



September 28, 2016

Reference No. 012607

Ms. Tessy Jose
City of Detroit
Water and Sewerage Department
Industrial Waste Control Division
303 S. Livernois Avenue
Detroit, Michigan 48209

Dear Ms. Jose:

**Re: DWSD Semi Annual Report – SD6-94508
(March 2016 through August 2016)
12950 Eckles Road
Livonia, Michigan 48150
Permit No.: SD6 94508**

GHD Services Inc. (GHD) is providing the attached documents for the reporting requirements of Special Discharge Permit SD6-94508 for the period of March 2016 through August 2016 for the RACER Eckles Road Site located at 12950 Eckles Road, Livonia, Michigan.

Special Discharge Permit SD6-94508 was issued in June 2011, renewed in June 2015 and is effective through June 30, 2019.

RACER has been implementing United States Environmental Protection Agency (U.S. EPA)-approved pilot studies to evaluate remedial alternatives for the reduction of dissolved chromium and nickel concentrations in site groundwater. Based on these pilot studies, RACER is currently implementing a remedial alternative consisting of in-situ chemical reduction (ISCR) of dissolved chromium and nickel through chemical injections into the impacted groundwater, essentially treating the groundwater in the subsurface.

The current City of Detroit Water and Sewerage Department (DWSD) Special Discharge Permit effluent limits for the groundwater treatment plant (GWTP) are 3.98 mg/L for nickel and 2.77 mg/L for total chromium. It is noted that recent GWTP influent concentrations have averaged between 2 to 3 mg/L for nickel and 5 to 10 mg/L for total chromium since December 2015 based on field tests performed weekly. If groundwater concentrations and the GWTP influent concentrations can be reduced to below Special Discharge Permit effluent limits through targeted chemical injections into the impacted groundwater in the vicinity of the French drain, RACER believes it will allow for modification of existing GWTP operation, while still meeting effluent limits and continuing to implement dewatering activities until final portions of the remedial alternative can be implemented and approval to discontinue dewatering (and therefore discharge to the sanitary sewer system) can be obtained from U.S. EPA. Influent testing will continue with field test kits weekly in order to obtain data to allow for evaluation of any trends in nickel and chromium concentrations in the influent, and once influent

concentrations are consistently below the Special Discharge Permit requirements, the field test kit results will be confirmed with laboratory analytical results. Effluent testing will continue as required by the Special Discharge Permit. If approval to discontinue dewatering is received from U.S. EPA then no discharge will be necessary and the existing Discharge Permit can be terminated. The conceptual schedule for receiving approval from U.S. EPA to discontinue dewatering activities through the groundwater extraction system and hence the need for operating and discharging to the sanitary sewer system is late in 2017.

SECTION D: REPORTING REQUIREMENTS

- Reporting Period: March 1, 2016 to August 31, 2016
- Dates of Sampling: March 2, 2016; May 25, 2016; June 22, 2016; July 20, 2016; and August 10, 2016.
- GHD notified DWSD on April 4, 2016 that the mechanical failure of the flocculation tank mixer caused a shutdown of the system from April 4, 2016 through May 4, 2016. No samples were collected for laboratory analysis during the month of April 2016 due to shutdown of the system.
- All samples were collected from the effluent sampling port of Tank T12
- Total Monthly Discharges (gallons):
 - March 2016: 783,853
 - April 2016: 40,821
 - May 2016: 665,591
 - June 2016: 735,675
 - July 2016: 744,193
 - August 2016: 518,332
- Total Flow to Date: 172,192,676 gallons
- Signature of GHD's authorized representative who is knowledgeable of the remediation site's discharge

GHD certifies that the discharge complied with the permit discharge limits.

Please contact me at (734) 453-5123 if you require further information or clarification.

Sincerely,

GHD Services Inc.



Christopher J. Meincke, P.E.

CM/ds/13/Det.
Encl.

cc: Dave Favero, RACER

SECTION D: REPORTING REQUIREMENTS/b) iii)**12950 Eckles Road****Livonia, MI 48150****Permit No.: SD6-94508****Maintenance Log - March 2016**

Date	Inspection Visits	Changes or Replacements of Treatment System	Samples Taken	Quantities of Groundwater Discharged / Day - GAL	Notes
03/01/16	None	None	On-Site	50,541	
03/02/16	None	None	On-site & Sampled	37,960	
03/03/16	None	None	On-Site	40,373	
03/04/16	None	None	On-Site	44,050	
03/05/16	None	None			
03/06/16	None	None			
03/07/16	None	None	On-Site	486	
03/08/16	None	None	On-Site	18,402	
03/09/16	None	None	On-Site	41,958	
03/10/16	None	None	On-Site	37,887	
03/11/16	None	None	On-Site	43,464	
03/12/16	None	None			
03/13/16	None	None			
03/14/16	None	None	On-Site	432	
03/15/16	None	None	On-Site	53,288	
03/16/16	None	None	On-Site	46,609	
03/17/16	None	None	On-Site	41,298	
03/18/16	None	None	On-Site	39,676	
03/19/16	None	None			
03/20/16	None	None			
03/21/16	None	None	On-Site	809	
03/22/16	None	None	On-Site	60,868	
03/23/16	None	None	On-Site	44,863	
03/24/16	None	None	On-Site	41,716	
03/25/16	None	None			
03/26/16	None	None			
03/27/16	None	None			
03/28/16	None	None	On-Site	938	
03/29/16	None	None	On-Site	55,177	
03/30/16	None	None	On-Site	44,342	
03/31/16	None	None	On-Site	38,716	

Total Monthly Discharge (gal)

783,853

SECTION D: REPORTING REQUIREMENTS/b) iii)
12950 Eckles Road
Livonia, MI 48150
Permit No.: SD6-94508
Maintenance Log - April 2016

Date	Inspection Visits	Changes or Replacements of Treatment System	Samples Taken	Quantities of Groundwater Discharged / Day - GAL	Notes
04/01/16	None	None	On-Site	40,821	
04/02/16	None	None			
04/03/16	None	None			
04/04/16	None	None			System down - Floc mixer motor down
04/05/16	None	None			System down - Floc mixer motor down
04/06/16	None	None			System down - Floc mixer motor down
04/07/16	None	None			System down - Floc mixer motor down
04/08/16	None	None			System down - Floc mixer motor down
04/09/16	None	None			System down - Floc mixer motor down
04/10/16	None	None			System down - Floc mixer motor down
04/11/16	None	None			System down - Floc mixer motor down
04/12/16	None	None			System down - Floc mixer motor down
04/13/16	None	None			System down - Floc mixer motor down
04/14/16	None	None			System down - Floc mixer motor down
04/15/16	None	None			System down - Floc mixer motor down
04/16/16	None	None			System down - Floc mixer motor down
04/17/16	None	None			System down - Floc mixer motor down
04/18/16	None	None			System down - Floc mixer motor down
04/19/16	None	None			System down - Floc mixer motor down
04/20/16	None	None			System down - Floc mixer motor down
04/21/16	None	None			System down - Floc mixer motor down
04/22/16	None	None			System down - Floc mixer motor down
04/23/16	None	None			System down - Floc mixer motor down
04/24/16	None	None			System down - Floc mixer motor down
04/25/16	None	None			System down - Floc mixer motor down
04/26/16	None	None			System down - Floc mixer motor down
04/27/16	None	None			System down - Floc mixer motor down
04/28/16	None	None			System down - Floc mixer motor down
04/29/16	None	None			System down - Floc mixer motor down
04/30/16	None	None			System down - Floc mixer motor down

Total Monthly Discharge (gal)

40,821

SECTION D: REPORTING REQUIREMENTS/b) iii)**12950 Eckles Road****Livonia, MI 48150****Permit No.: SD6-94508****Maintenance Log - May 2016**

Date	Inspection Visits	Changes or Replacements of Treatment System	Samples Taken	Quantities of Groundwater Discharged / Day - GAL	Notes
05/01/16	None	None			
05/02/16	None	None			
05/03/16	None	None			
05/04/16	None	None	On-Site	0	
05/05/16	None	None	On-Site	70,386	
05/06/16	None	None	On-Site	56,146	
05/07/16	None	None			
05/08/16	None	None			
05/09/16	None	None	On-Site	3,249	
05/10/16	None	None	On-Site	67,170	
05/11/16	None	None	On-Site	38,503	
05/12/16	None	None	On-Site	52,321	
05/13/16	None	None	On-Site	66,120	
05/14/16	None	None			
05/15/16	None	None			
05/16/16	None	None	On-Site	374	
05/17/16	None	None	On-Site	70,285	
05/18/16	None	None	On-Site	47,346	
05/19/16	None	None			
05/20/16	None	None			
05/21/16	None	None			
05/22/16	None	None			
05/23/16	None	None	On-Site	1,199	
05/24/16	None	None	On-Site	79,774	
05/25/16	None	None	On-site & Sampled	43,190	
05/26/16	None	None	On-Site	67,732	
05/27/16	None	None			
05/28/16	None	None			
05/29/16	None	None			
05/30/16	None	None			
05/31/16	None	None	On-Site	1,796	

Total Monthly Discharge (gal)

665,591

SECTION D: REPORTING REQUIREMENTS/b) iii)
12950 Eckles Road
Livonia, MI 48150
Permit No.: SD6-94508
Maintenance Log - June 2016

Date	Inspection Visits	Changes or Replacements of Treatment System	Samples Taken	Quantities of Groundwater Discharged / Day - GAL	Notes
06/01/16	None	None	On-Site	69,064	
06/02/16	None	None	On-Site	45,997	
06/03/16	None	None	On-Site	48,571	
06/04/16	None	None			
06/05/16	None	None			
06/06/16	None	None		0	
06/07/16	None	None		0	
06/08/16	None	None	On-Site	50,773	
06/09/16	None	None	On-Site	55,740	
06/10/16	None	None	On-Site	42,821	
06/11/16	None	None			
06/12/16	None	None			
06/13/16	None	None	On-Site	98	
06/14/16	None	None	On-Site	66,982	
06/15/16	None	None	On-Site	38,699	System down - out of mag lime
06/16/16	None	None			System down - out of mag lime
06/17/16	None	None			System down - out of mag lime
06/18/16	None	None			
06/19/16	None	None			
06/20/16	None	None			System down - out of mag lime
06/21/16	None	None	On-Site	0	
06/22/16	None	None	On-site & Sampled	56,768	
06/23/16	None	None	On-Site	56,083	
06/24/16	None	None	On-Site	46,617	
06/25/16	None	None			
06/26/16	None	None			
06/27/16	None	None	On-Site	1,200	
06/28/16	None	None	On-Site	47,307	
06/29/16	None	None	On-Site	43,496	
06/30/16	None	None	On-Site	65,459	

Total Monthly Discharge (gal) 735,675

SECTION D: REPORTING REQUIREMENTS/b) iii)**12950 Eckles Road****Livonia, MI 48150****Permit No.: SD6-94508****Maintenance Log - July 2016**

Date	Inspection Visits	Changes or Replacements of Treatment System	Samples Taken	Quantities of Groundwater Discharged / Day - GAL	Notes
07/01/16	None	None	On-Site	44,768	
07/02/16	None	None			
07/03/16	None	None			
07/04/16	None	None			
07/05/16	None	None			
07/06/16	None	None	On-Site	21	
07/07/16	None	None	On-Site	53,088	
07/08/16	None	None	On-Site	48,174	
07/09/16	None	None			
07/10/16	None	None			
07/11/16	None	None	On-Site	2,994	
07/12/16	None	None	On-Site	59,222	
07/13/16	None	None	On-Site	46,304	
07/14/16	None	None	On-Site	45,656	
07/15/16	None	None	On-Site	53,400	
07/16/16	None	None			
07/17/16	None	None			
07/18/16	None	None	On-Site	10	
07/19/16	None	None	On-Site	54,033	
07/20/16	None	None	On-site & Sampled	43,025	
07/21/16	None	None	On-Site	51,503	
07/22/16	None	None	On-Site	34,561	
07/23/16	None	None			
07/24/16	None	None			
07/25/16	None	None	On-Site	12,767	
07/26/16	None	None	On-Site	55,308	
07/27/16	None	None	On-Site	38,993	
07/28/16	None	None	On-Site	51,174	
07/29/16	None	None	On-Site	49,192	
07/30/16	None	None			
07/31/16	None	None			

Total Monthly Discharge (gal)

744,193

SECTION D: REPORTING REQUIREMENTS/b) iii)
12950 Eckles Road
Livonia, MI 48150
Permit No.: SD6-94508
Maintenance Log - August 2016

Date	Inspection Visits	Changes or Replacements of Treatment System	Samples Taken	Quantities of Groundwater Discharged / Day - GAL	Notes
08/01/16	None	None	On-Site	1,592	
08/02/16	None	None	On-Site	59,325	
08/03/16	None	None	On-Site	50,047	
08/04/16	None	None	On-Site	38,425	
08/05/16	None	None	On-Site	39,354	
08/06/16	None	None			
08/07/16	None	None			
08/08/16	None	None	On-Site	26	
08/09/16	None	None	On-Site	53,486	
08/10/16	None	None	On-site & Sampled	36,484	
08/11/16	None	None	On-Site	46,557	
08/12/16	None	None			
08/13/16	None	None			
08/14/16	None	None			
08/15/16	None	None	On-Site	928	
08/16/16	None	None	On-Site	54,500	
08/17/16	None	None	On-Site	32,250	
08/18/16	None	None	On-Site	51,434	
08/19/16	None	None			System down - Targeted Injections
08/20/16	None	None			
08/21/16	None	None			
08/22/16	None	None			System down - Targeted Injections
08/23/16	None	None			System down - Targeted Injections
08/24/16	None	None			System down - Targeted Injections
08/25/16	None	None			System down - Targeted Injections
08/26/16	None	None			System down - Targeted Injections
08/27/16	None	None			
08/28/16	None	None			
08/29/16	None	None	On-Site	318	
08/30/16	None	None	On-Site	3,300	
08/31/16	None	None	On-Site	50,306	

Total Monthly Discharge (gal) 518,332

SECTION D: REPORTING REQUIREMENTS/b) iii)
12950 Eckles Road
Livonia, MI 48150
Permit No.: SD6-94508
Maintenance Log- ISCO Sample Analyses - March 2016

	Permit Limits	5-11.5	3.98 mg/L	N/A	2.77 mg/L	
DATE	SAMPLE DATE	pH	(mg/L) NICKEL	(mg/L) HEX Cr	(mg/L) TOTAL Cr	NOTES
3/1/2016	3/1/2016	9.22	0.04	0.00	0.10	
3/2/2016	3/2/2016	9.26	0.06	0.00	0.20	
3/3/2016	3/3/2016	9.54	0.07	0.00	0.20	
3/4/2016	3/4/2016	9.42	0.04	0.00	0.10	
3/5/2016	3/5/2016					
3/6/2016	3/6/2016					
3/7/2016	3/7/2016	8.33	0.04	0.00	0.05	
3/8/2016	3/8/2016	9.64	0.04	0.00	0.05	
3/9/2016	3/9/2016	9.67	0.03	0.00	0.05	
3/10/2016	3/10/2016	9.61	0.05	0.00	0.15	
3/11/2016	3/11/2016	9.61	0.04	0.00	0.10	
3/12/2016	3/12/2016					
3/13/2016	3/13/2016					
3/14/2016	3/14/2016	8.56	0.05	0.00	0.10	
3/15/2016	3/15/2016	9.58	0.04	0.00	0.10	
3/16/2016	3/16/2016	9.49	0.03	0.00	0.05	
3/17/2016	3/17/2016	9.43	0.02	0.00	0.05	
3/18/2016	3/18/2016	9.37	0.04	0.00	0.05	
3/19/2016	3/19/2016					
3/20/2016	3/20/2016					
3/21/2016	3/21/2016	8.61	0.05	0.00	0.10	
3/22/2016	3/22/2016	9.65	0.03	0.00	0.05	
3/23/2016	3/23/2016	9.54	0.03	0.00	0.05	
3/24/2016	3/24/2016	9.52	0.03	0.00	0.05	
3/25/2016	3/25/2016					System down - Vacation day
3/26/2016	3/26/2016					
3/27/2016	3/27/2016					
3/28/2016	3/28/2016	8.71	0.03	0.00	0.10	
3/29/2016	3/29/2016	9.72	0.03	0.00	0.05	
3/30/2016	3/30/2016	9.54	0.03	0.00	0.05	
3/31/2016	3/31/2016	9.58	0.03	0.00	0.05	

