

Resource Conservation and Recovery Act Facility Investigation Phase II Report

Volume III of III

General Motors Corporation NAO Flint Operations Site ID #MID 005 356 712 Flint, Michigan

July 14, 2006



Appendix F

Transport and Fate of PCBs in NAO Flint Storm Sewers

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 $3 \mu g/L$ 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.

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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 μ g/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 μ g/kg wet weight, and more than 25 percent of the samples were greater than 500 μ g/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 Guide¹ 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.

References

MDEQ. 1997. A biological survey of the Flint River and selected tributaries, Genesee, Lapeer, and Saginaw Counties, Michigan, July 12–15, 1993. Staff Report. Michigan Department of Environmental Quality, Surface Water Quality Division.

MDEQ. 2001a. A biological survey of the Mainstem Flint River and its tributaries, Genessee, Lapeer, Saginaw, and Shiawassee Counties, Michigan, July, August, and September 1998. Staff Report. Michigan Department of Environmental Quality, Surface Water Quality Division.

MDEQ. 2001b. A biological survey of the North and South Branch Flint river and tributaries, Lapeer and Oakland Counties, Michigan, July and August, 1998. Staff Report. Michigan Department of Environmental Quality, Surface Water Quality Division.

Taylor, G.J. 1993. Personal Communication (letter to R. Metcalf regarding Flint River sediment sampling for PCBs, dated January 25, 1993). Michigan Department of Natural Resources, Lansing, MI.

Wong, C.S., P.D. Capel, and L.H. Nowell. (USGS). 2000. Organochlorine pesticides and PCBs in stream sediment and aquatic biota – initial results from the National Water-Quality Assessment Program, 1992-1995. Water-Resources Investigations Report 00-4053.

WW Engineering & Science. 1992. Flint River sediment sampling, February 5, 1992. Final Report. Prepared for General Motors—BOC Flint Operations. WW Engineering & Science, Inc.

US EPA ARCHIVE DOCUMENT





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

				Sa	mpling E	Event (µg/L	.)					
	1996	1997	1998	1999	Ĵ	2	000	200	01	20	02	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 (0.2)				
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 μ g/L)

	Date	Aroclor-1242	Aroclor-1248	Aroclor-1260		
Sample ID	Collected					
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.

		Collection			Sample	Length	Weight	Lipid	Total PCBs	
Station	Sample Location	Date	Sex	Species	Туре	(in.)	(lbs)	(ppm)	(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	М	Carp	Fs	23.6	5.3	1.1	0.149	
127	Below Flint	08/30/93	М	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	М	Smallmouth bass	F	12.4	1.2	0.95	0.101	
127	Below Flint	10/08/98	М	Smallmouth bass	F	13.3	1.4	0.85	0.117	
127	Below Flint	10/08/98	М	Smallmouth bass	F	12.9	1.2	0.9	0.171	
127	Below Flint	10/08/98	М	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	М	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	М	Carp	Fs	20.4	4.4	1.45	0.108	
127	Below Flint	10/08/98	М	Carp	Fs	22.4	5.2	4.55	0.537	
127	Below Flint	10/08/98	М	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		Smailmouth 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. State of Michigan total PCB data for fish from the Flint River

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Table 3	3. (coi	nt.)
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		Collection			Sample	Length	Weight	Lipid	Total PCBs	
	Sample Location	Date	Sex	Species	Туре	(in.)	(lbs)	(ppm)	(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 <i>K</i>	
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 <i>K</i>	
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 <i>K</i>	
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	М	Carp	Fs	24.8	5.9	0.35	0.025 K	
129	Mott Reservoir	04/16/96	М	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	Ŵ	6.5	0.1	5.6	0.115	Caged fish study; composite of 3 fish collected after 16 day
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 day
126	Saginaw Co., river mouth	08/02/88		Channel catfish	Ŵ	6.3	0.1	5.6	0.115	Caged fish study; composite of 3 fish collected after 16 day

8601811.001 0501\flint-pcb_tab.xls

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2 of 3

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		Collection			Sample	Length	Weight	Lipid	Total PCBs	
	Sample Location	Date	Sex	Species	Туре	(in.)	(lbs)	(ppm)	(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

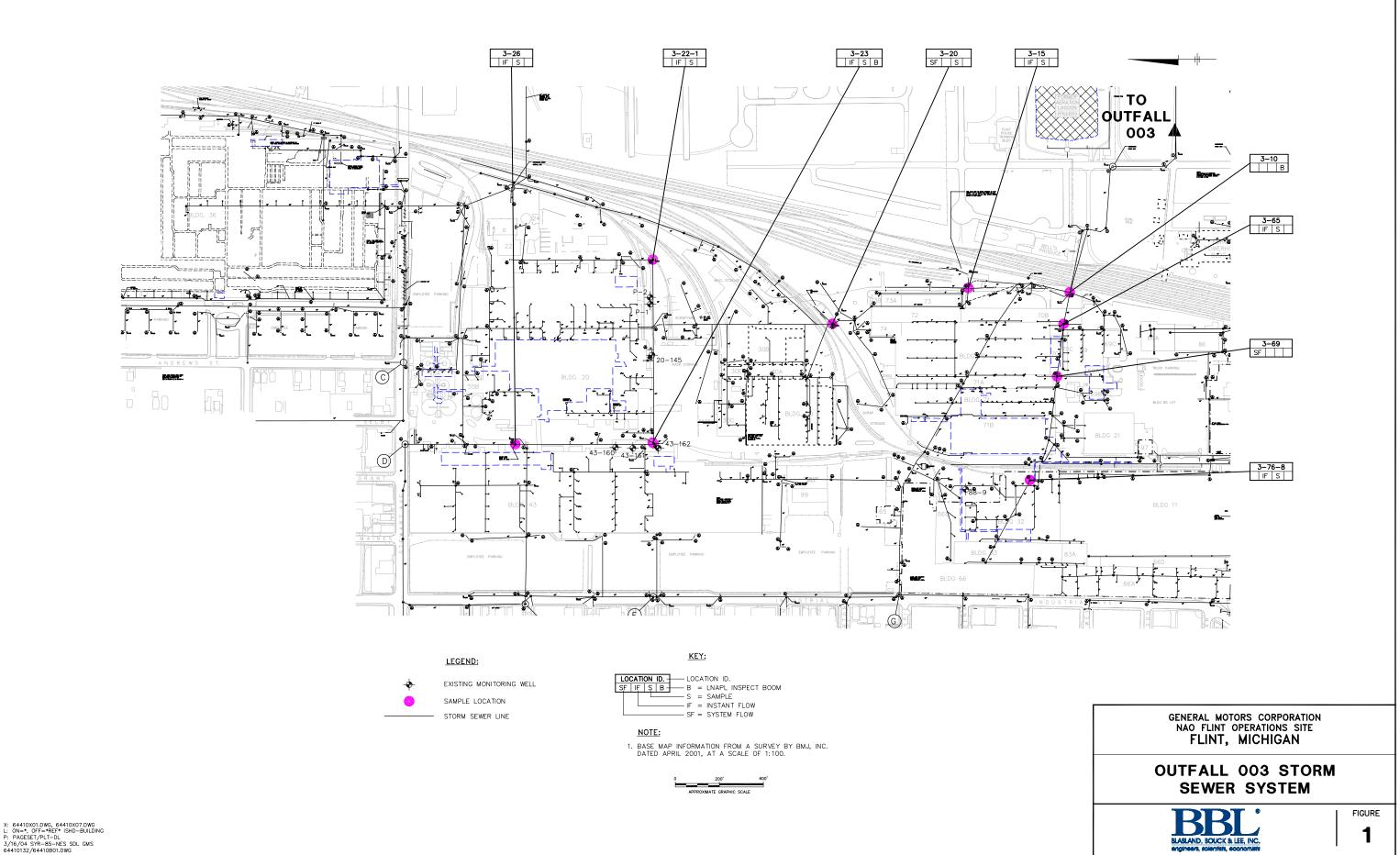
W whole-body

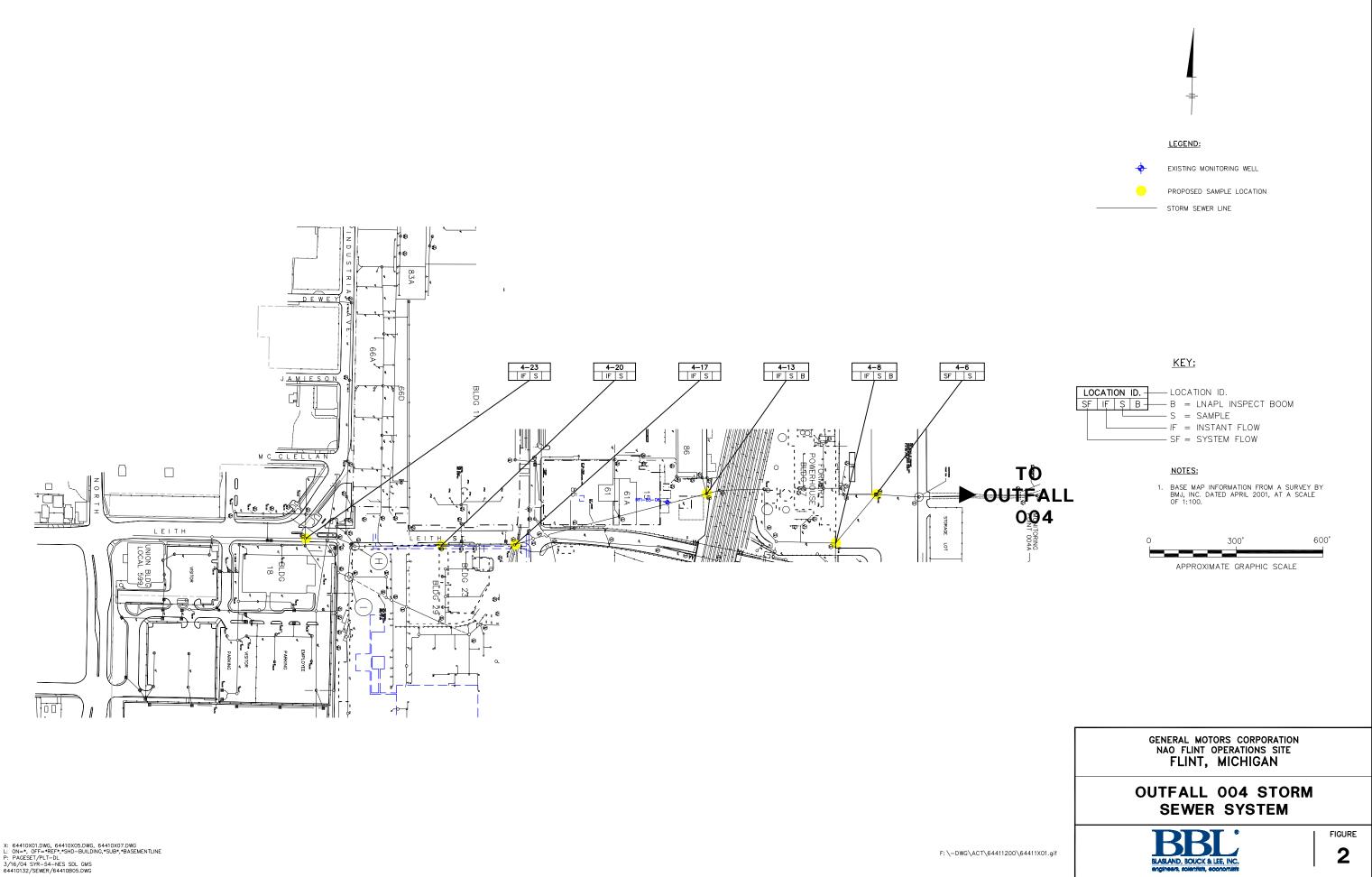
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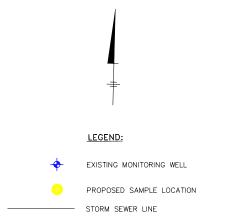
US EPA ARCHIVE DOCUMENT

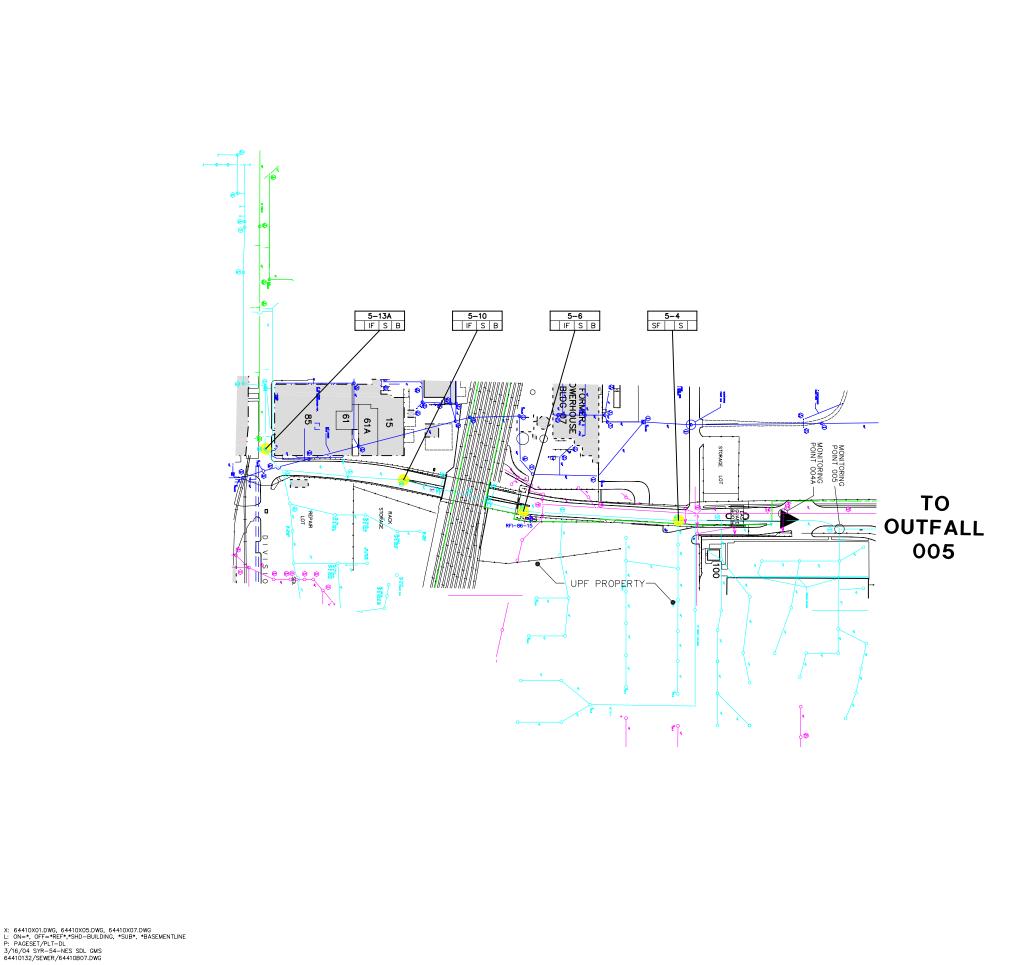














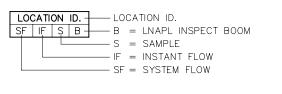
LEGEND:

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EXISTING MONITORING WELL PROPOSED SAMPLE LOCATION

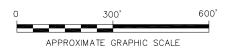
STORM SEWER LINE

<u>KEY:</u>

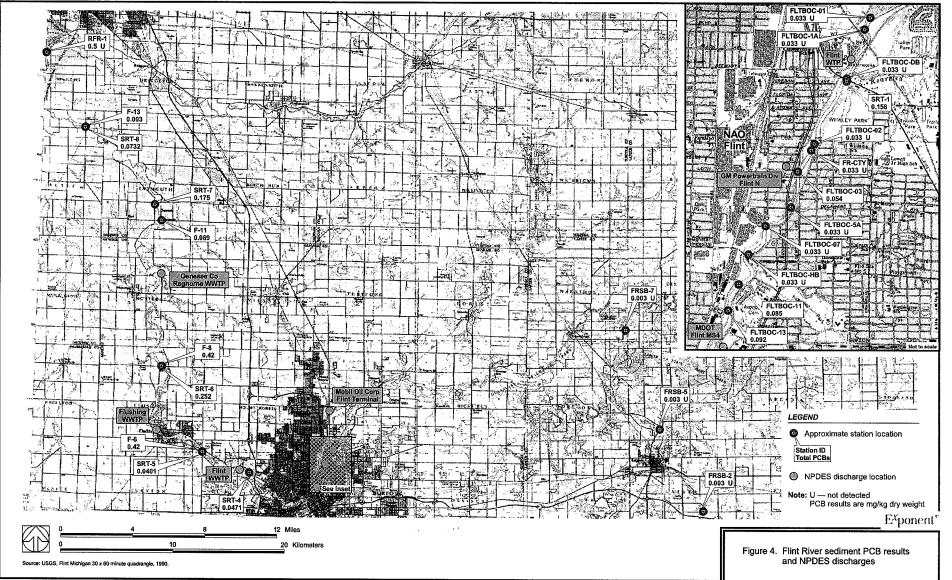


NOTES:

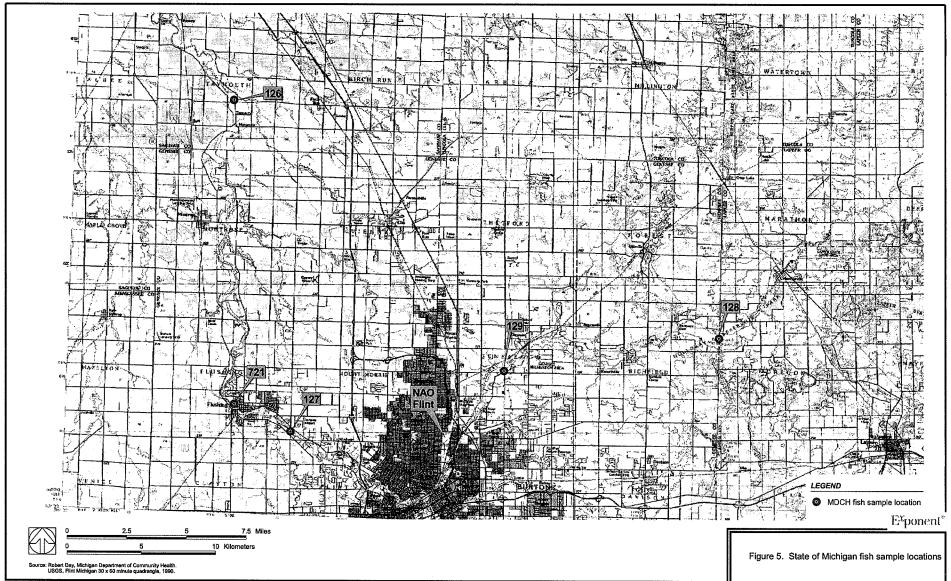
BASE MAP INFORMATION FROM A SURVEY BY BMJ, INC. DATED APRIL 2001, AT A SCALE OF 1:100.







