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Michigan Department of Environmental Quality  
Water Resources Division  
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Lansing, MI 48909-7742

ENVIRONMENT

Subject:  
NPDES Permit No. MI0001597 – 2011 Yearly Stormwater Trend Monitoring Data  
RACER – Buick City Site  
Flint, Michigan

Date:  
May 10, 2012

Dear Ms. Vanderlaan:

Contact:  
Christopher S. Peters,  
P.G.

This report was prepared by ARCADIS on behalf of the Revitalizing Auto Communities Environmental Response (RACER) Trust, for the Buick City Site (formerly known as the GM - Powertrain Flint North) located in Flint, Michigan. On March 31, 2011, ownership of the site was transferred from Motors Liquidation Company (MLC) to RACER Properties LLC and responsibility for environmental remediation of the Site was transferred to RACER Trust. Please note that RACER Trust retains the requirements and responsibilities of the National Pollutant Discharge Elimination System (NPDES) Permit No. MI0001597. RACER submitted Ownership and Operational Control Transfer Notification for NPDES Permit No. MI0001597 to the Michigan Department of Environmental Quality on June 10, 2011.

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Our ref:  
B0064410.4012

The Buick City Site (Site) is located near 902 East Leith Street in Flint, Michigan, in Genesee County and encompasses approximately 425 acres of land as shown on Figure 1. The portion of the Site located north of Leith Street (hereafter referred to as the Northend) was in part occupied by General Motors LLC (GM LLC) for manufacturing operations until December 6, 2010. Since December 6, 2010 there are no longer any manufacturing operations at the Site. Demolition of the Northend of the Site was completed in April 2012. Building demolition has been completed in the portion of the property located south of Leith Street, which is referred to as the Southend.

The Site is submitting annual stormwater monitoring data as required by section 1.A.7.a.1 of the above referenced NPDES permit. This report covers the period of January 1, 2011 through December 31, 2011 and includes data collected from Outfalls 003, 010, 011, and 012 shown on Figure 2.

There is no data for Outfall 008 due to the installation of a permanent storm sewer bulkhead immediately downstream of Monitoring Point 008. The bulkhead was installed on May 10, 2007 because of a no flow condition in the collapsed or plugged storm sewer line for Outfall 008. There is no longer a discharge to the Flint River from Outfall 008.

## **Background**

### **Outfall 003**

The Outfall 003/004 System was installed in order to capture polychlorinated biphenyl (PCB) containing oil. The Outfall 003 storm sewer system collects flow from the Northend of the Site and upstream offsite drainage areas, and discharges to the Flint River. The majority of the stormwater flow to this system originates from offsite drainage areas, located upgradient of the Site. The total onsite (from RACER property) drainage area of the Outfall 003 system is approximately 137 acres. The NPDES permit identifies the water discharging from the Site to the Outfall 003 storm sewer system as regulated stormwater, treated groundwater and other miscellaneous waters, drinking fountain overflow, and potential groundwater infiltration. However, due to changes in Site conditions since the permit was issued regulated stormwater and potential groundwater infiltration are the remaining water discharged to Outfall 003.

Monitoring Points 003A and 003B are monitoring points along the Outfall 003 Sewer System. NPDES Monitoring Point 003A is located downgradient of Oil Interceptor #2 and the recently constructed Outfall 003/004 Storm Sewer Diversion and Treatment System (Outfall 003/004 System). Note that as indicated in ARCADIS' September 24, 2010 letter to the Michigan Department of Natural Resources and Environment (MDNRE), Oil Interceptor #1 was removed to allow for construction of the oil/water separator system. Also, as part of the Outfall 003/004 System the flow from Outfall 004 has been re-routed through the treatment system and is a combined discharge from the Outfall 003 storm sewer. The Outfall 003/004 System installation was completed in January 2011.

NPDES Monitoring Point 003B was associated with the discharge from the former Factory 10 treatment system. In October 2010 the Factory 10 treatment system was shut down and is being decommissioned; therefore, treated groundwater and other miscellaneous waters are no longer being discharged to Outfall 003. A weekly sample is collected from Monitoring Point 003A as required in the NPDES permit. The weekly monitoring data is reported in the eDMR. In addition, a yearly wet weather sample is collected from Monitoring Point 003A and submitted to the laboratory for polychlorinated biphenyl (PCB) analysis.

#### Outfalls 010, 011, and 012

Outfalls 010, 011, and 012 are located in the Southend of the Site where all manufacturing facilities have been demolished, leaving the former building foundations or slabs at grade elevation. The water discharging from the Site through these outfalls has been identified as non-regulated stormwater and potential groundwater infiltration.

The total drainage area of the Outfall 010 system is approximately 16 acres. Under the existing NPDES permit a yearly wet weather sample is collected from Outfall 010 and submitted for laboratory analysis of mercury using EPA Method 1631, Revision E.

Storm sewer discharge from Outfall 011 includes non-regulated stormwater and groundwater infiltration from the drainage area for Outfall 009. The storm sewer outlet for Outfall 009 is connected to manhole 11-8, which discharges through Outfall 011. A portion of the stormwater flow to Outfall 011 originates from offsite drainage areas, located upgradient of the Site. The total onsite drainage area of the Outfall 011 system (including the drainage area for Outfall 009) is approximately 25 acres. Under the existing NPDES permit a yearly wet weather sample is collected from Outfall 011 and submitted for laboratory analysis of copper.

The Outfall 012 storm sewer system collects flow from the Southend of the Site and offsite drainage areas downstream, and discharges to the Flint River. The total onsite drainage area of the Outfall 012 system is approximately 8 acres. Under the existing NPDES permit a yearly wet weather samples is collected from Outfall 012 and submitted for laboratory analysis of copper.