SECTION D: REPORTING REQUIREMENTS/b) iii)
12950 Eckles Road
Livonia, MI 48150
Permit No.: SD6-94508
Maintenance Log- ISCO Sample Analyses - April 2016

	Permit Limits	5-11.5	3.98 mg/L	N/A	2.77 mg/L	
DATE	SAMPLE DATE	pH	(mg/L) NICKEL	(mg/L) HEX Cr	(mg/L) TOTAL Cr	NOTES
4/1/2016	4/1/2016	9.54	0.05	0.00	0.10	
4/2/2016	4/2/2016					
4/3/2016	4/3/2016					
4/4/2016	4/4/2016					System down - Floc mixer motor down
4/5/2016	4/5/2016					System down - Floc mixer motor down
4/6/2016	4/6/2016					System down - Floc mixer motor down
4/7/2016	4/7/2016					System down - Floc mixer motor down
4/8/2016	4/8/2016					System down - Floc mixer motor down
4/9/2016	4/9/2016					System down - Floc mixer motor down
4/10/2016	4/10/2016					System down - Floc mixer motor down
4/11/2016	4/11/2016					System down - Floc mixer motor down
4/12/2016	4/12/2016					System down - Floc mixer motor down
4/13/2016	4/13/2016					System down - Floc mixer motor down
4/14/2016	4/14/2016					System down - Floc mixer motor down
4/15/2016	4/15/2016					System down - Floc mixer motor down
4/16/2016	4/16/2016					System down - Floc mixer motor down
4/17/2016	4/17/2016					System down - Floc mixer motor down
4/18/2016	4/18/2016					System down - Floc mixer motor down
4/19/2016	4/19/2016					System down - Floc mixer motor down
4/20/2016	4/20/2016					System down - Floc mixer motor down
4/21/2016	4/21/2016					System down - Floc mixer motor down
4/22/2016	4/22/2016					System down - Floc mixer motor down
4/23/2016	4/23/2016					System down - Floc mixer motor down
4/24/2016	4/24/2016					System down - Floc mixer motor down
4/25/2016	4/25/2016					System down - Floc mixer motor down
4/26/2016	4/26/2016					System down - Floc mixer motor down
4/27/2016	4/27/2016					System down - Floc mixer motor down
4/28/2016	4/28/2016					System down - Floc mixer motor down
4/29/2016	4/29/2016					System down - Floc mixer motor down
4/30/2016	4/30/2016					System down - Floc mixer motor down

SECTION D: REPORTING REQUIREMENTS/b) iii)
12950 Eckles Road
Livonia, MI 48150
Permit No.: SD6-94508
Maintenance Log- ISCO Sample Analyses - May 2016

	Permit Limits	5-11.5	3.98 mg/L	N/A	2.77 mg/L	
DATE	SAMPLE DATE	pH	(mg/L) NICKEL	(mg/L) HEX Cr	(mg/L) TOTAL Cr	NOTES
5/1/2016	5/1/2016					
5/2/2016	5/2/2016					
5/3/2016	5/3/2016					
5/4/2016	5/4/2016	7.93	0.05	0.00	0.05	
5/5/2016	5/5/2016	9.56	0.03	0.00	0.05	
5/6/2016	5/6/2016	9.27	0.03	0.00	0.05	
5/7/2016	5/7/2016					
5/8/2016	5/8/2016					
5/9/2016	5/9/2016	8.60	0.03	0.00	0.05	
5/10/2016	5/10/2016	9.38	0.05	0.00	0.10	
5/11/2016	5/11/2016	9.28	0.05	0.00	0.15	
5/12/2016	5/12/2016	9.33	0.03	0.00	0.05	
5/13/2016	5/13/2016	9.22	0.05	0.00	0.10	
5/14/2016	5/14/2016					
5/15/2016	5/15/2016					
5/16/2016	5/16/2016					Power outage
5/17/2016	5/17/2016	8.25	0.05	0.00	0.05	
5/18/2016	5/18/2016	9.51	0.05	0.00	0.10	
5/19/2016	5/19/2016	9.57	0.03	0.00	0.05	
5/20/2016	5/20/2016					System down
5/21/2016	5/21/2016					
5/22/2016	5/22/2016					
5/23/2016	5/23/2016	8.31	0.03	0.00	0.05	
5/24/2016	5/24/2016	9.28	0.05	0.00	0.10	
5/25/2016	5/25/2016	9.22	0.05	0.00	0.20	
5/26/2016	5/26/2016	9.21	0.05	0.00	0.25	
5/27/2016	5/27/2016					System down - repairs
5/28/2016	5/28/2016					
5/29/2016	5/29/2016					
5/30/2016	5/30/2016					Memorial Day Break
5/31/2016	5/31/2016	8.20	0.05	0.00	0.10	

SECTION D: REPORTING REQUIREMENTS/b) iii)
12950 Eckles Road
Livonia, MI 48150
Permit No.: SD6-94508
Maintenance Log- ISCO Sample Analyses - June 2016

	Permit Limits	5-11.5	3.98 mg/L	N/A	2.77 mg/L	
DATE	SAMPLE DATE	pH	(mg/L) NICKEL	(mg/L) HEX Cr	(mg/L) TOTAL Cr	NOTES
6/1/2016	6/1/2016	9.25	0.07	0.00	0.05	
6/2/2016	6/2/2016	9.34	0.03	0.00	0.05	
6/3/2016	6/3/2016	9.02	0.05	0.00	0.05	
6/4/2016	6/4/2016					
6/5/2016	6/5/2016					
6/6/2016	6/6/2016	8.30	0.03	0.00	0.05	
6/7/2016	6/7/2016	8.29	0.03	0.00	0.05	
6/8/2016	6/8/2016	9.26	0.05	0.00	0.05	
6/9/2016	6/9/2016	9.41	0.06	0.00	0.10	
6/10/2016	6/10/2016	8.90	0.04	0.00	0.10	
6/11/2016	6/11/2016					
6/12/2016	6/12/2016					
6/13/2016	6/13/2016	8.13	0.03	0.00	0.05	
6/14/2016	6/14/2016	9.01	0.05	0.00	0.10	
6/15/2016	6/15/2016	8.28	0.10	0.00	0.20	System down - out of mag lime
6/16/2016	6/16/2016					System down - out of mag lime
6/17/2016	6/17/2016					System down - out of mag lime
6/18/2016	6/18/2016					
6/19/2016	6/19/2016					
6/20/2016	6/20/2016					System down - out of mag lime
6/21/2016	6/21/2016	8.29	0.05	0.00	0.05	
6/22/2016	6/22/2016	9.98	0.05	0.00	0.10	
6/23/2016	6/23/2016	9.93	0.05	0.00	0.05	
6/24/2016	6/24/2016	9.91	0.16	0.00	0.35	
6/25/165	6/25/165					
6/26/2016	6/26/2016					
6/27/2016	6/27/2016	8.02	0.08	0.00	0.20	
6/28/2016	6/28/2016	10.01	0.04	0.00	0.05	
6/29/2016	6/29/2016	9.79	0.03	0.00	0.05	
6/30/2016	6/30/2016	9.67	0.05	0.00	0.05	

SECTION D: REPORTING REQUIREMENTS/b) iii)
12950 Eckles Road
Livonia, MI 48150
Permit No.: SD6-94508
Maintenance Log- ISCO Sample Analyses - July 2016

	Permit Limits	5-11.5	3.98 mg/L	N/A	2.77 mg/L	
DATE	SAMPLE DATE	pH	(mg/L) NICKEL	(mg/L) HEX Cr	(mg/L) TOTAL Cr	NOTES
7/1/2016	7/1/2016	9.61	0.05	0.00	0.10	
7/2/2016	7/2/2016					
7/3/2016	7/3/2016					
7/4/2016	7/4/2016					
7/5/2016	7/5/2016					
7/6/2016	7/6/2016	8.78	0.04	0.00	0.05	
7/7/2016	7/7/2016	9.49	0.03	0.00	0.05	
7/8/2016	7/8/2016	9.58	0.03	0.00	0.05	
7/9/2016	7/9/2016					
7/10/2016	7/10/2016					
7/11/2016	7/11/2016	8.56	0.03	0.00	0.05	
7/12/2016	7/12/2016	9.60	0.03	0.00	0.05	
7/13/2016	7/13/2016	9.59	0.03	0.00	0.05	
7/14/2016	7/14/2016	9.53	0.03	0.00	0.05	
7/15/2016	7/15/2016	9.52	0.04	0.00	0.10	
7/16/2016	7/16/2016					
7/17/2016	7/17/2016					
7/18/2016	7/18/2016	8.57	0.03	0.00	0.05	
7/19/2016	7/19/2016	9.39	0.03	0.00	0.05	
7/20/2016	7/20/2016	9.37	0.03	0.00	0.05	
7/21/2016	7/21/2016	9.32	0.04	0.00	0.05	
7/22/2016	7/22/2016	9.27	0.04	0.00	0.05	
7/23/2016	7/23/2016					
7/24/2016	7/24/2016					
7/25/2016	7/25/2016	8.13	0.03	0.00	0.05	
7/26/2016	7/26/2016	9.48	0.04	0.00	0.05	
7/27/2016	7/27/2016	9.42	0.06	0.00	0.10	
7/28/2016	7/28/2016	9.20	0.05	0.00	0.10	
7/29/2016	7/29/2016	9.06	0.06	0.00	0.20	
7/30/2016	7/30/2016					

SECTION D: REPORTING REQUIREMENTS/b) iii)**12950 Eckles Road****Livonia, MI 48150****Permit No.: SD6-94508****Maintenance Log- ISCO Sample Analyses - August 2016**

	Permit Limits	5-11.5	3.98 mg/L	N/A	2.77 mg/L	
DATE	SAMPLE DATE	pH	(mg/L) NICKEL	(mg/L) HEX Cr	(mg/L) TOTAL Cr	NOTES
8/1/2016	8/1/2016	8.29	0.05	0.00	0.10	
8/2/2016	8/2/2016	8.99	0.04	0.00	0.05	
8/3/2016	8/3/2016	8.97	0.04	0.00	0.05	
8/4/2016	8/4/2016	8.96	0.04	0.00	0.10	
8/5/2016	8/5/2016	8.92	0.04	0.00	0.10	
8/6/2106	8/6/2106					
8/7/2016	8/7/2016					
8/8/2016	8/8/2016	8.19	0.04	0.00	0.05	
8/9/2016	8/9/2016	9.23	0.06	0.00	0.10	
8/10/2016	8/10/2016	9.14	0.06	0.00	0.15	
8/11/2016	8/11/2016	9.09	0.06	0.00	0.10	
8/12/2016	8/12/2016					
8/13/2016	8/13/2016					
8/14/2016	8/14/2016					
8/15/2016	8/15/2016	8.15	0.04	0.00	0.05	
8/16/2016	8/16/2016	9.12	0.03	0.00	0.05	
8/17/2016	8/17/2016	9.08	0.03	0.00	0.05	
8/18/2016	8/18/2016	9.06	0.04	0.00	0.05	
8/19/2016	8/19/2016					System down - Targeted Injections
8/20/2016	8/20/2016					
8/21/2016	8/21/2016					
8/22/2016	8/22/2016					System down - Targeted Injections
8/23/2016	8/23/2016					System down - Targeted Injections
8/24/2016	8/24/2016					System down - Targeted Injections
8/25/2016	8/25/2016					System down - Targeted Injections
8/26/2016	8/26/2016					System down - Targeted Injections
8/27/2016	8/27/2016					
8/28/2016	8/28/2016					
8/29/2016	8/29/2016	8.17	0.03	0.00	0.05	
8/30/2016	8/30/2016	10.34	0.06	0.00	0.20	
8.31/2016	8.31/2016	9.86	0.03	0.00	0.05	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Canton

4101 Shuffel Street NW

North Canton, OH 44720

Tel: (330)497-9396

TestAmerica Job ID: 240-61666-1

Client Project/Site: 12607-12, RACER Eckles Rd

For:

GHD Services Inc.

14496 Sheldon Road, Suite 200

Plymouth, Michigan 48170

Attn: Rawa Fleisher



Authorized for release by:

3/15/2016 8:21:26 AM

Denise Heckler, Project Manager II

(330)966-9477

denise.heckler@testamericainc.com

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

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

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Case Narrative

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-61666-1

Job ID: 240-61666-1

Laboratory: TestAmerica Canton

Narrative

Job Narrative 240-61666-1

Comments

No additional comments.

Receipt

The sample was received on 3/3/2016 9:30 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.9° C.