8501811.001 0501 | Feb 27, 2004 | plant view | Fig 4 historic stations layout | g:\gm_flint\projects\mdch_samples_0903.apr



8601811.001 0101 | Feb 27, 2004 | MDCH sample viaw | Fig 5 MDCH fish layout | g:lgm_flint/projects/undch_samples_0903.apr

Attachment 1

RI ASI AND ROICK To: Randy Brown Date: March 18, 2005 From: **Brian Loomis** CC: Mark Lovejoy

Re: GM NAO Flint – Outfall 003 Catchbasin Sediment Sampling

Randy-

MEMORANDU

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

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Transmitted Via [Click here and enter transmitted via] Page 1 of 1

FILE 64410 #5



Analytical Laboratory Report

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

Report to

Attention: Mr. Mark Lovejoy Blastand, Bouck & Lee, Inc. 1920 Opdyke Ct. Auburn Hilts, 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. Report shall not be reproduced except in full, without the written approval of Merit Laboratories.

Violetta F. Murshah

Violetta F. Murshak Laboratory Director

Report to Blasland, Bouck & Lee, Inc. Project: 64410/ GM NAO Flint Storm Sewers



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

# Туре	Preservative(s)	Refrigerated?	Arrival Te	mp. (C) Therm	ometer #	
1 8cz. Glass	None	Yes	8	3		
Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst CAS # Flag
Extraction / Prep.						البيدي فيستعم ومشته ومستعم ومش
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: Soll COC Reference: 1446

Sample Containers

#	Туре	Preservative(s)	Refrigerated?	Arrival Ter	mp. (C) Therm	ometer #	
1	8oz. Glass	None	Yes	8	3		
Ana	ysia	Results	Units	RDL	Method	Run Date/Time	Analyst CAS # Flag
Ext	action / Prep.						
Extr	action, PCB	Completed			3550B	09/17/04 17:28	BGD
Inoi	ganics						
Tota	l Solids	23.5	%	1	160.3	09/10/04 13:00	LBR
Org	enics						
PCE	List						
PCE	-1016	Not detected	ug/kg	1,000	8082	09/21/04 12:07	JANB 12674-11-2
PCE	-1242	3,400	ug/kg	1,000	8082	09/21/04 12:07	JANB 53469-21-9
PCE	-1221	Not detected	ug/kg	1,000	8082	09/21/04 12:07	JANB 11104-28-2
PCE	-1232	Not detected	ug/kg	1,000	8082	09/21/04 12:07	JANB 11141-16-5
PCE	-1248	Not detected	ug/kg	1,000	8082	09/21/04 12:07	JANB 12672-29-6
PCE	-1254	Not detected	ug/kg	1,000	8082	09/21/04 12:07	JANB 11097-69-1
PCE	-1260	2,500	ug/kg	1,000	8082	09/21/04 12:07	JANB 11096-82-5

				· · · · ·
BBBL: BLASLAND, BOUCK & LEF, INC. engineers, scientists, economists		IN OF CUSTODY & I ANALYSIS REQUE		Lab Work Order #
Contact & Company Name: MARK Lovesby-BBL Address: 1920 DppyKE CF State Zip	Telephone: 248 377 9162 Fax: 248 377 94/3 e-mail address:	Preservative 4°C Pillered (/) N Containere 2 Containere 8 PARAME	TER ANALYSIS & METHOD	Keys Preservation Key: Container Information Key: A. H ₂ SO ₄ 1. 40 mi Yial B. HCL 2. 1 L Amber C. HNO ₃ 3. 250 mi Plastic D. NaOH 4. 500 mi Plastic E. None 5. Encore F. Other: 6. 2 oz Glass Other 7. 4 oz Glass
MUBER MILES MI Proj. Name/Location (City/State): SM NAD CINIT Sample's Printed Name: B. CODMIS Sample ID	Project #: 44/10 . 135 Semajor Signature: Collection Date Time Comp Grab	a per		G. Other: 8. 8 oz Glass-, H. Other: 9. Other: 10. Other: Matrix Key: S0 - Soli SE - Sediment NL - NAPL/OI W - Water SL - Sludge SW - Semple Wipe T - Tissue A - Air Other: REMARKS
3-22-2 (090804) 3-31-6 (090804)	9/8/04 1130 × SorL 1/8/04 1200 × SOIL			
· · · · · · · · · · · · · · · · · · ·				
3pecial Instructions/Comments:	ANA	14/2E SED	DENT DALL	
Laboratory Informat ab Name: Mari + Cooler packed with ice (/)	Cooler Custody Seal (/):	Relinquished By	Received By Received By Printed Name: Printed Name: ChAIS (SAM) (CA Signalula: Signalula: Signatula:	Les JAther Paulo Straw
Specify Turnaround Requirements: STNDDALD Shipping Tracking #: COVALEN		imi BBC islet/mg/ 1/B/E4	Film/Courles Firm/Courles	lest, Firm: Merit

• ~ ~ •

	BOUCK & LEE, INC. scientists, economists	
То:	Kurt Blizzard, GM Jean Caufield, GM	D
From:	Derek C. Kaiding	C
Re:	Results of April 28, 2005 Flint River Sediment Split Sampling Event	

Date: September 2, 2005

cc:

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

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/

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

GENERAL MOTORS CORPORATION NAO FLINT OPERATIONS SITE FLINT, MICHIGAN

Sample II Date Collected		Outfall 005	Outfail 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
Соррег	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
Arocior-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
B-Nitroaniline	ug/kg	500 U	700 U	500 U
I,6-Dinitro-2-methylphenol	ug/kg	500 U	700 U	500 U
-Bromophenyl phenyl ether	ug/kg	500 U	300 U	500 U
I-Chioro-3-methylphenol	ug/kg	500 U	300 U	500 U
I-Chloroaniline	ug/kg	500 UJ	700 UJ	500 UJ
-Chlorophenyl phenyl ether	ug/kg	500 U	300 U	500 U
-Nitroaniline	ug/kg	500 U	700 U	500 U
-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
Inthracene	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

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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 01 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
luoranthene	ug/kg	1,600	300 U	2,000
luorene	ug/kg	500 U	300 U	500 U
lexachlorobenzene	ug/kg	500 U	300 U	500 U
lexachlorobutadiene	ug/kg	500 U	300 U	500 U
lexachlorocyclopentadiene	ug/kg	R	300 U	500 UJ
lexachloroethane	ug/kg	500 UJ	300 U	500 U
ndeno(1,2,3-cd)pyrene	ug/kg	1,200 J	300 U	1,500
sophorone	ug/kg	500 U	300 U	500 U
-Nitrosodi-n-propylamine	ug/kg	500 U	300 U	500 U
-Nitrosodiphenylamine	ug/kg	500 U	300 U	500 U
aphthalene	ug/kg	500 U	300 U	500 U
itrobenzene	ug/kg	500 U	200 U	500 U
entachlorophenol	ug/kg	500 U	700 U	500 U
henanthrene	ug/kg	700	500	800
henol	ug/kg	500 U	300 U	500 U
yrene	ug/kg	1,300	800	1,600
OC 1				
1,1-Trichloroethane	ug/kg	200 U	100 U	200 U
1,2,2-Tetrachloroethane	ug/kg	200 U	100 U	200 U
1,2-Trichloroethane	ug/kg	200 U	100 U	200 U
1-Dichloroethane	ug/kg	200 U	100 U	200 U
1-Dichloroethene	ug/kg	200 U	100 U	200 U
2,4-Trichlorobenzene	ug/kg	300 UJ	200 UJ	300 UJ
2-Dibromo-3-chloropropane (DBCP)	ug/kg	200 UJ	100 UJ	200 UJ
2-Dibromoethane (Ethylene Dibromide)	ug/kg	200 U	100 U	200 U
2-Dichlorobenzene	ug/kg	200 U	100 U	200 U
2-Dichloroethane	ug/kg	200 U	100 U	200 U
2-Dichloropropane	ug/kg	200 U	100 U	200 U
B-Dichlorobenzene	ug/kg	200 U	100 U	200 U
I-Dichlorobenzene	ug/kg	200 U	100 U	200 U
Butanone (Methyl Ethyl Ketone)	ug/kg	2,000 U	2,000 U	
lexanone	ug/kg	8,000 U		2,000 U
Aethyl-2-Pentanone (Methyl Isobutyl Ketone)	ug/kg	8,000 U	5,000 U 5,000 U	8,000 U 8,000 U
		0.000 0 1	3.UUU U I	

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

GENERAL MOTORS CORPORATION NAO FLINT OPERATIONS SITE FLINT, MICHIGAN

Sample ID: Date Collected:		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
Chioroethane	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 Ū
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
Toiuene	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
Vinyi chloride	ug/kg	300 U	200 U	300 U

Note:

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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.



APPENDIX A

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



Meri Laboratories, Inc.

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

Analytical Laboratory Report

Report produced by

Merit Laboratories 2080 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 Filmt 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. Report shall not be reproduced except in full, without the written approval of Merit Laboratories.

Violetta F. Murshah

Violetta F. Murshak Laboratory Director

Report to Blasland, Bouck & Lee, Inc. Project: 64410/ NAO Flint North

Page 1 of 13

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



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 Soz. Glass	Preservative(s) None	Refrigerate Yes	4		mometer #		
2 602. (8855	NUM	Tes	4	3			
Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst CAS #	Ft
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			30508	05/17/05 09:30	MSH	
Inorganics							
Total Solids	32.3	*	f	160,3	05/05/05 08:15	ЧU	
Metais							
Amenic	10.4	mg/kg	0.10	6020	1647105 (3.00		
Barlum	172	mg/kg	1.0	6020	05/17/05 17:08	SLS 7440-38-2	
Cadmium	1.20	mg/kg	0.05	6020	05/17/05 17:08	SLS 7440-39-3	
Chromium	17.2	mg/kg	0.50	6020 6020	05/17/05 17:08	SLS 7440-43-9	
copper	48.0	mg/kg	1.0	6020 6020	05/17/05 17:08	SLS 7440-47-3	
ead	75.5	mg/kg	1.0	6020	05/17/05 17:08	SLS 7440-50-8	
lercury	0.11	mg/kg	0.05	245.1M	05/17/05 17:08	SLS 7439-92-1	
elenium	0.66	mg/kg	0.20	6020	05/10/05 15:55	JRT 7439-97-8	
iver	0.24	mg/kg	0.10	6020	05/17/05 17:08	SLS 7782-49-2	
inc	235	mg/kg	1.0	6020	05/17/05 17:08 05/17/05 17:08	SLS 7440-22-4 SLS 7440-88-8	
CL PCB List (Column 1) 8-1016	Not detected	ug/kg	330	8082	05/06/05 11:31	JANB 12674-11-2	
CB-1242	Not detected	ug/kg	330	8082	05/08/05 11:31		
CB-1221	Not detected	ug/kg	330	8082	05/06/05 11:31	JANB 53469-21-9 JANB 11104-28-2	
CB-1232	Not detected	ug/kg	330	8082	05/08/05 11:31	JANB 11141-16-5	
CB-1248	Not detected	ug/kg	330	8082	05/06/05 11:31	JANB 12672-29-6	
CB-1254	30	ug/kg	330	8082	05/08/05 11:31	JANB 11097-69-1	
B-1260	Not detected	ug/kg	330	8082	05/06/05 11:31	JANB 11095-82-5	•
L PCB List (Column 2)					• •		
B-1016	Not detected	ug/kg	330	8052	05/06/05 11:31	JANB 12674-11-2	
B-1242	Not detected	ug/kg	330	8062	05/06/05 11:31	JANB 53469-21-9	
8-1221	Not detected	ug/kg	330	8082	05/06/05 11:31	JANB 11104-28-2	
B-1232	Not detected	ug/kg	330	8082	05/08/05 11:31	JANB 11141-16-5	
B-1248	Not detected	ug/kg	330	8082	05/06/05 11:31	JANB 12672-29-6	
B-1254	40	ug/kg	330	8052	05/06/05 11:31	JANB 11097-69-1	J
8-1260	Not detected	ug/kg	330	8082	05/08/05 11:31	JANB 11098-82-5	J
anics - Semi-Volatiles							
Semi-Voiatile Organics							
naphthene	Not detected	ug/kg	500	8270C	05/12/05 14:19		
stimated value less than reporting li		·• -•		VEIVO	vari2/02 14(19	ARH 83-32-9	1
EVATED DETECTION LIMITS DU							
ort to Blasiand, Bouck & Lee, Inc.		Page	2 of 13			Bannet IB. Bassar and	~~
ect: 64410/ NAO Flint North						Report ID: S22025.01(л)

Project: 64410/ NAO Flint North

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

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Lab 1 pc

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

Analysis	Results	Units	RDL	Method	Run Date/Time	Analys	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 delected	ug/kg	500	8270C	05/12/05 14:19	ARH	95-85-2	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	600	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)pyrane	800	ug/kg	500	8270C	05/12/05 14:19	ARH	50-32-8	1
Benzo(b)fluoranthene	800	nð\kð	500	8270C	05/12/05 14:19	ARH	205-99-2	1
Benzo(ghi)perytene	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-Chioronaphthalene	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	91-58-7	1
2-Chicrophenoi	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	95-57-8	1
4-Chioro-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	108-47-8	1
4-Chlorophanyl phenyl ether	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	7005-72-3	1
Caprolaciam	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	105-60-2	1
Cerbazole	100	ug/kg	500	8270C	05/12/05 14:19	ARH	86-74-8	Ji
bis(2-Chloroethoxy)meihane	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	111-91-1	1
bis(2-Chioroethyi)ether	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	111-44-4	i
bis(2-Chloroisopropyl)ether	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	108-80-1	t
Chrysene	900	ug/kg	600	8270C	05/12/05 14:19	ARH	218-01- 0	1
2,4-Dichlorophenoi	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	120-83-2	1
2,4-Dimethylphanol	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	105-87-9	1
2,4-Dinikrophenoi	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	21-14-2	1
2.6-Dinitrotoluene	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH (08-20-2	1
3,3'-Dichiorobenzidina	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH (1-94-1	1
1,5-Dinäro-2-methylphenol	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH S	i 34-52- 1	1
Dibenzo(ah)anthracene	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH 5	i 3-70-3	1
Dibenzofuran	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH 1	32-64-9	1
Diethyl phtheliate	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH 8	4-66-2	t
Dimethyl phthalate	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH 1	31-11-3	1
is(2-Ethylhexyi)phihalate	600	ug/kg	500	8270C	05/12/05 14:19	ARH 1	17-81-7	1
humathana	1,600	ug/kg	500	8270C	05/12/05 14:19	ARH 2	06-44-0	1
Riorana Fluorana	Not detected	ug/kg	500	\$270C	05/12/05 14:19	ARH 8	8-73-7	1
(exachlombenzene	Not detected	vg/kg	500	8270C	05/12/05 14:19	ARH 1	18-74-1	1
lexachionbutadiene	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH 8	7-68-3	1
iexachiorocyclopentadiene	Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH 7	7-47-4	t
lexachiorocyclopentaliene	Not detected	ug/kg	500	8270C	05/12/05 14:19		7-72-1	1
	1,200	ug/kg	500	8270C	05/12/05 14:19		93-39-5	1
ideno(1,2,3-od)pyrana	Not detected	ug/kg	500	8270C	05/12/05 14:19		6-59-1	1
iophorone Methylana	Not detected	ug/kg	500	8270C	05/12/05 14:19		1-57-6	1
-Methyinaphthelene	Not detected	ug/kg	500	6270C	05/12/05 14:19		5-48-7	1
-Methylphenol	101 00100000	-yrig	~~~	02100				•

1-ELEVATED DETECTION LIMITS DUE TO LOW TOTAL SOLIDS

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

Report to Blasland, Bouck & Lee, Inc. Project: 64410/ NAO Flint North

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Report ID: \$22025.01(01) Generated on 05/19/2005



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Analytical Laboratory Report

