	990.00	1.50	10/20/11 14:03	EEE	SW 3510C_HPLC
SW 8310	11J1054	CUJ1301-01RE1	990.00	1.50	10/20/11 14:03	EEE	SW 3510C_HPLC
SW 8310	11J1054	CUJ1301-01RE2	990.00	1.50	10/20/11 14:03	EEE	SW 3510C_HPLC

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LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD RPD	RPD Limit	Q
UST Volatile Compounds by GC/MS														
Benzene	11J1364			ug/L	N/A	1.00	<1.00							
Toluene	11J1364			ug/L	N/A	1.00	<1.00							
Ethylbenzene	11J1364			ug/L	N/A	1.00	<1.00							
Xylenes, total	11J1364			ug/L	N/A	3.00	<3.00							
Surrogate: Dibromofluoromethane	11J1364			ug/L					103		75-120			
Surrogate: Toluene-d8	11J1364			ug/L					99		80-120			
Surrogate: 4-Bromofluorobenzene	11J1364			ug/L					95		75-110			
PNA compounds by HPLC														
Acenaphthene	11J1054			ug/L	0.0220	0.190	<0.0220							
Acenaphthylene	11J1054			ug/L	0.0870	0.190	<0.0870							
Anthracene	11J1054			ug/L	0.0100	0.190	<0.0100							
Benzo (a) anthracene	11J1054			ug/L	0.0200	0.130	<0.0200							
Benzo (b) fluoranthene	11J1054			ug/L	0.0280	0.100	<0.0280							
Benzo (k) fluoranthene	11J1054			ug/L	0.00700	0.140	<0.00700							
Benzo (a) pyrene	11J1054			ug/L	0.00800	0.190	<0.00800							
Benzo (g,h,i) perylene	11J1054			ug/L	0.00800	0.100	<0.00800							
Chrysene	11J1054			ug/L	0.00800	0.100	<0.00800							
Dibenzo (a,h) anthracene	11J1054			ug/L	0.0100	0.100	<0.0100							
Fluoranthene	11J1054			ug/L	0.0100	0.190	<0.0100							
Fluorene	11J1054			ug/L	0.0160	0.190	<0.0160							
Indeno (1,2,3-cd) pyrene	11J1054			ug/L	0.00600	0.100	<0.00600							
Naphthalene	11J1054			ug/L	0.0460	0.100	<0.0460							
Phenanthrene	11J1054			ug/L	0.00500	0.100	<0.00500							
Pyrene	11J1054			ug/L	0.0170	0.190	<0.0170							
Surrogate: 2-Fluorobiphenyl	11J1054			ug/L					61		45-100			

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LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
UST Volatile Compounds by GC/MS														
Benzene	11J1364		20.0	ug/L	N/A	N/A	17.8		89		70-130			
Toluene	11J1364		20.0	ug/L	N/A	N/A	18.2		91		70-135			
Ethylbenzene	11J1364		20.0	ug/L	N/A	N/A	17.8		89		70-130			
Xylenes, total	11J1364		60.0	ug/L	N/A	N/A	55.6		93		70-130			
Surrogate: Dibromofluoromethane	11J1364			ug/L					100		75-120			
Surrogate: Toluene-d8	11J1364			ug/L					100		80-120			
Surrogate: 4-Bromofluorobenzene	11J1364			ug/L					102		80-120			
PNA compounds by HPLC														
Acenaphthene	11J1054		10.0	ug/L	0.0220	0.190	7.20	8.70	72	87	50-95	19	35	
Acenaphthylene	11J1054		20.0	ug/L	0.0870	0.190	14.1	16.7	71	83	40-95	16	35	
Anthracene	11J1054		1.00	ug/L	0.0100	0.190	0.759	0.917	76	92	50-90	19	35	LI
Benzo (a) anthracene	11J1054		1.00	ug/L	0.0200	0.130	0.832	0.960	83	96	55-95	14	35	LI
Benzo (b) fluoranthene	11J1054		2.00	ug/L	0.0280	0.100	1.72	1.93	86	96	55-110	11	35	
Benzo (k) fluoranthene	11J1054		1.00	ug/L	0.00700	0.140	0.903	0.961	90	96	55-100	6	35	
Benzo (a) pyrene	11J1054		1.00	ug/L	0.00800	0.190	0.924	0.951	92	95	40-105	3	35	
Benzo (g,h,i) perylene	11J1054		2.00	ug/L	0.00800	0.100	1.72	1.92	86	96	50-100	11	35	
Chrysene	11J1054		1.00	ug/L	0.00800	0.100	0.877	1.01	88	101	55-100	14	35	LI
Dibenzo (a,h) anthracene	11J1054		2.00	ug/L	0.0100	0.100	1.71	1.92	85	96	55-100	12	35	
Fluoranthene	11J1054		2.00	ug/L	0.0100	0.190	1.67	1.96	83	98	50-100	16	35	
Fluorene	11J1054		2.00	ug/L	0.0160	0.190	1.50	1.83	75	91	50-95	20	35	
Indeno (1,2,3-cd) pyrene	11J1054		1.00	ug/L	0.00600	0.100	0.827	0.928	83	93	50-100	12	35	
Naphthalene	11J1054		10.0	ug/L	0.0460	0.100	6.41	7.74	64	77	45-90	19	35	
Phenanthrene	11J1054		1.00	ug/L	0.00500	0.100	0.817	1.10	82	110	55-95	29	35	LI
Pyrene	11J1054		1.00	ug/L	0.0170	0.190	0.829	0.973	83	97	50-100	16	35	
Surrogate: 2-Fluorobiphenyl	11J1054			ug/L					64	76	50-95			

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MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
UST Volatile Compounds by GC/MS														
QC Source Sample: CUJ1313-01														
Benzene	11J1364	0.0400	20.0	ug/L	N/A	N/A	17.8	19.2	89	96	50-130	7	20	
Toluene	11J1364	0.140	20.0	ug/L	N/A	N/A	18.5	19.7	92	98	45-135	6	20	
Ethylbenzene	11J1364	0.0300	20.0	ug/L	N/A	N/A	18.2	19.9	91	99	45-135	9	20	
Xylenes, total	11J1364	<3.00	60.0	ug/L	N/A	N/A	55.9	61.0	93	102	40-135	9	20	
Surrogate: Dibromofluoromethane	11J1364			ug/L					104	103	75-120			
Surrogate: Toluene-d8	11J1364			ug/L					100	100	80-120			
Surrogate: 4-Bromofluorobenzene	11J1364			ug/L					99	102	80-120			

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Kevin Armstrong

Work Order: CUJ1301
Project: MEC - Dubuque FMGP
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CERTIFICATION SUMMARY

TestAmerica Cedar Falls

Method	Matrix	Nelac	Iowa
SW 8260B/OA-I	Water - NonPotable	X	X
SW 8310	Water - NonPotable	X	X
SW	Water - NonPotable		

Any abnormalities or departures from sample acceptance policy shall be documented on the 'Sample Receipt and Temperature Log Form' and 'Sample Non-conformance Form' (if applicable) included with this report.

For information concerning certifications of this facility or another TestAmerica facility, please visit our website at www.TestAmericaInc.com

Samples collected by TestAmerica Field Services personnel are noted on the Chain of Custody (COC) and are sampled in accordance with TA-CF SOP CF-FSS-01.

DATA QUALIFIERS AND DEFINITIONS

>2 >2
L1 Laboratory Control Sample and/or Laboratory Control Sample Duplicate recovery was outside control limits.

ADDITIONAL COMMENTS

Phone 319-277-2401 or 800-750-2401
Fax 319-277-2425

To assist us in using the proper analytical methods,
is this work being conducted for regulatory purposes?
Compliance Monitoring

Client Name: MWA AmeriCos Client #:

Address: 11153 Aurora Ave

City/State/Zip Code: Des Moines IA 50302

Project Manager: Kevin Almstrong

Email Address: Kevin.G.Hong@mhwylobal.com

Telephone Number: 515 253 0830 Fax: 515 253 7512

Sampler Name: (Print Name) my/ W. J. and

Sampler Signature:

Project Name: MCC Dubuque PNG

Project #: 1011180 (MWH)

Site/Location ID: Dubugne State: LA

Report To: Kevin Armstrong

Invoice To: Kevin Dodson - Mid American

Quote #: PO#:

[illegible]

Special Instructions:

LABORATORY COMMENTS:

Relinquished By: <u>T. Wineland - m...</u>	Date: <u>10-19-11</u>	Time: <u>12:30</u>	Received By: _____	Date: _____	Time: _____
Relinquished ~~By~~ <u>to Sedex</u>	Date: _____	Time: _____	Received By: <u>Volker</u>	Date: <u>10/19/11</u>	Time: <u>9</u>
Relinquished By: _____	Date: _____	Time: _____	Received By: _____	Date: _____	Time: _____

TAL-0033 (0708)

Sample Receipt and Temperature Log Form

Client: MWH Project: MEC DBP

City: Dsm

Date: 10-20-11 Receiver's Initials: CH Time (Delivered): 9:05

Temperature Record:

Thermometer:

Courier:

Cooler ID# (If Applicable)

ATL1

- ☐ IR - 111531565 'D'
☒ IR - 111531506 'E'
☐ IR - 61854108 'Front'
☐ 101681126

- | | |
|--|--|
| ☐ UPS | ☐ TA Courier |
| ☒ FedEx | ☐ TA Field Services |
| ☐ FedEx Ground | ☐ Client |
| ☐ US Postal Service | ☐ Other |
| ☐ Spee-Dee | |

☒ Temp Blank

☐ Temperature out of compliance

Custody seals present?

☐ Yes

Custody seals intact?

☐ Yes ☐ No

☐ Non-Conformance report started

Exceptions Noted

- ☐ Sample(s) not received in a cooler.
- ☐ Samples(s) received same day of sampling.
- ☐ Evidence of a chilling process.
- ☐ No Temp. Blank. Inside temperature of cooler recorded.
- ☐ Temperature not taken:

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Cedar Falls
704 Enterprise Drive
Cedar Falls, IA 50613
Tel: 800-750-2401

TestAmerica Job ID: CUL0037
Client Project/Site: 1011180.0107
Client Project Description: MEC - Dubuque FMGP

For:
MWH - DES MOINES
11153 Aurora Avenue
Des Moines, IA 50322

Attn: Kevin Armstrong

Angela Muehling

Authorized for release by:
12/14/2011 8:59:30 AM
Angela Muehling
Project Coordinator
Angela.Muehling@testamericainc.com

Designee for
Derrick Klinkenberg
Organics Manager
derrick.klinkenberg@testamericainc.com

LINKS

Review your project
results through
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www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0037

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
CUL0037-01	SE3-GW-1111	Ground Water	11/28/11 18:00	12/01/11 09:20
CUL0037-02	SE3-GW-1111	Ground Water	11/29/11 12:45	12/01/11 09:20
CUL0037-03	SE3-GW-1111	Ground Water	11/30/11 12:50	12/01/11 09:20
CUL0037-04	TB-1	Water	11/28/11 00:00	12/01/11 09:20

Detection Summary

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0037

Client Sample ID: SE3-GW-1111

Lab Sample ID: CUL0037-01

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	329		10.0		ug/L	10.0		SW 8260B/OA-1	Total
Ethylbenzene	260		10.0		ug/L	10.0		SW 8260B/OA-1	Total
Xylenes, total	41.5		30.0		ug/L	10.0		SW 8260B/OA-1	Total
Anthracene	0.805	L1	0.190	0.0100	ug/L	1.00		SW 8310	Total
2-Methylnaphthalene	10.1		0.190	0.100	ug/L	1.00		SW 8310	Total
Acenaphthene - RE1	73.4		1.90	0.220	ug/L	10.0		SW 8310	Total
Fluorene - RE1	32.9		1.90	0.160	ug/L	10.0		SW 8310	Total
Naphthalene - RE1	71.6	B	1.00	0.460	ug/L	10.0		SW 8310	Total
Phenanthrene - RE1	9.28		1.00	0.0500	ug/L	10.0		SW 8310	Total

Client Sample ID: SE3-GW-1111

Lab Sample ID: CUL0037-02

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	354		10.0		ug/L	10.0		SW 8260B/OA-1	Total
Toluene	12.3		10.0		ug/L	10.0		SW 8260B/OA-1	Total
Ethylbenzene	256		10.0		ug/L	10.0		SW 8260B/OA-1	Total
Xylenes, total	73.1		30.0		ug/L	10.0		SW 8260B/OA-1	Total
Anthracene	0.814	L1	0.190	0.0100	ug/L	1.00		SW 8310	Total
2-Methylnaphthalene	14.4	L1	0.190	0.100	ug/L	1.00		SW 8310	Total
Acenaphthene - RE1	61.0		1.90	0.220	ug/L	10.0		SW 8310	Total
Fluorene - RE1	27.5		1.90	0.160	ug/L	10.0		SW 8310	Total
Phenanthrene - RE1	8.06		1.00	0.0500	ug/L	10.0		SW 8310	Total
Naphthalene - RE2	183	B	10.0	4.60	ug/L	100		SW 8310	Total

Client Sample ID: SE3-GW-1111

Lab Sample ID: CUL0037-03

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	443		10.0		ug/L	10.0		SW 8260B/OA-1	Total
Toluene	22.1		10.0		ug/L	10.0		SW 8260B/OA-1	Total
Ethylbenzene	320		10.0		ug/L	10.0		SW 8260B/OA-1	Total
Xylenes, total	117		30.0		ug/L	10.0		SW 8260B/OA-1	Total
Anthracene	0.984	L1	0.190	0.0100	ug/L	1.00		SW 8310	Total
Acenaphthene - RE1	72.5		1.90	0.220	ug/L	10.0		SW 8310	Total
Fluorene - RE1	32.5		1.90	0.160	ug/L	10.0		SW 8310	Total
2-Methylnaphthalene - RE1	46.8		1.90	1.00	ug/L	10.0		SW 8310	Total
Phenanthrene - RE1	9.72		1.00	0.0500	ug/L	10.0		SW 8310	Total
Naphthalene - RE2	359	B	10.0	4.60	ug/L	100		SW 8310	Total

Client Sample ID: TB-1

Lab Sample ID: CUL0037-04

No Detections

Client Sample Results

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0037

Client Sample ID: SE3-GW-1111

Lab Sample ID: CUL0037-01

Date Collected: 11/28/11 18:00

Matrix: Ground Water

Date Received: 12/01/11 09:20

Method: SW 8260B/OA-1 - UST Volatile Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	329		10.0		ug/L		12/02/11 00:00	12/02/11 11:15	10.0
Toluene	<10.0		10.0		ug/L		12/02/11 00:00	12/02/11 11:15	10.0
Ethylbenzene	260		10.0		ug/L		12/02/11 00:00	12/02/11 11:15	10.0
Xylenes, total	41.5		30.0		ug/L		12/02/11 00:00	12/02/11 11:15	10.0

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	102		75 - 120	12/02/11 00:00	12/02/11 11:15	10.0
Toluene-d8	97		80 - 120	12/02/11 00:00	12/02/11 11:15	10.0
4-Bromofluorobenzene	97		75 - 110	12/02/11 00:00	12/02/11 11:15	10.0

Method: SW 9041 - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		12/01/11 15:52	12/01/11 16:42	1.00