## **Data Collection and Analysis**

ARCADIS personnel collected the yearly wet weather samples on September 26, 2011 (Outfall 012), September 27, 2011 (Outfall 003A), September 30, 2011 (Outfall 010), and October 15, 2011 (Outfall 011). The samples submitted for PCB and copper analysis were analyzed by Merit Laboratories, located in East Lansing, MI. The sample submitted for mercury analysis was analyzed by TriMatrix Laboratories, located in Grand Rapids, MI. Table 1 provides sampling dates, and associated analytes for each of the samples collected from 2006 through 2011. Attachment 1 provides the laboratory analytical reports for the 2011 samples.

## **Summary of Results**

Sampling results for Yearly Trend Monitoring of Outfalls 003, 008, 010, 011 and 012 are summarized in Table 1.

### **Outfall 003**

PCBs were not detected in the 2011 wet weather sample collected from Outfall 003 at Monitoring Point 003A. As discussed above, the Outfall 003/004 System is designed to capture dry weather flow and the first-flush of stormwater flow from Outfall 003 and 004. The Outfall 003/004 System has been operational since January 2011 and PCBs have not been detected in the required weekly dry weather samples collected from Outfall 003 since the Outfall 003/004 System began operating.

### **Outfall 010**

The 2011 wet weather sample collected from Outfall 010 detected mercury at a concentration 1.1 nanograms per liter (ng/L) which is below the monthly average goal of 1.3 ng/L listed in the NPDES permit. As part of Corrective Action activities being completed at the Site, monthly dry weather samples have been collected from Outfall 010 since September 2010 and submitted for laboratory analysis. The analytical results of the monthly sampling are being evaluated to determine the potential source of select inorganics in the storm sewer.

### **Outfall 011**

The 2011 wet weather sample collected from Outfall 011 did not detect copper. A review of the yearly wet weather data collected from Outfall 011 since the permit effective date (July 1, 2006) indicate that the highest concentration of copper (21

micrograms per liter ( $\mu\text{g/L}$ ) was detected in the September 8, 2006 sample. The daily maximum goal for copper listed in the NPDES permit is 100  $\mu\text{g/L}$ .

#### Outfall 012

The wet weather sample collected from Outfall 012 detected copper at a concentration of 5  $\mu\text{g/L}$  as shown on Table 1. The daily maximum goal for copper listed in the NPDES permit is 100  $\mu\text{g/L}$ . A review of the yearly wet weather data collected from Outfall 012 indicates that copper was detected at 6  $\mu\text{g/L}$  during the 2010 wet weather sample collection event. Copper was not detected at Outfall 012 in the three years prior to that.

### **Conclusions**

#### Outfall 003

PCB concentrations remain at non-detectable levels. The Outfall 003/004 System continues to operate and is functioning as intended.

#### Outfall 010

Mercury concentrations have decreased over the past four years and the concentration of mercury detected during the 2011 annual wet weather sampling event was below the monthly average goal of 1.3 ng/L listed in the NPDES permit.

#### Outfall 011

Copper has not been detected in the Outfall 011 wet weather sample for the past two years.

#### Outfall 012

Trace amounts of copper continue to be detected in the wet weather samples collected from Outfall 012. However, concentrations remain below the daily maximum goal of 100  $\mu\text{g/L}$  listed in the NPDES permit.

If you have any questions, please contact me at 810.225.1905.

Sincerely,

ARCADIS



Christopher S. Peters, P.G.  
Vice President

Copies:

Grant Trigger, RACER Trust

Dave Favero, RACER Trust

Attachments:

Table 1 – Stormwater Sampling Summary

Figure 1 – Site Location Map

Figure 2 – Site Diagram – Outfall Drainage Areas

Attachment 1 – Laboratory Analytical Reports

**Tables**

**Table 1**  
**Storm Water Sampling Summary**  
**NPDES Permit No. MI0001597**  
**Yearly Trend Monitoring - Outfalls 003, 008, 010, 011, and 012**

**RACER**  
**Powertrain Flint North**  
**Flint, Michigan**

Outfall	Parameter	Units	Date					
			9/12/2006	9/10/2007	9/3/2008	9/28/2009	9/28/2010	9/27/2011
003	PCB-1016	µg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
003	PCB-1221	µg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
003	PCB-1232	µg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
003	PCB-1242	µg/L	< 0.10	< 0.10	0.16	< 0.10	< 0.10	< 0.10
003	PCB-1248	µg/L	0.14	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
003	PCB-1254	µg/L	< 0.10	< 0.10	< 0.10	< 0.10	0.2	< 0.10
003	PCB-1260	µg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
003	Total PCB	µg/L	0.14	< 0.10	0.16	< 0.10	0.2	< 0.10

Outfall 008                      A permanent storm sewer bulkhead was installed immediately downstream of Manhole 8-1 (Monitoring Point 008) on May 10, 2007 due to a collapsed or plugged storm sewer line. There is no longer a discharge from Outfall 008.

Outfall	Parameter	Sample Type	Units	Data					
				9/8/2006	9/10/2007	9/3/2008	9/28/2009	10/13/2010	9/30/2011
010	Mercury	Sample	ng/L	2.47	17.2	23.8	6.04	13.6	1.1
010	Mercury	Duplicate	ng/L	2.47	4.73	25.9	5.73	NA	<0.500
010	Mercury	Equipment Blank	ng/L	<0.500	<0.500	<0.500	2.84	NA	<0.500
010	Mercury	Trip Blank	ng/L	NA	<0.500	<0.500	<0.500	NA	<0.500

Outfall	Parameter	Units	Sampling Dates					
			9/8/2006 <sup>(1)</sup>	9/10/2007	9/3/2008	9/28/2009	9/28/2010	10/15/2011
011	Copper	µg/L	21	14	<10	13	<4	<4

Note:

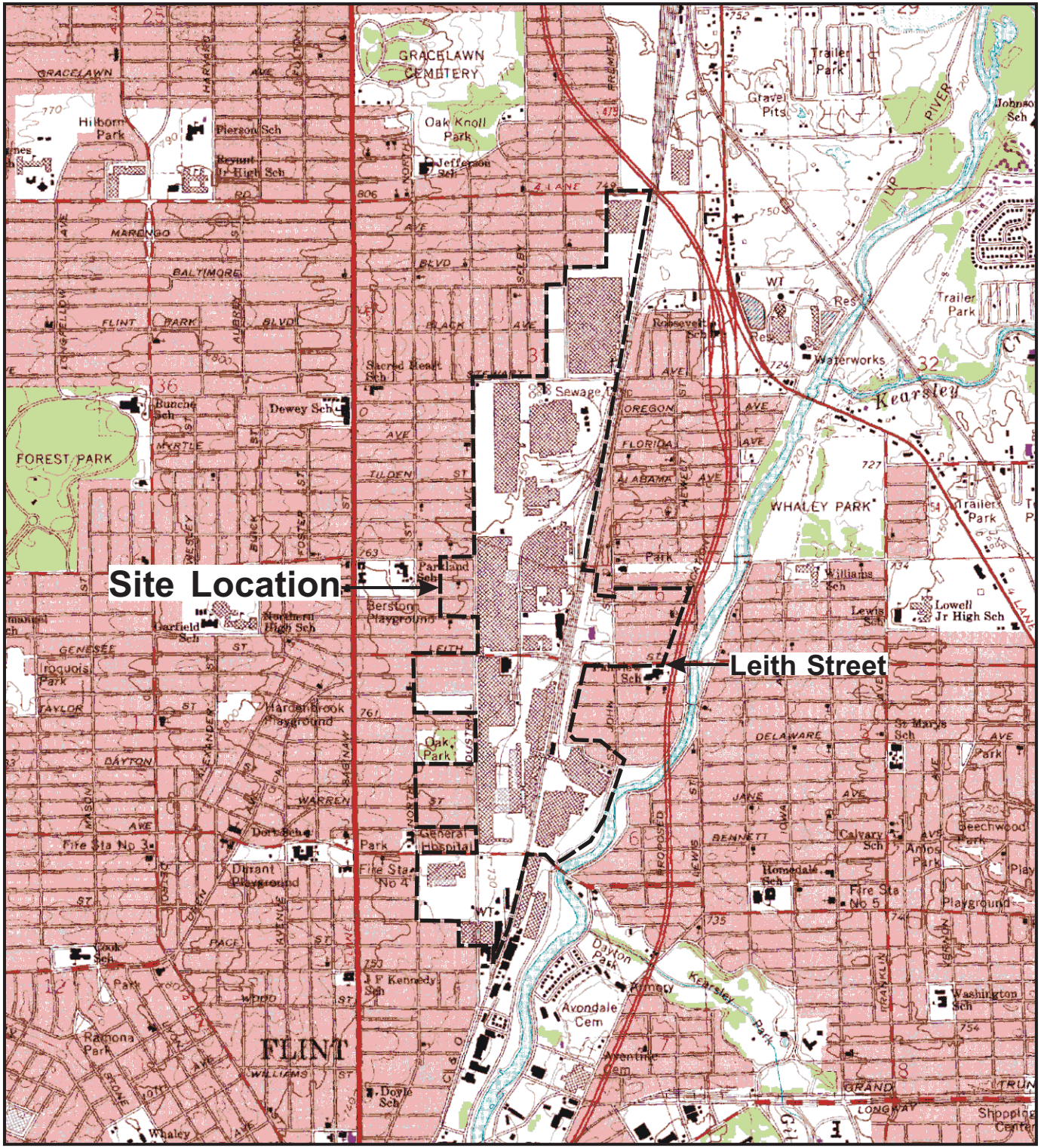
(1)                      It is assumed that the sampling date included in GM's letter to MDEQ dated May 9, 2007 had a typo and should actually be 9/8/2006 instead of 9/8/2007.

Outfall	Parameter	Units	Sampling Dates					
			9/12/2006	9/10/2007	9/3/2008	9/28/2009	11/22/2010	9/26/2011
012	Copper	µg/L	3700*	<10	<10	<10	6	5

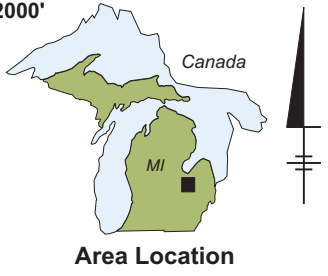
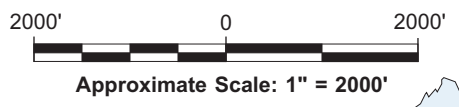
Note from GM's letter to MDEQ on May 9, 2007:

\* There was very little flow at the monitoring point on 12/22/2006. The sample taken for analysis was partially from the minimal flow in the drainage pipe and partially from standing water in the bottom of the catch basin. The sample was also noted to be orange in color per Jim Wooster of Environmental Sampling Services.

**Figures**



REFERENCE: Base Map Source: USGS 7.5 Min. Topo. Quad., Flint North, Mich. (1969, Photorevised 1975).