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

Not detected Not detected	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	500 500 500 500 500 500 500 500	8270C 8270C 8270C 8270C 8270C 8270C	05/12/05 14:19 05/12/05 14:19 05/12/05 14:19 05/12/05 14:19 05/12/05 14:19 05/12/05 14:19	ARH ARH ARH ARH	88-74-4 88-75-5 99-09-2	
Not detected Not detected	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	500 500 500 500 500 500	8270C 8270C 8270C 8270C 8270C 8270C	05/12/05 14:19 05/12/05 14:19 05/12/05 14:19 05/12/05 14:19	ARH ARH ARH ARH	88-74-4 88-75-5 99-09-2	
Not detected Not detected	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	500 500 500 500 500 500	8270C 8270C 8270C 8270C 8270C 8270C	05/12/05 14:19 05/12/05 14:19 05/12/05 14:19 05/12/05 14:19	ARH ARH ARH ARH	88-74-4 88-75-5 99-09-2	1 1
Not detected Not detected	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	500 500 500 500 500	8270C 8270C 8270C 8270C	05/12/05 14:19 05/12/05 14:19 05/12/05 14:19	ARH ARH ARH	88-75-5 99-09-2	1
Not detected Not detected 700	ug/kg ug/kg ug/kg ug/kg	500 500 500 500	8270C 8270C 8270C	05/12/05 14:19 05/12/05 14:19	ARH ARH	99-09-2	
Not detected Not detected Not detected Not detected Not detected Not detected Not detected Not detected Not detected 700	ngyra ngyra ngyra ngyra	500 500 500	8270C 8270C	05/12/05 14:19	ARH		1
Nat detected Not detected Not detected Not detected Not detected Not detected Not detected Not detected 700	ug/kg ug/kg ug/kg	5 00 500	8270C			100 04 0	
Not detected Not detected Not detected Not detected Not detected Not detected 700	ug/kg ug/kg ug/kg	500		05/12/05 14-10		100-01-6	· 1
Not detected Not detected Not detected Not detected Not detected 700	ug/kg ug/kg				ARH	100-02-7	1
Not detected Not detected Not detected Not detected 700	ug/kg	500	8270C	05/12/05 14:19	ARH	621-64-7	1
Not detected Not detected Not detected 700			8270C	05/12/05 14:19	ARH	85-30-6	1
Not detected Not detected 700	ug/kg	500	8270C	05/12/05 14:19	ARH	91-20-3	1
Not detected 700	-	500	8270C	05/12/05 14:19	ARH	98-95-3	1
700	ug/kg	500	8270C	05/12/05 14:19	ARH	117-84-0	1
	ug/kg	500	8270C	05/12/05 14:19	ARH	87-86-5	1
	ug/kg	500	8270C	05/12/05 14:19	ARH	85-01-8	1
Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	108-95-2	1
1,300	ugikg	500	8270C	05/12/05 14:19	ARH	129-00-0	1
Not detected	ug/kg	500	8270C	05/12/05 14:19	ARH	95-95-4	. 1
Not datacted	ug/kg	500	8270C	05/12/05 14:19	ARH	88-08-2	1
					•		
fot detected	ug/kg	2,000	5035/82608	05/12/05 15:08	JGH	67-64-1	
lot detected	ug/kg	2,000	5035/82608	05/12/05 15:08	JGH	78-93-3	
ict detected	ug/kg	200	5035/82808	05/12/05 15:08	JGH	71-43-2	
lot detected	ug/kg	200	5035/8260B	05/12/05 15:08	JGH	75-27-4	
iot detected	ug/kg	200	5035/82808	05/12/05 15:08			
ot delected	ug/kg	800	6035/82608				
ot detected	ug/kg	800					
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t delected	(11)/K(1						
t delected			5035/8260B	05/12/05 15:08		124-48-1	
t delected in t delected in t delected in t delected in t detected in t	ug/kg	200 200 200	5035/8260B 5035/8260B 5035/8260B	05/12/05 15:08 05/12/05 15:08 05/12/05 15:08	JGH 7	124-48-1 75-71-8 155-60-5	
	ot delected ot delected ot delected ot delected ot delected ot delected ot delected delected t delected t delected	at delected ug/kg at delected ug/kg	act detected ug/kg 800 act detected ug/kg 800 act detected ug/kg 800 act detected ug/kg 200 act detected ug/kg 800 act detected ug/kg 800 act detected ug/kg 800 act detected ug/kg 800 act detected ug/kg 200 act detected u	at detected ug/kg 800 6035/82608 at detected ug/kg 800 5035/82608 at detected ug/kg 800 5035/82608 at detected ug/kg 200 6035/82608 at detected ug/kg 200 5035/82608 at detected ug/kg 200 5035/82608 at detected ug/kg 800 8035/82608 at detected ug/kg 800 5035/82608 at detected ug/kg 800 5035/82608 at detected ug/kg 200 5035/82608	And Mathematical Market Market	at delected ug/kg 800 6035/82608 05/12/05 15:08 JGH at delected ug/kg 800 5035/82608 05/12/05 15:08 JGH at delected ug/kg 200 5035/82608 05/12/05 15:08 JGH at delected ug/kg 800 5035/82608 05/12/05 15:08 JGH at delected ug/kg 200 5035/82608 05/12/05 15:08 JGH at detected ug/kg 200 5035/82608	and delected ug/kg 800 6035/82608 05/12/05 15:08 JGH 74-83-9 act delected ug/kg 800 5035/82608 05/12/05 15:08 JGH 74-83-9 act delected ug/kg 800 5035/82608 05/12/05 15:08 JGH 75-15-0 act delected ug/kg 200 5035/82608 05/12/05 15:08 JGH 108-90-7 act delected ug/kg 200 5035/82608 05/12/05 15:08 JGH 75-00-3 act delected ug/kg 800 5035/82608 05/12/05 15:08 JGH 76-66-3 act detected ug/kg 800 5035/82608 05/12/05 15:08 JGH 74-87-3 act detected ug/kg 800 5035/82608 05/12/05 15:08 JGH 76-34-3 act detected ug/kg 200 5035/82608 05/12/05 15:08 JGH 75-35-4 act detected ug/kg 200 5035/82608 05/12/05 15:08 JGH 96-12-8 act detected ug/kg 200 5035/82608 05/12/05 15:08 JGH 96-12-8

1-ELEVATED DETECTION LIMITS DUE TO LOW TOTAL SOLIDS

Report to Blasland, Bouck & Lee, Inc. Project: 64410/ NAO Flint North Page 4 of 13

Report ID: \$22025.01(01) Generated on 05/19/2005 i de de la la



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

Analysis	Results	Units	RDL	Method	Run Date/Time	Analy	st CAS#	Flags
Organics - Volatiles (continued)								
TCL Volatile Organics 5035/8260 (con	tinued)							
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	5035/82608	05/12/05 15:08	JGH	591-78-6	
Isopropylbenzene	 Not detected 	ug/kg	200	5035/82608	05/12/05 15:08	JGH	98-82-8	
Methyi Acetate	800	ug/kg	8,000	5035/82608	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	5035/82608	05/12/05 15:08	JGH	1634-04-4	
Methyl cyclohexane	Not detected	ug/kg	200	5035/82608	05/12/05 15:08	JGH	108-87-2	
Methylene chloride	70	ug/kg	800	5035/82608	05/12/05 15:08	JGH	75-09-2	BJ
Styrene	Not detected	ug/kg	200	5035/82608	05/12/05 15:08	JGH	100-42-5	
1,1,1-Trichloroethane	Not detected	ug/kg	200	5035/82608	05/12/05 15:08	JGH	71-55-6	•
1,1,2,2-Tetrachioroethane	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 datected	ug/kg	200	5035/82808	05/12/05 15:08	JGH	79-00-5	·
1,2,4-Trichlorobenzene	Not detected	ug/kg	300	5035/82508	05/12/05 15:08	JGH	120-82-1	
Tetrachiorosthene	Not detected	ug/kg	200	5035/82608	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 16:08	JGH	75-89-4	
Vinyi chloride	Not detected	ug/kg	300	5035/8260B	05/12/05 15:08	JGH	75-01-4	
o-Xylene	Not detected	ug/kg	200	5035/82608	05/12/05 15:08	JGH	95-47-6	
p,m-Xyiene	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

Report to Biasland, Bouck & Lee, Inc. Project: 64410/ NAO Flint North

Merit Laboratorics, Inc.

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

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Sample Containers .

Type doz. Glass	Preservative(s)	Refrigerated? Yes			ermometer #		
	RUNC	TCA	4	3			
Analysis	Results	Units	RDL	Mathod	Run Date/Time	Analyst CAS #	F
Extraction / Prep.							
BNA Extraction	Completed			3550B	05/06/05 14:41	PL	
Extraction, PC8	Completed			3550B	05/03/05 14:43	EMR	
Marcury Digestion	Completed			7471A	05/10/05 12:00	JRT	
Metal Digestion	Completed			30508	05/17/05 09:30	MSH	
inorganics							•
Total Solids	49.4	*	1	160.3	05/05/05 08:15	VJH	
Metais							
Arsenic	4.62	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 7440-43-0	
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 7440-60-8	
.ead	67.1	mg/kg	1.0	6020	05/17/05 17:12	SLS 7439-92-1	
lercury	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		
lilver	0.28	mg/kg	0.10	6020	05/17/05 17:12		
linc	148	mg/kg	1.0	6020	05/17/05 17:12	SLS 7440-22-4 SLS 7440-66-6	
rganics - PCBs/Pesticides							
CL PCB List (Column 1)	·						
CB-1016	Not detected	ug/kg	330	8082	05/06/05 11:48		
CB-1242	Not detected	ug/kg	330	8082	05/06/05 11:45	JANB 12674-11-2	
C8-1221	Not detected	ug/kg	330	8082		JANB 53489-21-9	
CB-1232	Not detected	ug/kg	330	8082	05/06/05 11:48	JANB 11104-28-2	
CB-1248	Not detected	ug/kg	330		05/06/05 11:48	JANB 11141-16-5	
CB-1254	50			8082	05/08/05 11:48	JANB 12672-29-6	
CB-1250	Not detected	ug/kg ug/kg	330 330	6082 6082	05/06/05 11:48 05/06/05 11:48	JANB 11097-69-1 JANB 11096-82-5	J
CL PCB List (Column 2)	•••••	_					
8-1016	Not detected	ug/kg	330	8082	05/06/05 11:48	JANB 12674-11-2	
B-1242	Not detected	ug/kg	330	8082	05/06/05 11:48	JANE 53469-21-9	
8-1221	Not detected	ug/kg	330	8082	05/06/05 11:48	JANB 11104-28-2	
8-1232	Not detected	ug/kg	330	8082	05/06/05 11:48	JANB 11141-16-5	
8-1245	Not detected		330	8082	05/06/05 11:48	JANB 12672-29-6	
B-1254	50	ug/kg	330	5052	05/06/05 11:48	JANB 11097-69-1	J
B-1250	Not detected	ug/kg	330	8082	05/06/05 11:48	JANB 11096-82-5	
ganics - Semi-Volatiles							
L Semi-Volatile Organics							
naphthene	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH 83-32-9	
timated value less than reporting	g limit, but greater than MDL						
ort to Blasland, Bouck & Lee, Inc		Pane 6 r	4.4.9				

Report to Blasland, Bouck & Lee, Inc. Project: 64410/ NAO Flint North

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



Lab Sample ID: \$22025.02 (continued) Sample Tag: Outfall 011 (042805)

Anatysis	Results	Units	RDL	Method	Run Date/Time	Analyst CAS #	Flags
Organics - Semi-Voiatlies (continu	ed)						
TCL Semi-Volatile Organics (contin	nued)						
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 18:02	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 10:02	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 phihalate	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 18:02	ARH 50-32-8	
Benzo(b)fluoranthene	500	ug/kg	300	8270C	05/12/05 18:02	ARH 205-99-2	
Banzo(ghi)perylens	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-Chioronaphthalene	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-Chioro-3-methylphanol	Not delected	ug/kg	300	8270C	05/12/05 16:02	ARH 59-50-7	
4-Chtomaniline	Not detected	ug/kg	700	8270C	05/12/05 16:02	ARH 105-47-8	
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 185-80-2	
Carbazole	70	ug/kg	300	8270C	05/12/05 16:02	ARH 86-74-8	j
bis(2-Chloroethoxy)methana	Not detected	ug/kg	300	8270C	05/12/05 18:02	ARH 111-01-1	
bis(2-Chioroethyl)ether	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH 111-44-4	
bis(2-Chiorolsopropyi)sther	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH 108-50-1	
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 18:02	ARH 120-83-2	
2,4-Dimethylphanol	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 51-25-5	
2,4-Dinkrotoluene	Not detected	ug/kg	300	8270C	05/12/05 18:02	ARH 121-14-2	
2,6-Dinkrotokuene	Not delected	ug/kg	300	8270C	05/12/05 18:02	ARH 605-20-2	
3.3'-Dichlorobenzidine	Not detected	ug/kg	700	8270C	05/12/05 16:02	ARH 91-94-1	
I,6-Dintro-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 delected	ug/kg	300	8270C	05/12/05 16:02	ARH 132-64-9	
Diethyi phihalale	Not detected	ug/kg	300	8270C	05/12/05 18:02	ARH 84-66-2	
Dimethyl phthaiste	Not detected	ug/kg	300	8270C	05/12/05 18:02	ARH 131-11-3	
is(2-Ethylhexyl)phthalate	300	ug/kg	300	8270C	05/12/05 16:02	ARH 117-81-7	
kuprankhene	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH 208-44-0	
luorene	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH 86-73-7	
iexachiorobenzene	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH 118-74-1	
lexachiorobutadiene	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH 87-86-3	
	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH 77-47-4	
exachiorocyclopentaciene	Not detected	ug/kg	300	8270C	05/12/05 16:02	ARH 67-72-1	
exechioroethane	Not detected	ug/kg	300	8270C	05/12/05 18:02	ARH 193-39-5	
ideno(1,2,3-cd)pyrene	Not detected		300	8270C	05/12/05 16:02	ARH 78-59-1	
ophorone		ug/kg vo/kg	300	8270C		ARH 91-57-6	
Methyinaphthalana	Not detected	ug/kg			05/12/05 16:02		
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 elso found in associatéd method blank

Report to Blasland, Bouck & Lee, Inc. Project: 64410/ NAO Flint North Report ID: \$22025.01(01) Generated on 05/19/2005



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Analytical Laboratory Report

Lab Sample ID: \$22025.02 (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	8279C	05/12/05 16:02	ARH 108-39-4	
2-Nitroaniline	Not detected	ug/kg	700	8270C	05/12/05 16:02	ARH 88-74-4	
2-Nitrophenol	Not detected	սցուց	300	8270C	05/12/05 16:02	ARH 88-75-5	
3-Nitroaniline	Not detected	ug/kg	780	8270C	05/12/05 16:02	ARH 99-09-2	
4-Nitroaniline	Not detected	ug/kg	700	8270C	05/12/05 16:02	ARH 100-01-8	
4-Nitrophanoi	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 86-30-5	
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	
Pantachlorophenol	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 18:02	ARH \$5-06-2	
America Malatilas							
Organics - Volatiles							
TCL Volatile Organics 5035/8260	Not detected	walka	2,000	5035/8260B	05/12/05 15:42	JGH 67-64-1	
	Not detected	ug/kg	2,000	5035/82608			
2-Butanone (MEK)		ug/kg	100		05/12/05 15:42	JGH 78-93-3	
Senzene	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH 71-43-2	
Bromodichioromethane	Not detected	ug/kg		5035/8260B	05/12/05 15:42	JGH 75-27-4	
Sromoform .	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 58-23-6	
Chlorobenzene	Not detected	ug/kg	-100	5035/82608	05/12/05 15:42	JGH 108-90-7	
Chiorosthane	Not detected	ugfig	500	5035/8260B	05/12/05 15:42	JGH 75-00-3	
Chloroform	Not detected	ug/kg	100	5035/82608	05/12/05 15:42	JGH 67-68-3	
Chloromethane	Not detected	ug/kg	500	5035/82608	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-Dichloroathane	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH 75-34-3	
,1-Dichloroethene	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH 75-35-4	
,2-Dibromo-3-chloropropane	Not detected	ug/kg	100	5035/8280B	05/12/05 15:42	JGH 96-12-8	
2-Dibromoethane	Not detected	ug/kg	100	6035/82608	05/12/05 15:42	JGH 108-93-4	
2-Dichlorobenzene	Not detected	ug/kg .	100	5035/8260B	05/12/05 15:42	JGH 95-50-1	
2-Dichloroethane	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH 107-06-2	
2-Dichloropropane	Not detected	ug/icg	100	5035/8260B	05/12/05 15:42	JGH 78-87-5	
3-Dichlorobenzene	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH 541-73-1	
4-Dichiorobenzene	Not detected	ug/kg	100	5035/82608	05/12/05 15:42	JGH 106-48-7	
s-1,2-Dichloroethene	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH 156-59-2	
s-1,3-Dichloropropene	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH 10061-01-5	
bromschioromethane	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH 124-48-1	
chlorodifluoromethane	Not detected	ug/kg	100	5035/82608	05/12/05 15:42	JGH 75-71-8	
ins-1,2-Dichioroethene	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH 156-80-5	
ns-1,3-Dichloropropene	Not detected	ug/kg	100	5035/82608	05/12/05 15:42	JGH 10061-02-8	'
hylbenzene	Not detected	ug/kg	100	5035/82608	05/12/05 15:42	JGH 100-41-4	

Report to Bissland, Bouck & Lee, Inc. Project: 64410/ NAO Flint North Page 8 of 13

Report ID: \$22025.01(01) Generated on 05/19/2005



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Analytical Laboratory Report

Lab Sample ID: \$22025.02 (continued) Sample Tag: Outfati 011 (042805)

Analysis	Results	Units	ROL	Method	Run Dale/Time	Analyst	CAS#	Flags
Organics - Volatiles (continued)								
TCL Volatile Organics 5035/8260 (con	tinued)							
2-Hexanone	Not detected	ug/kg	5,000	5035/8260B	05/12/05 15:42		591-78-6	
Isopropyibenzene	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	98-82-8	
Methyl Acetale	Not detected	ug/kg	5,000	5035/8260B	05/12/05 15:42	JGH	79-20-9	
4-Methyl-2-pentanona (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	600	5035/8260B	05/12/08 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-Trichlorosthane	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	71-55-8	
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	78-13-1	
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	
Teirachloroethene	Not detected	ug/kg	100	5035/82608	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	
Trichioroethene	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH	79-01-8	
Trichiorofluoromethane	Not detected	ug/kg	200	5035/82608	05/12/05 15:42	JGH	75-89-4	
Vinyi chioride	Not detected	ug/kg	200	5035/8260B	05/12/05 15:42	JGH	75-01-4	
•	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH 1	95-47-8	
o-Xylene	Not detected	ug/kg	100	5035/8260B	05/12/05 15:42	JGH		
p,m-Xylene								

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

Merit Laboratories, Inc.