Method: SW 8310 - PNA compounds by HPLC

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	0.805	L1	0.190	0.0100	ug/L		12/01/11 12:56	12/05/11 13:40	1.00
Benzo (a) anthracene	<0.0200		0.130	0.0200	ug/L		12/01/11 12:56	12/05/11 13:40	1.00
Benzo (b) fluoranthene	<0.0280		0.100	0.0280	ug/L		12/01/11 12:56	12/05/11 13:40	1.00
Benzo (k) fluoranthene	<0.00700		0.140	0.00700	ug/L		12/01/11 12:56	12/05/11 13:40	1.00
Benzo (a) pyrene	<0.00800		0.190	0.00800	ug/L		12/01/11 12:56	12/05/11 13:40	1.00
Benzo (g,h,i) perylene	<0.00800		0.100	0.00800	ug/L		12/01/11 12:56	12/05/11 13:40	1.00
Chrysene	<0.00800		0.100	0.00800	ug/L		12/01/11 12:56	12/05/11 13:40	1.00
Dibenzo (a,h) anthracene	<0.0100		0.100	0.0100	ug/L		12/01/11 12:56	12/05/11 13:40	1.00
Fluoranthene	<0.0100		0.190	0.0100	ug/L		12/01/11 12:56	12/05/11 13:40	1.00
Indeno (1,2,3-cd) pyrene	<0.00600		0.100	0.00600	ug/L		12/01/11 12:56	12/05/11 13:40	1.00
2-Methylnaphthalene	10.1		0.190	0.100	ug/L		12/01/11 12:56	12/05/11 13:40	1.00
Pyrene	<0.0170		0.190	0.0170	ug/L		12/01/11 12:56	12/05/11 13:40	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	81		45 - 100	12/01/11 12:56	12/05/11 13:40	1.00

Method: SW 8310 - PNA compounds by HPLC - RE1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	73.4		1.90	0.220	ug/L		12/01/11 12:56	12/13/11 18:25	10.0
Acenaphthylene	<0.870		1.90	0.870	ug/L		12/01/11 12:56	12/13/11 18:25	10.0
Fluorene	32.9		1.90	0.160	ug/L		12/01/11 12:56	12/13/11 18:25	10.0
Naphthalene	71.6	B	1.00	0.460	ug/L		12/01/11 12:56	12/13/11 18:25	10.0
Phenanthrene	9.28		1.00	0.0500	ug/L		12/01/11 12:56	12/13/11 18:25	10.0

Client Sample Results

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0037

Client Sample ID: SE3-GW-1111

Lab Sample ID: CUL0037-02

Date Collected: 11/29/11 12:45

Matrix: Ground Water

Date Received: 12/01/11 09:20

Method: SW 8260B/OA-1 - UST Volatile Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	354		10.0		ug/L		12/02/11 00:00	12/02/11 11:40	10.0
Toluene	12.3		10.0		ug/L		12/02/11 00:00	12/02/11 11:40	10.0
Ethylbenzene	256		10.0		ug/L		12/02/11 00:00	12/02/11 11:40	10.0
Xylenes, total	73.1		30.0		ug/L		12/02/11 00:00	12/02/11 11:40	10.0

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	103		75 - 120				12/02/11 00:00	12/02/11 11:40	10.0
Toluene-d8	99		80 - 120				12/02/11 00:00	12/02/11 11:40	10.0
4-Bromofluorobenzene	97		75 - 110				12/02/11 00:00	12/02/11 11:40	10.0

Method: SW 9041 - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		12/01/11 15:52	12/01/11 16:42	1.00

Method: SW 8310 - PNA compounds by HPLC

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	0.814	L1	0.190	0.0100	ug/L		12/01/11 12:56	12/05/11 14:08	1.00
Benzo (a) anthracene	<0.0200		0.130	0.0200	ug/L		12/01/11 12:56	12/05/11 14:08	1.00
Benzo (b) fluoranthene	<0.0280		0.100	0.0280	ug/L		12/01/11 12:56	12/05/11 14:08	1.00
Benzo (k) fluoranthene	<0.00700		0.140	0.00700	ug/L		12/01/11 12:56	12/05/11 14:08	1.00
Benzo (a) pyrene	<0.00800		0.190	0.00800	ug/L		12/01/11 12:56	12/05/11 14:08	1.00
Benzo (g,h,i) perylene	<0.00800		0.100	0.00800	ug/L		12/01/11 12:56	12/05/11 14:08	1.00
Chrysene	<0.00800		0.100	0.00800	ug/L		12/01/11 12:56	12/05/11 14:08	1.00
Dibenzo (a,h) anthracene	<0.0100		0.100	0.0100	ug/L		12/01/11 12:56	12/05/11 14:08	1.00
Fluoranthene	<0.0100		0.190	0.0100	ug/L		12/01/11 12:56	12/05/11 14:08	1.00
Indeno (1,2,3-cd) pyrene	<0.00600		0.100	0.00600	ug/L		12/01/11 12:56	12/05/11 14:08	1.00
2-Methylnaphthalene	14.4	L1	0.190	0.100	ug/L		12/01/11 12:56	12/05/11 14:08	1.00
Pyrene	<0.0170		0.190	0.0170	ug/L		12/01/11 12:56	12/05/11 14:08	1.00

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	58		45 - 100				12/01/11 12:56	12/05/11 14:08	1.00

Method: SW 8310 - PNA compounds by HPLC - RE1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	61.0		1.90	0.220	ug/L		12/01/11 12:56	12/13/11 19:22	10.0
Acenaphthylene	<0.870		1.90	0.870	ug/L		12/01/11 12:56	12/13/11 19:22	10.0
Fluorene	27.5		1.90	0.160	ug/L		12/01/11 12:56	12/13/11 19:22	10.0
Phenanthrene	8.06		1.00	0.0500	ug/L		12/01/11 12:56	12/13/11 19:22	10.0

Method: SW 8310 - PNA compounds by HPLC - RE2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	183	B	10.0	4.60	ug/L		12/01/11 12:56	12/13/11 19:50	100

Client Sample Results

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0037

Client Sample ID: SE3-GW-1111

Lab Sample ID: CUL0037-03

Date Collected: 11/30/11 12:50

Matrix: Ground Water

Date Received: 12/01/11 09:20

Method: SW 8260B/OA-1 - UST Volatile Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	443		10.0		ug/L		12/02/11 00:00	12/02/11 12:05	10.0
Toluene	22.1		10.0		ug/L		12/02/11 00:00	12/02/11 12:05	10.0
Ethylbenzene	320		10.0		ug/L		12/02/11 00:00	12/02/11 12:05	10.0
Xylenes, total	117		30.0		ug/L		12/02/11 00:00	12/02/11 12:05	10.0

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	103		75 - 120	12/02/11 00:00	12/02/11 12:05	10.0
Toluene-d8	98		80 - 120	12/02/11 00:00	12/02/11 12:05	10.0
4-Bromofluorobenzene	98		75 - 110	12/02/11 00:00	12/02/11 12:05	10.0

Method: SW 9041 - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		12/01/11 15:52	12/01/11 16:42	1.00

Method: SW 8310 - PNA compounds by HPLC

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	0.984	L1	0.190	0.0100	ug/L		12/01/11 12:56	12/05/11 14:36	1.00
Benzo (a) anthracene	<0.0200		0.130	0.0200	ug/L		12/01/11 12:56	12/05/11 14:36	1.00
Benzo (b) fluoranthene	<0.0280		0.100	0.0280	ug/L		12/01/11 12:56	12/05/11 14:36	1.00
Benzo (k) fluoranthene	<0.00700		0.140	0.00700	ug/L		12/01/11 12:56	12/05/11 14:36	1.00
Benzo (a) pyrene	<0.00800		0.190	0.00800	ug/L		12/01/11 12:56	12/05/11 14:36	1.00
Benzo (g,h,i) perylene	<0.00800		0.100	0.00800	ug/L		12/01/11 12:56	12/05/11 14:36	1.00
Chrysene	<0.00800		0.100	0.00800	ug/L		12/01/11 12:56	12/05/11 14:36	1.00
Dibenzo (a,h) anthracene	<0.0100		0.100	0.0100	ug/L		12/01/11 12:56	12/05/11 14:36	1.00
Fluoranthene	<0.0100		0.190	0.0100	ug/L		12/01/11 12:56	12/05/11 14:36	1.00
Indeno (1,2,3-cd) pyrene	<0.00600		0.100	0.00600	ug/L		12/01/11 12:56	12/05/11 14:36	1.00
Pyrene	<0.0170		0.190	0.0170	ug/L		12/01/11 12:56	12/05/11 14:36	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	63		45 - 100	12/01/11 12:56	12/05/11 14:36	1.00

Method: SW 8310 - PNA compounds by HPLC - RE1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	72.5		1.90	0.220	ug/L		12/01/11 12:56	12/13/11 20:18	10.0
Acenaphthylene	<0.870		1.90	0.870	ug/L		12/01/11 12:56	12/13/11 20:18	10.0
Fluorene	32.5		1.90	0.160	ug/L		12/01/11 12:56	12/13/11 20:18	10.0
2-Methylnaphthalene	46.8		1.90	1.00	ug/L		12/01/11 12:56	12/13/11 20:18	10.0
Phenanthrene	9.72		1.00	0.0500	ug/L		12/01/11 12:56	12/13/11 20:18	10.0

Method: SW 8310 - PNA compounds by HPLC - RE2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	359	B	10.0	4.60	ug/L		12/01/11 12:56	12/13/11 20:46	100

Client Sample Results

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0037

Client Sample ID: TB-1

Lab Sample ID: CUL0037-04

Date Collected: 11/28/11 00:00

Matrix: Water

Date Received: 12/01/11 09:20

Method: SW 8260B/OA-1 - UST Volatile Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.00		1.00		ug/L		12/02/11 00:00	12/02/11 10:49	1.00
Toluene	<1.00		1.00		ug/L		12/02/11 00:00	12/02/11 10:49	1.00
Ethylbenzene	<1.00		1.00		ug/L		12/02/11 00:00	12/02/11 10:49	1.00
Xylenes, total	<3.00		3.00		ug/L		12/02/11 00:00	12/02/11 10:49	1.00

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	101		75 - 120				12/02/11 00:00	12/02/11 10:49	1.00
Toluene-d8	98		80 - 120				12/02/11 00:00	12/02/11 10:49	1.00
4-Bromofluorobenzene	96		75 - 110				12/02/11 00:00	12/02/11 10:49	1.00

Method: SW 9041 - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		12/05/11 16:04	12/05/11 17:16	1.00

Surrogate Summary

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0037

Method: SW 8260B/OA-1 - UST Volatile Compounds by GC/MS

Matrix: Ground Water

Prep Type: Total

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		DBFM (75-120)	Toluene-d8 (80-120)	BFB (75-110)
CUL0037-01	SE3-GW-1111	102	97	97
CUL0037-02	SE3-GW-1111	103	99	97
CUL0037-03	SE3-GW-1111	103	98	98

Surrogate Legend

DBFM = Dibromofluoromethane

Toluene-d8 = Toluene-d8

BFB = 4-Bromofluorobenzene

Method: SW 8260B/OA-1 - UST Volatile Compounds by GC/MS

Matrix: Water

Prep Type: Total

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		DBFM (75-120)	Toluene-d8 (80-120)	BFB (75-110)
CUL0037-04	TB-1	101	98	96

Surrogate Legend

DBFM = Dibromofluoromethane

Toluene-d8 = Toluene-d8

BFB = 4-Bromofluorobenzene

Method: SW 8260B/OA-1 - UST Volatile Compounds by GC/MS

Matrix: Water - NonPotable

Prep Type: Total

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		DBFM (75-120)	Toluene-d8 (80-120)	BFB (75-110)
11L0155-BLK1	Method Blank	102	99	97

Surrogate Legend

DBFM = Dibromofluoromethane

Toluene-d8 = Toluene-d8

BFB = 4-Bromofluorobenzene

Method: SW 8260B/OA-1 - UST Volatile Compounds by GC/MS

Matrix: Water - NonPotable

Prep Type: Total

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		DBFM (75-120)	Toluene-d8 (80-120)	BFB (80-120)
11L0155-BS1	Lab Control Sample	105	100	99
11L0155-MS1	Matrix Spike	103	99	100
11L0155-MSD1	Matrix Spike Duplicate	105	99	100

Surrogate Legend

DBFM = Dibromofluoromethane

Toluene-d8 = Toluene-d8

BFB = 4-Bromofluorobenzene

Surrogate Summary

Client: MWH - DES MOINES

TestAmerica Job ID: CUL0037

Project/Site: 101180.0107

Method: SW 8310 - PNA compounds by HPLC

Matrix: Ground Water

Prep Type: Total

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	FBP (45-100)
CUL0037-01	SE3-GW-1111	81
CUL0037-02	SE3-GW-1111	58
CUL0037-03	SE3-GW-1111	63

Surrogate Legend

FBP = 2-Fluorobiphenyl

Method: SW 8310 - PNA compounds by HPLC

Matrix: Water - NonPotable

Prep Type: Total

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	FBP (45-100)
11L0033-BLK1	Method Blank	49

Surrogate Legend

FBP = 2-Fluorobiphenyl

Method: SW 8310 - PNA compounds by HPLC

Matrix: Water - NonPotable

Prep Type: Total

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	FBP (50-95)
11L0033-BS1	Lab Control Sample	58
11L0033-BSD1	Lab Control Sample Dup	33 Z6

Surrogate Legend

FBP = 2-Fluorobiphenyl

QC Sample Results

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0037

Method: SW 8260B/OA-1 - UST Volatile Compounds by GC/MS

Lab Sample ID: 11L0155-BLK1

Matrix: Water - NonPotable

Analysis Batch: 11L0155

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 11L0155_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.00		1.00		ug/L		12/02/11 00:00	12/02/11 06:38	1.00
Toluene	<1.00		1.00		ug/L		12/02/11 00:00	12/02/11 06:38	1.00
Ethylbenzene	<1.00		1.00		ug/L		12/02/11 00:00	12/02/11 06:38	1.00
Xylenes, total	<3.00		3.00		ug/L		12/02/11 00:00	12/02/11 06:38	1.00

Surrogate	Blank %Recovery	Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	102		75 - 120	12/02/11 00:00	12/02/11 06:38	1.00
Toluene-d8	99		80 - 120	12/02/11 00:00	12/02/11 06:38	1.00
4-Bromofluorobenzene	97		75 - 110	12/02/11 00:00	12/02/11 06:38	1.00

Lab Sample ID: 11L0155-BS1

Matrix: Water - NonPotable

Analysis Batch: 11L0155

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 11L0155_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Benzene	20.0	18.9		ug/L		95	70 - 130
Toluene	20.0	19.1		ug/L		95	70 - 135
Ethylbenzene	20.0	19.5		ug/L		97	70 - 130
Xylenes, total	60.0	56.8		ug/L		95	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dibromofluoromethane	105		75 - 120
Toluene-d8	100		80 - 120
4-Bromofluorobenzene	99		80 - 120

Lab Sample ID: 11L0155-MS1

Matrix: Water - NonPotable

Analysis Batch: 11L0155

Client Sample ID: Matrix Spike

Prep Type: Total

Prep Batch: 11L0155_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	Limits
Benzene	2.48		20.0	18.2		ug/L		79	50 - 130
Toluene	0.120		20.0	15.9		ug/L		79	45 - 135
Ethylbenzene	0.0400		20.0	15.4		ug/L		77	45 - 135
Xylenes, total	<0.130		60.0	45.1		ug/L		75	40 - 135

Surrogate	Matrix Spike %Recovery	Matrix Spike Qualifier	Limits
Dibromofluoromethane	103		75 - 120
Toluene-d8	99		80 - 120
4-Bromofluorobenzene	100		80 - 120

Lab Sample ID: 11L0155-MSD1

Matrix: Water - NonPotable

Analysis Batch: 11L0155

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total

Prep Batch: 11L0155_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Dup Result	Matrix Spike Dup Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	2.48		20.0	18.2		ug/L		78	50 - 130	0.5	20
Toluene	0.120		20.0	15.4		ug/L		77	45 - 135	3	20
Ethylbenzene	0.0400		20.0	15.2		ug/L		76	45 - 135	1	20
Xylenes, total	<0.130		60.0	45.0		ug/L		75	40 - 135	0.1	20

QC Sample Results

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0037

Method: SW 8260B/OA-1 - UST Volatile Compounds by GC/MS (Continued)

