Resource Conservation and Recovery Act Facility Investigation Phase II Report

Volume III of III

General Motors Corporation
NAO Flint Operations Site
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Appendix F

Transport and Fate of PCBs in NAO Flint Storm Sewers

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Transport and Fate of PCBs in NAO Flint Storm Sewers

Introduction

The General Motors Corporation's (GM's) North American Operations (NAO) site, located in Flint, Michigan (the Site), is currently the focus of a Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI). Among other tasks, the RFI includes an assessment of the underground storm sewer systems at the Site. These sewers convey storm water to the Flint River and discharge through NPDES permitted outfalls. The Outfall 003, 004, and 005 sewer systems, including manhole locations, are shown in Figures 1, 2, and 3, respectively. All outfalls are sampled biannually to detect any hazardous constituents that might discharge to the river. Investigations of the presence of hazardous constituents present within the storm sewer system took place in 1997 and more recently in 2002, and have been documented in Appendix I of this RFI Phase II report. Low levels of polychlorinated biphenyls (PCBs) were detected in some water samples collected from manholes in the Outfall 003 and 004 storm sewers, and in a single outfall monitoring event. This memorandum includes a review of relevant historical data on PCBs in the sewers and the Flint River, a discussion of planned source control measures, and an analysis of the significance of the sewers as a hazardous constituent migration pathway to the Flint River.

History of Sewer and Outfall Sampling for PCBs

Water samples from all outfalls are analyzed for PCBs annually in the spring and fall as part of the NPDES monitoring program. All available data from 1996 to 2003 are summarized in Table 1. No PCBs were detected in the outfall discharges in 1996 or 1997.

In February 1997, sediment samples were collected from 21 sewer manholes and analyzed for total PCBs. Two detections were reported, both in the Outfall 003 storm sewer:

- 24 mg/kg at manhole 3-22-2
- 50 and 3.66 mg/kg (duplicate samples) at manhole 3-31-6.

These portions of the Outfall 003 storm sewer were cleaned in early 1997 just after these samples were collected, removing the contaminated sediment. On September 9, 2004, sediments from manholes 3-22-2 and 3-31-6 were sampled. Aroclor® 1242 was detected at manhole 3-22-2 at 4.5 mg/kg and at 3-31-6 at 3.4 mg/kg. Aroclor® 1260 was also detected at manhole 3-31-6 at 2.5 mg/kg. More details concerning this sampling event and resulting data are included in Attachment 1.

During spring 1998 NPDES monitoring, PCBs were detected in effluent from Outfalls 001, 002, and 003, all at detection limit levels (see Table 1). No PCBs were detected in the fall 1998 outfall sampling, nor have there been any outfall detections since.

During the sewer investigation in 2002, water samples were collected from manholes in the storm sewers leading to Outfalls 003, 004, and 005, during three separate events in June and July 2002, and analyzed for PCBs. Two rounds of sampling were conducted under dry weather flow conditions (June 27/28 and July 9) and one under wet weather conditions (July 29). PCBs were detected at a low frequency in manhole samples from the Outfall 003 sewer system during all three sampling events (see Table 2). PCBs were also detected in a single manhole sample from the Outfall 004 sewer system (see Table 2). No PCBs were detected in the Outfall 005 sewer. The PCB detection frequencies in the three sampling rounds were 3 of 15, 2 of 13, and 1 of 15 samples analyzed. The highest detection was 3 µg/L Aroclor® 1242 during the July 29 dry flow event at manhole 3-22-1 (Figure 1). Storm sewer sediments were not collected in 2002.

The underground storm sewers do not support any natural aquatic communities and do not represent significant ecological habitat or natural resources. The presence of PCBs in the storm sewers is of potential concern only in that PCBs could discharge to the Flint River.

PCBs in Flint River Sediments

In aquatic systems, PCBs selectively partition into sediment and biota. Sediment and fish data for the Flint River were evaluated to determine whether there is reason to believe that the above releases have resulted in measurable increases in PCB concentrations in these media.

Historical PCB data from Flint River sediments have been reviewed from all available sources, including data from the 1992 General Motors—BOC Flint Operations investigation (WW Engineering & Science 1992) and other data supplied by the Michigan Department of Environmental Quality (MDEQ, Taylor 1993) (see Figure 4). These samples were collected by various means, including dredge, coring tube, and bucket auger. Maximum sample depths ranged from 30 in. to 7 ft 10 in. All samples targeted fine sediments. Locations sampled include stations immediately upstream, offshore, and downstream of the Site. All detections downstream from the Site from the 1992 investigation were below 0.10 mg/kg dry weight (Figure 4).

In addition, in April 2005 MDEQ, accompanied by U.S. EPA, conducted sediment sampling in the Flint River at locations upstream, adjacent to, and downstream of the GM facility. Samples were analyzed for inorganics, PCBs, semivolatile organic compounds (SVOCs), and volatile organic compounds (VOCs). Split samples were collected at a subset of locations on behalf of GM. The results of the 2005 MDEQ Flint River sediment sampling and the GM split sample results provided in Attachment 2, along with the historical data on PCBs, provide evidence supporting a position that the GM facility is not a discernable source of PCBs to the Flint River. The maximum detected concentration of PCBs in 2005 was 560 µg/kg, for Aroclor® 1242 (estimated in MDEQ sample OFC0051 0-6, taken in the vicinity of GM Outfall 005).

These data suggest that sediment PCB concentrations in the vicinity of the Site have historically been consistent with levels throughout the Flint River system. Additionally, these levels are typical of those found in urban river sediments. For example, Wong et al. (2000) generated summary statistics for PCBs (and other substances) for different land-use categories nationwide. For urban sites, the data consisted of samples obtained from 44 sites in large metropolitan areas

(e.g. Dallas, Denver, Atlanta, Indianapolis, Portland, Milwaukee, and New York City) and some smaller urban areas such as Albany, N.Y. and Raleigh, N.C. Approximately 50 percent of the PCBs detected in sediment samples from these urban sites ranged from 0.1 to 0.2 mg/kg dry weight. The remaining half of the samples ranged from 0.2 to 0.6 mg/kg dry weight. Thus, sediment concentrations of PCBs that are less than one part per million (mg/kg) are common in urban areas, and occur throughout the Flint River system, including areas upstream, adjacent to, and downstream of the GM facility, as evidenced by the historical data for the Flint River. Nevertheless, discussions between USEPA and GM concerning the need for further investigation of the Flint River are ongoing, and will continue beyond the submission of this report.

PCBs in Flint River Fish

The State of Michigan periodically samples fish in watersheds throughout Michigan, including the Flint River, for contaminant body burdens. Like most urban waterways, fish from the Flint River have measurable body burdens of organic contaminants, including PCBs. Fish tissue concentrations from samples collected in urban waterways were also summarized by Wong et al. (2000): 75 percent of fish samples at urban sites had concentrations greater than 200 µg/kg wet weight, and more than 25 percent of the samples were greater than 500 µg/kg wet weight. Concentrations of PCBs in fish collected from the Flint River downstream of the NAO Flint site were comparable to those observed by Wong et al. (2000) in other urban areas.

The State of Michigan sampling stations are located well above and below the City of Flint (Figure 5). Carp collected below Flint consistently have the highest PCB body burdens of Flint River fish tested. There is no consumption advisory for the general population, except for very large carp, which should not be eaten. There is a limited consumption advisory for children and women of childbearing age below the City of Flint due to PCBs that recommends no more than one meal of smallmouth bass per week and no more than one meal of carp per month. Advisories for these fish species are typical for urban rivers and lakes in the state of Michigan.

More than 75 water bodies in the state have an advisory for carp and more than 25 have an advisory for smallmouth bass. The 2003 Michigan Family Fish Consumption Guide[1] states that children and women of childbearing age should exercise special caution when eating fish caught anywhere in the state.

Fish PCB data provided by MDEQ and the Michigan Department of Community Health are shown in Table 3. PCB levels in most fish sampled throughout the river are modest, with relatively few values exceeding 2 ppm, the default federal Food and Drug Administration consumption advisory level.

Flint River Aquatic Community

Fish and benthic community ecological assessments for the Flint River have been periodically conducted by MDEQ in recent years (MDEQ 1997, 2001a,b). Fish and benthic communities have been consistently judged by MDEQ to be somewhat degraded by pollutants at stations downstream of Flint relative to those upstream. These effects, however, are due to the net impacts of all point and non-point sources associated with the Greater Flint urban area and are not attributed to any particular source or chemical.

Historical PCB Source Control Measures

The following source control measures have been performed to date to address the potential migration of Site-related constituents from Site storm sewers to the Flint River:

- An oil/water separator was installed in November 1991 immediately east of Buildings 70B and 73 along the Storm Sewer 003 discharge to the Flint River. This oil/water separator is equipped with an overflow weir, an underflow weir, and a skimming system. Oils and debris that accumulate on

[1] http://www.michigan.gov/documents/FishAdvisory03_67354_7.pdf

the upstream side of the underflow weir are skimmed and pumped into a 500-gal aboveground storage tank and disposed of as needed.

- An additional oil/water separator system was installed in 1994 east of the coal yard adjacent to Building 07. This system consists of a subsurface vault within the main storm sewer branch (approximately 9 ft wide by 9 ft long by 6 ft deep) containing two pumps (approximately 200 gallons per minute [gpm] total capacity) that pump storm water during low-flow periods to an aboveground oil/water separator system. This system includes a debris screen, an 8,000-gal settling tank, and two parallel 200 gpm-capacity oil/water separators. Recovered oil is collected in a 275-gal tote that is periodically emptied.

- Storm sewer cleaning and videotaping was performed between April 23, 1997, and June 12, 1997. A total of approximately 2,600 linear feet of storm sewer pipeline were cleaned, resulting in the removal of approximately 26 cubic yards of sediments/debris materials from select portions of the storm sewer systems for Outfalls 002, 003, and 010.

- Floating oil and sheens trapped by floating booms at Outfalls 002, 003, 004, 005, and 006 is periodically pumped by vacuum truck and disposed offsite.

- Portions of the Outfall 006 storm sewer system were cleaned and plugged as a result of a release of oil from a hydraulic cylinder for an elevator (October 2002).

Several additional source control measures are being designed to address oil sheens observed in some portions of the Site's storm sewers and at select outfalls. Investigation activities are ongoing to obtain information needed for the design of these measures. These activities are discussed in Sections 4.7, 5.3.8, and Appendix I of this RFI Phase II report. Also refer to RFI Figures 2-4 and 2-5.

Summary and Recommendations

The potential for PCBs present in the Site storm sewers to migrate to and adversely impact the Flint River is judged to be low. There does not appear to be any significant historical effect, and the potential for future effects will be further reduced by ongoing source control measures implemented as part of the RCRA Corrective Action.

The historical presence of PCBs at some manhole locations raises the possibility that storm sewer outfalls may have historically been a minor source of PCBs to the Flint River. However, the data reviewed above suggest that little if any ecologically significant PCB loading to the Flint River from outfall discharges has occurred. The best recent evidence of this comes from the biannual NPDES outfall monitoring data. PCBs were only detected in storm sewer effluent in the spring of 1998, at detection limit levels. There were no detections prior to or since the spring of 1998. MDEQ studies of Flint River sediments and fish tissue do not indicate significant elevations in PCB levels in the vicinity of the Site outfalls. The available aquatic community survey data are less useful for assessment of local impacts from the Site because of the sample locations. Collectively, the available data do not indicate significant ecological impacts in the River as a result of Site discharges of PCBs.

Ongoing source control measures will further reduce any potential for Site outfall discharges to adversely impact the Flint River. These source control measures include a range of activities such as pipe lining, improving the efficiency of existing oil interceptors, and plugging unnecessary portions of the storm sewer system.

Nevertheless, discussions between USEPA and GM concerning the need for further investigation of the Flint River are ongoing, and will continue beyond the submission of this report.

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Tables

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Table 1. Storm sewer outfall total PCB monitoring (1996–2003)

	Sampling Event (μg/L)														
	1996		1997		1998		1999		2000		2001		2002		2003
Outfall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Winter
001	ND (0.1)	ND (0.1)	ND (1.0)	ND (0.1)	0.1 (0.1)	ND (0.1)	ND (0.1)	ND	ND	--	ND (0.1)	--	ND (0.1)	--	--
002	ND (0.2)	ND (0.1)	ND (0.1)	ND (0.1)	0.1 (0.1)	ND (0.1)	ND (0.1)	ND	ND	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.11)	ND (0.1)	ND (0.2)
003	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	0.2 (0.1)	ND (0.1)	ND (0.1)	ND	ND	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.2)
004	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)		ND	ND (0.11)	ND (0.1)	ND (0.11)	ND (0.11)	--	--
005	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)		ND	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.11)	ND (0.1)	--
006	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (1.0)	ND (0.1)		ND	ND (0.11)	ND (0.1)	ND (0.11)	ND (0.1)	ND (0.11)	ND (0.2)
007	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)		ND	--	ND (0.1)	--	ND (0.1)	ND (0.1)	--
008	ND (0.1)	ND (0.1)	--	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)		ND	--	ND (0.1)	--	ND (0.1)	ND (0.1)	--
009	ND (0.1)	--	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)		ND	--	ND (0.1)	--	ND (0.1)	--	--
010	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)		ND	--	ND (0.1)	--	ND (0.1)	ND (0.1)	--
011	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)		ND	--	ND (0.1)	--	ND (0.1)	ND (0.11)	--
012	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)		ND	--	ND (0.1)	--	ND (0.1)	--	--
013	--	--	--	--	--	--	--		ND	--	ND (0.1)	--	ND (0.1)	ND (0.1)	--
100	ND (3.0)	ND (0.1)	ND (0.1)	ND (1.0)	ND (1.0)	ND (0.1)	ND (0.1)		ND	--	ND (0.11)	--	--	--	--

Note: ND - not detected; detection limit not reported
ND (0.1) - not detected at detection limit shown in parentheses
-- - no data available

TABLE 2

GENERAL MOTORS CORPORATION
NAO FLINT OPERATIONS SITE - FLINT, MICHIGAN

STORM SEWER PCB ANALYTICAL DATA
(results presented in μg/L)

Sample ID	Date Collected	Aroclor-1242	Aroclor-1248	Aroclor-1260
MH 3-15	06/27/02	ND(0.10)	0.18	ND(0.10)
MH 3-15	07/09/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 3-15	07/29/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 3-20	06/27/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 3-20	07/09/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 3-20	07/29/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 3-22-1	06/27/02	ND(0.10)	2.4	ND(0.10)
MH 3-22-1	07/09/02	ND(0.10)	0.17	ND(0.10)
MH 3-22-1	07/29/02	3.0	ND(0.10)	ND(0.10)
MH 3-23	06/27/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 3-23	07/09/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 3-23	07/29/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 3-26	06/27/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 3-26	07/09/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 3-26	07/29/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 3-65	07/09/02	R	R	1.0 J
MH 3-65	07/29/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 3-69	07/29/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 3-76-8	06/28/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 3-76-8	07/29/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 4-8	06/27/02	ND(0.11)	ND(0.11)	ND(0.11)
MH 4-8	07/09/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 4-13	06/27/02	ND(0.11)	ND(0.11)	ND(0.11)
MH 4-13	07/09/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 4-13	07/29/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 4-17	06/27/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 4-17	07/29/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 4-20	06/27/02	ND(0.10)	ND(0.10)	1.1
MH 4-23	06/27/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 4-23	07/09/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 4-23	07/29/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 5-4	06/27/02	ND(0.11)	ND(0.11)	ND(0.11)
MH 5-4	07/09/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 5-4	07/29/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 5-5	06/27/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 5-5	07/09/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 5-5	07/29/02	ND(0.11)	ND(0.11)	ND(0.11)
MH 5-10	06/27/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 5-10	07/09/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 5-10	07/29/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 5-13A	06/27/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 5-13A	07/09/02	ND(0.10)	ND(0.10)	ND(0.10)
MH 5-13A	07/29/02	ND(0.10)	ND(0.10)	ND(0.10)

Notes:

ND = Not detected. The value in parentheses represents the associated detection limit.

J = The compound/constituent was positively identified; however, the associated numerical value is an estimated concentration only.

R = Indicates that the previously reported detection limit or sample result has been rejected due to a major deficiency in the data generation procedure. The data shall not be used for any qualitative or quantitative purposes.

Table 3. State of Michigan total PCB data for fish from the Flint River

Station	Sample Location	Collection Date	Sex	Species	Sample Type	Length (in.)	Weight (lbs)	Lipid (ppm)	Total PCBs (ppm)	Comments
127	Below Flint	08/30/93	F	Carp	Fs	18.9	3.5	3.4	0.199	
127	Below Flint	08/30/93		Carp	Fs	19.3	3.4	4.9	1.18	
127	Below Flint	08/30/93		Carp	Fs	21.3	5.1	7.95	1.84	
127	Below Flint	08/30/93		Carp	Fs	18.9	3.7	5.4	0.642	
127	Below Flint	08/30/93		Carp	Fs	18.9	3.7	2.95	0.292	
127	Below Flint	08/30/93	F	Carp	Fs	20.9	5.2	4.05	0.498	
127	Below Flint	08/30/93	M	Carp	Fs	23.6	5.3	1.1	0.149	
127	Below Flint	08/30/93	M	Carp	Fs	24.0	7.9	5.95	0.541	
127	Below Flint	08/30/93	F	Carp	Fs	27.2	9.9	14.1	9.14	
127	Below Flint	10/08/98	F	Smallmouth bass	F	11.6	0.8	1.1	0.122	
127	Below Flint	10/08/98	M	Smallmouth bass	F	12.4	1.2	0.95	0.101	
127	Below Flint	10/08/98	M	Smallmouth bass	F	13.3	1.4	0.85	0.117	
127	Below Flint	10/08/98	M	Smallmouth bass	F	12.9	1.2	0.9	0.171	
127	Below Flint	10/08/98	M	Smallmouth bass	F	13.3	1.3	1.65	0.264	
127	Below Flint	10/08/98	F	Smallmouth bass	F	13.3	1.4	1.25	0.155	
127	Below Flint	10/08/98	F	Smallmouth bass	F	13.4	1.5	0.9	0.11	
127	Below Flint	10/08/98	F	Smallmouth bass	F	14.4	1.9	1.35	0.138	
127	Below Flint	10/08/98	F	Smallmouth bass	F	13.9	1.6	0.8	0.082	
127	Below Flint	10/08/98	M	Smallmouth bass	F	14.8	1.9	0.8	0.12	
127	Below Flint	10/08/98	F	Carp	Fs	19.6	4.2	3.6	0.912	
127	Below Flint	10/08/98	F	Carp	Fs	19.5	5.2	8.65	1.193	
127	Below Flint	10/08/98	M	Carp	Fs	20.4	4.4	1.45	0.108	
127	Below Flint	10/08/98	M	Carp	Fs	22.4	5.2	4.55	0.537	
127	Below Flint	10/08/98	M	Carp	Fs	22.1	5.5	2.85	0.339	
127	Below Flint	10/08/98	F	Carp	Fs	23.1	6.6	3.15	0.682	
127	Below Flint	10/08/98	F	Carp	Fs	25.9	9.4	7.35	1.064	
127	Below Flint	10/08/98	F	Carp	Fs	26.7	11.1	10	1.316	
127	Below Flint	10/08/98	F	Carp	Fs	27.9	13.2	3.85	0.265	
127	Below Flint	10/08/98		Carp	Fs	28.6	14.2	27.5	7.611	
128	Holloway Reservoir	05/18/89		Black crappie	F	9.1	0.4	0.9	0.025 *K*	
128	Holloway Reservoir	05/18/89		Black crappie	F	9.3	0.4	1.3	0.025 *K*	
128	Holloway Reservoir	05/18/89		Black crappie	F	9.3	0.5	1.1	0.025 *K*	
128	Holloway Reservoir	05/18/89		Black crappie	F	10.4	0.6	0.8	0.025 *K*	
128	Holloway Reservoir	05/18/89		Black crappie	F	10.0	0.6	0.65	0.025 *K*	
128	Holloway Reservoir	05/18/89		Black crappie	F	10.0	0.6	0.8	0.025 *K*	
128	Holloway Reservoir	05/18/89		Black crappie	F	9.8	0.6	0.55	0.025 *K*	
128	Holloway Reservoir	05/18/89		Black crappie	F	11.4	0.8	0.7	0.025 *K*	
128	Holloway Reservoir	05/18/89		Black crappie	F	11.0	0.9	1.55	0.025 *K*	
128	Holloway Reservoir	05/18/89		Smallmouth bass	F	12.2	0.8	0.45	0.025 *K*	
128	Holloway Reservoir	05/18/89		Smallmouth bass	F	12.2	0.9	1	0.025 *K*	
128	Holloway Reservoir	05/18/89		Smallmouth bass	F	13.8	1.4	1.2	0.025	

Table 3. (cont.)

	Sample Location	Collection Date	Sex	Species	Sample Type	Length (in.)	Weight (lbs)	Lipid (ppm)	Total PCBs (ppm)	Comments
128	Holloway Reservoir	05/18/89		Smallmouth bass	F	12.6	1.3	0.6	0.025 *K*	
128	Holloway Reservoir	05/18/89		Smallmouth bass	F	14.0	1.5	1.1	0.025 *K*	
128	Holloway Reservoir	05/18/89		Smallmouth bass	F	16.1	2.3	1.6	0.033	
128	Holloway Reservoir	05/18/89		Smallmouth bass	F	16.3	2.6	2.3	0.057	
128	Holloway Reservoir	05/18/89		Channel catfish	Fs	15.0	1.1	6.6	0.148	
128	Holloway Reservoir	05/18/89		Channel catfish	Fs	16.1	1.3	4.7	0.173	
128	Holloway Reservoir	05/18/89		Channel catfish	Fs	15.6	1.0	2.6	0.138	
128	Holloway Reservoir	05/18/89		Channel catfish	Fs	15.4	1.3	4.2	0.347	
128	Holloway Reservoir	05/18/89		Channel catfish	Fs	16.7	1.6	8.1	0.201	
128	Holloway Reservoir	05/18/89		Channel catfish	Fs	16.9	1.7	8.8	0.31	
128	Holloway Reservoir	05/18/89		Channel catfish	Fs	16.9	1.7	3.8	0.11	
128	Holloway Reservoir	05/18/89		Channel catfish	Fs	17.3	2.1	5	0.65	
128	Holloway Reservoir	05/18/89		Channel catfish	Fs	18.1	2.2	8	0.256	
128	Holloway Reservoir	05/18/89		Channel catfish	Fs	18.1	2.4	3	0.133	
129	Mott Reservoir	04/16/96		Walleye	F	18.9	2.1	0.85	0.025 *K*	
129	Mott Reservoir	04/16/96		Walleye	F	22.8	3.8	0.45	0.025 *K*	
129	Mott Reservoir	04/16/96		Walleye	F	24.4	5.5	0.65	0.025 *K*	
129	Mott Reservoir	04/16/96		Walleye	F	16.9	1.9	0.85	0.025 *K*	
129	Mott Reservoir	04/16/96		Walleye	F	15.9	1.2	1.3	0.025 *K*	
129	Mott Reservoir	04/16/96		Walleye	F	16.5	1.5	1	0.025 *K*	
129	Mott Reservoir	04/16/96		Walleye	F	15.4	1.3	1.35	0.025 *K*	
129	Mott Reservoir	04/16/96		Walleye	F	17.3	2.1	2.45	0.045	
129	Mott Reservoir	04/16/96	F	Carp	Fs	18.1	1.1	11.7	0.121	
129	Mott Reservoir	04/16/96	F	Carp	Fs	18.9	1.2	1.25	0.031	
129	Mott Reservoir	04/16/96	F	Carp	Fs	19.3	1.5	1.4	0.025 *K*	
129	Mott Reservoir	04/16/96		Carp	Fs	18.9	1.3	2.35	0.057	
129	Mott Reservoir	04/16/96	F	Carp	Fs	20.5	1.7	0.55	0.025 *K*	
129	Mott Reservoir	04/16/96	F	Carp	Fs	23.0	6.0	1.6	0.036	
129	Mott Reservoir	04/16/96	M	Carp	Fs	24.0	5.1	0.65	0.025	
129	Mott Reservoir	04/16/96	M	Carp	Fs	24.8	5.9	0.35	0.025 *K*	
129	Mott Reservoir	04/16/96	M	Carp	Fs	23.2	4.6	0.55	0.025 *K*	
129	Mott Reservoir	04/16/96		Carp	Fs	24.4	6.0	0.75	0.025 *K*	
126	Saginaw Co., river mouth	08/02/88		Channel catfish	W	6.7	0.1	6.6	0.094	Caged fish study; composite of 3 fish collected after 4 days.
126	Saginaw Co., river mouth	08/02/88		Channel catfish	W	6.5	0.1	6.6	0.094	Caged fish study; composite of 3 fish collected after 4 days.
126	Saginaw Co., river mouth	08/02/88		Channel catfish	W	6.3	0.1	6.6	0.094	Caged fish study; composite of 3 fish collected after 4 days.
126	Saginaw Co., river mouth	08/02/88		Channel catfish	W	6.1	0.1	6.3	0.099	Caged fish study; composite of 3 fish collected after 8 days.
126	Saginaw Co., river mouth	08/02/88		Channel catfish	W	6.7	0.1	6.3	0.099	Caged fish study; composite of 3 fish collected after 8 days.
126	Saginaw Co., river mouth	08/02/88		Channel catfish	W	6.3	0.1	6.3	0.099	Caged fish study; composite of 3 fish collected after 8 days.
126	Saginaw Co., river mouth	08/02/88		Channel catfish	W	6.5	0.1	5.6	0.115	Caged fish study; composite of 3 fish collected after 16 days.
126	Saginaw Co., river mouth	08/02/88		Channel catfish	W	6.1	0.1	5.6	0.115	Caged fish study; composite of 3 fish collected after 16 days.
126	Saginaw Co., river mouth	08/02/88		Channel catfish	W	6.3	0.1	5.6	0.115	Caged fish study; composite of 3 fish collected after 16 days.

Table 3. (cont.)

	Sample Location	Collection Date	Sex	Species	Sample Type	Length (in.)	Weight (lbs)	Lipid (ppm)	Total PCBs (ppm)	Comments
126	Saginaw Co., river mouth	08/02/88		Channel catfish	W	6.3	0.1	5	0.133	Caged fish study; composite of 4 fish collected after 29 days.
126	Saginaw Co., river mouth	08/02/88		Channel catfish	W	6.6	0.1	5	0.133	Caged fish study; composite of 4 fish collected after 29 days.
126	Saginaw Co., river mouth	08/02/88		Channel catfish	W	6.7	0.1	5	0.133	Caged fish study; composite of 4 fish collected after 29 days.
126	Saginaw Co., river mouth	08/02/88		Channel catfish	W	6.5	0.1	5	0.133	Caged fish study; composite of 4 fish collected after 29 days.
126	Saginaw Co., river mouth	08/02/88		Channel catfish	W	5.9	0.0	4.6	0.136	Caged fish study; composite of 4 fish collected after 29 days.
126	Saginaw Co., river mouth	08/02/88		Channel catfish	W	5.9	0.1	4.6	0.136	Caged fish study; composite of 4 fish collected after 29 days.
126	Saginaw Co., river mouth	08/02/88		Channel catfish	W	5.7	0.0	4.6	0.136	Caged fish study; composite of 4 fish collected after 29 days.