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

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# Type	Preservati	ve(s)	Refrigerated?			ermometer #			
2 8oz. Giass	None		Yes	4	3				
Analysis		Results	Units	RDL	Method	Run Date/Time	An	alyst CAS#	Fi
Extraction / Prep.							يوسنون ويقوارك		
BNA Extraction		Completed			35508	05/05/05 14:41	PL		
Extraction, PCB		Completed			35508	05/03/05 14:43	EN	IR	
Mercury Digestion		Completed			7471A	05/10/05 12:00	JR	т	
Metal Digestion		Completed			3050B	05/17/05 09:30	MS	H	
inorganics									
Total Solids		31.8	%	1	160.3	05/05/05 08:15	VJł	1	
Metais									
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		
admium		1,90	mg/kg	0.05	6020	05/17/05 17:15	SLS		
hromium		20.3	mg/kg	0.50	6020	05/17/05 17:15	SLS		
Copper		67.1	mg/kg	1.0	6020	05/17/05 17:15	SLS		
ead		108	mg/kg	1.0	6020	05/17/05 17:15	SLS		
lercury		0.12	mg/kg	0.05	245.1M	05/10/05 15:59	JRT		
sienium		0.81	mg/kg	0.20	6020	05/17/05 17:15	SLS		
lver		0.25	mg/kg	0.10	6020	05/17/05 17:15	SLS		
NC		273	mg/kg	1.0	6020	05/17/05 17:15	SLS	7440-22-4 7440-66-6	
COLUCIENCIA COLUCI		Not detected	ug/kg	330	8082	05/05/05 14:29	JANE	3 12674-11-2	
CB-1242		Not detected	ug/kg	330	8082	05/05/05 14:29	JANE		
8-1221		Not detected	ug/kg	330	8082	05/05/05 14:29	JANE		
8-1232		Not detected	ug/kg	330	8082	05/05/05 14:29	JANE		
8-1248		Not detected	ug/kg	330	8082	05/05/05 14:29	JANB		
8-1254		20	ug/kg	330	8082	05/05/05 14:29	JANB		J
B-1260		Not detected	ug/kg	330	8082	05/05/05 14:29	JANB		•
L PCB List (Colum	nn 2)								
8-1016		Not detected	ug/kg	330	8082	05/05/05 14:30	JANB	12674-11-2	
B-1242		Not detected	ug/kg	330	8052	05/05/05 14:30	JANB	53469-21-9	
B-1221		Not detected	ug/kg	330	8082	05/05/05 14:30	JANB.	11104-28-2	
B-1232		Not detected	ug/kg	330	8082	05/05/05 14:30	JANB	11141-16-5	
B-1248		Not detected	ug/kg	330	8082	05/05/05 14:30	JANB	12672-29-6	
B-1254		20	ug/kg	330	8082	05/05/05 14:30		11097-69-1	J
B-1260		Not detected		330	8082	05/05/05 14:30		11098-82-5	J
anics - Semi-Vola	til as								
Semi-Volatile Or									
naphthene		Not detected	ug/kg	500	8270C	05/10/05 40/08			-
•	an reporting limit, but great					05/12/05 16:36	ARH	83-32-9	1
	N LIMITS DUE TO LOW 1								
ort to Blasland, Bouck	& Lee, inc,		Page 10	of 13					
							керог	t ID: 522025.01	(01)

Project: 64410/ NAO Flint North

Report ID: S22025.01(01) Generated on 05/19/2005 1.1



Lab Sample ID: \$22025.03 (continued) Sample Tag: Outfall 013 (042805)

Analysia	Results	Units	RDL	Method	Run Date/Time	Analyst CAS #	Flag
Organics - Semi-Volatiles (continued	Ŋ						
TCL Semi-Volatile Organics (continu	ed}						
Acenaphthylene	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH 205-95-8	
Acetophenone	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH 98-86-2	
Anthracene	100	ug/kg	500	8270C	05/12/05 18:36	ARH 120-12-7	J
Atrazine	Not detected	ug/kg	500	8270C	05/12/05 16:38	ARH 1912-24-9	٩
1,1'-Biphenył	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH 92-52-4	1
4-Bromophanyi phenyi ether	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH 101-55-3	1
di-n-Butyi phthaiate	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	ugikg	500	8270C	05/12/05 16:36	ARH 56-55-3	1
Benzo(a)pyrene	1,000	ug/kg	500	6270C	05/12/05 18:38	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 16:38	ARH 191-24-2	· J1
Benzo(k)fluoranthene	800	ugitg	500	8270C	05/12/05 18:38	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-Chioronaphthalene	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 18:36	ARH 95-57-8	1
I-Chioro-S-methylphenol	Not detected	ug/kg	500	6270C	05/12/05 18:36	ARH 59-50-7	1
I-Chlorognilline	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH 108-47-8	. 1
-Chlorophenyl phenyl ether	Not detected	ug/kg	500	8270C	05/12/05 18:38	ARH 7005-72-3	t
Caprolactam	Not detected	ug/kg	500	8270C	05/12/05 16:38	ARH 105-60-2	1
Carbazole	200	ug/kg	500	8270C	05/12/05 16:36	ARH 86-74-8	J1
is(2-Chloroethoxy)methane	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH 111-01-1	1
is(2-Chloroethyi)ether	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH 111-44-4	1
is(2-Chloroisopropyl)sther	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH 105-50-1	1
hrysone	1,200	ug/kg	500	8270C	05/12/05 18:36	ARH 218-01-9	1
4-Dichlorophenol	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH 120-83-2	1
4-Dimethylphenol	Not detected	ugikg	500	8270C	05/12/05 16:36	ARH 105-87-9	1
4-Dinitrophenol	Not detected	ug/kg	500	8270C	05/12/05 16:38	ARH 51-28-5	1
4-Dinkrotokuane	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH 121-14-2	1
6-Dinitrololuene	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH 608-20-2	1
3'-Dichlorobenzidine	Not detected	ugikg	500	8270C	05/12/05 18:38	ARH 91-94-1	1
6-Dinitro-2-methylphenol	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH 534-52-1	1
benzo(ah)anthracene	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH 53-70-3	1
benzofuran	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH 132-84-9	1
ethyl phthalate	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH 84-86-2	1
methyi phthalate	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH 131-11-3	1
s(2-Ethythexyl)phthalate	700	ug/kg	500	8270C	05/12/05 18:38	ARH 117-81-7	1
Joranthene	2,000	ug/kg	500	8270C	05/12/05 16:36	ARH 206-44-0	1
ICIERE	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH 85-73-7	1
xachlorobenzene	Not delected	ug/kg	500	8270C	05/12/05 16:36	ARH 118-74-1	1
xachlorobutadiene	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH 87-68-3	1
xechlorocyclopentadiene	Not detected	ug/kg	500	8270C	05/12/05 16:35	ARH 77-47-4	1
xachioroethane	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH 67-72-1	1
eno(1,2,3-cd)pyrene	1,500	ug/kg	500	8270C	05/12/05 16:36	ARH 193-39-5	1
phorone	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH 78-59-1	1
fethyinsphihalene	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH 91-57-6	1
lethylphenol	Not detected	ug/kg	500	8270C	05/12/05 16:38	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

Report to Blasland, Bouck & Lee, Inc. Project: 64410/ NAO Flint North

Report ID: \$22025.01(01) Generated on 05/19/2005

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Analytical Laboratory Report

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

Analysis	Results	Units	RDL	Method	Run Date/Time	Analysi	CAS#	Flags
Organics - Semi-Volatiles (continued)								
TCL Semi-Volatile Organics (continued)								•
3-, 4-Methylphenol	Not detected	ug/kg	500	8270C	05/12/05 16:38	ARH	108-39-4	1
2-Nitroaniline	Not detected	ug/kg	500	8270C	05/12/05 16:36		88-74-4	1
2-Nitrophenol	Not detected	ug/kg	500	8270C	05/12/05 16:36		88-75-5	1
3-Nitroanlline	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	99-09-2	1
4-Nitrogenflime	Not detected	ug/kg	500	8270C	05/12/05 18:38	ARH	100-01-5	1
4-Nitropheniol	Not detected	ug/kg	500	8270C	05/12/05 16:38	ARH	100-02-7	1
N-Nitrosodi-n-propylamins	Not detected	ug/kg	500	8270C	05/12/05 18:36	ARH	621-64-7	1
N-Nitrosod Iphenytamine	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 18:36	ARH	91-20-3	1
Närobenzene	Not detected	ug/kg	500	8270C	05/12/05 16:38	ARH	96-95-3	1
di-n-Octyl phthalate	Not detected	ug/kg	500	8270C	05/12/05 10:38	ARH	117-84-0	1
Pentachiorophenol	Not detected	ug/kg	500	8270C	05/12/05 18:36	ARH	87-88-5	1
Phenanthrene	800	ug/kg	500	8270C	05/12/05 16:36	ARH	85-01-8	1
Phanol	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-Trichlorophanol	Not detected	ug/kg	500	8270C	05/12/05 16:36	ARH	95-95-4	1
2.4.6-Trichtorophenol	Not detected	ug/kg	500	8270C	05/12/05 16:38	ARH	88-08-2	1
Organics - Volatiles								
FCL Volatile Organics 5035/8260	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	
Senzene	Not detected	ug/kg	200	5035/8260B	05/12/05 18:16	JGH	71-43-2	
Iromodichtoromethane	Not detected	ug/kg	200	5035/82608	05/12/05 18:16	JGH	75-27-4	
Bromolorm	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH	75-25-2	
iromomethane	Not detected	ug/kg	800	5035/8260B	05/12/05 16:16	JGH	74-53-9	
Carbon disulfide	Not detected	ug/kg	800	5035/8260B	05/12/05 16:16	JGH	75-15-0	
anbon tetrachioride	Not detected	ug/kg	200	5035/8280B	05/12/05 16:16	JGH	56-23-5	
ihiorobenzene		ug/kg	200	5035/82608	05/12/05 18:16		108-90-7	
hiorosthane	Not detected		800	5035/8260B	05/12/05 18:16		75-00-3	
ihiotoform	Not detected	ug/kg	200	5035/82608	05/12/05 16:16		57-66-3	
	Not detected	ug/kg		6035/8260B	05/12/05 16:16		74-87-3	
hloromethane	Not detected	ug/kg	800	5035/8250B	05/12/05 16:16		10-82-7	
yciohexane	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	• • • •	15-34-3	
1-Dichloroethane	Not detected	ug/kg	200		05/12/05 16:16		75-35-4	
1-Dichloroethene	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16		8-12-8	
2-Dibrorno-3-chloropropane	Not detected	ug/kg	200	5035/8260B			106-93-4	
2-Dibromoethane	Not detected	ug/kg	200	5035/82608	05/12/05 18:16		5-50-1	
2-Dichlorobenzen	Not detected	ug/log	200	5035/8260B	05/12/05 18:16			
2-Dichloroethane	Not detected	ug/kg	200	5035/8260B	05/12/05 18:18		07-06-2	
2-Dichloropropane	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16		/8-87- 5	
3-Dichlorobenzen	Not detected	ug/kg	200	6035/82608	05/12/05 16:16		41-73-1	
4-Dichlonobenzent	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16		06-46-7	
-1,2-Dichloroethene	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16		56-59-2	
-1,3-Dichloropoene	Not detected	ug/kg	200	5035/8260B	05/12/05 18:16		0061-01-5	
entimonoromethane	Not detected	ug/kg	200	6035/8260B	05/12/05 16:16		24-48-1	
chiorodiffuoromenane	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16		5-71-8	
ns-1,2-Dichlorethene	Not detected	ug/kg	200	5035/8280B	05/12/05 18:18		56-60-5	
ns-1,3-Dichloropopens	Not detected	ug/kg	200	5035/8260B	05/12/05 16:16	JGH 1	0061-02-6	

1-ELEVATED DETECTION LIMITS DUE TO LOW TOTAL SOLIDS

Report to Blastand, Bouck & Lee, Inc. Project: 64-4 10/ NAO Film North Page 12 of 13

Report ID: \$22025.01(01) Generated on 05/19/2005



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

Analysis	Results	Units	RDL	Method	Run Date/Time	Ansiy	t CAS#	Flags
Organics - Volatiles (continued)								
TCL Volatile Organics 5035/8260 (continu	led)							
Ethylbenzene	Not detected	ug/kg	200	5035/82608	05/12/05 18:16	JGH	100-41-4	
2-Hexanone	Not detected	ug/kg	8,000	5035/8260B	05/12/05 16:16	JGH	591-78-8	
isopropyibe nzene	Not detected	ug/kg	200	5035/82608	05/12/05 16:16	JGH	98-82-8	
Methyl Acetale	400	ug/kg	8,000	5035/8260B	05/12/05 18:16	JGH	79-20-9	J
4-Methyl-2-pentanone (MIBK)	Not detected	ug/kg	8,000	5035/8260B	05/12/05 18:16	JGH	108-10-1	
tert-Methyl butyl ether (MT8E)	Not detected	ug/kg	800	5035/8250B	05/12/05 16:16	JGH	1634-04-4	
Methyl cyclohexane	Not detected	ug/kg	200	5035/5260B	05/12/05 16:16	JGH	108-87-2	
Melhylene 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 10:18	JGH	100-42-5	
1.1.1-Trichloroethane	Not detected	ug/kg	200	5035/8280B	05/12/05 16:18	JGH	71-55-8	
1,1,2,2-Tetrachloroethane	Not detected	ugʻikg	200	5035/8250B	05/12/05 18:16	JGH	79-34-5	
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	ugʻikg	300	5035/82608	05/12/05 18:16	JGH	78-13-1	
1,1,2-Trichloroethane	Not detected	ugʻikg	200	5035/8260B	05/12/05 18:16	JGH	79-00-5	
1,2,4-Trichlorobanzena	Not detected	ug/kg	300	5035/8260B	05/12/05 16:16	JGH	120-82-1	
Tetrachioroethene	Not detected	ug/kg	200	5035/82608	05/12/05 16:16	JGH	127-18-4	
Toluene	Not detected	ug/kg	200	5035/5260B	05/12/05 16:16	JGH	108-88-3	
Trichlometheme	Not detected	ug/kg	200	5035/8200B	05/12/05 16:16	JGH	79-01-6	
Trichlorofluoromethane	Not detected	ug/kg	300	6035/8260B	05/12/05 16:16	JGH	75-69-4	
Vinyi chloride	Not detected	ug/kg	300	5035/82608	05/12/05 16:16	JGH	75-01-4	
o-Xylana	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



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

<u>Mott Lake</u>

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.

<u>Utah Dam</u>

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 PMSubject: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>



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Division	WHMD		
Report to:	ART OSTASZEWSKI	Lab Work Order # :	50400391
	MDEQ-WHMD-LANSING	Work Site ID :	LB040161
	CONSTITUTION HALL	Site Name :	FLINT RIVER SEDIMENTS
	525 W. ALLEGAN, LANSING, MI 48909	Received:	04/29/2005
		Reported:	06/03/2005
Total:	\$5,725.54	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

Lab Work Order #: 50400391

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P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

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.

Til

Bob Avery, Laboratory Director

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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



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53407 MLC2 0-6

Base Neutral Acid Compounds

	Actu Compounds			
Analytical Me		Date Tested: 05/18/2005	Analyst: SMH	
Extraction M		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-Dimitrophenol	Not Detected	2200	10
-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 second states and second
50-32-8	Benzo[a]pyrene	Not Detected	260	1.0
205-99-2	Benzo[b]fluoranthene	Not Detected	260	0.10
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# : Ch	emical Abstract Service Registry Number	ug / L : microgram / liter (ppb)	Laboratory Conta	cts
•	porting Limit	mg / L : milligram / liter (ppm)	Inorganic Unit M	1
	t Detected	ug / Kg : microgram / kilogram (ppb)	Organic Unit Mg	
1		mg/Kg:milligram/kilogram (ppm)	Systems Mgmt U	nit: George Krisztian



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53407 MLC2 0-6

Base Neutral Acid Compounds

Analytical M		Date Tested: 05/18/2005	Analyst: SMH	
Extraction M	ethod: 3545	Extraction Date: 05/03/2005	Qualifier:	
CAS #	Compound	Result ug/Kg dry	RL Qualifi	er 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 (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
18-3	Hexachlorobutadiene	Not Detected	260	10
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 Defected		1.0
156-10-5	N-Nitrosodiphenylamine	Not Detected	260	1.0
87-86-5	Pentachlorophenol	Not Detected	4400	1.0. State 1.0.
85-01-8	Phenanthrene	Not Detected	130	1.0
108-95-2	Phenol	Not Detected	430	10
129-00-0	Pyrene	Not Detected	130	1.0

PCBs as Aroclors

Analytical Method: Extraction Method: CAS # Com	8082 3545 pound	Date Tested: Extraction Date	05/10/2005 :: 05/05/2005 Result ug/Kg dry	Analyst: MF Qualifier: RL	Qualifier	Dilution Factor
Company and the State of the St	achlorobiphenyl# achloro-m-xylene#		92.9 62.3			
12674-11-2 Arocl	or 1016 or 1221		02.5 Not Detected Not Detected	130 130		1.0 10
	or 1232		Not Detected	130		1.0
CAS# : Chemical At RL : Reporting L ND : Not Detecte		mg/L: mill ug/Kg : mid	rogram / liter (ppb) igram / liter (ppm) crogram / kilogram (ppb) lligram / kilogram (ppm)	lno Org	poratory Contacts rganic Unit Mgr: ganic Unit Mgr: stems Mgmt Unit:	Sandy Gregg



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53407 MLC2 0-6

PCBs as Aroclors

Analytical Metl Extraction Met		8082 3545	Date Tested: Extraction Date	05/10/2005 e: 05/05/2005	Analyst: MF Qualifier:		
CAS#	Compo	ound		Result ug/Kg dry	RL	Qualifier	Dilution Factor
	Aroclo	r 1242		Not Detected	130		1.0
12672-29-6	Aroclo	r 1248		Not Detected	130		1.0
	Aroclo			Not Detected	130		1.0
11096-82-5	Aroclo	r 1260		Not Detected	130		1.0
	Aroclo	r 1262		Not Detected	130		1.0
11100-14-4	Aroclo	r 1268		Not Detected	130		1.0

Sample Number AA53407 MLC2 0-6

CAS#	Analyte Name % Total Solids		Result 77.6	Unit %	RL 0.1	Qualifier	Date Tested 05/05/2005	Method	Analyst DB	
					• 3	4 R				
					- 1 k	1.25				
					2-2 ž					
		8 g.C				Site of				•
		45 A			e * y j	(NH .				
					A	- 2. C. 1				

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



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53408 MLC2 6-14

Base Neutral Acid Compounds 05/18/2005 Analyst: SMH 8270 Date Tested: **Analytical Method:** 05/03/2005 Qualifier: 3545 **Extraction Date: Extraction Method:** RL Qualifier **Dilution Factor** CAS# Compound Result ug/Kg dry SURROGATE #2 - Fluorobiphenyl# 70.9 #2,4,6-Tribromophenol# SURROGATE 78.0 SURROGATE #2-Fluorophenol# 66.7 SURROGATE #Nitrobenzene - D5# 70.2 #Phenol - D5# SURROGATE 67.4 SURROGATE #p-Terphenyl-d14# 99.4 1,2,4-Trichlorobenzene Not Detected 120-82-1 10Not Detected 120 1.0 95-50-1 1,2-Dichlorobenzene 1.0 Not Detected 120 541-73-1 1,3-Dichlorobenzene 1,4-Dichlorobenzene Not Detected 120 1.0 106-46-7 410 1.0 95-95-4 2,4,5-Trichlorophenol Not Detected 410 1.0 2,4,6-Trichlorophenol Not Detected 88-06-2 410 1.0 Not Detected 120-83-2 2,4-Dichlorophenol 105-67-9 2,4-Dimethylphenol Not Detected 410 1.0 Not Detected 2100 1.0 51-28-5 2,4-Dinitrophenol a. 12 410 '-14-2 2,4-Dinitrotoluene Not Detected 1.0 410 1.0 -20-2 2,6-Dinitrotoluene Not Detected 91-58-7 2-Chloronaphthalene Not Detected 250 1.0 Not Detected 410 1.0 95-57-8 2-Chlorophenol 2100 534-52-1 2-Methyl-4,6-dinitrophenol Not Detected 1.0 Not Detected 91-57-6 2-Methylnaphthalene 310 1.0 410 95-48-7 2-Methylphenol (o-Cresol) Not Detected 1.0 88-74-4 2-Nitroaniline Not Detected 2100 1.0 88-75-5 2-Nitrophenol Not Detected 410 1.0 3 & 4-Methylphenol Not Detected 810 1.0 108394,10644 99-09-2 3-Nitroaniline Not Detected 2100 1.0 101-55-3 Not Detected 250 1.0 4-Bromophenyl phenyl ether 410 1.0 59-50-7 4-Chloro-3-methyl-phenol Not Detected 4-Chlorodiphenylether 120 1.0 7005-72-3 Not Detected Not Detected 2100 1.0 100-01-6 4-Nitroaniline 1.0 100-02-7 4-Nitrophenol Not Detected 2100 83-32-9 Acenaphthene Not Detected 120 1.0 Acenaphthylene 120 208-96-8 Not Detected 1.0 120-12-7 Anthracene Not Detected 120 1.0 1.0 103-33-3 Azobenzene Not Detected 250 Benz[a]anthracene Not Detected 120 1.0 56-55-3 Not Detected 250 1.0 50-32-8 Benzo[a]pyrene 1.0 205-99-2 Benzolb fluoranthene Not Detected. 250 191-24-2 Not Detected 250 1.0 Benzo[g,h,i]perylene 207-08-9 Not Detected 250 1.0 Benzo[k]fluoranthene 111-91-1 Not Detected 250 1.0 Bis(2-chloroethoxy)methane CAS# : Chemical Abstract Service Registry Number ug / L : microgram / liter (ppb) Laboratory Contacts mg / L : milligram / liter (ppm) Inorganic Unit Mgr: Sandy Gregg RL : Reporting Limit ug / Kg : microgram / kilogram (ppb) Organic Unit Mgr: Carol Smith ND : Not Detected mg / Kg : milligram / kilogram (ppm) Systems Mgmt Unit: George Krisztian