GC Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals

Method(s) 200.7 Rev 4.4, 6010B: Some requested practical quantitation limits (PQLs) on the following samples fall below the laboratory's verified standard quantitation limit: WT-012607-030216-EE-01 (240-61666-1). The continuing calibration blanks and method blanks may not support the lower PQL.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-61666-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Sample Summary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-61666-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-61666-1	WT-012607-030216-EE-01	Water	03/02/16 14:00	03/03/16 09:30

Detection Summary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-61666-1

Client Sample ID: WT-012607-030216-EE-01

Lab Sample ID: 240-61666-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.56		0.050	mg/L	1		200.7 Rev 4.4	Total
Nickel	0.38		0.010	mg/L	1		200.7 Rev 4.4	Recoverable
Total Suspended Solids	49		4.0	mg/L	1		SM 2540D	Total
								Recoverable
								Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

Method Summary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-61666-1

Method	Method Description	Protocol	Laboratory
608	Polychlorinated Biphenyls (PCBs) (GC)	40CFR136A	TAL CAN
200.7 Rev 4.4	Metals (ICP)	EPA	TAL CAN
245.1	Mercury (CVAA)	EPA	TAL CAN
1664A	HEM and SGT-HEM	1664A	TAL CAN
3500-Cr B-2009	Chromium, Hexavalent	SM	TAL CAN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CAN

Protocol References:

1664A = EPA-821-98-002

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-61666-1

Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Client Sample ID: WT-012607-030216-EE-01

Date Collected: 03/02/16 14:00

Date Received: 03/03/16 09:30

Lab Sample ID: 240-61666-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.095	U	0.095	ug/L		03/04/16 05:30	03/08/16 10:34	1
Aroclor-1221	0.095	U	0.095	ug/L		03/04/16 05:30	03/08/16 10:34	1
Aroclor-1232	0.095	U	0.095	ug/L		03/04/16 05:30	03/08/16 10:34	1
Aroclor-1242	0.095	U	0.095	ug/L		03/04/16 05:30	03/08/16 10:34	1
Aroclor-1248	0.095	U	0.095	ug/L		03/04/16 05:30	03/08/16 10:34	1
Aroclor-1254	0.095	U	0.095	ug/L		03/04/16 05:30	03/08/16 10:34	1
Aroclor-1260	0.095	U	0.095	ug/L		03/04/16 05:30	03/08/16 10:34	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	60		10 - 114			03/04/16 05:30	03/08/16 10:34	1
Tetrachloro-m-xylene	62		15 - 131			03/04/16 05:30	03/08/16 10:34	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-61666-1

Method: 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Client Sample ID: WT-012607-030216-EE-01

Date Collected: 03/02/16 14:00

Date Received: 03/03/16 09:30

Lab Sample ID: 240-61666-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.56		0.050	mg/L		03/04/16 10:45	03/07/16 20:00	1
Nickel	0.38		0.010	mg/L		03/04/16 10:45	03/07/16 20:00	1
Lead	0.050	U	0.050	mg/L		03/04/16 10:45	03/07/16 20:00	1
Zinc	0.020	U	0.020	mg/L		03/04/16 10:45	03/07/16 20:00	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-61666-1

Method: 245.1 - Mercury (CVAA)

Client Sample ID: WT-012607-030216-EE-01

Date Collected: 03/02/16 14:00

Date Received: 03/03/16 09:30

Lab Sample ID: 240-61666-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	mg/L	—	03/04/16 12:00	03/07/16 17:09	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-61666-1

General Chemistry

Client Sample ID: WT-012607-030216-EE-01

Date Collected: 03/02/16 14:00

Date Received: 03/03/16 09:30

Lab Sample ID: 240-61666-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	4.8	U	4.8	mg/L			03/14/16 09:06	1
Cr (VI)	0.0050	U	0.0050	mg/L			03/03/16 12:42	1
Total Suspended Solids	49		4.0	mg/L			03/04/16 13:26	1

QC Association Summary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-61666-1

GC Semi VOA

Prep Batch: 220148

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-61666-1	WT-012607-030216-EE-01	Total/NA	Water	3520C	
LCS 240-220148/23-A	Lab Control Sample	Total/NA	Water	3520C	
MB 240-220148/22-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 220575

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-61666-1	WT-012607-030216-EE-01	Total/NA	Water	608	220148
LCS 240-220148/23-A	Lab Control Sample	Total/NA	Water	608	220148
MB 240-220148/22-A	Method Blank	Total/NA	Water	608	220148

Metals

Prep Batch: 220223

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-61666-1	WT-012607-030216-EE-01	Total Recoverable	Water	200.7	
LCS 240-220223/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
MB 240-220223/1-A	Method Blank	Total Recoverable	Water	200.7	

Prep Batch: 220227

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-61666-1	WT-012607-030216-EE-01	Total/NA	Water	245.1	
LCS 240-220227/2-A	Lab Control Sample	Total/NA	Water	245.1	
MB 240-220227/1-A	Method Blank	Total/NA	Water	245.1	

Analysis Batch: 220596

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-61666-1	WT-012607-030216-EE-01	Total Recoverable	Water	200.7 Rev 4.4	220223
LCS 240-220223/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	220223
MB 240-220223/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	220223

Analysis Batch: 220605

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-61666-1	WT-012607-030216-EE-01	Total/NA	Water	245.1	220227
LCS 240-220227/2-A	Lab Control Sample	Total/NA	Water	245.1	220227
MB 240-220227/1-A	Method Blank	Total/NA	Water	245.1	220227

General Chemistry

Analysis Batch: 220011

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-61666-1	WT-012607-030216-EE-01	Total/NA	Water	3500-Cr B-2009	
LCS 240-220011/31	Lab Control Sample	Total/NA	Water	3500-Cr B-2009	
LCS 240-220011/4	Lab Control Sample	Total/NA	Water	3500-Cr B-2009	
MB 240-220011/3	Method Blank	Total/NA	Water	3500-Cr B-2009	
MB 240-220011/30	Method Blank	Total/NA	Water	3500-Cr B-2009	

Analysis Batch: 220267

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-61666-1	WT-012607-030216-EE-01	Total/NA	Water	SM 2540D	
LCS 240-220267/2	Lab Control Sample	Total/NA	Water	SM 2540D	

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QC Association Summary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-61666-1

General Chemistry (Continued)

Analysis Batch: 220267 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 240-220267/1	Method Blank	Total/NA	Water	SM 2540D	

Analysis Batch: 221394

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-61666-1	WT-012607-030216-EE-01	Total/NA	Water	1664A	
LCS 240-221394/2	Lab Control Sample	Total/NA	Water	1664A	
MB 240-221394/1	Method Blank	Total/NA	Water	1664A	

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-61666-1

Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Lab Sample ID: MB 240-220148/22-A

Matrix: Water

Analysis Batch: 220575

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 220148

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.10	U	0.10	ug/L		03/04/16 05:30	03/08/16 14:21	1
Aroclor-1221	0.10	U	0.10	ug/L		03/04/16 05:30	03/08/16 14:21	1
Aroclor-1232	0.10	U	0.10	ug/L		03/04/16 05:30	03/08/16 14:21	1
Aroclor-1242	0.10	U	0.10	ug/L		03/04/16 05:30	03/08/16 14:21	1
Aroclor-1248	0.10	U	0.10	ug/L		03/04/16 05:30	03/08/16 14:21	1
Aroclor-1254	0.10	U	0.10	ug/L		03/04/16 05:30	03/08/16 14:21	1
Aroclor-1260	0.10	U	0.10	ug/L		03/04/16 05:30	03/08/16 14:21	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	93		10 - 114	03/04/16 05:30	03/08/16 14:21	1
Tetrachloro-m-xylene	79		15 - 131	03/04/16 05:30	03/08/16 14:21	1

Lab Sample ID: LCS 240-220148/23-A

Matrix: Water

Analysis Batch: 220575

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 220148

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor-1016	2.50	1.61		ug/L		64	50 - 114
Aroclor-1260	2.50	1.69		ug/L		68	8 - 127

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	74		10 - 114
Tetrachloro-m-xylene	64		15 - 131

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 240-220223/1-A

Matrix: Water

Analysis Batch: 220596

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 220223

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.050	U	0.050	mg/L		03/04/16 10:45	03/07/16 19:03	1
Nickel	0.010	U	0.010	mg/L		03/04/16 10:45	03/07/16 19:03	1
Lead	0.050	U	0.050	mg/L		03/04/16 10:45	03/07/16 19:03	1
Zinc	0.020	U	0.020	mg/L		03/04/16 10:45	03/07/16 19:03	1

Lab Sample ID: LCS 240-220223/2-A

Matrix: Water

Analysis Batch: 220596

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 220223

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.200	0.192		mg/L		96	85 - 115
Nickel	0.500	0.487		mg/L		97	85 - 115
Lead	0.500	0.462		mg/L		92	85 - 115
Zinc	0.500	0.492		mg/L		98	85 - 115

TestAmerica Canton

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-61666-1

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 240-220227/1-A
Matrix: Water
Analysis Batch: 220605

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 220227

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	mg/L		03/04/16 12:00	03/07/16 16:33	1

Lab Sample ID: LCS 240-220227/2-A
Matrix: Water
Analysis Batch: 220605

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 220227

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00500	0.00495		mg/L		99	85 - 115

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 240-221394/1
Matrix: Water
Analysis Batch: 221394

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	5.0	U	5.0	mg/L			03/14/16 09:06	1

Lab Sample ID: LCS 240-221394/2
Matrix: Water
Analysis Batch: 221394

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM	40.0	37.9		mg/L		95	78 - 114

Method: 3500-Cr B-2009 - Chromium, Hexavalent

Lab Sample ID: MB 240-220011/3
Matrix: Water
Analysis Batch: 220011

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0050	U	0.0050	mg/L			03/03/16 09:33	1

Lab Sample ID: MB 240-220011/30
Matrix: Water
Analysis Batch: 220011

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0050	U	0.0050	mg/L			03/03/16 12:29	1

Lab Sample ID: LCS 240-220011/4
Matrix: Water
Analysis Batch: 220011

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.250	0.250		mg/L		100	80 - 118

TestAmerica Canton

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-61666-1

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 240-220267/1

Matrix: Water

Analysis Batch: 220267

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	4.0	U	4.0	mg/L	-		03/04/16 13:26	1

Lab Sample ID: LCS 240-220267/2

Matrix: Water

Analysis Batch: 220267

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	78.3	68.0		mg/L	-	87	73 - 113

Surrogate Summary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-61666-1

Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCB1 (10-114)	TCX1 (15-131)
240-61666-1	WT-012607-030216-EE-01	60	62
LCS 240-220148/23-A	Lab Control Sample	74	64
MB 240-220148/22-A	Method Blank	93	79

Surrogate Legend

DCB = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-61666-1

Client Sample ID: WT-012607-030216-EE-01

Date Collected: 03/02/16 14:00

Date Received: 03/03/16 09:30

Lab Sample ID: 240-61666-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			220148	03/04/16 05:30	CSC	TAL CAN
Total/NA	Analysis	608		1	220575	03/08/16 10:34	LSH	TAL CAN
Total Recoverable	Prep	200.7			220223	03/04/16 10:45	WKD	TAL CAN
Total Recoverable	Analysis	200.7 Rev 4.4		1	220596	03/07/16 20:00	RKT	TAL CAN
Total/NA	Prep	245.1			220227	03/04/16 12:00	WKD	TAL CAN
Total/NA	Analysis	245.1		1	220605	03/07/16 17:09	DSH	TAL CAN
Total/NA	Analysis	1664A		1	221394	03/14/16 09:06	DTN	TAL CAN
Total/NA	Analysis	3500-Cr B-2009		1	220011	03/03/16 12:42	LCN	TAL CAN
Total/NA	Analysis	SM 2540D		1	220267	03/04/16 13:26	GNR	TAL CAN

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Certification Summary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-61666-1

Laboratory: TestAmerica Canton

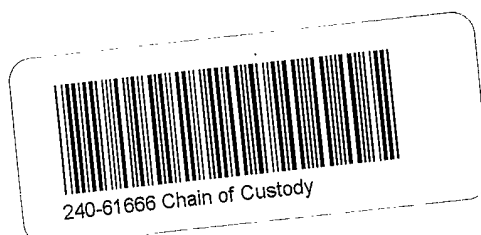
All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-14 *
California	State Program	9	2927	04-30-17
Connecticut	State Program	1	PH-0590	12-31-17
Florida	NELAP	4	E87225	06-30-16
Illinois	NELAP	5	200004	07-31-16
Kansas	NELAP	7	E-10336	01-31-16 *
Kentucky (UST)	State Program	4	58	02-23-17
Kentucky (VW)	State Program	4	98016	12-31-16
L-A-B	DoD ELAP		L2315	07-18-16
Minnesota	NELAP	5	039-999-348	12-31-16
Nevada	State Program	9	OH-000482008A	07-31-16
New Jersey	NELAP	2	OH001	06-30-16 *
New York	NELAP	2	10975	03-31-16 *
Ohio VAP	State Program	5	CL0024	09-14-17
Oregon	NELAP	10	4062	02-23-17
Pennsylvania	NELAP	3	68-00340	08-31-16
Texas	NELAP	6	T104704517-15-5	08-31-16
USDA	Federal		P330-13-00319	11-26-16
Virginia	NELAP	3	460175	09-14-16
Washington	State Program	10	C971	01-12-17
West Virginia DEP	State Program	3	210	12-31-16
Wisconsin	State Program	5	999518190	08-31-16

* Certification renewal pending - certification considered valid.

TestAmerica Canton

CHAIN OF CUSTODY AND RECEIVING DOCUMENTS



TestAmerica Canton Sample Receipt Form/Narrative				Login # : <u>61666</u>	
Canton Facility					
Client <u>BHD</u>		Site Name <u>LIVONTIA MI</u>		Cooler unpacked by: <u>Can</u>	
Cooler Received on <u>3-7-16</u>		Opened on <u>3-7-16</u>			
FedEx: 1 st <u>Grd</u> <u>Exp</u> <u>UPS</u> <u>FAS</u> <u>Stetson</u> Client Drop Off <u>TestAmerica Courier</u> Other _____					
Receipt After-hours: Drop-off Date/Time _____				Storage Location _____	
TestAmerica Cooler # <u>7A</u>		Foam Box	Client Cooler	Box	Other _____
Packing material used: <u>Bubble Wrap</u>		Foam	<u>Plastic Bag</u>	None	Other _____
COOLANT: <u>Wet Ice</u>		Blue Ice	Dry Ice	Water	None
1. Cooler temperature upon receipt				☐ See Multiple Cooler Form	
IR GUN# 48 (CF -1.9 °C)		Observed Cooler Temp. _____ °C		Corrected Cooler Temp. _____ °C	
IR GUN# 36 (CF -1.5 °C)		Observed Cooler Temp. _____ °C		Corrected Cooler Temp. _____ °C	
IR GUN# 18 (CF -0.5 °C)		Observed Cooler Temp. <u>1.4</u> °C		Corrected Cooler Temp. <u>0.9</u> °C	
2. Were custody seals on the outside of the cooler(s)? If Yes Quantity <u>1</u>				Yes <u>No</u>	
-Were custody seals on the outside of the cooler(s) signed & dated?				Yes <u>No</u> NA	
-Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?				Yes <u>No</u>	
3. Shippers' packing slip attached to the cooler(s)?				Yes <u>No</u>	
4. Did custody papers accompany the sample(s)?				Yes <u>No</u>	
5. Were the custody papers relinquished & signed in the appropriate place?				Yes <u>No</u>	
6. Was/were the person(s) who collected the samples clearly identified on the COC?				Yes <u>No</u>	
7. Did all bottles arrive in good condition (Unbroken)?				Yes <u>No</u>	
8. Could all bottle labels be reconciled with the COC?				Yes <u>No</u>	
9. Were correct bottle(s) used for the test(s) indicated?				Yes <u>No</u>	
10. Sufficient quantity received to perform indicated analyses?				Yes <u>No</u>	
11. Are these work share samples?				Yes <u>No</u>	
<i>If yes, Questions 12-16 have been checked at the originating laboratory.</i>					
12. Were sample(s) at the correct pH upon receipt?				Yes <u>No</u> NA pH Strip Lot# <u>HC559158</u>	
13. Were VOAs on the COC?				Yes <u>No</u>	
14. Were air bubbles >6 mm in any VOA vials?				Yes <u>No</u> NA	
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____				Yes <u>No</u>	
16. Was a LL Hg or Me Hg trip blank present? _____				Yes <u>No</u>	
Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____					
Concerning _____					

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by: _____

18. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
 Sample(s) _____ were received in a broken container.
 Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

19. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
 Time preserved: _____ Preservative(s) added/Lot number(s): _____

Temperature readings: _____

<u>Client Sample ID</u>	<u>Lab ID</u>	<u>Container Type</u>	<u>Container</u> <u>pH</u>	<u>Preservative</u> <u>Added (mls)</u>	<u>Lot #</u>
WT-012607-030216-EE-01	240-61666-B-1	Plastic 500ml - with Nitric Acid	<2		
WT-012607-030216-EE-01	240-61666-E-1	Amber Glass 1 liter - Sulfuric Acid			
WT-012607-030216-EE-01	240-61666-F-1	Amber Glass 1 liter - Sulfuric Acid			

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Canton

4101 Shuffel Street NW

North Canton, OH 44720

Tel: (330)497-9396

TestAmerica Job ID: 240-65301-1

Client Project/Site: 12607-12, RACER Eckles Rd

For:

GHD Services Inc.