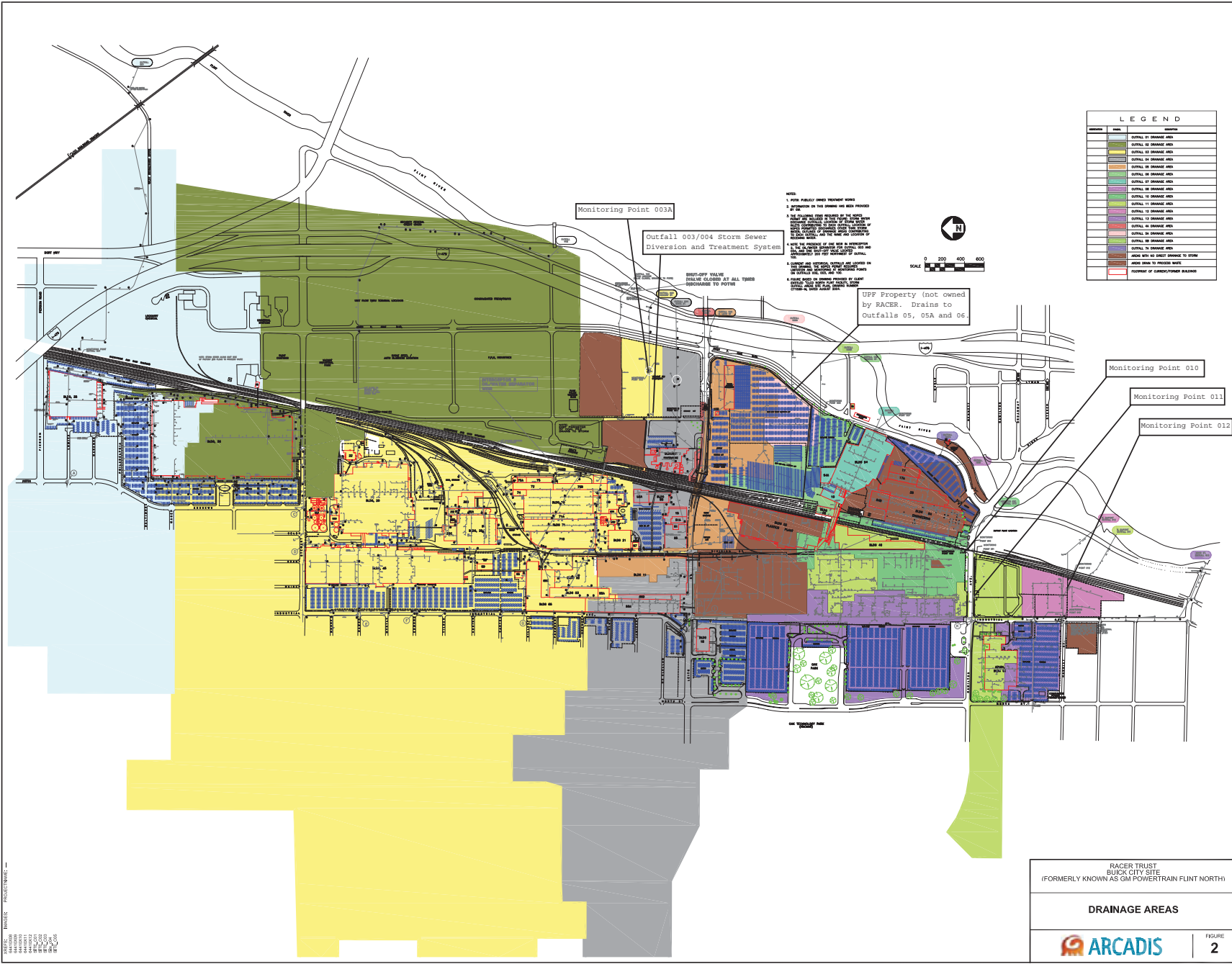
Area Location

<p>RACER TRUST BUICK CITY - FLINT, MICHIGAN</p>	
<p><b>SITE LOCATION</b></p>	
	<p>FIGURE <b>1</b></p>

05/07/2012 SYRACUSE, NY: ENV/CAD-DJHOWES  
B0064410/4012/00104/CDR/64410N02.CDR

ATTENTION: DIVISION 24, DEBORAH C. STOWELL, L.P., OWNER, IS PROVIDING THIS INFORMATION FOR YOUR INFORMATION ONLY. RACER TRUST, BUICK CITY SITE (FORMERLY KNOWN AS GM POWERTRAIN FLINT NORTH) IS THE PROPERTY OF RACER TRUST. THIS INFORMATION IS NOT TO BE USED FOR ANY OTHER PURPOSES. RACER TRUST, BUICK CITY SITE (FORMERLY KNOWN AS GM POWERTRAIN FLINT NORTH) IS THE PROPERTY OF RACER TRUST. THIS INFORMATION IS NOT TO BE USED FOR ANY OTHER PURPOSES.

PROJECT: PROJECT NAME  
 SHEET: SHEET NUMBER  
 DATE: DATE  
 SCALE: SCALE  
 DRAWN BY: DRAWN BY  
 CHECKED BY: CHECKED BY  
 APPROVED BY: APPROVED BY