Lab Sample ID: 11L0155-MSD1

Matrix: Water - NonPotable

Analysis Batch: 11L0155

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total

Prep Batch: 11L0155_P

Surrogate	Matrix Spike Dup %Recovery	Matrix Spike Dup Qualifier	Limits
Dibromofluoromethane	105		75 - 120
Toluene-d8	99		80 - 120
4-Bromofluorobenzene	100		80 - 120

Method: SW 8310 - PNA compounds by HPLC

Lab Sample ID: 11L0033-BLK1

Matrix: Water - NonPotable

Analysis Batch: U002051

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 11L0033_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.0220		0.190	0.0220	ug/L		12/01/11 12:56	12/05/11 12:16	1.00
Acenaphthylene	<0.0870		0.190	0.0870	ug/L		12/01/11 12:56	12/05/11 12:16	1.00
Anthracene	<0.0100		0.190	0.0100	ug/L		12/01/11 12:56	12/05/11 12:16	1.00
Benzo (a) anthracene	<0.0200		0.130	0.0200	ug/L		12/01/11 12:56	12/05/11 12:16	1.00
Benzo (b) fluoranthene	<0.0280		0.100	0.0280	ug/L		12/01/11 12:56	12/05/11 12:16	1.00
Benzo (k) fluoranthene	<0.00700		0.140	0.00700	ug/L		12/01/11 12:56	12/05/11 12:16	1.00
Benzo (a) pyrene	<0.00800		0.190	0.00800	ug/L		12/01/11 12:56	12/05/11 12:16	1.00
Benzo (g,h,i) perylene	<0.00800		0.100	0.00800	ug/L		12/01/11 12:56	12/05/11 12:16	1.00
Chrysene	<0.00800		0.100	0.00800	ug/L		12/01/11 12:56	12/05/11 12:16	1.00
Dibenzo (a,h) anthracene	<0.0100		0.100	0.0100	ug/L		12/01/11 12:56	12/05/11 12:16	1.00
Fluoranthene	<0.0100		0.190	0.0100	ug/L		12/01/11 12:56	12/05/11 12:16	1.00
Fluorene	<0.0160		0.190	0.0160	ug/L		12/01/11 12:56	12/05/11 12:16	1.00
Indeno (1,2,3-cd) pyrene	<0.00600		0.100	0.00600	ug/L		12/01/11 12:56	12/05/11 12:16	1.00
2-Methylnaphthalene	<0.100		0.190	0.100	ug/L		12/01/11 12:56	12/05/11 12:16	1.00
Naphthalene	0.212		0.100	0.0460	ug/L		12/01/11 12:56	12/05/11 12:16	1.00
Phenanthrene	<0.00500		0.100	0.00500	ug/L		12/01/11 12:56	12/05/11 12:16	1.00
Pyrene	<0.0170		0.190	0.0170	ug/L		12/01/11 12:56	12/05/11 12:16	1.00

Surrogate	Blank %Recovery	Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	49		45 - 100	12/01/11 12:56	12/05/11 12:16	1.00

Lab Sample ID: 11L0033-BS1

Matrix: Water - NonPotable

Analysis Batch: U002051

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 11L0033_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	10.0	6.05		ug/L		61	50 - 95
Acenaphthylene	20.0	12.1		ug/L		60	40 - 95
Anthracene	1.00	0.608		ug/L		61	50 - 90
Benzo (a) anthracene	1.00	0.678		ug/L		68	55 - 95
Benzo (b) fluoranthene	2.00	1.40		ug/L		70	55 - 110
Benzo (k) fluoranthene	1.00	0.698		ug/L		70	55 - 100
Benzo (a) pyrene	1.00	1.02		ug/L		102	40 - 105
Benzo (g,h,i) perylene	2.00	1.49		ug/L		75	50 - 100
Chrysene	1.00	0.695		ug/L		70	55 - 100
Dibenzo (a,h) anthracene	2.00	1.47		ug/L		73	55 - 100
Fluoranthene	2.00	1.31		ug/L		65	50 - 100
Fluorene	2.00	1.33		ug/L		67	50 - 95

QC Sample Results

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0037

Method: SW 8310 - PNA compounds by HPLC (Continued)

Lab Sample ID: 11L0033-BS1

Matrix: Water - NonPotable

Analysis Batch: U002051

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 11L0033_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Indeno (1,2,3-cd) pyrene	1.00	0.730		ug/L		73	50 - 100
2-Methylnaphthalene	10.0	5.42		ug/L		54	45 - 95
Naphthalene	10.0	5.89	B	ug/L		59	45 - 90
Phenanthrene	1.00	0.683		ug/L		68	55 - 95
Pyrene	1.00	0.655		ug/L		65	50 - 100

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	58		50 - 95

Lab Sample ID: 11L0033-BSD1

Matrix: Water - NonPotable

Analysis Batch: U002051

Client Sample ID: Lab Control Sample Dup

Prep Type: Total

Prep Batch: 11L0033_P

Analyte	Spike Added	LCS Dup Result	LCS Dup Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Acenaphthene	10.0	3.78	L1 R2	ug/L		38	50 - 95	46	35
Acenaphthylene	20.0	7.54	L1 R2	ug/L		38	40 - 95	46	35
Anthracene	1.00	0.378	L1 R2	ug/L		38	50 - 90	47	35
Benzo (a) anthracene	1.00	0.420	L1 R2	ug/L		42	55 - 95	47	35
Benzo (b) fluoranthene	2.00	0.879	L1 R2	ug/L		44	55 - 110	46	35
Benzo (k) fluoranthene	1.00	0.446	L1 R2	ug/L		45	55 - 100	44	35
Benzo (a) pyrene	1.00	0.423	R2	ug/L		42	40 - 105	83	35
Benzo (g,h,i) perylene	2.00	0.868	L1 R2	ug/L		43	50 - 100	53	35
Chrysene	1.00	0.427	L1 R2	ug/L		43	55 - 100	48	35
Dibenzo (a,h) anthracene	2.00	0.870	L1 R2	ug/L		43	55 - 100	51	35
Fluoranthene	2.00	0.847	L1 R2	ug/L		42	50 - 100	43	35
Fluorene	2.00	0.883	L1 R2	ug/L		44	50 - 95	41	35
Indeno (1,2,3-cd) pyrene	1.00	0.437	L1 R2	ug/L		44	50 - 100	50	35
2-Methylnaphthalene	10.0	3.32	L1 R2	ug/L		33	45 - 95	48	35
Naphthalene	10.0	3.87	L1 R2 B	ug/L		39	45 - 90	41	35
Phenanthrene	1.00	0.417	L1 R2	ug/L		42	55 - 95	48	35
Pyrene	1.00	0.427	L1 R2	ug/L		43	50 - 100	42	35

Surrogate	LCS Dup %Recovery	LCS Dup Qualifier	Limits
2-Fluorobiphenyl	33	Z6	50 - 95

QC Association Summary

Client: MWH - DES MOINES

TestAmerica Job ID: CUL0037

Project/Site: 1011180.0107

GCMS Volatiles

Analysis Batch: 11L0049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
CUL0037-01	SE3-GW-1111	Total	Ground Water	SW 9041	11L0049_P
CUL0037-02	SE3-GW-1111	Total	Ground Water	SW 9041	11L0049_P
CUL0037-03	SE3-GW-1111	Total	Ground Water	SW 9041	11L0049_P

Analysis Batch: 11L0155

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11L0155-BLK1	Method Blank	Total	Water - NonPotable	SW 8260B/OA-1	11L0155_P
11L0155-BS1	Lab Control Sample	Total	Water - NonPotable	SW 8260B/OA-1	11L0155_P
11L0155-MS1	Matrix Spike	Total	Water - NonPotable	SW 8260B/OA-1	11L0155_P
11L0155-MSD1	Matrix Spike Duplicate	Total	Water - NonPotable	SW 8260B/OA-1	11L0155_P
CUL0037-01	SE3-GW-1111	Total	Ground Water	SW 8260B/OA-1	11L0155_P
CUL0037-02	SE3-GW-1111	Total	Ground Water	SW 8260B/OA-1	11L0155_P
CUL0037-03	SE3-GW-1111	Total	Ground Water	SW 8260B/OA-1	11L0155_P
CUL0037-04	TB-1	Total	Water	SW 8260B/OA-1	11L0155_P

Analysis Batch: 11L0191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
CUL0037-04	TB-1	Total	Water	SW 9041	11L0191_P

Prep Batch: 11L0049_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
CUL0037-01	SE3-GW-1111	Total	Ground Water	Default Prep VOC	
CUL0037-02	SE3-GW-1111	Total	Ground Water	Default Prep VOC	
CUL0037-03	SE3-GW-1111	Total	Ground Water	Default Prep VOC	

Prep Batch: 11L0155_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11L0155-BLK1	Method Blank	Total	Water - NonPotable	SW 5030B	
11L0155-BS1	Lab Control Sample	Total	Water - NonPotable	SW 5030B	
11L0155-MS1	Matrix Spike	Total	Water - NonPotable	SW 5030B	
11L0155-MSD1	Matrix Spike Duplicate	Total	Water - NonPotable	SW 5030B	
CUL0037-01	SE3-GW-1111	Total	Ground Water	SW 5030B	
CUL0037-02	SE3-GW-1111	Total	Ground Water	SW 5030B	
CUL0037-03	SE3-GW-1111	Total	Ground Water	SW 5030B	
CUL0037-04	TB-1	Total	Water	SW 5030B	

Prep Batch: 11L0191_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
CUL0037-04	TB-1	Total	Water	Default Prep VOC	

QC Association Summary

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0037

HPLC

Analysis Batch: U002051

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11L0033-BLK1	Method Blank	Total	Water -	SW 8310	11L0033_P
11L0033-BS1	Lab Control Sample	Total	NonPotable	SW 8310	11L0033_P
11L0033-BSD1	Lab Control Sample Dup	Total	Water -	SW 8310	11L0033_P
CUL0037-01	SE3-GW-1111	Total	NonPotable	SW 8310	11L0033_P
CUL0037-02	SE3-GW-1111	Total	Ground Water	SW 8310	11L0033_P
CUL0037-03	SE3-GW-1111	Total	Ground Water	SW 8310	11L0033_P

Analysis Batch: U002058

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
CUL0037-01 - RE1	SE3-GW-1111	Total	Ground Water	SW 8310	11L0033_P
CUL0037-02 - RE1	SE3-GW-1111	Total	Ground Water	SW 8310	11L0033_P
CUL0037-02 - RE2	SE3-GW-1111	Total	Ground Water	SW 8310	11L0033_P
CUL0037-03 - RE1	SE3-GW-1111	Total	Ground Water	SW 8310	11L0033_P
CUL0037-03 - RE2	SE3-GW-1111	Total	Ground Water	SW 8310	11L0033_P

Prep Batch: 11L0033_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11L0033-BLK1	Method Blank	Total	Water -	SW	
11L0033-BS1	Lab Control Sample	Total	NonPotable	3510C_HPLC	
11L0033-BSD1	Lab Control Sample Dup	Total	Water -	SW	
CUL0037-01	SE3-GW-1111	Total	NonPotable	3510C_HPLC	
CUL0037-01 - RE1	SE3-GW-1111	Total	Ground Water	SW	
CUL0037-02	SE3-GW-1111	Total	Ground Water	3510C_HPLC	
CUL0037-02 - RE1	SE3-GW-1111	Total	Ground Water	SW	
CUL0037-02 - RE2	SE3-GW-1111	Total	Ground Water	3510C_HPLC	
CUL0037-03	SE3-GW-1111	Total	Ground Water	SW	
CUL0037-03 - RE1	SE3-GW-1111	Total	Ground Water	3510C_HPLC	
CUL0037-03 - RE2	SE3-GW-1111	Total	Ground Water	SW	
				3510C_HPLC	

Lab Chronicle

Client: MWH - DES MOINES

TestAmerica Job ID: CUL0037

Project/Site: 1011180.0107

Client Sample ID: SE3-GW-1111

Lab Sample ID: CUL0037-01

Date Collected: 11/28/11 18:00

Matrix: Ground Water

Date Received: 12/01/11 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	11L0155_P	12/02/11 00:00	SJN	TAL CF
Total	Analysis	SW 8260B/OA-1		10.0			11L0155	12/02/11 11:15	SJN	TAL CF
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	11L0049_P	12/01/11 15:52	ZTB	TAL CF
Total	Analysis	SW 9041		1.00			11L0049	12/01/11 16:42	ZTB	TAL CF
Total	Prep	SW 3510C_HPLC		1.02	980 mL	1.5 mL	11L0033_P	12/01/11 12:56	AM	TAL CF
Total	Analysis	SW 8310		1.00			U002051	12/05/11 13:40	TCH	TAL CF
Total	Prep	SW 3510C_HPLC	RE1	1.02	980 mL	1.5 mL	11L0033_P	12/01/11 12:56	AM	TAL CF
Total	Analysis	SW 8310	RE1	10.0			U002058	12/13/11 18:25	TCH	TAL CF

Client Sample ID: SE3-GW-1111

Lab Sample ID: CUL0037-02

Date Collected: 11/29/11 12:45

Matrix: Ground Water

Date Received: 12/01/11 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	11L0155_P	12/02/11 00:00	SJN	TAL CF
Total	Analysis	SW 8260B/OA-1		10.0			11L0155	12/02/11 11:40	SJN	TAL CF
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	11L0049_P	12/01/11 15:52	ZTB	TAL CF
Total	Analysis	SW 9041		1.00			11L0049	12/01/11 16:42	ZTB	TAL CF
Total	Prep	SW 3510C_HPLC		1.02	980 mL	1.5 mL	11L0033_P	12/01/11 12:56	AM	TAL CF
Total	Analysis	SW 8310		1.00			U002051	12/05/11 14:08	TCH	TAL CF
Total	Prep	SW 3510C_HPLC	RE1	1.02	980 mL	1.5 mL	11L0033_P	12/01/11 12:56	AM	TAL CF
Total	Analysis	SW 8310	RE1	10.0			U002058	12/13/11 19:22	TCH	TAL CF
Total	Prep	SW 3510C_HPLC	RE2	1.02	980 mL	1.5 mL	11L0033_P	12/01/11 12:56	AM	TAL CF
Total	Analysis	SW 8310	RE2	100			U002058	12/13/11 19:50	TCH	TAL CF

Client Sample ID: SE3-GW-1111

Lab Sample ID: CUL0037-03

Date Collected: 11/30/11 12:50

Matrix: Ground Water

Date Received: 12/01/11 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	11L0155_P	12/02/11 00:00	SJN	TAL CF
Total	Analysis	SW 8260B/OA-1		10.0			11L0155	12/02/11 12:05	SJN	TAL CF
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	11L0049_P	12/01/11 15:52	ZTB	TAL CF
Total	Analysis	SW 9041		1.00			11L0049	12/01/11 16:42	ZTB	TAL CF
Total	Prep	SW 3510C_HPLC		1.01	990 mL	1.5 mL	11L0033_P	12/01/11 12:56	AM	TAL CF
Total	Analysis	SW 8310		1.00			U002051	12/05/11 14:36	TCH	TAL CF
Total	Prep	SW 3510C_HPLC	RE1	1.01	990 mL	1.5 mL	11L0033_P	12/01/11 12:56	AM	TAL CF
Total	Analysis	SW 8310	RE1	10.0			U002058	12/13/11 20:18	TCH	TAL CF
Total	Prep	SW 3510C_HPLC	RE2	1.01	990 mL	1.5 mL	11L0033_P	12/01/11 12:56	AM	TAL CF
Total	Analysis	SW 8310	RE2	100			U002058	12/13/11 20:46	TCH	TAL CF