Note: F fillet skin-on
Fs fillet skin-off
K unknown laboratory qualifier, suspected to be undetected
W whole-body

Figures

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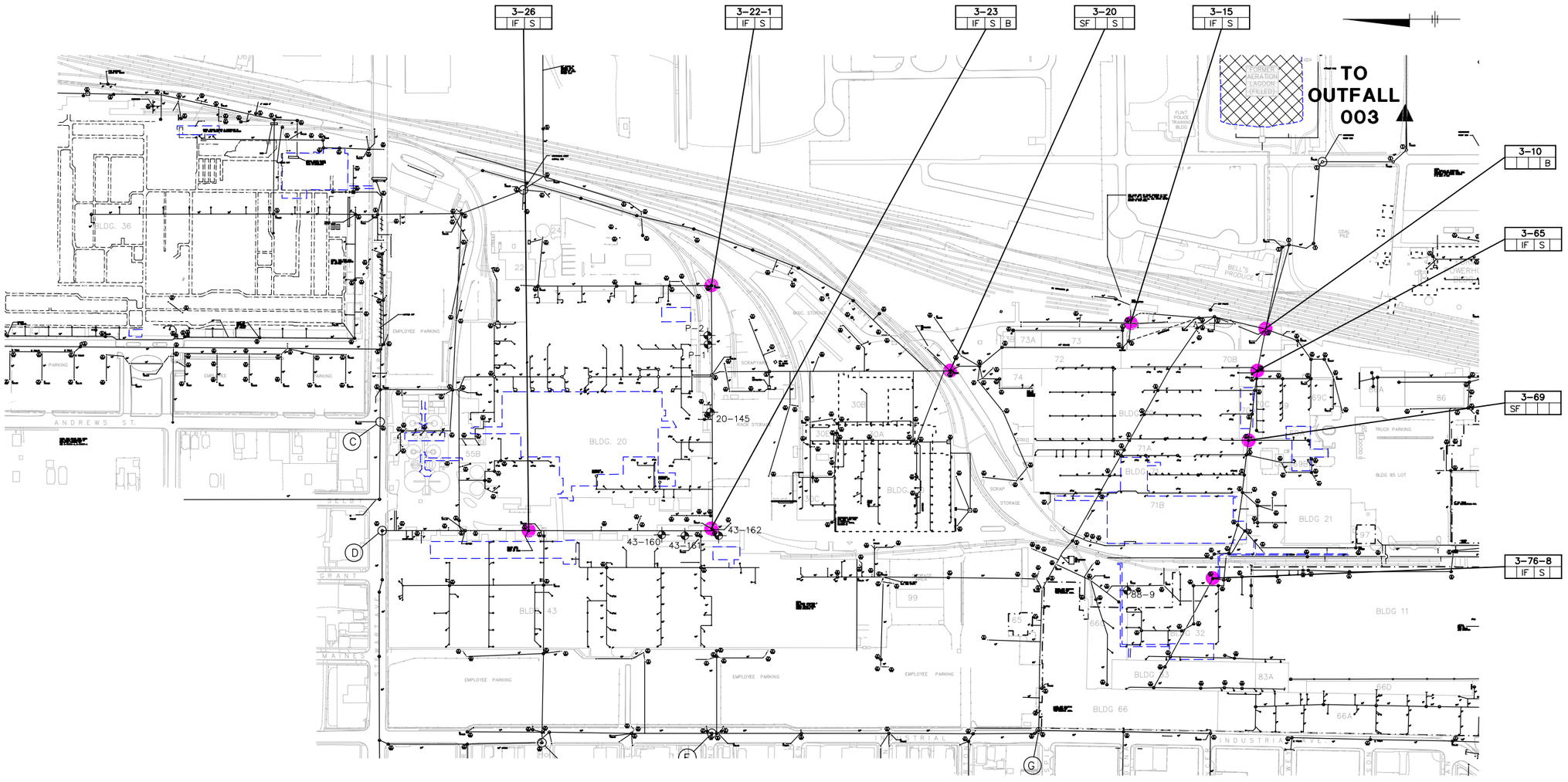
engineers & scientists



LEGEND:

- EXISTING MONITORING WELL
- SAMPLE LOCATION
- STORM SEWER LINE

KEY:

LOCATION ID. (SF | IF | S | B)

- LOCATION ID.
- B = LNAPL INSPECT BOOM
- S = SAMPLE
- IF = INSTANT FLOW
- SF = SYSTEM FLOW

NOTE:

1. BASE MAP INFORMATION FROM A SURVEY BY BMJ, INC. DATED APRIL 2001, AT A SCALE OF 1:100.

0 200' 400'
APPROXIMATE GRAPHIC SCALE

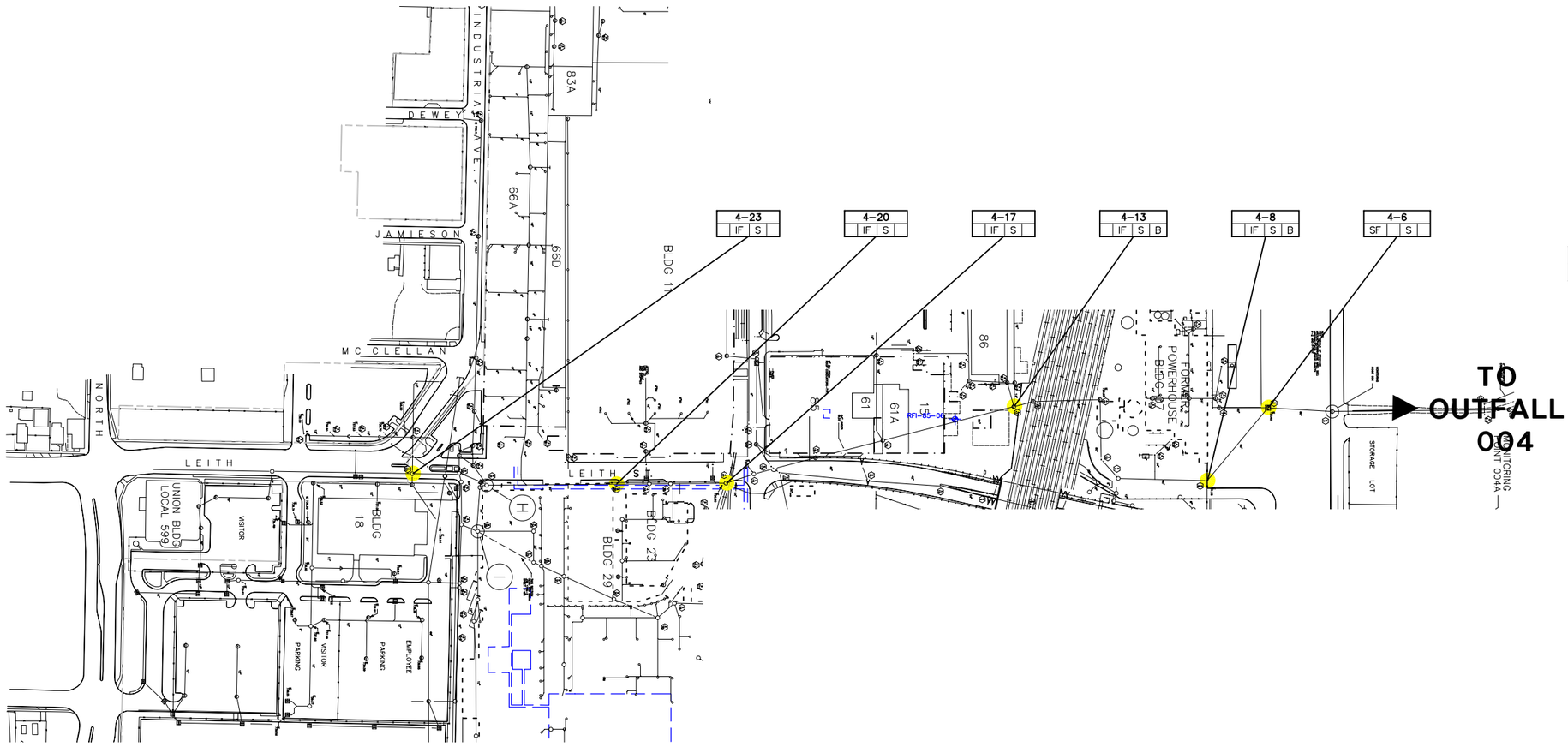
GENERAL MOTORS CORPORATION
NAO FLINT OPERATIONS SITE
FLINT, MICHIGAN

OUTFALL 003 STORM SEWER SYSTEM

BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

FIGURE 1

X: 64410X01.DWG, 64410X07.DWG
L: ON=*, OFF=*REF* ISHD-BUILDING
P: PAGESET/PLT-DL
3/16/04 SYR-85-NES SDL GMS
64410132/64410B01.DWG



LEGEND:

- EXISTING MONITORING WELL
- PROPOSED SAMPLE LOCATION
- STORM SEWER LINE

KEY:

LOCATION ID.			
SF	IF	S	B

- LOCATION ID.
- B = LNAPL INSPECT BOOM
- S = SAMPLE
- IF = INSTANT FLOW
- SF = SYSTEM FLOW

NOTES:

1. BASE MAP INFORMATION FROM A SURVEY BY BMJ, INC. DATED APRIL 2001, AT A SCALE OF 1:100.

0 300' 600'

APPROXIMATE GRAPHIC SCALE

X: 64410X01.DWG, 64410X05.DWG, 64410X07.DWG
L: ON=*, OFF=*REF*,*SHD-BUILDING,*SUB*,*BASEMENTLINE
P: PAGESET/PLT-DL
3/16/04 SYR-54-NES SDL GMS
64410132/SEWER/64410B05.DWG

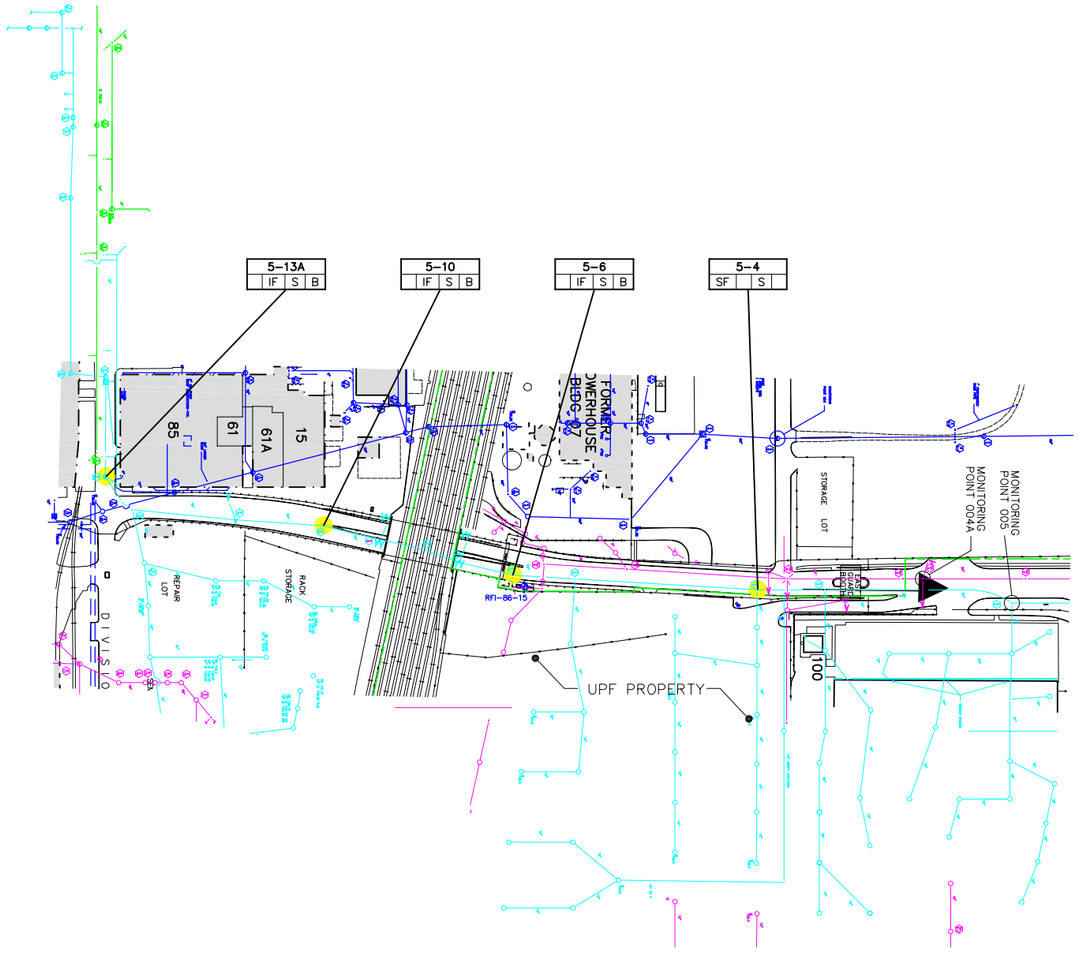
F:\-DWG\ACT\64411200\64411X01.gif

GENERAL MOTORS CORPORATION
NAO FLINT OPERATIONS SITE
FLINT, MICHIGAN

OUTFALL 004 STORM SEWER SYSTEM

BBL BLASLAND, BOUCK & LEE, INC. engineers, scientists, economists

FIGURE 2



TO OUTFALL 005

LEGEND:

- EXISTING MONITORING WELL
- PROPOSED SAMPLE LOCATION
- STORM SEWER LINE

KEY:

LOCATION ID.			
SF	IF	S	B

- LOCATION ID.
- B = LNAPL INSPECT BOOM
- S = SAMPLE
- IF = INSTANT FLOW
- SF = SYSTEM FLOW

NOTES:

1. BASE MAP INFORMATION FROM A SURVEY BY BMJ, INC. DATED APRIL 2001, AT A SCALE OF 1:100.

0 300' 600'

APPROXIMATE GRAPHIC SCALE

X: 64410X01.DWG, 64410X05.DWG, 64410X07.DWG
L: ON=*, OFF=*REF*,*SHD-BUILDING, *SUB*, *BASEMENTLINE
P: PAGESET/PLT-DL
3/16/04 SYR-54-NES SDL GMS
64410132/SEWER/64410B07.DWG

GENERAL MOTORS CORPORATION
NAO FLINT OPERATIONS SITE
FLINT, MICHIGAN

OUTFALL 005 STORM SEWER SYSTEM

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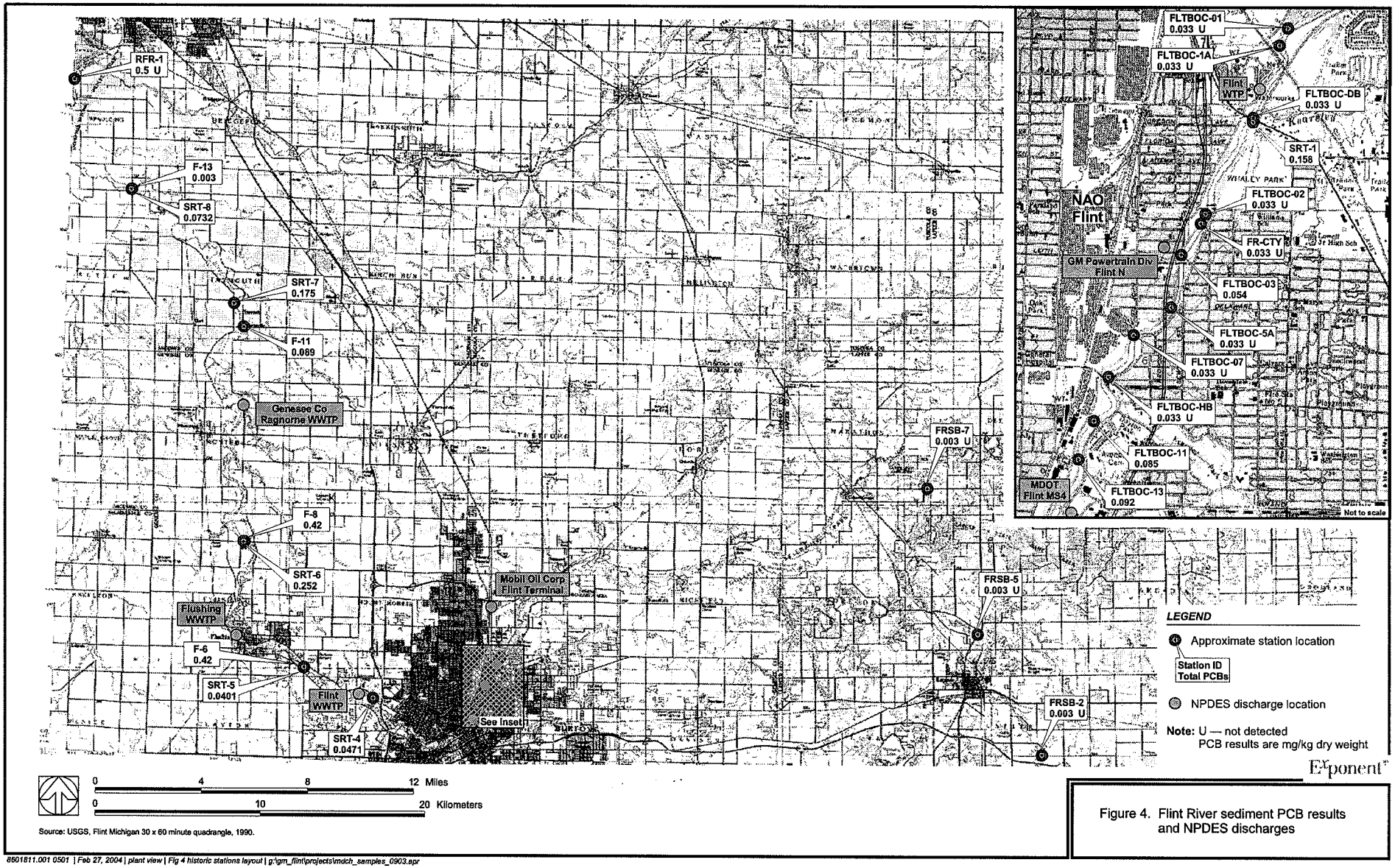
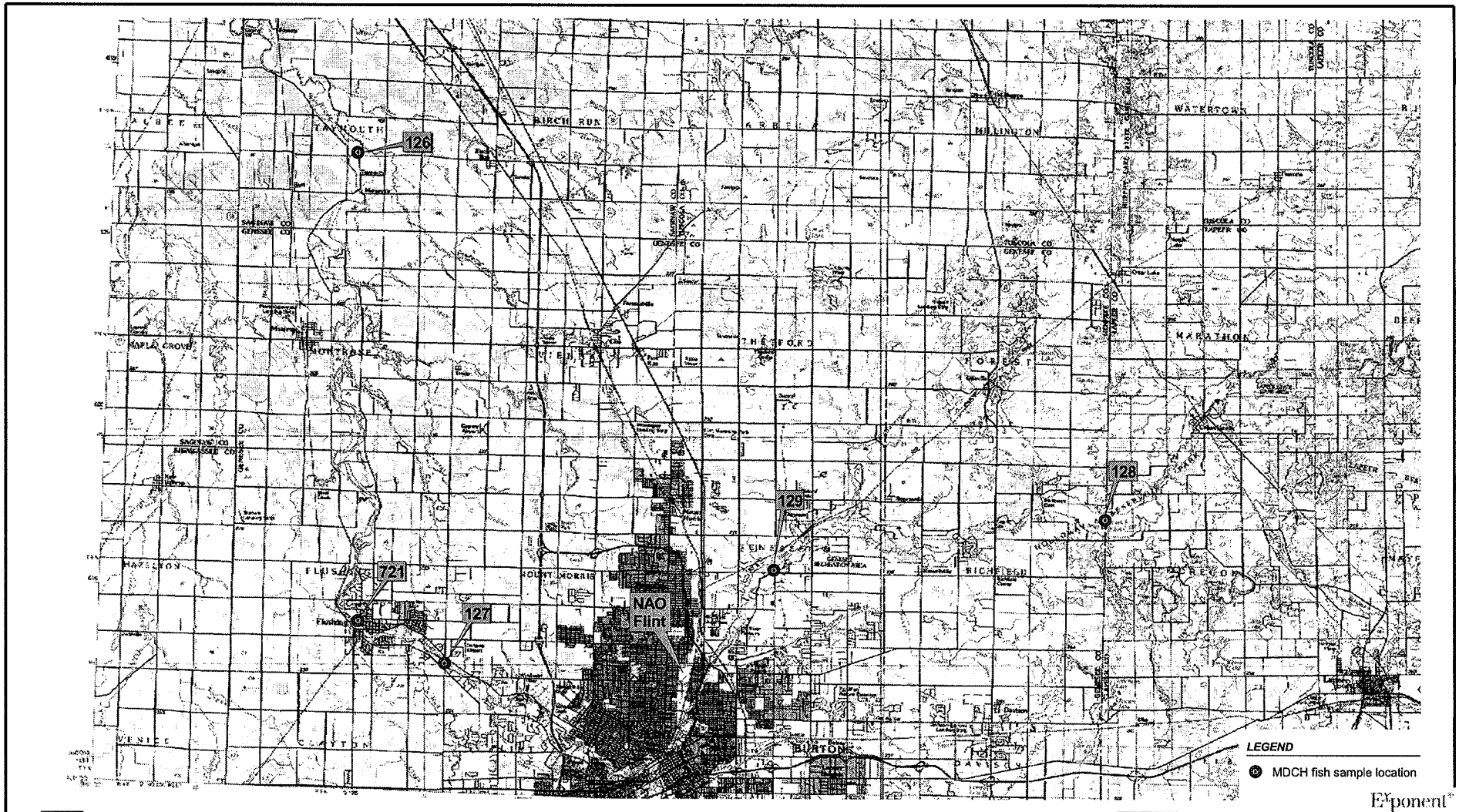
FIGURE
3



Source: USGS, Flint Michigan 30 x 60 minute quadrangle, 1990.

Figure 4. Flint River sediment PCB results and NPDES discharges



Source: Robert Day, Michigan Department of Community Health.
USGS, Flint Michigan 30 x 60 minute quadrangle, 1990.

Exponent

Figure 5. State of Michigan fish sample locations

8601811.001 0101 | Feb 27, 2004 | MDCH sample view | Fig 5 MDCH fish layout | g:\gm_flint\projects\mdch_samples_0903.apr

Attachment 1

FILE 6440 #5

MEMORANDUM

BBL®
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engineers, scientists, economists

To: Randy Brown **Date:** March 18, 2005

From: Brian Loomis **cc:** Mark Lovejoy

Re: GM NAO Flint – Outfall 003 Catchbasin Sediment Sampling

Randy-

The following summarizes the activities associated with the collection of the sediment samples from two of the General Motors Corporation (GM) North American Operations, Flint Engine North Site (the Site). The Site storm sewer catch basins that were sampled are a part of the outfall 003 storm sewer system. Sediment from these catch basins was sampled by Brian Loomis of Blasland, Bouck, & Lee on September 9, 2004 for polychlorinated biphenyl (PCB) analysis. This work was performed as a part of the ongoing Outfall 003 investigation activities.

The catch basins sampled included MH 3-22-2 and MH 3-31-6, located near the site waste water treatment plant Sediment had been cleaned from these manholes in the late 1990's that had detectable levels of PCB's. Sediment was collected from the ground surface using a disposable scoop. Sediment was transferred into a sample container and shipped via courier to Merit Laboratory for PCB analysis. The samples were shipped under a BBL Chain of Custody # 1446. Sample identification for MH 3-22-2 and MH 3-31-6 are 3-22-2(090804) and 3-31-6(090804) respectively. Upon disturbance of the sediment during collection of the samples, a sheen appeared in each of the manholes. The sediment collected consisted mainly of fine dark brown to black sand, with trace silt and clay.

The samples collected were analyzed by Merit Laboratory on September 21, 2004 and a summary of the results are as follows:

3-22-2(090804) - Lab ID S18736.01
78 % solid
PCB 1242 4,500 ug/kg

3-31-6(090804) – Lab ID S18736.02
23.5 % solid
PCB 1242 3,400 ug/kg
PCB 1260 2,500 ug/kg

These results are recorded in lab report S18736.01 (01) that was generated on 09/22/2004.
BTL/btl

Analytical Laboratory Report

Report ID: S18736.01(01)
Generated on 09/22/2004

Report to

Attention: Mr. Mark Lovejoy
Blasland, Bouck & Lee, Inc.
1920 Opdyke Ct.
Auburn Hills, MI 48326

Phone: 248-377-9162 FAX: 248-377-9413

Report produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S18736.01-S18736.02
Project: 64410/ GM NAO Flint Storm Sewers
Submitted Date/Time: 09/08/2004 16:00
Sampled by: B. Loomis
P.O. #:

Report Notes

Results relate only to items tested.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
"Not detected" indicates that parameter was not found at a level equal to or greater than the RDL.

Violetta F. Murshak

Violetta F. Murshak
Laboratory Director

Analytical Laboratory Report

Lab Sample ID: S18736.01
Sample Tag: 3-22-2 (090804)
Collected Date/Time: 09/08/2004 11:30
Matrix: Soil
COC Reference: 1446

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	8oz. Glass	None	Yes	8	3

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flag
Extraction / Prep.								
Extraction, PCB	Completed			3550B	09/17/04 17:28	BGD		
Inorganics								
Total Solids	78	%	1	160.3	09/20/04 19:30	LBR		
Organics								
PCB List								
PCB-1016	Not detected	ug/kg	500	8082	09/21/04 11:49	JANB	12674-11-2	
PCB-1242	4,500	ug/kg	500	8082	09/21/04 11:49	JANB	53469-21-9	
PCB-1221	Not detected	ug/kg	500	8082	09/21/04 11:49	JANB	11104-28-2	
PCB-1232	Not detected	ug/kg	500	8082	09/21/04 11:49	JANB	11141-16-5	
PCB-1248	Not detected	ug/kg	500	8082	09/21/04 11:49	JANB	12672-29-6	
PCB-1254	Not detected	ug/kg	500	8082	09/21/04 11:49	JANB	11097-69-1	
PCB-1260	Not detected	ug/kg	500	8082	09/21/04 11:49	JANB	11096-82-5	

Y-Elevated reporting limit due to high target concentration

Analytical Laboratory Report

Lab Sample ID: S18736.02
Sample Tag: 3-31-6 (090804)
Collected Date/Time: 09/08/2004 12:00
Matrix: Soil
COC Reference: 1446

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	8oz. Glass	None	Yes	8	3

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flag
Extraction / Prep.								
Extraction, PCB	Completed			3550B	09/17/04 17:28	BGD		
Inorganics								
Total Solids	23.5	%	1	160.3	09/10/04 13:00	LBR		
Organics								
PCB List								
PCB-1016	Not detected	ug/kg	1,000	8082	09/21/04 12:07	JANB	12674-11-2	
PCB-1242	3,400	ug/kg	1,000	8082	09/21/04 12:07	JANB	53469-21-9	
PCB-1221	Not detected	ug/kg	1,000	8082	09/21/04 12:07	JANB	11104-28-2	
PCB-1232	Not detected	ug/kg	1,000	8082	09/21/04 12:07	JANB	11141-16-5	
PCB-1248	Not detected	ug/kg	1,000	8082	09/21/04 12:07	JANB	12672-29-6	
PCB-1254	Not detected	ug/kg	1,000	8082	09/21/04 12:07	JANB	11097-69-1	
PCB-1260	2,500	ug/kg	1,000	8082	09/21/04 12:07	JANB	11096-82-5	

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BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

ID#: 1446

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 1

Lab Work Order #:

Send Results to:

Contact & Company Name: MARK LOVEJOY-BBL	Telephone: 248 377 9162
Address: 1920 OPPYKE CT	Fax: 248 377 9413
City: AUBURN HILLS State: MI Zip:	e-mail address:
Proj. Name/Location (City/State): GM NAO FLINT	Project #: 64410.135
Sampler's Printed Name: B. COOMIS	Sampler's Signature:

Preservative	4°C							
Filtered (Y)	N							
# of Containers	2							
Container Information	B							

PARAMETER ANALYSIS & METHOD

Keys

Preservation Key: A. H_2SO_4 B. HCL C. HNO_3 D. NaOH E. None F. Other: _____ G. Other: _____ H. Other: _____

Container Information Key: 1. 40 ml Vial 2. 1 L Amber 3. 250 ml Plastic 4. 500 ml Plastic 5. Encore 6. 2 oz Glass 7. 4 oz Glass 8. 8 oz Glass 9. Other: _____ 10. Other: _____

Matrix Key: SO - Soil SE - Sediment NL - NAPL/Oil W - Water SL - Sludge SW - Sample Wipe T - Tissue A - Air Other: _____

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	PCB	REMARKS
3-22-2 (090804)	9/8/04	1130		X	SOIL	X	
3-31-6 (090804)	9/8/04	1200		X	SOIL	X	

ANALYZE SEDIMENT ONLY

Special Instructions/Comments:

☐ Special QA/QC Instructions (✓):

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name: Merit	Cooler Custody Seal (✓): ☐ Intact ☐ Not Intact	Printed Name: Brian Loomis	Printed Name: Chris Gauthier	Printed Name: Chris Gauthier	Printed Name: Paula Straw
☑ Cooler packed with ice (✓)		Signature:	Signature:	Signature:	Signature: Paula Straw
Specify Turnaround Requirements: STANDARD	Sample Receipt: Condition/Cooler Temp:	Firm: BBL	Firm/Courier: Merit	Firm/Courier: Merit	Firm: Merit
Shipping Tracking #: COURIER		Date/Time: 9/8/04	Date/Time: 9-8-04 1500	Date/Time: 9-8-04 1600	Date/Time: 9-8-04 1600

MEMORANDUM

BBL®
BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

To: Kurt Blizzard, GM
Jean Caufield, GM

From: Derek C. Kaiding

Date: September 2, 2005

cc: Pieter Booth, Exponent
C.Y. Jeng, ENVIRON
Mark Brown, BBL
Mike Scoville , BBL

Re: Results of April 28, 2005 Flint River Sediment Split Sampling Event

At your request, on April 28, 2005, Blasland, Bouck & Lee, Inc. (BBL) observed sediment sampling being performed by the Michigan Department of Environmental Quality (MDEQ) along the Flint River, adjacent to the General Motors Corporation (GM) North America Operations (NAO) Flint Operations Site (GM facility). These observations were performed for the purposes of splitting sediment samples with MDEQ for separate laboratory analysis on behalf of GM.

