



# Riverfront Park Site Characterization Report

Town of Lewiston





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# 1. Introduction

GHD has completed a site characterization of the proposed Town of Lewiston (Town) Riverfront Park site (Site) located at 4358 Lower River Road in Lewiston, New York. The Site is shown on Figure 1.

This report discusses the characterization activities completed at the Site and GHD's conclusions and recommendations associated with future use of the property.

## 1.1 Site History

The Site was historically owned by the United States government and was the site of a water intake for the Lake Ontario Ordnance Works in Model City, New York. Two 60-inch intake lines extended underwater from a point 365 feet in the Niagara River to an upland intake well located 85 feet on shore. The intake well, a 54-inch pipe, a pump station, and a gate house were located on the Site. The water intake and associated infrastructure were determined to be obsolete around 1965, at which time the Town began to acquire the property with the intent to use the Site and infrastructure for the Town's sewage treatment facility outfall. This was completed over the next 10 years and the new wastewater system/outfall became operational in 1976.

The Town initiated a project in 1977 to inspect the two 60-inch former intake pipes which were now part of the Wastewater Treatment Plant (WWTP) outfall. Inspection of the pipes was limited by the accumulation of sediments within the pipes, and a second attempt at inspection and sampling of accumulated materials was completed in December 1977. The data are summarized on Table 1. The analysis completed at that time indicated the presence of metals (chromium, copper, mercury, nickel, zinc), total polychlorinated biphenyls (PCBs), and the pesticide lindane (gamma-BHC) in the two sediment samples collected from the discharge pipes. Additionally, a test for total halogenated organics indicated a concentration range of 0.38 – 0.55%. No applicable comparison criteria were provided in the data report. Comparison of these historical data to the current 6 NYCRR Part 375 criteria adopted in 2006 indicates that the only compounds in excess of the current regulatory criteria are total PCBs at concentrations ranging from 2.1 mg/kg to 2.6 mg/kg in comparison to the criteria of 1 mg/kg, and mercury at concentrations ranging from 8.6 mg/kg to 12.4 mg/kg in comparison to the criteria of 0.81 mg/kg.

Based on the findings of the inspection and sampling activities, removal and collection of the accumulated sediments from the pipes followed by on-Site dewatering/disposal of the removed solids was proposed. Plans and specifications for cleaning the outfall were completed. The Town was issued a permit by the New York State Department of Environmental Conservation (NYSDEC) in June 1980 to clean the outfall and contain and dewater the solids. As part of the permit conditions, the Town constructed two dewatering basins (basins or lagoons) on the Site to settle and dewater sediments removed from the outfall. Each basin was approximately 139 feet by 82 feet, and constructed to a depth approximately 3 to 4 feet below the surrounding grade (base elevation of 248.0 compared with surrounding grades of 261.0 – 262.0 as indicated on the historical lagoon construction design drawing). The basins were encircled by a berm constructed to a height at least 2.5 feet above the surrounding grade. At the completion of the project, the dewatered solids were



left in place, the berms were graded flat, and the basins were covered with 18 inches of clean fill and landscaped. The location of the historical dewatering lagoons are shown on Figure 2.

The Site has remained undeveloped since completion of that project.

## 1.2 Proposed Development

The Town is pursuing development of the Site as Riverfront Park, which may include parking areas, walking trails, picnic pavilions, and a kayak launch/Niagara River access. Passive recreational uses are those with limited potential for soil contact, while active recreational uses are public uses with a reasonable potential for soil contact. As a conservative measure, this proposed development is being considered an active recreational use under 6 NYCRR Part 375. As such, Part 375 Restricted Residential criteria apply for comparison of analytical data.

# 2. Physical Characteristics

## 2.1 Site Description

The Site is an approximately 5.7-acre parcel owned by the Town on the west side of Lower River Road between the road and the Niagara River. The property slopes to the west toward the river. A small brick structure is located near the entrance drive to the property along Lower River Road. This building was a former pump station, but is no longer in service. A larger brick structure is located mid-slope on the eastern third of the property and is used by the Town Public Works Department for storage and maintenance of landscaping equipment. The property is not fenced, but a gate across the access drive is in place to deter access.

