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Mary Vanderlaan
Supervisor, Lansing District
Michigan Department of Environmental Quality
Water Resources Division
525 W. Allegan (Constitution Hall, 4N)
P. O. Box 30242
Lansing, MI 48909-7742

ENVIRONMENT

Subject:
NPDES Permit No. MI0001597 – 2013 Yearly Stormwater Trend Monitoring Data
RACER – Buick City Site
Flint, Michigan

Date:
April 16, 2014

Dear Ms. Vanderlaan:

Contact:
Christopher S. Peters

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). 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 have been no manufacturing operations at the Site. Demolition of the Northend of the Site was completed in April 2012. Building demolition was completed in 2001 in the portion of the property located south of Leith Street, which is referred to as the Southend.

Phone:
517.324.5052
Email:
Chris.Peters@arcadis-us.com

Our ref:
B0064410.4014

RACER is submitting annual stormwater monitoring data as required by Section 1.A.7.a.1 of the above referenced National Pollutant Discharge Elimination System (NPDES) permit for the Site. The current NPDES permit expired in 2010. RACER submitted a timely application to the MDEQ for a new permit in April 2010. Due to significant changes in Site conditions, a revised NPDES permit application for the Site was prepared and submitted to the MDEQ on May 15, 2012. A yearly trend monitoring report for 2012 was submitted to the MDEQ on May 15, 2013. This report covers the period of January 1, 2013 through December 31, 2013 and includes data collected from Outfalls 003, 010, 011, and 012 shown on **Figure 2**.

Imagine the result

Page:
1/6

The yearly stormwater sampling program includes the following outfalls, analytes, and regulatory criteria:

Outfall	Analyte	Monthly Average	Daily Maximum
003	Total PCBs	0.026 ng/L	N/A
008	Total Mercury	1.3 ng/L	N/A
010	Total Mercury	1.3 ng/L	N/A
011	Total Copper	N/A	100 µg/L
012	Total Copper	N/A	100 µg/L

Background

Outfall 003

A Storm Water Diversion and Treatment System was installed to capture polychlorinated biphenyl (PCB) containing oil from the Outfall 003 and 004 storm sewers (Outfall 003/004 System). The Outfall 003/004 System has been designed to capture oil during dry weather and first-flush stormwater flow conditions through diversion structures, a BaySeparator, and an Oil-Water Separator. The system became fully operational on January 12, 2011.

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 only remaining water discharged to Outfall 003.

NPDES Monitoring Point 003A (MP 003A) is the only remaining monitoring point along the Outfall 003 Sewer System. It is located downgradient of Oil Interceptor #2 and the Outfall 003/004 System. Note that during dry weather and first-flush stormwater flow water and oil are diverted through the Outfall 003/004 System from both the Outfall 003 and 004 storm sewers. Therefore, samples collected at MP

003A represent the combined flow of the Outfall 003 and 004 under these conditions. During stormwater flow conditions, however, flows are diverted around the Outfall 003/004 System and discharge through the individual outfalls. Therefore, water samples collected at MP003A during stormwater events are representative of flow only from the Outfall 003A storm sewer.

A weekly sample is collected from MP 003A as required in the NPDES permit. The weekly sample collected at this point is intended to be representative of dry weather/first-flush flow conditions. However, occasionally due to weather conditions it is not possible to collect a dry weather/first-flush flow sample. When those conditions are encountered, a sample is still collected, but noted as a wet weather sample on the eDMR form. The weekly monitoring data is reported in the monthly eDMR. In addition, a yearly wet weather sample is collected from MP 003A and submitted to the laboratory for PCB analysis.

Outfall 008

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. Thus there is no longer a discharge to the Flint River from Outfall 008 and samples are no longer collected at this outfall.

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, all of which is part of the Site property. Under the existing NPDES permit a yearly wet weather sample is collected from Outfall 010 and submitted for laboratory analysis of mercury.

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 October 7, 2013. The samples submitted for PCB and copper analysis were analyzed by Merit Laboratories, located in East Lansing, Michigan. The sample submitted for mercury analysis was analyzed by Fibertec Environmental Services, located in Holt, Michigan. **Table 1** provides sampling dates, and associated analytes for each of the samples collected from 2007 through 2013. **Attachment 1** provides the laboratory analytical reports for the 2013 samples.

Summary of Results

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

Outfall 003

PCBs were not detected in the 2013 wet weather sample collected from Outfall 003 at MP 003A.