LEGEND		
Color	Area	Description
[Green]	UPFAL 01	UPFAL 01 DRAINAGE AREA
[Yellow]	UPFAL 02	UPFAL 02 DRAINAGE AREA
[Orange]	UPFAL 03	UPFAL 03 DRAINAGE AREA
[Red]	UPFAL 04	UPFAL 04 DRAINAGE AREA
[Purple]	UPFAL 05	UPFAL 05 DRAINAGE AREA
[Blue]	UPFAL 06	UPFAL 06 DRAINAGE AREA
[Light Blue]	UPFAL 07	UPFAL 07 DRAINAGE AREA
[Light Green]	UPFAL 08	UPFAL 08 DRAINAGE AREA
[Light Yellow]	UPFAL 09	UPFAL 09 DRAINAGE AREA
[Light Orange]	UPFAL 10	UPFAL 10 DRAINAGE AREA
[Light Red]	UPFAL 11	UPFAL 11 DRAINAGE AREA
[Light Purple]	UPFAL 12	UPFAL 12 DRAINAGE AREA
[Light Blue-Gray]	UPFAL 13	UPFAL 13 DRAINAGE AREA
[Light Green-Gray]	UPFAL 14	UPFAL 14 DRAINAGE AREA
[Light Yellow-Gray]	UPFAL 15	UPFAL 15 DRAINAGE AREA
[Light Orange-Gray]	UPFAL 16	UPFAL 16 DRAINAGE AREA
[Light Red-Gray]	UPFAL 17	UPFAL 17 DRAINAGE AREA
[Light Purple-Gray]	UPFAL 18	UPFAL 18 DRAINAGE AREA
[Light Blue-Gray]	UPFAL 19	UPFAL 19 DRAINAGE AREA
[Light Green-Gray]	UPFAL 20	UPFAL 20 DRAINAGE AREA
[Light Yellow-Gray]	UPFAL 21	UPFAL 21 DRAINAGE AREA
[Light Orange-Gray]	UPFAL 22	UPFAL 22 DRAINAGE AREA
[Light Red-Gray]	UPFAL 23	UPFAL 23 DRAINAGE AREA
[Light Purple-Gray]	UPFAL 24	UPFAL 24 DRAINAGE AREA
[Light Blue-Gray]	UPFAL 25	UPFAL 25 DRAINAGE AREA
[Light Green-Gray]	UPFAL 26	UPFAL 26 DRAINAGE AREA
[Light Yellow-Gray]	UPFAL 27	UPFAL 27 DRAINAGE AREA
[Light Orange-Gray]	UPFAL 28	UPFAL 28 DRAINAGE AREA
[Light Red-Gray]	UPFAL 29	UPFAL 29 DRAINAGE AREA
[Light Purple-Gray]	UPFAL 30	UPFAL 30 DRAINAGE AREA
[Light Blue-Gray]	UPFAL 31	UPFAL 31 DRAINAGE AREA
[Light Green-Gray]	UPFAL 32	UPFAL 32 DRAINAGE AREA
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[Light Red-Gray]	UPFAL 35	UPFAL 35 DRAINAGE AREA
[Light Purple-Gray]	UPFAL 36	UPFAL 36 DRAINAGE AREA
[Light Blue-Gray]	UPFAL 37	UPFAL 37 DRAINAGE AREA
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[Light Yellow-Gray]	UPFAL 39	UPFAL 39 DRAINAGE AREA
[Light Orange-Gray]	UPFAL 40	UPFAL 40 DRAINAGE AREA
[Light Red-Gray]	UPFAL 41	UPFAL 41 DRAINAGE AREA
[Light Purple-Gray]	UPFAL 42	UPFAL 42 DRAINAGE AREA
[Light Blue-Gray]	UPFAL 43	UPFAL 43 DRAINAGE AREA
[Light Green-Gray]	UPFAL 44	UPFAL 44 DRAINAGE AREA
[Light Yellow-Gray]	UPFAL 45	UPFAL 45 DRAINAGE AREA
[Light Orange-Gray]	UPFAL 46	UPFAL 46 DRAINAGE AREA
[Light Red-Gray]	UPFAL 47	UPFAL 47 DRAINAGE AREA
[Light Purple-Gray]	UPFAL 48	UPFAL 48 DRAINAGE AREA
[Light Blue-Gray]	UPFAL 49	UPFAL 49 DRAINAGE AREA
[Light Green-Gray]	UPFAL 50	UPFAL 50 DRAINAGE AREA
[Light Yellow-Gray]	UPFAL 51	UPFAL 51 DRAINAGE AREA
[Light Orange-Gray]	UPFAL 52	UPFAL 52 DRAINAGE AREA
[Light Red-Gray]	UPFAL 53	UPFAL 53 DRAINAGE AREA
[Light Purple-Gray]	UPFAL 54	UPFAL 54 DRAINAGE AREA
[Light Blue-Gray]	UPFAL 55	UPFAL 55 DRAINAGE AREA
[Light Green-Gray]	UPFAL 56	UPFAL 56 DRAINAGE AREA
[Light Yellow-Gray]	UPFAL 57	UPFAL 57 DRAINAGE AREA
[Light Orange-Gray]	UPFAL 58	UPFAL 58 DRAINAGE AREA
[Light Red-Gray]	UPFAL 59	UPFAL 59 DRAINAGE AREA
[Light Purple-Gray]	UPFAL 60	UPFAL 60 DRAINAGE AREA
[Light Blue-Gray]	UPFAL 61	UPFAL 61 DRAINAGE AREA
[Light Green-Gray]	UPFAL 62	UPFAL 62 DRAINAGE AREA
[Light Yellow-Gray]	UPFAL 63	UPFAL 63 DRAINAGE AREA
[Light Orange-Gray]	UPFAL 64	UPFAL 64 DRAINAGE AREA
[Light Red-Gray]	UPFAL 65	UPFAL 65 DRAINAGE AREA
[Light Purple-Gray]	UPFAL 66	UPFAL 66 DRAINAGE AREA
[Light Blue-Gray]	UPFAL 67	UPFAL 67 DRAINAGE AREA
[Light Green-Gray]	UPFAL 68	UPFAL 68 DRAINAGE AREA
[Light Yellow-Gray]	UPFAL 69	UPFAL 69 DRAINAGE AREA
[Light Orange-Gray]	UPFAL 70	UPFAL 70 DRAINAGE AREA
[Light Red-Gray]	UPFAL 71	UPFAL 71 DRAINAGE AREA
[Light Purple-Gray]	UPFAL 72	UPFAL 72 DRAINAGE AREA
[Light Blue-Gray]	UPFAL 73	UPFAL 73 DRAINAGE AREA
[Light Green-Gray]	UPFAL 74	UPFAL 74 DRAINAGE AREA
[Light Yellow-Gray]	UPFAL 75	UPFAL 75 DRAINAGE AREA
[Light Orange-Gray]	UPFAL 76	UPFAL 76 DRAINAGE AREA
[Light Red-Gray]	UPFAL 77	UPFAL 77 DRAINAGE AREA
[Light Purple-Gray]	UPFAL 78	UPFAL 78 DRAINAGE AREA
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[Light Yellow-Gray]	UPFAL 87	UPFAL 87 DRAINAGE AREA
[Light Orange-Gray]	UPFAL 88	UPFAL 88 DRAINAGE AREA
[Light Red-Gray]	UPFAL 89	UPFAL 89 DRAINAGE AREA
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[Light Green-Gray]	UPFAL 92	UPFAL 92 DRAINAGE AREA
[Light Yellow-Gray]	UPFAL 93	UPFAL 93 DRAINAGE AREA
[Light Orange-Gray]	UPFAL 94	UPFAL 94 DRAINAGE AREA
[Light Red-Gray]	UPFAL 95	UPFAL 95 DRAINAGE AREA
[Light Purple-Gray]	UPFAL 96	UPFAL 96 DRAINAGE AREA
[Light Blue-Gray]	UPFAL 97	UPFAL 97 DRAINAGE AREA
[Light Green-Gray]	UPFAL 98	UPFAL 98 DRAINAGE AREA
[Light Yellow-Gray]	UPFAL 99	UPFAL 99 DRAINAGE AREA
[Light Orange-Gray]	UPFAL 100	UPFAL 100 DRAINAGE AREA