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53408 MLC2 6-14

Base Neutral Acid Compounds

Analytical M	ethod: 8270	Date Tested: 05/18/2005	Analyst: SMH	
Extraction M	ethod: 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	$\sim 1.0^{\circ}$, we have a second state
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
58-3	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	10
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 . The second se
129-00-0	Pyrene	Not Detected	120	1.0

PCBs as Aroclors

Analytical Met Extraction Met		Date Tested: 05/10/200 Extraction Date: 05/05/2		ſF	
CAS#	Compound	Result ug/	Kg dry RL	Qualifier I	Dilution Factor
SURROGATE	#Decachlorobiphenyl#	85.8			
SURROGATE	#Tetrachloro-m-xylene#	59.6			
12674-11-2	Aroclor 1016	Not Detecte	d 120	1	1.0
11104-28-2	Aroclor 1221	Not Detecte	d 120	1	1.0
11141-16-5	Aroclor 1232	Not Detected	d 120	1	1.0
	nical Abstract Service Registry Number orting Limit Detected	ug/L : microgram/liter (p mg/L : milligram/liter (p ug/Kg : microgram/kilogr mg/Kg : milligram/kilogram	npm) ram (ppb)	Laboratory Contacts Inorganic Unit Mgr: Sar Organic Unit Mgr: Ca Systems Mgmt Unit: Ge	arol Smith

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P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53408 MLC2 6-14

PCBs as Aroclors

Analytical Extraction				.0/2005 5/05/2005	Analy Qualif	rst: MF ier:		
CAS#	Compound		Resul	t ug/Kg dry	R	L	Qualifier	Dilution Factor
53469-21-9	Aroclor 1242		Not D	etected	12	20		1.0
12672-29-6	Aroclor 1248		Not D	etected	12	20		1.0
11097-69-1	Aroclor 1254		Not D	etected	12	20	10.10.00.2000.00.000.000000000000000000	1.0
11096-82-5	Aroclor 1260		Not D	etected		20		1.0 states and the second second
37324-23-5	Aroclor 1262			etected	12	REPORT OF LOSS AND ADDRESS AND ADDRESS		1.0
11100-14-4	Arecler 1268		Not D	etected	12	20		1.0
								· · · · · · · · · · · · · · · · · · ·
Sample	Number AA53408	MLC2 6	-14					
CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Teste	d Method	l Analyst
7440-38-2	Arsenic - Sediment	1.8	mg/Kg dry	05		05/10/2005	7060	LAV
	And Bounder	1.0	mg/ng uy	0.5		05/19/2005	7060	LAV
7782-49-2	Selenium - Sediment	ND	mg/Kg dry	0.5		05/19/2005	u una estimation anomana defensaria esterator	LAV
7782-49-2 7440-22-4			and the later day of the state of the second state of the second state of the second state of the second state	the substantic arts basis confight Checkborg Andres to Salvers 44		NAMES OF TAXABLE PARTY OF TAXABLE PARTY OF TAXABLE PARTY OF TAXABLE PARTY.	7740 7761	LAV LAV
2012/02/02/02/02/02/02/02/02/02/02/02/02/02	Selenium - Sediment	ND	mg/Kg dry mg/Kg dry	0.5		05/12/2005	7740 7761	LAV
7440-22-4 79-97-6	Selenium - Sediment Silver - Sediment Digest Mercury - Sediment Mercury - Sediment	ND ND Completed ND	mg/Kg dry mg/Kg dry	0.5		05/12/2005 05/13/2005 05/09/2005 05/26/2005	7740 7761 7471 7471	LAV LAV RK TS
7440-22-4 	Selenium – Sediment Silver - Sediment Digest Mercury – Sediment	ND ND Completed	mg/Kg dry mg/Kg dry l	0.5 0.25		05/12/2005 05/13/2005 05/09/2005	7740 7761 7471 7471	LAV LAV RK
7440-22-4 	Selenium - Sediment Silver - Sediment Digest Mercury - Sediment Mercury - Sediment	ND ND Completed ND	mg/Kg dry mg/Kg dry I mg/Kg dry	0.5 0.25		05/12/2005 05/13/2005 05/09/2005 05/26/2005 05/23/2005 05/23/2005	7740 7761 7471 7471 6010 6010	LAV LAV RK TS
7440-22-4 	Selenium - Sediment Silver - Sediment Digest Mercury - Sediment Mercury - Sediment Barium - Sediment Cadmium - Sediment Chromium - Sediment	ND ND Completed ND 14 ND 4.8	mg/Kg dry mg/Kg dry l mg/Kg dry mg/Kg dry	0.5 0.25 0.05 1		05/12/2005 05/13/2005 05/09/2005 05/26/2005 05/23/2005 05/23/2005 05/23/2005	7740 7761 7471 7471 6010 6010 6010	LAV LAV RK TS MJ MJ MJ
7440-22-4 	Selenium - Sediment Silver - Sediment Digest Mercury - Sediment Mercury - Sediment Barium - Sediment Cadmium - Sediment Chromium - Sediment Copper - Sediment	ND ND Completed ND 14 ND 4.8 2.5	mg/Kg dry mg/Kg dry mg/Kg dry mg/Kg dry mg/Kg dry mg/Kg dry mg/Kg dry	0.5 0.25 0.05 1 2.0		05/12/2005 05/13/2005 05/09/2005 05/26/2005 05/23/2005 05/23/2005 05/23/2005	7740 7761 7471 6010 6010 6010 6010	LAV LAV RK TS MJ MJ
7440-22-4 3-39-37-6 3-39-3 7440-43-9 7440-47-3 7440-50-8	Selenium - Sediment Silver - Sediment Digest Mercury - Sediment Mercury - Sediment Barium - Sediment Cadmium - Sediment Chromium - Sediment Copper - Sediment Digest Metals - Sediment	ND ND Completed ND 14 ND 4.8	mg/Kg dry mg/Kg dry mg/Kg dry mg/Kg dry mg/Kg dry mg/Kg dry mg/Kg dry	0.5 0.25 0.05 1 2.0 2		05/12/2005 05/13/2005 05/09/2005 05/26/2005 05/23/2005 05/23/2005 05/23/2005 05/23/2005 05/09/2005	7740 7761 7471 7471 6010 6010 6010	LAV LAV RK TS MJ MJ MJ
7440-22-4 	Selenium - Sediment Silver - Sediment Digest Mercury - Sediment Mercury - Sediment Barium - Sediment Cadmium - Sediment Chromium - Sediment Copper - Sediment	ND ND Completed ND 14 ND 4.8 2.5	mg/Kg dry mg/Kg dry mg/Kg dry mg/Kg dry mg/Kg dry mg/Kg dry mg/Kg dry	0.5 0.25 0.05 1 2.0 2		05/12/2005 05/13/2005 05/09/2005 05/26/2005 05/23/2005 05/23/2005 05/23/2005	7740 7761 7471 6010 6010 6010 6010	LAV LAV RK TS MJ MJ MJ MJ MJ

0.1

05/05/2005

05/06/2005

81.3

%

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

% Total Solids

Drying and Grinding - Sediment Completed

DB

RK



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53409 **UDP1**

Base Neutral Acid Compounds Analyst: SMH **Analytical Method:** 8270 **Date Tested:** 05/18/2005 **Oualifier: Extraction Method:** 3545 Extraction Date: 05/03/2005 RL Oualifier **Dilution Factor** CAS# Compound Result ug/Kg dry SURROGATE 50.6 #2 - Fluorobiphenyl# #2,4,6-Tribromophenol# 63.6 SURROGATE 43.4 SURROGATE #2-Fluorophenol# 46.2 SURROGATE #Nitrobenzene - D5# 50.1 SURROGATE #Phenol - D5# SURROGATE 76.0 #p-Terphenyl-d14# 1.0 120-82-1 1,2,4-Trichlorobenzene Not Detected 550 Not Detected .270 1.0 95-50-1 1.2-Dichlorobenzene Not Detected 270 1.0 541-73-1 1.3-Dichlorobenzene Not Detected 270 1.0 1,4-Dichlorobenzene 106-46-7 900 1.0 95-95-4 2,4,5-Trichlorophenol Not Detected 900 1.0 2,4,6-Trichlorophenol Not Detected 88-06-2 Not Detected 900 1.0 2,4-Dichlorophenol 120-83-2 900 1.0 2,4-Dimethylphenol Not Detected 105-67-9 2.4-Dinitrophenol Not Detected 4600 1.0 51-28-5 900 1.0 -14-2 2,4-Dinitrotoluene Not Detected 900 1.0 JJ-20-2 2,6-Dinitrotoluene Not Detected Not Detected 91-58-7 2-Chloronaphthalene 550 1.0 Not Detected 900 1.0 95-57-8 2-Chlorophenol 2-Methyl-4,6-dinitrophenol Not Detected 4600 1.0 534-52-1 680 1.0 2-Methylnaphthalene Not Detected 91-57-6 Not Detected 900 1.0 2-Methylphenol (o-Cresol 95-48-7 Not Detected 4600 1.0 88-74-4 2-Nitroaniline Not Detected 900 1.0 88-75-5 2-Nitrophenol 1800 1.0 108394,106445 3 & 4-Methylphenol Not Detected 4600 1.0 3-Nitroaniline Not Detected 99-09-2 550 1.0 4-Bromophenyl phenyl ether Not Detected 101-55-3 1.0 900 4-Chloro-3-methyl-phenol Not Detected 59-50-7 270 1.0 7005-72-3 4-Chlorodiphenylether Not Detected 1.0 4600 100-01-6 - 4-Nitroaniline Not Detected Not Detected 4600 1.0 100-02-7 4-Nitrophenol 270 1.0 Not Detected Acenaphthene 83-32-9 270 1.0 208-96-8 Acenaphthylene Not Detected Not Detected 1.0 120-12-7 Anthracene 270 1.0 Not Detected 550 103-33-3 Azobenzene 270 56-55-3 Benz[a]anthracene Not Detected 1.0 50-32-8 Benzo[a]pyrene Not Detected 550 1.0 Not Detected 550 1.0 205-99-2 Benzo[b]fluoranthene Not Detected 550 1.0 191-24-2 Benzo[g,h,i]perylene 1.0 207-08-9 Benzo[k]fluoranthene Not Detected 550 111-91-1 Not Detected 550 1.0 Bis(2-chloroethoxy)methane Laboratory Contacts ug / L : microgram / liter (ppb) CAS# : Chemical Abstract Service Registry Number Inorganic Unit Mgr: Sandy Gregg mg / L : milligram / liter (ppm) RL : Reporting Limit Organic Unit Mgr: Carol Smith

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

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Systems Mgmt Unit: George Krisztian



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53409 UDP1

Base Neutral Acid Compounds

Analytical Me	ethod: 8270	Date Tested:	05/18/2005	Analyst: SMI	ł	
Extraction M	ethod: 3545	Extraction Dat	e: 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	n oc se somer for somer som somer som	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	20000 1100 100 100 100 100 100 100 100 1	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
58-3	Hexachlorobutadiene		Not Detected	550		1.0
47-4	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	warman shering an water a subject to the second	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
67-75 - 9	N-Nitrosodimethylamine		Not Detected	900		1.0
621-64-7	N-Nitrosodi-n-propylamine	Charles Commercial Sector Contention on the American Commercial	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	Programme and the second	Not Detected	270		1.0

PCBs as Aroclors

Analytical Method:8082Extraction Method:3545	Date Tested: 05/10/2005 Extraction Date: 05/05/2005	Analyst: MF Qualifier:	
CAS# Compound	Result ug/Kg dry	RL Qualifi	er 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 Areclor 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)	Organic Unit M	tacts Mgr: Sandy Gregg gr: Carol Smith Unit: George Krisztian



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53409 UDP1

PCBs as Aroclors

Analytical Extraction				10/2005 5/05/2005	Analy Quali	/st: MF fier:		
CAS #	Compound		Resul	t ug/Kg dry	R	L	Qualifier	Dilution Factor
53469-21-9	Aroclor 1242		Not D	etected	2	70		1.0
12672-29-6	Aroclor 1248	a kana da sa	Not D	etected	2	70	n an	1.0
11097-69-1	Aroclor 1254		Not D	etected	2	70		1.0
11096-82-5	Aroclor 1260			etected		70	19 10 10 10 10 10 10 10 10 10 10 10 10 10	1.0
37324-23-5	Aroclor 1262		Not D	etected		70		1.0
11100-14-4	Aroclor 1268		Not D	etected	2'	70		1.0
<u></u>								· · · · · · · · · · · · · · · · · · ·
Sample	Number AA53409	UDP1						
CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Teste	d Method	l Analyst
7440-38-2	Arsenic - Sediment	15.1	mg/Kg dry	0.5		05/19/2005	5 7060	LAV
7782-49-2	Selenium - Sediment	0.7	mg/Kg dry	0.5		05/12/2005	5 7740	LAV
7440-22-4	Silver - Sediment	ND	mg/Kg dry	0.25		05/13/2005	5 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	an a						
_k -40-39-3	Barium - Sediment	170	mg/Kg dry	1		05/23/2005		MJ
7440-43-9	Cadmium - Sediment	ND	mg/Kg dry	2.0		05/23/2005		MJ
7440-47-3	Chromium - Sediment	24	mg/K.g dry	2		05/23/2005		MJ
7440-50-8	Copper - Sediment	44	mg/Kg dry	2		05/23/2005	and a second second second second	MJ
	Digest Metals - Sediment	Completed	and the second			-05/09/2005		TK
7439-92-1	Lead - Sediment	45	mg/Kg dry	5		05/23/2005		MJ
7440-66-6	Zinc - Sediment	160	mg/K.g dry	5		05/23/2005		MJ
	% Total Solids	36.6	%	0.1		05/05/2005		DB
	Drying and Grinding - Sediment	Completed				- 05/06/2005		RK. State

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 .



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53410 OFC0051 0-6

Base Neutral Acid Compounds

Analytical Method:	8270	Date Tested:	05/18/2005	Analyst: SMH		
•	3545	Extraction Date:		Qualifier:		
CAS # Compo	und		lesult ug/Kg dry	RL	Qualifier	Dilution Factor
	orobiphenyl#		0.0			
	ribromophenol#	and the second secon	0.0			
yes/www.endustries.com/www endustries.com/www.endustries.com/www.endustries.com/www.endustries.com/www.endustries.com/www.endustries.com/www.endustries.com/www.endustries.com/www.endustries.com/www.endustries.com/www.endustries.com/www.endustries.com/www.endustries.com/www.endustries.com/www.endustries.com/w	rophenol#	NAMA-240-400 NOVAMA (2010) (2010) (2010) (2010) (2010)	7.9			
	enzene - D5#		1.1			
SURROGATE #Phenol			3.6			
	henyl-d14#		10			
200400000000000000000000000000000000000	ichlorobenzene		lot Detected	310		1.0
the rest of the second statement of the second statement of the second statement of the second statement of the	llorobenzene		lot Detected	160		1.0
	llorobenzene		lot Detected	160		1.0
(1) 2.30 (2) (2) (2) (2) (2) (2) (2) (2) (2) (2)	lorobenzene		lot Detected	160		1.0
	ichlorophenol	energe frankerer in versioner werdenanden alle holden and	lot Detected	510		1.0
	ichlorophenol		lot Detected	510		1.0
Carety reproduction of the	llorophenol	Concernent of the second of th	lot Detected	510		1.0
	ethylphenol		lot Detected	510		1.0
Security Control Action Control Control Control Control Action Control Cont	trophenol	CALIFORNIA AND AND AND AND AND AND AND AND AND AN	lot Detected	2600		1.0
country and a second	trotoluene	SALATSA PARA AND AND AND AND AND AND AND AND AND AN	of Detected	510	Marine and States	1.0
	trotoluene	Address and the Constant of Constant State of State and State and State and State and State and State and State	ot Detected	510		1.0
	maphthalene		ot Detected	310		1.0
95-57-8 2-Chloro		an a	ot Detected	510		1.0
	l-4,6-dinitrophenol		of Detected	2600		1.0
Concernation and a second s	Inaphthalene		ot Detected	390		1.0
	Iphenol (o-Cresol)	Ň	ot Detected	510		1.0
88-74-4 2-Nitroa		NEW SCHOOL SECTION IS AN ADDRESS STORE STORE AND ADDRESS STORE ADDRE	ot Detected	2600		1.0
88-75-5 2-Nitrop	henol	N	ot Detected	510		1.0
	ethylphenol		ot Detected	1000		1.0
99-09-2 - 3-Nitroa	niline	N	ot Detected	2600		1.0
	phenyl phenyl ether	******	ot Detected	310		1.0
59-50-7 4-Chloro	-3-methyl-phenol	Ň	ot Detected	510		1.0
 A state of the sta	odiphenylether	N	ot Detected	160	***************************************	1.0
100-01-6	niline	N	ot Detected	2600		1.0
100-02-7 4-Nitrop	henol	N	ot Detected	2600		1.0
83-32-9 Acenaph	thene	N	ot Detected	160		1.0
208-96-8 Acenaph	thylene	N	ot Detected	160		1.0
120-12-7 Anthrace	ene	N	ot Detected	160		1.0
103-33-3 Azobenz	ene	N	ot Detected	310		1.0
56-55-3 Benz[a]a	inthracene	27	70	160		1.0
50-32-8 Benzoja	pyrene	• N	ot Detected	310		1.0
]fluoranthene	· 43	30	310		1.0
191-24-2 Benzo[g	h,i]perylene	N	ot Detected	310		1.0
]fluoranthene	N	ot Detected	310		1.0
111-91-1 Bis(2-ch	loroethoxy)methane	N	ot Detected	310		1.0
CAS# : Chemical Abstra	ct Service Registry Number	ug/L : micro	gram / liter (ppb)	Lab	oratory Contacts	
RL : Reporting Limit		mg/L: millig	ram / liter (ppm)	Inor	ganic Unit Mgr: S	
ND : Not Detected			ogram / kilogram (ppb) gram / kilogram (ppm)	-	anic Unit Mgr: C ems Mgmt Unit: C	
		mg/ reg - mini	gran / knogran (ppm)	Syst	ons wgnit Ome V	Deorge Milszman