Outfall 010

Mercury was detected in the 2013 wet weather sample collected from Outfall 010 at a concentration 370 nanograms per liter (ng/L) and in the duplicate sample at 160 ng/L, which exceed the monthly average goal of 1.3 ng/L listed in the NPDES permit. As part of RCRA 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 mercury in the storm sewer.

Outfall 011

Copper was detected in the 2013 wet weather sample collected from Outfall 011 at a concentration of 8 micrograms per liter ($\mu\text{g/L}$). The highest concentration of copper detected during the wet weather sampling since the permit effective date (July 1, 2006) was 21 $\mu\text{g/L}$ in the September 8, 2006 sample, well below the daily maximum goal for copper of 100 $\mu\text{g/L}$ listed in the NPDES permit at this outfall.

Outfall 012

Outfall 012 was observed several times between October 7 and December 31, 2013. No flow was observed and therefore no sample was collected during the 2013 wet weather event. Copper was detected in the wet weather sample collected from Outfall 012 at a concentration of 4 $\mu\text{g/L}$ during the 2012 wet weather sample collection event, at 5 $\mu\text{g/L}$ during the 2011 wet weather sample collection event and at 6 $\mu\text{g/L}$ during the 2010 wet weather sample collection event. The daily maximum goal for copper listed in the NPDES permit is 100 $\mu\text{g/L}$. Copper was not detected in samples collected at Outfall 012 in the three years prior to that.

Conclusions

Outfall 003

PCBs concentrations for the yearly wet-weather sampling event have remained at non-detectable levels since September 2010. The Outfall 003/004 System continues to operate and is functioning as intended.

Outfall 010

The mercury concentration from this outfall sample is above the monthly average goal provided in the NPDES permit. It should be noted that low level mercury analysis was not performed on this sample due to elevated mercury concentration during initial testing of the sample. Analyzing samples with elevated mercury concentrations could potentially destroy laboratory equipment used for low level mercury analysis. The highest concentration of mercury reported prior to this sample was 23.8 ng/L, detected in the September 3, 2008 sample. RACER is continuing to work toward a remedy for this exceedance as part of the RCRA Corrective Action process at the Site.

Outfall 011

Copper was detected at a concentration of 8 µg/L during the 2013 wet weather sample collection event. Copper concentrations consistently remain well below the daily maximum goal for copper listed in the NPDES permit of 100 µg/L.

Outfall 012

Outfall 012 was observed several times between October 7 and December 31, 2013. No flow was observed and therefore no sample was collected during the 2013 wet weather event. Copper concentrations have historically been well below the daily maximum goal of 100 µg/L listed in the NPDES permit.

If you have any questions, please contact me at 517.324.5052.

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
Buick City
Flint, Michigan

Outfall	Parameter	Units								
			9/10/2007	9/3/2008	9/28/2009	9/28/2010	9/27/2011	10/18/2012	10/7/2013	
003	PCB-1016	µg/L	< 0.10	< 0.10	< 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	< 0.10	< 0.10
003	PCB-1232	µg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
003	PCB-1242	µg/L	< 0.10	0.16	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
003	PCB-1248	µg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
003	PCB-1254	µg/L	< 0.10	< 0.10	< 0.10	0.2	< 0.10	< 0.10	< 0.10	< 0.10
003	PCB-1260	µg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
003	Total PCB	µg/L	< 0.10	0.16	< 0.10	0.2	< 0.10	< 0.10	< 0.10	< 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	Sample Type	Units								
			9/10/2007	9/3/2008	9/28/2009	10/13/2010	9/30/2011	10/18/2012	10/7/2013	
010	Sample	ng/L	17.2	23.8	6.04	13.6	1.1	12	370	
010	Duplicate	ng/L	4.73	25.9	5.73	NA	<0.500	11	160	
010	Equipment Blank	ng/L	<0.500	<0.500	2.84	NA	<0.500	4.8*	<0.500	
010	Trip Blank	ng/L	<0.500	<0.500	<0.500	NA	<0.500	4.9*	<0.500	

Note:

* Merit Laboratories indicate equipment and trip blank detections were most likely caused by naturally occurring mercury in the sample environment as mercury was not detected in the laboratory blank.

Outfall	Parameter	Units								
			9/10/2007	9/3/2008	9/28/2009	9/28/2010	10/15/2011	10/18/2012	10/7/2013	
011	Copper	µg/L	14	<10	13	<4	<4	4	8	

Note:

* 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.