The MDEQ sampling program included the collection of a total of nine samples from six general locations along the river upstream of, adjacent to, and downstream of the GM facility, with a particular focus on outfalls associated with the GM facility. MDEQ specifically sampled the following locations: Mott Lake, Utah Dam area, and Outfalls 003, 005, 011, and 013. Figure 1 provides an illustration of these areas.

Per MDEQ, the purpose of its sampling program was to establish a base line data set for this segment of the Flint River. All sediment samples collected by MDEQ were to be analyzed for volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs), with the majority also slated for analysis of dioxins, Michigan 10 metals, and arochlor- and congener-specific polychlorinated biphenyls (PCBs).

All of the sediment samples were collected by Mr. Art Ostaszewski of MDEQ, with Gary Cygan and Tammy Moore, both of the United States Environmental Protection Agency (USEPA), also observing the entire sampling program.

GM was notified only on April 26, 2005 of the sampling event, not leaving enough time for GM to properly coordinate split sampling and program observation. As such, Brian Loomis of BBL, split a total of only three sediment samples on behalf of GM, and observed only about one-half of the MDEQ program, on behalf of GM.

MDEQ used a "Ponar Dredge" to collect grab samples at most of the locations in order to collect sufficient quantities of material to split samples. MDEQ used a "Peat Borer" to collect cores at some of the locations in an effort to visually inspect an 18-inch core of the sediment along the rivers edge, as well as to sample in 6-inch intervals to depth.

MDEQ decontaminated their equipment between each sampling location by scrubbing and rinsing the equipment in the Flint River, followed by a dionized water rinse. MDEQ released all

rinsate and solids from decontaminating equipment into the Flint River at each location where samples had been collected.

Prior to BBL's arrival, MDEQ and USEPA had already collected samples from three of the locations: Mott Lake, the Utah Dam area, and Outfall 003. BBL split sediment samples from the remaining three sampling locations: Outfall 005, Outfall 011, and Outfall 013.

These split samples collected by BBL were submitted to Merit Laboratories, Inc. (Merit) in East Lansing, Michigan, under proper chain of custody, and were sampled for arochlor- and congener-specific PCBs, Project Analyte List (PAL) VOCs, PAL SVOCs, and Michigan 10 metals (arsenic, barium, cadmium, chromium total, copper, lead, mercury, selenium, silver, and zinc).

A copy of GM's split sample laboratory analytical data report is included in Appendix A. A summary of GM's split sample analytical results are presented in Table 1.

As shown on Table 1, PCBs (arochlor 1254 only) were detected at all three split sample locations, however only at estimated concentrations less than 0.1 parts per billion (ppb). The following SVOCs were detected at levels above the reporting limit (up to 1,600 ppb): benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, bis(2-Ethylhexyl)phthalate, chrysene, fluoranthene, phenanthrene, and pyrene. Methylene chloride is the only VOC detected above the reporting limit (up to 800 ppb). Similar results were observed in samples from all three sampling locations. The highest concentrations of analytes were recorded near Outfall 013

Sediment at all of the locations consisted of silt with some sand, and appeared to contain a high organic content based on visual observations. Dark staining was present in several samples.

MDEQ recorded the location of four of the sampling points using a hand held Global Positioning System (GPS) unit. The remaining two locations were not recorded due to equipment failure.

Appendix B provides a summary of the specific samples collected by MDEQ and the corresponding laboratory analyses that MDEQ indicated would be conducted.

DCK/

TABLE 1
SUMMARY OF ANALYTICAL DATA - FLINT RIVER SPLIT SEDIMENT SAMPLES

GENERAL MOTORS CORPORATION
NAO FLINT OPERATIONS SITE
FLINT, MICHIGAN

Sample ID: / Date Collected:	Units	Outfall 005 04/28/05	Outfall 011 04/28/05	Outfall 013 04/28/05
Inorganic				
Arsenic	mg/kg	10	4.6	7.8
Barium	mg/kg	170	70	140
Cadmium	mg/kg	1.2	1.7	1.9
Chromium Total	mg/kg	17	15	20
Copper	mg/kg	48	58	67
Lead	mg/kg	76	67	110
Mercury	mg/kg	0.11	0.070	0.12
Selenium	mg/kg	0.68	0.42	0.81
Silver	mg/kg	0.24	0.26	0.25
Zinc	mg/kg	240	150	270
Miscellaneous				
Total Solids	%	32	49	32
PCB				
Aroclor-1016 (PCB-1016)	ug/kg	330 U	330 U	330 U
Aroclor-1221 (PCB-1221)	ug/kg	330 U	330 U	330 U
Aroclor-1232 (PCB-1232)	ug/kg	330 U	330 U	330 U
Aroclor-1242 (PCB-1242)	ug/kg	330 U	330 U	330 U
Aroclor-1248 (PCB-1248)	ug/kg	330 U	330 U	330 U
Aroclor-1254 (PCB-1254)	ug/kg	40 J	50 J	20 J
Aroclor-1260 (PCB-1260)	ug/kg	330 U	330 U	330 U
SVOC				
2,2'-oxybis(1-Chloropropane) (bis(2-chloroisopropyl) ether)	ug/kg	500 U	300 U	500 U
2,4,5-Trichlorophenol	ug/kg	500 U	300 U	500 U
2,4,6-Trichlorophenol	ug/kg	500 U	300 U	500 U
2,4-Dichlorophenol	ug/kg	500 U	300 U	500 U
2,4-Dimethylphenol	ug/kg	500 U	300 U	500 U
2,4-Dinitrophenol	ug/kg	500 UJ	700 UJ	500 UJ
2,4-Dinitrotoluene	ug/kg	500 U	300 U	500 U
2,6-Dinitrotoluene	ug/kg	500 U	300 U	500 U
2-Chloronaphthalene	ug/kg	500 U	300 U	500 U
2-Chlorophenol	ug/kg	500 U	300 U	500 U
2-Methylnaphthalene	ug/kg	500 U	300 U	500 U
2-Methylphenol	ug/kg	500 U	300 U	500 U
2-Nitroaniline	ug/kg	500 U	700 U	500 U
2-Nitrophenol	ug/kg	500 U	300 U	500 U
3,3'-Dichlorobenzidine	ug/kg	500 U	700 U	500 U
3-Methylphenol	ug/kg	500 U	300 U	500 U
3-Nitroaniline	ug/kg	500 U	700 U	500 U
4,6-Dinitro-2-methylphenol	ug/kg	500 U	700 U	500 U
4-Bromophenyl phenyl ether	ug/kg	500 U	300 U	500 U
4-Chloro-3-methylphenol	ug/kg	500 U	300 U	500 U
4-Chloroaniline	ug/kg	500 UJ	700 UJ	500 UJ
4-Chlorophenyl phenyl ether	ug/kg	500 U	300 U	500 U
4-Nitroaniline	ug/kg	500 U	700 U	500 U
4-Nitrophenol	ug/kg	500 U	700 U	500 U
Acenaphthene	ug/kg	500 U	300 U	500 U
Acenaphthylene	ug/kg	500 U	300 U	500 U
Acetophenone	ug/kg	500 U	300 U	500 U
Anthracene	ug/kg	100 J	70 J	100 J
Atrazine	ug/kg	500 U	300 U	500 U
Benzaldehyde	ug/kg	500 U	300 U	500 U
Benzo(a)anthracene	ug/kg	700	400	900

TABLE 1
SUMMARY OF ANALYTICAL DATA - FLINT RIVER SPLIT SEDIMENT SAMPLES

GENERAL MOTORS CORPORATION
NAO FLINT OPERATIONS SITE
FLINT, MICHIGAN

Sample ID: / Date Collected:	Units	Outfall 005 04/28/05	Outfall 011 04/28/05	Outfall 013 04/28/05
SVOC Cont.				
Benzo(a)pyrene	ug/kg	800	500	1,000
Benzo(b)fluoranthene	ug/kg	800	500	1,100
Benzo(g,h,i)perylene	ug/kg	500 UJ	300 UJ	400 J
Benzo(k)fluoranthene	ug/kg	600	400	800
Biphenyl	ug/kg	500 U	300 U	500 U
bis(2-Chloroethoxy)methane	ug/kg	500 U	300 U	500 U
bis(2-Chloroethyl)ether	ug/kg	500 U	300 U	500 U
bis(2-Ethylhexyl)phthalate	ug/kg	600	300	700
Butyl benzylphthalate	ug/kg	500 U	400	500 U
Caprolactam	ug/kg	500 U	300 U	500 U
Carbazole	ug/kg	100 J	70 J	200 J
Chrysene	ug/kg	900	600	1,200
Di-n-butylphthalate	ug/kg	500 U	300	500 U
Di-n-octyl phthalate	ug/kg	500 U	300 U	500 U
Dibenz(a,h)anthracene	ug/kg	500 UJ	300 U	500 UJ
Dibenzofuran	ug/kg	500 U	300 U	500 U
Diethyl phthalate	ug/kg	500 U	300 U	500 U
Dimethyl phthalate	ug/kg	500 U	300 U	500 U
Fluoranthene	ug/kg	1,600	300 U	2,000
Fluorene	ug/kg	500 U	300 U	500 U
Hexachlorobenzene	ug/kg	500 U	300 U	500 U
Hexachlorobutadiene	ug/kg	500 U	300 U	500 U
Hexachlorocyclopentadiene	ug/kg	R	300 U	500 UJ
Hexachloroethane	ug/kg	500 UJ	300 U	500 U
Indeno(1,2,3-cd)pyrene	ug/kg	1,200 J	300 U	1,500
Isophorone	ug/kg	500 U	300 U	500 U
N-Nitrosodi-n-propylamine	ug/kg	500 U	300 U	500 U
N-Nitrosodiphenylamine	ug/kg	500 U	300 U	500 U
Naphthalene	ug/kg	500 U	300 U	500 U
Nitrobenzene	ug/kg	500 U	200 U	500 U
Pentachlorophenol	ug/kg	500 U	700 U	500 U
Phenanthrene	ug/kg	700	500	800
Phenol	ug/kg	500 U	300 U	500 U
Pyrene	ug/kg	1,300	800	1,600
VOC				
1,1,1-Trichloroethane	ug/kg	200 U	100 U	200 U
1,1,2,2-Tetrachloroethane	ug/kg	200 U	100 U	200 U
1,1,2-Trichloroethane	ug/kg	200 U	100 U	200 U
1,1-Dichloroethane	ug/kg	200 U	100 U	200 U
1,1-Dichloroethene	ug/kg	200 U	100 U	200 U
1,2,4-Trichlorobenzene	ug/kg	300 UJ	200 UJ	300 UJ
1,2-Dibromo-3-chloropropane (DBCP)	ug/kg	200 UJ	100 UJ	200 UJ
1,2-Dibromoethane (Ethylene Dibromide)	ug/kg	200 U	100 U	200 U
1,2-Dichlorobenzene	ug/kg	200 U	100 U	200 U
1,2-Dichloroethane	ug/kg	200 U	100 U	200 U
1,2-Dichloropropane	ug/kg	200 U	100 U	200 U
1,3-Dichlorobenzene	ug/kg	200 U	100 U	200 U
1,4-Dichlorobenzene	ug/kg	200 U	100 U	200 U
2-Butanone (Methyl Ethyl Ketone)	ug/kg	2,000 U	2,000 U	2,000 U
2-Hexanone	ug/kg	8,000 U	5,000 U	8,000 U
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	ug/kg	8,000 U	5,000 U	8,000 U
Acetone	ug/kg	2,000 U	2,000 U	2,000 U

TABLE 1
SUMMARY OF ANALYTICAL DATA - FLINT RIVER SPLIT SEDIMENT SAMPLES

GENERAL MOTORS CORPORATION
NAO FLINT OPERATIONS SITE
FLINT, MICHIGAN

Sample ID: / Date Collected:	Units	Outfall 005 04/28/05	Outfall 011 04/28/05	Outfall 013 04/28/05
VOC cont.				
Benzene	ug/kg	200 U	100 U	200 U
Bromodichloromethane	ug/kg	200 U	100 U	200 U
Bromoform	ug/kg	200 UJ	100 UJ	200 UJ
Bromomethane (Methyl Bromide)	ug/kg	800 U	500 U	800 U
Carbon disulfide	ug/kg	800 U	500 U	800 U
Carbon tetrachloride	ug/kg	200 U	100 U	200 U
Chlorobenzene	ug/kg	200 U	100 U	200 U
Chloroethane	ug/kg	800 U	500 U	800 U
Chloroform (Trichloromethane)	ug/kg	200 U	100 U	200 U
Chloromethane (Methyl Chloride)	ug/kg	800 U	500 U	800 U
cis-1,2-Dichloroethene	ug/kg	200 U	100 U	200 U
cis-1,3-Dichloropropene	ug/kg	200 U	100 U	200 U
Cyclohexane	ug/kg	200 UJ	100 UJ	200 UJ
Dibromochloromethane	ug/kg	200 U	100 U	200 U
Dichlorodifluoromethane (CFC-12)	ug/kg	200 U	100 U	200 U
Ethylbenzene	ug/kg	200 U	100 U	200 U
Isopropylbenzene	ug/kg	200 U	100 U	200 U
m&p-Xylene	ug/kg	200 U	100 U	200 U
Methyl acetate	ug/kg	800 J	5,000 U	400 J
Methyl cyclohexane	ug/kg	200 U	100 U	200 U
Methyl Tert Butyl Ether	ug/kg	800 U	500 U	800 U
Methylene chloride	ug/kg	800	500	800
o-Xylene	ug/kg	200 U	100 U	200 U
Styrene	ug/kg	200 U	100 U	200 U
Tetrachloroethene	ug/kg	200 U	100 U	200 U
Toluene	ug/kg	40 J	100 U	200 U
trans-1,2-Dichloroethene	ug/kg	200 U	100 U	200 U
trans-1,3-Dichloropropene	ug/kg	200 U	100 U	200 U
Trichloroethene	ug/kg	200 U	100 U	200 U
Trichlorofluoromethane (CFC-11)	ug/kg	300 U	200 U	300 U
Trifluorotrichloroethane (Freon 113)	ug/kg	300 U	200 U	300 U
Vinyl chloride	ug/kg	300 U	200 U	300 U

Note:
J = The compound was positively identified; however, the associated numerical value is an estimated concentration only.
R = Sample results were rejected.
U = The compound was not identified.
UJ = The compound was analyzed but not detected. The associated value is the compound reporting limit.


C.S. MOTT LAKE DAM
OUTFALL 001
GM SITE
UTAH DAM
OUTFALL 002
OUTFALL 100 FROM LAGOONS VALVE CLOSED
OUTFALL 003 HICKORY ST
OUTFALL 004 STATE ST
OUTFALL 004A
OUTFALL 005 S. LEITH ST
OUTFALL 005A
OUTFALL 005B
OUTFALL 006 CAMPAU ST
OUTFALL 007
OUTFALL 007A
OUTFALL 008
OUTFALL 010 HAMILTON AVE
OUTFALL 012 N. DUPONT
OUTFALL 011 S. DUPONT
OUTFALL 013 WOOD ST
HAMILTON DAM
LEGEND:
OUTFALL
NOTE:
1. AERIAL PHOTOS OBTAINED FROM: THE STATE OF MICHIGAN'S CENTER FOR GEOGRAPHIC INFORMATION, DEPARTMENT OF INFORMATION TECHNOLOGY, http://www.michigan.gov/cgi/
0
1,600
3,200
Feet
GENERAL MOTORS CORPORATION
NORTH AMERICAN OPERATIONS
FLINT OPERATIONS SITE - FLINT, MICHIGAN
DESCRIPTION OF FLINT RIVER STUDY AREA
FLINT RIVER STUDY AREA AND
GM STORM SEWER OUTFALL LOCATIONS
BBL
BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists
FIGURE
1
5/4/05 SYR 85 EAB
GM Flint
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APPENDIX A

ANALYTICAL LABORATORY REPORT – GM FLINT RIVER SEDIMENT SPLIT SAMPLES, APRIL 28, 2005

BBL®
BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

Analytical Laboratory Report

Report ID: S22025.01(01)
Generated on 05/19/2005

Report to

Attention: Mr. Mark Lovejoy/Randy Brown
Blasland, Bouck & Lee, Inc.
6723 Towpath Rd.
Syracuse, NY 13214

Phone: 315-446-2570 FAX: 315--449-0025

Report produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S22025.01-S22025.03
Project: 64410/ NAO Flint North
Submitted Date/Time: 05/02/2005 08:00
Sampled by: Brian Loomis
P.O. #:

Report Notes

Results relate only to items tested.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
"Not detected" indicates that parameter was not found at a level equal to or greater than the RDL.

Violetta F. Murshak
Violetta F. Murshak
Laboratory Director

Merit Laboratories, Inc.

Analytical Laboratory Report

Lab Sample ID: S22025.01
Sample Tag: Outfall 005 (042805)
Collected Date/Time: 04/28/2005 11:20
Matrix: Sludge
COC Reference: 02504

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	8oz. Glass	None	Yes	4	3

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
BNA Extraction	Completed			3550B	05/05/05 14:41	PL		
Extraction, PCB	Completed			3550B	05/03/05 14:43	EMR		
Mercury Digestion	Completed			7471A	05/10/05 12:00	JRT		
Metal Digestion	Completed			3050B	05/17/05 09:30	MSH		
Inorganics								
Total Solids	32.3	%	1	160.3	05/05/05 08:15	VJH		
Metals								
Arsenic	10.4	mg/kg	0.10	6020	05/17/05 17:08	SLS	7440-38-2	
Barium	172	mg/kg	1.0	6020	05/17/05 17:08	SLS	7440-39-3	
Cadmium	1.20	mg/kg	0.05	6020	05/17/05 17:08	SLS	7440-43-9	
Chromium	17.2	mg/kg	0.50	6020	05/17/05 17:08	SLS	7440-47-3	
Copper	48.0	mg/kg	1.0	6020	05/17/05 17:08	SLS	7440-50-8	
Lead	75.5	mg/kg	1.0	6020	05/17/05 17:08	SLS	7439-92-1	
Mercury	0.11	mg/kg	0.05	245.1M	05/10/05 15:55	JRT	7439-97-6	
Selenium	0.68	mg/kg	0.20	6020	05/17/05 17:08	SLS	7782-49-2	
Silver	0.24	mg/kg	0.10	6020	05/17/05 17:08	SLS	7440-22-4	
Zinc	235	mg/kg	1.0	6020	05/17/05 17:08	SLS	7440-66-6	
Organics - PCBs/Pesticides								
TCL PCB List (Column 1)								
PCB-1016	Not detected	ug/kg	330	8082	05/06/05 11:31	JANB	12674-11-2	
PCB-1242	Not detected	ug/kg	330	8082	05/06/05 11:31	JANB	53469-21-9	
PCB-1221	Not detected	ug/kg	330	8082	05/06/05 11:31	JANB	11104-28-2	
PCB-1232	Not detected	ug/kg	330	8082	05/06/05 11:31	JANB	11141-16-5	
PCB-1248	Not detected	ug/kg	330	8082	05/06/05 11:31	JANB	12672-29-6	
PCB-1254	30	ug/kg	330	8082	05/06/05 11:31	JANB	11097-69-1	J
PCB-1260	Not detected	ug/kg	330	8082	05/06/05 11:31	JANB	11096-82-5	
TCL PCB List (Column 2)								
PCB-1016	Not detected	ug/kg	330	8082	05/06/05 11:31	JANB	12674-11-2	
PCB-1242	Not detected	ug/kg	330	8082	05/06/05 11:31	JANB	53469-21-9	
PCB-1221	Not detected	ug/kg	330	8082	05/06/05 11:31	JANB	11104-28-2	
PCB-1232	Not detected	ug/kg	330	8082	05/06/05 11:31	JANB	11141-16-5	
PCB-1248	Not detected	ug/kg	330	8082	05/06/05 11:31	JANB	12672-29-6	
PCB-1254	40	ug/kg	330	8082	05/06/05 11:31	JANB	11097-69-1	J
PCB-1260	Not detected	ug/kg	330	8082	05/06/05 11:31	JANB	11096-82-5	
Organics - Semi-Volatiles								
TCL Semi-Volatile Organics								
Acenaphthene	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	83-32-9	1

J-Estimated value less than reporting limit, but greater than MDL
1-ELEVATED DETECTION LIMITS DUE TO LOW TOTAL SOLIDS

Merit Laboratories, Inc.

Analytical Laboratory Report

Lab Sample ID: S22025.01 (continued)
Sample Tag: Outfall 005 (042805)

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Semi-Volatiles (continued)								
TCL Semi-Volatile Organics (continued)								
Acenaphthylene	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	208-96-8	1
Acetophenone	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	98-86-2	1
Anthracene	100	ug/kg	500	8270C	05/12/05 14:19	ARH	120-12-7	J1
Atrazine	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	1912-24-9	1
1,1'-Biphenyl	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	92-52-4	1
4-Bromophenyl phenyl ether	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	101-55-3	1
di-n-Butyl phthalate	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	84-74-2	1
Benzaldehyde	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	100-52-7	1
Benzo(a)anthracene	700	ug/kg	500	8270C	05/12/05 14:19	ARH	56-55-3	1
Benzo(a)pyrene	800	ug/kg	500	8270C	05/12/05 14:19	ARH	50-32-8	1
Benzo(b)fluoranthene	800	ug/kg	500	8270C	05/12/05 14:19	ARH	205-99-2	1
Benzo(ghi)perylene	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	191-24-2	1
Benzo(k)fluoranthene	600	ug/kg	500	8270C	05/12/05 14:19	ARH	207-08-9	1
Butyl benzyl phthalate	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	85-68-7	1
2-Chloronaphthalene	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	91-58-7	1
2-Chlorophenol	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	95-57-8	1
4-Chloro-3-methylphenol	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	59-50-7	1
4-Chloroaniline	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	106-47-8	1
4-Chlorophenyl phenyl ether	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	7005-72-3	1
Caprolactam	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	105-60-2	1
Carbazole	100	ug/kg	500	8270C	05/12/05 14:19	ARH	86-74-8	J1
bis(2-Chloroethoxy)methane	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	111-91-1	1
bis(2-Chloroethyl)ether	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	111-44-4	1
bis(2-Chloroisopropyl)ether	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	108-60-1	1
Chrysene	900	ug/kg	500	8270C	05/12/05 14:19	ARH	218-01-9	1
2,4-Dichlorophenol	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	120-83-2	1
2,4-Dimethylphenol	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	105-67-9	1
2,4-Dinitrophenol	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	51-28-5	1
2,4-Dinitrotoluene	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	121-14-2	1
2,6-Dinitrotoluene	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	606-20-2	1
3,3'-Dichlorobenzidine	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	91-94-1	1
4,6-Dinitro-2-methylphenol	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	534-52-1	1
Dibenzo(ah)anthracene	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	53-70-3	1
Dibenzofuran	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	132-64-9	1
Diethyl phthalate	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	84-66-2	1
Dimethyl phthalate	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	131-11-3	1
bis(2-Ethylhexyl)phthalate	600	ug/kg	500	8270C	05/12/05 14:19	ARH	117-81-7	1
Fluoranthene	1,600	ug/kg	500	8270C	05/12/05 14:19	ARH	206-44-0	1
Fluorene	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	86-73-7	1
Hexachlorobenzene	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	118-74-1	1
Hexachlorobutadiene	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	87-68-3	1
Hexachlorocyclopentadiene	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	77-47-4	1
Hexachloroethane	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	67-72-1	1
Indeno(1,2,3-cd)pyrene	1,200	ug/kg	500	8270C	05/12/05 14:19	ARH	193-39-5	1
Isophorone	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	78-59-1	1
2-Methylnaphthalene	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	91-57-6	1
2-Methylphenol	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	95-48-7	1

1-ELEVATED DETECTION LIMITS DUE TO LOW TOTAL SOLIDS
J-Estimated value less than reporting limit, but greater than MDL

Lab Sample ID: S22025.01 (continued)
Sample Tag: Outfall 005 (042805)

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Semi-Volatiles (continued)								
TCL Semi-Volatile Organics (continued)								
3-, 4-Methylphenol	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	108-39-4	1
2-Nitroaniline	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	88-74-4	1
2-Nitrophenol	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	88-75-5	1
3-Nitroaniline	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	99-09-2	1
4-Nitroaniline	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	100-01-6	1
4-Nitrophenol	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	100-02-7	1
N-Nitrosodi-n-propylamine	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	621-64-7	1
N-Nitrosodiphenylamine	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	86-30-6	1
Naphthalene	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	91-20-3	1
Nitrobenzene	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	98-95-3	1
di-n-Octyl phthalate	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	117-84-0	1
Pentachlorophenol	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	87-86-5	1
Phenanthrene	700	ug/kg	500	8270C	05/12/05 14:19	ARH	85-01-8	1
Phenol	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	108-95-2	1
Pyrene	1,300	ug/kg	500	8270C	05/12/05 14:19	ARH	129-00-0	1
2,4,5-Trichlorophenol	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	95-95-4	1
2,4,6-Trichlorophenol	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	88-06-2	1
Organics - Volatiles								
TCL Volatile Organics 5035/8260								
Acetone	Not detected	ug/kg	2,000	5035/8260B	05/12/05 15:08	JGH	67-64-1	
2-Butanone (MEK)	Not detected	ug/kg	2,000	5035/8260B	05/12/05 15:08	JGH	78-93-3	
Benzene	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	71-43-2	
Bromodichloromethane	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	75-27-4	
Bromoform	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	75-25-2	
Bromomethane	Not detected	ug/kg	800	5035/8260B	05/12/05 15:08	JGH	74-83-9	
Carbon disulfide	Not detected	ug/kg	800	5035/8260B	05/12/05 15:08	JGH	75-15-0	
Carbon tetrachloride	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	56-23-5	
Chlorobenzene	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	108-90-7	
Chloroethane	Not detected	ug/kg	800	5035/8260B	05/12/05 15:08	JGH	75-00-3	
Chloroform	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	67-66-3	
Chloromethane	Not detected	ug/kg	800	5035/8260B	05/12/05 15:08	JGH	74-87-3	
Cyclohexane	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	110-82-7	
1,1-Dichloroethane	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	75-34-3	
1,1-Dichloroethene	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	75-35-4	
1,2-Dibromo-3-chloropropane	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	96-12-8	
1,2-Dibromoethane	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	106-93-4	
1,2-Dichlorobenzene	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	95-50-1	
1,2-Dichloroethane	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	107-06-2	
1,2-Dichloropropane	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	78-87-5	
1,3-Dichlorobenzene	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	541-73-1	
1,4-Dichlorobenzene	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	106-46-7	
cis-1,2-Dichloroethene	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	156-59-2	
cis-1,3-Dichloropropene	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	10061-01-5	
Dibromochloromethane	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	124-48-1	
Dichlorodifluoromethane	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	75-71-8	
trans-1,2-Dichloroethene	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	156-60-5	
trans-1,3-Dichloropropene	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	10061-02-6	

1-ELEVATED DETECTION LIMITS DUE TO LOW TOTAL SOLIDS

Lab Sample ID: S22025.01 (continued)
Sample Tag: Outfall 005 (042805)

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
TCL Volatile Organics 5035/8260 (continued)								
Ethylbenzene	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	100-41-4	
2-Hexanone	Not detected	ug/kg	8,000	5035/8260B	05/12/05 15:08	JGH	591-78-6	
Isopropylbenzene	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	98-82-8	
Methyl Acetate	800	ug/kg	8,000	5035/8260B	05/12/05 15:08	JGH	79-20-9	J
4-Methyl-2-pentanone (MIBK)	Not detected	ug/kg	8,000	5035/8260B	05/12/05 15:08	JGH	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	ug/kg	800	5035/8260B	05/12/05 15:08	JGH	1634-04-4	
Methyl cyclohexane	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	108-87-2	
Methylene chloride	70	ug/kg	800	5035/8260B	05/12/05 15:08	JGH	75-09-2	BJ
Styrene	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	100-42-5	
1,1,1-Trichloroethane	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	79-34-5	
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	ug/kg	300	5035/8260B	05/12/05 15:08	JGH	76-13-1	
1,1,2-Trichloroethane	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	79-00-5	
1,2,4-Trichlorobenzene	Not detected	ug/kg	300	5035/8260B	05/12/05 15:08	JGH	120-82-1	
Tetrachloroethene	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	127-18-4	
Toluene	40	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	108-88-3	J
Trichloroethene	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	79-01-6	
Trichlorofluoromethane	Not detected	ug/kg	300	5035/8260B	05/12/05 15:08	JGH	75-69-4	
Vinyl chloride	Not detected	ug/kg	300	5035/8260B	05/12/05 15:08	JGH	75-01-4	
o-Xylene	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	95-47-6	
p,m-Xylene	Not detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH		

J-Estimated value less than reporting limit, but greater than MDL
B-Compound also found in associated method blank

Merit Laboratories, Inc.