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MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY ENVIRONMENTAL LABORATORY

P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

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Sample Number: AA53410 OFC0051 0-6

Base Neutral Acid Compounds

Analytical M	lethod: 8270	Date Tested: 05/18/2005	Analyst: SMH	
Extraction N		Extraction Date: 05/03/2005	Qualifier:	
CAS #	Compound	Result ug/Kg dry	RL Qual	ifier 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	. The second 1.0 , we are the second seco
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=20	
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
67-75-9 621-64-7	N-Nitrosodimethylamine	Not Detected	510	1.0
	N-Nitrosodi-n-propylamine	Not Detected	310 310	1.0 1.0
156-10-5 87-86-5	N-Nitrosodiphenylamine			
87-80-5 85-01-8	Pentachlorophenol Phenanthrene	Not Detected 370	5300 160	1.0 1.0
108-95-2	Phenol	370 Not Detected	510	1.0
108-95-2	Pyrene	Not Detected	160	1.0 1.0
	troleum product(s) present.	UO	100	4 U
1100a010 pc	a orean producers/ present.		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
PCBs as Are	oclors			

Analytical Method:8082Extraction Method:3545	Date Tested: 05/10/2005 Extraction Date: 05/05/2005	Analyst: MF 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	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)	Laboratory Contact Inorganic Unit Mgr Organic Unit Mgr: Systems Mgmt Unit	: Sandy Gregg



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

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Sample Number: AA53410 OFC0051 0-6

PCBs as Aroclors

Analytical M	ethod:	8082	Date Tested:	05/10/2005	Analyst: MF		
Extraction M	ethod:	3545	Extraction Date:	05/05/2005	Qualifier:		
CAS#	Comp	ound	R	lesult ug/Kg dry	RL	Qualifier	Dilution Factor
53469-21-9	Arocic	r 1242	4	lot Detected	160		1.0
12672-29-6	Aroclo	or 1248	Ň	lot Detected	160		1.0
11097-69-1	Arocle	r 1254	1	80	160		1.0
11096-82-5	Aroclo	or 1260	N	lot Detected	160		1.0
37324-23-5	Aroclo	r 1262	· · · · · · · · · · · · · · · · · · ·	lot Detected	160		1.0
11100-14-4	Aroclo	r 1268	N	lot Detected	160		1.0
Sample N	umber	· 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) Laboratory Contacts Inorganic Unit Mgr: Sandy Gregg Organic Unit Mgr: Carol Smith Systems Mgmt Unit: George Krisztian

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P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 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** #2 - Fluorobiphenyl# SURROGATE 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 410 Not Detected 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 2100 Not Detected 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 2-Nitrophenol 88-75-5 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 4-Chloro-3-methyl-phenol 59-50-7 Not Detected 410 1.0 7005-72-3 4-Chlorodiphenylether Not Detected 120 1.0 4-Nitroaniline 100-01-6 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 1.0 250 205-99-2 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 ug / L : microgram / liter (ppb) Laboratory Contacts mg / L: milligram / liter (ppm) Inorganic Unit Mgr: Sandy Gregg RL : Reporting Limit ug / Kg : microgram / kilogram (ppb) Organic Unit Mgr: Carol Smith ND : Not Detected mg / Kg : milligram / kilogram (ppm) Systems Mgmt Unit: George Krisztian



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53411 OFC0052 6-12

Base Neutral Acid Compounds

Analytical M	ethod: 8270	Date Tested:	05/18/2005	Analyst: SMH		
Extraction M	ethod: 3545	Extraction Date	e: 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	4	1.0
218-01-9	Chrysene]	Not Detected	120		1.0
\$3-70-3	Dibenz[a,h]anthracene	1	Not Detected	250		10
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	1	Not Detected	120		10
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
<i>.</i> 7-4	Hexachlorocyclopentadiene		Not Detected	2500		1.0 . The second sec
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	1	Not Detected	120		1.0
98-95-3	Nitrobenzene	1	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	1	Not Detected	250		1.0
87-86-5	Pentachlorophenol]	Not Detected	4200		1.0
85-01-8	Phenanthrene	ta da	290	120		1.0
108-95-2	Phenol		Not Detected	410	1757 17 1975 1 1271 1 1071 1 1071 1 1071 1 1071 1 1071 1 1071 1 1071 1 1071 1 1071 1 1071 1 1071 1 1071 1 1071	1.0
129-00-0	Pyrene		500	120		
Probable pet	roleum product(s) present.					······································

PCBs as Aroclors

Analytical Method: 8082 Extraction Method: 3545	Date Tested: 05/10/2005 Extraction Date: 05/05/2005	Analyst: MF 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) mg / Kg : milligram / kilogram (ppm)	Laboratory Contacts Inorganic Unit Mgr: Organic Unit Mgr: Systems Mgmt Unit	Sandy Gregg Carol Smith

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P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53411 OFC0052 6-12

PCBs as Aroclors

Analytical Method: Extraction Method:	8082 3545	Date Tested: 05/10/2005 Extraction Date: 05/05/2005	Analyst: MF Qualifier:	
CAS # Comp	ound	Result ug/Kg dry	RL Q	Qualifier Dilution Factor
53469-21-9 Arocle	or 1242	Not Detected	. 120	1.0
	or 1248	Not Detected	120	1.0
11097-69-1 Arock	or 1254	Not Detected	120	1.0
	or 1260	Not Detected	120	1.0
37324-23-5 Arocla	or 1262	Not Detected	120	1.0
11100-14-4 Arocle	or 1268	Not Detected	120	1.0
Sample Number	r 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

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



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53412 OFP0052

Analytical Me		Date Tested: 05/23/2005	Analyst: SMH		
Extraction Me		Extraction Date: 05/03/2005	•		
AS #	Compound	Result ug/Kg	iry RL	Qualifier	Dilution Factor
JRROGATE	#2 - Fluorobiphenyl#	67.0			
IRROGATE	#2,4,6-Tribromophenol#	73.1			
JRROGATE	#2-Fluorophenol#	53.4			
RROGATE	#Nitrobenzene - D5#	54.6			
JRROGATE	#Phenol - D5#	57.2			
RROGATE	#p-Terphenyl-d14#	-104			
0-82-1	1,2,4-Trichlorobenzene	Not Detected	470		1.0
-50-1	1,2-Dichlorobenzene	Not Detected	230		1.0
1-73-1	1,3-Dichlorobenzene	Not Detected	230		1.0
6-46-7	1,4-Dichlorobenzene	Not Detected	230		1.0
-95-4	2,4,5-Trichlorophenol	Not Detected	770		1.0
-06-2	2,4,6-Trichlorophenol	Not Detected	770		10
0-83-2	2,4-Dichlorophenol	Not Detected	770		1.0
5-67-9	2,4-Dimethylphenol	Not Detected Not Detected	770 4000		1.0 1.0
-28-5	2,4-Dinitrophenol	A STATE OF A	nanan gaana ahka karaka karanga mata dalar karanga karanga karanga karanga karanga karanga karanga karanga kara		1.0
14-2 -20-2	2,4-Dinitrotoluene	Not Detected Not Detected	770 770		1.0
-20-2 -58-7	2,6-Dinitrotoluene 2-Chloronaphthalene	Not Detected	470		1.0
-Jo-7 -57-8	2-Chlorophenol	Not Detected	470 770		1.0
-57-8 4-52-1	2-Methyl-4,6-dinitrophenol	Not Detected	4000		1.0
-57-6	2-Methylnaphthalene	Not Detected	580		1.0
-48-7	2-Methylphenol (o-Cresol)	Not Detected	770		1.0
-74-4	2-Nitroaniline	Not Detected	4000		1.0
-75-5	2-Nitrophenol	Not Detected	770		1.0
8394,106445	3 & 4-Methylphenol	Not Detected	1500		1.0
-09-2	3-Nitroaniline	Not Detected	4000		- <u>1.0</u> ************************************
1-55-3	4-Bromophenyl phenyl ether	Not Detected	470		1.0
-50-7	4-Chloro-3-methyl-phenol	Not Detected	770		1.0
05-72 - 3	4-Chlorodiphenylether	Not Detected	230		1.0
)-01-6	4-Nitroaniline	Not Detected	4000		1.0
0-02-7	4-Nitrophenol	Not Detected	4000		1.0
-32-9	Acenaphthene	Not Detected	230		1.0
8-96-8	Acenaphthylene	Not Detected	230		1.0
0-12-7	Anthracene	Not Detected	230		1.0
3-33-3	Azobenzene	Not Detected	470		1.0
-55-3	Benz[a]anthracene	590	230		1.0
32-8	Benzo[a]pyrene	720	470.		1.0
5-99-2	Benzo[b]fluoranthene	1200	470	n	1.0
-24-2	Benzo[g,h,i]perylene	590	470		1.0
′-08- 9	Benzo[k]fluoranthene	Not Detected	470		1.0
1-91-1	Bis(2-chloroethoxy)methane	Not Detected	470		1.0

mg / L : milligram / liter (ppm)

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

RL : Reporting Limit

ND : Not Detected

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Inorganic Unit Mgr: Sandy Gregg

Organic Unit Mgr: Carol Smith

Systems Mgmt Unit: George Krisztian



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53412 OFP0052

Base Neutral Acid Compounds

Analytical Method: 8270		Date Tested:	05/23/2005	Analyst: SMH				
Extraction Method: 3545		Extraction Date		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	1.2000 PM COCCUSION OF THE TOP TO	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	Barris and the state of the second state of th	Not Detected	770	1.1	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		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	Eluorene		Not Detected	230	- De	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	and a state of the second s	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	n paga karna ang ang ang ang ang ang ang ang ang a	Not Detected	230		10		
98-95-3	Nitrobenzene		Not Detected	470		1.0		
67-75-9	N-Nitrosodimethylamine	e est de la de la grande de la de	Not Detected	770		1.0		
621-64-7	N-Nitrosodi-n-propylamine		Not Detected	470		1.0		
156-10-5	N-Nifrosodiphenylamine	and the second	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.								
DCDs as Amodors								

PCBs as Aroclors

Analytical Method: 8082 Extraction Method: 3545	Date Tested: 05/10/2005 Extraction Date: 05/05/2005	Analyst: MF Qualifier:		
CAS # Compound	Result ug/Kg dry	RL Qua	lifier 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 - State State	
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)	Organic Un	Contacts Jnit Mgr: Sandy Gregg nit Mgr: Carol Smith gmt Unit: George Krisztian	



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53412 OFP0052

PCBs as Aroclors

		Date T Extrac		10/2005 05/05/2005	Analy Quali	yst: MF fier:		
CAS #	Compound		Resul	t ug/Kg dry	F	L	Qualifier	Dilution Factor
53469-21-9	Areclor 1242		Not D	letected	2	30		1.0
12672-29-6	Aroclor 1248			etected	2	30		1.0
11097-69-1	Aroclor 1254		Not D	etected	2	30		1.0
11096-82-5	Aroclor 1260			etected		30		1.0
37324-23-5	Aroclor 1262		and the second secon	etected		30		1.0
11100-14-4	Aroclor 1268		Not D	etected	2	30		1.0
Sample	Number AA53412	OFP0052	2					
CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Teste	d Methoo	d 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	i 7740 ·	LAV
7440-22-4	Silver - Sediment	ND	mg/Kg dry	0.25		05/13/2005	5 7761	LAV
	Digest Mercury - Sediment	Completed				05/09/2005	7471	RK
<u>9-97-6</u>	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	and the state of the	MJ
7440-43-9	Cadmium - Sediment	ND	mg/Kg dry	2.0		05/23/2005	SPECTORS ADDITION OF ADDITION AND ADDITION AND ADDITIONAL ADDITICICAL ADDITICICAL ADDITIONAL ADDITIONAL ADDITI	MJ
7440-47-3	Chromum - Sediment	26	mg/Kg dry	2		05/23/2005		MJ
7440-50-8	Copper - Sediment	52	mg/Kg dry	2		05/23/2005		MJ
	Digest Metals - Sediment	Completed			E.C.	05/09/2005	3050	TK
7439-92-1	Lead - Sediment	72	mg/Kg dry	5		05/23/2005		MJ
7440-66-6	Zine - Sediment	230	mg/Kg dry	5		05/23/2005		MD
	% Total Solids	43.0	%	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) Laboratory Contacts Inorganic Unit Mgr: Sandy Gregg Organic Unit Mgr: Carol Smith Systems Mgmt Unit: George Krisztian

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P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53413 OFP0052D

nalytical Me		Date Tested: 05/23/2005	Analyst: SMH		
Extraction Me		Extraction Date: 05/03/2005	Qualifier:	~ ~~	
\S#	Compound	Result ug/Kg dry	, RL	Qualifier	Dilution Factor
RROGATE	#2 - Fluorobiphenyl#	68.5			
RROGATE	#2,4,6-Tribromophenol#	68.3			
RROGATE	#2-Fluorophenol#	50.5	-		
RROGATE	<pre>#Nitrobenzene - D5# #Phenol - D5#</pre>	49.4		2.2	
RROGATE		51.5	·		
0-82-1	#p-Terphenyl-d14# 1,2,4-Trichlorobenzene	101 Not Detected	4(0		1.0
50-1	1,2,4-Themorobenzene	Not Detected	460 230	2010	1.0
50-1 1-73-1	1,3-Dichlorobenzene	Not Detected	230		10
5-46-7	1,4-Dichlorobenzene	Not Detected	230		1.0 1.0
.95-4	2,4,5-Trichlorophenol	Not Detected	760		1.0
06-2	2,4,6-Trichlorophenol	Not Detected	760		1.0
)-83-2	2,4-Dichlorophenol	Not Detected	760		1.0
5-67-9	2,4-Dimethylphenol	Not Detected	760		1.0
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
58-7	2-Chloronaphthalene	Not Detected	460		1.0
57-8	2-Chlorophenol	Not Detected	760		1.0
-52-1	2-Methyl-4,6-dinitrophenol	Not Detected	3900		. 1.0
57-6	2-Methylnaphthalene	Not Detected	580		1.0
48-7	2-Methylphenol (o-Cresol)	Not Detected	760		-1.0
74-4	2-Nitroaniline	Not Detected	3900		1.0
75-5	2-Nitrophenol	Not Detected	760		1.0
394,106445	3 & 4-Methylphenol	Not Detected	1500		1.0
09-2	3-Nitroaniline	Not Detected	3900		1.0
-55-3	4-Bromophenyl phenyl ether	Not Detected	460		1.0
50-7	4-Chloro-3-methyl-phenol	Not Detected	760		1.0
5-72-3	4-Chlorodiphenylether	Not Detected	230		1.0
-01-6	4-Nitroaniline	Not Detected	3900		1.0
-02-7	4-Nitrophenol	Not Detected	3900		1.0
32-9	Acenaphthene	Not Detected	230		1.0
-96-8	Acenaphthylene	Not Detected	230		1.0
-12-7	Anthracene	Not Detected	230		1.0
-33-3	Azobenzene	Not Detected	460		1.0
55-3	Benz[a]anthracene	650	230		1.0
32-8	Benzo[a]pyrene	750	460		1.0
-99-2	Benzo[b]fluoranthene	1200	460		1.0
-24-2	Benzo[g,h,i]perylene	700	460		. 1.0
-08-9	Benzo[k]fluoranthene	Not Detected	460		1.0
-91-1	Bis(2-chloroethoxy)methane	Not.Detected	460		
CAS# : Cher	mical Abstract Service Registry Number	ug / L : microgram / liter (ppb)	Labo	oratory Contacts	
RL : Rep	orting Limit	mg/L: milligram/liter (ppm)	Inor	ganic Unit Mgr:	
ND : Not	Detected	ug / Kg : microgram / kilogram (ppb mg / Kg : milligram / kilogram (ppm	, 0	nic Unit Mgr:	Carol Smith George Krisztian

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P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53413 OFP0052D

Base Neutral Acid Compounds

Analytical M	lethod: 8270	Date Tested:	05/23/2005	Analyst:	SMH	
Extraction N	fethod: 3545	Extraction Date	: 05/03/2005	Qualifier:		
CAS #	Compound]	Result ug/Kg dry	RL	Qualifier	Dilution Factor
111-44-4	Bis(2-chloroethyl)ether	1	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	1	Not Detected	230		1.0
86-74-8	Carbazole	1	Not Detected	760	Contraction of the second	1.0
218-01-9	Chrysene	9	930	230		1.0
53-70-3	Dibenz[a,h]anthracene	1 (Sec. 1	Not Detected	460		1.0 States and Selection and Selection
132-64-9	Dibenzofuran	1	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	1	Not Detected	230		10
117-84-0	Di-n-octyl phthalate	1	Not Detected	460		1.0
86-73-7	Fluorene	1	Not Detected	230		1.0
206-44-0	Fluoroanthene		2000	230		1.0
118-74-1	Hexachlorobenzene	1	Not Detected	460		1.0
68-3	Hexachlorobutadiene	1	Not Detected	460		1.0
47-4	Hexachlorocyclopentadiene	1	Not Detected	4600	5	1.0
67-72-1	Hexachloroethane	1	Not Detected	230		1.0
193-39-5	Indeno(1,2,3-c,d)pyrene		520	460		-1.0
78-59-1	Isophorone	1	Not Detected	230		1.0
91-20-3	Naphthalene	1	Not Detected	230	line and the second	1.0
98-95-3	Nitrobenzene	1	Not Detected	460		1.0
67-75-9	N-Nitrosodimethylamine	1	Not Detected	760		1.0 0.0 0.0 0.0 0.0 0.0
621-64-7	N-Nitrosodi-n-propylamine	1	Not Detected	460		1.0
156-10-5	N-Nitrosodiphenylamine	, P	Not Detected	460	1946 (Sec. 1997)	1.0
87-86-5	Pentachlorophenol	ľ	Not Detected	7900		1.0
85-01-8	Phenanthrene	8	.70	230		1.0
108-95-2	Phenol	1	Not Detected	760		1.0
129-00-0	Pyrene	2	200	230		1.0
Probable pe	troleum product(s) present.					