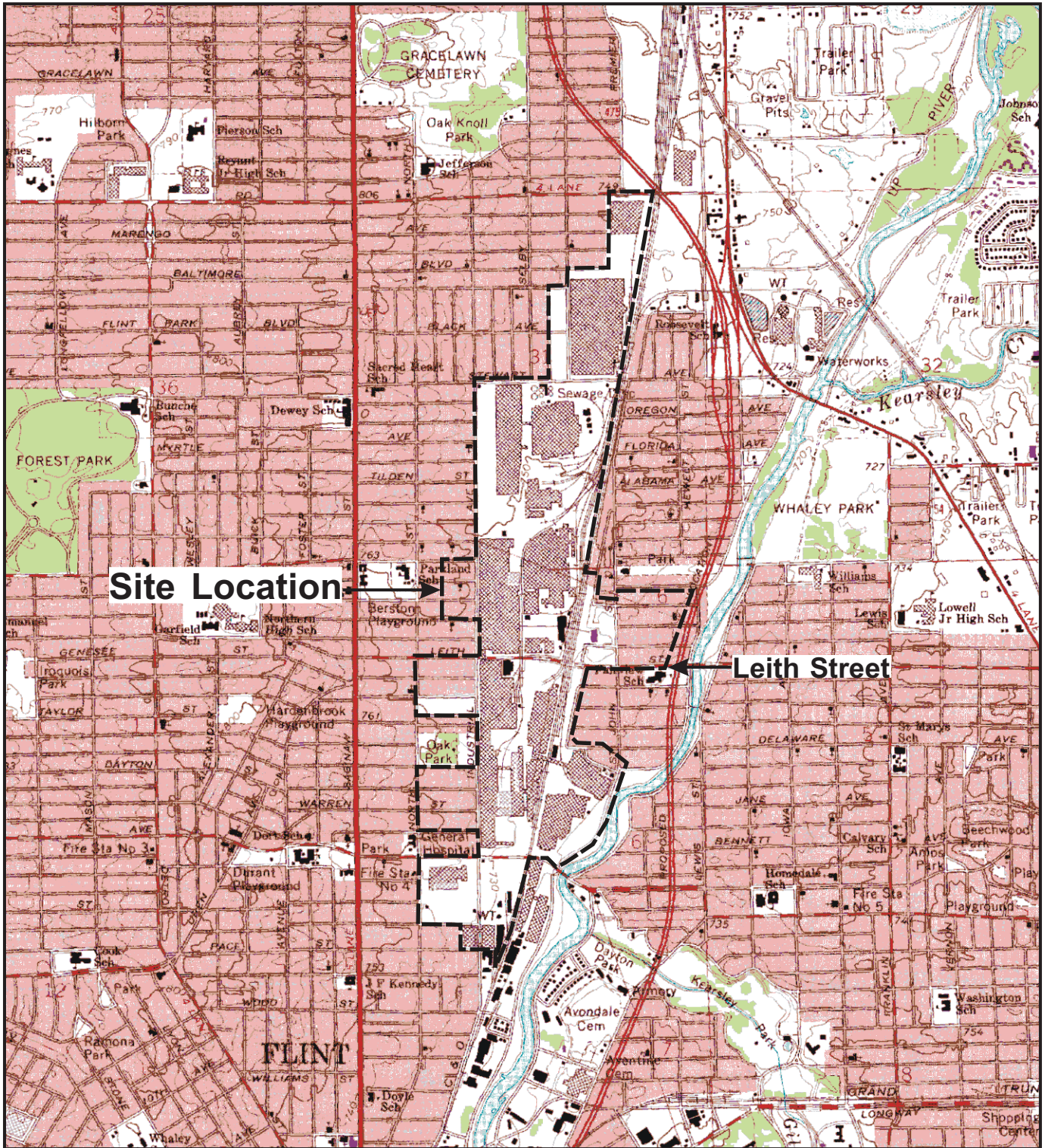
Outfall	Parameter	Units								
			9/10/2007	9/3/2008	9/28/2009	11/22/2010	9/26/2011	10/18/2012	10/7/2013	
012	Copper	µg/L	<10	<10	<10	6	5	4	No Flow**	

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

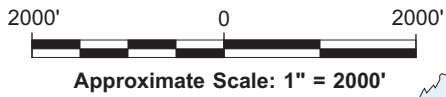
* There was very little flow at the monitoring point on 12/22/2006. The sample taken for analysis was partially from the minimal flow in the drainage pipe and partially from standing water in the bottom of the catch basin. The sample was also noted to be orange in color per Jim Wooster of Environmental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

** Outfall 012 was checked various times between October 7 and December 31, 2013. No flow was observed and therefore no sample was collected.