Lab Chronicle

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0037

Client Sample ID: TB-1

Lab Sample ID: CUL0037-04

Date Collected: 11/28/11 00:00

Matrix: Water

Date Received: 12/01/11 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	11L0155_P	12/02/11 00:00	SJN	TAL CF
Total	Analysis	SW 8260B/OA-1		1.00			11L0155	12/02/11 10:49	SJN	TAL CF
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	11L0191_P	12/05/11 16:04	ZTB	TAL CF
Total	Analysis	SW 9041		1.00			11L0191	12/05/11 17:16	ZTB	TAL CF

Laboratory References:

TAL CF = TestAmerica Cedar Falls, 704 Enterprise Drive, Cedar Falls, IA 50613, TEL 800-750-2401

Definitions/Glossary

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0037

Qualifiers

HPLC

Qualifier	Qualifier Description
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B	Analyte was detected in the associated Method Blank.
Z6	Surrogate recovery was outside control limits.
L1	Laboratory Control Sample and/or Laboratory Control Sample Duplicate recovery was outside control limits.
R2	LCS duplicate RPD exceeded the laboratory control limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
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✱	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Certification Summary

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0037

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Cedar Falls	AIHA -LAP	IHLAP		101044
TestAmerica Cedar Falls	Illinois	NELAC	5	200024
TestAmerica Cedar Falls	Iowa	State Program	7	7
TestAmerica Cedar Falls	Kansas	NELAC	7	E-10341
TestAmerica Cedar Falls	Minnesota	NELAC	5	019-999-319
TestAmerica Cedar Falls	North Dakota	State Program	8	R-186
TestAmerica Cedar Falls	Oregon	NELAC	10	IA100001
TestAmerica Cedar Falls	Wisconsin	State Program	5	999917270

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Method Summary

Client: MWH - DES MOINES

TestAmerica Job ID: CUL0037

Project/Site: 1011180.0107

Method	Method Description	Protocol	Laboratory
SW 8260B/OA-1	UST Volatile Compounds by GC/MS		TAL CF
SW 9041	VOC Preservation Check		TAL CF
SW 8310	PNA compounds by HPLC		TAL CF

Protocol References:

Laboratory References:

TAL CF = TestAmerica Cedar Falls, 704 Enterprise Drive, Cedar Falls, IA 50613, TEL 800-750-2401

Client Name: MEC Client #:

Address: 1153 Avenue Ave

City/State/Zip Code: Urbandale IA, 50322

Project Manager: Kevin Armstrong

Email Address: Kevin.Armstrong@Mullylab.com

Telephone Number: 515-2530830 Fax:

Sampler Name: (Print Name) Clint Oberbrockling

Sampler Signature: [Signature]

Project Name: MEC PNG

Project #: 100-101180.0107

Site/Location ID: Dubuque IA State: IA

Report To: Kevin Armstrong

Invoice To: Kevin Dodson

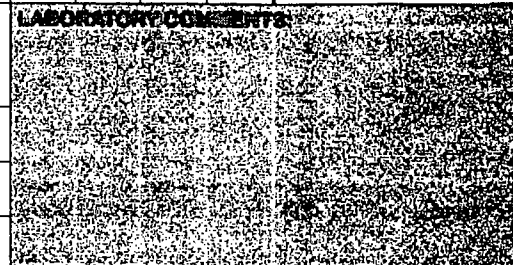
Quote #: PO#:

TAT ☒ Standard ☐ Rush (surcharges may apply)	Date Needed: _____	Fax Results: Y ☒ N ☒	Email Results: ☒ Y ☒ N	SAMPLE ID	Date Sampled	Time Sampled	G = Grab, C = Composite	Field Filtered	Matrix SL - Sludge DW - Drinking Water GW - Groundwater S - Soil/Solid WW - Wastewater Specify, Other	Preservation & # of Containers								Analyze For:										REMARKS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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QC Deliverables
☐ None
☐ Level 2
(Batch QC)
☐ Level 3
☐ Level 4
Other:

Special Instructions:

Relinquished By: <u>Clint Oberbrockling</u>	Date: <u>11/30/11</u>	Time: <u>1700</u>	Received By: <u>Tyler Jensen</u>	Date: <u>12/1/11</u>	Time: <u>9:20</u>
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:



Sample Receipt and Temperature Log Form

Client: MEC Project: _____

City: _____

Date: 12-1-11 Receiver's Initials: CH Time (Delivered): 9:20

Temperature Record:

Cooler ID# (If Applicable)
TARC

3.4 °C / On Ice

Thermometer:

- ☐ IR - 111531565 'D'
- ☒ IR - 111531506 'E'
- ☐ IR - 61854108 'Front'
- ☐ 101681126

Courier:

- | | |
|--|--|
| ☐ UPS | ☐ TA Courier |
| ☒ FedEx | ☐ TA Field Services |
| ☐ FedEx Ground | ☐ Client |
| ☐ US Postal Service | ☐ Other |
| ☐ Spee-Dee | |

☒ Temp Blank

☐ Temperature out of compliance

Custody seals present?

☐ Yes

Custody seals intact?

☐ Yes ☐ No

☐ Non-Conformance report started

Exceptions Noted

- ☐ Sample(s) not received in a cooler.
- ☐ Samples(s) received same day of sampling.
- ☐ Evidence of a chilling process
- ☐ No Temp. Blank. Inside temperature of cooler recorded.
- ☐ Temperature not taken:

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Cedar Falls
704 Enterprise Drive
Cedar Falls, IA 50613
Tel: 800-750-2401

TestAmerica Job ID: CUL0262
Client Project/Site: 1011180.0107
Client Project Description: MEC - Dubuque FMGP

For:
MWH - DES MOINES
11153 Aurora Avenue
Des Moines, IA 50322

Attn: Kevin Armstrong

Angela Muehling

Authorized for release by:
12/19/2011 11:15:22 AM
Angela Muehling
Project Coordinator
Angela.Muehling@testamericainc.com

Designee for
Derrick Klinkenberg
Organics Manager
derrick.klinkenberg@testamericainc.com

LINKS

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results through
TotalAccess

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The
Expert**

Visit us at:
www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0262

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
CUL0262-01	SE-3-GW-1111	Ground Water	12/01/11 12:55	12/05/11 18:00
CUL0262-02	SE-3-GW-1111	Water	12/02/11 12:55	12/05/11 18:00
CUL0262-03	Trip Blank	Water	12/01/11 00:00	12/05/11 18:00

Detection Summary

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0262

Client Sample ID: SE-3-GW-1111

Lab Sample ID: CUL0262-01

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	528		5.00		ug/L	5.00		SW 8260B/OA-1	Total
Toluene	30.6		5.00		ug/L	5.00		SW 8260B/OA-1	Total
Ethylbenzene	333		5.00		ug/L	5.00		SW 8260B/OA-1	Total
Xylenes, total	144		15.0		ug/L	5.00		SW 8260B/OA-1	Total
Anthracene	1.03		0.190	0.0100	ug/L	1.00		SW 8310	Total
Fluorene - RE1	36.6		1.90	0.160	ug/L	10.0		SW 8310	Total
Phenanthrene - RE1	10.1		1.00	0.0500	ug/L	10.0		SW 8310	Total
Acenaphthene - RE2	76.4		19.0	2.20	ug/L	100		SW 8310	Total
2-Methylnaphthalene - RE2	56.2		19.0	10.0	ug/L	100		SW 8310	Total
Naphthalene - RE2	464		10.0	4.60	ug/L	100		SW 8310	Total

Client Sample ID: SE-3-GW-1111

Lab Sample ID: CUL0262-02

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	534		5.00		ug/L	5.00		SW 8260B/OA-1	Total
Toluene	28.4		5.00		ug/L	5.00		SW 8260B/OA-1	Total
Ethylbenzene	326		5.00		ug/L	5.00		SW 8260B/OA-1	Total
Xylenes, total	142		15.0		ug/L	5.00		SW 8260B/OA-1	Total
TPH as Gasoline	5.45		5.00		mg/L	5.00		OA-1	Total
Anthracene	1.30		0.190	0.0100	ug/L	1.00		SW 8310	Total
Fluorene - RE1	36.0		1.90	0.160	ug/L	10.0		SW 8310	Total
Phenanthrene - RE1	9.31		1.00	0.0500	ug/L	10.0		SW 8310	Total
Acenaphthene - RE2	70.1		19.0	2.20	ug/L	100		SW 8310	Total
2-Methylnaphthalene - RE2	57.8		19.0	10.0	ug/L	100		SW 8310	Total
Naphthalene - RE2	454		10.0	4.60	ug/L	100		SW 8310	Total
Iron	68.8		0.100		mg/L	1.00		EPA 200.7	Total
Manganese	4.21		0.0100		mg/L	1.00		EPA 200.7	Total
Cyanide	0.848	pH<12	0.0200		mg/L	2.00		EPA 335.4	Total
Hardness	1920	pH>2	5.00		mg/L	1.00		SM 2340 C	Total
Cyanide (amenable)	0.0390	pH<12	0.0100		mg/L	1.00		SM 4500 CN G	Total

Client Sample ID: Trip Blank

Lab Sample ID: CUL0262-03

No Detections

Client Sample Results

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0262

Client Sample ID: SE-3-GW-1111

Lab Sample ID: CUL0262-01

Date Collected: 12/01/11 12:55

Matrix: Ground Water

Date Received: 12/05/11 18:00

Method: SW 8260B/OA-1 - UST Volatile Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	528		5.00		ug/L		12/06/11 00:00	12/06/11 16:25	5.00
Toluene	30.6		5.00		ug/L		12/06/11 00:00	12/06/11 16:25	5.00
Ethylbenzene	333		5.00		ug/L		12/06/11 00:00	12/06/11 16:25	5.00
Xylenes, total	144		15.0		ug/L		12/06/11 00:00	12/06/11 16:25	5.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	106		75 - 120	12/06/11 00:00	12/06/11 16:25	5.00
Toluene-d8	91		80 - 120	12/06/11 00:00	12/06/11 16:25	5.00
4-Bromofluorobenzene	104		75 - 110	12/06/11 00:00	12/06/11 16:25	5.00

Method: SW 9041 - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		12/07/11 13:18	12/07/11 13:31	1.00

Method: SW 8310 - PNA compounds by HPLC

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	1.03		0.190	0.0100	ug/L		12/07/11 10:23	12/09/11 23:50	1.00
Benzo (a) anthracene	<0.0200		0.130	0.0200	ug/L		12/07/11 10:23	12/09/11 23:50	1.00
Benzo (b) fluoranthene	<0.0280		0.100	0.0280	ug/L		12/07/11 10:23	12/09/11 23:50	1.00
Benzo (k) fluoranthene	<0.00700		0.140	0.00700	ug/L		12/07/11 10:23	12/09/11 23:50	1.00
Benzo (a) pyrene	<0.00800		0.190	0.00800	ug/L		12/07/11 10:23	12/09/11 23:50	1.00
Benzo (g,h,i) perylene	<0.00800		0.100	0.00800	ug/L		12/07/11 10:23	12/09/11 23:50	1.00
Chrysene	<0.00800		0.100	0.00800	ug/L		12/07/11 10:23	12/09/11 23:50	1.00
Dibenzo (a,h) anthracene	<0.0100		0.100	0.0100	ug/L		12/07/11 10:23	12/09/11 23:50	1.00
Fluoranthene	<0.0100		0.190	0.0100	ug/L		12/07/11 10:23	12/09/11 23:50	1.00
Indeno (1,2,3-cd) pyrene	<0.00600		0.100	0.00600	ug/L		12/07/11 10:23	12/09/11 23:50	1.00
Pyrene	<0.0170		0.190	0.0170	ug/L		12/07/11 10:23	12/09/11 23:50	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	97		45 - 100	12/07/11 10:23	12/09/11 23:50	1.00

Method: SW 8310 - PNA compounds by HPLC - RE1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	36.6		1.90	0.160	ug/L		12/07/11 10:23	12/13/11 21:14	10.0
Phenanthrene	10.1		1.00	0.0500	ug/L		12/07/11 10:23	12/13/11 21:14	10.0

Method: SW 8310 - PNA compounds by HPLC - RE2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	76.4		19.0	2.20	ug/L		12/07/11 10:23	12/13/11 21:42	100
Acenaphthylene	<8.70		19.0	8.70	ug/L		12/07/11 10:23	12/13/11 21:42	100
2-Methylnaphthalene	56.2		19.0	10.0	ug/L		12/07/11 10:23	12/13/11 21:42	100
Naphthalene	464		10.0	4.60	ug/L		12/07/11 10:23	12/13/11 21:42	100

Client Sample Results

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0262

Client Sample ID: SE-3-GW-1111

Lab Sample ID: CUL0262-02

Date Collected: 12/02/11 12:55

Matrix: Water

Date Received: 12/05/11 18:00

Method: SW 8260B/OA-1 - UST Volatile Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	534		5.00		ug/L		12/06/11 00:00	12/06/11 16:48	5.00
Toluene	28.4		5.00		ug/L		12/06/11 00:00	12/06/11 16:48	5.00
Ethylbenzene	326		5.00		ug/L		12/06/11 00:00	12/06/11 16:48	5.00
Xylenes, total	142		15.0		ug/L		12/06/11 00:00	12/06/11 16:48	5.00

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	101		75 - 120				12/06/11 00:00	12/06/11 16:48	5.00
Toluene-d8	91		80 - 120				12/06/11 00:00	12/06/11 16:48	5.00
4-Bromofluorobenzene	105		75 - 110				12/06/11 00:00	12/06/11 16:48	5.00

Method: SW 9041 - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		12/07/11 13:18	12/07/11 13:31	1.00

Method: EPA 625 - Semivolatile Organics by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	<50.0	RL1	50.0		ug/L		12/08/11 11:00	12/12/11 13:55	5.00
2,4-Dinitrotoluene	<50.0	RL1	50.0		ug/L		12/08/11 11:00	12/12/11 13:55	5.00
2,6-Dinitrotoluene	<50.0	RL1	50.0		ug/L		12/08/11 11:00	12/12/11 13:55	5.00
Nitrobenzene	<50.0	RL1	50.0		ug/L		12/08/11 11:00	12/12/11 13:55	5.00
2,4-Dimethylphenol	<50.0	RL1	50.0		ug/L		12/08/11 11:00	12/12/11 13:55	5.00
2,4-Dinitrophenol	<100	RL1	100		ug/L		12/08/11 11:00	12/12/11 13:55	5.00
4,6-Dinitro-2-methylphenol	<50.0	RL1	50.0		ug/L		12/08/11 11:00	12/12/11 13:55	5.00
2-Nitrophenol	<50.0	RL1	50.0		ug/L		12/08/11 11:00	12/12/11 13:55	5.00
4-Nitrophenol	<50.0	RL1	50.0		ug/L		12/08/11 11:00	12/12/11 13:55	5.00
Phenol	<50.0	RL1	50.0		ug/L		12/08/11 11:00	12/12/11 13:55	5.00

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	35	RL1	35 - 110				12/08/11 11:00	12/12/11 13:55	5.00
2-Fluorobiphenyl	36	RL1	35 - 100				12/08/11 11:00	12/12/11 13:55	5.00
Terphenyl-d14	60	RL1	35 - 135				12/08/11 11:00	12/12/11 13:55	5.00
Phenol-d6	15	RL1	10 - 60				12/08/11 11:00	12/12/11 13:55	5.00
2-Fluorophenol	20	RL1	20 - 80				12/08/11 11:00	12/12/11 13:55	5.00
2,4,6-Tribromophenol	47	RL1	45 - 120				12/08/11 11:00	12/12/11 13:55	5.00

Method: OA-1 - UST Volatile Compounds by GC

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
TPH as Gasoline	5.45		5.00		mg/L		12/07/11 14:11	12/07/11 19:17	5.00