North of the Site is a Tennessee Gas Pipeline compressor station, with residential property further to the north. South of the property is the Stella Niagara nature preserve. The Niagara River forms the west boundary of the Site, while Lower River Road and the Lewiston Senior Center and Town Park are to the east of the Site. The Town WWTP discharge (54-inch pipe) and a town storm sewer (18-inch pipe) traverse the property from east to west, ultimately discharging to the Niagara River.

Based on the Soil Survey of Niagara County, New York issued by the United States Department of Agriculture Soil Conservation Service (October, 1972), the Site is located north of the escarpment on the Ontario Plain. There is little significant relief except in the immediate vicinity except along major drainage ways.

A review of the United State Geological Survey (USGS) Lewiston, New York – Ontario 7.5-minute topographic quadrangle map shows the elevation at the east end of the Site along Lower River Road to be approximately 315 feet above mean sea level (AMSL). The Site has a steep slope to the west toward the Niagara River, dropping to an elevation of approximately 275 feet AMSL before leveling off across the western half of the Site.

## 2.2 Geology

Soils in the area of the Site are dominated by lake-laid sands and are in the Claverack-Cosad-Elnora association consisting of generally deep, moderately well-drained and somewhat poorly-drained soils having a coarse-textured subsoil over clay or fine sand. The Site is underlain by the Queenston



Shale. Depth to bedrock is approximately 11 feet below grade in the western half of the Site based on the depth of refusal during the direct push drilling activities completed by GHD.

Based on the soil borings, native soils appear to be primarily silts and silty clay, with fine to coarse gravel intermixed.

### 3. Summary of Site Investigation Activities

GHD initially had limited information available regarding the location of the historical lagoons, so soil borings were located based on a staggered grid pattern to provide a broad assessment of the property. GHD retained TREC Environmental, Inc. of Spencerport, New York to install the borings using direct-push technology. A total of 12 soil borings (SB-1 through SB-12) were installed across the Site on July 25, 2018 and advanced into native clay, or in the absence of a distinct clay layer, refusal. Total depths ranged from 8 to 11 feet below ground surface (bgs). Soil cores were collected continually from each borehole. A GHD engineer was present to observe the borehole installation and document the soil lithology of the samples. Drilling logs are provided as Appendix A.

One soil sample was generated from each borehole based on the soil observations for laboratory analysis. If visually impacted material was observed, a discrete sample of that material was collected, otherwise a composite of the unconsolidated soils was generated. The sampling depths are summarized below.

Boring Location	Sampling Depth	Sample Type
SB-1	5 feet bgs	Discrete - Material somewhat darker in color than other soils in sampler
SB-2	0.5 – 4.0 feet bgs	Composite
SB-3	0.5 – 6.5 feet bgs	Composite
SB-4	0.5 – 3.0 feet bgs	Composite
SB-5	0.5 – 7.25 feet bgs	Composite
SB-6	0.5 – 6.5 feet bgs	Composite
SB-7	0.75 – 6.25 feet bgs	Composite
SB-8	0.5 – 10.75 feet bgs	Composite
SB-9	4.0 – 11.0 feet bgs	Composite
SB-10	2.0 – 7.5 feet bgs	Composite
SB-11	0.5 – 7.5 feet bgs	Composite
SB-12	0.5 – 7.0 feet bgs	Composite

The soil samples were submitted to TestAmerica in Amherst, New York for analysis of the 6 NYCRR Part 375 list of compounds. Samples were analyzed by the following methods: volatile organic compounds (VOCs) by USEPA Method 8260C, semivolatile organic compounds (SVOCs) by USEPA Method 8270D, pesticides by USEPA Method 8081B, polychlorinated biphenyls (PCBs) by USEPA Method 8082A, Herbicides (Silvex) by USEPA Method 8151A, Metals by USEPA Method 6010C, and mercury by Method 7471B.