Figures

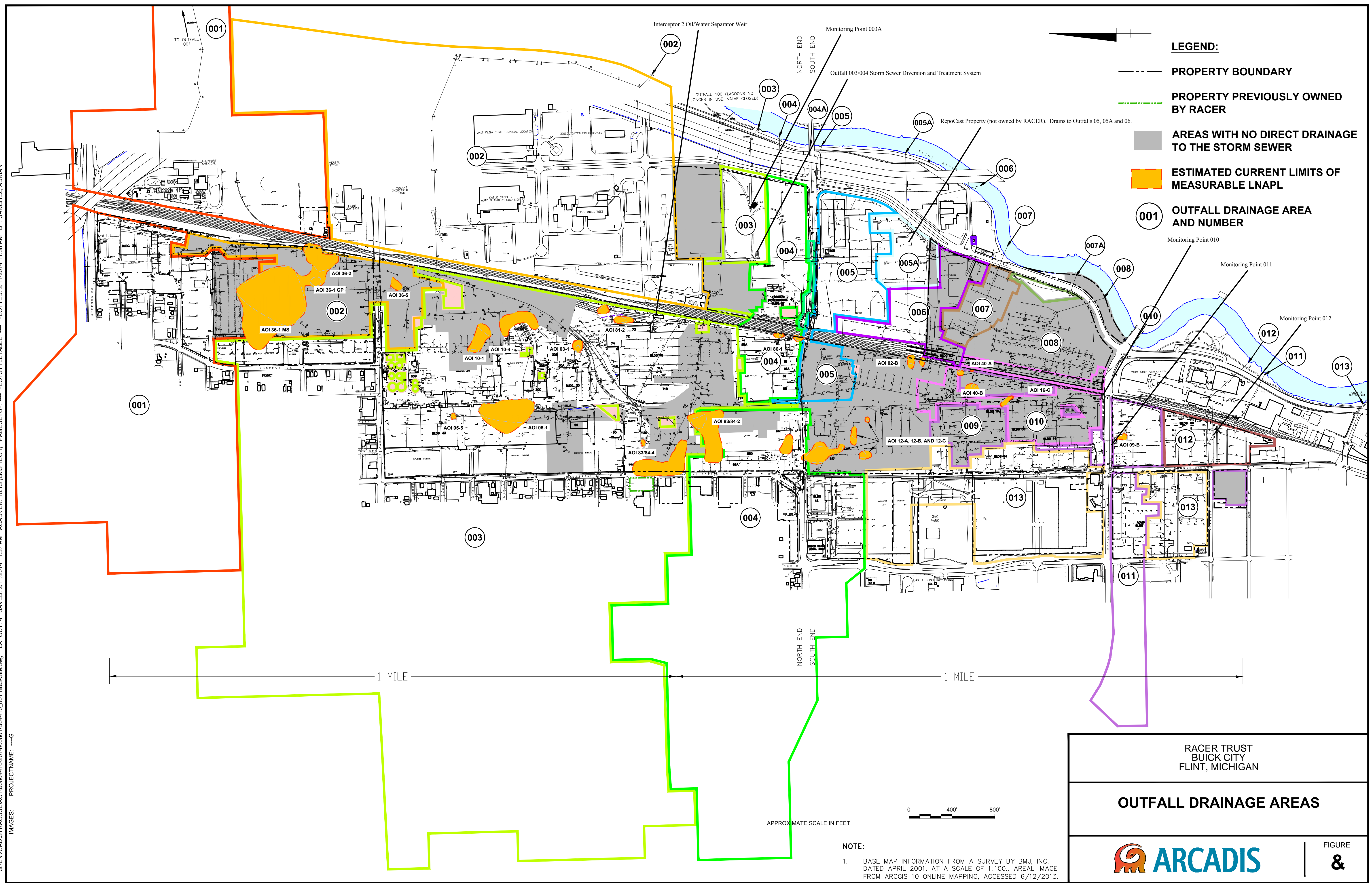


REFERENCE: Base Map Source: USGS 7.5 Min. Topo. Quad., Flint North, Mich. (1969, Photorevised 1975).