14496 Sheldon Road, Suite 200

Plymouth, Michigan 48170

Attn: Rawa Fleisher



Authorized for release by:

6/3/2016 12:56:32 PM

Denise Heckler, Project Manager II

(330)966-9477

denise.heckler@testamericainc.com

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

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

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Case Narrative

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-65301-1

Job ID: 240-65301-1

Laboratory: TestAmerica Canton

Narrative

Job Narrative 240-65301-1

Comments

No additional comments.

Receipt

The sample was received on 5/26/2016 9:30 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.5° C.

GC Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals

Method(s) 200.7 Rev 4.4, 6010B: Some requested practical quantitation limits (PQLs) on the following samples fall below the laboratory's verified standard quantitation limit: WT-012607-052516-EE-001 (240-65301-1). The continuing calibration blanks and method blanks may not support the lower PQL.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

Method(s) 3520C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 240-232199.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-65301-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Sample Summary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-65301-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-65301-1	WT-012607-052516-EE-001	Water	05/25/16 15:15	05/26/16 09:30

Detection Summary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-65301-1

Client Sample ID: WT-012607-052516-EE-001

Lab Sample ID: 240-65301-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.92		0.050	mg/L	1		200.7 Rev 4.4	Total
Nickel	0.56		0.010	mg/L	1		200.7 Rev 4.4	Recoverable
Total Suspended Solids	130		4.0	mg/L	1		SM 2540D	Total Recoverable Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

Method Summary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-65301-1

Method	Method Description	Protocol	Laboratory
608	Polychlorinated Biphenyls (PCBs) (GC)	40CFR136A	TAL CAN
200.7 Rev 4.4	Metals (ICP)	EPA	TAL CAN
245.1	Mercury (CVAA)	EPA	TAL CAN
1664A	HEM and SGT-HEM	1664A	TAL CAN
3500-Cr B-2009	Chromium, Hexavalent	SM	TAL CAN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CAN

Protocol References:

1664A = EPA-821-98-002

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-65301-1

Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Client Sample ID: WT-012607-052516-EE-001

Date Collected: 05/25/16 15:15

Date Received: 05/26/16 09:30

Lab Sample ID: 240-65301-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.095	U	0.095	ug/L		05/27/16 05:13	06/01/16 13:01	1
Aroclor-1221	0.095	U	0.095	ug/L		05/27/16 05:13	06/01/16 13:01	1
Aroclor-1232	0.095	U	0.095	ug/L		05/27/16 05:13	06/01/16 13:01	1
Aroclor-1242	0.095	U	0.095	ug/L		05/27/16 05:13	06/01/16 13:01	1
Aroclor-1248	0.095	U	0.095	ug/L		05/27/16 05:13	06/01/16 13:01	1
Aroclor-1254	0.095	U	0.095	ug/L		05/27/16 05:13	06/01/16 13:01	1
Aroclor-1260	0.095	U	0.095	ug/L		05/27/16 05:13	06/01/16 13:01	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	41		10 - 114			05/27/16 05:13	06/01/16 13:01	1
Tetrachloro-m-xylene	53		15 - 131			05/27/16 05:13	06/01/16 13:01	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-65301-1

Method: 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Client Sample ID: WT-012607-052516-EE-001

Date Collected: 05/25/16 15:15

Date Received: 05/26/16 09:30

Lab Sample ID: 240-65301-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.92		0.050	mg/L		05/31/16 10:49	06/01/16 21:40	1
Nickel	0.56		0.010	mg/L		05/31/16 10:49	06/01/16 21:40	1
Lead	0.050	U	0.050	mg/L		05/31/16 10:49	06/01/16 21:40	1
Zinc	0.020	U	0.020	mg/L		05/31/16 10:49	06/01/16 21:40	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-65301-1

Method: 245.1 - Mercury (CVAA)

Client Sample ID: WT-012607-052516-EE-001

Date Collected: 05/25/16 15:15

Date Received: 05/26/16 09:30

Lab Sample ID: 240-65301-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	mg/L		05/31/16 12:00	06/02/16 11:06	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-65301-1

General Chemistry

Client Sample ID: WT-012607-052516-EE-001

Date Collected: 05/25/16 15:15

Date Received: 05/26/16 09:30

Lab Sample ID: 240-65301-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	4.7	U	4.7	mg/L			06/02/16 08:20	1
Cr (VI)	0.0050	U F1	0.0050	mg/L			05/26/16 13:00	1
Total Suspended Solids	130		4.0	mg/L			06/01/16 16:43	1

QC Association Summary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-65301-1

GC Semi VOA

Prep Batch: 232199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-65301-1	WT-012607-052516-EE-001	Total/NA	Water	3520C	
LCS 240-232199/9-A	Lab Control Sample	Total/NA	Water	3520C	
MB 240-232199/8-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 232642

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-65301-1	WT-012607-052516-EE-001	Total/NA	Water	608	232199
LCS 240-232199/9-A	Lab Control Sample	Total/NA	Water	608	232199
MB 240-232199/8-A	Method Blank	Total/NA	Water	608	232199

Metals

Prep Batch: 232503

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-65301-1	WT-012607-052516-EE-001	Total Recoverable	Water	200.7	
LCS 240-232503/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
MB 240-232503/1-A	Method Blank	Total Recoverable	Water	200.7	

Prep Batch: 232505

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-65301-1	WT-012607-052516-EE-001	Total/NA	Water	245.1	
LCS 240-232505/2-A	Lab Control Sample	Total/NA	Water	245.1	
MB 240-232505/1-A	Method Blank	Total/NA	Water	245.1	

Analysis Batch: 232702

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-65301-1	WT-012607-052516-EE-001	Total Recoverable	Water	200.7 Rev 4.4	232503
LCS 240-232503/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	232503
MB 240-232503/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	232503

Analysis Batch: 232888

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-65301-1	WT-012607-052516-EE-001	Total/NA	Water	245.1	232505
LCS 240-232505/2-A	Lab Control Sample	Total/NA	Water	245.1	232505
MB 240-232505/1-A	Method Blank	Total/NA	Water	245.1	232505

General Chemistry

Analysis Batch: 232106

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-65301-1	WT-012607-052516-EE-001	Total/NA	Water	3500-Cr B-2009	
240-65301-1 MS	WT-012607-052516-EE-001	Total/NA	Water	3500-Cr B-2009	
240-65301-1 MSD	WT-012607-052516-EE-001	Total/NA	Water	3500-Cr B-2009	
LCS 240-232106/4	Lab Control Sample	Total/NA	Water	3500-Cr B-2009	
MB 240-232106/3	Method Blank	Total/NA	Water	3500-Cr B-2009	

Analysis Batch: 232774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-65301-1	WT-012607-052516-EE-001	Total/NA	Water	SM 2540D	
240-65301-1 DU	WT-012607-052516-EE-001	Total/NA	Water	SM 2540D	

TestAmerica Canton

QC Association Summary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-65301-1

General Chemistry (Continued)

Analysis Batch: 232774 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 240-232774/2	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 240-232774/1	Method Blank	Total/NA	Water	SM 2540D	

Analysis Batch: 232841

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-65301-1	WT-012607-052516-EE-001	Total/NA	Water	1664A	
LCS 240-232841/2	Lab Control Sample	Total/NA	Water	1664A	
MB 240-232841/1	Method Blank	Total/NA	Water	1664A	

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-65301-1

Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Lab Sample ID: MB 240-232199/8-A

Matrix: Water

Analysis Batch: 232642

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 232199

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.10	U	0.10	ug/L		05/27/16 05:13	06/01/16 11:29	1
Aroclor-1221	0.10	U	0.10	ug/L		05/27/16 05:13	06/01/16 11:29	1
Aroclor-1232	0.10	U	0.10	ug/L		05/27/16 05:13	06/01/16 11:29	1
Aroclor-1242	0.10	U	0.10	ug/L		05/27/16 05:13	06/01/16 11:29	1
Aroclor-1248	0.10	U	0.10	ug/L		05/27/16 05:13	06/01/16 11:29	1
Aroclor-1254	0.10	U	0.10	ug/L		05/27/16 05:13	06/01/16 11:29	1
Aroclor-1260	0.10	U	0.10	ug/L		05/27/16 05:13	06/01/16 11:29	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	76		10 - 114	05/27/16 05:13	06/01/16 11:29	1
Tetrachloro-m-xylene	71		15 - 131	05/27/16 05:13	06/01/16 11:29	1

Lab Sample ID: LCS 240-232199/9-A

Matrix: Water

Analysis Batch: 232642

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 232199

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor-1016	2.50	1.78		ug/L		71	50 - 114
Aroclor-1260	2.50	1.92		ug/L		77	8 - 127

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	75		10 - 114
Tetrachloro-m-xylene	72		15 - 131

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 240-232503/1-A

Matrix: Water

Analysis Batch: 232702

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 232503

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.050	U	0.050	mg/L		05/31/16 10:49	06/01/16 20:43	1
Nickel	0.010	U	0.010	mg/L		05/31/16 10:49	06/01/16 20:43	1
Lead	0.050	U	0.050	mg/L		05/31/16 10:49	06/01/16 20:43	1
Zinc	0.020	U	0.020	mg/L		05/31/16 10:49	06/01/16 20:43	1

Lab Sample ID: LCS 240-232503/2-A

Matrix: Water

Analysis Batch: 232702

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 232503

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.200	0.197		mg/L		98	85 - 115
Nickel	0.500	0.496		mg/L		99	85 - 115
Lead	0.500	0.479		mg/L		96	85 - 115
Zinc	0.500	0.511		mg/L		102	85 - 115

TestAmerica Canton

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-65301-1

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 240-232505/1-A

Matrix: Water

Analysis Batch: 232888

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 232505

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	mg/L		05/31/16 12:00	06/02/16 09:28	1

Lab Sample ID: LCS 240-232505/2-A

Matrix: Water

Analysis Batch: 232888

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 232505

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00500	0.00498		mg/L		100	85 - 115

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 240-232841/1

Matrix: Water

Analysis Batch: 232841

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	5.0	U	5.0	mg/L			06/02/16 08:20	1

Lab Sample ID: LCS 240-232841/2

Matrix: Water

Analysis Batch: 232841

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM	40.0	40.1		mg/L		100	78 - 114

Method: 3500-Cr B-2009 - Chromium, Hexavalent

Lab Sample ID: MB 240-232106/3

Matrix: Water

Analysis Batch: 232106

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0050	U	0.0050	mg/L			05/26/16 12:27	1

Lab Sample ID: LCS 240-232106/4

Matrix: Water

Analysis Batch: 232106

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.250	0.251		mg/L		100	80 - 118

Lab Sample ID: 240-65301-1 MS

Matrix: Water

Analysis Batch: 232106

Client Sample ID: WT-012607-052516-EE-001

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.0050	U F1	0.250	0.0266	F1	mg/L		11	41 - 136

TestAmerica Canton

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-65301-1

Method: 3500-Cr B-2009 - Chromium, Hexavalent (Continued)

Lab Sample ID: 240-65301-1 MSD

Matrix: Water

Analysis Batch: 232106

Client Sample ID: WT-012607-052516-EE-001

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cr (VI)	0.0050	U F1	0.250	0.0241	F1	mg/L	-	10	41 - 136	10	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 240-232774/1

Matrix: Water

Analysis Batch: 232774

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	4.0	U	4.0	mg/L	-		06/01/16 16:43	1

Lab Sample ID: LCS 240-232774/2

Matrix: Water

Analysis Batch: 232774

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	82.3	84.0		mg/L	-	102	73 - 113

Lab Sample ID: 240-65301-1 DU

Matrix: Water

Analysis Batch: 232774

Client Sample ID: WT-012607-052516-EE-001

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	130		132		mg/L	-	2	10

TestAmerica Canton

Surrogate Summary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-65301-1

Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCB2 (10-114)	TCX2 (15-131)
240-65301-1	WT-012607-052516-EE-001	41	53
LCS 240-232199/9-A	Lab Control Sample	75	72
MB 240-232199/8-A	Method Blank	76	71

Surrogate Legend

DCB = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-65301-1

Client Sample ID: WT-012607-052516-EE-001

Lab Sample ID: 240-65301-1

Date Collected: 05/25/16 15:15

Matrix: Water

Date Received: 05/26/16 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			232199	05/27/16 05:13	CSC	TAL CAN
Total/NA	Analysis	608		1	232642	06/01/16 13:01	HMB	TAL CAN
Total Recoverable	Prep	200.7			232503	05/31/16 10:49	AJC	TAL CAN
Total Recoverable	Analysis	200.7 Rev 4.4		1	232702	06/01/16 21:40	RKT	TAL CAN
Total/NA	Prep	245.1			232505	05/31/16 12:00	AJC	TAL CAN
Total/NA	Analysis	245.1		1	232888	06/02/16 11:06	WKD	TAL CAN
Total/NA	Analysis	1664A		1	232841	06/02/16 08:20	BLW	TAL CAN
Total/NA	Analysis	3500-Cr B-2009		1	232106	05/26/16 13:00	BLW	TAL CAN
Total/NA	Analysis	SM 2540D		1	232774	06/01/16 16:43	GNR	TAL CAN

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Certification Summary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-65301-1

Laboratory: TestAmerica Canton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-14 *
California	State Program	9	2927	04-30-17
Connecticut	State Program	1	PH-0590	12-31-17
Florida	NELAP	4	E87225	06-30-16 *
Illinois	NELAP	5	200004	07-31-16 *
Kansas	NELAP	7	E-10336	07-31-16 *
Kentucky (UST)	State Program	4	58	02-23-17
Kentucky (VW)	State Program	4	98016	12-31-16
L-A-B	DoD ELAP		L2315	07-18-16
Minnesota	NELAP	5	039-999-348	12-31-16
Nevada	State Program	9	OH-000482008A	07-31-16 *
New Jersey	NELAP	2	OH001	06-30-16 *
New York	NELAP	2	10975	03-31-17
Ohio VAP	State Program	5	CL0024	09-14-17
Oregon	NELAP	10	4062	02-23-17
Pennsylvania	NELAP	3	68-00340	08-31-16 *
Texas	NELAP	6	T104704517-15-5	08-31-16 *
USDA	Federal		P330-13-00319	11-26-16
Virginia	NELAP	3	460175	09-14-16
Washington	State Program	10	C971	01-12-17
West Virginia DEP	State Program	3	210	12-31-16
Wisconsin	State Program	5	999518190	08-31-16 *

* Certification renewal pending - certification considered valid.

TestAmerica Canton

CHAIN OF CUSTODY AND RECEIVING DOCUMENTS



240-65301 Chain of Custody

Phone: 810.229.2763 Fax:

Phone: 810.229.2763

Fax:

Regulatory Program

□ DW

NPDES

☐ RCRA ☐ Other:

Appendix

TAI-83

0713)

[illegible]

Temperature readings: _____

<u>Client Sample ID</u>	<u>Lab ID</u>	<u>Container Type</u>	<u>Container</u> pH	<u>Preservative</u> Added (mls)	<u>Lot #</u>
WT-012607-052516-EE-001	240-65301-B-1	Plastic 500ml - with Nitric Acid	<2	_____	_____
WT-012607-052516-EE-001	240-65301-E-1	Amber Glass 1 liter - Sulfuric Acid	_____	_____	_____
WT-012607-052516-EE-001	240-65301-F-1	Amber Glass 1 liter - Sulfuric Acid	_____	_____	_____

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Canton

4101 Shuffel Street NW

North Canton, OH 44720

Tel: (330)497-9396

TestAmerica Job ID: 240-66344-1

Client Project/Site: 12607-12, RACER Livonia

For:

GHD Services Inc.