Method: SW 8310 - PNA compounds by HPLC

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	1.30		0.190	0.0100	ug/L		12/07/11 10:23	12/10/11 00:19	1.00
Benzo (a) anthracene	<0.0200		0.130	0.0200	ug/L		12/07/11 10:23	12/10/11 00:19	1.00
Benzo (b) fluoranthene	<0.0280		0.100	0.0280	ug/L		12/07/11 10:23	12/10/11 00:19	1.00
Benzo (k) fluoranthene	<0.00700		0.140	0.00700	ug/L		12/07/11 10:23	12/10/11 00:19	1.00
Benzo (a) pyrene	<0.00800		0.190	0.00800	ug/L		12/07/11 10:23	12/10/11 00:19	1.00
Benzo (g,h,i) perylene	<0.00800		0.100	0.00800	ug/L		12/07/11 10:23	12/10/11 00:19	1.00
Chrysene	<0.00800		0.100	0.00800	ug/L		12/07/11 10:23	12/10/11 00:19	1.00
Dibenzo (a,h) anthracene	<0.0100		0.100	0.0100	ug/L		12/07/11 10:23	12/10/11 00:19	1.00
Fluoranthene	<0.0100		0.190	0.0100	ug/L		12/07/11 10:23	12/10/11 00:19	1.00
Indeno (1,2,3-cd) pyrene	<0.00600		0.100	0.00600	ug/L		12/07/11 10:23	12/10/11 00:19	1.00

Client Sample Results

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0262

Client Sample ID: SE-3-GW-1111

Lab Sample ID: CUL0262-02

Date Collected: 12/02/11 12:55

Matrix: Water

Date Received: 12/05/11 18:00

Method: SW 8310 - PNA compounds by HPLC (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pyrene	<0.0170		0.190	0.0170	ug/L		12/07/11 10:23	12/10/11 00:19	1.00

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	101	ZX	45 - 100				12/07/11 10:23	12/10/11 00:19	1.00

Method: SW 8310 - PNA compounds by HPLC - RE1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	36.0		1.90	0.160	ug/L		12/07/11 10:23	12/13/11 22:10	10.0
Phenanthrene	9.31		1.00	0.0500	ug/L		12/07/11 10:23	12/13/11 22:10	10.0

Method: SW 8310 - PNA compounds by HPLC - RE2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	70.1		19.0	2.20	ug/L		12/07/11 10:23	12/13/11 22:38	100
Acenaphthylene	<8.70		19.0	8.70	ug/L		12/07/11 10:23	12/13/11 22:38	100
2-Methylnaphthalene	57.8		19.0	10.0	ug/L		12/07/11 10:23	12/13/11 22:38	100
Naphthalene	454		10.0	4.60	ug/L		12/07/11 10:23	12/13/11 22:38	100

Method: EPA 200.7 - Total Metals by EPA 200 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	<0.0200		0.0200		mg/L		12/07/11 10:33	12/08/11 04:52	1.00
Copper	<0.0200		0.0200		mg/L		12/07/11 10:33	12/08/11 04:52	1.00
Iron	68.8		0.100		mg/L		12/07/11 10:33	12/08/11 04:52	1.00
Lead	<0.100		0.100		mg/L		12/07/11 10:33	12/08/11 04:52	1.00
Manganese	4.21		0.0100		mg/L		12/07/11 10:33	12/08/11 04:52	1.00
Nickel	<0.0500		0.0500		mg/L		12/07/11 10:33	12/08/11 04:52	1.00
Zinc	<0.100	IE	0.100		mg/L		12/07/11 10:33	12/13/11 15:47	5.00

Method: EPA 335.4 - General Chemistry Parameters

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide	0.848	pH<12	0.0200		mg/L		12/07/11 14:00	12/08/11 19:45	2.00

Method: SM 2340 C - General Chemistry Parameters

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness	1920	pH>2	5.00		mg/L		12/14/11 11:59	12/14/11 12:08	1.00

Method: SM 4500 CN G - General Chemistry Parameters

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide (amenable)	0.0390	pH<12	0.0100		mg/L		12/07/11 14:00	12/08/11 19:46	1.00

Client Sample Results

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0262

Client Sample ID: Trip Blank

Lab Sample ID: CUL0262-03

Date Collected: 12/01/11 00:00

Matrix: Water

Date Received: 12/05/11 18:00

Method: SW 8260B/OA-1 - UST Volatile Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.00		1.00		ug/L		12/06/11 00:00	12/06/11 17:10	1.00
Toluene	<1.00		1.00		ug/L		12/06/11 00:00	12/06/11 17:10	1.00
Ethylbenzene	<1.00		1.00		ug/L		12/06/11 00:00	12/06/11 17:10	1.00
Xylenes, total	<3.00		3.00		ug/L		12/06/11 00:00	12/06/11 17:10	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	100		75 - 120	12/06/11 00:00	12/06/11 17:10	1.00
Toluene-d8	92		80 - 120	12/06/11 00:00	12/06/11 17:10	1.00
4-Bromofluorobenzene	103		75 - 110	12/06/11 00:00	12/06/11 17:10	1.00

Method: SW 9041 - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		12/07/11 13:18	12/07/11 13:31	1.00

Surrogate Summary

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0262

Method: SW 8260B/OA-1 - UST Volatile Compounds by GC/MS

Matrix: Ground Water

Prep Type: Total

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		DBFM (75-120)	Toluene-d8 (80-120)	BFB (75-110)
CUL0262-01	SE-3-GW-1111	106	91	104

Surrogate Legend

DBFM = Dibromofluoromethane

Toluene-d8 = Toluene-d8

BFB = 4-Bromofluorobenzene

Method: SW 8260B/OA-1 - UST Volatile Compounds by GC/MS

Matrix: Water

Prep Type: Total

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		DBFM (75-120)	Toluene-d8 (80-120)	BFB (75-110)
CUL0262-02	SE-3-GW-1111	101	91	105
CUL0262-03	Trip Blank	100	92	103

Surrogate Legend

DBFM = Dibromofluoromethane

Toluene-d8 = Toluene-d8

BFB = 4-Bromofluorobenzene

Method: SW 8260B/OA-1 - UST Volatile Compounds by GC/MS

Matrix: Water - NonPotable

Prep Type: Total

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		DBFM (75-120)	Toluene-d8 (80-120)	BFB (75-110)
11L0263-BLK1	Method Blank	104	90	100

Surrogate Legend

DBFM = Dibromofluoromethane

Toluene-d8 = Toluene-d8

BFB = 4-Bromofluorobenzene

Method: SW 8260B/OA-1 - UST Volatile Compounds by GC/MS

Matrix: Water - NonPotable

Prep Type: Total

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		DBFM (75-120)	Toluene-d8 (80-120)	BFB (80-120)
11L0263-BS1	Lab Control Sample	108	94	110
11L0263-MS1	Matrix Spike	106	92	104
11L0263-MSD1	Matrix Spike Duplicate	107	95	107

Surrogate Legend

DBFM = Dibromofluoromethane

Toluene-d8 = Toluene-d8

BFB = 4-Bromofluorobenzene

Surrogate Summary

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0262

Method: EPA 625 - Semivolatile Organics by GC/MS

Matrix: Water

Prep Type: Total

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		NBZ (35-110)	FBP (35-100)	TPH (35-135)	PHL (10-60)	2FP (20-80)	TBP (45-120)
CUL0262-02	SE-3-GW-1111	35 RL1	36 RL1	60 RL1	15 RL1	20 RL1	47 RL1
Surrogate Legend							
NBZ = Nitrobenzene-d5							
FBP = 2-Fluorobiphenyl							
TPH = Terphenyl-d14							
PHL = Phenol-d6							
2FP = 2-Fluorophenol							
TBP = 2,4,6-Tribromophenol							

Method: EPA 625 - Semivolatile Organics by GC/MS

Matrix: Water - NonPotable

Prep Type: Total

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		NBZ (35-110)	FBP (35-100)	TPH (35-135)	PHL (10-60)	2FP (20-80)	TBP (45-120)
11L0335-BLK1	Method Blank	35	32 Z6	69	17	25	39 Z6
11L0335-BLK3	Method Blank	39	33 Z6	68	20	28	48
Surrogate Legend							
NBZ = Nitrobenzene-d5							
FBP = 2-Fluorobiphenyl							
TPH = Terphenyl-d14							
PHL = Phenol-d6							
2FP = 2-Fluorophenol							
TBP = 2,4,6-Tribromophenol							

Method: EPA 625 - Semivolatile Organics by GC/MS

Matrix: Water - NonPotable

Prep Type: Total

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		NBZ (35-105)	FBP (35-100)	TPH (40-125)	PHL (10-45)	2FP (20-65)	TBP (50-115)
11L0335-BS1	Lab Control Sample	39	42	72	16	24	54
11L0335-BS3	Lab Control Sample	45	42	72	19	26	63
Surrogate Legend							
NBZ = Nitrobenzene-d5							
FBP = 2-Fluorobiphenyl							
TPH = Terphenyl-d14							
PHL = Phenol-d6							
2FP = 2-Fluorophenol							
TBP = 2,4,6-Tribromophenol							

Method: EPA 625 - Semivolatile Organics by GC/MS

Matrix: Water - NonPotable

Prep Type: Total

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		NBZ (20-95)	FBP (25-90)	TPH (30-115)	PHL (10-40)	2FP (10-65)	TBP (30-120)
11L0335-MS1	Matrix Spike	34	35	58	14	21	41
11L0335-MSD1	Matrix Spike Duplicate	53	55	79	21	31	64

Surrogate Summary

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0262

Surrogate Legend

NBZ = Nitrobenzene-d5
FBP = 2-Fluorobiphenyl
TPH = Terphenyl-d14
PHL = Phenol-d6
2FP = 2-Fluorophenol
TBP = 2,4,6-Tribromophenol

Method: SW 8310 - PNA compounds by HPLC

Matrix: Ground Water

Prep Type: Total

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	FBP (45-100)
CUL0262-01	SE-3-GW-1111	97

Surrogate Legend

FBP = 2-Fluorobiphenyl

Method: SW 8310 - PNA compounds by HPLC

Matrix: Water

Prep Type: Total

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	FBP (45-100)
CUL0262-02	SE-3-GW-1111	101 ZX

Surrogate Legend

FBP = 2-Fluorobiphenyl

Method: SW 8310 - PNA compounds by HPLC

Matrix: Water - NonPotable

Prep Type: Total

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	FBP (45-100)
11L0272-BLK1	Method Blank	48

Surrogate Legend

FBP = 2-Fluorobiphenyl

Method: SW 8310 - PNA compounds by HPLC

Matrix: Water - NonPotable

Prep Type: Total

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	FBP (50-95)
11L0272-BS1	Lab Control Sample	44 Z6

Surrogate Legend

FBP = 2-Fluorobiphenyl

Surrogate Summary

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0262

Method: SW 8310 - PNA compounds by HPLC

Matrix: Water - NonPotable

Prep Type: Total

Percent Surrogate Recovery (Acceptance Limits)

FBP
(40-100)

Lab Sample ID	Client Sample ID
11L0272-MS1	Matrix Spike
11L0272-MSD1	Matrix Spike Duplicate

63

69

Surrogate Legend

FBP = 2-Fluorobiphenyl

QC Sample Results

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0262

Method: SW 8260B/OA-1 - UST Volatile Compounds by GC/MS

Lab Sample ID: 11L0263-BLK1

Matrix: Water - NonPotable

Analysis Batch: 11L0263

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 11L0263_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.00		1.00		ug/L		12/06/11 00:00	12/06/11 14:56	1.00
Toluene	<1.00		1.00		ug/L		12/06/11 00:00	12/06/11 14:56	1.00
Ethylbenzene	<1.00		1.00		ug/L		12/06/11 00:00	12/06/11 14:56	1.00
Xylenes, total	<3.00		3.00		ug/L		12/06/11 00:00	12/06/11 14:56	1.00

Surrogate	Blank %Recovery	Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	104		75 - 120	12/06/11 00:00	12/06/11 14:56	1.00
Toluene-d8	90		80 - 120	12/06/11 00:00	12/06/11 14:56	1.00
4-Bromofluorobenzene	100		75 - 110	12/06/11 00:00	12/06/11 14:56	1.00

Lab Sample ID: 11L0263-BS1

Matrix: Water - NonPotable

Analysis Batch: 11L0263

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 11L0263_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Benzene	20.0	21.8		ug/L		109	70 - 130
Toluene	20.0	19.3		ug/L		97	70 - 135
Ethylbenzene	20.0	19.8		ug/L		99	70 - 130
Xylenes, total	60.0	61.8		ug/L		103	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dibromofluoromethane	108		75 - 120
Toluene-d8	94		80 - 120
4-Bromofluorobenzene	110		80 - 120

Lab Sample ID: 11L0263-MS1

Matrix: Water - NonPotable

Analysis Batch: 11L0263

Client Sample ID: Matrix Spike

Prep Type: Total

Prep Batch: 11L0263_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	Limits
Benzene	0.120		20.0	20.2		ug/L		100	50 - 130
Toluene	0.0200		20.0	17.6		ug/L		88	45 - 135
Ethylbenzene	0.0400		20.0	17.6		ug/L		88	45 - 135
Xylenes, total	<0.130		60.0	53.7		ug/L		89	40 - 135

Surrogate	Matrix Spike %Recovery	Matrix Spike Qualifier	Limits
Dibromofluoromethane	106		75 - 120
Toluene-d8	92		80 - 120
4-Bromofluorobenzene	104		80 - 120

Lab Sample ID: 11L0263-MSD1

Matrix: Water - NonPotable

Analysis Batch: 11L0263

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total

Prep Batch: 11L0263_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Dup Result	Matrix Spike Dup Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.120		20.0	19.7		ug/L		98	50 - 130	2	20
Toluene	0.0200		20.0	18.2		ug/L		91	45 - 135	4	20
Ethylbenzene	0.0400		20.0	18.1		ug/L		90	45 - 135	3	20
Xylenes, total	<0.130		60.0	55.5		ug/L		93	40 - 135	3	20

QC Sample Results

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0262

Method: SW 8260B/OA-1 - UST Volatile Compounds by GC/MS (Continued)

Lab Sample ID: 11L0263-MSD1

Matrix: Water - NonPotable

Analysis Batch: 11L0263

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total

Prep Batch: 11L0263_P

Surrogate	Matrix Spike Dup %Recovery	Matrix Spike Dup Qualifier	Limits
Dibromofluoromethane	107		75 - 120
Toluene-d8	95		80 - 120
4-Bromofluorobenzene	107		80 - 120

Method: EPA 625 - Semivolatile Organics by GC/MS

Lab Sample ID: 11L0335-BLK1

Matrix: Water - NonPotable

Analysis Batch: U002048

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 11L0335_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	<10.0		10.0		ug/L		12/08/11 11:00	12/09/11 13:01	1.00
2,4-Dinitrotoluene	<10.0		10.0		ug/L		12/08/11 11:00	12/09/11 13:01	1.00
2,6-Dinitrotoluene	<10.0		10.0		ug/L		12/08/11 11:00	12/09/11 13:01	1.00
Nitrobenzene	<10.0		10.0		ug/L		12/08/11 11:00	12/09/11 13:01	1.00
2,4-Dimethylphenol	<10.0		10.0		ug/L		12/08/11 11:00	12/09/11 13:01	1.00
2,4-Dinitrophenol	<20.0		20.0		ug/L		12/08/11 11:00	12/09/11 13:01	1.00
4,6-Dinitro-2-methylphenol	<10.0		10.0		ug/L		12/08/11 11:00	12/09/11 13:01	1.00
2-Nitrophenol	<10.0		10.0		ug/L		12/08/11 11:00	12/09/11 13:01	1.00
4-Nitrophenol	<10.0		10.0		ug/L		12/08/11 11:00	12/09/11 13:01	1.00
Phenol	<10.0		10.0		ug/L		12/08/11 11:00	12/09/11 13:01	1.00