Analytical Laboratory Report

Lab Sample ID: S22025.02
Sample Tag: Outfall 011 (042805)
Collected Date/Time: 04/28/2005 11:56
Matrix: Sludge
COC Reference: 02504

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	8oz. Glass	None	Yes	4	3

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
BNA Extraction	Completed			3550B	05/06/05 14:41	PL		
Extraction, PCB	Completed			3550B	05/03/05 14:43	EMR		
Mercury Digestion	Completed			7471A	05/10/05 12:00	JRT		
Metal Digestion	Completed			3050B	05/17/05 09:30	MSH		
Inorganics								
Total Solids	49.4	%	1	160.3	05/05/05 08:15	VJH		
Metals								
Arsenic	4.82	mg/kg	0.10	6020	05/17/05 17:12	SLS	7440-38-2	
Barium	70.4	mg/kg	1.0	6020	05/17/05 17:12	SLS	7440-39-3	
Cadmium	1.74	mg/kg	0.05	6020	05/17/05 17:12	SLS	7440-43-9	
Chromium	15.2	mg/kg	0.50	6020	05/17/05 17:12	SLS	7440-47-3	
Copper	58.0	mg/kg	1.0	6020	05/17/05 17:12	SLS	7440-50-8	
Lead	67.1	mg/kg	1.0	6020	05/17/05 17:12	SLS	7439-92-1	
Mercury	0.07	mg/kg	0.05	245.1M	05/10/05 15:57	JRT	7439-97-6	
Selenium	0.42	mg/kg	0.20	6020	05/17/05 17:12	SLS	7782-49-2	
Silver	0.26	mg/kg	0.10	6020	05/17/05 17:12	SLS	7440-22-4	
Zinc	148	mg/kg	1.0	6020	05/17/05 17:12	SLS	7440-66-6	
Organics - PCBs/Pesticides								
TCL PCB List (Column 1)								
PCB-1016	Not detected	ug/kg	330	8082	05/06/05 11:48	JANB	12674-11-2	
PCB-1242	Not detected	ug/kg	330	8082	05/06/05 11:48	JANB	53469-21-9	
PCB-1221	Not detected	ug/kg	330	8082	05/06/05 11:48	JANB	11104-28-2	
PCB-1232	Not detected	ug/kg	330	8082	05/06/05 11:48	JANB	11141-16-5	
PCB-1248	Not detected	ug/kg	330	8082	05/06/05 11:48	JANB	12672-29-6	
PCB-1254	50	ug/kg	330	8082	05/06/05 11:48	JANB	11097-69-1	J
PCB-1260	Not detected	ug/kg	330	8082	05/06/05 11:48	JANB	11096-82-5	
TCL PCB List (Column 2)								
PCB-1016	Not detected	ug/kg	330	8082	05/06/05 11:48	JANB	12674-11-2	
PCB-1242	Not detected	ug/kg	330	8082	05/06/05 11:48	JANB	53469-21-9	
PCB-1221	Not detected	ug/kg	330	8082	05/06/05 11:48	JANB	11104-28-2	
PCB-1232	Not detected	ug/kg	330	8082	05/06/05 11:48	JANB	11141-16-5	
PCB-1248	Not detected	ug/kg	330	8082	05/06/05 11:48	JANB	12672-29-6	
PCB-1254	50	ug/kg	330	8082	05/06/05 11:48	JANB	11097-69-1	J
PCB-1260	Not detected	ug/kg	330	8082	05/06/05 11:48	JANB	11096-82-5	
Organics - Semi-Volatiles								
TCL Semi-Volatile Organics								
Acenaphthene	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	83-32-9	

J-Estimated value less than reporting limit, but greater than MDL

Merit Laboratories, Inc.

Analytical Laboratory Report

Lab Sample ID: S22025.02 (continued)
Sample Tag: Outfall 011 (042805)

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Semi-Volatiles (continued)								
TCL Semi-Volatile Organics (continued)								
Acenaphthylene	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	208-96-8	
Acetophenone	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	98-86-2	
Anthracene	70	ug/kg	300	8270C	05/12/05 16:02	ARH	120-12-7	J
Atrazine	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	1912-24-9	
1,1'-Biphenyl	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	92-52-4	
4-Bromophenyl phenyl ether	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	101-55-3	
di-n-Butyl phthalate	70	ug/kg	300	8270C	05/12/05 16:02	ARH	84-74-2	BJ
Benzaldehyde	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	100-52-7	
Benzo(a)anthracene	400	ug/kg	300	8270C	05/12/05 16:02	ARH	56-55-3	
Benzo(a)pyrene	500	ug/kg	300	8270C	05/12/05 16:02	ARH	50-32-8	
Benzo(b)fluoranthene	500	ug/kg	300	8270C	05/12/05 16:02	ARH	205-99-2	
Benzo(ghi)perylene	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	191-24-2	
Benzo(k)fluoranthene	400	ug/kg	300	8270C	05/12/05 16:02	ARH	207-08-9	
Butyl benzyl phthalate	400	ug/kg	300	8270C	05/12/05 16:02	ARH	85-68-7	
2-Chloronaphthalene	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	91-58-7	
2-Chlorophenol	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	95-57-8	
4-Chloro-3-methylphenol	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	59-50-7	
4-Chloroaniline	Not detected	ug/kg	700	8270C	05/12/05 16:02	ARH	106-47-8	
4-Chlorophenyl phenyl ether	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	7005-72-3	
Caprolactam	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	105-60-2	
Carbazole	70	ug/kg	300	8270C	05/12/05 16:02	ARH	86-74-8	J
bis(2-Chloroethoxy)methane	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	111-91-1	
bis(2-Chloroethyl)ether	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	111-44-4	
bis(2-Chloroisopropyl)ether	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	108-60-1	
Chrysene	600	ug/kg	300	8270C	05/12/05 16:02	ARH	218-01-9	
2,4-Dichlorophenol	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	120-83-2	
2,4-Dimethylphenol	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	105-67-9	
2,4-Dinitrophenol	Not detected	ug/kg	700	8270C	05/12/05 16:02	ARH	51-28-5	
2,4-Dinitrotoluene	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	121-14-2	
2,6-Dinitrotoluene	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	606-20-2	
3,3'-Dichlorobenzidine	Not detected	ug/kg	700	8270C	05/12/05 16:02	ARH	91-94-1	
4,6-Dinitro-2-methylphenol	Not detected	ug/kg	700	8270C	05/12/05 16:02	ARH	534-52-1	
Dibenzo(ah)anthracene	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	53-70-3	
Dibenzofuran	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	132-64-9	
Diethyl phthalate	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	84-66-2	
Dimethyl phthalate	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	131-11-3	
bis(2-Ethylhexyl)phthalate	300	ug/kg	300	8270C	05/12/05 16:02	ARH	117-81-7	
Fluoranthene	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	206-44-0	
Fluorene	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	86-73-7	
Hexachlorobenzene	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	118-74-1	
Hexachlorobutadiene	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	87-68-3	
Hexachlorocyclopentadiene	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	77-47-4	
Hexachloroethane	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	67-72-1	
Indeno(1,2,3-cd)pyrene	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	193-39-5	
Isophorone	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	78-59-1	
2-Methylnaphthalene	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	91-57-6	
2-Methylphenol	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	95-48-7	

J-Estimated value less than reporting limit, but greater than MDL
B-Compound also found in associated method blank

Lab Sample ID: S22025.02 (continued)
Sample Tag: Outfall 011 (042805)

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Semi-Volatiles (continued)								
TCL Semi-Volatile Organics (continued)								
3-, 4-Methylphenol	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	106-39-4	
2-Nitroaniline	Not detected	ug/kg	700	8270C	05/12/05 16:02	ARH	88-74-4	
2-Nitrophenol	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	88-75-5	
3-Nitroaniline	Not detected	ug/kg	700	8270C	05/12/05 16:02	ARH	99-09-2	
4-Nitroaniline	Not detected	ug/kg	700	8270C	05/12/05 16:02	ARH	100-01-6	
4-Nitrophenol	Not detected	ug/kg	700	8270C	05/12/05 16:02	ARH	100-02-7	
N-Nitrosodi-n-propylamine	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	621-64-7	
N-Nitrosodiphenylamine	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	86-30-6	
Naphthalene	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	91-20-3	
Nitrobenzene	Not detected	ug/kg	200	8270C	05/12/05 16:02	ARH	98-95-3	
di-n-Octyl phthalate	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	117-84-0	
Pentachlorophenol	Not detected	ug/kg	700	8270C	05/12/05 16:02	ARH	87-86-5	
Phenanthrene	500	ug/kg	300	8270C	05/12/05 16:02	ARH	85-01-8	
Phenol	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	108-95-2	
Pyrene	800	ug/kg	300	8270C	05/12/05 16:02	ARH	129-00-0	
2,4,5-Trichlorophenol	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	95-95-4	
2,4,6-Trichlorophenol	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH	88-06-2	
Organics - Volatiles								
TCL Volatile Organics 5035/8260								
Acetone	Not detected	ug/kg	2,000	5035/8260B	05/12/05 15:42	JGH	67-64-1	
2-Butanone (MEK)	Not detected	ug/kg	2,000	5035/8260B	05/12/05 15:42	JGH	78-93-3	
Benzene	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	71-43-2	
Bromodichloromethane	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	75-27-4	
Bromoform	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	75-25-2	
Bromomethane	Not detected	ug/kg	500	5035/8260B	05/12/05 15:42	JGH	74-83-9	
Carbon disulfide	Not detected	ug/kg	500	5035/8260B	05/12/05 15:42	JGH	75-15-0	
Carbon tetrachloride	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	56-23-5	
Chlorobenzene	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	108-90-7	
Chloroethane	Not detected	ug/kg	500	5035/8260B	05/12/05 15:42	JGH	75-00-3	
Chloroform	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	67-66-3	
Chloromethane	Not detected	ug/kg	500	5035/8260B	05/12/05 15:42	JGH	74-87-3	
Cyclohexane	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	110-82-7	
1,1-Dichloroethane	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	75-34-3	
1,1-Dichloroethene	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	75-35-4	
1,2-Dibromo-3-chloropropane	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	96-12-8	
1,2-Dibromoethane	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	106-93-4	
1,2-Dichlorobenzene	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	95-50-1	
1,2-Dichloroethane	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	107-06-2	
1,2-Dichloropropane	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	78-87-5	
1,3-Dichlorobenzene	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	541-73-1	
1,4-Dichlorobenzene	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	106-46-7	
cis-1,2-Dichloroethene	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	156-59-2	
cis-1,3-Dichloropropene	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	10061-01-5	
Dibromochloromethane	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	124-48-1	
Dichlorodifluoromethane	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	75-71-8	
trans-1,2-Dichloroethene	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	156-60-5	
trans-1,3-Dichloropropene	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	10061-02-6	
Ethylbenzene	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	100-41-4	

Lab Sample ID: S22025.02 (continued)
Sample Tag: Outfall 011 (042805)

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
TCL Volatile Organics 5035/8260 (continued)								
2-Hexanone	Not detected	ug/kg	5,000	5035/8260B	05/12/05 15:42	JGH	591-78-6	
Isopropylbenzene	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	98-82-8	
Methyl Acetate	Not detected	ug/kg	5,000	5035/8260B	05/12/05 15:42	JGH	79-20-9	
4-Methyl-2-pentanone (MIBK)	Not detected	ug/kg	5,000	5035/8260B	05/12/05 15:42	JGH	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	ug/kg	500	5035/8260B	05/12/05 15:42	JGH	1634-04-4	
Methyl cyclohexane	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	108-87-2	
Methylene chloride	30	ug/kg	500	5035/8260B	05/12/05 15:42	JGH	75-09-2	BJ
Styrene	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	100-42-5	
1,1,1-Trichloroethane	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	79-34-5	
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	ug/kg	200	5035/8260B	05/12/05 15:42	JGH	76-13-1	
1,1,2-Trichloroethane	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	79-00-5	
1,2,4-Trichlorobenzene	Not detected	ug/kg	200	5035/8260B	05/12/05 15:42	JGH	120-82-1	
Tetrachloroethene	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	127-18-4	
Toluene	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	108-88-3	
Trichloroethene	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	79-01-6	
Trichlorofluoromethane	Not detected	ug/kg	200	5035/8260B	05/12/05 15:42	JGH	75-69-4	
Vinyl chloride	Not detected	ug/kg	200	5035/8260B	05/12/05 15:42	JGH	75-01-4	
o-Xylene	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	95-47-6	
p,m-Xylene	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH		

B-Compound also found in associated method blank J-Estimated value less than reporting limit, but greater than MDL

Merit Laboratories, Inc.

Analytical Laboratory Report

Lab Sample ID: S22025.03
Sample Tag: Outfall 013 (042805)
Collected Date/Time: 04/28/2005 12:48
Matrix: Sludge
COC Reference: 02504

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	8oz. Glass	None	Yes	4	3

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
BNA Extraction	Completed			3550B	05/05/05 14:41	PL		
Extraction, PCB	Completed			3550B	05/03/05 14:43	EMR		
Mercury Digestion	Completed			7471A	05/10/05 12:00	JRT		
Metal Digestion	Completed			3050B	05/17/05 09:30	MSH		
Inorganics								
Total Solids	31.8	%	1	160.3	05/05/05 08:15	VJH		
Metals								
Arsenic	7.83	mg/kg	0.10	6020	05/17/05 17:15	SLS	7440-38-2	
Barium	144	mg/kg	1.0	6020	05/17/05 17:15	SLS	7440-39-3	
Cadmium	1.90	mg/kg	0.05	6020	05/17/05 17:15	SLS	7440-43-9	
Chromium	20.3	mg/kg	0.50	6020	05/17/05 17:15	SLS	7440-47-3	
Copper	67.1	mg/kg	1.0	6020	05/17/05 17:15	SLS	7440-50-8	
Lead	108	mg/kg	1.0	6020	05/17/05 17:15	SLS	7439-92-1	
Mercury	0.12	mg/kg	0.05	245.1M	05/10/05 15:59	JRT	7439-97-6	
Selenium	0.81	mg/kg	0.20	6020	05/17/05 17:15	SLS	7782-49-2	
Silver	0.25	mg/kg	0.10	6020	05/17/05 17:15	SLS	7440-22-4	
Zinc	273	mg/kg	1.0	6020	05/17/05 17:15	SLS	7440-66-6	
Organics - PCBs/Pesticides								
TCL PCB List (Column 1)								
PCB-1016	Not detected	ug/kg	330	8082	05/05/05 14:29	JANB	12674-11-2	
PCB-1242	Not detected	ug/kg	330	8082	05/05/05 14:29	JANB	53469-21-9	
PCB-1221	Not detected	ug/kg	330	8082	05/05/05 14:29	JANB	11104-28-2	
PCB-1232	Not detected	ug/kg	330	8082	05/05/05 14:29	JANB	11141-16-5	
PCB-1248	Not detected	ug/kg	330	8082	05/05/05 14:29	JANB	12672-29-6	
PCB-1254	20	ug/kg	330	8082	05/05/05 14:29	JANB	11097-69-1	J
PCB-1260	Not detected	ug/kg	330	8082	05/05/05 14:29	JANB	11096-82-5	
TCL PCB List (Column 2)								
PCB-1016	Not detected	ug/kg	330	8082	05/05/05 14:30	JANB	12674-11-2	
PCB-1242	Not detected	ug/kg	330	8082	05/05/05 14:30	JANB	53469-21-9	
PCB-1221	Not detected	ug/kg	330	8082	05/05/05 14:30	JANB	11104-28-2	
PCB-1232	Not detected	ug/kg	330	8082	05/05/05 14:30	JANB	11141-16-5	
PCB-1248	Not detected	ug/kg	330	8082	05/05/05 14:30	JANB	12672-29-6	
PCB-1254	20	ug/kg	330	8082	05/05/05 14:30	JANB	11097-69-1	J
PCB-1260	Not detected	ug/kg	330	8082	05/05/05 14:30	JANB	11096-82-5	
Organics - Semi-Volatiles								
TCL Semi-Volatile Organics								
Acenaphthene	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	83-32-9	1

J-Estimated value less than reporting limit, but greater than MDL
1-ELEVATED DETECTION LIMITS DUE TO LOW TOTAL SOLIDS

Merit Laboratories, Inc.

Analytical Laboratory Report

Lab Sample ID: S22025.03 (continued)
Sample Tag: Outfall 013 (042805)

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Semi-Volatiles (continued)								
TCL Semi-Volatile Organics (continued)								
Acenaphthylene	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	208-96-8	1
Acetophenone	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	98-86-2	1
Anthracene	100	ug/kg	500	8270C	05/12/05 16:36	ARH	120-12-7	J1
Atrazine	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	1912-24-9	1
1,1'-Biphenyl	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	92-52-4	1
4-Bromophenyl phenyl ether	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	101-55-3	1
di-n-Butyl phthalate	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	84-74-2	1
Benzaldehyde	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	100-52-7	1
Benzo(a)anthracene	900	ug/kg	500	8270C	05/12/05 16:36	ARH	56-55-3	1
Benzo(a)pyrene	1,000	ug/kg	500	8270C	05/12/05 16:36	ARH	50-32-8	1
Benzo(b)fluoranthene	1,100	ug/kg	500	8270C	05/12/05 16:36	ARH	205-99-2	1
Benzo(ghi)perylene	400	ug/kg	500	8270C	05/12/05 16:36	ARH	191-24-2	J1
Benzo(k)fluoranthene	800	ug/kg	500	8270C	05/12/05 16:36	ARH	207-08-9	1
Butyl benzyl phthalate	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	85-68-7	1
2-Chloronaphthalene	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	91-58-7	1
2-Chlorophenol	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	95-57-8	1
4-Chloro-3-methylphenol	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	59-50-7	1
4-Chloroaniline	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	106-47-8	1
4-Chlorophenyl phenyl ether	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	7005-72-3	1
Caprolactam	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	105-60-2	1
Carbazole	200	ug/kg	500	8270C	05/12/05 16:36	ARH	86-74-8	J1
bis(2-Chloroethoxy)methane	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	111-91-1	1
bis(2-Chloroethyl)ether	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	111-44-4	1
bis(2-Chloroisopropyl)ether	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	108-60-1	1
Chrysene	1,200	ug/kg	500	8270C	05/12/05 16:36	ARH	218-01-9	1
2,4-Dichlorophenol	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	120-83-2	1
2,4-Dimethylphenol	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	105-67-9	1
2,4-Dinitrophenol	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	51-28-5	1
2,4-Dinitrotoluene	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	121-14-2	1
2,6-Dinitrotoluene	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	606-20-2	1
3,3'-Dichlorobenzidine	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	91-94-1	1
4,6-Dinitro-2-methylphenol	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	534-52-1	1
Dibenzo(ah)anthracene	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	53-70-3	1
Dibenzofuran	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	132-64-9	1
Diethyl phthalate	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	84-66-2	1
Dimethyl phthalate	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	131-11-3	1
bis(2-Ethylhexyl)phthalate	700	ug/kg	500	8270C	05/12/05 16:36	ARH	117-81-7	1
Fluoranthene	2,000	ug/kg	500	8270C	05/12/05 16:36	ARH	206-44-0	1
Fluorene	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	86-73-7	1
Hexachlorobenzene	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	118-74-1	1
Hexachlorobutadiene	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	87-68-3	1
Hexachlorocyclopentadiene	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	77-47-4	1
Hexachloroethane	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	67-72-1	1
Indeno(1,2,3-cd)pyrene	1,500	ug/kg	500	8270C	05/12/05 16:36	ARH	193-39-5	1
Isophorone	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	78-59-1	1
2-Methylnaphthalene	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	91-57-6	1
2-Methylphenol	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	95-48-7	1

1-ELEVATED DETECTION LIMITS DUE TO LOW TOTAL SOLIDS
J-Estimated value less than reporting limit, but greater than MDL

Analytical Laboratory Report

Lab Sample ID: S22025.03 (continued)
Sample Tag: Outfall 013 (042805)

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Semi-Volatiles (continued)								
TCL Semi-Volatile Organics (continued)								
3-, 4-Methylphenol	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	108-39-4	1
2-Nitroaniline	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	88-74-4	1
2-Nitrophenol	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	88-75-5	1
3-Nitroaniline	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	99-09-2	1
4-Nitroaniline	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	100-01-6	1
4-Nitrophenol	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	100-02-7	1
N-Nitrosodi-n-propylamine	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	621-64-7	1
N-Nitrosodiphenylamine	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	86-30-6	1
Naphthalene	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	91-20-3	1
Nitrobenzene	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	98-95-3	1
di-n-Octyl phthalate	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	117-84-0	1
Pentachlorophenol	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	87-86-5	1
Phenanthrene	800	ug/kg	500	8270C	05/12/05 16:36	ARH	85-01-8	1
Phenol	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	108-95-2	1
Pyrene	1,600	ug/kg	500	8270C	05/12/05 16:36	ARH	129-00-0	1
2,4,5-Trichlorophenol	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	95-95-4	1
2,4,6-Trichlorophenol	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	88-06-2	1
Organics - Volatiles								
TCL Volatile Organics 5035/8260								
Acetone	Not detected	ug/kg	2,000	5035/8260B	05/12/05 16:16	JGH	67-64-1	
2-Butanone (MEK)	Not detected	ug/kg	2,000	5035/8260B	05/12/05 16:16	JGH	78-93-3	
Benzene	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	71-43-2	
Bromodichloromethane	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	75-27-4	
Bromoform	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	75-25-2	
Bromomethane	Not detected	ug/kg	800	5035/8260B	05/12/05 16:16	JGH	74-83-9	
Carbon disulfide	Not detected	ug/kg	800	5035/8260B	05/12/05 16:16	JGH	75-15-0	
Carbon tetrachloride	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	56-23-5	
Chlorobenzene	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	108-90-7	
Chloroethane	Not detected	ug/kg	800	5035/8260B	05/12/05 16:16	JGH	75-00-3	
Chloroform	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	67-66-3	
Chloromethane	Not detected	ug/kg	800	5035/8260B	05/12/05 16:16	JGH	74-87-3	
Cyclohexane	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	110-82-7	
1,1-Dichloroethane	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	75-34-3	
1,1-Dichloroethene	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	75-35-4	
1,2-Dibromo-3-chloropropane	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	96-12-8	
1,2-Dibromoethane	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	106-93-4	
1,2-Dichlorobenzene	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	95-50-1	
1,2-Dichloroethane	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	107-06-2	
1,2-Dichloropropane	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	78-87-5	
1,3-Dichlorobenzene	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	541-73-1	
1,4-Dichlorobenzene	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	106-46-7	
cis-1,2-Dichloroethene	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	156-59-2	
cis-1,3-Dichloropropene	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	10061-01-5	
Dibromochloromethane	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	124-48-1	
Dichlorodifluoromethane	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	75-71-8	
trans-1,2-Dichloroethene	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	156-60-5	
trans-1,3-Dichloropropene	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	10061-02-6	

1-ELEVATED DETECTION LIMITS DUE TO LOW TOTAL SOLIDS

Lab Sample ID: S22025.03 (continued)
Sample Tag: Outfall 013 (042805)

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
TCL Volatile Organics 5035/8260 (continued)								
Ethylbenzene	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	100-41-4	
2-Hexanone	Not detected	ug/kg	8,000	5035/8260B	05/12/05 16:16	JGH	591-78-6	
Isopropylbenzene	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	98-82-8	
Methyl Acetate	400	ug/kg	8,000	5035/8260B	05/12/05 16:16	JGH	79-20-9	J
4-Methyl-2-pentanone (MIBK)	Not detected	ug/kg	8,000	5035/8260B	05/12/05 16:16	JGH	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	ug/kg	800	5035/8260B	05/12/05 16:16	JGH	1634-04-4	
Methyl cyclohexane	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	108-87-2	
Methylene chloride	50	ug/kg	800	5035/8260B	05/12/05 16:16	JGH	75-09-2	BJ
Styrene	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	100-42-5	
1,1,1-Trichloroethane	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	79-34-5	
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	ug/kg	300	5035/8260B	05/12/05 16:16	JGH	76-13-1	
1,1,2-Trichloroethane	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	79-00-5	
1,2,4-Trichlorobenzene	Not detected	ug/kg	300	5035/8260B	05/12/05 16:16	JGH	120-82-1	
Tetrachloroethene	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	127-18-4	
Toluene	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	108-88-3	
Trichloroethene	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	79-01-6	
Trichlorofluoromethane	Not detected	ug/kg	300	5035/8260B	05/12/05 16:16	JGH	75-69-4	
Vinyl chloride	Not detected	ug/kg	300	5035/8260B	05/12/05 16:16	JGH	75-01-4	
o-Xylene	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	95-47-6	
p,m-Xylene	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH		

J-Estimated value less than reporting limit, but greater than MDL
B-Compound also found in associated method blank

APPENDIX B

SUMMARY OF MDEQ SEDIMENT SAMPLING AND ANALYSIS- FLINT RIVER, APRIL 28, 2005

BBL®
BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

Summary of MDEQ Sampling and Analysis Activities
Flint River Investigation on April 28, 2005

Mott Lake
The MDEQ sample identification for this location is MLC 2, and the sediment was sampled for polychlorinated dibenzodioxins (dioxins), VOCs and SVOCs, and PCBs. The sample at this location was collected using a Peat Borer. The readings from MDEQ's handheld GPS were N 43.8133 and W 83.6518.

Utah Dam
The MDEQ sample identification for this location is UDP 1, and the sediment was sampled for dioxins, VOCs and SVOCs, and PCBs. The sample at this location was collected using a Ponar Dredge. The readings from MDEQ's handheld GPS were N 43.04175 and W 83.6735.