14496 Sheldon Road, Suite 200

Plymouth, Michigan 48170

Attn: Rawa Fleisher



Authorized for release by:

7/7/2016 9:08:23 AM

Denise Heckler, Project Manager II

(330)966-9477

denise.heckler@testamericainc.com

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

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

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Case Narrative

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Livonia

TestAmerica Job ID: 240-66344-1

Job ID: 240-66344-1

Laboratory: TestAmerica Canton

Narrative

Job Narrative 240-66344-1

Comments

No additional comments.

Receipt

The sample was received on 6/23/2016 9:30 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.3° C.

GC Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals

Method(s) 200.7 Rev 4.4, 6010B: Some requested practical quantitation limits (PQLs) on the following samples fall below the laboratory's verified standard quantitation limit: WT-012607-062216-EE-001 (240-66344-1). The continuing calibration blanks and method blanks may not support the lower PQL.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Livonia

TestAmerica Job ID: 240-66344-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Sample Summary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Livonia

TestAmerica Job ID: 240-66344-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-66344-1	WT-012607-062216-EE-001	Water	06/22/16 14:00	06/23/16 09:30

Detection Summary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Livonia

TestAmerica Job ID: 240-66344-1

Client Sample ID: WT-012607-062216-EE-001

Lab Sample ID: 240-66344-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.33		0.050	mg/L	1		200.7 Rev 4.4	Total
Nickel	0.22		0.010	mg/L	1		200.7 Rev 4.4	Recoverable
Total Suspended Solids	72		4.0	mg/L	1		SM 2540D	Total
								Recoverable
								Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

Method Summary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Livonia

TestAmerica Job ID: 240-66344-1

Method	Method Description	Protocol	Laboratory
608	Polychlorinated Biphenyls (PCBs) (GC)	40CFR136A	TAL CAN
200.7 Rev 4.4	Metals (ICP)	EPA	TAL CAN
245.1	Mercury (CVAA)	EPA	TAL CAN
1664A	HEM and SGT-HEM	1664A	TAL CAN
3500-Cr B-2009	Chromium, Hexavalent	SM	TAL CAN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CAN

Protocol References:

1664A = EPA-821-98-002

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Livonia

TestAmerica Job ID: 240-66344-1

Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Client Sample ID: WT-012607-062216-EE-001

Date Collected: 06/22/16 14:00

Date Received: 06/23/16 09:30

Lab Sample ID: 240-66344-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.095	U	0.095	ug/L		06/25/16 10:21	06/29/16 11:20	1
Aroclor-1221	0.095	U	0.095	ug/L		06/25/16 10:21	06/29/16 11:20	1
Aroclor-1232	0.095	U	0.095	ug/L		06/25/16 10:21	06/29/16 11:20	1
Aroclor-1242	0.095	U	0.095	ug/L		06/25/16 10:21	06/29/16 11:20	1
Aroclor-1248	0.095	U	0.095	ug/L		06/25/16 10:21	06/29/16 11:20	1
Aroclor-1254	0.095	U	0.095	ug/L		06/25/16 10:21	06/29/16 11:20	1
Aroclor-1260	0.095	U	0.095	ug/L		06/25/16 10:21	06/29/16 11:20	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	70		10 - 114			06/25/16 10:21	06/29/16 11:20	1
Tetrachloro-m-xylene	68		15 - 131			06/25/16 10:21	06/29/16 11:20	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Livonia

TestAmerica Job ID: 240-66344-1

Method: 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Client Sample ID: WT-012607-062216-EE-001

Date Collected: 06/22/16 14:00

Date Received: 06/23/16 09:30

Lab Sample ID: 240-66344-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.33		0.050	mg/L		06/24/16 10:47	06/26/16 01:10	1
Nickel	0.22		0.010	mg/L		06/24/16 10:47	06/26/16 01:10	1
Lead	0.050	U	0.050	mg/L		06/24/16 10:47	06/26/16 01:10	1
Zinc	0.020	U	0.020	mg/L		06/24/16 10:47	06/26/16 01:10	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Livonia

TestAmerica Job ID: 240-66344-1

Method: 245.1 - Mercury (CVAA)

Client Sample ID: WT-012607-062216-EE-001

Date Collected: 06/22/16 14:00

Date Received: 06/23/16 09:30

Lab Sample ID: 240-66344-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	mg/L		06/24/16 12:00	06/28/16 12:49	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Livonia

TestAmerica Job ID: 240-66344-1

General Chemistry

Client Sample ID: WT-012607-062216-EE-001

Date Collected: 06/22/16 14:00

Date Received: 06/23/16 09:30

Lab Sample ID: 240-66344-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	4.7	U	4.7	mg/L			07/06/16 08:51	1
Cr (VI)	0.0050	U	0.0050	mg/L			06/23/16 12:39	1
Total Suspended Solids	72		4.0	mg/L			06/28/16 09:34	1

QC Association Summary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Livonia

TestAmerica Job ID: 240-66344-1

GC Semi VOA

Prep Batch: 235965

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-66344-1	WT-012607-062216-EE-001	Total/NA	Water	3520C	
LCS 240-235965/16-A	Lab Control Sample	Total/NA	Water	3520C	
MB 240-235965/15-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 236362

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-66344-1	WT-012607-062216-EE-001	Total/NA	Water	608	235965
LCS 240-235965/16-A	Lab Control Sample	Total/NA	Water	608	235965
MB 240-235965/15-A	Method Blank	Total/NA	Water	608	235965

Metals

Prep Batch: 235873

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-66344-1	WT-012607-062216-EE-001	Total Recoverable	Water	200.7	
LCS 240-235873/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
MB 240-235873/1-A	Method Blank	Total Recoverable	Water	200.7	

Prep Batch: 235875

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-66344-1	WT-012607-062216-EE-001	Total/NA	Water	245.1	
LCS 240-235875/2-A	Lab Control Sample	Total/NA	Water	245.1	
MB 240-235875/1-A	Method Blank	Total/NA	Water	245.1	

Analysis Batch: 236043

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-66344-1	WT-012607-062216-EE-001	Total Recoverable	Water	200.7 Rev 4.4	235873
LCS 240-235873/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	235873
MB 240-235873/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	235873

Analysis Batch: 236379

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-66344-1	WT-012607-062216-EE-001	Total/NA	Water	245.1	235875
LCS 240-235875/2-A	Lab Control Sample	Total/NA	Water	245.1	235875
MB 240-235875/1-A	Method Blank	Total/NA	Water	245.1	235875

General Chemistry

Analysis Batch: 235665

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-66344-1	WT-012607-062216-EE-001	Total/NA	Water	3500-Cr B-2009	
LCS 240-235665/29	Lab Control Sample	Total/NA	Water	3500-Cr B-2009	
LCS 240-235665/4	Lab Control Sample	Total/NA	Water	3500-Cr B-2009	
MB 240-235665/3	Method Blank	Total/NA	Water	3500-Cr B-2009	

Analysis Batch: 236232

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-66344-1	WT-012607-062216-EE-001	Total/NA	Water	SM 2540D	
LCS 240-236232/2	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 240-236232/1	Method Blank	Total/NA	Water	SM 2540D	

TestAmerica Canton

QC Association Summary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Livonia

TestAmerica Job ID: 240-66344-1

General Chemistry (Continued)

Analysis Batch: 237099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-66344-1	WT-012607-062216-EE-001	Total/NA	Water	1664A	
LCS 240-237099/2	Lab Control Sample	Total/NA	Water	1664A	
MB 240-237099/1	Method Blank	Total/NA	Water	1664A	

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Livonia

TestAmerica Job ID: 240-66344-1

Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Lab Sample ID: MB 240-235965/15-A

Matrix: Water

Analysis Batch: 236362

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 235965

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.10	U	0.10	ug/L		06/25/16 10:21	06/29/16 13:23	1
Aroclor-1221	0.10	U	0.10	ug/L		06/25/16 10:21	06/29/16 13:23	1
Aroclor-1232	0.10	U	0.10	ug/L		06/25/16 10:21	06/29/16 13:23	1
Aroclor-1242	0.10	U	0.10	ug/L		06/25/16 10:21	06/29/16 13:23	1
Aroclor-1248	0.10	U	0.10	ug/L		06/25/16 10:21	06/29/16 13:23	1
Aroclor-1254	0.10	U	0.10	ug/L		06/25/16 10:21	06/29/16 13:23	1
Aroclor-1260	0.10	U	0.10	ug/L		06/25/16 10:21	06/29/16 13:23	1
Surrogate	%Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	76		10 - 114			06/25/16 10:21	06/29/16 13:23	1
Tetrachloro-m-xylene	61		15 - 131			06/25/16 10:21	06/29/16 13:23	1

Lab Sample ID: LCS 240-235965/16-A

Matrix: Water

Analysis Batch: 236362

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 235965

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor-1016	2.50	1.66		ug/L		66	50 - 114
Aroclor-1260	2.50	1.80		ug/L		72	8 - 127
Surrogate	%Recovery	LCS Qualifier	Limits				
DCB Decachlorobiphenyl	79		10 - 114				
Tetrachloro-m-xylene	68		15 - 131				

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 240-235873/1-A

Matrix: Water

Analysis Batch: 236043

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 235873

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.050	U	0.050	mg/L		06/24/16 10:47	06/25/16 23:37	1
Nickel	0.010	U	0.010	mg/L		06/24/16 10:47	06/25/16 23:37	1
Lead	0.050	U	0.050	mg/L		06/24/16 10:47	06/25/16 23:37	1
Zinc	0.020	U	0.020	mg/L		06/24/16 10:47	06/25/16 23:37	1

Lab Sample ID: LCS 240-235873/2-A

Matrix: Water

Analysis Batch: 236043

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 235873

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.200	0.200		mg/L		100	85 - 115
Nickel	0.500	0.501		mg/L		100	85 - 115
Lead	0.500	0.479		mg/L		96	85 - 115
Zinc	0.500	0.519		mg/L		104	85 - 115

TestAmerica Canton

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Livonia

TestAmerica Job ID: 240-66344-1

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 240-235875/1-A
Matrix: Water
Analysis Batch: 236379

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 235875

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	mg/L		06/24/16 12:00	06/28/16 12:06	1

Lab Sample ID: LCS 240-235875/2-A
Matrix: Water
Analysis Batch: 236379

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 235875

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00500	0.00492		mg/L		98	85 - 115

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 240-237099/1
Matrix: Water
Analysis Batch: 237099

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	5.0	U	5.0	mg/L			07/06/16 08:51	1

Lab Sample ID: LCS 240-237099/2
Matrix: Water
Analysis Batch: 237099

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM	40.0	35.4		mg/L		89	78 - 114

Method: 3500-Cr B-2009 - Chromium, Hexavalent

Lab Sample ID: MB 240-235665/3
Matrix: Water
Analysis Batch: 235665

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0050	U	0.0050	mg/L			06/23/16 08:35	1

Lab Sample ID: LCS 240-235665/29
Matrix: Water
Analysis Batch: 235665

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.250	0.259		mg/L		103	80 - 118

Lab Sample ID: LCS 240-235665/4
Matrix: Water
Analysis Batch: 235665

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.250	0.261		mg/L		104	80 - 118

TestAmerica Canton

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Livonia

TestAmerica Job ID: 240-66344-1

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 240-236232/1

Matrix: Water

Analysis Batch: 236232

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	4.0	U	4.0	mg/L			06/28/16 09:34	1

Lab Sample ID: LCS 240-236232/2

Matrix: Water

Analysis Batch: 236232

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	82.3	83.0		mg/L		101	73 - 113

Surrogate Summary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Livonia

TestAmerica Job ID: 240-66344-1

Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCB1 (10-114)	TCX1 (15-131)
240-66344-1	WT-012607-062216-EE-001	70	68
LCS 240-235965/16-A	Lab Control Sample	79	68
MB 240-235965/15-A	Method Blank	76	61

Surrogate Legend

DCB = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Livonia

TestAmerica Job ID: 240-66344-1

Client Sample ID: WT-012607-062216-EE-001

Lab Sample ID: 240-66344-1

Date Collected: 06/22/16 14:00

Matrix: Water

Date Received: 06/23/16 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			235965	06/25/16 10:21	SDE	TAL CAN
Total/NA	Analysis	608		1	236362	06/29/16 11:20	KMG	TAL CAN
Total Recoverable	Prep	200.7			235873	06/24/16 10:47	AJC	TAL CAN
Total Recoverable	Analysis	200.7 Rev 4.4		1	236043	06/26/16 01:10	KLC	TAL CAN
Total/NA	Prep	245.1			235875	06/24/16 12:00	AJC	TAL CAN
Total/NA	Analysis	245.1		1	236379	06/28/16 12:49	WKD	TAL CAN
Total/NA	Analysis	1664A		1	237099	07/06/16 08:51	BLW	TAL CAN
Total/NA	Analysis	3500-Cr B-2009		1	235665	06/23/16 12:39	BLW	TAL CAN
Total/NA	Analysis	SM 2540D		1	236232	06/28/16 09:34	JMB	TAL CAN

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Certification Summary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Livonia

TestAmerica Job ID: 240-66344-1

Laboratory: TestAmerica Canton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-14 *
California	State Program	9	2927	04-30-17
Connecticut	State Program	1	PH-0590	12-31-17
Florida	NELAP	4	E87225	06-30-17
Illinois	NELAP	5	200004	07-31-16 *
Kansas	NELAP	7	E-10336	07-31-16 *
Kentucky (UST)	State Program	4	58	02-23-17
Kentucky (VW)	State Program	4	98016	12-31-16
L-A-B	DoD ELAP		L2315	07-18-16
Minnesota	NELAP	5	039-999-348	12-31-16
Nevada	State Program	9	OH-000482008A	07-31-16 *
New Jersey	NELAP	2	OH001	06-30-17
New York	NELAP	2	10975	03-31-17
Ohio VAP	State Program	5	CL0024	09-14-17
Oregon	NELAP	10	4062	02-23-17
Pennsylvania	NELAP	3	68-00340	08-31-16 *
Texas	NELAP	6	T104704517-15-5	08-31-16 *
USDA	Federal		P330-13-00319	11-26-16
Virginia	NELAP	3	460175	09-14-16 *
Washington	State Program	10	C971	01-12-17
West Virginia DEP	State Program	3	210	12-31-16
Wisconsin	State Program	5	999518190	08-31-16 *

* Certification renewal pending - certification considered valid.