Other than some low-level detections of acetone and 2-butanone (methyl ethyl ketone), no VOCs were detected. The low-level detections of these compounds were well below the Part 375 criteria for restricted residential property use.

SVOCs were detected in the sample collected from SB-10. All results were below the Part 375 criteria for restricted residential property use.

4,4'-DDD was detected in the samples collected from SB-4, SB-8, and SB-9, while alpha-BHC and beta-BHC were detected in the sample from SB-10. All results were well below the Part 375 criteria for restricted residential property use.

No PCBs or Silvex were detected in any of the samples.

Metals were present in all samples as expected; however, concentrations of arsenic exceeded the Part 375 criteria for restricted residential property use at locations SB-2, SB-3, SB4, SB-6, and SB-8 at concentrations ranging from 21.1 mg/kg to 30.4 mg/kg compared to the standard of 16 mg/kg. In addition, concentrations of manganese and mercury exceeded the Part 375 criteria for residential property use at location SB-10 at concentrations of 3,750 mg/kg and an estimated 0.90 mg/kg, respectively, compared to criteria of 2,000 mg/kg and 0.81 mg/kg.

Part 375 requires a layer of 2 feet of clean soil/fill or some other structure/cap (e.g., parking lot, building slab) between the ground surface and soils in excess of the restricted residential criteria to prevent contact with impacted soil. Because the initial sampling results identified possible exceedances of the Part 375 criteria in the 0 – 2 foot surface zone, additional sampling was completed at locations SB-2, SB-3, SB-4, SB-6, and SB-8 on August 31, 2018 as summarized below.

Boring Location	Sampling Depth	Sample Type
SB-2	0-2.0 feet bgs	Composite
SB-3	0-2.0 feet bgs	Composite
SB-4	0-2.0 feet bgs	Composite
SB-6	0-2.0 feet bgs	Composite
SB-8	0-2.0 feet bgs	Composite

Composite soil samples were manually collected from the 0- to 2-foot zone using a shovel and hand trowel. The samples were submitted for arsenic analysis only as this was the only parameter in excess of the criteria in the surface soils.

Only the arsenic results at location SB-2 exceeded the Part 375 criteria for restricted residential property use at a concentration of 17.4 mg/kg.

GHD discussed the preliminary sampling results with the NYSDEC on October 1, 2018. Based on that discussion, additional information was provided by NYSDEC regarding the locations of the historical lagoons. GHD obtained a copy of the original Stream Disturbance Permit authorizing the lagoon construction and outfall cleaning dated June 10, 1980, as well as a supplemental packet of information containing the lagoon construction design shown in relation to a storm sewer manhole and the sanitary outfall.



Using this new information, GHD overlaid the locations of the historical lagoons onto a figure showing the previously installed sampling locations using the manhole and outfall as reference points to determine what samples if any were collected from within the historical lagoons. Measurements were confirmed in the field. Doing this showed that sampling locations SB-9 and SB-10 were located within the east and west lagoons, respectively. Because discrete samples of the 0- to 2-foot surface zone were not previously collected at these two locations, a third round of samples was collected on October 12, 2018. Samples of the 0- to 2-foot surface zone were collected at the original locations of SB-9 and SB-10, as well as at two additional locations in each of the historical lagoon footprints (SB-9A/9B and SB-10A/10B) as summarized below.

Boring Location	Sampling Depth	Sample Type
SB-9	0-2.0 feet bgs	Composite
SB-9A	0-2.0 feet bgs	Composite
SB-9B	0-2.0 feet bgs	Composite
SB-10	0-2.0 feet bgs	Composite
SB-10A	0-2.0 feet bgs	Composite
SB-10B	0-2.0 feet bgs	Composite

Composite soil samples were manually collected from the 0- to 2-foot zone using a shovel and hand trowel. The samples were submitted for metals analysis only as this was the only parameter group detected above the restricted residential criteria during the initial round of sampling at the Site.