PCBs as Aroclors

Analytical Method: 8082 Extraction Method: 3545	Date Tested: 05/10/2005 Extraction Date: 05/05/2005	Analyst: MF 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	19-00-9-0 -00
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)	Laboratory Contacts Inorganic Unit Mgr: Sandy Gregg Organic Unit Mgr: Carol Smith Systems Mgmt Unit: George Krisztian	



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53413 OFP0052D

PCBs as Aroclors

Analytical Extraction					Analyst: MF Oualifier:			
CAS#	Compound			t ug/Kg dry	RL	Qualifier	Dilution Factor	
53469-21-9	Aroclor 1242		Not D	etected	230		1.0	
12672-29-6	Aroclor 1248		Not D	etected	230		1.0	20.00 k
11097-69-1	Aroclor 1254			etected	230		1.0	
11096-82-5	Aroclor 1260			etected	230		1.0	088034
37324-23-5	Aroclor 1262			etected	230	*****	1.0	
11100-14-4	Aroclor 1268		Not D	etected	230		1.0	
Sample	Number AA53413	OFP005	2D					
CAS#	Analyte Name	Result	Unit	RL Quali	ifier Date Teste	ed Method	Analyst	
		Result 12.8	· · · · ·	RL Quali	ifier Date Test 05/19/200:		Analyst LAV	
CAS#	Analyte Name		Unit	-		5 7060	•	
CAS# 7440-38-2	Analyte Name Arsenic - Sediment	12.8	Unit mg/Kg dry	0.5	05/19/200:	5 7060 5 7740	LAV	
CAS# 7440-38-2 7782-49-2	Analyte Name Arsenic - Sediment Selenum - Sediment	12.8 ND	Unit mg/Kg dry mg/Kg dry mg/Kg dry	0.5	05/19/200: 05/12/200	5 7060 5 7740 5 7761	LAV LAV	
CAS# 7440-38-2 7782-49-2	Analyte Name Arsenic - Sediment Selenium - Sediment Silver - Sediment	12.8 ND ND	Unit mg/Kg dry mg/Kg dry mg/Kg dry	0.5	05/19/200: 05/12/200 05/13/200:	5 7060 5 7740 5 7761 5 7471	LAV LAV LAV	
CAS# 7440-38-2 7782-49-2 7440-22-4	Analyte Name Arsenic - Sediment Selenium - Sediment Silver - Sediment Digest Mercury - Sediment	12.8 ND ND Completed	Unit mg/Kg dry mg/Kg dry mg/Kg dry 1	0.5 0.5 0.25	05/19/200: 05/12/200 05/13/200: 05/09/200	5 7060 5 7740 5 7761 5 7471 5 7471	LAV LAV LAV RK	
CAS# 7440-38-2 7782-49-2 7440-22-4 ~*39-97-6)-39-3 /440-43-9	Analyte Name Arsenic - Sediment Selenium - Sediment Silver - Sediment Digest Mercury - Sediment Mercury - Sediment	12.8 ND ND Completed .12	Unit mg/Kg dry mg/Kg dry mg/Kg dry i mg/Kg dry	0.5 0.5 0.25	05/19/200: 05/12/200 05/13/200: 05/09/200: 05/26/200:	5 7060 5 7740 5 7761 5 7471 5 7471 5 6010	LAV LAV LAV RK TS	
CAS# 7440-38-2 7782-49-2 7440-22-4 ~*39-97-6 3-39-3	Analyte Name Arsenic - Sediment Selenium - Sediment Silver - Sediment Digest Mercury - Sediment Mercury - Sediment Barium - Sediment	12.8 ND ND Completec .12 130	Unit mg/Kg dry mg/Kg dry mg/Kg dry i mg/Kg dry mg/Kg dry	0.5 0.5 0.25 0.05 1	05/19/200: 05/12/200 05/13/200: 05/09/200 05/26/200: 05/26/200:	5 7060 5 7740 5 7761 5 7471 5 7471 5 7471 5 6010 5 6010	LAV LAV LAV RK TS MJ	
CAS# 7440-38-2 7782-49-2 7440-22-4 ~*39-97-6)-39-3 /440-43-9	Analyte Name Arsenic - Sediment Selenium - Sediment Silver - Sediment Digest Mercury - Sediment Mercury - Sediment Barium - Sediment Cadmium - Sediment	12.8 ND Completec .12 130 ND	Unit mg/Kg dry mg/Kg dry mg/Kg dry i mg/Kg dry mg/Kg dry mg/Kg dry	0.5 0.5 0.25 0.05 1 2.0	05/19/200: 05/12/200 05/13/200: 05/09/200 05/26/200: 05/23/200: 05/23/200:	5 7060 5 7740 5 7761 5 7471 5 7471 5 7471 5 6010 5 6010 5 6010	LAV LAV LAV RK TS MJ MJ	

Digest Metals - Sediment Completed _05/09/2005 3050 IK 7439-92-1 Lead - Sediment mg/Kg dry 5 05/23/2005 6010 MJ 66 6010 7440-66-6 Zinc - Sediment 230 mg/Kg dry 5 05/23/2005 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



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53414 OFP013

Base Neutral Acid Compounds

Dase Neutra	i Acia Compounds			
Analytical Me	ethod: 8270	Date Tested: 05/23/2005	Analyst: SMH	
Extraction M	ethod: 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	10
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	10
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		Not Detected	1600	10 10
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	10
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
208-96-8 120-12-7	Acchaphthylene	Not Detected Not Detected	250	1.0 1.0
120-12-7	Azobenzene	Not Detected	250 490	1.0
Sector and the sector of the s		\$50	250	1.9
56-55-3 50-32-8	Benz[a]anthracene	700	490	
205-99-2	Benzo[a]pyrene Benzo[b]fluoranthene		490	1.0
203-99-2 191-24-2	Benzo[g,h,i]perylene	1200 700	490	1.0 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
	Dist2-chioroculoxy Jinculatic		770	1.0
CAS# : Che	emical Abstract Service Registry Number	ug / L : microgram / liter (ppb)		oratory Contacts
	porting Limit	mg/L: milligram/liter (ppm)		ganic Unit Mgr: Sandy Gregg
ND : No	ot Detected	ug / Kg : microgram / kilogram (ppb) mg / Kg : milligram / kilogram (ppm)		unic Unit Mgr: Carol Smith erns Mgmt Unit: George Krisztian
1			,	· · ·



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53414 OFP013

Base Neutral Acid Compounds

Analytical Me	ethod: 8270	Date Tested: 05/23/2005	Analyst: SMH		
Extraction M	ethod: 3545	Extraction Date: 05/03/2005	Qualifier:		
CAS#	Compound	Result ug/Kg dry	r 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	1992-1997 (1995) - 1997 (1997) - 1997 (1997) - 1997 (1997) - 1997 (1997) - 1997 (1997) - 1997 (1997) - 1997 (1	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	and the second	M=200	1.0
131-11-3	Dimethyl phthalate	Not Detected	490		1.0
84-74-2	Di-n-butyl phthalate	Not Detected	250	Ringing (Interneting during stars, 1999-19	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	an da an	1.0
\$8- 3	Hexachlorobutadiene	Not Detected	490		1.0
47-4	Hexachlorocyclopentadiene	Not Detected	and the second secon	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	Isophorene	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 85-01-8	Pentachiorophenol Phenanthrene	Not Detected	8400		1.0
85-01-8 108-95-2	Phenol	700	250		1.0
108-93-2		Not Detected	810		1.0
	Pyrene oleum product(s) present.	1900	250		1.0
riobable petr	oleum produci(s) present.				

PCBs as Aroclors

Analytical Met Extraction Met		Date Tested: Extraction Date:	05/10/2005 05/05/2005	Analyst: MF Qualifier:		
CAS #	Compound	R	Result ug/Kg dry	RL	Qualifier	Dilution Factor
SURROGATE	#Decachlorobiphenyl#	6	5.2			
SURROGATE	#Tetrachloro-m-xylene#		9.9			
12674-11-2	Aroclor 1016	N	lot Detected	250	***************	1.0
11104-28-2	Aroclor 1221	N	lot Detected	250		10
11141-16-5	Aroclor 1232	N	lot Detected	250		1.0
	nical Abstract Service Registry Number orting Limit Detected	mg/L: millig ug/Kg : micr	ogram / liter (ppb) gram / liter (ppm) ogram / kilogram (ppb) gram / kilogram (ppm)	Inc Or	boratory Contacts organic Unit Mgr: ganic Unit Mgr: stems Mgmt Unit:	Carol Smith



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

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# Com	npound	F	Result ug/Kg dry	RL	Qualifier	Dilution Factor
53469-21-9 Aroc	clor 1242	1	Not Detected	250		1.0
12672-29-6 Aroc	clor 1248	N .	Not Detected	250		1.0
	clor 1254	ľ	Not Detected	250		1.0
11096-82-5 Aroo	clor 1260) I	Not Detected	250		1.0
37324-23-5 Aroc	clor 1262	r	Not Detected	250		1.0
[1100-14-4] Aroc	clor 1268	N. State	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	Complete	d			05/09/2005	7471	RK
``139-97-6	Mercury - Sediment	.15	mg/Kg dry	0.05		05/26/2005	7471	TS
j-39-3	Barium - Sediment	110	mg/K.g dry	1	States and	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	Complete	đ			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	Complete	đ		, state	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



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53415 OFC013 0-6

Base Neutral	Acid Compounds					
Analytical Me	thod: 8270	Date Tested:	05/18/2005	Analyst: SMH		
Extraction Me	ethod: 3545	Extraction Da	te: 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
-14-2	2.4 Dimitrotoluene		Not Detected	620		10
J-20-2	2,6-Dinitrotoluene		Not Detected	620		1.0
91-58-7	2-Chloronaphthalene		Not Detected	380		1.0
95-57-8 534-52-1	2-Chlorophenol 2-Methyl-4,6-dinitrophenol		Not Detected	620 3200		1.0 1.0
91-57-6	2-Methylnaphthalene		Not Detected	3200 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	and a second	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		L0
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
M1-91-1	Bis(2-chloroethoxy)methane		Not Detected	380	an a	1.0
	mical Abstract Service Registry Number	-	crogram / liter (ppb)		oratory Contacts	
	porting Limit		lligram / liter (ppm) icrogram / kilogram (ppb)		ganic Unit Mgr: 3 anic Unit Mgr:	
ND : No	t Detected		illigram / kilogram (ppm)	•	ems Mgmt Unit:	4



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53415 OFC013 0-6

Base Neutral Acid Compounds

Analytical Me	ethod: 8270	Date Tested:	05/18/2005	Analyst: SMH		
Extraction M	ethod: 3545	Extraction Date	e: 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	2 () () () () () () () () () (1.0
58-3	Hexachlorobutadiene		Not Detected	380	and the second	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	Construction of the Constr	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	Constant and Manager and Manager	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	1994-1997 (1997) - 1997 (1997) - 1997 (1997) (1997) (1997) - 1997 (1997)	470	190		1.0
108-95-2	Phenol		Not Detected	620	100 100 100 100 100 100 100 100 100 100	1.0
129-00-0	Pyrene		Not Detected	. 190		1.0
Probable pet	roleum product(s) present.					·····

PCBs as Aroclors

Analytical Met Extraction Met		Date Tested: Extraction Date	05/10/2005 e: 05/05/2005	Analyst: MF Oualifier:		
CAS#	Compound		Result ug/Kg dry	L.	Qualifier	Dilution Factor
SURROGATE	#Decachlorobiphenyl#		67.4			
SURROGATE	#Tetrachloro-m-xylene#		66.5			
12674-11-2	Aroclor 1016		Not Detected		K	2.0
11104-28-2	Aroclor 1221]	Not Detected	380	K	2.0
11141-16-5	Aroclor 1232	1	Not Detected	380	K	2.0
h.e.	mical Abstract Service Registry Nu orting Limit Detected	mg/L: mill ug/Kg : mic	crogram / liter (ppb) ligram / liter (ppm) crogram / kilogram (ppl lligram / kilogram (ppr) C	aboratory Contacts norganic Unit Mgr: Irganic Unit Mgr: ystems Mgrnt Unit	Sandy Gregg

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P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53415 OFC013 0-6

PCBs as Aroclors

Analytical Extraction				10/2005 5/05/2005	Analy Quali	/st: MF fier:			
CAS#	Compound		Resul	t ug/Kg dry	R	L	Qualifier	Dilution Factor	
53469-21-9	Aroclor 1242		Not D	etected	3	30 H	ζ.	2.0	
12672-29-6	Aroclor 1248		Not D	etected	3	30 H	ζ	2.0	1999-1292230
11097-69-1	Aroclor 1254		340		1	90 6	,	1.0	
11096-82-5	Aroclor 1260		Not D	etected	19	90		1.0	
37324-23-5	Aroclor 1262		Not D	etected	1	90		1,0	
11100-14-4	Aroclor 1268		Not D	etected	19	90		1.0	
Sample	Number AA53415	OFC013	0-6	• • •					
CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Teste	d 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	20.00			05/09/2005	7471	RK	
***************	Mercury - Sediment	.18	mg/Kg dry	0.05		05/10/2005	7471	TS	
J-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/K.g dry	5		05/23/2005	6010	MJ	
7440-66-6	Zinc - Sediment	210	mg/K.g 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) 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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P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53416 OFC013 6-13

Base Neutral Acid Compounds

	Acia Compounds						
Analytical Me		Date Tested:		9/2005	Analyst:	SMH	
Extraction Me		Extraction Dat		/03/2005	Qualifier:		
CAS #	Compound			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 De	tected	370		10
95-50-1	1,2-Dichlorobenzene		Not De	tected	190		1.0
541-73-1	1,3-Dichlorobenzene		Not De	tected	190		1.0
106-46-7	1,4-Dichlorobenzene		Not De	tected	190		1.0
95-95-4	2,4,5-Trichlorophenol		Not De	tected	610		1.0
88-06-2	2,4,6-Trichlorophenol		Not De	tected	610		1.0
120-83-2	2,4-Dichlorophenol		Not De	tected	610		1.0
105-67-9	2,4-Dimethylphenol		Not De	tected	610	:	1.0
51-28-5	2,4-Dinitrophenol		Not De	tected	3100		1.0
-14-2	2,4-Dinitrotoluene		Not De	tected	610	•	1.0
J-20-2	2,6-Dinitrotoluene		Not De	teeted	610	125	1.0
91-58-7	2-Chloronaphthalene		Not De	tected	370	· •	1.0
95-57-8	2-Chlorophenol		Not De	tected	610		1.0
534-52-1	2-Methyl-4,6-dinitrophenol		Not De	tected	3100		1.0
91-57-6	2-Methylnaphthalene		Not De	tected	460	. I 1993	1.0
95-48-7	2-Methylphenol (o-Cresol)		Not De	tected	610		1.0
88-74-4	2-Nitroaniline		Not De	tected	3100		1.0
88-75-5	2-Nitrophenol		Not De	tected	610		1.0
108394,106445	3 & 4-Methylphenol		Not De	tected	1200		1.0
99-09-2	3-Nitroaniline		Not De	tected	3100		1.0
101-55-3	4-Bromophenyl phenyl ether	2.2	Not De	tected	370		1.0
59-50-7	4-Chloro-3-methyl-phenol		Not De	tected	610		1.0
7005-72-3	4-Chlorodiphenylether		Not De	tected	190		1.0
100-01-6	4-Nitroaniline		Not De	tected	3100		1.0
100-02-7	4-Nitrophenol		Not De	tected	3100		1.0
83-32-9	Acenaphthene		Not Det	tected	190		1.0
208-96-8	Acenaphthylene	the second second	Not De	lected	190		1.0
120-12-7	Anthracene		Not De	tected	190		1.0
103-33-3	Azobenzene		Not De	tected	370		1.0
56-55-3	Benz[a]anthracene		Not De	iected	190		1.0
50-32-8	Benzo[a]pyrene		590	949.459.999.999.999.999.999.995.995.995.	370		1.0
205-99-2	Benzo[b]fluoranthene		Not De	tected	370		1.0
191-24-2	Benzo[g,h,i]perylene		Not Det		370		1.0
207-08-9	Benzo[k]fluoranthene		Not Del	lected	370		1.0
111-91-1	Bis(2-chloroethoxy)methane	e Asalar na kata tan ina katabuta katabaga	Not Det	0.000000000000000000000000000000000000	370		1.0
ſ	· · · · · · · · · · · · · · · · · · ·					· · · · · ·	
	mical Abstract Service Registry Number	ug/L:mid				Laboratory Contact	
-	porting Limit	mg/L:mil ug/Kg:mi		ter (ppm) kilogram (ppb)		Inorganic Unit Mg Organic Unit Mgr:	
ND : No	t Detected	•••	-	cilogram (ppm)		• •	it: George Krisztian
1							

.



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

•

Sample Number: AA53416 OFC013 6-13

Base Neutral Acid Compounds

Analytical M	e thod: 8270	Date Tested: 05/19/2005	Analyst: SMH	
Extraction M	ethod: 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 best and a second second second	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	Isophorene	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 pet	roleum product(s) present.			