Outfall 003
The MDEQ sample identification for this location is OFP 003, and the sediment was sampled for dioxins, VOCs and SVOCs, metals (Michigan 10), and PCBs. The sample at this location was collected using a Ponar Dredge. The readings from MDEQ's handheld GPS were N 43.04402 and W 83.67541.

Outfall 005
This sampling location is approximately 30 feet south of the GM Outfall 005 located approximately 10 feet from the west bank of the Flint River. The readings from MDEQ's handheld GPS were N 43.04403 and W 86.6735. The MDEQ collected two samples at this location, one via Peat Borer with sample identification 0051 and the second with a Ponar Dredge with sample identification OFP 005. The sample collected with the Peat Borer was sampled for VOCs and SVOCs from a depth of 0 to 6 inches and from 6 to 12 inches below the surface of the sediment bed. The sample collected with the Ponar Dredge was sampled for metals (Michigan 10), VOCs and SVOCs, dioxins, and PCBs.

Outfall 011
This sampling location is approximately 200 feet south of the GM Outfall 011, approximately 12 to 15 feet from the west bank of the Flint River about 25 feet south of a cattail outcrop. Equipment failure with MDEQ's handheld GPS prevented collection of coordinates for this location. The MDEQ collected one sample at this location using a Ponar Dredge, with sample identification OFP 011. The sample collected with the Ponar dredge was sampled for metals (Michigan 10), VOCs and SVOCs, dioxins, and PCBs.

Outfall 013
This sampling location is south of the GM Outfall 013, and directly east of park benches overlooking the river. The samples were collected approximately 10 to 12 feet from the west bank of the Flint River. Equipment failure with MDEQ's handheld GPS prevented collection of coordinates for this location. The MDEQ collected two samples at this location, one using a Peat Borer with sample identification OFC 13 and the second with a Ponar Dredge with sample identification OFP 013. The sample collected with the Peat Borer was sampled for VOCs and SVOCs and metals from 0 to 6 inches, from 6 to 13 inches, and from 13 to 17 inches below the sediment surface. The sample collected with the Ponar Dredge was sampled for metals (Michigan 10), VOCs and SVOCs, dioxins, and PCBs.

From: <Moore.Tammy@epamail.epa.gov>
To: DEREK KAIDING <DCK@bbl-inc.com>, <kurt.blizzard@gm.com>
Date: Tue, Jun 14, 2005 4:01 PM
Subject: Draft MDEQ Flint River Sediments Results - Low PAH / PCB hits below 1ppm

Here is the draft Flint River sediment sampling results. All PCB results are qualified due to degradation. There were PCB detects, but all concentrations are below 1ppm. We are interested in seeing the results of the split samples that GM shared with MDEQ when they are available.

(See attached file: Flint River Draft.PDF)

Tammy Moore
Environmental Scientist-Project Manager
Corrective Action Section
Enforcement & Compliance Assurance Branch
U.S. EPA- Region 5
Ph# 312 886-6181

CC: <sundar.bhooma@epamail.epa.gov>, <boothp@exponent.com>, "C.Y. Jeng" <CJeng@environcorp.com>, <framacciotti@environcorp.com>, <Cygan.Gary@epamail.epa.gov>, <Phillips.Gerald@epamail.epa.gov>, <jean.e.caufield@gm.com>, LISA COFFEY <LAR@bbl-inc.com>, Linda Ziccardi <lziccardi@exponent.com>, MICHAEL SCOVILLE <MDS@bbl-inc.com>, MARK BROWN <MPB@bbl-inc.com>, <Fonseca.Priscilla@epamail.epa.gov>, Peter Quackenbush <quackenp@michigan.gov>, "ROBERT J. ANDERSON" <RJA@bbl-inc.com>, <SSong@environcorp.com>, <yocumw@michigan.gov>

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FAX: (517) 335-9600

Division: WHMD
Report to: ART OSTASZEWSKI
MDEQ-WHMD-LANSING
CONSTITUTION HALL
525 W. ALLEGAN, LANSING, MI 48909

Total: $5,725.54

Lab Work Order # : 50400391
Work Site ID : LB040161
Site Name : FLINT RIVER SEDIMENTS
Received: 04/29/2005
Reported: 06/03/2005
Collected By: ART OSTASZEWSKI

Samples Received :

No:	Sample ID	Sample Description	Matrix:	Collection Date
01	AA53407	MLC2 0-6	SEDIMENT	04/28/2005
02	AA53408	MLC2 6-14	SEDIMENT	04/28/2005
03	AA53409	UDP1	SEDIMENT	04/28/2005
04	AA53410	OFC0051 0-6	SEDIMENT	04/28/2005
05	AA53411	OFC0052 6-12	SEDIMENT	04/28/2005
06	AA53412	OFP0052	SEDIMENT	04/28/2005
07	AA53413	OFP0052D	SEDIMENT	04/28/2005
08	AA53414	OFP013	SEDIMENT	04/28/2005
09	AA53415	OFC013 0-6	SEDIMENT	04/28/2005
10	AA53416	OFC013 6-13	SEDIMENT	04/28/2005
11	AA53417	OFC013 13-17	SEDIMENT	04/28/2005
2	AA53418	OFP003	SEDIMENT	04/28/2005
13	AA53419	DOFP	SEDIMENT	04/28/2005

Sample Comments :

AA53407	SEE COMENTS ON BACK OF COC
AA53408	SEE COMENTS ON BACK OF COC
AA53409	SEE COMENTS ON BACK OF COC
AA53410	SEE COMENTS ON BACK OF COC
AA53411	SEE COMENTS ON BACK OF COC
AA53412	SEE COMENTS ON BACK OF COC
AA53413	SEE COMENTS ON BACK OF COC
AA53414	SEE COMENTS ON BACK OF COC
AA53415	SEE COMENTS ON BACK OF COC
AA53416	SEE COMENTS ON BACK OF COC
AA53417	SEE COMENTS ON BACK OF COC
AA53418	SEE COMENTS ON BACK OF COC
AA53419	SEE COMENTS ON BACK OF COC

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I certify that the analysis performed by the MDEQ Environmental Laboratory are accurate and that the laboratory tests were conducted by methods approved by the U.S. Environmental Protection Agency and other appropriate regulatory agencies.

Bob Avery, Laboratory Director

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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Organic Unit Mgr: Carol Smith
Systems Mgmt Unit: George Krisztian

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Sample Number: AA53407 MLC2 0-6

Base Neutral Acid Compounds

Analytical Method: 8270 **Date Tested:** 05/18/2005 **Analyst:** SMH
Extraction Method: 3545 **Extraction Date:** 05/03/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
SURROGATE	#2 - Fluorobiphenyl#	70.8			
SURROGATE	#2,4,6-Tribromophenol#	77.3			
SURROGATE	#2-Fluorophenol#	72.6			
SURROGATE	#Nitrobenzene - D5#	67.6			
SURROGATE	#Phenol - D5#	72.3			
SURROGATE	#p-Terphenyl-d14#	84.8			
120-82-1	1,2,4-Trichlorobenzene	Not Detected	260		1.0
95-50-1	1,2-Dichlorobenzene	Not Detected	130		1.0
541-73-1	1,3-Dichlorobenzene	Not Detected	130		1.0
106-46-7	1,4-Dichlorobenzene	Not Detected	130		1.0
95-95-4	2,4,5-Trichlorophenol	Not Detected	430		1.0
88-06-2	2,4,6-Trichlorophenol	Not Detected	430		1.0
120-83-2	2,4-Dichlorophenol	Not Detected	430		1.0
105-67-9	2,4-Dimethylphenol	Not Detected	430		1.0
51-28-5	2,4-Dinitrophenol	Not Detected	2200		1.0
14-2	2,4-Dinitrotoluene	Not Detected	430		1.0
20-2	2,6-Dinitrotoluene	Not Detected	430		1.0
91-58-7	2-Chloronaphthalene	Not Detected	260		1.0
95-57-8	2-Chlorophenol	Not Detected	430		1.0
534-52-1	2-Methyl-4,6-dinitrophenol	Not Detected	2200		1.0
91-57-6	2-Methylnaphthalene	Not Detected	320		1.0
95-48-7	2-Methylphenol (o-Cresol)	Not Detected	430		1.0
88-74-4	2-Nitroaniline	Not Detected	2200		1.0
88-75-5	2-Nitrophenol	Not Detected	430		1.0
108394,106445	3 & 4-Methylphenol	Not Detected	850		1.0
99-09-2	3-Nitroaniline	Not Detected	2200		1.0
101-55-3	4-Bromophenyl phenyl ether	Not Detected	260		1.0
59-50-7	4-Chloro-3-methyl-phenol	Not Detected	430		1.0
7005-72-3	4-Chlorodiphenylether	Not Detected	130		1.0
100-01-6	4-Nitroaniline	Not Detected	2200		1.0
100-02-7	4-Nitrophenol	Not Detected	2200		1.0
83-32-9	Acenaphthene	Not Detected	130		1.0
208-96-8	Acenaphthylene	Not Detected	130		1.0
120-12-7	Anthracene	Not Detected	130		1.0
103-33-3	Azobenzene	Not Detected	260		1.0
56-55-3	Benz[a]anthracene	Not Detected	130		1.0
50-32-8	Benzo[a]pyrene	Not Detected	260		1.0
205-99-2	Benzo[b]fluoranthene	Not Detected	260		1.0
191-24-2	Benzo[g,h,i]perylene	Not Detected	260		1.0
207-08-9	Benzo[k]fluoranthene	Not Detected	260		1.0
111-91-1	Bis(2-chloroethoxy)methane	Not Detected	260		1.0

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
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Organic Unit Mgr: Carol Smith
Systems Mgmt Unit: George Krisztian

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FAX: (517) 335-9600

Sample Number: AA53407 MLC2 0-6

Base Neutral Acid Compounds

Analytical Method: 8270 **Date Tested:** 05/18/2005 **Analyst:** SMH
Extraction Method: 3545 **Extraction Date:** 05/03/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
111-44-4	Bis(2-chloroethyl)ether	Not Detected	130		1.0
108-60-1	Bis(2-chloroisopropyl)ether	Not Detected	130		1.0
117-81-7	Bis(2-ethylhexyl)phthalate	Not Detected	260		1.0
85-68-7	Butyl benzyl phthalate	Not Detected	130		1.0
86-74-8	Carbazole	Not Detected	430		1.0
218-01-9	Chrysene	Not Detected	130		1.0
53-70-3	Dibenz[a,h]anthracene	Not Detected	260		1.0
132-64-9	Dibenzofuran	Not Detected	430		1.0
84-66-2	Diethylphthalate	410	130	M=200	1.0
131-11-3	Dimethyl phthalate	Not Detected	260		1.0
84-74-2	Di-n-butyl phthalate	Not Detected	130		1.0
117-84-0	Di-n-octyl phthalate	Not Detected	260		1.0
86-73-7	Fluorene	Not Detected	130		1.0
206-44-0	Fluoroanthene	Not Detected	130		1.0
118-74-1	Hexachlorobenzene	Not Detected	260		1.0
8-3	Hexachlorobutadiene	Not Detected	260		1.0
47-4	Hexachlorocyclopentadiene	Not Detected	2600		1.0
67-72-1	Hexachloroethane	Not Detected	130		1.0
193-39-5	Indeno(1,2,3-c,d)pyrene	Not Detected	260		1.0
78-59-1	Isophorone	Not Detected	130		1.0
91-20-3	Naphthalene	Not Detected	130		1.0
98-95-3	Nitrobenzene	Not Detected	260		1.0
67-75-9	N-Nitrosodimethylamine	Not Detected	430		1.0
621-64-7	N-Nitrosodi-n-propylamine	Not Detected	260		1.0
156-10-5	N-Nitrosodiphenylamine	Not Detected	260		1.0
87-86-5	Pentachlorophenol	Not Detected	4400		1.0
85-01-8	Phenanthrene	Not Detected	130		1.0
108-95-2	Phenol	Not Detected	430		1.0
129-00-0	Pyrene	Not Detected	130		1.0

PCBs as Aroclors

Analytical Method: 8082 **Date Tested:** 05/10/2005 **Analyst:** MF
Extraction Method: 3545 **Extraction Date:** 05/05/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
SURROGATE	#Decachlorobiphenyl#	92.9			
SURROGATE	#Tetrachloro-m-xylene#	62.3			
12674-11-2	Aroclor 1016	Not Detected	130		1.0
11104-28-2	Aroclor 1221	Not Detected	130		1.0
11141-16-5	Aroclor 1232	Not Detected	130		1.0

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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Sample Number: AA53407 MLC2 0-6

PCBs as Aroclors

Analytical Method: 8082 **Date Tested:** 05/10/2005 **Analyst:** MF
Extraction Method: 3545 **Extraction Date:** 05/05/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
53469-21-9	Aroclor 1242	Not Detected	130		1.0
12672-29-6	Aroclor 1248	Not Detected	130		1.0
11097-69-1	Aroclor 1254	Not Detected	130		1.0
11096-82-5	Aroclor 1260	Not Detected	130		1.0
37324-23-5	Aroclor 1262	Not Detected	130		1.0
11100-14-4	Aroclor 1268	Not Detected	130		1.0

Sample Number AA53407 MLC2 0-6

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
	% Total Solids	77.6	%	0.1		05/05/2005		DB

CAS# : Chemical Abstract Service Registry Number
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Sample Number: AA53408 MLC2 6-14

Base Neutral Acid Compounds

Analytical Method: 8270 **Date Tested:** 05/18/2005 **Analyst:** SMH
Extraction Method: 3545 **Extraction Date:** 05/03/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
SURROGATE	#2 - Fluorobiphenyl#	70.9			
SURROGATE	#2,4,6-Tribromophenol#	78.0			
SURROGATE	#2-Fluorophenol#	66.7			
SURROGATE	#Nitrobenzene - D5#	70.2			
SURROGATE	#Phenol - D5#	67.4			
SURROGATE	#p-Terphenyl-d14#	99.4			
120-82-1	1,2,4-Trichlorobenzene	Not Detected	250		1.0
95-50-1	1,2-Dichlorobenzene	Not Detected	120		1.0
541-73-1	1,3-Dichlorobenzene	Not Detected	120		1.0
106-46-7	1,4-Dichlorobenzene	Not Detected	120		1.0
95-95-4	2,4,5-Trichlorophenol	Not Detected	410		1.0
88-06-2	2,4,6-Trichlorophenol	Not Detected	410		1.0
120-83-2	2,4-Dichlorophenol	Not Detected	410		1.0
105-67-9	2,4-Dimethylphenol	Not Detected	410		1.0
51-28-5	2,4-Dinitrophenol	Not Detected	2100		1.0
'-14-2	2,4-Dinitrotoluene	Not Detected	410		1.0
20-2	2,6-Dinitrotoluene	Not Detected	410		1.0
91-58-7	2-Chloronaphthalene	Not Detected	250		1.0
95-57-8	2-Chlorophenol	Not Detected	410		1.0
534-52-1	2-Methyl-4,6-dinitrophenol	Not Detected	2100		1.0
91-57-6	2-Methylnaphthalene	Not Detected	310		1.0
95-48-7	2-Methylphenol (o-Cresol)	Not Detected	410		1.0
88-74-4	2-Nitroaniline	Not Detected	2100		1.0
88-75-5	2-Nitrophenol	Not Detected	410		1.0
108394,106445	3 & 4-Methylphenol	Not Detected	810		1.0
99-09-2	3-Nitroaniline	Not Detected	2100		1.0
101-55-3	4-Bromophenyl phenyl ether	Not Detected	250		1.0
59-50-7	4-Chloro-3-methyl-phenol	Not Detected	410		1.0
7005-72-3	4-Chlorodiphenylether	Not Detected	120		1.0
100-01-6	4-Nitroaniline	Not Detected	2100		1.0
100-02-7	4-Nitrophenol	Not Detected	2100		1.0
83-32-9	Acenaphthene	Not Detected	120		1.0
208-96-8	Acenaphthylene	Not Detected	120		1.0
120-12-7	Anthracene	Not Detected	120		1.0
103-33-3	Azobenzene	Not Detected	250		1.0
56-55-3	Benz[a]anthracene	Not Detected	120		1.0
50-32-8	Benzo[a]pyrene	Not Detected	250		1.0
205-99-2	Benzo[b]fluoranthene	Not Detected	250		1.0
191-24-2	Benzo[g,h,i]perylene	Not Detected	250		1.0
207-08-9	Benzo[k]fluoranthene	Not Detected	250		1.0
111-91-1	Bis(2-chloroethoxy)methane	Not Detected	250		1.0

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
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ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
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Sample Number: AA53408 MLC2 6-14

Base Neutral Acid Compounds

Analytical Method: 8270 **Date Tested:** 05/18/2005 **Analyst:** SMH
Extraction Method: 3545 **Extraction Date:** 05/03/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
111-44-4	Bis(2-chloroethyl)ether	Not Detected	120		1.0
108-60-1	Bis(2-chloroisopropyl)ether	Not Detected	120		1.0
117-81-7	Bis(2-ethylhexyl)phthalate	Not Detected	250		1.0
85-68-7	Butyl benzyl phthalate	Not Detected	120		1.0
86-74-8	Carbazole	Not Detected	410		1.0
218-01-9	Chrysene	Not Detected	120		1.0
53-70-3	Dibenz[a,h]anthracene	Not Detected	250		1.0
132-64-9	Dibenzofuran	Not Detected	410		1.0
84-66-2	Diethylphthalate	400	120	M=200	1.0
131-11-3	Dimethyl phthalate	Not Detected	250		1.0
84-74-2	Di-n-butyl phthalate	Not Detected	120		1.0
117-84-0	Di-n-octyl phthalate	Not Detected	250		1.0
86-73-7	Fluorene	Not Detected	120		1.0
206-44-0	Fluoroanthene	Not Detected	120		1.0
118-74-1	Hexachlorobenzene	Not Detected	250		1.0
8-3	Hexachlorobutadiene	Not Detected	250		1.0
47-4	Hexachlorocyclopentadiene	Not Detected	2500		1.0
67-72-1	Hexachloroethane	Not Detected	120		1.0
193-39-5	Indeno(1,2,3-c,d)pyrene	Not Detected	250		1.0
78-59-1	Isophorone	Not Detected	120		1.0
91-20-3	Naphthalene	Not Detected	120		1.0
98-95-3	Nitrobenzene	Not Detected	250		1.0
67-75-9	N-Nitrosodimethylamine	Not Detected	410		1.0
621-64-7	N-Nitrosodi-n-propylamine	Not Detected	250		1.0
156-10-5	N-Nitrosodiphenylamine	Not Detected	250		1.0
87-86-5	Pentachlorophenol	Not Detected	4200		1.0
85-01-8	Phenanthrene	Not Detected	120		1.0
108-95-2	Phenol	Not Detected	410		1.0
129-00-0	Pyrene	Not Detected	120		1.0

PCBs as Aroclors

Analytical Method: 8082 **Date Tested:** 05/10/2005 **Analyst:** MF
Extraction Method: 3545 **Extraction Date:** 05/05/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
SURROGATE	#Decachlorobiphenyl#	85.8			
SURROGATE	#Tetrachloro-m-xylene#	59.6			
12674-11-2	Aroclor 1016	Not Detected	120		1.0
11104-28-2	Aroclor 1221	Not Detected	120		1.0
11141-16-5	Aroclor 1232	Not Detected	120		1.0

CAS# : Chemical Abstract Service Registry Number
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Sample Number: AA53408 MLC2 6-14

PCBs as Aroclors

Analytical Method: 8082 **Date Tested:** 05/10/2005 **Analyst:** MF
Extraction Method: 3545 **Extraction Date:** 05/05/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
53469-21-9	Aroclor 1242	Not Detected	120		1.0
12672-29-6	Aroclor 1248	Not Detected	120		1.0
11097-69-1	Aroclor 1254	Not Detected	120		1.0
11096-82-5	Aroclor 1260	Not Detected	120		1.0
37324-23-5	Aroclor 1262	Not Detected	120		1.0
11100-14-4	Aroclor 1268	Not Detected	120		1.0

Sample Number AA53408 MLC2 6-14

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
7440-38-2	Arsenic - Sediment	1.8	mg/Kg dry	0.5		05/19/2005	7060	LAV
7782-49-2	Selenium - Sediment	ND	mg/Kg dry	0.5		05/12/2005	7740	LAV
7440-22-4	Silver - Sediment	ND	mg/Kg dry	0.25		05/13/2005	7761	LAV
	Digest Mercury - Sediment	Completed				05/09/2005	7471	RK
[illegible]9-97-6	Mercury - Sediment	ND	mg/Kg dry	0.05		05/26/2005	7471	TS
[illegible]-39-3	Barium - Sediment	14	mg/Kg dry	1		05/23/2005	6010	MJ
7440-43-9	Cadmium - Sediment	ND	mg/Kg dry	2.0		05/23/2005	6010	MJ
7440-47-3	Chromium - Sediment	4.8	mg/Kg dry	2		05/23/2005	6010	MJ
7440-50-8	Copper - Sediment	2.5	mg/Kg dry	2		05/23/2005	6010	MJ
	Digest Metals - Sediment	Completed				05/09/2005	3050	TK
7439-92-1	Lead - Sediment	ND	mg/Kg dry	5		05/23/2005	6010	MJ
7440-66-6	Zinc - Sediment	11	mg/Kg dry	5		05/23/2005	6010	MJ
	% Total Solids	81.3	%	0.1		05/05/2005		DB
	Drying and Grinding - Sediment	Completed				05/06/2005		RK

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts
Inorganic Unit Mgr: Sandy Gregg
Organic Unit Mgr: Carol Smith
Systems Mgmt Unit: George Krisztian

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FAX: (517) 335-9600

Sample Number: AA53409 UDP1

Base Neutral Acid Compounds

Analytical Method: 8270 **Date Tested:** 05/18/2005 **Analyst:** SMH
Extraction Method: 3545 **Extraction Date:** 05/03/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
SURROGATE	#2 - Fluorobiphenyl#	50.6			
SURROGATE	#2,4,6-Tribromophenol#	63.6			
SURROGATE	#2-Fluorophenol#	43.4			
SURROGATE	#Nitrobenzene - D5#	46.2			
SURROGATE	#Phenol - D5#	50.1			
SURROGATE	#p-Terphenyl-d14#	76.0			
120-82-1	1,2,4-Trichlorobenzene	Not Detected	550		1.0
95-50-1	1,2-Dichlorobenzene	Not Detected	270		1.0
541-73-1	1,3-Dichlorobenzene	Not Detected	270		1.0
106-46-7	1,4-Dichlorobenzene	Not Detected	270		1.0
95-95-4	2,4,5-Trichlorophenol	Not Detected	900		1.0
88-06-2	2,4,6-Trichlorophenol	Not Detected	900		1.0
120-83-2	2,4-Dichlorophenol	Not Detected	900		1.0
105-67-9	2,4-Dimethylphenol	Not Detected	900		1.0
51-28-5	2,4-Dinitrophenol	Not Detected	4600		1.0
[illegible]14-2	2,4-Dinitrotoluene	Not Detected	900		1.0
[illegible]6-20-2	2,6-Dinitrotoluene	Not Detected	900		1.0
91-58-7	2-Chloronaphthalene	Not Detected	550		1.0
95-57-8	2-Chlorophenol	Not Detected	900		1.0
534-52-1	2-Methyl-4,6-dinitrophenol	Not Detected	4600		1.0
91-57-6	2-Methylnaphthalene	Not Detected	680		1.0
95-48-7	2-Methylphenol (o-Cresol)	Not Detected	900		1.0
88-74-4	2-Nitroaniline	Not Detected	4600		1.0
88-75-5	2-Nitrophenol	Not Detected	900		1.0
108394,106445	3 & 4-Methylphenol	Not Detected	1800		1.0
99-09-2	3-Nitroaniline	Not Detected	4600		1.0
101-55-3	4-Bromophenyl phenyl ether	Not Detected	550		1.0
59-50-7	4-Chloro-3-methyl-phenol	Not Detected	900		1.0
7005-72-3	4-Chlorodiphenylether	Not Detected	270		1.0
100-01-6	4-Nitroaniline	Not Detected	4600		1.0
100-02-7	4-Nitrophenol	Not Detected	4600		1.0
83-32-9	Acenaphthene	Not Detected	270		1.0
208-96-8	Acenaphthylene	Not Detected	270		1.0
120-12-7	Anthracene	Not Detected	270		1.0
103-33-3	Azobenzene	Not Detected	550		1.0
56-55-3	Benz[a]anthracene	Not Detected	270		1.0
50-32-8	Benzo[a]pyrene	Not Detected	550		1.0
205-99-2	Benzo[b]fluoranthene	Not Detected	550		1.0
191-24-2	Benzo[g,h,i]perylene	Not Detected	550		1.0
207-08-9	Benzo[k]fluoranthene	Not Detected	550		1.0
111-91-1	Bis(2-chloroethoxy)methane	Not Detected	550		1.0

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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Sample Number: AA53409 UDP1

Base Neutral Acid Compounds

Analytical Method: 8270 **Date Tested:** 05/18/2005 **Analyst:** SMH
Extraction Method: 3545 **Extraction Date:** 05/03/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
111-44-4	Bis(2-chloroethyl)ether	Not Detected	270		1.0
108-60-1	Bis(2-chloroisopropyl)ether	Not Detected	270		1.0
117-81-7	Bis(2-ethylhexyl)phthalate	Not Detected	550		1.0
85-68-7	Butyl benzyl phthalate	Not Detected	270		1.0
86-74-8	Carbazole	Not Detected	900		1.0
218-01-9	Chrysene	Not Detected	270		1.0
53-70-3	Dibenz[a,h]anthracene	Not Detected	550		1.0
132-64-9	Dibenzofuran	Not Detected	900		1.0
84-66-2	Diethylphthalate	860	270	M=200	1.0
131-11-3	Dimethyl phthalate	Not Detected	550		1.0
84-74-2	Di-n-butyl phthalate	Not Detected	270		1.0
117-84-0	Di-n-octyl phthalate	Not Detected	550		1.0
86-73-7	Fluorene	Not Detected	270		1.0
206-44-0	Fluoroanthene	320	270		1.0
118-74-1	Hexachlorobenzene	Not Detected	550		1.0
[illegible]8-3	Hexachlorobutadiene	Not Detected	550		1.0
[illegible]7-4	Hexachlorocyclopentadiene	Not Detected	5500		1.0
67-72-1	Hexachloroethane	Not Detected	270		1.0
193-39-5	Indeno(1,2,3-c,d)pyrene	Not Detected	550		1.0
78-59-1	Isophorone	Not Detected	270		1.0
91-20-3	Naphthalene	Not Detected	270		1.0
98-95-3	Nitrobenzene	Not Detected	550		1.0
62-75-9	N-Nitrosodimethylamine	Not Detected	900		1.0
621-64-7	N-Nitrosodi-n-propylamine	Not Detected	550		1.0
156-10-5	N-Nitrosodiphenylamine	Not Detected	550		1.0
87-86-5	Pentachlorophenol	Not Detected	9300		1.0
85-01-8	Phenanthrene	Not Detected	270		1.0
108-95-2	Phenol	Not Detected	900		1.0
129-00-0	Pyrene	Not Detected	270		1.0

PCBs as Aroclors

Analytical Method: 8082 **Date Tested:** 05/10/2005 **Analyst:** MF
Extraction Method: 3545 **Extraction Date:** 05/05/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
SURROGATE	#Decachlorobiphenyl#	90.1			
SURROGATE	#Tetrachloro-m-xylene#	69.8			
12674-11-2	Aroclor 1016	Not Detected	270		1.0
11104-28-2	Aroclor 1221	Not Detected	270		1.0
11141-16-5	Aroclor 1232	Not Detected	270		1.0

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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Sample Number: AA53409 UDP1