Metals were present in all samples as expected; however, concentrations of arsenic exceeded the Part 375 criteria for restricted residential property use at location SB-9. Arsenic was detected at a concentration of 28.7 mg/kg compared to the criteria of 16 mg/kg. Concentrations of manganese and mercury, previously detected above the Part 375 criteria at depth at location SB-10 were all below criteria in the 0- to 2-foot surface zone samples.

The analytical data reports for the three rounds of sampling are provided as Appendix B.

## 4. Summary and Recommendations

As part of the outfall cleaning project in the late 1970s and early 1980s, the Town constructed two dewatering lagoons on the Site to settle and dewater sediments removed from the outfall. Once the solids were dewatered, the site was covered with 18 inches of clean fill, regraded, and landscaped.

Anecdotal reports had mentioned the presence of hazardous waste on Site; however, neither the historical analytical data nor current data support this. GHD completed installation of 12 soil borings and three rounds of soil sampling to characterize the subsurface and surface soil conditions at the Site. Although elevated concentrations of mercury were historically detected in the sediment, concentrations in the subsurface only slightly exceeded the applicable Part 375 restricted residential criteria. Concentrations of mercury in the 0- to 2-foot surface zone were all below the applicable criteria. Other historical contaminants of concern included metals (chromium, copper, nickel, zinc), total PCBs, and the pesticide lindane (gamma-BHC). None of these compounds were detected at depth or in the 0- to 2-foot surface zone at concentrations in excess of the Part 375 restricted residential criteria.



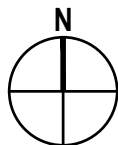
The only compound to exceed the applicable criteria in the 0- to 2-foot surface zone at the site is arsenic which was detected at locations SB-2 and SB-9 at concentrations of 17.4 mg/kg and an estimated 28.7 mg/kg, respectively, above the criteria of 16 mg/kg. No conclusions can be drawn as to the source of the arsenic, which could be either naturally occurring, the result of agricultural pesticide applications in the vicinity, or some other environmental source.

The presence of arsenic at these concentrations does not preclude development of the Site, but will require proper management to prevent direct contact by the general public. Options to accomplish this include removal of the impacted material and replacement with clean fill in accordance with Part 375-6.7(d), covering of the affected areas with 2 feet of clean fill in accordance with Part 375-6.7(d), or covering of the affected areas with some other permanent structure such as a paved parking area or structural slab or foundation.

There is precedent for managing non-hazardous but impacted material exceeding applicable criteria in place at public use sites. Examples of where this has occurred include the Buffalo Harbor State Park, Outer Harbor Recreational Area (the Greenbelt between the Bell Slip and Municipal Pier), and Wilkeson Point in the City of Buffalo. All of these properties are constructed on manufactured land, which is land that was built by infilling of the lake shore and nearshore impoundments with dredged sediments from the Buffalo Harbor and Buffalo River as well as municipal ash. Other historical uses such as manufacturing and illegal dumping have resulted in the presence of contaminant concentrations above applicable use criteria. With the installation of appropriate cover, impacted soils remain in place and the sites are available for public recreational use.