PCBs as Aroclors

Analytical M Extraction N CAS #		Date Tested: 05/10/2005 Extraction Date: 05/05/2005 Result ug/Kg dry	Analyst: MF Qualifier: RL	Qualifier	Dilution Factor
SURROGATE SURROGATE		41.7 \$9.5			
12674-11-2 11104-28-2	Aroclor 1016 Aroclor 1221	Not Detected Not Detected	650 650	K K	3.5 3.5
11141-16-5	Aroclor 1232	630	190	6	1.0
RL : 1	Chemical Abstract Service Registry Number Reporting Limit Not Detected	ug / L : microgram / liter (ppb) mg / L : milligram / liter (ppm) ug / Kg : microgram / kilogram (ppb) mg / Kg : milligram / kilogram (ppm)	lno Or	boratory Contacts organic Unit Mgr: ganic Unit Mgr: stems Mgmt Unit:	Sandy Gregg



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53416 OFC013 6-13

PCBs as Aroclors

Analytical M Extraction M		8082 3545	Date Tested: Extraction Dat)/2005 /05/2005	Analyst: Qualifier		
CAS #	Comp	ound		Result	ug/Kg dry	RL	Qualifier	Dilution Factor
53469-21-9	Arocle	or 1242		Not De	tected	650	К	3.5
12672-29-6	Aroch	or 1248		Not De	tected	650	K	3.5
11097-69-1	Aroclo	or 1254		Not De	tected	190		1.0
11096-82-5	Arocle	»r 1260		Not De	tected	190		1.0
37324-23-5	Aroclo	or 1262		Not De	tected	190		1.0
11100-14-4	Aroch	or 1268		Not De	tected	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	1947) 1947)	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	1			05/09/2005	7471	RK.
*19-97-6	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	1			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	L.			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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P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53417 OFC013 13-17

Base Neutral	Acid Compounds			·		
Analytical Me	thod: 8270	Date Tested:	05/19/2005	Analyst:	: SMH	
Extraction Me	sthod: 3545	Extraction Dat	e: 05/03/20	05 Qualifier	r:	
CAS #	Compound		Result ug/K	g dry RL	Qualifier	Dilution Factor
SURROGATE	#2 - Fluorobiphenyl#		73.8			
SURROGATE	#2,4,6-Tribromophenol#		77.0			
SURROGATE	#2-Fluorophenol#		52.8			n an
SURROGATE	#Nitrobenzene - D5#		52.9			
SURROGATE	#Phenol - D5#		61.9			
SURROGATE	#p-Terphenyl-d14#		103			
120-82-1	1,2,4-Trichlorobenzene	Coll 24 Control of the server is a server of the server and a second server as a server	Not Detected	370		1.0
95-50-1	1,2-Dichlorøbenzene	a survey ou and the second	Not Detected	~~~~~~		1.0
541-73-1	1,3-Dichlorobenzene	and a first of the second s	Not Detected	190		1.0
106-46-7	1,4-Dichlorobenzene		Not Detected	a de la companya de l		1.0
95-95-4	2,4,5-Trichlorophenol		Not Detected	620		1.0
88-06-2	2,4,6-Trichlorophenol		Not Detected	620		10
120-83-2	2,4-Dichlorophenol	in the relation of the second s	Not Detected	620		1.0
105-67-9	2,4-Dimethylphenol		Not Detected			1.0
51-28-5	2,4-Dinitrophenol		Not Detected	3200)	1.0
14-2	2,4-Dinitrotoluene		Not Detected			1.0
ാ-20-2 91-58-7	2,6-Dinitrotoluene 2-Chloronaphthalene	n ministra de la finada da compañía de la compañía	Not Detected	620		1.0
95-57-8	2-Chlorophenol	NAME AND ADDRESS OF A DECEMBER OF A	Not Detected Not Detected	370 620		1.0 1.0
534-52-1	2-Methyl-4,6-dinitrophenol	a na seu de la casta case de la case da mais de la companya de la case de la case de la case de la case de la c	Not Detected	3200		1.0
91-57-6	2-Methylnaphthalene		Not Detected	3200 470		1.0
95-48-7	2-Methylphenol (o-Cresol)		Not Detected	620		1.0
88-74-4	2-Nitroaniline		Not Detected	3200	1 (1997) 1	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	##10#0433#1000#1022.0030.309000.30000#1310383813603	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			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
	mical Abstract Service Registry Number		rogram / liter (pp		Laboratory Contacts	
	orting Limit	•	igram / liter (ppn	•	Inorganic Unit Mgr.	
ND : Not	Detected		rogram / kilograr ligram / kilogram		Organic Unit Mgr: Systems Mgmt Unit	

Lab Work Order #: 50400391

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P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53417 OFC013 13-17

Base Neutral Acid Compounds

Analytical Me	thod: 8270	Date Tested:	05/19	9/2005	Analyst:	SMH		
Extraction Me	ethod: 3545	Extraction Dat	te: 05	/03/2005	Qualifier:			
CAS#	Compound		Result	ug/Kg dry	RL		Qualifier	Dilution Factor
111-44-4	Bis(2-chloroethyl)ether		Not De	tected	190			1.0
108-60-1	Bis(2-chloroisopropyl)ether		Not De	tected	190			1.0
117-81-7	Bis(2-ethylhexyl)phthalate		Not De	tected	370	- 1		1.0
85-68-7	Butyl benzyl phthalate		Not De	tected	190			1.0
86-74-8	Carbazole		Not De	tected	620			1.0
218-01-9	Chrysene		Not De	tected	190			1.0
53-70-3	Dibenz[a,h]anthracene		Not De	tected	370			1.0
132-64-9	Dibenzofuran		Not De	tected	620			1.0
84-66-2	Diethylphthalate		560		190	l	M=200	1.0
131-11-3	Dimethyl phthalate		Not De	tected	370			1.0
84-74-2	Di-n-butyl phthalate		Not De	tected	190			1.0
117-84-0	Di-n-octyl phthalate		Not De	tected	370			1.0
86-73-7	Fluorene		Not De	er et fan de ster de s	190			1.0
206-44-0	Fluoroanthene		Not De	AND ANY AVERAGE AND ANY	190			1.0
118-74-1	Hexachlorobenzene		Not De	ting trifficture of a state of a s	370			1.0
18-3	Hexachlorobutadiene		Not De		370	The second second		1.0
47-4	Hexachlorocyclopentadiene		Not De		3700			1.0
67-72-1	Hexachloroethane		Not De		190			1.0
193-39-5	Indeno(1,2,3-c,d)pyrene		Not De		370			10
78-59-1	Isophorone		Not De	tected	190			1.0
91-20-3	Naphthalene		230		190			1.0
98-95-3	Nitrobenzene		Not De	anana manan kanara tanana bartukai kanarina ta sata	370	2.31753535353535		1.0
67-75-9	N-Nitrosodimethylamine		Not De		620			1.0
621-64-7	N-Nitrosodi-n-propylamine		Not De	CONTRACTOR OF CONT	370			1.0
156-10-5	N-Nitrosodiphenylamine		Not De		370			1.0
87-86-5	Pentachlorophenol		Not De	en a constant a constan	6400			1.0
85-01-8	Phenanthrene		Not De	2.5- 9/2.937.547.547.528.4	190			1.0
108-95-2	Phenol		Not De		620			1.0
129-00-0	Pyrene		Not De	tected	190			1.0
Probable petr	oleum product(s) present.							

PCBs as Aroclors

	alytical Method: traction Method:	8082 3545	Date Tested: Extraction Date	05/10/2005 : 05/05/2005	Analyst: MF Qualifier:			
CAS	# Comp	oound	1	Result ug/Kg dry	RL	Qualifier	Dilution Factor	
SUR	ROGATE #Deca	ichlorobiphenyl#		8.4				
SUR	ROGATE #Tetra	achloro-m-xylene#		51.1				
1267	4-11-2 Arocl	or 1016	1	Not Detected	390	K	2.1	
		or 1221	1	Not Detected	390	K	2.1	
1114	1-16-5 Aroch	or 1232	1	Not Detected	390	ĸ	2.1	
. Г Х	CAS# : Chemical Ab RL : Reporting Li ND : Not Detected		mg/L:milli ug/Kg:mic	ogram / liter (ppb) gram / liter (ppm) rogram / kilogram (ppb) ligram / kilogram (ppm)	Inc Or	boratory Contacts organic Unit Mgr: ganic Unit Mgr: stems Mgmt Unit:	Sandy Gregg	



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53417 OFC013 13-17

PCBs as Aroclors

Analytical M	ethod:	8082	Date Tested:	05/10/2005	Analyst: MF		
Extraction M	lethod:	3545	Extraction Date	e: 05/05/2005	Qualifier:		
CAS#	Comp	ound		Result ug/Kg dry	RL	Qualifier	Dilution Factor
53469-21-9	Arocle	or 1242		Not Detected	390	K	2.1
12672-29-6	Aroclo	or 1248		Not Detected	390	K	2.1
11097-69-1	Aroclo	n 1254		Not Detected	190		10
11096-82-5	Aroclo	or 1260		Not Detected	190		1.0
37324-23-5	Aroclo	r 1262		Not Detected	190		1.0
11100-14-4	Aroclo	r 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/K.g 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.
~ 139-97-6	Mercury - Sediment	.39	mg/Kg dry	0.05		05/10/2005	7471	TS
)-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	MI
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	Zine - 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

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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P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53418 OFP003

Base Neutral Acid Compounds

	Acta Compounds					
Analytical Me		Date Tested:	05/19/2005	Analyst: SMH		
Extraction M		Extraction Date		Qualifier:		
CAS#	Compound		Result ug/Kg dry	RL	Qualifier	Dilution Factor
SURROGATE	#2 - Fluorobiphenyl#		Not Applicable		V	
SURROGATE	#2,4,6-Tribromophenol#	exception and a second	Not Applicable		V	
SURROGATE	#2-Fluorophenol#		Not Applicable	1997 (1997 (1997 (1997 (1997 (1997 (1997 (1997 (1997 (1997 (1997 (1997 (1997 (1997 (1997 (1997 (1997 (1997 (1997	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	iter and the second s	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	ちちょうちょうちん ちょうちょう ちょうちょう しょうちょう ちょうちょう ひょうちょう ひょうせいせん	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	21/2/10/2/04/5/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/	Not Detected	38000		10
·-14-2	2,4-Dinitrotoluene	CHARLES CONTRACTOR CONTRACTOR STATES	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	ARRENT AN	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	CONSIGNATION SOCIETING AND A DESCRIPTION OF SOCIETING CONSIGNATION	Not Detected	38000		10
88-75-5	2-Nitrophenol		Not Detected	7300		10
cheral (cheral and a second second second second second	3 & 4-Methylphenol		Not Detected	15000		10
99-09-2	3-Nitroaniline	The second s	Not Detected	38000		10
101-55-3	4-Bromophenyl phenyl ether	CHICK AND CONTRACTOR OF A CALCULAR AND AND A CALCULAR AND A	Not Detected	4400		10
59-50-7	4-Chloro-3-methyl-phenol	CONTRACT ADJ AND CONTRACT OF CONT	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	and a subscription of the second s	Not Detected	38000		10
83-32-9	Acenaphthene		Not Detected	2200		10
208-96-8	Acenaphthylene	27.06363702012/2010/0000000000000000000000000000	Not Defected	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# · Ch	emical Abstract Service Registry Number	ug/L. · mic	rogram / liter (ppb)	I ah	oratory Contacts	
· · ·	porting Limit		ligram / liter (ppm)		ganic Unit Mgr:	Sandy Gregg
	bt Detected		crogram / kilogram (ppb)		anic Unit Mgr:	
1		mg / Kg : mi	lligram / kilogram (ppm)	Syst	ems Mgmt Unit:	George Krisztian



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53418 OFP003

Base Neutral Acid Compounds

Analytical Me	ethod: 8270	Date Tested:	05/19/2005	Analyst: SMH			
Extraction M	ethod: 3545	Extraction Da	te: 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		$\sim 10^{-10}$	
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		\$500	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	
	roleum product(s) present.						
RLs raised du	ue to matrix interference.						
PCBs as Aroclors							
Analytical Me	thod: 8082	Date Tested:	05/10/2005	Analyst: MF			
Extraction Me		Extraction Dat	te: 05/05/2005	Qualifier:		đ	
CAS#	Compound		Result ug/Kg dry	RL	Qualifier	Dilution Factor	
SURROGATE	#Decachlorobiphenyl#		60.6				

56.0

Not Detected

Not Detected

360

Κ

360 K 1.6

SURROGATE #Tetrachloro-m-xylene#

Aroclor 1016

11104-28-2 Aroclør 1221

12674-11-2



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Sample Number: AA53418 **OFP003**

PCBs as Aroclors

Analytical M	ethod:	8082	Date Tested:	05/10)/2005	Analyst:	MF			
Extraction M	ethod:	3545	Extraction Dat	e: 05	/05/2005	Qualifier:				
CAS#	Comp	ound		Result	ug/Kg dry	RL		Qualifier	Dilution Factor	
11141-16-5	Arocle	эт 1232		Nöt De	tected	360		K	-1.6	
53469-21-9	Aroclo	or 1242		340		220		JD 6	1.0	
12672-29-6	Arocle	or 1248		Not De	tected	360		K	1.6	
11097-69-1	Aroclo	or 1254		310		220		JD 6	1.0	
11096-82-5	Arocle	or 1260		Not De	tected	220	÷.		1.0	
37324-23-5	Aroclo	or 1262		Not De	tected	220			1.0	
11100-14-4	Arocle	or 1268		Not De	tected	220			1.0	

Sample Number AA53418 **OFP003**

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
440-38-2	Arsenic - Sediment	11.7	mg/Kg dry	0.5		05/19/2005	7060	LAV
782-49-2	Selenium - Sediment	0.8	mg/Kg dry	0.5		05/12/2005	7740	LAV
440-22-4	Silver - Sediment	0.5	mg/Kg dry	0.25		05/13/2005	7761	LAV
	Digest Mercury - Sediment	Complete	d	1792		05/09/2005	7471	RK
) -97-6	Mercury - Sediment	.15	mg/Kg dry	0.05		05/26/2005	7471	TS
440-39-3	Barium - Sediment	120	mg/Kg dry :	1		05/23/2005	6010	MJ
440-43-9	Cadmium - Sediment	2.4	mg/Kg dry	2.0		05/23/2005	6010	MJ
440-47-3	Chromium - Sediment	41	mg/Kg dry	2		05/23/2005	6010	MJ
440-50-8	Copper - Sediment	69	mg/Kg dry	2		05/23/2005	6010	MJ
	Digest Metals - Sediment	Complete	d e da			05/09/2005	3050	TK
439-92-1	Lead - Sediment	150	mg/Kg dry	5		05/23/2005	6010	MJ
440-66-6	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	Complete	d			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



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53419 DOFP

Base Neutral Acid Compounds

Analytical M	ethod: 8270	Date Tested: 05/19	9/2005 Analyst: S	SMH	
Extraction M			5/03/2005 Qualifier:	214111	
CAS #	Compound		ug/Kg dry RL	Qualifier	Dilution Factor
SURROGATE	#2 - Fluorobiphenyl#		oplicable	V	
SURROGATE	#2,4,6-Tribromophenol#		plicable	v	
SURROGATE	#2,4,0-1110101110pile101# #2-Fluorophenol#		NAMES AND ADDRESS OF THE OWNER OF THE DESCRIPTION O	V	
SURROGATE	#Nitrobenzene - D5#		plicable		
SURROGATE	#Phenol - D5#		plicable	V V	
SURROGATE			plicable	V	
120-82-1	#p-Terphenyl-d14#		plicable	V	10
95-50-1	1,2,4-Trichlorobenzene	Not De Not De			10
	1,2-Dichlorobenzene				10
541-73-1	1,3-Dichlorobenzene	Not De	n nanowerse and a state and a state and a state of the stat	•	10
106-46-7	1,4-Dichlorobenzene	Not De			10
95-95-4	2,4,5-Trichlorophenol	Not De			10.
88-06-2	2,4,6-Trichlorophenol	Not De			10
120-83-2	2,4-Dichlorophenol	Not De			10
105-67-9	2,4-Dimethylphenol	Not De			10
51-28-5	2,4-Dinitrophenol	Not De	a na		10
-14-2	2,4-Dinitrotoluene	Not De			10
<i>3</i> -20 -2	2,6-Dinitrotoluene	Not De			10
91-58-7	2-Chloronaphthalene	Not De			10
95-57-8	2-Chlorophenol	Not De	ennennennen i som nitter ander som en som en som en som en som som som en segerare har var att som som som som		10
534-52-1	2-Methyl-4,6-dinitrophenol	Not De			10
91-57-6	2-Methylnaphthalene	Not De			10
95-48-7	2-Methylphenol (o-Cresol)	Not De			10
88-74-4	2-Nitroaniline	Not De			10
88-75-5	2-Nitrophenol	Not De			10
108394,106445	***************************************	Not De			10
99-09-2	3-Nitroaniline	Not De			10
101-55-3	4-Bromophenyl phenyl ether	Not De		1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	10
59-50-7	4-Chloro-3-methyl-phenol	Not De			10
7005-72-3	4-Chlorodiphenylether	Not De			10 And Andrews Andrews
100-01-6	4-Nitroaniline	Not De		-	10
100-02-7	4-Nitrophenol	Not De			10
83-32-9	Acenaphthene	Not De			10
208-96-8	Acenaphthylene	Not De			10
120-12-7	Anthracene	Not De	tected 1800		10
103-33-3	Azobenzene	Not De	tected 3700		10
56-55-3	Benz[a]anthracene	Not De	tected 1800		10° . The second
50-32-8	Benzo[a]pyrene	Not De	tected 3700		10
205-99-2	Benzo[b]fluoranthene	Not De	tected 3700		10
191-24-2	Benzo[g,h,i]perylene	Not De	the second se		10
207-08-9	Benzo[k]fluoranthene	Not De	fected 3700		10
111-91-1	Bis(2-chloroethoxy)methane	Not De	tected 3700		10
CAS# : Ch	emical Abstract Service Registry Number	ug/L : microgram/	liter (ppb)	Laboratory Contacts	
	eporting Limit	mg / L : milligram / li	ter (ppm)	Inorganic Unit Mgr: S	
ND : N	ot Detected	ug / Kg : microgram /		Organic Unit Mgr: 0	
		mg / Kg : milligram / l	kuogram (ppm)	Systems Mgmt Unit: (Jeorge Krisztian

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P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA53419 DOFP

Base Neutral Acid Compounds

Analytical N		Date Tested: 05/19/2005	Analyst: SMH			
Extraction I		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	40		
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 Ar	oclors					

Analytical Method: 8082 Extraction Method: 3545	Date Tested: 05/10/2005 Extraction Date: 05/05/2005	Analyst: MF Qualifier:	
CAS # Compound SURROGATE #Decachlorobiphenyl#	Result ug/Kg dry 67.8	RL Qualifier Dilution Factor	
SURROGATE#Tetrachloro-m-xylene#12674-11-2Aroclor 101611104-28-2Aroclor 1221	61.0 Not Detected Not Detected	570 K 3.1 570 K 3.1	
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: AA53419 DOFP

PCBs as Aroclors

Analytical Method: Extraction Method:	8082 3545	Date Tested: Extraction Date:	05/10/2005 05/05/2005	Analyst: MF Qualifier:		
CAS # Com	pound	F	Result ug/Kg dry	RL	Qualifier	Dilution Factor
11141-16-5 Arocl	lor 1232	۸	lot Detected	570	K	3.1
53469-21-9 Arocl	lor 1242	5	60	180	JD 6	1.0
12672-29-6 Arocl	lor 1248		lot Detected	570	K	3.1
11097-69-1 Arocl	lor 1254	2	.90	180	JD 6	1.0
11096-82-5 Arocl	lor 1260) N	lot Detected	180		1.0
37324-23-5 Arocl	lor 1262	Ν	lot Detected	180		1.0
11100-14-4 Arocl	lor 1268	ţ.	lot Detected	180	1	1.0

Sample Number AA53419 DOFP

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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	Complete	đ			05/09/2005	7471	RK
)-97-6	Mercury - Sediment	.24	mg/Kg dry	0.05		05/26/2005	7471	TS
440-39-3	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
/440-47-3	Chromium - Sediment	20	mg/K.g dry	.2		05/23/2005	6010	MJ
440-50-8	Copper - Sediment	43	mg/Kg dry	2		05/23/2005	6010	MJ
	Digest Metals - Sediment	Complete	d 👘			05/09/2005	3050	TK
439-92-1	Lead - Sediment	61	mg/Kg dry	5		05/23/2005	6010	MJ
440-66-6	Zinc - Sediment	140	mg/Kg dry	5		05/23/2005	6010	MJ
9708	% Total Solids	54.6	%	0.1		05/05/2005		DB
	Drying and Grinding - Sediment	Complete	d			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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MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY ENVIRONMENTAL LABORATORY

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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.
С	Value calculated from other independent parameters.
D	Analyte value quantified from a dilution(s); reporting limit (RL) raised.
Е	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.
Н	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
Ъ	Due to severe degradation, specific Aroclor identification is difficult and quantitation is estimated.
ĸ	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.
XW	RL(s) raised due to light sample weight.
LB	Reported library search compounds are tentative identifications with estimated concentrations.
М	The level of the method preparation blank (MPB) is reported in the qualifier column.
N	Non-homogeneous sample made analysis of sample questionable.
0	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
DI.	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.

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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