NOTES  
 1. NEW PUBLICLY OWNED TREATMENT WORKS  
 2. OPERATIONS ON THE CHASE AND BIRD PARKWAY  
 3. ALL STORMWATER SHALL BE TREATED AT THE RACER TRUST BUICK CITY SITE (FORMERLY KNOWN AS GM POWERTRAIN FLINT NORTH) TREATMENT PLANT. ALL STORMWATER SHALL BE TREATED AT THE RACER TRUST BUICK CITY SITE (FORMERLY KNOWN AS GM POWERTRAIN FLINT NORTH) TREATMENT PLANT.  
 4. UPFAL 05, 05A AND 06 ARE NOT TO BE CONNECTED TO THE STORM SEWER SYSTEM.  
 5. UPFAL 05, 05A AND 06 ARE NOT TO BE CONNECTED TO THE STORM SEWER SYSTEM.  
 6. UPFAL 05, 05A AND 06 ARE NOT TO BE CONNECTED TO THE STORM SEWER SYSTEM.  
 7. UPFAL 05, 05A AND 06 ARE NOT TO BE CONNECTED TO THE STORM SEWER SYSTEM.  
 8. UPFAL 05, 05A AND 06 ARE NOT TO BE CONNECTED TO THE STORM SEWER SYSTEM.  
 9. UPFAL 05, 05A AND 06 ARE NOT TO BE CONNECTED TO THE STORM SEWER SYSTEM.  
 10. UPFAL 05, 05A AND 06 ARE NOT TO BE CONNECTED TO THE STORM SEWER SYSTEM.



Monitoring Point 003A

Outfall 003/004 Storm Sewer Diversion and Treatment System

SHUT-OFF VALVE SHALL BE CLOSED AT ALL TIMES DISCHARGE TO POTWS

UPF Property (not owned by RACER. Drains to Outfalls 05, 05A and 06.

Monitoring Point 010

Monitoring Point 011

Monitoring Point 012

RACER TRUST  
 BUICK CITY SITE  
 (FORMERLY KNOWN AS GM POWERTRAIN FLINT NORTH)

**DRAINAGE AREAS**

FIGURE  
**2**



**Attachment 1**

Laboratory Analytical Reports



# Analytical Laboratory Report

Report ID: S50196.01(01)  
Generated on 10/05/2011

Report to

Attention: Beth Nanzer  
Arcadis  
10559 Citation Drive  
Suite 100  
Brighton, MI 48116

Phone: 810-225-1937 FAX: 810-229-8837  
Email: bethany.nanzer@arcadis-us.com

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): S50196.01-S50196.04  
Project: B0064410.4011.00100/ Buick City/ Flint, MI  
Collected Date: 09/26/2011  
Submitted Date/Time: 09/29/2011 11:40  
Sampled by: DLN  
P.O. #: FLN0035-600140

Report Notes

Results relate only to items tested as received by the laboratory.  
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 RL.  
Report shall not be reproduced except in full, without the written approval of Merit Laboratories.

Laboratory Certifications:

Michigan DNRE (#9956), Ohio EPA (#CL0002), NELAC NY (#11814), NELAC FL (#E871045), WBENC (#2005110032)  
Some analytes reported may not be certified. Full certification lists are available upon request.

Violetta F. Murshak  
Laboratory Director



## Analytical Laboratory Report

### Sample Summary (4 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S50196.01	MP012 09262011	Water	09/26/2011 14:00
S50196.02	Duplicate 09262011	Water	09/26/2011 00:01
S50196.03	Field Blank 09262011	Water	09/26/2011 13:45
S50196.04	Equip Blank 09262011	Water	09/26/2011 13:30



# Analytical Laboratory Report

Lab Sample ID: S50196.01  
Sample Tag: MP012 09262011  
Collected Date/Time: 09/26/2011 14:00  
Matrix: Water  
COC Reference: BC092811.1

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.2	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
<b>Extraction / Prep.</b>								
Metal Digestion	Completed			3015A	10/05/11 09:00	PER		
<b>Metals</b>								
Copper	0.005	mg/L	0.004	200.8	10/05/11 13:16	PER	7440-50-8	



# Analytical Laboratory Report

Lab Sample ID: S50196.02  
Sample Tag: Duplicate 09262011  
Collected Date/Time: 09/26/2011 00:01  
Matrix: Water  
COC Reference: BC092811.1