TestAmerica Canton

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact Company Name: <u>GHD Services, Inc</u> Address: <u>14496 Sheldon Dr Suite 200</u> City/State/Zip: <u>Plymouth, MI 48170</u> Phone: <u>(734) 453-5123</u> Fax: <u>(734) 453-5301</u> Project Name: <u>RACER Livonia GWT</u> Site: <u>Livonia, MI</u> PO# <u>12607-10146-003</u>		Project Manager: Tel/Fax: _____ Analysis Turnaround Time ☐ CALENDAR DAYS ☐ WORKING DAYS TAT if different from Below _____ ☒ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		Site Contact: <u>Rawn Fletcher</u> Date: <u>6/22/16</u> Lab Contact: <u>Denise Heckler</u> Carrier: <u>FEA</u>		COC No: <u>1</u> of <u>1</u> COCs Sampler: _____ For Lab Use Only: Walk-in Client: _____ Lab Sampling: _____ Job / SDG No.: _____	
Sample Identification WT - 012607 - 062216 - ET-001 WT - 012607		Sample Date: <u>6/22/16</u> Sample Time: <u>1400</u> Sample Type: <u>C</u> Matrix: <u>WT</u> # of Cont.: <u>6</u>		Filtered Sample (Y / N) _____ Perform MS / MSD (Y / N) _____ Sample Specific Notes:		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other _____ Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.							
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown							
Special Instructions/QC Requirements & Comments:							
Custody Seals Intact: ☐ Yes ☐ No Relinquished by: <u>Ewb-Eggen</u>		Custody Seal No.: <u>1538</u> Company: <u>GHD Services</u>		Cooler Temp. (°C): Obs'd: _____ Cor'd: _____ Received by: <u>Regen Kordos</u> Company: <u>TA</u>		Therm ID No.: _____	
Relinquished by: _____		Date/Time: <u>6/22/16</u>		Date/Time: <u>6-23-16 930</u>			
Relinquished by: _____		Date/Time: _____		Date/Time: _____			
Relinquished by: _____		Date/Time: _____		Date/Time: _____			



TestAmerica Canton Sample Receipt Form/Narrative Login #: 606334

Canton Facility

Client GH0 Site Name _____ Cooler unpacked by: Regem Henderson

Cooler Received on 6-23-16 Opened on 6-23-16

FedEx: 1st Grd ☒ Exp UPS FAS Stetson Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # _____ Foam Box ☒ Client Cooler Box Other _____

Packing material used: ☒ Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: ☒ Wet Ice Blue Ice Dry Ice Water None

☐ See Multiple Cooler Form

- Cooler temperature upon receipt
IR GUN# IR-8 (CF +1.3 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
IR GUN #36 (CF +1.0 °C) Observed Cooler Temp. 2.3 °C Corrected Cooler Temp. 3.3 °C
- Were custody seals on the outside of the cooler(s)? If Yes Quantity 1 ☒ Yes ☐ No
-Were custody seals on the outside of the cooler(s) signed & dated? ☒ Yes ☐ No NA
-Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? ☒ Yes ☐ No
- Shippers' packing slip attached to the cooler(s)? ☒ Yes ☐ No
- Did custody papers accompany the sample(s)? ☒ Yes ☐ No
- Were the custody papers relinquished & signed in the appropriate place? ☒ Yes ☐ No
- Was/were the person(s) who collected the samples clearly identified on the COC? ☒ Yes ☐ No
- Did all bottles arrive in good condition (Unbroken)? ☒ Yes ☐ No
- Could all bottle labels be reconciled with the COC? ☒ Yes ☐ No
- Were correct bottle(s) used for the test(s) indicated? ☒ Yes ☐ No
- Sufficient quantity received to perform indicated analyses? ☒ Yes ☐ No
- Are these work share samples?
If yes, Questions 11-15 have been checked at the originating laboratory.
- Were sample(s) at the correct pH upon receipt? ☒ Yes ☐ No NA pH Strip Lot# HC574756
- Were VOAs on the COC? ☒ Yes ☐ No
- Were air bubbles >6 mm in any VOA vials? ☒ Yes ☐ No NA
- Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ ☒ Yes ☐ No
- Was a LL Hg or Me Hg trip blank present? ☒ Yes ☐ No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____

Concerning _____

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by: _____

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

Temperature readings: _____

<u>Client Sample ID</u>	<u>Lab ID</u>	<u>Container Type</u>	<u>Container</u> <u>pH</u>	<u>Preservative</u> <u>Added (mls)</u>	<u>Lot #</u>
WT-012607-062216-EE-001	240-66344-B-1	Plastic 500ml - with Nitric Acid	<2	_____	_____
WT-012607-062216-EE-001	240-66344-E-1	Amber Glass 1 liter - Sulfuric Acid	_____	_____	_____
WT-012607-062216-EE-001	240-66344-F-1	Amber Glass 1 liter - Sulfuric Acid	_____	_____	_____

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Canton

4101 Shuffel Street NW

North Canton, OH 44720

Tel: (330)497-9396

TestAmerica Job ID: 240-67434-1

Client Project/Site: 12607-012, RACER Eckles Rd

For:

GHD Services Inc.

14496 Sheldon Road, Suite 200

Plymouth, Michigan 48170

Attn: Rawa Fleisher



Authorized for release by:

7/29/2016 4:42:31 PM

Denise Heckler, Project Manager II

(330)966-9477

denise.heckler@testamericainc.com

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

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

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Case Narrative

Client: GHD Services Inc.
Project/Site: 12607-012, RACER Eckles Rd

TestAmerica Job ID: 240-67434-1

Job ID: 240-67434-1

Laboratory: TestAmerica Canton

Narrative

Job Narrative 240-67434-1

Comments

No additional comments.

Receipt

The sample was received on 7/21/2016 9:30 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.2° C.

GC Semi VOA

Method(s) 608: The following samples required a tetrabutylammonium sulfite (TBA) clean-up to reduce matrix interferences caused by sulfur: WT-012607-072016-EE-001 (240-67434-1).2622264, 2103098, 2586316.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method(s) 200.7 Rev 4.4: Some requested practical quantitation limits (PQLs) on the following samples fall below the laboratory's verified standard quantitation limit: WT-012607-072016-EE-001 (240-67434-1). The continuing calibration blanks and method blanks may not support the lower PQL.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

Method(s) 3520C, 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 240-239288.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: 12607-012, RACER Eckles Rd

TestAmerica Job ID: 240-67434-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Sample Summary

Client: GHD Services Inc.
Project/Site: 12607-012, RACER Eckles Rd

TestAmerica Job ID: 240-67434-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-67434-1	WT-012607-072016-EE-001	Water	07/20/16 15:15	07/21/16 09:30

Detection Summary

Client: GHD Services Inc.
Project/Site: 12607-012, RACER Eckles Rd

TestAmerica Job ID: 240-67434-1

Client Sample ID: WT-012607-072016-EE-001

Lab Sample ID: 240-67434-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.050		0.050	mg/L	1		200.7 Rev 4.4	Total
Nickel	0.070		0.010	mg/L	1		200.7 Rev 4.4	Recoverable
Total Suspended Solids	7.0		4.0	mg/L	1		SM 2540D	Total
								Recoverable
								Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

Method Summary

Client: GHD Services Inc.
Project/Site: 12607-012, RACER Eckles Rd

TestAmerica Job ID: 240-67434-1

Method	Method Description	Protocol	Laboratory
608	Polychlorinated Biphenyls (PCBs) (GC)	40CFR136A	TAL CAN
200.7 Rev 4.4	Metals (ICP)	EPA	TAL CAN
245.1	Mercury (CVAA)	EPA	TAL CAN
1664A	HEM and SGT-HEM	1664A	TAL CAN
3500-Cr B-2009	Chromium, Hexavalent	SM	TAL CAN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CAN

Protocol References:

1664A = EPA-821-98-002

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607-012, RACER Eckles Rd

TestAmerica Job ID: 240-67434-1

Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Client Sample ID: WT-012607-072016-EE-001

Date Collected: 07/20/16 15:15

Date Received: 07/21/16 09:30

Lab Sample ID: 240-67434-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.095	U	0.095	ug/L		07/22/16 06:18	07/26/16 19:38	1
Aroclor-1221	0.095	U	0.095	ug/L		07/22/16 06:18	07/26/16 19:38	1
Aroclor-1232	0.095	U	0.095	ug/L		07/22/16 06:18	07/26/16 19:38	1
Aroclor-1242	0.095	U	0.095	ug/L		07/22/16 06:18	07/26/16 19:38	1
Aroclor-1248	0.095	U	0.095	ug/L		07/22/16 06:18	07/26/16 19:38	1
Aroclor-1254	0.095	U	0.095	ug/L		07/22/16 06:18	07/26/16 19:38	1
Aroclor-1260	0.095	U	0.095	ug/L		07/22/16 06:18	07/26/16 19:38	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	60		10 - 114			07/22/16 06:18	07/26/16 19:38	1
Tetrachloro-m-xylene	53		15 - 131			07/22/16 06:18	07/26/16 19:38	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607-012, RACER Eckles Rd

TestAmerica Job ID: 240-67434-1

Method: 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Client Sample ID: WT-012607-072016-EE-001

Date Collected: 07/20/16 15:15

Date Received: 07/21/16 09:30

Lab Sample ID: 240-67434-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.050		0.050	mg/L		07/22/16 11:24	07/25/16 15:36	1
Nickel	0.070		0.010	mg/L		07/22/16 11:24	07/25/16 15:36	1
Lead	0.050	U	0.050	mg/L		07/22/16 11:24	07/25/16 15:36	1
Zinc	0.020	U	0.020	mg/L		07/22/16 11:24	07/25/16 15:36	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607-012, RACER Eckles Rd

TestAmerica Job ID: 240-67434-1

Method: 245.1 - Mercury (CVAA)

Client Sample ID: WT-012607-072016-EE-001

Date Collected: 07/20/16 15:15

Date Received: 07/21/16 09:30

Lab Sample ID: 240-67434-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	mg/L	—	07/22/16 12:00	07/25/16 12:23	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607-012, RACER Eckles Rd

TestAmerica Job ID: 240-67434-1

General Chemistry

Client Sample ID: WT-012607-072016-EE-001

Date Collected: 07/20/16 15:15

Date Received: 07/21/16 09:30

Lab Sample ID: 240-67434-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	4.8	U	4.8	mg/L			07/29/16 09:02	1
Cr (VI)	0.0050	U	0.0050	mg/L			07/21/16 11:10	1
Total Suspended Solids	7.0		4.0	mg/L			07/25/16 11:32	1

QC Association Summary

Client: GHD Services Inc.
Project/Site: 12607-012, RACER Eckles Rd

TestAmerica Job ID: 240-67434-1

GC Semi VOA

Prep Batch: 239288

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-67434-1	WT-012607-072016-EE-001	Total/NA	Water	3520C	
MB 240-239288/21-A	Method Blank	Total/NA	Water	3520C	
LCS 240-239288/22-A	Lab Control Sample	Total/NA	Water	3520C	

Analysis Batch: 239859

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-67434-1	WT-012607-072016-EE-001	Total/NA	Water	608	239288
MB 240-239288/21-A	Method Blank	Total/NA	Water	608	239288
LCS 240-239288/22-A	Lab Control Sample	Total/NA	Water	608	239288

Metals

Prep Batch: 239378

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-67434-1	WT-012607-072016-EE-001	Total Recoverable	Water	200.7	
MB 240-239378/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 240-239378/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
240-67434-1 MS	WT-012607-072016-EE-001	Total Recoverable	Water	200.7	
240-67434-1 MSD	WT-012607-072016-EE-001	Total Recoverable	Water	200.7	

Prep Batch: 239383

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-67434-1	WT-012607-072016-EE-001	Total/NA	Water	245.1	
MB 240-239383/1-A	Method Blank	Total/NA	Water	245.1	
LCS 240-239383/2-A	Lab Control Sample	Total/NA	Water	245.1	
240-67434-1 MS	WT-012607-072016-EE-001	Total/NA	Water	245.1	
240-67434-1 MSD	WT-012607-072016-EE-001	Total/NA	Water	245.1	

Analysis Batch: 239666

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-67434-1	WT-012607-072016-EE-001	Total/NA	Water	245.1	239383
MB 240-239383/1-A	Method Blank	Total/NA	Water	245.1	239383
LCS 240-239383/2-A	Lab Control Sample	Total/NA	Water	245.1	239383
240-67434-1 MS	WT-012607-072016-EE-001	Total/NA	Water	245.1	239383
240-67434-1 MSD	WT-012607-072016-EE-001	Total/NA	Water	245.1	239383

Analysis Batch: 239686

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-67434-1	WT-012607-072016-EE-001	Total Recoverable	Water	200.7 Rev 4.4	239378
MB 240-239378/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	239378
LCS 240-239378/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	239378
240-67434-1 MS	WT-012607-072016-EE-001	Total Recoverable	Water	200.7 Rev 4.4	239378
240-67434-1 MSD	WT-012607-072016-EE-001	Total Recoverable	Water	200.7 Rev 4.4	239378

General Chemistry

Analysis Batch: 239150

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-67434-1	WT-012607-072016-EE-001	Total/NA	Water	3500-Cr B-2009	
MB 240-239150/3	Method Blank	Total/NA	Water	3500-Cr B-2009	

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QC Association Summary

Client: GHD Services Inc.
Project/Site: 12607-012, RACER Eckles Rd

TestAmerica Job ID: 240-67434-1

General Chemistry (Continued)

Analysis Batch: 239150 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 240-239150/4	Lab Control Sample	Total/NA	Water	3500-Cr B-2009	

Analysis Batch: 239660

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-67434-1	WT-012607-072016-EE-001	Total/NA	Water	SM 2540D	
MB 240-239660/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 240-239660/2	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 240390

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-67434-1	WT-012607-072016-EE-001	Total/NA	Water	1664A	
MB 240-240390/1	Method Blank	Total/NA	Water	1664A	
LCS 240-240390/2	Lab Control Sample	Total/NA	Water	1664A	

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607-012, RACER Eckles Rd

TestAmerica Job ID: 240-67434-1

Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Lab Sample ID: MB 240-239288/21-A

Matrix: Water

Analysis Batch: 239859

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 239288

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.10	U	0.10	ug/L		07/22/16 06:18	07/26/16 22:35	1
Aroclor-1221	0.10	U	0.10	ug/L		07/22/16 06:18	07/26/16 22:35	1
Aroclor-1232	0.10	U	0.10	ug/L		07/22/16 06:18	07/26/16 22:35	1
Aroclor-1242	0.10	U	0.10	ug/L		07/22/16 06:18	07/26/16 22:35	1
Aroclor-1248	0.10	U	0.10	ug/L		07/22/16 06:18	07/26/16 22:35	1
Aroclor-1254	0.10	U	0.10	ug/L		07/22/16 06:18	07/26/16 22:35	1
Aroclor-1260	0.10	U	0.10	ug/L		07/22/16 06:18	07/26/16 22:35	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	60		10 - 114	07/22/16 06:18	07/26/16 22:35	1
Tetrachloro-m-xylene	52		15 - 131	07/22/16 06:18	07/26/16 22:35	1

Lab Sample ID: LCS 240-239288/22-A

Matrix: Water

Analysis Batch: 239859

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 239288

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Aroclor-1016	2.50	1.28		ug/L		51	50 - 114
Aroclor-1260	2.50	1.59		ug/L		64	8 - 127

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	64		10 - 114
Tetrachloro-m-xylene	53		15 - 131

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 240-239378/1-A

Matrix: Water

Analysis Batch: 239686

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 239378

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.050	U	0.050	mg/L		07/22/16 11:24	07/25/16 15:28	1
Nickel	0.010	U	0.010	mg/L		07/22/16 11:24	07/25/16 15:28	1
Lead	0.050	U	0.050	mg/L		07/22/16 11:24	07/25/16 15:28	1
Zinc	0.0237		0.020	mg/L		07/22/16 11:24	07/25/16 15:28	1

Lab Sample ID: LCS 240-239378/2-A

Matrix: Water

Analysis Batch: 239686

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 239378

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Chromium	0.200	0.205		mg/L		103	85 - 115
Nickel	0.500	0.516		mg/L		103	85 - 115
Lead	0.500	0.500		mg/L		100	85 - 115
Zinc	0.500	0.529		mg/L		106	85 - 115