PCBs as Aroclors

Analytical Method: 8082 **Date Tested:** 05/10/2005 **Analyst:** MF
Extraction Method: 3545 **Extraction Date:** 05/05/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
53469-21-9	Aroclor 1242	Not Detected	270		1.0
12672-29-6	Aroclor 1248	Not Detected	270		1.0
11097-69-1	Aroclor 1254	Not Detected	270		1.0
11096-82-5	Aroclor 1260	Not Detected	270		1.0
37324-23-5	Aroclor 1262	Not Detected	270		1.0
11100-14-4	Aroclor 1268	Not Detected	270		1.0

Sample Number AA53409 UDP1

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
7440-38-2	Arsenic - Sediment	15.1	mg/Kg dry	0.5		05/19/2005	7060	LAV
7782-49-2	Selenium - Sediment	0.7	mg/Kg dry	0.5		05/12/2005	7740	LAV
7440-22-4	Silver - Sediment	ND	mg/Kg dry	0.25		05/13/2005	7761	LAV
	Digest Mercury - Sediment	Completed				05/09/2005	7471	RK
7439-97-6	Mercury - Sediment	ND	mg/Kg dry	0.05		05/26/2005	7471	TS
	RL= 1.5 mg/Kg due to low percent total solids.							
7440-39-3	Barium - Sediment	170	mg/Kg dry	1		05/23/2005	6010	MJ
7440-43-9	Cadmium - Sediment	ND	mg/Kg dry	2.0		05/23/2005	6010	MJ
7440-47-3	Chromium - Sediment	24	mg/Kg dry	2		05/23/2005	6010	MJ
7440-50-8	Copper - Sediment	44	mg/Kg dry	2		05/23/2005	6010	MJ
	Digest Metals - Sediment	Completed				05/09/2005	3050	TK
7439-92-1	Lead - Sediment	45	mg/Kg dry	5		05/23/2005	6010	MJ
7440-66-6	Zinc - Sediment	160	mg/Kg dry	5		05/23/2005	6010	MJ
	% Total Solids	36.6	%	0.1		05/05/2005		DB
	Drying and Grinding - Sediment	Completed				05/06/2005		RK

CAS# : Chemical Abstract Service Registry Number
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ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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Sample Number: AA53410 OFC0051 0-6

Base Neutral Acid Compounds

Analytical Method: 8270 **Date Tested:** 05/18/2005 **Analyst:** SMH
Extraction Method: 3545 **Extraction Date:** 05/03/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
SURROGATE	#2 - Fluorobiphenyl#	70.0			
SURROGATE	#2,4,6-Tribromophenol#	80.0			
SURROGATE	#2-Fluorophenol#	57.9			
SURROGATE	#Nitrobenzene - D5#	61.1			
SURROGATE	#Phenol - D5#	63.6			
SURROGATE	#p-Terphenyl-d14#	110			
120-82-1	1,2,4-Trichlorobenzene	Not Detected	310		1.0
95-50-1	1,2-Dichlorobenzene	Not Detected	160		1.0
541-73-1	1,3-Dichlorobenzene	Not Detected	160		1.0
106-46-7	1,4-Dichlorobenzene	Not Detected	160		1.0
95-95-4	2,4,5-Trichlorophenol	Not Detected	510		1.0
88-06-2	2,4,6-Trichlorophenol	Not Detected	510		1.0
120-83-2	2,4-Dichlorophenol	Not Detected	510		1.0
105-67-9	2,4-Dimethylphenol	Not Detected	510		1.0
51-28-5	2,4-Dinitrophenol	Not Detected	2600		1.0
14-2	2,4-Dinitrotoluene	Not Detected	510		1.0
-20-2	2,6-Dinitrotoluene	Not Detected	510		1.0
91-58-7	2-Chloronaphthalene	Not Detected	310		1.0
95-57-8	2-Chlorophenol	Not Detected	510		1.0
534-52-1	2-Methyl-4,6-dinitrophenol	Not Detected	2600		1.0
91-57-6	2-Methylnaphthalene	Not Detected	390		1.0
95-48-7	2-Methylphenol (o-Cresol)	Not Detected	510		1.0
88-74-4	2-Nitroaniline	Not Detected	2600		1.0
88-75-5	2-Nitrophenol	Not Detected	510		1.0
108394,106445	3 & 4-Methylphenol	Not Detected	1000		1.0
99-09-2	3-Nitroaniline	Not Detected	2600		1.0
101-55-3	4-Bromophenyl phenyl ether	Not Detected	310		1.0
59-50-7	4-Chloro-3-methyl-phenol	Not Detected	510		1.0
7005-72-3	4-Chlorodiphenylether	Not Detected	160		1.0
100-01-6	4-Nitroaniline	Not Detected	2600		1.0
100-02-7	4-Nitrophenol	Not Detected	2600		1.0
83-32-9	Acenaphthene	Not Detected	160		1.0
208-96-8	Acenaphthylene	Not Detected	160		1.0
120-12-7	Anthracene	Not Detected	160		1.0
103-33-3	Azobenzene	Not Detected	310		1.0
56-55-3	Benz[a]anthracene	270	160		1.0
50-32-8	Benzo[a]pyrene	Not Detected	310		1.0
205-99-2	Benzo[b]fluoranthene	430	310		1.0
191-24-2	Benzo[g,h,i]perylene	Not Detected	310		1.0
207-08-9	Benzo[k]fluoranthene	Not Detected	310		1.0
111-91-1	Bis(2-chloroethoxy)methane	Not Detected	310		1.0

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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Sample Number: AA53410 OFC0051 0-6

Base Neutral Acid Compounds

Analytical Method: 8270 **Date Tested:** 05/18/2005 **Analyst:** SMH
Extraction Method: 3545 **Extraction Date:** 05/03/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
111-44-4	Bis(2-chloroethyl)ether	Not Detected	160		1.0
108-60-1	Bis(2-chloroisopropyl)ether	Not Detected	160		1.0
117-81-7	Bis(2-ethylhexyl)phthalate	Not Detected	310		1.0
85-68-7	Butyl benzyl phthalate	Not Detected	160		1.0
86-74-8	Carbazole	Not Detected	510		1.0
218-01-9	Chrysene	Not Detected	160		1.0
53-70-3	Dibenz[a,h]anthracene	Not Detected	310		1.0
132-64-9	Dibenzofuran	Not Detected	510		1.0
84-66-2	Diethylphthalate	490	160	M=200	1.0
131-11-3	Dimethyl phthalate	Not Detected	310		1.0
84-74-2	Di-n-butyl phthalate	Not Detected	160		1.0
117-84-0	Di-n-octyl phthalate	Not Detected	310		1.0
86-73-7	Fluorene	Not Detected	160		1.0
206-44-0	Fluoroanthene	740	160		1.0
118-74-1	Hexachlorobenzene	Not Detected	310		1.0
58-3	Hexachlorobutadiene	Not Detected	310		1.0
47-4	Hexachlorocyclopentadiene	Not Detected	3100		1.0
67-72-1	Hexachloroethane	Not Detected	160		1.0
193-39-5	Indeno(1,2,3-c,d)pyrene	Not Detected	310		1.0
78-59-1	Isophorone	Not Detected	160		1.0
91-20-3	Naphthalene	Not Detected	160		1.0
98-95-3	Nitrobenzene	Not Detected	310		1.0
62-75-9	N-Nitrosodimethylamine	Not Detected	510		1.0
621-64-7	N-Nitrosodi-n-propylamine	Not Detected	310		1.0
156-10-5	N-Nitrosodiphenylamine	Not Detected	310		1.0
87-86-5	Pentachlorophenol	Not Detected	5300		1.0
85-01-8	Phenanthrene	370	160		1.0
108-95-2	Phenol	Not Detected	510		1.0
129-00-0	Pyrene	770	160		1.0

Probable petroleum product(s) present.

PCBs as Aroclors

Analytical Method: 8082 **Date Tested:** 05/10/2005 **Analyst:** MF
Extraction Method: 3545 **Extraction Date:** 05/05/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
SURROGATE	#Decachlorobiphenyl#	69.2			
SURROGATE	#Tetrachloro-m-xylene#	64.5			
12674-11-2	Aroclor 1016	Not Detected	160		1.0
11104-28-2	Aroclor 1221	Not Detected	160		1.0
11141-16-5	Aroclor 1232	Not Detected	160		1.0

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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Sample Number: AA53410 OFC0051 0-6

PCBs as Aroclors

Analytical Method: 8082 **Date Tested:** 05/10/2005 **Analyst:** MF
Extraction Method: 3545 **Extraction Date:** 05/05/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
53469-21-9	Aroclor 1242	Not Detected	160		1.0
12672-29-6	Aroclor 1248	Not Detected	160		1.0
11097-69-1	Aroclor 1254	180	160		1.0
11096-82-5	Aroclor 1260	Not Detected	160		1.0
37324-23-5	Aroclor 1262	Not Detected	160		1.0
11100-14-4	Aroclor 1268	Not Detected	160		1.0

Sample Number AA53410 OFC0051 0-6

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
	% Total Solids	64.5	%	0.1		05/05/2005		DB

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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Sample Number: AA53411 OFC0052 6-12

Base Neutral Acid Compounds

Analytical Method: 8270 **Date Tested:** 05/18/2005 **Analyst:** SMH
Extraction Method: 3545 **Extraction Date:** 05/03/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
SURROGATE	#2 - Fluorobiphenyl#	75.3			
SURROGATE	#2,4,6-Tribromophenol#	80.1			
SURROGATE	#2-Fluorophenol#	57.9			
SURROGATE	#Nitrobenzene - D5#	57.8			
SURROGATE	#Phenol - D5#	62.4			
SURROGATE	#p-Terphenyl-d14#	101			
120-82-1	1,2,4-Trichlorobenzene	Not Detected	250		1.0
95-50-1	1,2-Dichlorobenzene	Not Detected	120		1.0
541-73-1	1,3-Dichlorobenzene	Not Detected	120		1.0
106-46-7	1,4-Dichlorobenzene	Not Detected	120		1.0
95-95-4	2,4,5-Trichlorophenol	Not Detected	410		1.0
88-06-2	2,4,6-Trichlorophenol	Not Detected	410		1.0
120-83-2	2,4-Dichlorophenol	Not Detected	410		1.0
105-67-9	2,4-Dimethylphenol	Not Detected	410		1.0
51-28-5	2,4-Dinitrophenol	Not Detected	2100		1.0
14-2	2,4-Dinitrotoluene	Not Detected	410		1.0
-20-2	2,6-Dinitrotoluene	Not Detected	410		1.0
91-58-7	2-Chloronaphthalene	Not Detected	250		1.0
95-57-8	2-Chlorophenol	Not Detected	410		1.0
534-52-1	2-Methyl-4,6-dinitrophenol	Not Detected	2100		1.0
91-57-6	2-Methylnaphthalene	Not Detected	310		1.0
95-48-7	2-Methylphenol (o-Cresol)	Not Detected	410		1.0
88-74-4	2-Nitroaniline	Not Detected	2100		1.0
88-75-5	2-Nitrophenol	Not Detected	410		1.0
108394,106445	3 & 4-Methylphenol	Not Detected	820		1.0
99-09-2	3-Nitroaniline	Not Detected	2100		1.0
101-55-3	4-Bromophenyl phenyl ether	Not Detected	250		1.0
59-50-7	4-Chloro-3-methyl-phenol	Not Detected	410		1.0
7005-72-3	4-Chlorodiphenylether	Not Detected	120		1.0
100-01-6	4-Nitroaniline	Not Detected	2100		1.0
100-02-7	4-Nitrophenol	Not Detected	2100		1.0
83-32-9	Acenaphthene	Not Detected	120		1.0
208-96-8	Acenaphthylene	Not Detected	120		1.0
120-12-7	Anthracene	Not Detected	120		1.0
103-33-3	Azobenzene	Not Detected	250		1.0
56-55-3	Benz[a]anthracene	240	120		1.0
50-32-8	Benzo[a]pyrene	260	250		1.0
205-99-2	Benzo[b]fluoranthene	370	250		1.0
191-24-2	Benzo[g,h,i]perylene	Not Detected	250		1.0
207-08-9	Benzo[k]fluoranthene	Not Detected	250		1.0
111-91-1	Bis(2-chloroethoxy)methane	Not Detected	250		1.0

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts
Inorganic Unit Mgr: Sandy Gregg
Organic Unit Mgr: Carol Smith
Systems Mgmt Unit: George Krisztian

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FAX: (517) 335-9600

Sample Number: AA53411 OFC0052 6-12

Base Neutral Acid Compounds

Analytical Method: 8270 **Date Tested:** 05/18/2005 **Analyst:** SMH
Extraction Method: 3545 **Extraction Date:** 05/03/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
111-44-4	Bis(2-chloroethyl)ether	Not Detected	120		1.0
108-60-1	Bis(2-chloroisopropyl)ether	Not Detected	120		1.0
117-81-7	Bis(2-ethylhexyl)phthalate	Not Detected	250		1.0
85-68-7	Butyl benzyl phthalate	Not Detected	120		1.0
86-74-8	Carbazole	Not Detected	410		1.0
218-01-9	Chrysene	Not Detected	120		1.0
53-70-3	Dibenz[a,h]anthracene	Not Detected	250		1.0
132-64-9	Dibenzofuran	Not Detected	410		1.0
84-66-2	Diethylphthalate	340	120	M=200	1.0
131-11-3	Dimethyl phthalate	Not Detected	250		1.0
84-74-2	Di-n-butyl phthalate	Not Detected	120		1.0
117-84-0	Di-n-octyl phthalate	Not Detected	250		1.0
86-73-7	Fluorene	Not Detected	120		1.0
206-44-0	Fluoroanthene	540	120		1.0
118-74-1	Hexachlorobenzene	Not Detected	250		1.0
58-3	Hexachlorobutadiene	Not Detected	250		1.0
7-4	Hexachlorocyclopentadiene	Not Detected	2500		1.0
67-72-1	Hexachloroethane	Not Detected	120		1.0
193-39-5	Indeno(1,2,3-c,d)pyrene	Not Detected	250		1.0
78-59-1	Isophorone	Not Detected	120		1.0
91-20-3	Naphthalene	Not Detected	120		1.0
98-95-3	Nitrobenzene	Not Detected	250		1.0
62-75-9	N-Nitrosodimethylamine	Not Detected	410		1.0
621-64-7	N-Nitrosodi-n-propylamine	Not Detected	250		1.0
156-10-5	N-Nitrosodiphenylamine	Not Detected	250		1.0
87-86-5	Pentachlorophenol	Not Detected	4200		1.0
85-01-8	Phenanthrene	290	120		1.0
108-95-2	Phenol	Not Detected	410		1.0
129-00-0	Pyrene	500	120		1.0

Probable petroleum product(s) present.

PCBs as Aroclors

Analytical Method: 8082 **Date Tested:** 05/10/2005 **Analyst:** MF
Extraction Method: 3545 **Extraction Date:** 05/05/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
SURROGATE	#Decachlorobiphenyl#	77.4			
SURROGATE	#Tetrachloro-m-xylene#	67.3			
12674-11-2	Aroclor 1016	Not Detected	120		1.0
11104-28-2	Aroclor 1221	Not Detected	120		1.0
11141-16-5	Aroclor 1232	Not Detected	120		1.0

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
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Sample Number: AA53411 OFC0052 6-12

PCBs as Aroclors

Analytical Method: 8082 **Date Tested:** 05/10/2005 **Analyst:** MF
Extraction Method: 3545 **Extraction Date:** 05/05/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
53469-21-9	Aroclor 1242	Not Detected	120		1.0
12672-29-6	Aroclor 1248	Not Detected	120		1.0
11097-69-1	Aroclor 1254	Not Detected	120		1.0
11096-82-5	Aroclor 1260	Not Detected	120		1.0
37324-23-5	Aroclor 1262	Not Detected	120		1.0
11100-14-4	Aroclor 1268	Not Detected	120		1.0

Sample Number AA53411 OFC0052 6-12

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
	% Total Solids	80.7	%	0.1		05/05/2005		DB

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

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ug / Kg : microgram / kilogram (ppb)
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Sample Number: AA53412 OFP0052

Base Neutral Acid Compounds

Analytical Method: 8270 **Date Tested:** 05/23/2005 **Analyst:** SMH
Extraction Method: 3545 **Extraction Date:** 05/03/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
SURROGATE	#2 - Fluorobiphenyl#	67.0			
SURROGATE	#2,4,6-Tribromophenol#	73.1			
SURROGATE	#2-Fluorophenol#	53.4			
SURROGATE	#Nitrobenzene - D5#	54.6			
SURROGATE	#Phenol - D5#	57.2			
SURROGATE	#p-Terphenyl-d14#	104			
120-82-1	1,2,4-Trichlorobenzene	Not Detected	470		1.0
95-50-1	1,2-Dichlorobenzene	Not Detected	230		1.0
541-73-1	1,3-Dichlorobenzene	Not Detected	230		1.0
106-46-7	1,4-Dichlorobenzene	Not Detected	230		1.0
95-95-4	2,4,5-Trichlorophenol	Not Detected	770		1.0
88-06-2	2,4,6-Trichlorophenol	Not Detected	770		1.0
120-83-2	2,4-Dichlorophenol	Not Detected	770		1.0
105-67-9	2,4-Dimethylphenol	Not Detected	770		1.0
51-28-5	2,4-Dinitrophenol	Not Detected	4000		1.0
14-2	2,4-Dinitrotoluene	Not Detected	770		1.0
-20-2	2,6-Dinitrotoluene	Not Detected	770		1.0
91-58-7	2-Chloronaphthalene	Not Detected	470		1.0
95-57-8	2-Chlorophenol	Not Detected	770		1.0
534-52-1	2-Methyl-4,6-dinitrophenol	Not Detected	4000		1.0
91-57-6	2-Methylnaphthalene	Not Detected	580		1.0
95-48-7	2-Methylphenol (o-Cresol)	Not Detected	770		1.0
88-74-4	2-Nitroaniline	Not Detected	4000		1.0
88-75-5	2-Nitrophenol	Not Detected	770		1.0
108394,106445	3 & 4-Methylphenol	Not Detected	1500		1.0
99-09-2	3-Nitroaniline	Not Detected	4000		1.0
101-55-3	4-Bromophenyl phenyl ether	Not Detected	470		1.0
59-50-7	4-Chloro-3-methyl-phenol	Not Detected	770		1.0
7005-72-3	4-Chlorodiphenylether	Not Detected	230		1.0
100-01-6	4-Nitroaniline	Not Detected	4000		1.0
100-02-7	4-Nitrophenol	Not Detected	4000		1.0
83-32-9	Acenaphthene	Not Detected	230		1.0
208-96-8	Acenaphthylene	Not Detected	230		1.0
120-12-7	Anthracene	Not Detected	230		1.0
103-33-3	Azobenzene	Not Detected	470		1.0
56-55-3	Benz[a]anthracene	590	230		1.0
50-32-8	Benzo[a]pyrene	720	470		1.0
205-99-2	Benzo[b]fluoranthene	1200	470		1.0
191-24-2	Benzo[g,h,i]perylene	590	470		1.0
207-08-9	Benzo[k]fluoranthene	Not Detected	470		1.0
111-91-1	Bis(2-chloroethoxy)methane	Not Detected	470		1.0

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
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Sample Number: AA53412 OFP0052

Base Neutral Acid Compounds

Analytical Method: 8270 **Date Tested:** 05/23/2005 **Analyst:** SMH
Extraction Method: 3545 **Extraction Date:** 05/03/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
111-44-4	Bis(2-chloroethyl)ether	Not Detected	230		1.0
108-60-1	Bis(2-chloroisopropyl)ether	Not Detected	230		1.0
117-81-7	Bis(2-ethylhexyl)phthalate	760	470		1.0
85-68-7	Butyl benzyl phthalate	Not Detected	230		1.0
86-74-8	Carbazole	Not Detected	770		1.0
218-01-9	Chrysene	860	230		1.0
53-70-3	Dibenz[a,h]anthracene	Not Detected	470		1.0
132-64-9	Dibenzofuran	Not Detected	770		1.0
84-66-2	Diethylphthalate	680	230	M=200	1.0
131-11-3	Dimethyl phthalate	Not Detected	470		1.0
84-74-2	Di-n-butyl phthalate	Not Detected	230		1.0
117-84-0	Di-n-octyl phthalate	Not Detected	470		1.0
86-73-7	Fluorene	Not Detected	230		1.0
206-44-0	Fluoroanthene	1900	230		1.0
118-74-1	Hexachlorobenzene	Not Detected	470		1.0
58-3	Hexachlorobutadiene	Not Detected	470		1.0
47-4	Hexachlorocyclopentadiene	Not Detected	4700	5	1.0
67-72-1	Hexachloroethane	Not Detected	230		1.0
193-39-5	Indeno(1,2,3-c,d)pyrene	530	470		1.0
78-59-1	Isophorone	Not Detected	230		1.0
91-20-3	Naphthalene	Not Detected	230		1.0
98-95-3	Nitrobenzene	Not Detected	470		1.0
67-75-9	N-Nitrosodimethylamine	Not Detected	770		1.0
621-64-7	N-Nitrosodi-n-propylamine	Not Detected	470		1.0
156-10-5	N-Nitrosodiphenylamine	Not Detected	470		1.0
87-86-5	Pentachlorophenol	Not Detected	7900		1.0
85-01-8	Phenanthrene	800	230		1.0
108-95-2	Phenol	Not Detected	770		1.0
129-00-0	Pyrene	2000	230		1.0

Probable petroleum product(s) present.

PCBs as Aroclors

Analytical Method: 8082 **Date Tested:** 05/10/2005 **Analyst:** MF
Extraction Method: 3545 **Extraction Date:** 05/05/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
SURROGATE	#Decachlorobiphenyl#	64.1			
SURROGATE	#Tetrachloro-m-xylene#	57.3			
12674-11-2	Aroclor 1016	Not Detected	230		1.0
11104-28-2	Aroclor 1221	Not Detected	230		1.0
11141-16-5	Aroclor 1232	Not Detected	230		1.0

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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Sample Number: AA53412 OFP0052

PCBs as Aroclors

Analytical Method: 8082 **Date Tested:** 05/10/2005 **Analyst:** MF
Extraction Method: 3545 **Extraction Date:** 05/05/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
53469-21-9	Aroclor 1242	Not Detected	230		1.0
12672-29-6	Aroclor 1248	Not Detected	230		1.0
11097-69-1	Aroclor 1254	Not Detected	230		1.0
11096-82-5	Aroclor 1260	Not Detected	230		1.0
37324-23-5	Aroclor 1262	Not Detected	230		1.0
11100-14-4	Aroclor 1268	Not Detected	230		1.0

Sample Number AA53412 OFP0052

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
7440-38-2	Arsenic - Sediment	12.8	mg/Kg dry	0.5		05/19/2005	7060	LAV
7782-49-2	Selenium - Sediment	0.7	mg/Kg dry	0.5		05/12/2005	7740	LAV
7440-22-4	Silver - Sediment	ND	mg/Kg dry	0.25		05/13/2005	7761	LAV
	Digest Mercury - Sediment	Completed				05/09/2005	7471	RK
7439-97-6	Mercury - Sediment	ND	mg/Kg dry	0.05		05/26/2005	7471	TS
	RL= 1.5 mg/Kg due to low percent total solids.							
7440-39-3	Barium - Sediment	130	mg/Kg dry	1		05/23/2005	6010	MJ
7440-43-9	Cadmium - Sediment	ND	mg/Kg dry	2.0		05/23/2005	6010	MJ
7440-47-3	Chromium - Sediment	26	mg/Kg dry	2		05/23/2005	6010	MJ
7440-50-8	Copper - Sediment	52	mg/Kg dry	2		05/23/2005	6010	MJ
	Digest Metals - Sediment	Completed				05/09/2005	3050	TK
7439-92-1	Lead - Sediment	72	mg/Kg dry	5		05/23/2005	6010	MJ
7440-66-6	Zinc - Sediment	230	mg/Kg dry	5		05/23/2005	6010	MJ
	% Total Solids	43.0	%	0.1		05/05/2005		DB
	Drying and Grinding - Sediment	Completed				05/06/2005		RK

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Sample Number: AA53413 OFP0052D

Base Neutral Acid Compounds

Analytical Method: 8270 **Date Tested:** 05/23/2005 **Analyst:** SMH
Extraction Method: 3545 **Extraction Date:** 05/03/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
SURROGATE	#2 - Fluorobiphenyl#	68.5			
SURROGATE	#2,4,6-Tribromophenol#	68.3			
SURROGATE	#2-Fluorophenol#	50.5			
SURROGATE	#Nitrobenzene - D5#	49.4			
SURROGATE	#Phenol - D5#	51.5			
SURROGATE	#p-Terphenyl-d14#	101			
120-82-1	1,2,4-Trichlorobenzene	Not Detected	460		1.0
95-50-1	1,2-Dichlorobenzene	Not Detected	230		1.0
541-73-1	1,3-Dichlorobenzene	Not Detected	230		1.0
106-46-7	1,4-Dichlorobenzene	Not Detected	230		1.0
95-95-4	2,4,5-Trichlorophenol	Not Detected	760		1.0
88-06-2	2,4,6-Trichlorophenol	Not Detected	760		1.0
120-83-2	2,4-Dichlorophenol	Not Detected	760		1.0
105-67-9	2,4-Dimethylphenol	Not Detected	760		1.0
51-28-5	2,4-Dinitrophenol	Not Detected	3900		1.0
-14-2	2,4-Dinitrotoluene	Not Detected	760		1.0
-20-2	2,6-Dinitrotoluene	Not Detected	760		1.0
91-58-7	2-Chloronaphthalene	Not Detected	460		1.0
95-57-8	2-Chlorophenol	Not Detected	760		1.0
534-52-1	2-Methyl-4,6-dinitrophenol	Not Detected	3900		1.0
91-57-6	2-Methylnaphthalene	Not Detected	580		1.0
95-48-7	2-Methylphenol (o-Cresol)	Not Detected	760		1.0
88-74-4	2-Nitroaniline	Not Detected	3900		1.0
88-75-5	2-Nitrophenol	Not Detected	760		1.0
108394,106445	3 & 4-Methylphenol	Not Detected	1500		1.0
99-09-2	3-Nitroaniline	Not Detected	3900		1.0
101-55-3	4-Bromophenyl phenyl ether	Not Detected	460		1.0
59-50-7	4-Chloro-3-methyl-phenol	Not Detected	760		1.0
7005-72-3	4-Chlorodiphenylether	Not Detected	230		1.0
100-01-6	4-Nitroaniline	Not Detected	3900		1.0
100-02-7	4-Nitrophenol	Not Detected	3900		1.0
83-32-9	Acenaphthene	Not Detected	230		1.0
208-96-8	Acenaphthylene	Not Detected	230		1.0
120-12-7	Anthracene	Not Detected	230		1.0
103-33-3	Azobenzene	Not Detected	460		1.0
56-55-3	Benz[a]anthracene	650	230		1.0
50-32-8	Benzo[a]pyrene	750	460		1.0
205-99-2	Benzo[b]fluoranthene	1200	460		1.0
191-24-2	Benzo[g,h,i]perylene	700	460		1.0
207-08-9	Benzo[k]fluoranthene	Not Detected	460		1.0
111-91-1	Bis(2-chloroethoxy)methane	Not Detected	460		1.0

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
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Sample Number: AA53413 OFP0052D

Base Neutral Acid Compounds

Analytical Method: 8270 **Date Tested:** 05/23/2005 **Analyst:** SMH
Extraction Method: 3545 **Extraction Date:** 05/03/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
111-44-4	Bis(2-chloroethyl)ether	Not Detected	230		1.0
108-60-1	Bis(2-chloroisopropyl)ether	Not Detected	230		1.0
117-81-7	Bis(2-ethylhexyl)phthalate	590	460		1.0
85-68-7	Butyl benzyl phthalate	Not Detected	230		1.0
86-74-8	Carbazole	Not Detected	760		1.0
218-01-9	Chrysene	930	230		1.0
53-70-3	Dibenz[a,h]anthracene	Not Detected	460		1.0
132-64-9	Dibenzofuran	Not Detected	760		1.0
84-66-2	Diethylphthalate	760	230	M=200	1.0
131-11-3	Dimethyl phthalate	Not Detected	460		1.0
84-74-2	Di-n-butyl phthalate	Not Detected	230		1.0
117-84-0	Di-n-octyl phthalate	Not Detected	460		1.0
86-73-7	Fluorene	Not Detected	230		1.0
206-44-0	Fluoroanthene	2000	230		1.0
118-74-1	Hexachlorobenzene	Not Detected	460		1.0
68-3	Hexachlorobutadiene	Not Detected	460		1.0
47-4	Hexachlorocyclopentadiene	Not Detected	4600	5	1.0
67-72-1	Hexachloroethane	Not Detected	230		1.0
193-39-5	Indeno(1,2,3-c,d)pyrene	620	460		1.0
78-59-1	Isophorone	Not Detected	230		1.0
91-20-3	Naphthalene	Not Detected	230		1.0
98-95-3	Nitrobenzene	Not Detected	460		1.0
67-75-9	N-Nitrosodimethylamine	Not Detected	760		1.0
621-64-7	N-Nitrosodi-n-propylamine	Not Detected	460		1.0
156-10-5	N-Nitrosodiphenylamine	Not Detected	460		1.0
87-86-5	Pentachlorophenol	Not Detected	7900		1.0
85-01-8	Phenanthrene	870	230		1.0
108-95-2	Phenol	Not Detected	760		1.0
129-00-0	Pyrene	2200	230		1.0

Probable petroleum product(s) present.