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

CITY: SYRACUSE DIV/GROUP: 141 DB: A SANCHEZ LD: GMS PM: L. McBURNEY Lyr: ON= "OFF=REF"
 G:\ENV\CAD\SYRACUSE\ACT\B0064410\2014\09\01\B64410_801 N&S-Site.dwg LAYOUT: 4 SAVED: 2/11/2014 11:37 AM ACADVER: 18.1\$ (LWS TECH) PAGES: 4 PLOTSTYLETABLE: ... PLOTSETUP: ... PLOTSTYLETABLE: ... PLOTTED: 2/11/2014 11:38 AM BY: SANCHEZ, ADRIAN
 IMAGES: PROJECTNAME: ...G



- LEGEND:**
- PROPERTY BOUNDARY
 - PROPERTY PREVIOUSLY OWNED BY RACER
 - AREAS WITH NO DIRECT DRAINAGE TO THE STORM SEWER
 - ESTIMATED CURRENT LIMITS OF MEASURABLE LNAPL
 - 001 OUTFALL DRAINAGE AREA AND NUMBER

RACER TRUST
 BUICK CITY
 FLINT, MICHIGAN

OUTFALL DRAINAGE AREAS

ARCADIS

FIGURE &

NOTE:

1. BASE MAP INFORMATION FROM A SURVEY BY BMJ, INC. DATED APRIL 2001, AT A SCALE OF 1:100.. AREAL IMAGE FROM ARCGIS 10 ONLINE MAPPING, ACCESSED 6/12/2013.



Attachment 1

Laboratory Analytical Reports



Analytical Laboratory Report

Report ID: S58421.01(01)
Generated on 10/17/2013

Report to

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

Phone: n/a FAX: 248-994-2241
Email: bethany.nanzer@arcadis-us.com

Additional Contacts: Deb Newcom, Erin Kozak

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

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

Contacts for report questions:
Tabitha Faust (tfaust@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S58421.01-S58421.02
Project: B0064410.4013.00102 / Buick City RACER Flint, MI
Collected Date: 10/07/2013
Submitted Date/Time: 10/07/2013 14:23
Sampled by: D. Newcom
P.O. #: B0064410.4013.00102

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 reporting limit (RL).
Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.
Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc..

Laboratory Certifications:

Michigan DNRE (#9956), DOD/ISO 17025 (#69699), WBENC (#2005110032), Ohio EPA (#CL0002)
IN Drinking Water (#C-MI-07), NELAC NY (#11814), NCDENR (#680), NC Drinking Water (#26702)
Some analytes reported may not be certified. Full certification lists are available upon request.

Violetta F. Murshak
Laboratory Director



Analytical Laboratory Report

Sample Summary (2 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S58421.01	MP011_100713_WW	Liquid	10/07/2013 11:30
S58421.02	Outfall003A_100713_WW	Liquid	10/07/2013 12:00



Analytical Laboratory Report

Lab Sample ID: S58421.01
Sample Tag: MP011_100713_WW
Collected Date/Time: 10/07/2013 11:30
Matrix: Liquid
COC Reference: BC100713.1

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	5.0	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3015A	10/16/13 10:00	PER		
Metals								
Copper	0.008	mg/L	0.005	E200.8	10/16/13 14:19	PER	7440-50-8	



Analytical Laboratory Report

Lab Sample ID: S58421.02
 Sample Tag: Outfall003A_100713_WW
 Collected Date/Time: 10/07/2013 12:00
 Matrix: Liquid
 COC Reference: BC100713.1

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Amber	None	Yes	5.0	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
----------	---------	-------	----	--------	---------------	---------	-------	-------

Extraction / Prep.

Extraction, PCB	Completed			3510C	10/10/13 10:00	RGS		
-----------------	-----------	--	--	-------	----------------	-----	--	--

Organics - PCBs/Pesticides

PCB

PCB-1016	Not detected	ug/L	0.1	E608	10/10/13 12:35	JAN	12674-11-2	
PCB-1221	Not detected	ug/L	0.1	E608	10/10/13 12:35	JAN	11104-28-2	
PCB-1232	Not detected	ug/L	0.1	E608	10/10/13 12:35	JAN	11141-16-5	
PCB-1242	Not detected	ug/L	0.1	E608	10/10/13 12:35	JAN	53469-21-9	
PCB-1248	Not detected	ug/L	0.1	E608	10/10/13 12:35	JAN	12672-29-6	
PCB-1254	Not detected	ug/L	0.1	E608	10/10/13 12:35	JAN	11097-69-1	
PCB-1260	Not detected	ug/L	0.1	E608	10/10/13 12:35	JAN	11096-82-5	
PCB, Total	Not detected	ug/L	0.1	E608	10/10/13 12:35	JAN	1336-36-3	