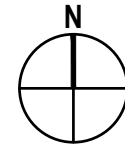
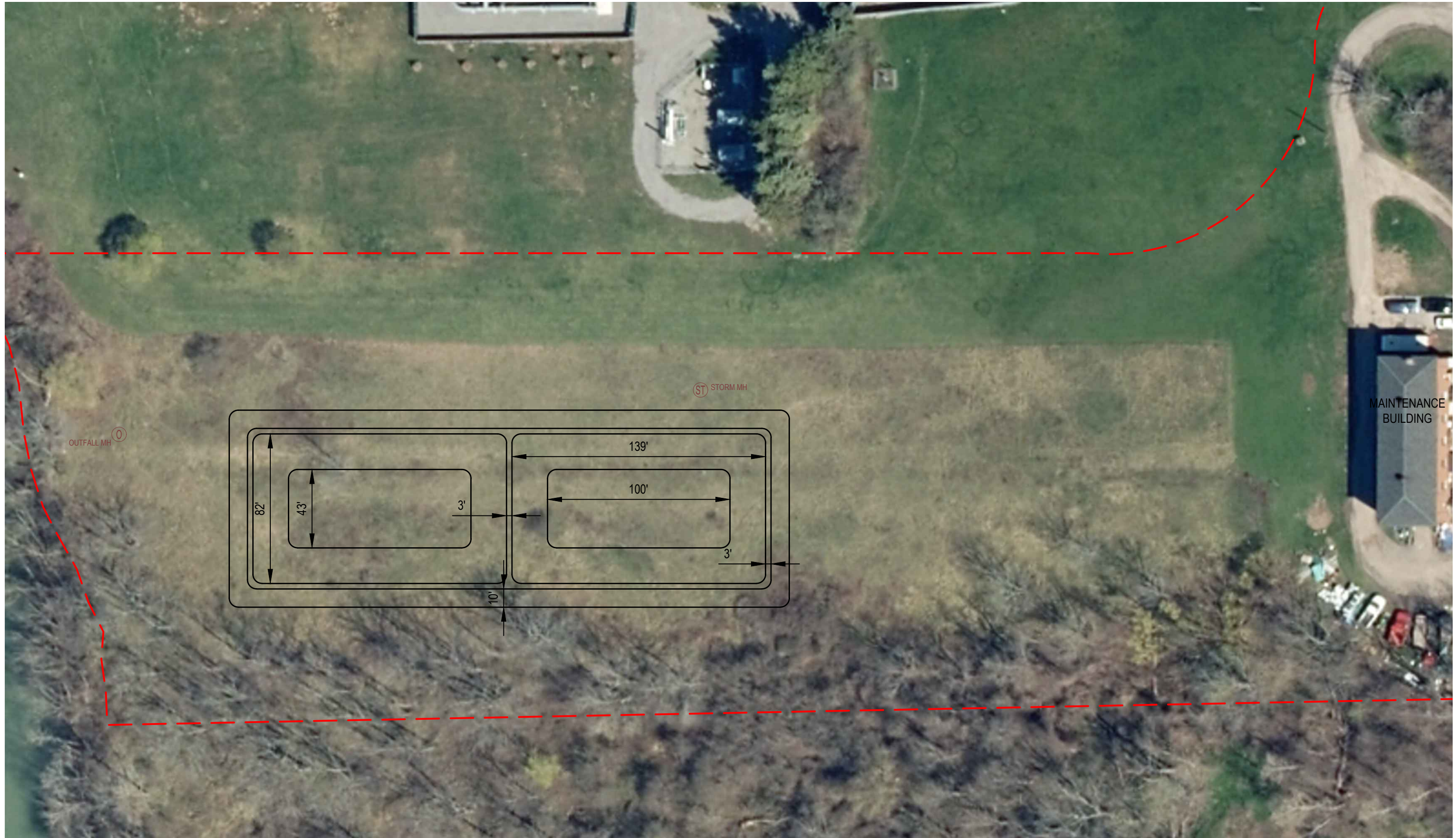
# Figures