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607-012, RACER Eckles Rd

TestAmerica Job ID: 240-67434-1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 240-67434-1 MS

Matrix: Water

Analysis Batch: 239686

Client Sample ID: WT-012607-072016-EE-001

Prep Type: Total Recoverable

Prep Batch: 239378

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits	%Rec.
Chromium	0.050		0.200	0.239		mg/L		95	75 - 125	
Nickel	0.070		0.500	0.560		mg/L		98	75 - 125	
Lead	0.050	U	0.500	0.459		mg/L		92	75 - 125	
Zinc	0.020	U	0.500	0.500		mg/L		100	75 - 125	

Lab Sample ID: 240-67434-1 MSD

Matrix: Water

Analysis Batch: 239686

Client Sample ID: WT-012607-072016-EE-001

Prep Type: Total Recoverable

Prep Batch: 239378

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chromium	0.050		0.200	0.245		mg/L		97	75 - 125	2	20
Nickel	0.070		0.500	0.572		mg/L		101	75 - 125	2	20
Lead	0.050	U	0.500	0.471		mg/L		94	75 - 125	3	20
Zinc	0.020	U	0.500	0.511		mg/L		102	75 - 125	2	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 240-239383/1-A

Matrix: Water

Analysis Batch: 239666

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 239383

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	mg/L		07/22/16 12:00	07/25/16 12:19	1

Lab Sample ID: LCS 240-239383/2-A

Matrix: Water

Analysis Batch: 239666

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 239383

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	0.00500	0.00441		mg/L		88	85 - 115

Lab Sample ID: 240-67434-1 MS

Matrix: Water

Analysis Batch: 239666

Client Sample ID: WT-012607-072016-EE-001

Prep Type: Total/NA

Prep Batch: 239383

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits	%Rec.
Mercury	0.00020	U	0.00100	0.000971		mg/L		97	70 - 130	

Lab Sample ID: 240-67434-1 MSD

Matrix: Water

Analysis Batch: 239666

Client Sample ID: WT-012607-072016-EE-001

Prep Type: Total/NA

Prep Batch: 239383

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Mercury	0.00020	U	0.00100	0.000970		mg/L		97	70 - 130	0	20

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607-012, RACER Eckles Rd

TestAmerica Job ID: 240-67434-1

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 240-240390/1

Matrix: Water

Analysis Batch: 240390

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	5.0	U	5.0	mg/L			07/29/16 09:02	1

Lab Sample ID: LCS 240-240390/2

Matrix: Water

Analysis Batch: 240390

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM	40.0	41.50		mg/L		104	78 - 114

Method: 3500-Cr B-2009 - Chromium, Hexavalent

Lab Sample ID: MB 240-239150/3

Matrix: Water

Analysis Batch: 239150

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0050	U	0.0050	mg/L			07/21/16 10:26	1

Lab Sample ID: LCS 240-239150/4

Matrix: Water

Analysis Batch: 239150

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.250	0.260		mg/L		104	80 - 118

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 240-239660/1

Matrix: Water

Analysis Batch: 239660

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	4.0	U	4.0	mg/L			07/25/16 11:32	1

Lab Sample ID: LCS 240-239660/2

Matrix: Water

Analysis Batch: 239660

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	41.0	37.0		mg/L		90	73 - 113

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Surrogate Summary

Client: GHD Services Inc.
Project/Site: 12607-012, RACER Eckles Rd

TestAmerica Job ID: 240-67434-1

Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCB1 (10-114)	TCX1 (15-131)
240-67434-1	WT-012607-072016-EE-001	60	53
LCS 240-239288/22-A	Lab Control Sample	64	53
MB 240-239288/21-A	Method Blank	60	52

Surrogate Legend

DCB = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 12607-012, RACER Eckles Rd

TestAmerica Job ID: 240-67434-1

Client Sample ID: WT-012607-072016-EE-001

Lab Sample ID: 240-67434-1

Date Collected: 07/20/16 15:15

Matrix: Water

Date Received: 07/21/16 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			239288	07/22/16 06:18	CSC	TAL CAN
Total/NA	Analysis	608		1	239859	07/26/16 19:38	LSH	TAL CAN
Total Recoverable	Prep	200.7			239378	07/22/16 11:24	AJC	TAL CAN
Total Recoverable	Analysis	200.7 Rev 4.4		1	239686	07/25/16 15:36	KLC	TAL CAN
Total/NA	Prep	245.1			239383	07/22/16 12:00	AJC	TAL CAN
Total/NA	Analysis	245.1		1	239666	07/25/16 12:23	WKD	TAL CAN
Total/NA	Analysis	1664A		1	240390	07/29/16 09:02	DTN	TAL CAN
Total/NA	Analysis	3500-Cr B-2009		1	239150	07/21/16 11:10	DTN	TAL CAN
Total/NA	Analysis	SM 2540D		1	239660	07/25/16 11:32	JW	TAL CAN

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Certification Summary

Client: GHD Services Inc.
Project/Site: 12607-012, RACER Eckles Rd

TestAmerica Job ID: 240-67434-1

Laboratory: TestAmerica Canton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-14 *
California	State Program	9	2927	04-30-17
Connecticut	State Program	1	PH-0590	12-31-17
Florida	NELAP	4	E87225	06-30-17
Illinois	NELAP	5	200004	07-31-17
Kansas	NELAP	7	E-10336	07-31-16 *
Kentucky (UST)	State Program	4	58	02-23-17
Kentucky (VW)	State Program	4	98016	12-31-16
Minnesota	NELAP	5	039-999-348	12-31-16
Nevada	State Program	9	OH-000482008A	07-31-17
New Jersey	NELAP	2	OH001	06-30-17
New York	NELAP	2	10975	03-31-17
Ohio VAP	State Program	5	CL0024	09-14-17
Oregon	NELAP	10	4062	02-23-17
Pennsylvania	NELAP	3	68-00340	08-31-16 *
Texas	NELAP	6	T104704517-15-5	08-31-16 *
USDA	Federal		P330-13-00319	11-26-16
Virginia	NELAP	3	460175	09-14-16 *
Washington	State Program	10	C971	01-12-17
West Virginia DEP	State Program	3	210	12-31-16
Wisconsin	State Program	5	999518190	08-31-16 *

* Certification renewal pending - certification considered valid.

TestAmerica Canton

Brighton, MI 48116
Phone: 810.229.2763 Fax:

A 2406 5880

Chain of Custody Record

3.2/4.2

122489

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact Company Name: GHD Services, Inc. Address: 14456 Sheldon Rd, Suite 200 City/State/Zip: Plymouth, MI 48133 Phone: (734) 453-5133 Fax: (734) 453-5301 Project Name: RACER Human GWTP Site: Warren, MI PO # 12607-701 Y16-003		Project Manager: Tell/Fax: _____ Analysis Turnaround Time ☐ CALENDAR DAYS ☐ WORKING DAYS TAT if different from Below ☒ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day STD		Site Contact: Dawn Fletcher Date: 7/20/16 Lab Contact: Denise Heckler Carrier: FedEx		COC No: _____ of _____ COCs Sampler: _____ For Lab Use Only: Walk-in Client: _____ Lab Sampling: _____ Job / SDG No.: _____	
Sample Identification WT-012607-072016-EE-001		Sample Date 7/20/16 1515		Sample Type (C=Comp, G=Grab) C		# of Cont. 6	
Sample Specific Notes:		Filtered Sample (Y/N) _____ Perform MS / MSD (Y/N) _____ PCEs: _____ Metals: _____ TSS: _____ C (VI) _____					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) 1341					
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample. ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown		☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months					
Special Instructions/QC Requirements & Comments:							
Custody Seals Intact: ☐ Yes ☐ No		Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____ Cor'd: _____		Therm ID No.:	
Relinquished by: <i>Emily Engel</i>		Company: GHD Services		Received by: <i>[Signature]</i>		Company: TA	
Relinquished by:		Company:		Received by:		Company:	
Relinquished by:		Company:		Received in Laboratory by:		Company:	

TestAmerica Canton Sample Receipt Form/Narrative

Login # : 107434

Canton Facility

Client G+H Site Name _____ Cooler unpacked by: [Signature]
 Cooler Received on 7-21-16 Opened on 7-21-16
 FedEx: 1st Grd. Exp UPS FAS Stetson Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # _____ Foam Box CKent Cooler Box _____ Other _____
 Packing material used: Bubble Wrap Foam Plastic Bag None Other _____
 COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
 IR GUN# IR-8 (CF +1.3 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 IR GUN #36 (CF +1.0 °C) Observed Cooler Temp. 3.2 °C Corrected Cooler Temp. 4.2 °C

2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
 -Were custody seals on the outside of the cooler(s) signed & dated? Yes No NA
 -Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No

3. Shippers' packing slip attached to the cooler(s)? Yes No
 4. Did custody papers accompany the sample(s)? Yes No
 5. Were the custody papers relinquished & signed in the appropriate place? Yes No
 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
 7. Did all bottles arrive in good condition (Unbroken)? Yes No
 8. Could all bottle labels be reconciled with the COC? Yes No
 9. Were correct bottle(s) used for the test(s) indicated? Yes No
 10. Sufficient quantity received to perform indicated analyses? Yes No
 11. Are these work share samples? Yes No
 If yes, Questions 11-15 have been checked at the originating laboratory.

11. Were sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC574756
 12. Were VOAs on the COC? Yes No
 13. Were air bubbles >6 mm in any VOA vials? Yes No NA
 14. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
 15. Was a LL Hg or Me Hg trip blank present? Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____
 Concerning _____

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by: _____

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
 Sample(s) _____ were received in a broken container.
 Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
 Time preserved: _____ Preservative(s) added/Lot number(s): _____

Temperature readings: _____

<u>Client Sample ID</u>	<u>Lab ID</u>	<u>Container Type</u>	<u>Container pH</u>	<u>Preservative Added (mls)</u>	<u>Lot #</u>
WT-012607-072016-EE-001	240-67434-B-1	Plastic 500ml - with Nitric Acid	<2	_____	_____
WT-012607-072016-EE-001	240-67434-E-1	Amber Glass 1 liter - Sulfuric Acid	_____	_____	_____
WT-012607-072016-EE-001	240-67434-F-1	Amber Glass 1 liter - Sulfuric Acid	_____	_____	_____

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Canton

4101 Shuffel Street NW

North Canton, OH 44720

Tel: (330)497-9396

TestAmerica Job ID: 240-68204-1

Client Project/Site: 12607-12, RACER Eckles Rd

For:

GHD Services Inc.

14496 Sheldon Road, Suite 200

Plymouth, Michigan 48170

Attn: Rawa Fleisher



Authorized for release by:

8/18/2016 7:43:30 AM

Denise Heckler, Project Manager II

(330)966-9477

denise.heckler@testamericainc.com

LINKS

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results through

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Have a Question?



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www.testamericainc.com

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

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

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Case Narrative

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-68204-1

Job ID: 240-68204-1

Laboratory: TestAmerica Canton

Narrative

Job Narrative 240-68204-1

Comments

No additional comments.

Receipt

The sample was received on 8/11/2016 9:15 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.8° C.

GC Semi VOA

Method(s) 608: Two surrogates are used for this analysis. The laboratory's SOP allows one of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The following sample contained an allowable number of surrogate compounds outside limits: WT-012607-081016-EE-001 (240-68204-1). These results have been reported and qualified.

Method(s) 608: The following samples required a tetrabutylammonium sulfite (TBA) clean-up to reduce matrix interferences caused by sulfur: WT-012607-081016-EE-001 (240-68204-1). 2641677, 2103098, 2283705.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method(s) 200.7 Rev 4.4: Some requested practical quantitation limits (PQLs) on the following samples fall below the laboratory's verified standard quantitation limit: WT-012607-081016-EE-001 (240-68204-1). The continuing calibration blanks and method blanks may not support the lower PQL.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

Method(s) 3520C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 240-242224.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-68204-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
X	Surrogate is outside control limits

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Sample Summary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-68204-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-68204-1	WT-012607-081016-EE-001	Water	08/10/16 15:00	08/11/16 09:15

Detection Summary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-68204-1

Client Sample ID: WT-012607-081016-EE-001

Lab Sample ID: 240-68204-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.51		0.050	mg/L	1		200.7 Rev 4.4	Total
Nickel	0.37		0.010	mg/L	1		200.7 Rev 4.4	Recoverable
Total Suspended Solids	49		4.0	mg/L	1		SM 2540D	Total
								Recoverable
								Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

Method Summary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-68204-1

Method	Method Description	Protocol	Laboratory
608	Polychlorinated Biphenyls (PCBs) (GC)	40CFR136A	TAL CAN
200.7 Rev 4.4	Metals (ICP)	EPA	TAL CAN
245.1	Mercury (CVAA)	EPA	TAL CAN
1664A	HEM and SGT-HEM	1664A	TAL CAN
3500-Cr B-2009	Chromium, Hexavalent	SM	TAL CAN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CAN

Protocol References:

1664A = EPA-821-98-002

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-68204-1

Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Client Sample ID: WT-012607-081016-EE-001

Date Collected: 08/10/16 15:00

Date Received: 08/11/16 09:15

Lab Sample ID: 240-68204-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.095	U	0.095	ug/L		08/12/16 05:02	08/15/16 15:24	1
Aroclor-1221	0.095	U	0.095	ug/L		08/12/16 05:02	08/15/16 15:24	1
Aroclor-1232	0.095	U	0.095	ug/L		08/12/16 05:02	08/15/16 15:24	1
Aroclor-1242	0.095	U	0.095	ug/L		08/12/16 05:02	08/15/16 15:24	1
Aroclor-1248	0.095	U	0.095	ug/L		08/12/16 05:02	08/15/16 15:24	1
Aroclor-1254	0.095	U	0.095	ug/L		08/12/16 05:02	08/15/16 15:24	1
Aroclor-1260	0.095	U	0.095	ug/L		08/12/16 05:02	08/15/16 15:24	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	0	X	10 - 114			08/12/16 05:02	08/15/16 15:24	1
Tetrachloro-m-xylene	34		15 - 131			08/12/16 05:02	08/15/16 15:24	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-68204-1

Method: 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Client Sample ID: WT-012607-081016-EE-001

Date Collected: 08/10/16 15:00

Date Received: 08/11/16 09:15

Lab Sample ID: 240-68204-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.51		0.050	mg/L		08/12/16 10:31	08/16/16 03:46	1
Nickel	0.37		0.010	mg/L		08/12/16 10:31	08/16/16 03:46	1
Lead	0.050	U	0.050	mg/L		08/12/16 10:31	08/16/16 03:46	1
Zinc	0.020	U	0.020	mg/L		08/12/16 10:31	08/16/16 03:46	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-68204-1

Method: 245.1 - Mercury (CVAA)

Client Sample ID: WT-012607-081016-EE-001

Date Collected: 08/10/16 15:00

Date Received: 08/11/16 09:15

Lab Sample ID: 240-68204-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	mg/L	—	08/12/16 12:00	08/15/16 17:22	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-68204-1

General Chemistry

Client Sample ID: WT-012607-081016-EE-001

Date Collected: 08/10/16 15:00

Date Received: 08/11/16 09:15

Lab Sample ID: 240-68204-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	4.8	U	4.8	mg/L			08/17/16 08:13	1
Cr (VI)	0.0050	U	0.0050	mg/L			08/11/16 10:42	1
Total Suspended Solids	49		4.0	mg/L			08/15/16 09:45	1