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 Phone (517) 332-0167 Fax (517) 332-4034
 www.meritlabs.com

C.O.C. Page # 1 of 1

C.O.C I.D.# BC100713.1

REPORT TO **CHAIN OF CUSTODY RECORD** **INVOICE TO**

CONTACT NAME
Beth Nanzler, Erin Kozak, D.Newcom

COMPANY
ARCADIS U.S., Inc.

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28550 Cabot Drive Ste 500

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Novi

STATE
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ARCADIS WA# 01

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QUOTE NO.

CONTACT NAME
Christi Kiker

SAME

COMPANY

ADDRESS

CITY

STATE

ZIP CODE

PHONE NO.

EMAIL ADDRESS
christi.kiker@arcadis-us.com

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME
B0064410.4013.00201 / Buick City RACER Flint, MI

SAMPLER(S) - PLEASE PRINT/SIGN NAME
D.Newcom

TURNAROUND TIME REQUIRED
 1 DAY 2 DAYS 3 DAYS STANDARD OTHER

DELIVERABLES REQUIRED
 LEVEL I LEVEL II LEVEL III LEVEL IV EDD OTHER

Matrix Code:
 GW=Groundwater WW=Waste Water S=Soil L=Liquid SD=Solid
 SL=Sludge DW=Drinking Water O=Oil WP=Wipe A=Air W=Waste

Certifications
 Ohio VAP Drinking Water
 DoD NPDES

Project Locations
 Detroit New York
 Other

Special Instructions

MERIT LAB NO. FOR LAB USE ONLY	YEAR		SAMPLE TAG IDENTIFICATION - DESCRIPTION	MATRIX	# OF BOTTLES
	DATE	TIME			
59421.01	10/7/2013	1130	MP011_100713_WW	L	1
	10/7/2013	1145	MP012_100713_WW	L	1
102	10/7/2013	1200	Outfall003A_100713_WW	L	2

# OF CONTAINERS & PRESERVATIVES								Total Copper	PCB
NONE	HCL	HNO3	H2SO4	NAOH	MEOH	OTHER			
		X						X	
		X						X	
X									X

No SAMPLE

tab filled seal

Relinquished By: [Signature] / ARCADIS Sampler Date: 10/7/13 Time: 1423

Received By: [Signature] Date: 10/7/13 Time: 1423

Relinquished By: [Signature] Date: 10/7/13 Time: 1423

Received By: [Signature] Date: 10/7/13 Time: 1423

Seal No. Seal Intact Yes No Initials

Notes: Temp. on arrival 57.6



Analytical Laboratory Report

Report ID: S58422.01(01)
Generated on 10/16/2013

Report to

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

Phone: n/a FAX: 248-994-2241
Email: bethany.nanzer@arcadis-us.com

Additional Contacts: Deb Newcom, Erin Kozak

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

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

Contacts for report questions:

Tabitha Faust (tfaust@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S58422.01-S58422.04
Project: B0064410.4013.00102 / Buick City RACER Flint, MI
Collected Date: 10/07/2013
Submitted Date/Time: 10/07/2013 14:23
Sampled by: D. Newcom
P.O. #: B0064410.4013.00102

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 reporting limit (RL).
Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.
Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc..

Laboratory Certifications:

Michigan DNRE (#9956), DOD/ISO 17025 (#69699), WBENC (#2005110032), Ohio EPA (#CL0002)
IN Drinking Water (#C-MI-07), NELAC NY (#11814), NCDENR (#680), NC Drinking Water (#26702)
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
S58422.01	MP010_100713_WW	Liquid	10/07/2013 11:00
S58422.02	Duplicate_100713_WW	Liquid	10/07/2013 00:01
S58422.03	Equip_Blank_100713_WW	Liquid	10/07/2013 10:50
S58422.04	Trip_Blank_100713_WW	Liquid	10/07/2013 00:01



Analytical Laboratory Report

Lab Sample ID: S58422.01
Sample Tag: MP010_100713_WW
Collected Date/Time: 10/07/2013 11:00
Matrix: Liquid
COC Reference: BC100713.2