Surrogate	Blank %Recovery	Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	35		35 - 110	12/08/11 11:00	12/09/11 13:01	1.00
2-Fluorobiphenyl	32	Z6	35 - 100	12/08/11 11:00	12/09/11 13:01	1.00
Terphenyl-d14	69		35 - 135	12/08/11 11:00	12/09/11 13:01	1.00
Phenol-d6	17		10 - 60	12/08/11 11:00	12/09/11 13:01	1.00
2-Fluorophenol	25		20 - 80	12/08/11 11:00	12/09/11 13:01	1.00
2,4,6-Tribromophenol	39	Z6	45 - 120	12/08/11 11:00	12/09/11 13:01	1.00

Lab Sample ID: 11L0335-BLK3

Matrix: Water - NonPotable

Analysis Batch: U002046

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 11L0335_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	<10.0		10.0		ug/L		12/08/11 11:00	12/09/11 13:44	1.00
2,4-Dinitrotoluene	<10.0		10.0		ug/L		12/08/11 11:00	12/09/11 13:44	1.00
2,6-Dinitrotoluene	<10.0		10.0		ug/L		12/08/11 11:00	12/09/11 13:44	1.00
Nitrobenzene	<10.0		10.0		ug/L		12/08/11 11:00	12/09/11 13:44	1.00
2,4-Dimethylphenol	<10.0		10.0		ug/L		12/08/11 11:00	12/09/11 13:44	1.00
2,4-Dinitrophenol	<20.0	CIN	20.0		ug/L		12/08/11 11:00	12/09/11 13:44	1.00
4,6-Dinitro-2-methylphenol	<10.0	CIN	10.0		ug/L		12/08/11 11:00	12/09/11 13:44	1.00
2-Nitrophenol	<10.0		10.0		ug/L		12/08/11 11:00	12/09/11 13:44	1.00
4-Nitrophenol	<10.0		10.0		ug/L		12/08/11 11:00	12/09/11 13:44	1.00
Phenol	<10.0		10.0		ug/L		12/08/11 11:00	12/09/11 13:44	1.00

Surrogate	Blank %Recovery	Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	39		35 - 110	12/08/11 11:00	12/09/11 13:44	1.00

QC Sample Results

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0262

Method: EPA 625 - Semivolatile Organics by GC/MS (Continued)

Lab Sample ID: 11L0335-BLK3

Matrix: Water - NonPotable

Analysis Batch: U002046

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 11L0335_P

Surrogate	Blank %Recovery	Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	33	Z6	35 - 100	12/08/11 11:00	12/09/11 13:44	1.00
Terphenyl-d14	68		35 - 135	12/08/11 11:00	12/09/11 13:44	1.00
Phenol-d6	20		10 - 60	12/08/11 11:00	12/09/11 13:44	1.00
2-Fluorophenol	28		20 - 80	12/08/11 11:00	12/09/11 13:44	1.00
2,4,6-Tribromophenol	48		45 - 120	12/08/11 11:00	12/09/11 13:44	1.00

Lab Sample ID: 11L0335-BS1

Matrix: Water - NonPotable

Analysis Batch: U002048

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 11L0335_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Dibenzofuran	100	45.1		ug/L		45	45 - 110
2,4-Dinitrotoluene	100	56.5		ug/L		56	55 - 120
2,6-Dinitrotoluene	100	52.4		ug/L		52	50 - 120
Nitrobenzene	100	37.6		ug/L		38	35 - 100
2,4-Dimethylphenol	100	36.1		ug/L		36	35 - 95
2,4-Dinitrophenol	100	46.3		ug/L		46	45 - 140
4,6-Dinitro-2-methylphenol	100	59.8		ug/L		60	50 - 145
2-Nitrophenol	100	38.9	L1	ug/L		39	40 - 110
4-Nitrophenol	100	21.6		ug/L		22	10 - 60
Phenol	100	16.5		ug/L		16	15 - 45

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Nitrobenzene-d5	39		35 - 105
2-Fluorobiphenyl	42		35 - 100
Terphenyl-d14	72		40 - 125
Phenol-d6	16		10 - 45
2-Fluorophenol	24		20 - 65
2,4,6-Tribromophenol	54		50 - 115

Lab Sample ID: 11L0335-BS3

Matrix: Water - NonPotable

Analysis Batch: U002046

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 11L0335_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Dibenzofuran	100	46.2		ug/L		46	45 - 110
2,4-Dinitrotoluene	100	67.6		ug/L		68	55 - 120
2,6-Dinitrotoluene	100	60.1		ug/L		60	50 - 120
Nitrobenzene	100	41.2		ug/L		41	35 - 100
2,4-Dimethylphenol	100	43.3		ug/L		43	35 - 95
2,4-Dinitrophenol	100	75.7	CIN	ug/L		76	45 - 140
4,6-Dinitro-2-methylphenol	100	87.3	CIN	ug/L		87	50 - 145
2-Nitrophenol	100	47.8		ug/L		48	40 - 110
4-Nitrophenol	100	29.4		ug/L		29	10 - 60
Phenol	100	19.4		ug/L		19	15 - 45

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Nitrobenzene-d5	45		35 - 105
2-Fluorobiphenyl	42		35 - 100

QC Sample Results

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0262

Method: EPA 625 - Semivolatile Organics by GC/MS (Continued)

Lab Sample ID: 11L0335-BS3
Matrix: Water - NonPotable
Analysis Batch: U002046

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 11L0335_P

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	72		40 - 125
Phenol-d6	19		10 - 45
2-Fluorophenol	26		20 - 65
2,4,6-Tribromophenol	63		50 - 115

Lab Sample ID: 11L0335-MS1
Matrix: Water - NonPotable
Analysis Batch: U002057

Client Sample ID: Matrix Spike
Prep Type: Total
Prep Batch: 11L0335_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Matrix Spike Unit	D	%Rec	%Rec. Limits
Dibenzofuran	<0.539		108	35.8	M1	ug/L		33	45 - 110
2,4-Dinitrotoluene	<0.427		108	46.7	M1	ug/L		43	55 - 120
2,6-Dinitrotoluene	44.5		108	42.2	M1	ug/L		-2	50 - 120
Nitrobenzene	<0.494		108	35.8	M1	ug/L		33	35 - 115
2,4-Dimethylphenol	<0.472		108	32.6		ug/L		30	15 - 110
2,4-Dinitrophenol	<3.01		108	22.1	M1	ug/L		21	45 - 145
4,6-Dinitro-2-methylphenol	<4.99		108	40.0	M1	ug/L		37	50 - 145
2-Nitrophenol	<0.360		108	38.0	M1	ug/L		35	40 - 110
4-Nitrophenol	1.03		108	19.6		ug/L		17	10 - 60
Phenol	<5.39		108	16.7		ug/L		16	10 - 50

Surrogate	Matrix Spike %Recovery	Matrix Spike Qualifier	Limits
Nitrobenzene-d5	34		20 - 95
2-Fluorobiphenyl	35		25 - 90
Terphenyl-d14	58		30 - 115
Phenol-d6	14		10 - 40
2-Fluorophenol	21		10 - 65
2,4,6-Tribromophenol	41		30 - 120

Lab Sample ID: 11L0335-MSD1
Matrix: Water - NonPotable
Analysis Batch: U002057

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total
Prep Batch: 11L0335_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Dup Result	Matrix Spike Dup Qualifier	Matrix Spike Dup Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dibenzofuran	<0.539		108	62.7	R	ug/L		58	45 - 110	55	35
2,4-Dinitrotoluene	<0.427		108	72.9	R	ug/L		68	55 - 120	44	35
2,6-Dinitrotoluene	44.5		108	66.8	R	ug/L		21	50 - 120	45	35
Nitrobenzene	<0.494		108	55.2	R	ug/L		51	35 - 115	43	35
2,4-Dimethylphenol	<0.472		108	51.0	R	ug/L		47	15 - 110	44	35
2,4-Dinitrophenol	<3.01		108	47.2	M1 R	ug/L		44	45 - 145	73	35
4,6-Dinitro-2-methylphenol	<4.99		108	69.8	R	ug/L		65	50 - 145	54	35
2-Nitrophenol	<0.360		108	59.6	R	ug/L		55	40 - 110	44	35
4-Nitrophenol	1.03		108	28.4	R	ug/L		25	10 - 60	37	35
Phenol	<5.39		108	25.0	R	ug/L		23	10 - 50	40	35

Surrogate	Matrix Spike Dup %Recovery	Matrix Spike Dup Qualifier	Limits
Nitrobenzene-d5	53		20 - 95
2-Fluorobiphenyl	55		25 - 90
Terphenyl-d14	79		30 - 115

QC Sample Results

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0262

Method: EPA 625 - Semivolatile Organics by GC/MS (Continued)

Lab Sample ID: 11L0335-MSD1

Matrix: Water - NonPotable

Analysis Batch: U002057

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total

Prep Batch: 11L0335_P

Surrogate	Matrix Spike Dup %Recovery	Matrix Spike Dup Qualifier	Limits
Phenol-d6	21		10 - 40
2-Fluorophenol	31		10 - 65
2,4,6-Tribromophenol	64		30 - 120

Method: OA-1 - UST Volatile Compounds by GC

Lab Sample ID: 11L0362-BLK1

Matrix: Water - NonPotable

Analysis Batch: 11L0362

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 11L0362_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
TPH as Gasoline	<1.00		1.00		mg/L		12/07/11 00:00	12/07/11 13:00	1.00

Lab Sample ID: 11L0362-BS2

Matrix: Water - NonPotable

Analysis Batch: 11L0362

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 11L0362_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
TPH as Gasoline	1000	929		ug/L		93	80 - 150

Method: SW 8310 - PNA compounds by HPLC

Lab Sample ID: 11L0272-BLK1

Matrix: Water - NonPotable

Analysis Batch: U002040

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 11L0272_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.0220		0.190	0.0220	ug/L		12/07/11 10:23	12/09/11 21:58	1.00
Acenaphthylene	<0.0870		0.190	0.0870	ug/L		12/07/11 10:23	12/09/11 21:58	1.00
Anthracene	<0.0100		0.190	0.0100	ug/L		12/07/11 10:23	12/09/11 21:58	1.00
Benzo (a) anthracene	<0.0200		0.130	0.0200	ug/L		12/07/11 10:23	12/09/11 21:58	1.00
Benzo (b) fluoranthene	<0.0280		0.100	0.0280	ug/L		12/07/11 10:23	12/09/11 21:58	1.00
Benzo (k) fluoranthene	<0.00700		0.140	0.00700	ug/L		12/07/11 10:23	12/09/11 21:58	1.00
Benzo (a) pyrene	<0.00800		0.190	0.00800	ug/L		12/07/11 10:23	12/09/11 21:58	1.00
Benzo (g,h,i) perylene	<0.00800		0.100	0.00800	ug/L		12/07/11 10:23	12/09/11 21:58	1.00
Chrysene	<0.00800		0.100	0.00800	ug/L		12/07/11 10:23	12/09/11 21:58	1.00
Dibenzo (a,h) anthracene	<0.0100		0.100	0.0100	ug/L		12/07/11 10:23	12/09/11 21:58	1.00
Fluoranthene	<0.0100		0.190	0.0100	ug/L		12/07/11 10:23	12/09/11 21:58	1.00
Fluorene	<0.0160		0.190	0.0160	ug/L		12/07/11 10:23	12/09/11 21:58	1.00
Indeno (1,2,3-cd) pyrene	<0.00600		0.100	0.00600	ug/L		12/07/11 10:23	12/09/11 21:58	1.00
2-Methylnaphthalene	<0.100		0.190	0.100	ug/L		12/07/11 10:23	12/09/11 21:58	1.00
Naphthalene	<0.0460		0.100	0.0460	ug/L		12/07/11 10:23	12/09/11 21:58	1.00
Phenanthrene	<0.00500		0.100	0.00500	ug/L		12/07/11 10:23	12/09/11 21:58	1.00
Pyrene	<0.0170		0.190	0.0170	ug/L		12/07/11 10:23	12/09/11 21:58	1.00

Surrogate	Blank %Recovery	Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	48		45 - 100	12/07/11 10:23	12/09/11 21:58	1.00

QC Sample Results

Client: MWH - DES.MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0262

Method: SW 8310 - PNA compounds by HPLC (Continued)

Lab Sample ID: 11L0272-BS1

Matrix: Water - NonPotable

Analysis Batch: U002040

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 11L0272_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Acenaphthene	10.0	5.14		ug/L		51	50 - 95
Acenaphthylene	20.0	10.1		ug/L		51	40 - 95
Anthracene	1.00	0.535		ug/L		53	50 - 90
Benzo (a) anthracene	1.00	0.591		ug/L		59	55 - 95
Benzo (b) fluoranthene	2.00	1.23		ug/L		62	55 - 110
Benzo (k) fluoranthene	1.00	0.622		ug/L		62	55 - 100
Benzo (a) pyrene	1.00	0.600		ug/L		60	40 - 105
Benzo (g,h,i) perylene	2.00	1.22		ug/L		61	50 - 100
Chrysene	1.00	0.600		ug/L		60	55 - 100
Dibenzo (a,h) anthracene	2.00	1.23		ug/L		61	55 - 100
Fluoranthene	2.00	1.14		ug/L		57	50 - 100
Fluorene	2.00	1.08		ug/L		54	50 - 95
Indeno (1,2,3-cd) pyrene	1.00	0.607		ug/L		61	50 - 100
2-Methylnaphthalene	10.0	4.67		ug/L		47	45 - 95
Naphthalene	10.0	5.05		ug/L		51	45 - 90
Phenanthrene	1.00	0.567		ug/L		57	55 - 95
Pyrene	1.00	0.564		ug/L		56	50 - 100

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	44	Z6	50 - 95

Lab Sample ID: 11L0272-MS1

Matrix: Water - NonPotable

Analysis Batch: U002040

Client Sample ID: Matrix Spike

Prep Type: Total

Prep Batch: 11L0272_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	Limits
Acenaphthene	<0.0220		10.1	6.83		ug/L		68	20 - 115
Acenaphthylene	<0.0870		20.2	13.8		ug/L		68	15 - 110
Anthracene	<0.0100		1.01	0.713		ug/L		71	10 - 105
Benzo (a) anthracene	<0.0200		1.01	0.752		ug/L		74	20 - 115
Benzo (b) fluoranthene	<0.0280		2.02	1.52		ug/L		75	25 - 125
Benzo (k) fluoranthene	<0.00700		1.01	0.770		ug/L		76	20 - 115
Benzo (a) pyrene	<0.00800		1.01	0.702		ug/L		69	15 - 110
Benzo (g,h,i) perylene	<0.00800		2.02	1.51		ug/L		75	15 - 115
Chrysene	<0.00800		1.01	0.761		ug/L		75	20 - 115
Dibenzo (a,h) anthracene	<0.0100		2.02	1.52		ug/L		75	20 - 115
Fluoranthene	<0.0100		2.02	1.49		ug/L		74	25 - 120
Fluorene	<0.0160		2.02	1.47		ug/L		73	30 - 130
Indeno (1,2,3-cd) pyrene	<0.00600		1.01	0.758		ug/L		75	15 - 110
2-Methylnaphthalene	<0.100		10.1	5.92		ug/L		59	15 - 110
Naphthalene	<0.0460		10.1	6.69		ug/L		66	10 - 105
Phenanthrene	<0.00500		1.01	0.756		ug/L		75	20 - 115
Pyrene	<0.0170		1.01	0.762		ug/L		75	15 - 110

Surrogate	Matrix Spike %Recovery	Matrix Spike Qualifier	Limits
2-Fluorobiphenyl	63		40 - 100

QC Sample Results

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0262

Method: SW 8310 - PNA compounds by HPLC (Continued)