PCBs as Aroclors

Analytical Method: 8082 **Date Tested:** 05/10/2005 **Analyst:** MF
Extraction Method: 3545 **Extraction Date:** 05/05/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
SURROGATE	#Decachlorobiphenyl#	79.3			
SURROGATE	#Tetrachloro-m-xylene#	71.2			
12674-11-2	Aroclor 1016	Not Detected	230		1.0
11104-28-2	Aroclor 1221	Not Detected	230		1.0
11141-16-5	Aroclor 1232	Not Detected	230		1.0

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
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ug / Kg : microgram / kilogram (ppb)
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TEL: (517) 335-9800
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Sample Number: AA53413 OFP0052D

PCBs as Aroclors

Analytical Method: 8082 **Date Tested:** 05/10/2005 **Analyst:** MF
Extraction Method: 3545 **Extraction Date:** 05/05/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
53469-21-9	Aroclor 1242	Not Detected	230		1.0
12672-29-6	Aroclor 1248	Not Detected	230		1.0
11097-69-1	Aroclor 1254	Not Detected	230		1.0
11096-82-5	Aroclor 1260	Not Detected	230		1.0
37324-23-5	Aroclor 1262	Not Detected	230		1.0
11100-14-4	Aroclor 1268	Not Detected	230		1.0

Sample Number AA53413 OFP0052D

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
7440-38-2	Arsenic - Sediment	12.8	mg/Kg dry	0.5		05/19/2005	7060	LAV
7782-49-2	Selenium - Sediment	ND	mg/Kg dry	0.5		05/12/2005	7740	LAV
7440-22-4	Silver - Sediment	ND	mg/Kg dry	0.25		05/13/2005	7761	LAV
	Digest Mercury - Sediment	Completed				05/09/2005	7471	RK
7439-97-6	Mercury - Sediment	.12	mg/Kg dry	0.05		05/26/2005	7471	TS
7440-39-3	Barium - Sediment	130	mg/Kg dry	1		05/23/2005	6010	MJ
7440-43-9	Cadmium - Sediment	ND	mg/Kg dry	2.0		05/23/2005	6010	MJ
7440-47-3	Chromium - Sediment	25	mg/Kg dry	2		05/23/2005	6010	MJ
7440-50-8	Copper - Sediment	57	mg/Kg dry	2		05/23/2005	6010	MJ
	Digest Metals - Sediment	Completed				05/09/2005	3050	TK
7439-92-1	Lead - Sediment	66	mg/Kg dry	5		05/23/2005	6010	MJ
7440-66-6	Zinc - Sediment	230	mg/Kg dry	5		05/23/2005	6010	MJ
	% Total Solids	43.3	%	0.1		05/05/2005		DB
	Drying and Grinding - Sediment	Completed				05/06/2005		RK

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts
Inorganic Unit Mgr: Sandy Gregg
Organic Unit Mgr: Carol Smith
Systems Mgmt Unit: George Krisztian

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Sample Number: AA53414 OFP013

Base Neutral Acid Compounds

Analytical Method: 8270 **Date Tested:** 05/23/2005 **Analyst:** SMH
Extraction Method: 3545 **Extraction Date:** 05/03/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
SURROGATE	#2 - Fluorobiphenyl#	69.7			
SURROGATE	#2,4,6-Tribromophenol#	71.8			
SURROGATE	#2-Fluorophenol#	52.1			
SURROGATE	#Nitrobenzene - D5#	55.3			
SURROGATE	#Phenol - D5#	56.5			
SURROGATE	#p-Terphenyl-d14#	99.5			
120-82-1	1,2,4-Trichlorobenzene	Not Detected	490		1.0
95-50-1	1,2-Dichlorobenzene	Not Detected	250		1.0
541-73-1	1,3-Dichlorobenzene	Not Detected	250		1.0
106-46-7	1,4-Dichlorobenzene	Not Detected	250		1.0
95-95-4	2,4,5-Trichlorophenol	Not Detected	810		1.0
88-06-2	2,4,6-Trichlorophenol	Not Detected	810		1.0
120-83-2	2,4-Dichlorophenol	Not Detected	810		1.0
105-67-9	2,4-Dimethylphenol	Not Detected	810		1.0
51-28-5	2,4-Dinitrophenol	Not Detected	4200		1.0
-14-2	2,4-Dinitrotoluene	Not Detected	810		1.0
-20-2	2,6-Dinitrotoluene	Not Detected	810		1.0
91-58-7	2-Chloronaphthalene	Not Detected	490		1.0
95-57-8	2-Chlorophenol	Not Detected	810		1.0
534-52-1	2-Methyl-4,6-dinitrophenol	Not Detected	4200		1.0
91-57-6	2-Methylnaphthalene	Not Detected	620		1.0
95-48-7	2-Methylphenol (o-Cresol)	Not Detected	810		1.0
88-74-4	2-Nitroaniline	Not Detected	4200		1.0
88-75-5	2-Nitrophenol	Not Detected	810		1.0
108394,106445	3 & 4-Methylphenol	Not Detected	1600		1.0
99-09-2	3-Nitroaniline	Not Detected	4200		1.0
101-55-3	4-Bromophenyl phenyl ether	Not Detected	490		1.0
59-50-7	4-Chloro-3-methyl-phenol	Not Detected	810		1.0
7005-72-3	4-Chlorodiphenylether	Not Detected	250		1.0
100-01-6	4-Nitroaniline	Not Detected	4200		1.0
100-02-7	4-Nitrophenol	Not Detected	4200		1.0
83-32-9	Acenaphthene	Not Detected	250		1.0
208-96-8	Acenaphthylene	Not Detected	250		1.0
120-12-7	Anthracene	Not Detected	250		1.0
103-33-3	Azobenzene	Not Detected	490		1.0
56-55-3	Benz[a]anthracene	550	250		1.0
50-32-8	Benzo[a]pyrene	700	490		1.0
205-99-2	Benzo[b]fluoranthene	1200	490		1.0
191-24-2	Benzo[g,h,i]perylene	700	490		1.0
207-08-9	Benzo[k]fluoranthene	Not Detected	490		1.0
111-91-1	Bis(2-chloroethoxy)methane	Not Detected	490		1.0

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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Sample Number: AA53414 OFP013

Base Neutral Acid Compounds

Analytical Method: 8270 **Date Tested:** 05/23/2005 **Analyst:** SMH
Extraction Method: 3545 **Extraction Date:** 05/03/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
111-44-4	Bis(2-chloroethyl)ether	Not Detected	250		1.0
108-60-1	Bis(2-chloroisopropyl)ether	Not Detected	250		1.0
117-81-7	Bis(2-ethylhexyl)phthalate	Not Detected	490		1.0
85-68-7	Butyl benzyl phthalate	Not Detected	250		1.0
86-74-8	Carbazole	Not Detected	810		1.0
218-01-9	Chrysene	850	250		1.0
53-70-3	Dibenz[a,h]anthracene	Not Detected	490		1.0
132-64-9	Dibenzofuran	Not Detected	810		1.0
84-66-2	Diethylphthalate	730	250	M=200	1.0
131-11-3	Dimethyl phthalate	Not Detected	490		1.0
84-74-2	Di-n-butyl phthalate	Not Detected	250		1.0
117-84-0	Di-n-octyl phthalate	Not Detected	490		1.0
86-73-7	Fluorene	Not Detected	250		1.0
206-44-0	Fluoroanthene	1800	250		1.0
118-74-1	Hexachlorobenzene	Not Detected	490		1.0
[illegible]8-3	Hexachlorobutadiene	Not Detected	490		1.0
[illegible]7-4	Hexachlorocyclopentadiene	Not Detected	4900	5	1.0
67-72-1	Hexachloroethane	Not Detected	250		1.0
193-39-5	Indeno(1,2,3-c,d)pyrene	570	490		1.0
78-59-1	Isophorone	Not Detected	250		1.0
91-20-3	Naphthalene	Not Detected	250		1.0
98-95-3	Nitrobenzene	Not Detected	490		1.0
67-75-9	N-Nitrosodimethylamine	Not Detected	810		1.0
621-64-7	N-Nitrosodi-n-propylamine	Not Detected	490		1.0
156-10-5	N-Nitrosodiphenylamine	Not Detected	490		1.0
87-86-5	Pentachlorophenol	Not Detected	8400		1.0
85-01-8	Phenanthrene	700	250		1.0
108-95-2	Phenol	Not Detected	810		1.0
129-00-0	Pyrene	1900	250		1.0

Probable petroleum product(s) present.

PCBs as Aroclors

Analytical Method: 8082 **Date Tested:** 05/10/2005 **Analyst:** MF
Extraction Method: 3545 **Extraction Date:** 05/05/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
SURROGATE	#Decachlorobiphenyl#	65.2			
SURROGATE	#Tetrachloro-m-xylene#	59.9			
12674-11-2	Aroclor 1016	Not Detected	250		1.0
11104-28-2	Aroclor 1221	Not Detected	250		1.0
11141-16-5	Aroclor 1232	Not Detected	250		1.0

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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Sample Number: AA53414 OFP013

PCBs as Aroclors

Analytical Method: 8082 **Date Tested:** 05/10/2005 **Analyst:** MF
Extraction Method: 3545 **Extraction Date:** 05/05/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
53469-21-9	Aroclor 1242	Not Detected	250		1.0
12672-29-6	Aroclor 1248	Not Detected	250		1.0
11097-69-1	Aroclor 1254	Not Detected	250		1.0
11096-82-5	Aroclor 1260	Not Detected	250		1.0
37324-23-5	Aroclor 1262	Not Detected	250		1.0
11100-14-4	Aroclor 1268	Not Detected	250		1.0

Sample Number AA53414 OFP013

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
7440-38-2	Arsenic - Sediment	12.2	mg/Kg dry	0.5		05/19/2005	7060	LAV
7782-49-2	Selenium - Sediment	0.7	mg/Kg dry	0.5		05/12/2005	7740	LAV
7440-22-4	Silver - Sediment	ND	mg/Kg dry	0.25		05/13/2005	7761	LAV
	Digest Mercury - Sediment	Completed				05/09/2005	7471	RK
[illegible]39-97-6	Mercury - Sediment	.15	mg/Kg dry	0.05		05/26/2005	7471	TS
[illegible]-39-3	Barium - Sediment	110	mg/Kg dry	1		05/23/2005	6010	MJ
7440-43-9	Cadmium - Sediment	ND	mg/Kg dry	2.0		05/23/2005	6010	MJ
7440-47-3	Chromium - Sediment	26	mg/Kg dry	2		05/23/2005	6010	MJ
7440-50-8	Copper - Sediment	56	mg/Kg dry	2		05/23/2005	6010	MJ
	Digest Metals - Sediment	Completed				05/09/2005	3050	TK
7439-92-1	Lead - Sediment	80	mg/Kg dry	5		05/23/2005	6010	MJ
7440-66-6	Zinc - Sediment	230	mg/Kg dry	5		05/23/2005	6010	MJ
	% Total Solids	40.5	%	0.1		05/05/2005		DB
	Drying and Grinding - Sediment	Completed				05/06/2005		RK

CAS# : Chemical Abstract Service Registry Number
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ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
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Sample Number: AA53415 OFC013 0-6

Base Neutral Acid Compounds

Analytical Method: 8270 **Date Tested:** 05/18/2005 **Analyst:** SMH
Extraction Method: 3545 **Extraction Date:** 05/03/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
SURROGATE	#2 - Fluorobiphenyl#	82.3			
SURROGATE	#2,4,6-Tribromophenol#	77.9			
SURROGATE	#2-Fluorophenol#	66.4			
SURROGATE	#Nitrobenzene - D5#	63.3			
SURROGATE	#Phenol - D5#	71.8			
SURROGATE	#p-Terphenyl-d14#	119			
120-82-1	1,2,4-Trichlorobenzene	Not Detected	380		1.0
95-50-1	1,2-Dichlorobenzene	Not Detected	190		1.0
541-73-1	1,3-Dichlorobenzene	Not Detected	190		1.0
106-46-7	1,4-Dichlorobenzene	Not Detected	190		1.0
95-95-4	2,4,5-Trichlorophenol	Not Detected	620		1.0
88-06-2	2,4,6-Trichlorophenol	Not Detected	620		1.0
120-83-2	2,4-Dichlorophenol	Not Detected	620		1.0
105-67-9	2,4-Dimethylphenol	Not Detected	620		1.0
51-28-5	2,4-Dinitrophenol	Not Detected	3200		1.0
[illegible]14-2	2,4-Dinitrotoluene	Not Detected	620		1.0
[illegible]-20-2	2,6-Dinitrotoluene	Not Detected	620		1.0
91-58-7	2-Chloronaphthalene	Not Detected	380		1.0
95-57-8	2-Chlorophenol	Not Detected	620		1.0
534-52-1	2-Methyl-4,6-dinitrophenol	Not Detected	3200		1.0
91-57-6	2-Methylnaphthalene	Not Detected	470		1.0
95-48-7	2-Methylphenol (o-Cresol)	Not Detected	620		1.0
88-74-4	2-Nitroaniline	Not Detected	3200		1.0
88-75-5	2-Nitrophenol	Not Detected	620		1.0
108394,106445	3 & 4-Methylphenol	Not Detected	1200		1.0
99-09-2	3-Nitroaniline	Not Detected	3200		1.0
101-55-3	4-Bromophenyl phenyl ether	Not Detected	380		1.0
59-50-7	4-Chloro-3-methyl-phenol	Not Detected	620		1.0
7005-72-3	4-Chlorodiphenylether	Not Detected	190		1.0
100-01-6	4-Nitroaniline	Not Detected	3200		1.0
100-02-7	4-Nitrophenol	Not Detected	3200		1.0
83-32-9	Acenaphthene	Not Detected	190		1.0
208-96-8	Acenaphthylene	Not Detected	190		1.0
120-12-7	Anthracene	Not Detected	190		1.0
103-33-3	Azobenzene	Not Detected	380		1.0
56-55-3	Benz[a]anthracene	Not Detected	190		1.0
50-32-8	Benzo[a]pyrene	Not Detected	380		1.0
205-99-2	Benzo[b]fluoranthene	Not Detected	380		1.0
191-24-2	Benzo[g,h,i]perylene	Not Detected	380		1.0
207-08-9	Benzo[k]fluoranthene	Not Detected	380		1.0
111-91-1	Bis(2-chloroethoxy)methane	Not Detected	380		1.0

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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Sample Number: AA53415 OFC013 0-6

Base Neutral Acid Compounds

Analytical Method: 8270 **Date Tested:** 05/18/2005 **Analyst:** SMH
Extraction Method: 3545 **Extraction Date:** 05/03/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
111-44-4	Bis(2-chloroethyl)ether	Not Detected	190		1.0
108-60-1	Bis(2-chloroisopropyl)ether	Not Detected	190		1.0
117-81-7	Bis(2-ethylhexyl)phthalate	Not Detected	380		1.0
85-68-7	Butyl benzyl phthalate	Not Detected	190		1.0
86-74-8	Carbazole	Not Detected	620		1.0
218-01-9	Chrysene	220	190		1.0
53-70-3	Dibenz[a,h]anthracene	Not Detected	380		1.0
132-64-9	Dibenzofuran	Not Detected	620		1.0
84-66-2	Diethylphthalate	410	190	M=200	1.0
131-11-3	Dimethyl phthalate	Not Detected	380		1.0
84-74-2	Di-n-butyl phthalate	Not Detected	190		1.0
117-84-0	Di-n-octyl phthalate	Not Detected	380		1.0
86-73-7	Fluorene	Not Detected	190		1.0
206-44-0	Fluoroanthene	Not Detected	190		1.0
118-74-1	Hexachlorobenzene	Not Detected	380		1.0
58-3	Hexachlorobutadiene	Not Detected	380		1.0
47-4	Hexachlorocyclopentadiene	Not Detected	3800		1.0
67-72-1	Hexachloroethane	Not Detected	190		1.0
193-39-5	Indeno(1,2,3-c,d)pyrene	Not Detected	380		1.0
78-59-1	Isophorone	Not Detected	190		1.0
91-20-3	Naphthalene	Not Detected	190		1.0
98-95-3	Nitrobenzene	Not Detected	380		1.0
67-75-9	N-Nitrosodimethylamine	Not Detected	620		1.0
621-64-7	N-Nitrosodi-n-propylamine	Not Detected	380		1.0
156-10-5	N-Nitrosodiphenylamine	Not Detected	380		1.0
87-86-5	Pentachlorophenol	Not Detected	6400		1.0
85-01-8	Phenanthrene	470	190		1.0
108-95-2	Phenol	Not Detected	620		1.0
129-00-0	Pyrene	Not Detected	190		1.0

Probable petroleum product(s) present.

PCBs as Aroclors

Analytical Method: 8082 **Date Tested:** 05/10/2005 **Analyst:** MF
Extraction Method: 3545 **Extraction Date:** 05/05/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
SURROGATE	#Decachlorobiphenyl#	67.4			
SURROGATE	#Tetrachloro-m-xylene#	66.5			
12674-11-2	Aroclor 1016	Not Detected	380	K	2.0
11104-28-2	Aroclor 1221	Not Detected	380	K	2.0
11141-16-5	Aroclor 1232	Not Detected	380	K	2.0

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mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
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Sample Number: AA53415 OFC013 0-6

PCBs as Aroclors

Analytical Method: 8082 **Date Tested:** 05/10/2005 **Analyst:** MF
Extraction Method: 3545 **Extraction Date:** 05/05/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
53469-21-9	Aroclor 1242	Not Detected	380	K	2.0
12672-29-6	Aroclor 1248	Not Detected	380	K	2.0
11097-69-1	Aroclor 1254	340	190	6	1.0
11096-82-5	Aroclor 1260	Not Detected	190		1.0
37324-23-5	Aroclor 1262	Not Detected	190		1.0
11100-14-4	Aroclor 1268	Not Detected	190		1.0

Sample Number AA53415 OFC013 0-6

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
7440-38-2	Arsenic - Sediment	7.2	mg/Kg dry	0.5		05/19/2005	7060	LAV
7782-49-2	Selenium - Sediment	1.2	mg/Kg dry	0.5		05/12/2005	7740	LAV
7440-22-4	Silver - Sediment	0.7	mg/Kg dry	0.25		05/13/2005	7761	LAV
	Digest Mercury - Sediment	Completed				05/09/2005	7471	RK
7439-97-6	Mercury - Sediment	.18	mg/Kg dry	0.05		05/10/2005	7471	TS
7440-39-3	Barium - Sediment	140	mg/Kg dry	1		05/23/2005	6010	MJ
7440-43-9	Cadmium - Sediment	2.1	mg/Kg dry	2.0		05/23/2005	6010	MJ
7440-47-3	Chromium - Sediment	60	mg/Kg dry	2		05/23/2005	6010	MJ
7440-50-8	Copper - Sediment	90	mg/Kg dry	2		05/23/2005	6010	MJ
	Digest Metals - Sediment	Completed				05/09/2005	3050	TK
7439-92-1	Lead - Sediment	110	mg/Kg dry	5		05/23/2005	6010	MJ
7440-66-6	Zinc - Sediment	210	mg/Kg dry	5		05/23/2005	6010	MJ
	% Total Solids	52.9	%	0.1		05/05/2005		DB
	Drying and Grinding - Sediment	Completed				05/06/2005		RK

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
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Sample Number: AA53416 OFC013 6-13

Base Neutral Acid Compounds

Analytical Method: 8270 **Date Tested:** 05/19/2005 **Analyst:** SMH
Extraction Method: 3545 **Extraction Date:** 05/03/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
SURROGATE	#2 - Fluorobiphenyl#	66.9			
SURROGATE	#2,4,6-Tribromophenol#	64.6			
SURROGATE	#2-Fluorophenol#	52.7			
SURROGATE	#Nitrobenzene - D5#	49.2			
SURROGATE	#Phenol - D5#	53.5			
SURROGATE	#p-Terphenyl-d14#	92.8			
120-82-1	1,2,4-Trichlorobenzene	Not Detected	370		1.0
95-50-1	1,2-Dichlorobenzene	Not Detected	190		1.0
541-73-1	1,3-Dichlorobenzene	Not Detected	190		1.0
106-46-7	1,4-Dichlorobenzene	Not Detected	190		1.0
95-95-4	2,4,5-Trichlorophenol	Not Detected	610		1.0
88-06-2	2,4,6-Trichlorophenol	Not Detected	610		1.0
120-83-2	2,4-Dichlorophenol	Not Detected	610		1.0
105-67-9	2,4-Dimethylphenol	Not Detected	610		1.0
51-28-5	2,4-Dinitrophenol	Not Detected	3100		1.0
-14-2	2,4-Dinitrotoluene	Not Detected	610		1.0
-20-2	2,6-Dinitrotoluene	Not Detected	610		1.0
91-58-7	2-Chloronaphthalene	Not Detected	370		1.0
95-57-8	2-Chlorophenol	Not Detected	610		1.0
534-52-1	2-Methyl-4,6-dinitrophenol	Not Detected	3100		1.0
91-57-6	2-Methylnaphthalene	Not Detected	460		1.0
95-48-7	2-Methylphenol (o-Cresol)	Not Detected	610		1.0
88-74-4	2-Nitroaniline	Not Detected	3100		1.0
88-75-5	2-Nitrophenol	Not Detected	610		1.0
108394,106445	3 & 4-Methylphenol	Not Detected	1200		1.0
99-09-2	3-Nitroaniline	Not Detected	3100		1.0
101-55-3	4-Bromophenyl phenyl ether	Not Detected	370		1.0
59-50-7	4-Chloro-3-methyl-phenol	Not Detected	610		1.0
7005-72-3	4-Chlorodiphenylether	Not Detected	190		1.0
100-01-6	4-Nitroaniline	Not Detected	3100		1.0
100-02-7	4-Nitrophenol	Not Detected	3100		1.0
83-32-9	Acenaphthene	Not Detected	190		1.0
208-96-8	Acenaphthylene	Not Detected	190		1.0
120-12-7	Anthracene	Not Detected	190		1.0
103-33-3	Azobenzene	Not Detected	370		1.0
56-55-3	Benz[a]anthracene	Not Detected	190		1.0
50-32-8	Benzo[a]pyrene	590	370		1.0
205-99-2	Benzo[b]fluoranthene	Not Detected	370		1.0
191-24-2	Benzo[g,h,i]perylene	Not Detected	370		1.0
207-08-9	Benzo[k]fluoranthene	Not Detected	370		1.0
111-91-1	Bis(2-chloroethoxy)methane	Not Detected	370		1.0

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts
Inorganic Unit Mgr: Sandy Gregg
Organic Unit Mgr: Carol Smith
Systems Mgmt Unit: George Krisztian

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Sample Number: AA53416 OFC013 6-13

Base Neutral Acid Compounds

Analytical Method: 8270 **Date Tested:** 05/19/2005 **Analyst:** SMH
Extraction Method: 3545 **Extraction Date:** 05/03/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
111-44-4	Bis(2-chloroethyl)ether	Not Detected	190		1.0
108-60-1	Bis(2-chloroisopropyl)ether	Not Detected	190		1.0
117-81-7	Bis(2-ethylhexyl)phthalate	Not Detected	370		1.0
85-68-7	Butyl benzyl phthalate	Not Detected	190		1.0
86-74-8	Carbazole	Not Detected	610		1.0
218-01-9	Chrysene	Not Detected	190		1.0
53-70-3	Dibenz[a,h]anthracene	Not Detected	370		1.0
132-64-9	Dibenzofuran	Not Detected	610		1.0
84-66-2	Diethylphthalate	330	190	M=200	1.0
131-11-3	Dimethyl phthalate	Not Detected	370		1.0
84-74-2	Di-n-butyl phthalate	Not Detected	190		1.0
117-84-0	Di-n-octyl phthalate	Not Detected	370		1.0
86-73-7	Fluorene	Not Detected	190		1.0
206-44-0	Fluoroanthene	Not Detected	190		1.0
118-74-1	Hexachlorobenzene	Not Detected	370		1.0
58-3	Hexachlorobutadiene	Not Detected	370		1.0
47-4	Hexachlorocyclopentadiene	Not Detected	3700		1.0
67-72-1	Hexachloroethane	Not Detected	190		1.0
193-39-5	Indeno(1,2,3-c,d)pyrene	Not Detected	370		1.0
78-59-1	Isophorone	Not Detected	190		1.0
91-20-3	Naphthalene	Not Detected	190		1.0
98-95-3	Nitrobenzene	Not Detected	370		1.0
67-75-9	N-Nitrosodimethylamine	Not Detected	610		1.0
621-64-7	N-Nitrosodi-n-propylamine	Not Detected	370		1.0
156-10-5	N-Nitrosodiphenylamine	Not Detected	370		1.0
87-86-5	Pentachlorophenol	Not Detected	6300		1.0
85-01-8	Phenanthrene	390	190		1.0
108-95-2	Phenol	Not Detected	610		1.0
129-00-0	Pyrene	Not Detected	190		1.0

Probable petroleum product(s) present.