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	LL Hg Kit	None	Yes	5.0	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Other / Misc.								
Mercury	0.37	ug/L	0.10	SW7470A	10/10/13 12:00	Fib	7439-97-6	O

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



Analytical Laboratory Report

Lab Sample ID: S58422.02
Sample Tag: Duplicate_100713_WW
Collected Date/Time: 10/07/2013 00:01
Matrix: Liquid
COC Reference: BC100713.2

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	LL Hg Kit	None	Yes	5.0	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Other / Misc.								
Mercury	0.16	ug/L	0.10	SW7470A	10/10/13 12:00	Fib	7439-97-6	O

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



Analytical Laboratory Report

Lab Sample ID: S58422.03
Sample Tag: Equip_Blank_100713_WW
Collected Date/Time: 10/07/2013 10:50
Matrix: Liquid
COC Reference: BC100713.2

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	LL Hg Kit	None	Yes	5.0	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Metals								
Mercury, Low Level	Not detected	ng/L	0.50	1631E	10/11/13 12:00	Fib	7439-97-6	O

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



Analytical Laboratory Report

Lab Sample ID: S58422.04
Sample Tag: Trip_Blank_100713_WW
Collected Date/Time: 10/07/2013 00:01
Matrix: Liquid
COC Reference: BC100713.2

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	LL Hg Kit	None	Yes	5.0	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Metals								
Mercury, Low Level	Not detected	ng/L	0.50	1631E	10/11/13 12:00	Fib	7439-97-6	O

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



2680 East Lansing Dr., East Lansing, MI 48823
 Phone (517) 332-0167 Fax (517) 332-4034
 www.meritlabs.com

C.O.C. Page # 1 of 1

C.O.C I.D.# BC100713.2

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME
Beth Nanzer, Erin Kozak, D.Newcom

COMPANY
ARCADIS U.S., Inc.

ADDRESS
28550 Cabot Drive Ste 500

CITY
Novi

STATE
MI

ZIP CODE
48377

PHONE NO.
248.994.2314

FAX NO.
248.994.2241

P.O. NO.
ARCADIS WA# 01

EMAIL ADDRESSES
bethany.nanzer@arcadis-us.com; erin.kozak@arcadis-us.com; deborah.newcom@arcadis-us.com

QUOTE NO.

CONTACT NAME
Christi Kiker

COMPANY
[] SAME

ADDRESS

CITY

STATE

ZIP CODE

PHONE NO.

EMAIL ADDRESS
christi.kiker@arcadis-us.com

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME
B0064410.4013.00201 / Buick City RACER Flint, MI

SAMPLER(S) - PLEASE PRINT/SIGN NAME
D.Newcom

TURNAROUND TIME REQUIRED
 1 DAY 2 DAYS 3 DAYS STANDARD OTHER

DELIVERABLES REQUIRED
 LEVEL I LEVEL II LEVEL III LEVEL IV EDD OTHER

Matrix Code:
 GW=Groundwater WW=Waste Water S=Soil L=Liquid SD=Solid
 SL=Sludge DW=Drinking Water O=Oil WP=Wipe A=Air W=Waste

# OF CONTAINERS & PRESERVATIVES										LLHg											
NONE	HCL	HNO3	H2SO4	NAOH	MEOH	OTHER															
X										X											
X										X											
X										X											
X										X											

Certifications
 Ohio VAP Drinking Water
 DoD NPDES

Project Locations
 Detroit New York
 Other

Special Instructions

MERIT LAB NO. FOR LAB USE ONLY	YEAR		SAMPLE TAG IDENTIFICATION - DESCRIPTION	MATRIX	# OF BOTTLES
	DATE	TIME			
58422.01	10/7/2013	1100	MP010_100713_WW	L	3
.02	10/7/2013	NA	Duplicate_100713_WW	L	3
.03	10/7/2013	1050	Equip_Blank_100713_WW	L	3
.04	10/7/2013	NA	Trip_Blank_100713_WW	L	3

lab filled

Relinquished By: *[Signature]* / ARCADIS Sampler Date: 10/7/13 Time: 1423

Relinquished By: Signature/Organization Date Time

Received By: Signature/Organization Date Time

Received By: *Talbert Faust Faust* Date: 10/7/13 Time: 1423

Relinquished By: Signature/Organization Date Time

Seal No. Seal Intact Yes No Initials

Received By: Signature/Organization Date Time

Seal No. Seal Intact Yes No Initials

Notes: Temp. on arrival 50



Monday, October 14, 2013

Fibertec Project Number: 58394
Project Identification: S58422 /
Submittal Date: 10/08/2013

Ms. Tabitha Faust
Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Dear Ms. Faust,

Thank you for selecting Fibertec Environmental Services as your analytical laboratory. The samples you submitted have been analyzed in accordance with NELAC standards and the results compiled in the attached report. Any exceptions to NELAC compliance are noted in the report. These results apply only to those samples submitted. Please note samples will be disposed of 30 days after reporting date.