Lab Sample ID: 11L0272-MSD1

Matrix: Water - NonPotable

Analysis Batch: U002040

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total

Prep Batch: 11L0272_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Dup Result	Matrix Spike Dup Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Acenaphthene	<0.0220		11.2	8.54		ug/L		76	20 - 115	22	25
Acenaphthylene	<0.0870		22.5	17.5		ug/L		78	15 - 110	23	30
Anthracene	<0.0100		1.12	0.875		ug/L		78	10 - 105	20	35
Benzo (a) anthracene	<0.0200		1.12	0.963		ug/L		86	20 - 115	25	35
Benzo (b) fluoranthene	<0.0280		2.25	2.05		ug/L		91	25 - 125	30	35
Benzo (k) fluoranthene	<0.00700		1.12	1.05		ug/L		94	20 - 115	31	35
Benzo (a) pyrene	<0.00800		1.12	0.955	R	ug/L		85	15 - 110	31	25
Benzo (g,h,i) perylene	<0.00800		2.25	1.93		ug/L		86	15 - 115	24	35
Chrysene	<0.00800		1.12	0.980		ug/L		87	20 - 115	25	35
Dibenzo (a,h) anthracene	<0.0100		2.25	1.95		ug/L		87	20 - 115	25	35
Fluoranthene	<0.0100		2.25	1.84		ug/L		82	25 - 120	21	25
Fluorene	<0.0160		2.25	1.97	R	ug/L		88	30 - 130	29	25
Indeno (1,2,3-cd) pyrene	<0.00600		1.12	0.969		ug/L		86	15 - 110	24	35
2-Methylnaphthalene	<0.100		11.2	7.48		ug/L		67	15 - 110	23	25
Naphthalene	<0.0460		11.2	8.71	R	ug/L		77	10 - 105	26	25
Phenanthrene	<0.00500		1.12	0.933		ug/L		83	20 - 115	21	25
Pyrene	<0.0170		1.12	0.924		ug/L		82	15 - 110	19	25

Surrogate	Matrix Spike Dup %Recovery	Matrix Spike Dup Qualifier	Matrix Spike Dup Limits
2-Fluorobiphenyl	69		40 - 100

Method: EPA 200.7 - Total Metals by EPA 200 Series Methods

Lab Sample ID: 11L0275-BLK1

Matrix: Water - NonPotable

Analysis Batch: 11L0275

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 11L0275_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	<0.0200		0.0200		mg/L		12/07/11 10:33	12/08/11 03:26	1.00
Copper	<0.0200		0.0200		mg/L		12/07/11 10:33	12/08/11 03:26	1.00
Iron	<0.100		0.100		mg/L		12/07/11 10:33	12/08/11 03:26	1.00
Lead	<0.100		0.100		mg/L		12/07/11 10:33	12/08/11 03:26	1.00
Manganese	<0.0100		0.0100		mg/L		12/07/11 10:33	12/08/11 03:26	1.00
Nickel	<0.0500		0.0500		mg/L		12/07/11 10:33	12/08/11 03:26	1.00
Zinc	<0.0200		0.0200		mg/L		12/07/11 10:33	12/08/11 03:26	1.00

Lab Sample ID: 11L0275-BS1

Matrix: Water - NonPotable

Analysis Batch: 11L0275

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 11L0275_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Chromium	1.00	0.923		mg/L		92	85 - 115
Copper	2.00	1.81		mg/L		90	80 - 110
Iron	2.00	1.79		mg/L		90	85 - 110
Lead	2.00	1.78		mg/L		89	80 - 110
Manganese	1.00	0.935		mg/L		93	85 - 115
Nickel	2.00	1.76		mg/L		88	85 - 110
Zinc	1.00	0.915		mg/L		92	80 - 110

QC Sample Results

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0262

Method: EPA 200.7 - Total Metals by EPA 200 Series Methods (Continued)

Lab Sample ID: 11L0275-MS1

Matrix: Water - NonPotable

Analysis Batch: 11L0275

Client Sample ID: Matrix Spike

Prep Type: Total

Prep Batch: 11L0275_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	Limits
Chromium	0.00590		1.00	0.922		mg/L		92	75 - 115
Copper	0.0253		2.00	1.91		mg/L		94	80 - 115
Iron	0.131		2.00	1.91		mg/L		89	75 - 125
Lead	0.0338		2.00	1.81		mg/L		89	80 - 110
Manganese	1.85		1.00	2.78		mg/L		93	80 - 115
Nickel	0.0114		2.00	1.74		mg/L		87	75 - 110
Zinc	0.0252		1.00	0.970		mg/L		94	75 - 120

Lab Sample ID: 11L0275-MS2

Matrix: Water - NonPotable

Analysis Batch: 11L0275

Client Sample ID: Matrix Spike

Prep Type: Total

Prep Batch: 11L0275_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	Limits
Chromium	0.0206		1.00	0.840		mg/L		82	75 - 115
Copper	0.0449		2.00	1.71		mg/L		83	80 - 115
Iron	0.414		2.00	1.99		mg/L		79	75 - 125
Lead	0.0254		2.00	1.63		mg/L		80	80 - 110
Manganese	0.0801		1.00	0.916		mg/L		84	80 - 115
Nickel	0.0240		2.00	1.57		mg/L		77	75 - 110

Lab Sample ID: 11L0275-MS2

Matrix: Water - NonPotable

Analysis Batch: 11L0275

Client Sample ID: Matrix Spike

Prep Type: Total

Prep Batch: 11L0275_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	Limits
Zinc	0.0439		1.00	1.04		mg/L		99	75 - 120

Lab Sample ID: 11L0275-MSD1

Matrix: Water - NonPotable

Analysis Batch: 11L0275

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total

Prep Batch: 11L0275_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Dup Result	Matrix Spike Dup Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chromium	0.00590		1.00	0.887		mg/L		88	75 - 115	4	20
Copper	0.0253		2.00	1.82		mg/L		90	80 - 115	5	20
Iron	0.131		2.00	1.83		mg/L		85	75 - 125	4	20
Lead	0.0338		2.00	1.75		mg/L		86	80 - 110	4	20
Manganese	1.85		1.00	2.67		mg/L		82	80 - 115	4	20
Nickel	0.0114		2.00	1.68		mg/L		83	75 - 110	4	20
Zinc	0.0252		1.00	0.931		mg/L		91	75 - 120	4	20

Lab Sample ID: 11L0275-DUP1

Matrix: Water - NonPotable

Analysis Batch: 11L0275

Client Sample ID: Duplicate

Prep Type: Total

Prep Batch: 11L0275_P

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	Limit
Chromium	0.0339		0.0366		mg/L		8	20
Copper	0.182		0.204		mg/L		12	20
Iron	3.71		4.17		mg/L		12	20
Lead	0.0154		0.0146		mg/L		6	20
Manganese	1.13		1.30		mg/L		14	15

QC Sample Results

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0262

Method: EPA 200.7 - Total Metals by EPA 200 Series Methods (Continued)

Lab Sample ID: 11L0275-DUP1				Client Sample ID: Duplicate			
Matrix: Water - NonPotable				Prep Type: Total			
Analysis Batch: 11L0275				Prep Batch: 11L0275_P			
Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD Limit
Nickel	0.0869		0.0964		mg/L		10 20

Lab Sample ID: 11L0275-DUP1				Client Sample ID: Duplicate			
Matrix: Water - NonPotable				Prep Type: Total			
Analysis Batch: 11L0275				Prep Batch: 11L0275_P			
Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD Limit
Zinc	2.15		2.31		mg/L		7 20

Method: EPA 335.4 - General Chemistry Parameters

Lab Sample ID: 11L0321-BLK1				Client Sample ID: Method Blank			
Matrix: Water - NonPotable				Prep Type: Total			
Analysis Batch: 11L0321				Prep Batch: 11L0321_P			
Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared Analyzed Dil Fac
Cyanide	<0.0100		-0.0100		mg/L		12/07/11 14:00 12/08/11 18:19 1.00

Lab Sample ID: 11L0321-BS1				Client Sample ID: Lab Control Sample			
Matrix: Water - NonPotable				Prep Type: Total			
Analysis Batch: 11L0321				Prep Batch: 11L0321_P			
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Cyanide	0.200	0.217		mg/L		109	90 - 110

Lab Sample ID: 11L0321-MS1				Client Sample ID: Matrix Spike			
Matrix: Water - NonPotable				Prep Type: Total			
Analysis Batch: 11L0321				Prep Batch: 11L0321_P			
Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D %Rec Limits
Cyanide	<0.00170		0.200	0.143	M1	mg/L	72 90 - 110

Lab Sample ID: 11L0321-MSD1				Client Sample ID: Matrix Spike Duplicate			
Matrix: Water - NonPotable				Prep Type: Total			
Analysis Batch: 11L0321				Prep Batch: 11L0321_P			
Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Dup Result	Matrix Spike Dup Qualifier	Unit	D %Rec Limits RPD Limit
Cyanide	<0.00170		0.200	0.133	M1	mg/L	66 90 - 110 7 20

Method: SM 2340 C - General Chemistry Parameters

Lab Sample ID: 11L0604-BLK1				Client Sample ID: Method Blank			
Matrix: Water - NonPotable				Prep Type: Total			
Analysis Batch: 11L0604				Prep Batch: 11L0604_P			
Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared Analyzed Dil Fac
Hardness	<5.00		5.00		mg/L		12/14/11 11:59 12/14/11 12:08 1.00

QC Sample Results

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0262

Method: SM 2340 C - General Chemistry Parameters (Continued)

Lab Sample ID: 11L0604-BS1
Matrix: Water - NonPotable
Analysis Batch: 11L0604

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 11L0604_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Hardness	138	148		mg/L		107	90 - 115

Lab Sample ID: 11L0604-MS1
Matrix: Water - NonPotable
Analysis Batch: 11L0604

Client Sample ID: SE-3-GW-1111
Prep Type: Total
Prep Batch: 11L0604_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	%Rec. Limits
Hardness	1920	pH>2	1000	2900	pH>2	mg/L		98	85 - 115

Lab Sample ID: 11L0604-MSD1
Matrix: Water - NonPotable
Analysis Batch: 11L0604

Client Sample ID: SE-3-GW-1111
Prep Type: Total
Prep Batch: 11L0604_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Dup Result	Matrix Spike Dup Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hardness	1920	pH>2	1000	2900	pH>2	mg/L		98	85 - 115	0	10

Method: SM 4500 CN G - General Chemistry Parameters

Lab Sample ID: 11L0375-BLK1
Matrix: Water - NonPotable
Analysis Batch: 11L0375

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 11L0375_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide (amenable)	<0.0100		0.0100		mg/L		12/07/11 14:00	12/08/11 18:56	1.00

Lab Sample ID: 11L0375-DUP1
Matrix: Water - NonPotable
Analysis Batch: 11L0375

Client Sample ID: Duplicate
Prep Type: Total
Prep Batch: 11L0375_P

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	RPD Limit
Cyanide (amenable)	0.00530		<0.0100		mg/L			20

QC Association Summary

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0262

GCMS Volatiles

Analysis Batch: 11L0263

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11L0263-BLK1	Method Blank	Total	Water -	SW 8260B/OA-1	11L0263_P
11L0263-BS1	Lab Control Sample	Total	NonPotable	SW 8260B/OA-1	11L0263_P
11L0263-MS1	Matrix Spike	Total	Water -	SW 8260B/OA-1	11L0263_P
11L0263-MSD1	Matrix Spike Duplicate	Total	NonPotable	SW 8260B/OA-1	11L0263_P
CUL0262-01	SE-3-GW-1111	Total	Water -	SW 8260B/OA-1	11L0263_P
CUL0262-02	SE-3-GW-1111	Total	Ground Water	SW 8260B/OA-1	11L0263_P
CUL0262-03	Trip Blank	Total	Water	SW 8260B/OA-1	11L0263_P

Analysis Batch: 11L0297

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
CUL0262-01	SE-3-GW-1111	Total	Water	SW 9041	11L0297_P
CUL0262-02	SE-3-GW-1111	Total	Ground Water	SW 9041	11L0297_P
CUL0262-03	Trip Blank	Total	Water	SW 9041	11L0297_P

Prep Batch: 11L0263_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11L0263-BLK1	Method Blank	Total	Water -	SW 5030B	
11L0263-BS1	Lab Control Sample	Total	NonPotable	SW 5030B	
11L0263-MS1	Matrix Spike	Total	Water -	SW 5030B	
11L0263-MSD1	Matrix Spike Duplicate	Total	NonPotable	SW 5030B	
CUL0262-01	SE-3-GW-1111	Total	Water -	SW 5030B	
CUL0262-02	SE-3-GW-1111	Total	Ground Water	SW 5030B	
CUL0262-03	Trip Blank	Total	Water	SW 5030B	

Prep Batch: 11L0297_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
CUL0262-01	SE-3-GW-1111	Total	Ground Water	Default Prep VOC	
CUL0262-02	SE-3-GW-1111	Total	Water	Default Prep VOC	
CUL0262-03	Trip Blank	Total	Water	Default Prep VOC	

GCMS Semivolatiles

Analysis Batch: U002046

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11L0335-BLK3	Method Blank	Total	Water -	EPA 625	11L0335_P
11L0335-BS3	Lab Control Sample	Total	NonPotable	EPA 625	11L0335_P
			Water -		
			NonPotable		

Analysis Batch: U002048

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11L0335-BLK1	Method Blank	Total	Water -	EPA 625	11L0335_P
11L0335-BS1	Lab Control Sample	Total	NonPotable	EPA 625	11L0335_P
			Water -		
			NonPotable		

QC Association Summary

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0262

GCMS Semivolatiles (Continued)

Analysis Batch: U002057

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11L0335-MS1	Matrix Spike	Total	Water - NonPotable	EPA 625	11L0335_P
11L0335-MSD1	Matrix Spike Duplicate	Total	Water - NonPotable	EPA 625	11L0335_P
CUL0262-02	SE-3-GW-1111	Total	Water	EPA 625	11L0335_P

Prep Batch: 11L0335_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11L0335-BLK1	Method Blank	Total	Water - NonPotable	SW 3510C_MS	
11L0335-BLK3	Method Blank	Total	Water - NonPotable	SW 3510C_MS	
11L0335-BS1	Lab Control Sample	Total	Water - NonPotable	SW 3510C_MS	
11L0335-BS3	Lab Control Sample	Total	Water - NonPotable	SW 3510C_MS	
11L0335-MS1	Matrix Spike	Total	Water - NonPotable	SW 3510C_MS	
11L0335-MSD1	Matrix Spike Duplicate	Total	Water - NonPotable	SW 3510C_MS	
CUL0262-02	SE-3-GW-1111	Total	Water	SW 3510C_MS	

GC Volatiles

Analysis Batch: 11L0362

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11L0362-BLK1	Method Blank	Total	Water - NonPotable	OA-1	11L0362_P
11L0362-BS2	Lab Control Sample	Total	Water - NonPotable	OA-1	11L0362_P
CUL0262-02	SE-3-GW-1111	Total	Water	OA-1	11L0362_P

Prep Batch: 11L0362_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11L0362-BLK1	Method Blank	Total	Water - NonPotable	SW 5030B GC	
11L0362-BS2	Lab Control Sample	Total	Water - NonPotable	SW 5030B GC	
CUL0262-02	SE-3-GW-1111	Total	Water	SW 5030B GC	

HPLC

Analysis Batch: U002040

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11L0272-BLK1	Method Blank	Total	Water - NonPotable	SW 8310	11L0272_P
11L0272-BS1	Lab Control Sample	Total	Water - NonPotable	SW 8310	11L0272_P
11L0272-MS1	Matrix Spike	Total	Water - NonPotable	SW 8310	11L0272_P
11L0272-MSD1	Matrix Spike Duplicate	Total	Water - NonPotable	SW 8310	11L0272_P
CUL0262-01	SE-3-GW-1111	Total	Ground Water	SW 8310	11L0272_P
CUL0262-02	SE-3-GW-1111	Total	Water	SW 8310	11L0272_P

QC Association Summary

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0262

HPLC (Continued)