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.2	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
<b>Extraction / Prep.</b>								
Metal Digestion	Completed			3015A	10/05/11 09:00	PER		
<b>Metals</b>								
Copper	0.005	mg/L	0.004	200.8	10/05/11 13:18	PER	7440-50-8	



# Analytical Laboratory Report

Lab Sample ID: S50196.03  
Sample Tag: Field Blank 09262011  
Collected Date/Time: 09/26/2011 13:45  
Matrix: Water  
COC Reference: BC092811.1

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.2	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
<b>Extraction / Prep.</b>								
Metal Digestion	Completed			3015A	10/05/11 09:00	PER		
<b>Metals</b>								
Copper	Not detected	mg/L	0.004	200.8	10/05/11 12:08	PER	7440-50-8	



# Analytical Laboratory Report

Lab Sample ID: S50196.04  
Sample Tag: Equip Blank 09262011  
Collected Date/Time: 09/26/2011 13:30  
Matrix: Water  
COC Reference: BC092811.1

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.2	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
<b>Extraction / Prep.</b>								
Metal Digestion	Completed			3015A	10/05/11 09:00	PER		
<b>Metals</b>								
Copper	Not detected	mg/L	0.004	200.8	10/05/11 12:10	PER	7440-50-8	



CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

QCOC ID: BC092811.1

<b>Contact &amp; Company Name:</b> Beth Nanzer Address: 28550 Cabot Drive Ste 500 City: Novi, MI 48377 State: MI Zip: 48377 Telephone: 248.994.2314 Fax: 248.994.2241 Email: bethnanzer@arcadis-us.com		<b>Preservative:</b> D <b>Filter (✓):</b> <b># of Containers:</b> 1 <b>Container Material:</b> 3 <b>PARAMETER ANALYSIS &amp; METHOD</b>	
<b>Project Name/Location (City, State):</b> Buick City/ Flint, MI Project #: B0064410.4011.00100		<b>Sampler's Signature:</b> <i>[Signature]</i>	
<b>Sample ID</b>		<b>Collection Date</b>	
01 MF012_09262011 02 duplicate_09262011 03 Field Blank_09262011 04 Equip_Bank_09262011		9/26/11 1400 9/26/11 NA 9/26/11 1345 9/26/11 1330	
<b>Type</b>		<b>Matrix</b>	
X X X X		W W W W	
<b>Matrix</b>		Total Copper X X X X	
<b>Special Instructions/Comments:</b> Invoice to: Ms. Monica Wallingford, Racer Trust, 2930 Ecorse Road, Ypsilanti, MI 48198, (313) 486.2928, P.O. No. FLN0035-600110 - Please also send copy of Invoicing to Micki Maki (ARCADIS). Please Cc results to: michael.brennan@arcadis-us.com.		<b>Special QA/QC Instructions (✓):</b> Standard deliverable Level 1, EDD <i>[Signature]</i>	
<b>Laboratory Information and Receipt</b>		<b>Relinquished By</b>	
Lab Name: Merit Cooler Custody Seal: <input type="checkbox"/> Intact <input type="checkbox"/> Not Intact Sample Receipt: <input type="checkbox"/> <input type="checkbox"/> Specify Turnaround Requirements: Standard TAT: Field Ex Tracking #:		Printed Name: D Newcom Signature: <i>[Signature]</i> Firm: ARCADIS Date/Time: 9/28/11 1140	
<b>Received By</b>		<b>Laboratory Received By</b>	
Printed Name: Paula Shaw Signature: <i>[Signature]</i> Firm: Merit Date/Time: 9-29-11 1140		Printed Name: Paula Shaw Signature: <i>[Signature]</i> Firm: Merit Date/Time: 9-29-11 1140	
<b>REMARKS</b> Preservation Key: A. H <sub>2</sub> SO <sub>4</sub> , B. HCl, C. NaOH, D. HNO <sub>3</sub> , E. None Containers Information Key: 1. 40 mL VOA, 2. 1 L Amber, 3. 125 mL Plastic, 4. 250 mL Plastic, 5. 500 mL Plastic, 6. 1 L Plastic, 7. 2 oz. Glass, 8. 4 oz. Glass, 9. 8 oz. Glass, 10. Other Matrix Key: SE = Sediment, SD = Soil, A = Air, NL = NAPL/Oil, SL = Sludge, SW = Surface			



# Analytical Laboratory Report

Report ID: S50407.01(01)  
Generated on 10/19/2011

Report to

Attention: Beth Nanzer  
Arcadis  
28550 Cabot Drive  
Suite 500  
Novi, MI 48377

Phone: 248-994-2314 FAX: 810-229-8837  
Email: bethany.nanzer@arcadis-us.com

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): S50407.01  
Project: B0064410.4011.00100/ Buick City/ Flint, MI  
Collected Date: 10/15/2011  
Submitted Date/Time: 10/17/2011 15:00  
Sampled by: D. Newcom  
P.O. #: FLN0035-600140

Report Notes

Results relate only to items tested as received by the laboratory.  
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 RL.  
Report shall not be reproduced except in full, without the written approval of Merit Laboratories.

Laboratory Certifications:

Michigan DNRE (#9956), Ohio EPA (#CL0002), NELAC NY (#11814), NELAC FL (#E871045), WBENC (#2005110032)  
Some analytes reported may not be certified. Full certification lists are available upon request.