If you have any questions regarding these results or if we may be of further assistance to you, please contact me at (517) 699-0345.

Sincerely,

A handwritten signature in black ink, appearing to read "Daryl Strandbergh", written in a cursive style.

Daryl P. Strandbergh
Laboratory Director

DPS/kc

Enclosures

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 58394
Laboratory Sample Number: 58394-001

Order: 58394
Page: 2 of 6
Date: 10/14/13

Client Identification: Merit Laboratories, Inc.	Sample Description: 58422.01	Chain of Custody: 75735
Client Project Name: S58422	Sample No: 1	Collect Date: 10/07/13
Client Project No: NA	Sample Matrix: Ground Water	Collect Time: 11:00

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable †: Parameter not included in NELAC Scope of Analysis.

Mercury by CVAAS, Total (EPA 7470A)			Aliquot ID: 58394-001			Matrix: Ground Water				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	0.37		µg/L	0.10	1.2	10/10/13	PM13J10C	10/10/13	M613J10A	JLP

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Analytical Laboratory Report
Laboratory Project Number: 58394
Laboratory Sample Number: 58394-002

Order: 58394
Page: 3 of 6
Date: 10/14/13

Client Identification: Merit Laboratories, Inc.	Sample Description: 58422.02	Chain of Custody: 75735
Client Project Name: S58422	Sample No: 2	Collect Date: 10/07/13
Client Project No: NA	Sample Matrix: Ground Water	Collect Time: NA

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable †: Parameter not included in NELAC Scope of Analysis.

Mercury by CVAAS, Total (EPA 7470A)			Aliquot ID: 58394-002			Matrix: Ground Water				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	0.16		µg/L	0.10	1.2	10/10/13	PM13J10C	10/10/13	M613J10A	JLP

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Analytical Laboratory Report
Laboratory Project Number: 58394
Laboratory Sample Number: 58394-003

Order: 58394
Page: 4 of 6
Date: 10/14/13

Client Identification: Merit Laboratories, Inc.	Sample Description: 58422.03	Chain of Custody: 75735
Client Project Name: S58422	Sample No: 3	Collect Date: 10/07/13
Client Project No: NA	Sample Matrix: Ground Water	Collect Time: 10:50

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable †: Parameter not included in NELAC Scope of Analysis.

Mercury by CVAFS, Low-Level, Total (EPA 1631E)			Aliquot ID: 58394-003			Matrix: Ground Water				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	U		ng/L	0.50	1.0	10/11/13	PM13J11A	10/11/13	M513J11A	JLP

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Analytical Laboratory Report
Laboratory Project Number: 58394
Laboratory Sample Number: 58394-004

Order: 58394
Page: 5 of 6
Date: 10/14/13

Client Identification: Merit Laboratories, Inc.	Sample Description: 58422.04	Chain of Custody: 75735
Client Project Name: S58422	Sample No: 4	Collect Date: 10/07/13
Client Project No: NA	Sample Matrix: Ground Water	Collect Time: NA

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable †: Parameter not included in NELAC Scope of Analysis.

Mercury by CVAFS, Low-Level, Total (EPA 1631E)	Aliquot ID: 58394-004	Matrix: Ground Water								
	<u>Preparation</u>		<u>Analysis</u>							
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	U		ng/L	0.50	1.0	10/11/13	PM13J11A	10/11/13	M513J11A	JLP

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Definitions/ Qualifiers:

- A:** Spike recovery or precision unusable due to dilution.
- B:** The analyte was detected in the associated method blank.
- E:** The analyte was detected at a concentration greater than the calibration range, therefore the result is estimated.
- J:** The concentration is an estimated value.
- M:** Modified Method
- U:** The analyte was not detected at or above the reporting limit.
- X:** Matrix Interference has resulted in a raised reporting limit or distorted result.
- W:** Results reported on a wet-weight basis.
- *:** Value reported is outside QA limits

Exception Summary:



Accreditation Number(s):

E-10395 (KS)

T104704518-13-1 (TX)

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