QC Association Summary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-68204-1

GC Semi VOA

Prep Batch: 242224

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-68204-1	WT-012607-081016-EE-001	Total/NA	Water	3520C	
MB 240-242224/11-A	Method Blank	Total/NA	Water	3520C	
LCS 240-242224/12-A	Lab Control Sample	Total/NA	Water	3520C	

Analysis Batch: 242477

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-68204-1	WT-012607-081016-EE-001	Total/NA	Water	608	242224
MB 240-242224/11-A	Method Blank	Total/NA	Water	608	242224
LCS 240-242224/12-A	Lab Control Sample	Total/NA	Water	608	242224

Metals

Prep Batch: 242323

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-68204-1	WT-012607-081016-EE-001	Total Recoverable	Water	200.7	
MB 240-242323/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 240-242323/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
240-68204-1 MS	WT-012607-081016-EE-001	Total Recoverable	Water	200.7	
240-68204-1 MSD	WT-012607-081016-EE-001	Total Recoverable	Water	200.7	

Prep Batch: 242324

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-68204-1	WT-012607-081016-EE-001	Total/NA	Water	245.1	
MB 240-242324/1-A	Method Blank	Total/NA	Water	245.1	
LCS 240-242324/2-A	Lab Control Sample	Total/NA	Water	245.1	
240-68204-1 MS	WT-012607-081016-EE-001	Total/NA	Water	245.1	
240-68204-1 MSD	WT-012607-081016-EE-001	Total/NA	Water	245.1	

Analysis Batch: 242603

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-68204-1	WT-012607-081016-EE-001	Total Recoverable	Water	200.7 Rev 4.4	242323
MB 240-242323/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	242323
LCS 240-242323/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	242323
240-68204-1 MS	WT-012607-081016-EE-001	Total Recoverable	Water	200.7 Rev 4.4	242323
240-68204-1 MSD	WT-012607-081016-EE-001	Total Recoverable	Water	200.7 Rev 4.4	242323

Analysis Batch: 242790

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-68204-1	WT-012607-081016-EE-001	Total/NA	Water	245.1	242324
MB 240-242324/1-A	Method Blank	Total/NA	Water	245.1	242324
LCS 240-242324/2-A	Lab Control Sample	Total/NA	Water	245.1	242324
240-68204-1 MS	WT-012607-081016-EE-001	Total/NA	Water	245.1	242324
240-68204-1 MSD	WT-012607-081016-EE-001	Total/NA	Water	245.1	242324

General Chemistry

Analysis Batch: 242125

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-68204-1	WT-012607-081016-EE-001	Total/NA	Water	3500-Cr B-2009	
MB 240-242125/3	Method Blank	Total/NA	Water	3500-Cr B-2009	

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QC Association Summary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-68204-1

General Chemistry (Continued)

Analysis Batch: 242125 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 240-242125/4	Lab Control Sample	Total/NA	Water	3500-Cr B-2009	

Analysis Batch: 242567

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-68204-1	WT-012607-081016-EE-001	Total/NA	Water	SM 2540D	
MB 240-242567/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 240-242567/2	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 242943

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-68204-1	WT-012607-081016-EE-001	Total/NA	Water	1664A	
MB 240-242943/1	Method Blank	Total/NA	Water	1664A	
LCS 240-242943/2	Lab Control Sample	Total/NA	Water	1664A	

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-68204-1

Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Lab Sample ID: MB 240-242224/11-A

Matrix: Water

Analysis Batch: 242477

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 242224

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.10	U	0.10	ug/L		08/12/16 05:02	08/15/16 17:55	1
Aroclor-1221	0.10	U	0.10	ug/L		08/12/16 05:02	08/15/16 17:55	1
Aroclor-1232	0.10	U	0.10	ug/L		08/12/16 05:02	08/15/16 17:55	1
Aroclor-1242	0.10	U	0.10	ug/L		08/12/16 05:02	08/15/16 17:55	1
Aroclor-1248	0.10	U	0.10	ug/L		08/12/16 05:02	08/15/16 17:55	1
Aroclor-1254	0.10	U	0.10	ug/L		08/12/16 05:02	08/15/16 17:55	1
Aroclor-1260	0.10	U	0.10	ug/L		08/12/16 05:02	08/15/16 17:55	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	31		10 - 114	08/12/16 05:02	08/15/16 17:55	1
Tetrachloro-m-xylene	41		15 - 131	08/12/16 05:02	08/15/16 17:55	1

Lab Sample ID: LCS 240-242224/12-A

Matrix: Water

Analysis Batch: 242477

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 242224

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Aroclor-1016	2.50	1.60		ug/L		64	50 - 114
Aroclor-1260	2.50	0.927		ug/L		37	8 - 127

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	39		10 - 114
Tetrachloro-m-xylene	49		15 - 131

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 240-242323/1-A

Matrix: Water

Analysis Batch: 242603

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 242323

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.050	U	0.050	mg/L		08/12/16 10:31	08/16/16 03:38	1
Nickel	0.010	U	0.010	mg/L		08/12/16 10:31	08/16/16 03:38	1
Lead	0.050	U	0.050	mg/L		08/12/16 10:31	08/16/16 03:38	1
Zinc	0.020	U	0.020	mg/L		08/12/16 10:31	08/16/16 03:38	1

Lab Sample ID: LCS 240-242323/2-A

Matrix: Water

Analysis Batch: 242603

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 242323

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Chromium	1.00	0.915		mg/L		91	85 - 115
Nickel	1.00	0.925		mg/L		92	85 - 115
Lead	1.00	0.928		mg/L		93	85 - 115
Zinc	1.00	0.950		mg/L		95	85 - 115

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-68204-1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 240-68204-1 MS

Matrix: Water

Analysis Batch: 242603

Client Sample ID: WT-012607-081016-EE-001

Prep Type: Total Recoverable

Prep Batch: 242323

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits	%Rec.
Chromium	0.51		1.00	1.50		mg/L		99	75 - 125	
Nickel	0.37		1.00	1.39		mg/L		103	75 - 125	
Lead	0.050	U	1.00	0.954		mg/L		95	75 - 125	
Zinc	0.020	U	1.00	1.05		mg/L		105	75 - 125	

Lab Sample ID: 240-68204-1 MSD

Matrix: Water

Analysis Batch: 242603

Client Sample ID: WT-012607-081016-EE-001

Prep Type: Total Recoverable

Prep Batch: 242323

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chromium	0.51		1.00	1.50		mg/L		99	75 - 125	0	20
Nickel	0.37		1.00	1.41		mg/L		104	75 - 125	1	20
Lead	0.050	U	1.00	0.968		mg/L		97	75 - 125	1	20
Zinc	0.020	U	1.00	1.06		mg/L		106	75 - 125	1	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 240-242324/1-A

Matrix: Water

Analysis Batch: 242790

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 242324

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	mg/L		08/12/16 12:00	08/15/16 17:17	1

Lab Sample ID: LCS 240-242324/2-A

Matrix: Water

Analysis Batch: 242790

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 242324

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	0.00500	0.00470		mg/L		94	85 - 115

Lab Sample ID: 240-68204-1 MS

Matrix: Water

Analysis Batch: 242790

Client Sample ID: WT-012607-081016-EE-001

Prep Type: Total/NA

Prep Batch: 242324

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits	%Rec.
Mercury	0.00020	U	0.00100	0.000983		mg/L		98	70 - 130	

Lab Sample ID: 240-68204-1 MSD

Matrix: Water

Analysis Batch: 242790

Client Sample ID: WT-012607-081016-EE-001

Prep Type: Total/NA

Prep Batch: 242324

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Mercury	0.00020	U	0.00100	0.000965		mg/L		96	70 - 130	2	20

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-68204-1

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 240-242943/1

Matrix: Water

Analysis Batch: 242943

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	5.0	U	5.0	mg/L			08/17/16 08:13	1

Lab Sample ID: LCS 240-242943/2

Matrix: Water

Analysis Batch: 242943

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM	40.0	35.90		mg/L		90	78 - 114

Method: 3500-Cr B-2009 - Chromium, Hexavalent

Lab Sample ID: MB 240-242125/3

Matrix: Water

Analysis Batch: 242125

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0050	U	0.0050	mg/L			08/11/16 10:06	1

Lab Sample ID: LCS 240-242125/4

Matrix: Water

Analysis Batch: 242125

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.250	0.276		mg/L		110	80 - 118

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 240-242567/1

Matrix: Water

Analysis Batch: 242567

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	4.0	U	4.0	mg/L			08/15/16 09:45	1

Lab Sample ID: LCS 240-242567/2

Matrix: Water

Analysis Batch: 242567

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	78.0	83.0		mg/L		106	73 - 113

TestAmerica Canton

Surrogate Summary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-68204-1

Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCB2 (10-114)	TCX2 (15-131)
240-68204-1	WT-012607-081016-EE-001	0 X	34
LCS 240-242224/12-A	Lab Control Sample	39	49
MB 240-242224/11-A	Method Blank	31	41

Surrogate Legend

DCB = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-68204-1

Client Sample ID: WT-012607-081016-EE-001

Lab Sample ID: 240-68204-1

Date Collected: 08/10/16 15:00

Matrix: Water

Date Received: 08/11/16 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			242224	08/12/16 05:02	CSC	TAL CAN
Total/NA	Analysis	608		1	242477	08/15/16 15:24	CSC	TAL CAN
Total Recoverable	Prep	200.7			242323	08/12/16 10:31	AJC	TAL CAN
Total Recoverable	Analysis	200.7 Rev 4.4		1	242603	08/16/16 03:46	RKT	TAL CAN
Total/NA	Prep	245.1			242324	08/12/16 12:00	AJC	TAL CAN
Total/NA	Analysis	245.1		1	242790	08/15/16 17:22	DSH	TAL CAN
Total/NA	Analysis	1664A		1	242943	08/17/16 08:13	BLW	TAL CAN
Total/NA	Analysis	3500-Cr B-2009		1	242125	08/11/16 10:42	LCN	TAL CAN
Total/NA	Analysis	SM 2540D		1	242567	08/15/16 09:45	JW	TAL CAN

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Certification Summary

Client: GHD Services Inc.
Project/Site: 12607-12, RACER Eckles Rd

TestAmerica Job ID: 240-68204-1

Laboratory: TestAmerica Canton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-14 *
California	State Program	9	2927	04-30-17
Connecticut	State Program	1	PH-0590	12-31-17
Florida	NELAP	4	E87225	06-30-17
Illinois	NELAP	5	200004	07-31-17
Kentucky (UST)	State Program	4	58	02-23-17
Kentucky (VW)	State Program	4	98016	12-31-16
Minnesota	NELAP	5	039-999-348	12-31-16
Minnesota (Petrofund)	State Program	1	3506	07-31-17
Nevada	State Program	9	OH-000482008A	07-31-17
New Jersey	NELAP	2	OH001	06-30-17
New York	NELAP	2	10975	03-31-17
Ohio VAP	State Program	5	CL0024	09-14-17
Oregon	NELAP	10	4062	02-23-17
Pennsylvania	NELAP	3	68-00340	08-31-17
Texas	NELAP	6	T104704517-15-5	08-31-16 *
USDA	Federal		P330-13-00319	11-26-16
Washington	State Program	10	C971	01-12-17
West Virginia DEP	State Program	3	210	12-31-16
Wisconsin	State Program	5	999518190	08-31-16 *

* Certification renewal pending - certification considered valid.

TestAmerica Canton

Chain of Custody Record

149329

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.

TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact		Project Manager:		Site Contact:		Date: 8/10/16		COC No: 1 of 1 COCs	
Company Name: GHD Services Inc.		Tel/Fax:		Lab Contact:		Carrier: FedEx		Sampler:	
Address: 14446 Shelton Rd Suite 200		Analysis Turnaround Time		Perform MS / MSD (Y / N)		Walk-in Client:		For Lab Use Only:	
City/State/Zip: Plymouth MI 48170		☐ CALENDAR DAYS ☐ WORKING DAYS		Filtered Sample (Y / N)		Lab Sampling:		Job / SDG No.:	
Phone: (734) 453-5123		TAT if different from Below		Matrix		Job / SDG No.:		Sample Specific Notes:	
Fax:		2 weeks		C		Job / SDG No.:			
Project Name: RACER known GWP		1 week		WT 6		Job / SDG No.:			
Site: Livonia, MI		2 days				Job / SDG No.:			
PO # 12607-TOYU6-002		1 day				Job / SDG No.:			
Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=Grab)		# of Cont.	
WT-012607-08WU6-EEWU		8/10/16		1500		C		6	
Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other									
Possible Hazard Identification:									
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.									
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown									
Special Instructions/QC Requirements & Comments:									
Custody Seals Intact: ☐ Yes ☐ No									
Relinquished by: E. Engler									
Relinquished by:									
Relinquished by:									
Custody Seal No.:									
Company: GHD Services									
Date/Time: 8/10/16									
Received by:									
Received in Laboratory by:									
Date/Time:									
Date/Time:									
Date/Time:									
Cooler Temp. (°C): Obs'd:									
Cor'd:									
Company: TANC									
Date/Time: 8/11/16 9:15									

Login # : 08204

TestAmerica Canton Sample Receipt Form/Narrative

Canton Facility SHD Services Inc. Site Name SHD Cooler unpacked by Tom

Cooler Received on 8/11/14 Opened on 8/11/14

FedEx: 1st Grd Exp UPS FAS Stetson Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # _____ Foam Box Client Cooler Box _____ Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None ☐ See Multiple Cooler Form

- Cooler temperature upon receipt
 IR GUN# IR-8 (CF +1.3 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 IR GUN #36 (CF +1.0 °C) Observed Cooler Temp. 0.8 °C Corrected Cooler Temp. 1.8 °C
- Were custody seals on the outside of the cooler(s)? If Yes Quantity 2 Yes No
 -Were custody seals on the outside of the cooler(s) signed & dated? Yes No NA
 -Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
- Shippers' packing slip attached to the cooler(s)? Yes No
- Did custody papers accompany the sample(s)? Yes No
- Were the custody papers relinquished & signed in the appropriate place? Yes No
- Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
- Did all bottles arrive in good condition (Unbroken)? Yes No
- Could all bottle labels be reconciled with the COC? Yes No
- Were correct bottle(s) used for the test(s) indicated? Yes No
- Sufficient quantity received to perform indicated analyses? Yes No
- Are these work share samples?
 If yes, Questions 11-15 have been checked at the originating laboratory. Yes No NA pH Strip Lot# HC574756
- Were sample(s) at the correct pH upon receipt? Yes No
- Were VOAs on the COC? Yes No NA
- Were air bubbles >6 mm in any VOA vials? Yes No
- Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
- Was a LL Hg or Me Hg trip blank present? _____ Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____

Concerning _____

Samples processed by: _____

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

Temperature readings: _____

<u>Client Sample ID</u>	<u>Lab ID</u>	<u>Container Type</u>	<u>Container pH</u>	<u>Preservative Added (mls)</u>	<u>Lot #</u>
WT-012607-081016-EE-001	240-68204-B-I	Plastic 500ml - with Nitric Acid	<2	_____	_____
WT-012607-081016-EE-001	240-68204-E-I	Amber Glass 1 liter - Sulfuric Acid	_____	_____	_____
WT-012607-081016-EE-001	240-68204-F-I	Amber Glass 1 liter - Sulfuric Acid	_____	_____	_____