Analysis Batch: U002058

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
CUL0262-01 - RE1	SE-3-GW-1111	Total	Ground Water	SW 8310	11L0272_P
CUL0262-01 - RE2	SE-3-GW-1111	Total	Ground Water	SW 8310	11L0272_P
CUL0262-02 - RE1	SE-3-GW-1111	Total	Water	SW 8310	11L0272_P
CUL0262-02 - RE2	SE-3-GW-1111	Total	Water	SW 8310	11L0272_P

Prep Batch: 11L0272_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11L0272-BLK1	Method Blank	Total	Water -	SW	
			NonPotable	3510C_HPLC	
11L0272-BS1	Lab Control Sample	Total	Water -	SW	
			NonPotable	3510C_HPLC	
11L0272-MS1	Matrix Spike	Total	Water -	SW	
			NonPotable	3510C_HPLC	
11L0272-MSD1	Matrix Spike Duplicate	Total	Water -	SW	
			NonPotable	3510C_HPLC	
CUL0262-01	SE-3-GW-1111	Total	Ground Water	SW	
				3510C_HPLC	
CUL0262-01 - RE1	SE-3-GW-1111	Total	Ground Water	SW	
				3510C_HPLC	
CUL0262-01 - RE2	SE-3-GW-1111	Total	Ground Water	SW	
				3510C_HPLC	
CUL0262-02	SE-3-GW-1111	Total	Water	SW	
				3510C_HPLC	
CUL0262-02 - RE1	SE-3-GW-1111	Total	Water	SW	
				3510C_HPLC	
CUL0262-02 - RE2	SE-3-GW-1111	Total	Water	SW	
				3510C_HPLC	

Metals-ICP

Analysis Batch: 11L0275

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11L0275-BLK1	Method Blank	Total	Water -	EPA 200.7	11L0275_P
			NonPotable		
11L0275-BS1	Lab Control Sample	Total	Water -	EPA 200.7	11L0275_P
			NonPotable		
11L0275-DUP1	Duplicate	Total	Water -	EPA 200.7	11L0275_P
			NonPotable		
11L0275-MS1	Matrix Spike	Total	Water -	EPA 200.7	11L0275_P
			NonPotable		
11L0275-MS2	Matrix Spike	Total	Water -	EPA 200.7	11L0275_P
			NonPotable		
11L0275-MSD1	Matrix Spike Duplicate	Total	Water -	EPA 200.7	11L0275_P
			NonPotable		
CUL0262-02	SE-3-GW-1111	Total	Water	EPA 200.7	11L0275_P

Prep Batch: 11L0275_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11L0275-BLK1	Method Blank	Total	Water -	SW 3010A	
			NonPotable		
11L0275-BS1	Lab Control Sample	Total	Water -	SW 3010A	
			NonPotable		
11L0275-DUP1	Duplicate	Total	Water -	SW 3010A	
			NonPotable		
11L0275-MS1	Matrix Spike	Total	Water -	SW 3010A	
			NonPotable		

QC Association Summary

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0262

Metals-ICP (Continued)

Prep Batch: 11L0275_P (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11L0275-MS2	Matrix Spike	Total	Water - NonPotable	SW 3010A	
11L0275-MSD1	Matrix Spike Duplicate	Total	Water - NonPotable	SW 3010A	
CUL0262-02	SE-3-GW-1111	Total	Water	SW 3010A	

WetChem

Analysis Batch: 11L0321

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11L0321-BLK1	Method Blank	Total	Water - NonPotable	EPA 335.4	11L0321_P
11L0321-BS1	Lab Control Sample	Total	Water - NonPotable	EPA 335.4	11L0321_P
11L0321-MS1	Matrix Spike	Total	Water - NonPotable	EPA 335.4	11L0321_P
11L0321-MSD1	Matrix Spike Duplicate	Total	Water - NonPotable	EPA 335.4	11L0321_P
CUL0262-02	SE-3-GW-1111	Total	Water	EPA 335.4	11L0321_P

Analysis Batch: 11L0375

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11L0375-BLK1	Method Blank	Total	Water - NonPotable	SM 4500 CN G	11L0375_P
11L0375-DUP1	Duplicate	Total	Water - NonPotable	SM 4500 CN G	11L0375_P
CUL0262-02	SE-3-GW-1111	Total	Water	SM 4500 CN G	11L0375_P

Analysis Batch: 11L0604

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11L0604-BLK1	Method Blank	Total	Water - NonPotable	SM 2340 C	11L0604_P
11L0604-BS1	Lab Control Sample	Total	Water - NonPotable	SM 2340 C	11L0604_P
11L0604-MS1	SE-3-GW-1111	Total	Water - NonPotable	SM 2340 C	11L0604_P
11L0604-MSD1	SE-3-GW-1111	Total	Water - NonPotable	SM 2340 C	11L0604_P
CUL0262-02	SE-3-GW-1111	Total	Water	SM 2340 C	11L0604_P

Prep Batch: 11L0321_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11L0321-BLK1	Method Blank	Total	Water - NonPotable	NO PREP - WET CHEM	
11L0321-BS1	Lab Control Sample	Total	Water - NonPotable	NO PREP - WET CHEM	
11L0321-MS1	Matrix Spike	Total	Water - NonPotable	NO PREP - WET CHEM	
11L0321-MSD1	Matrix Spike Duplicate	Total	Water - NonPotable	NO PREP - WET CHEM	
CUL0262-02	SE-3-GW-1111	Total	Water	NO PREP - WET CHEM	

QC Association Summary

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0262

WetChem (Continued)

Prep Batch: 11L0375_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11L0375-BLK1	Method Blank	Total	Water - NonPotable	NO PREP - WET CHEM	
11L0375-DUP1	Duplicate	Total	Water - NonPotable	NO PREP - WET CHEM	
CUL0262-02	SE-3-GW-1111	Total	Water	NO PREP - WET CHEM	

Prep Batch: 11L0604_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11L0604-BLK1	Method Blank	Total	Water - NonPotable	NO PREP - WET CHEM	
11L0604-BS1	Lab Control Sample	Total	Water - NonPotable	NO PREP - WET CHEM	
11L0604-MS1	SE-3-GW-1111	Total	Water - NonPotable	NO PREP - WET CHEM	
11L0604-MSD1	SE-3-GW-1111	Total	Water - NonPotable	NO PREP - WET CHEM	
CUL0262-02	SE-3-GW-1111	Total	Water	NO PREP - WET CHEM	

Lab Chronicle

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0262

Client Sample ID: SE-3-GW-1111

Lab Sample ID: CUL0262-01

Date Collected: 12/01/11 12:55

Matrix: Ground Water

Date Received: 12/05/11 18:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	11L0263_P	12/06/11 00:00	SJN	TAL CF
Total	Analysis	SW 8260B/OA-1		5.00			11L0263	12/06/11 16:25	SJN	TAL CF
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	11L0297_P	12/07/11 13:18	CMM	TAL CF
Total	Analysis	SW 9041		1.00			11L0297	12/07/11 13:31	CMM	TAL CF
Total	Prep	SW 3510C_HPLC		1.04	960 mL	1.5 mL	11L0272_P	12/07/11 10:23	AM	TAL CF
Total	Analysis	SW 8310		1.00			U002040	12/09/11 23:50	TCH	TAL CF
Total	Prep	SW 3510C_HPLC	RE1	1.04	960 mL	1.5 mL	11L0272_P	12/07/11 10:23	AM	TAL CF
Total	Analysis	SW 8310	RE1	10.0			U002058	12/13/11 21:14	TCH	TAL CF
Total	Prep	SW 3510C_HPLC	RE2	1.04	960 mL	1.5 mL	11L0272_P	12/07/11 10:23	AM	TAL CF
Total	Analysis	SW 8310	RE2	100			U002058	12/13/11 21:42	TCH	TAL CF

Client Sample ID: SE-3-GW-1111

Lab Sample ID: CUL0262-02

Date Collected: 12/02/11 12:55

Matrix: Water

Date Received: 12/05/11 18:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	11L0263_P	12/06/11 00:00	SJN	TAL CF
Total	Analysis	SW 8260B/OA-1		5.00			11L0263	12/06/11 16:48	SJN	TAL CF
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	11L0297_P	12/07/11 13:18	CMM	TAL CF
Total	Analysis	SW 9041		1.00			11L0297	12/07/11 13:31	CMM	TAL CF
Total	Prep	SW 3510C_MS		1.05	950 mL	1 mL	11L0335_P	12/08/11 11:00	AM	TAL CF
Total	Analysis	EPA 625		5.00			U002057	12/12/11 13:55	DMD	TAL CF
Total	Prep	SW 5030B GC		1.00	5 mL	5 mL	11L0362_P	12/07/11 14:11	CMM	TAL CF
Total	Analysis	OA-1		5.00			11L0362	12/07/11 19:17	CMM	TAL CF
Total	Prep	SW 3510C_HPLC		1.05	950 mL	1.5 mL	11L0272_P	12/07/11 10:23	AM	TAL CF
Total	Analysis	SW 8310		1.00			U002040	12/10/11 00:19	TCH	TAL CF
Total	Prep	SW 3510C_HPLC	RE1	1.05	950 mL	1.5 mL	11L0272_P	12/07/11 10:23	AM	TAL CF
Total	Analysis	SW 8310	RE1	10.0			U002058	12/13/11 22:10	TCH	TAL CF
Total	Prep	SW 3510C_HPLC	RE2	1.05	950 mL	1.5 mL	11L0272_P	12/07/11 10:23	AM	TAL CF
Total	Analysis	SW 8310	RE2	100			U002058	12/13/11 22:38	TCH	TAL CF
Total	Prep	SW 3010A		1.00	50 mL	50 mL	11L0275_P	12/07/11 10:33	MEW	TAL CF
Total	Analysis	EPA 200.7		1.00			11L0275	12/08/11 04:52	CJT	TAL CF
Total	Analysis	EPA 200.7		5.00			11L0275	12/13/11 15:47	CJT	TAL CF
Total	Prep	NO PREP - WET CHEM		1.00	50 mL	50 mL	11L0375_P	12/07/11 14:00	LCB	TAL CF
Total	Analysis	SM 4500 CN G		1.00			11L0375	12/08/11 19:46	LCB	TAL CF
Total	Prep	NO PREP - WET CHEM		1.00	50 mL	50 mL	11L0321_P	12/07/11 14:00	LCB	TAL CF
Total	Analysis	EPA 335.4		2.00			11L0321	12/08/11 19:45	LCB	TAL CF
Total	Prep	NO PREP - WET CHEM		1.00	50 mL	50 mL	11L0604_P	12/14/11 11:59	JCF	TAL CF
Total	Analysis	SM 2340 C		1.00			11L0604	12/14/11 12:08	JCF	TAL CF

Lab Chronicle

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0262

Client Sample ID: Trip Blank

Lab Sample ID: CUL0262-03

Date Collected: 12/01/11 00:00

Matrix: Water

Date Received: 12/05/11 18:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	11L0263_P	12/06/11 00:00	SJN	TAL CF
Total	Analysis	SW 8260B/OA-1		1.00			11L0263	12/06/11 17:10	SJN	TAL CF
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	11L0297_P	12/07/11 13:18	CMM	TAL CF
Total	Analysis	SW 9041		1.00			11L0297	12/07/11 13:31	CMM	TAL CF

Laboratory References:

TAL CF = TestAmerica Cedar Falls, 704 Enterprise Drive, Cedar Falls, IA 50613, TEL 800-750-2401

Definitions/Glossary

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0262

Qualifiers

GCMS Semivolatiles

Qualifier	Qualifier Description
Z6	Surrogate recovery was outside control limits.
CIN	The % RSD for this compound was above 15%. The average % RSD for all compounds in the calibration met the 15% criteria specified in EPA methods 8260B/8270C.
L1	Laboratory Control Sample and/or Laboratory Control Sample Duplicate recovery was outside control limits.
M1	The MS and/or MSD were outside control limits.
R	Sample duplicate RPD exceeded the laboratory control limit.
RL1	Reporting limit raised due to sample matrix effects.

HPLC

Qualifier	Qualifier Description
Z6	Surrogate recovery was outside control limits.
R	Sample duplicate RPD exceeded the laboratory control limit.
ZX	Due to sample matrix effects, the surrogate recovery was outside the control limits.

Metals-ICP

Qualifier	Qualifier Description
IE	Elevated reporting limit due to interelement interference.

WetChem

Qualifier	Qualifier Description
M1	The MS and/or MSD were outside control limits.
pH>2	Sample received at pH>2. It was adjusted correctly prior to analysis.
pH<12	Sample received at pH<12. It was adjusted correctly prior to analysis.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☆	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Certification Summary

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0262

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Cedar Falls	AIHA - LAP	IHLAP		101044
TestAmerica Cedar Falls	Illinois	NELAC	5	200024
TestAmerica Cedar Falls	Iowa	State Program	7	7
TestAmerica Cedar Falls	Kansas	NELAC	7	E-10341
TestAmerica Cedar Falls	Minnesota	NELAC	5	019-999-319
TestAmerica Cedar Falls	North Dakota	State Program	8	R-186
TestAmerica Cedar Falls	Oregon	NELAC	10	IA100001
TestAmerica Cedar Falls	Wisconsin	State Program	5	999917270

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Method Summary

Client: MWH - DES MOINES
Project/Site: 1011180.0107

TestAmerica Job ID: CUL0262

Method	Method Description	Protocol	Laboratory
SW 8260B/OA-1	UST Volatile Compounds by GC/MS		TAL CF
SW 9041	VOC Preservation Check		TAL CF
EPA 625	Semivolatile Organics by GC/MS		TAL CF
OA-1	UST Volatile Compounds by GC		TAL CF
SW 8310	PNA compounds by HPLC		TAL CF
EPA 200.7	Total Metals by EPA 200 Series Methods		TAL CF
EPA 335.4	General Chemistry Parameters		TAL CF
SM 2340 C	General Chemistry Parameters		TAL CF
SM 4500 CN G	General Chemistry Parameters		TAL CF

Protocol References:

Laboratory References:

TAL CF = TestAmerica Cedar Falls, 704 Enterprise Drive, Cedar Falls, IA 50613, TEL 800-750-2401

Phone 319-277-2401 or 800-750-2401
Fax 319-277-2425

To assist us in using the proper analytical methods,
is this work being conducted for regulatory purposes?
Compliance Monitoring

Client #:

Address: 11153 Huron Ave

City/State/Zip Code: Urbandale IA 50322

Project Manager: Keith Armstrong

Email Address: Kevin.Armstrong@MATHglobal.com

Telephone Number: 515 253 0830

Fax: 5152531592

Sampler Name: (Print Name) 127 Overbrook, in

Sampler Signature: *Cliff Overbrook*

Project Name: MFC Dubuque PNG

Project #: 101180, 0107

Site/Location ID: Arbuckle ~~Elmo~~ State: IA

Report To: Kevin Armstrong

Invoice To: Kevin Dodson

Quote #: PO#:

[illegible]

Sample Receipt and Temperature Log Form

Client: MWH Project: _____

City: Urbana, IL

Date: 12/5/11 Receiver's Initials: JMH Time (Delivered): 1800

Temperature Record:

Cooler ID# (If Applicable)

MBC-2

4.6 °C / On Ice

☒ Temp Blank

☐ Temperature out of compliance

Thermometer:

- ☐ IR - 111531565 'D'
☒ IR - 111531506 'E'
☐ IR - 61854108 'Front'
☐ 101681126

Courier:

- ☐ UPS ☒ TA Courier
☐ FedEx ☐ TA Field Services
☐ FedEx Ground ☐ Client
☐ US Postal Service ☐ Other
☐ Spee-Dee

Custody seals present?

☐ Yes

Custody seals intact?

☐ Yes ☐ No

☐ Non-Conformance report started

Exceptions Noted

- ☐ Sample(s) not received in a cooler.
☐ Sample(s) received same day of sampling.
☐ Evidence of a chilling process
☐ No Temp. Blank. Inside temperature of cooler recorded:
☐ Temperature not taken:

Purge Vials

*Refer to SOP CF-SS-01 for Temperature Criteria