PCBs as Aroclors

Analytical Method: 8082 **Date Tested:** 05/10/2005 **Analyst:** MF
Extraction Method: 3545 **Extraction Date:** 05/05/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
SURROGATE	#Decachlorobiphenyl#	41.7			
SURROGATE	#Tetrachloro-m-xylene#	59.5			
12674-11-2	Aroclor 1016	Not Detected	650	K	3.5
11104-28-2	Aroclor 1221	Not Detected	650	K	3.5
11141-16-5	Aroclor 1232	630	190	6	1.0

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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Sample Number: AA53416 OFC013 6-13

PCBs as Aroclors

Analytical Method: 8082 **Date Tested:** 05/10/2005 **Analyst:** MF
Extraction Method: 3545 **Extraction Date:** 05/05/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
53469-21-9	Aroclor 1242	Not Detected	650	K	3.5
12672-29-6	Aroclor 1248	Not Detected	650	K	3.5
11097-69-1	Aroclor 1254	Not Detected	190		1.0
11096-82-5	Aroclor 1260	Not Detected	190		1.0
37324-23-5	Aroclor 1262	Not Detected	190		1.0
11100-14-4	Aroclor 1268	Not Detected	190		1.0

Sample Number AA53416 OFC013 6-13

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
7440-38-2	Arsenic - Sediment	13.1	mg/Kg dry	0.5		05/19/2005	7060	LAV
7782-49-2	Selenium - Sediment	1.1	mg/Kg dry	0.5		05/12/2005	7740	LAV
7440-22-4	Silver - Sediment	29	mg/Kg dry	0.25	D	05/13/2005	7761	LAV
	Digest Mercury - Sediment	Completed				05/09/2005	7471	RK
39-97-6	Mercury - Sediment	.28	mg/Kg dry	0.05		05/10/2005	7471	TS
0-39-3	Barium - Sediment	220	mg/Kg dry	1		05/23/2005	6010	MJ
7440-43-9	Cadmium - Sediment	31	mg/Kg dry	2.0		05/23/2005	6010	MJ
7440-47-3	Chromium - Sediment	190	mg/Kg dry	2		05/23/2005	6010	MJ
7440-50-8	Copper - Sediment	210	mg/Kg dry	2		05/23/2005	6010	MJ
	Digest Metals - Sediment	Completed				05/09/2005	3050	TK
7439-92-1	Lead - Sediment	190	mg/Kg dry	5		05/23/2005	6010	MJ
7440-66-6	Zinc - Sediment	340	mg/Kg dry	5		05/23/2005	6010	MJ
	% Total Solids	54.0	%	0.1		05/05/2005		DB
	Drying and Grinding - Sediment	Completed				05/06/2005		RK

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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Sample Number: AA53417 OFC013 13-17

Base Neutral Acid Compounds

Analytical Method: 8270 **Date Tested:** 05/19/2005 **Analyst:** SMH
Extraction Method: 3545 **Extraction Date:** 05/03/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
SURROGATE	#2 - Fluorobiphenyl#	73.8			
SURROGATE	#2,4,6-Tribromophenol#	77.0			
SURROGATE	#2-Fluorophenol#	52.8			
SURROGATE	#Nitrobenzene - D5#	52.9			
SURROGATE	#Phenol - D5#	61.9			
SURROGATE	#p-Terphenyl-d14#	103			
120-82-1	1,2,4-Trichlorobenzene	Not Detected	370		1.0
95-50-1	1,2-Dichlorobenzene	Not Detected	190		1.0
541-73-1	1,3-Dichlorobenzene	Not Detected	190		1.0
106-46-7	1,4-Dichlorobenzene	Not Detected	190		1.0
95-95-4	2,4,5-Trichlorophenol	Not Detected	620		1.0
88-06-2	2,4,6-Trichlorophenol	Not Detected	620		1.0
120-83-2	2,4-Dichlorophenol	Not Detected	620		1.0
105-67-9	2,4-Dimethylphenol	Not Detected	620		1.0
51-28-5	2,4-Dinitrophenol	Not Detected	3200		1.0
14-2	2,4-Dinitrotoluene	Not Detected	620		1.0
-20-2	2,6-Dinitrotoluene	Not Detected	620		1.0
91-58-7	2-Chloronaphthalene	Not Detected	370		1.0
95-57-8	2-Chlorophenol	Not Detected	620		1.0
534-52-1	2-Methyl-4,6-dinitrophenol	Not Detected	3200		1.0
91-57-6	2-Methylnaphthalene	Not Detected	470		1.0
95-48-7	2-Methylphenol (o-Cresol)	Not Detected	620		1.0
88-74-4	2-Nitroaniline	Not Detected	3200		1.0
88-75-5	2-Nitrophenol	Not Detected	620		1.0
108394,106445	3 & 4-Methylphenol	Not Detected	1200		1.0
99-09-2	3-Nitroaniline	Not Detected	3200		1.0
101-55-3	4-Bromophenyl phenyl ether	Not Detected	370		1.0
59-50-7	4-Chloro-3-methyl-phenol	Not Detected	620		1.0
7005-72-3	4-Chlorodiphenylether	Not Detected	190		1.0
100-01-6	4-Nitroaniline	Not Detected	3200		1.0
100-02-7	4-Nitrophenol	Not Detected	3200		1.0
83-32-9	Acenaphthene	Not Detected	190		1.0
208-96-8	Acenaphthylene	Not Detected	190		1.0
120-12-7	Anthracene	Not Detected	190		1.0
103-33-3	Azobenzene	Not Detected	370		1.0
56-55-3	Benz[a]anthracene	Not Detected	190		1.0
50-32-8	Benzo[a]pyrene	610	370		1.0
205-99-2	Benzo[b]fluoranthene	Not Detected	370		1.0
191-24-2	Benzo[g,h,i]perylene	Not Detected	370		1.0
207-08-9	Benzo[k]fluoranthene	Not Detected	370		1.0
111-91-1	Bis(2-chloroethoxy)methane	Not Detected	370		1.0

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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Sample Number: AA53417 OFC013 13-17

Base Neutral Acid Compounds

Analytical Method: 8270 **Date Tested:** 05/19/2005 **Analyst:** SMH
Extraction Method: 3545 **Extraction Date:** 05/03/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
111-44-4	Bis(2-chloroethyl)ether	Not Detected	190		1.0
108-60-1	Bis(2-chloroisopropyl)ether	Not Detected	190		1.0
117-81-7	Bis(2-ethylhexyl)phthalate	Not Detected	370		1.0
85-68-7	Butyl benzyl phthalate	Not Detected	190		1.0
86-74-8	Carbazole	Not Detected	620		1.0
218-01-9	Chrysene	Not Detected	190		1.0
53-70-3	Dibenz[a,h]anthracene	Not Detected	370		1.0
132-64-9	Dibenzofuran	Not Detected	620		1.0
84-66-2	Diethylphthalate	560	190	M=200	1.0
131-11-3	Dimethyl phthalate	Not Detected	370		1.0
84-74-2	Di-n-butyl phthalate	Not Detected	190		1.0
117-84-0	Di-n-octyl phthalate	Not Detected	370		1.0
86-73-7	Fluorene	Not Detected	190		1.0
206-44-0	Fluoroanthene	Not Detected	190		1.0
118-74-1	Hexachlorobenzene	Not Detected	370		1.0
8-3	Hexachlorobutadiene	Not Detected	370		1.0
47-4	Hexachlorocyclopentadiene	Not Detected	3700		1.0
67-72-1	Hexachloroethane	Not Detected	190		1.0
193-39-5	Indeno(1,2,3-c,d)pyrene	Not Detected	370		1.0
78-59-1	Isophorone	Not Detected	190		1.0
91-20-3	Naphthalene	230	190		1.0
98-95-3	Nitrobenzene	Not Detected	370		1.0
67-75-9	N-Nitrosodimethylamine	Not Detected	620		1.0
621-64-7	N-Nitrosodi-n-propylamine	Not Detected	370		1.0
156-10-5	N-Nitrosodiphenylamine	Not Detected	370		1.0
87-86-5	Pentachlorophenol	Not Detected	6400		1.0
85-01-8	Phenanthrene	Not Detected	190		1.0
108-95-2	Phenol	Not Detected	620		1.0
129-00-0	Pyrene	Not Detected	190		1.0

Probable petroleum product(s) present.

PCBs as Aroclors

Analytical Method: 8082 **Date Tested:** 05/10/2005 **Analyst:** MF
Extraction Method: 3545 **Extraction Date:** 05/05/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
SURROGATE	#Decachlorobiphenyl#	18.4			
SURROGATE	#Tetrachloro-m-xylene#	61.1			
12674-11-2	Aroclor 1016	Not Detected	390	K	2.1
11104-28-2	Aroclor 1221	Not Detected	390	K	2.1
11141-16-5	Aroclor 1232	Not Detected	390	K	2.1

CAS# : Chemical Abstract Service Registry Number
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mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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Sample Number: AA53417 OFC013 13-17

PCBs as Aroclors

Analytical Method: 8082 **Date Tested:** 05/10/2005 **Analyst:** MF
Extraction Method: 3545 **Extraction Date:** 05/05/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
53469-21-9	Aroclor 1242	Not Detected	390	K	2.1
12672-29-6	Aroclor 1248	Not Detected	390	K	2.1
11097-69-1	Aroclor 1254	Not Detected	190		1.0
11096-82-5	Aroclor 1260	Not Detected	190		1.0
37324-23-5	Aroclor 1262	Not Detected	190		1.0
11100-14-4	Aroclor 1268	Not Detected	190		1.0

Sample Number AA53417 OFC013 13-17

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
7440-38-2	Arsenic - Sediment	16.7	mg/Kg dry	0.5		05/19/2005	7060	LAV
7782-49-2	Selenium - Sediment	0.7	mg/Kg dry	0.5		05/12/2005	7740	LAV
7440-22-4	Silver - Sediment	5.7	mg/Kg dry	0.25	D	05/13/2005	7761	LAV
	Digest Mercury - Sediment	Completed				05/09/2005	7471	RK
7439-97-6	Mercury - Sediment	.39	mg/Kg dry	0.05		05/10/2005	7471	TS
7440-39-3	Barium - Sediment	320	mg/Kg dry	1		05/23/2005	6010	MJ
7440-43-9	Cadmium - Sediment	36	mg/Kg dry	2.0		05/23/2005	6010	MJ
7440-47-3	Chromium - Sediment	130	mg/Kg dry	2		05/23/2005	6010	MJ
7440-50-8	Copper - Sediment	150	mg/Kg dry	2		05/23/2005	6010	MJ
	Digest Metals - Sediment	Completed				05/09/2005	3050	TK
7439-92-1	Lead - Sediment	180	mg/Kg dry	5		05/23/2005	6010	MJ
7440-66-6	Zinc - Sediment	340	mg/Kg dry	5		05/23/2005	6010	MJ
	% Total Solids	53.5	%	0.1		05/05/2005		DB
	Drying and Grinding - Sediment	Completed				05/06/2005		RK

CAS# : Chemical Abstract Service Registry Number
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Sample Number: AA53418 OFP003

Base Neutral Acid Compounds

Analytical Method: 8270 **Date Tested:** 05/19/2005 **Analyst:** SMH
Extraction Method: 3545 **Extraction Date:** 05/03/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
SURROGATE	#2 - Fluorobiphenyl#	Not Applicable		V	
SURROGATE	#2,4,6-Tribromophenol#	Not Applicable		V	
SURROGATE	#2-Fluorophenol#	Not Applicable		V	
SURROGATE	#Nitrobenzene - D5#	Not Applicable		V	
SURROGATE	#Phenol - D5#	Not Applicable		V	
SURROGATE	#p-Terphenyl-d14#	Not Applicable		V	
120-82-1	1,2,4-Trichlorobenzene	Not Detected	4400		10
95-50-1	1,2-Dichlorobenzene	Not Detected	2200		10
541-73-1	1,3-Dichlorobenzene	Not Detected	2200		10
106-46-7	1,4-Dichlorobenzene	Not Detected	2200		10
95-95-4	2,4,5-Trichlorophenol	Not Detected	7300		10
88-06-2	2,4,6-Trichlorophenol	Not Detected	7300		10
120-83-2	2,4-Dichlorophenol	Not Detected	7300		10
105-67-9	2,4-Dimethylphenol	Not Detected	7300		10
51-28-5	2,4-Dinitrophenol	Not Detected	38000		10
-14-2	2,4-Dinitrotoluene	Not Detected	7300		10
20-2	2,6-Dinitrotoluene	Not Detected	7300		10
91-58-7	2-Chloronaphthalene	Not Detected	4400		10
95-57-8	2-Chlorophenol	Not Detected	7300		10
534-52-1	2-Methyl-4,6-dinitrophenol	Not Detected	38000		10
91-57-6	2-Methylnaphthalene	Not Detected	5600		10
95-48-7	2-Methylphenol (o-Cresol)	Not Detected	7300		10
88-74-4	2-Nitroaniline	Not Detected	38000		10
88-75-5	2-Nitrophenol	Not Detected	7300		10
108394,106445	3 & 4-Methylphenol	Not Detected	15000		10
99-09-2	3-Nitroaniline	Not Detected	38000		10
101-55-3	4-Bromophenyl phenyl ether	Not Detected	4400		10
59-50-7	4-Chloro-3-methyl-phenol	Not Detected	7300		10
7005-72-3	4-Chlorodiphenylether	Not Detected	2200		10
100-01-6	4-Nitroaniline	Not Detected	38000		10
100-02-7	4-Nitrophenol	Not Detected	38000		10
83-32-9	Acenaphthene	Not Detected	2200		10
208-96-8	Acenaphthylene	Not Detected	2200		10
120-12-7	Anthracene	Not Detected	2200		10
103-33-3	Azobenzene	Not Detected	4400		10
56-55-3	Benz[a]anthracene	Not Detected	2200		10
50-32-8	Benzo[a]pyrene	Not Detected	4400		10
205-99-2	Benzo[b]fluoranthene	Not Detected	4400		10
191-24-2	Benzo[g,h,i]perylene	Not Detected	4400		10
207-08-9	Benzo[k]fluoranthene	Not Detected	4400		10
111-91-1	Bis(2-chloroethoxy)methane	Not Detected	4400		10

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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Organic Unit Mgr: Carol Smith
Systems Mgmt Unit: George Krisztian

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Sample Number: AA53418 OFP003

Base Neutral Acid Compounds

Analytical Method: 8270 **Date Tested:** 05/19/2005 **Analyst:** SMH
Extraction Method: 3545 **Extraction Date:** 05/03/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
111-44-4	Bis(2-chloroethyl)ether	Not Detected	2200		10
108-60-1	Bis(2-chloroisopropyl)ether	Not Detected	2200		10
117-81-7	Bis(2-ethylhexyl)phthalate	Not Detected	4400		10
85-68-7	Butyl benzyl phthalate	Not Detected	2200		10
86-74-8	Carbazole	Not Detected	7300		10
218-01-9	Chrysene	2600	2200		10
53-70-3	Dibenz[a,h]anthracene	Not Detected	4400		10
132-64-9	Dibenzofuran	Not Detected	7300		10
84-66-2	Diethylphthalate	Not Detected	2200		10
131-11-3	Dimethyl phthalate	Not Detected	4400		10
84-74-2	Di-n-butyl phthalate	Not Detected	2200		10
117-84-0	Di-n-octyl phthalate	Not Detected	4400		10
86-73-7	Fluorene	Not Detected	2200		10
206-44-0	Fluoroanthene	5500	2200		10
118-74-1	Hexachlorobenzene	Not Detected	4400		10
8-3	Hexachlorobutadiene	Not Detected	4400		10
47-4	Hexachlorocyclopentadiene	Not Detected	44000		10
67-72-1	Hexachloroethane	Not Detected	2200		10
193-39-5	Indeno(1,2,3-c,d)pyrene	Not Detected	4400		10
78-59-1	Isophorone	Not Detected	2200		10
91-20-3	Naphthalene	Not Detected	2200		10
98-95-3	Nitrobenzene	Not Detected	4400		10
67-75-9	N-Nitrosodimethylamine	Not Detected	7300		10
621-64-7	N-Nitrosodi-n-propylamine	Not Detected	4400		10
156-10-5	N-Nitrosodiphenylamine	Not Detected	4400		10
87-86-5	Pentachlorophenol	Not Detected	76000		10
85-01-8	Phenanthrene	2700	2200		10
108-95-2	Phenol	Not Detected	7300		10
129-00-0	Pyrene	4800	2200		10

Probable petroleum product(s) present.
RLs raised due to matrix interference.

PCBs as Aroclors

Analytical Method: 8082 **Date Tested:** 05/10/2005 **Analyst:** MF
Extraction Method: 3545 **Extraction Date:** 05/05/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
SURROGATE	#Decachlorobiphenyl#	60.6			
SURROGATE	#Tetrachloro-m-xylene#	56.0			
12674-11-2	Aroclor 1016	Not Detected	360	K	1.6
11104-28-2	Aroclor 1221	Not Detected	360	K	1.6

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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Sample Number: AA53418 OFP003

PCBs as Aroclors

Analytical Method: 8082 **Date Tested:** 05/10/2005 **Analyst:** MF
Extraction Method: 3545 **Extraction Date:** 05/05/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
11141-16-5	Aroclor 1232	Not Detected	360	K	1.6
53469-21-9	Aroclor 1242	340	220	JD 6	1.0
12672-29-6	Aroclor 1248	Not Detected	360	K	1.6
11097-69-1	Aroclor 1254	310	220	JD 6	1.0
11096-82-5	Aroclor 1260	Not Detected	220		1.0
37324-23-5	Aroclor 1262	Not Detected	220		1.0
11100-14-4	Aroclor 1268	Not Detected	220		1.0

Sample Number AA53418 OFP003

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
7440-38-2	Arsenic - Sediment	11.7	mg/Kg dry	0.5		05/19/2005	7060	LAV
7782-49-2	Selenium - Sediment	0.8	mg/Kg dry	0.5		05/12/2005	7740	LAV
7440-22-4	Silver - Sediment	0.5	mg/Kg dry	0.25		05/13/2005	7761	LAV
	Digest Mercury - Sediment	Completed				05/09/2005	7471	RK
9-97-6	Mercury - Sediment	.15	mg/Kg dry	0.05		05/26/2005	7471	TS
7440-39-3	Barium - Sediment	120	mg/Kg dry	1		05/23/2005	6010	MJ
7440-43-9	Cadmium - Sediment	2.4	mg/Kg dry	2.0		05/23/2005	6010	MJ
7440-47-3	Chromium - Sediment	41	mg/Kg dry	2		05/23/2005	6010	MJ
7440-50-8	Copper - Sediment	69	mg/Kg dry	2		05/23/2005	6010	MJ
	Digest Metals - Sediment	Completed				05/09/2005	3050	TK
7439-92-1	Lead - Sediment	150	mg/Kg dry	5		05/23/2005	6010	MJ
7440-66-6	Zinc - Sediment	450	mg/Kg dry	5		05/23/2005	6010	MJ
	% Total Solids	45.0	%	0.1		05/05/2005		DB
	Drying and Grinding - Sediment	Completed				05/06/2005		RK

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
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Sample Number: AA53419 DOFP

Base Neutral Acid Compounds

Analytical Method: 8270 **Date Tested:** 05/19/2005 **Analyst:** SMH
Extraction Method: 3545 **Extraction Date:** 05/03/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
SURROGATE	#2 - Fluorobiphenyl#	Not Applicable		V	
SURROGATE	#2,4,6-Tribromophenol#	Not Applicable		V	
SURROGATE	#2-Fluorophenol#	Not Applicable		V	
SURROGATE	#Nitrobenzene - D5#	Not Applicable		V	
SURROGATE	#Phenol - D5#	Not Applicable		V	
SURROGATE	#p-Terphenyl-d14#	Not Applicable		V	
120-82-1	1,2,4-Trichlorobenzene	Not Detected	3700		10
95-50-1	1,2-Dichlorobenzene	Not Detected	1800		10
541-73-1	1,3-Dichlorobenzene	Not Detected	1800		10
106-46-7	1,4-Dichlorobenzene	Not Detected	1800		10
95-95-4	2,4,5-Trichlorophenol	Not Detected	6000		10
88-06-2	2,4,6-Trichlorophenol	Not Detected	6000		10
120-83-2	2,4-Dichlorophenol	Not Detected	6000		10
105-67-9	2,4-Dimethylphenol	Not Detected	6000		10
51-28-5	2,4-Dinitrophenol	Not Detected	31000		10
-14-2	2,4-Dinitrotoluene	Not Detected	6000		10
-20-2	2,6-Dinitrotoluene	Not Detected	6000		10
91-58-7	2-Chloronaphthalene	Not Detected	3700		10
95-57-8	2-Chlorophenol	Not Detected	6000		10
534-52-1	2-Methyl-4,6-dinitrophenol	Not Detected	31000		10
91-57-6	2-Methylnaphthalene	Not Detected	4600		10
95-48-7	2-Methylphenol (o-Cresol)	Not Detected	6000		10
88-74-4	2-Nitroaniline	Not Detected	31000		10
88-75-5	2-Nitrophenol	Not Detected	6000		10
108394,106445	3 & 4-Methylphenol	Not Detected	12000		10
99-09-2	3-Nitroaniline	Not Detected	31000		10
101-55-3	4-Bromophenyl phenyl ether	Not Detected	3700		10
59-50-7	4-Chloro-3-methyl-phenol	Not Detected	6000		10
7005-72-3	4-Chlorodiphenylether	Not Detected	1800		10
100-01-6	4-Nitroaniline	Not Detected	31000		10
100-02-7	4-Nitrophenol	Not Detected	31000		10
83-32-9	Acenaphthene	Not Detected	1800		10
208-96-8	Acenaphthylene	Not Detected	1800		10
120-12-7	Anthracene	Not Detected	1800		10
103-33-3	Azobenzene	Not Detected	3700		10
56-55-3	Benz[a]anthracene	Not Detected	1800		10
50-32-8	Benzo[a]pyrene	Not Detected	3700		10
205-99-2	Benzo[b]fluoranthene	Not Detected	3700		10
191-24-2	Benzo[g,h,i]perylene	Not Detected	3700		10
207-08-9	Benzo[k]fluoranthene	Not Detected	3700		10
111-91-1	Bis(2-chloroethoxy)methane	Not Detected	3700		10

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
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Sample Number: AA53419 DOFP

Base Neutral Acid Compounds

Analytical Method: 8270 **Date Tested:** 05/19/2005 **Analyst:** SMH
Extraction Method: 3545 **Extraction Date:** 05/03/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
111-44-4	Bis(2-chloroethyl)ether	Not Detected	1800		10
108-60-1	Bis(2-chloroisopropyl)ether	Not Detected	1800		10
117-81-7	Bis(2-ethylhexyl)phthalate	Not Detected	3700		10
85-68-7	Butyl benzyl phthalate	Not Detected	1800		10
86-74-8	Carbazole	Not Detected	6000		10
218-01-9	Chrysene	Not Detected	1800		10
53-70-3	Dibenz[a,h]anthracene	Not Detected	3700		10
132-64-9	Dibenzofuran	Not Detected	6000		10
84-66-2	Diethylphthalate	Not Detected	1800		10
131-11-3	Dimethyl phthalate	Not Detected	3700		10
84-74-2	Di-n-butyl phthalate	Not Detected	1800		10
117-84-0	Di-n-octyl phthalate	Not Detected	3700		10
86-73-7	Fluorene	Not Detected	1800		10
206-44-0	Fluoroanthene	2800	1800		10
118-74-1	Hexachlorobenzene	Not Detected	3700		10
8-3	Hexachlorobutadiene	Not Detected	3700		10
+7-4	Hexachlorocyclopentadiene	Not Detected	37000		10
67-72-1	Hexachloroethane	Not Detected	1800		10
193-39-5	Indeno(1,2,3-c,d)pyrene	Not Detected	3700		10
78-59-1	Isophorone	Not Detected	1800		10
91-20-3	Naphthalene	Not Detected	1800		10
98-95-3	Nitrobenzene	Not Detected	3700		10
67-75-9	N-Nitrosodimethylamine	Not Detected	6000		10
621-64-7	N-Nitrosodi-n-propylamine	Not Detected	3700		10
156-10-5	N-Nitrosodiphenylamine	Not Detected	3700		10
87-86-5	Pentachlorophenol	Not Detected	62000		10
85-01-8	Phenanthrene	Not Detected	1800		10
108-95-2	Phenol	Not Detected	6000		10
129-00-0	Pyrene	2400	1800		10

Probable petroleum product(s) present.
RLs raised due to matrix interference.

PCBs as Aroclors

Analytical Method: 8082 **Date Tested:** 05/10/2005 **Analyst:** MF
Extraction Method: 3545 **Extraction Date:** 05/05/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
SURROGATE	#Decachlorobiphenyl#	67.8			
SURROGATE	#Tetrachloro-m-xylene#	61.0			
12674-11-2	Aroclor 1016	Not Detected	570	K	3.1
11104-28-2	Aroclor 1221	Not Detected	570	K	3.1

CAS# : Chemical Abstract Service Registry Number
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ug / Kg : microgram / kilogram (ppb)
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Sample Number: AA53419 DOFP

PCBs as Aroclors

Analytical Method: 8082 **Date Tested:** 05/10/2005 **Analyst:** MF
Extraction Method: 3545 **Extraction Date:** 05/05/2005 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
11141-16-5	Aroclor 1232	Not Detected	570	K	3.1
53469-21-9	Aroclor 1242	560	180	JD 6	1.0
12672-29-6	Aroclor 1248	Not Detected	570	K	3.1
11097-69-1	Aroclor 1254	290	180	JD 6	1.0
11096-82-5	Aroclor 1260	Not Detected	180		1.0
37324-23-5	Aroclor 1262	Not Detected	180		1.0
11100-14-4	Aroclor 1268	Not Detected	180		1.0

Sample Number AA53419 DOFP

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
7440-38-2	Arsenic - Sediment	6.3	mg/Kg dry	0.5		05/19/2005	7060	LAV
7782-49-2	Selenium - Sediment	ND	mg/Kg dry	0.5		05/12/2005	7740	LAV
7440-22-4	Silver - Sediment	0.3	mg/Kg dry	0.25		05/13/2005	7761	LAV
	Digest Mercury - Sediment	Completed				05/09/2005	7471	RK
)-97-6	Mercury - Sediment	.24	mg/Kg dry	0.05		05/26/2005	7471	TS
7440-39-3	Barium - Sediment	64	mg/Kg dry	1		05/23/2005	6010	MJ
7440-43-9	Cadmium - Sediment	ND	mg/Kg dry	2.0		05/23/2005	6010	MJ
7440-47-3	Chromium - Sediment	20	mg/Kg dry	2		05/23/2005	6010	MJ
7440-50-8	Copper - Sediment	43	mg/Kg dry	2		05/23/2005	6010	MJ
	Digest Metals - Sediment	Completed				05/09/2005	3050	TK
7439-92-1	Lead - Sediment	61	mg/Kg dry	5		05/23/2005	6010	MJ
7440-66-6	Zinc - Sediment	140	mg/Kg dry	5		05/23/2005	6010	MJ
	% Total Solids	54.6	%	0.1		05/05/2005		DB
	Drying and Grinding - Sediment	Completed				05/06/2005		RK

CAS# : Chemical Abstract Service Registry Number
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ug / L : microgram / liter (ppb)
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Qualifier Code	Qualifier Description
1	Result(s) and RL(s) are estimated due to low surrogate recovery.
2	Result is estimated due to high surrogate recovery.
3	Result(s) and RL(s) are estimated due to low matrix spike recovery.
4	Result is estimated due to high matrix spike recovery.
5	Result and RL are estimated due to low continuing calibration standard criteria failure.
6	Result is estimated due to high continuing calibration standard criteria failure.
7	Result(s) and RL(s) are estimated due to poor precision.
8	Result(s) and RL(s) are estimated due to low recovery of batch QC.
9	Result outside QC acceptance criteria.
A	Value reported is the mean of two or more determinations.
C	Value calculated from other independent parameters.
D	Analyte value quantified from a dilution(s); reporting limit (RL) raised.
E	Result is estimated due to high recovery of batch QC.
F	Free cyanide was not analyzed due to low level of total cyanide.
G	Result and RL are estimated due to initial calibration standard criteria failure.
H	Recommended laboratory holding time was exceeded.
I	Dilution required due to matrix interference; reporting limit (RL) raised.
J	Analyte was positively identified. Value is an estimate.
JA	Result is estimated due to multiple Aroclors present.
JC	Result is estimated since confirmation analysis did not meet acceptance criteria
JD	Due to severe degradation, specific Aroclor identification is difficult and quantitation is estimated.
K	RL(s) raised due to matrix interferences.
KR	RL(s) raised due to low sample volume submitted.
KS	RL(s) raised due to low total solids.
KW	RL(s) raised due to light sample weight.
LB	Reported library search compounds are tentative identifications with estimated concentrations.
M	The level of the method preparation blank (MPB) is reported in the qualifier column.
N	Non-homogeneous sample made analysis of sample questionable.
O	Result and RL estimated due to analysis from an open vial.
P	Recommended sample collection/preservation technique not used; reported result(s) is an estimate.
Q	Quantity of sample insufficient to perform analyses requested.
R	Result confirmed by re-extraction and analysis.
S	Supernatant analyzed.
T	Reported value is less than the reporting limit (RL). Result is estimated.
V	Value not available due to dilution.
W	Reported value is less than the method detection limit (MDL).
X	Methods 8260 & 624 are used to analyze volatile organics that have boiling points below 200°C. 2-Methylnaphthalene & naphthalene have boiling points above 200°C and are better suited to analysis by methods 8270 or 625 as semivolatile organics.
PI	Possible interference may have affected the accuracy of the laboratory result
Z	Result reported below the RL to meet the TDL in RRD Op Memo 2 (10/22/04) multiplied by applicable dilution factor.

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