Violetta F. Murshak  
Laboratory Director



# Analytical Laboratory Report

Sample Summary (1 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S50407.01	MP011 10152011 WW	Water	10/15/2011 00:01



# Analytical Laboratory Report

Lab Sample ID: S50407.01  
Sample Tag: MP011 10152011 WW  
Collected Date/Time: 10/15/2011 00:01  
Matrix: Water  
COC Reference: BC101511.1

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	5.1	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
<b>Extraction / Prep.</b>								
Metal Digestion	Completed			3015A	10/18/11 01:00	SLR		
<b>Metals</b>								
Copper	Not detected	mg/L	0.004	200.8	10/18/11 16:28	SLS	7440-50-8	





# Analytical Laboratory Report

Report ID: S50212.01(01)  
Generated on 10/04/2011

Report to

Attention: Beth Nanzer  
Arcadis  
10559 Citation Drive  
Suite 100  
Brighton, MI 48116

Phone: 248-994-2314 FAX: 810-229-8837  
Email: bethany.nanzer@arcadis-us.com

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): S50212.01  
Project: B0064410.3011/ Buick City Flint, MI  
Collected Date: 09/27/2011  
Submitted Date/Time: 09/30/2011 13:45  
Sampled by: D. Newcom  
P.O. #: FLN0035-600140

Report Notes

Results relate only to items tested as received by the laboratory.  
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 RL.  
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Laboratory Certifications:

Michigan DNRE (#9956), Ohio EPA (#CL0002), NELAC NY (#11814), NELAC FL (#E871045), WBENC (#2005110032)  
Some analytes reported may not be certified. Full certification lists are available upon request.

Violetta F. Murshak  
Laboratory Director



# Analytical Laboratory Report

Sample Summary (1 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S50212.01	MP003A 09272011	Water	09/27/2011 09:00



# Analytical Laboratory Report

Lab Sample ID: S50212.01  
Sample Tag: MP003A 09272011  
Collected Date/Time: 09/27/2011 09:00  
Matrix: Water  
COC Reference: BC093011.1

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	1L Amber	None	Yes	5.5	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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### **Extraction / Prep.**

Extraction, PCB	Completed			3510C	10/03/11 12:51	CCM		
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### **Organics - PCBs/Pesticides**

#### **PCB**

PCB-1016	Not detected	ug/L	0.1	608	10/03/11 14:40	JANB	12674-11-2	
PCB-1221	Not detected	ug/L	0.1	608	10/03/11 14:40	JANB	11104-28-2	
PCB-1232	Not detected	ug/L	0.1	608	10/03/11 14:40	JANB	11141-16-5	
PCB-1242	Not detected	ug/L	0.1	608	10/03/11 14:40	JANB	53469-21-9	
PCB-1248	Not detected	ug/L	0.1	608	10/03/11 14:40	JANB	12672-29-6	
PCB-1254	Not detected	ug/L	0.1	608	10/03/11 14:40	JANB	11097-69-1	
PCB-1260	Not detected	ug/L	0.1	608	10/03/11 14:40	JANB	11096-82-5	
PCB, Total	Not detected	ug/L	0.1	608	10/03/11 14:40	JANB	1336-36-3	





# Analytical Laboratory Report

Report ID: S50213.01(01)  
Generated on 10/19/2011

Report to

Attention: Beth Nanzer  
Arcadis  
28550 Cabot Drive  
Suite 500  
Novi, MI 48377

Phone: 248-994-2314 FAX: 810-229-8837  
Email: bethany.nanzer@arcadis-us.com

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): S50213.01-S50213.04  
Project: B0064410.4011.00100/ Buick City/ Flint, MI  
Collected Date: 09/30/2011  
Submitted Date/Time: 09/30/2011 13:45  
Sampled by: D. Newcom  
P.O. #: FLN0035-600140

Report Notes

Results relate only to items tested as received by the laboratory.  
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 RL.  
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Some analytes reported may not be certified. Full certification lists are available upon request.

Violetta F. Murshak  
Laboratory Director



## Analytical Laboratory Report

### Sample Summary (4 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S50213.01	MP010 09302011 WW	Water	09/30/2011 12:30
S50213.02	Field Blank 09302011	Water	09/30/2011 12:00
S50213.03	Equip Blank 09302011	Water	09/30/2011 12:12
S50213.04	Trip Blank 09302011	Water	09/30/2011 00:01



# Analytical Laboratory Report

Lab Sample ID: S50213.01  
Sample Tag: MP010 09302011 WW  
Collected Date/Time: 09/30/2011 12:30  
Matrix: Water  
COC Reference: BC092811.1

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	LL Hg Kit	None	Yes	4.9	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
<b>Metals</b>								
Mercury, Low Level	1.1	ng/L	0.50	1631E	10/05/11 12:58	Trmx	7439-97-6	O

O-Analysis performed by outside laboratory. See attached report.



# Analytical Laboratory Report

Lab Sample ID: S50213.02  
Sample Tag: Field Blank 09302011  
Collected Date/Time: 09/30/2011 12:00  
Matrix: Water  
COC Reference: BC092811.1

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	LL Hg Kit	None	Yes	4.9	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
<b>Metals</b>								
Mercury, Low Level	<0.50	ng/L	0.50	1631E	10/05/11 13:02	Trmx	7439-97-6	O

O-Analysis performed by outside laboratory. See attached report.



# Analytical Laboratory Report

Lab Sample ID: S50213.03  
Sample Tag: Equip Blank 09302011  
Collected Date/Time: 09/30/2011 12:12  
Matrix: Water  
COC Reference: BC092811.1

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	LL Hg Kit	None	Yes	4.9	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
<b>Metals</b>								
Mercury, Low Level	<0.50	ng/L	0.50	1631E	10/05/11 13:06	Trmx	7439-97-6	O

O-Analysis performed by outside laboratory. See attached report.



# Analytical Laboratory Report

Lab Sample ID: S50213.04  
Sample Tag: Trip Blank 09302011  
Collected Date/Time: 09/30/2011 00:01  
Matrix: Water  
COC Reference: BC092811.1

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	LL Hg Kit	None	Yes	4.9	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
<b>Metals</b>								
Mercury, Low Level	<0.50	ng/L	0.50	1631E	10/05/11 13:09	Trmx	7439-97-6	O

O-Analysis performed by outside laboratory. See attached report.