TOWN OF LEWISTON  
RIVERFRONT PARK  
SITE LOCATION MAP

Project No. 11137156  
Report No. 005  
Date NOV 2018

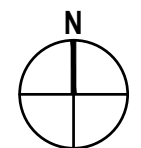
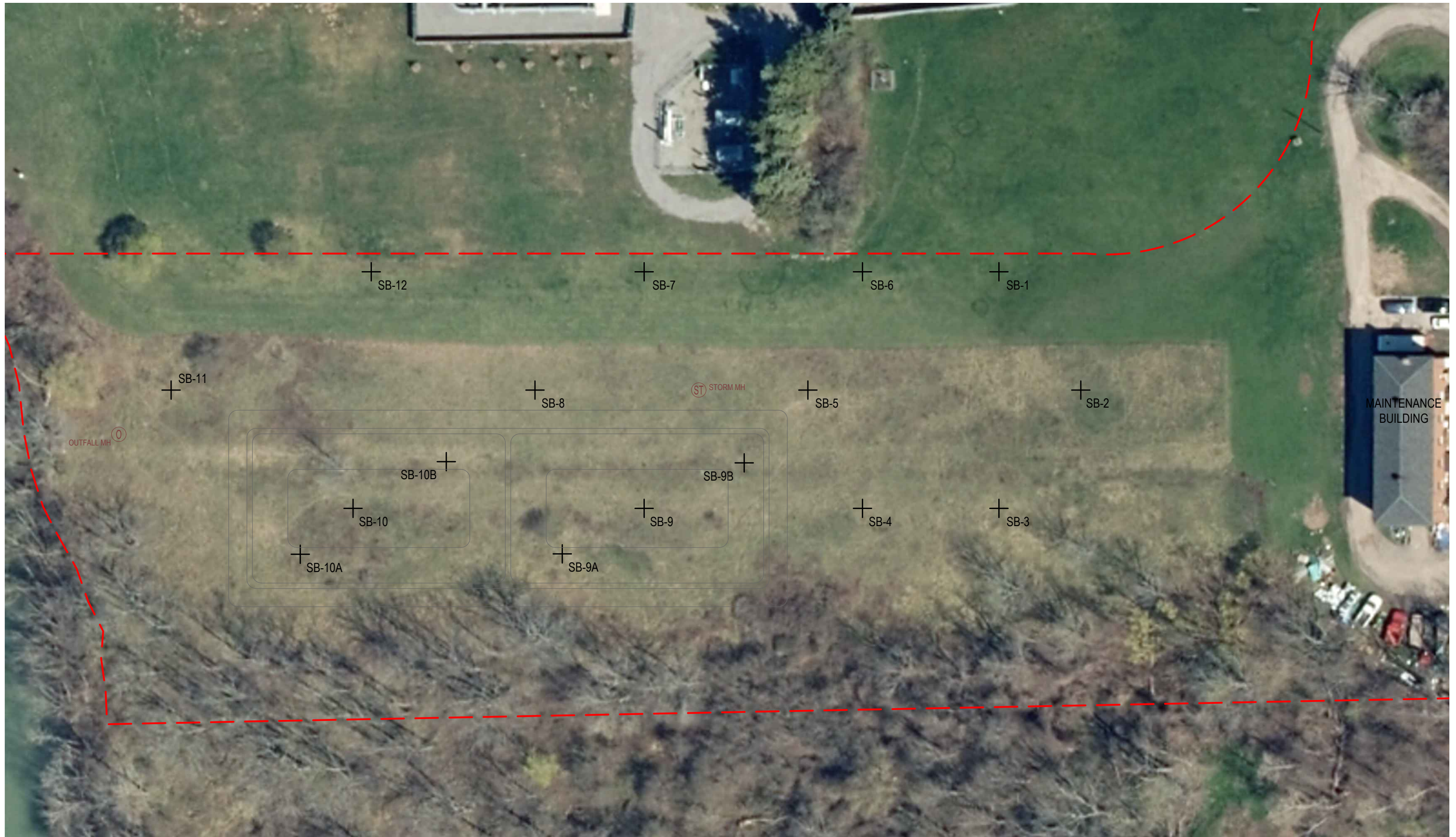
**FIG 001**



TOWN OF LEWISTON  
 RIVERFRONT PARK  
**HISTORICAL SETTLING PONDS**

Project No. 11137156  
 Report No. 005  
 Date NOV 2018

**FIGURE 002**



TOWN OF LEWISTON  
RIVERFRONT PARK  
  
SAMPLE LOCATIONS

Project No. 11137156  
Report No. 005  
Date NOV 2018

**FIGURE 003**

# Tables

**Table 1  
Town of Lewiston  
Riverfront Park Site Characterization  
Historical Sediment Data**

Parameters	NYSDEC Part 375 Restricted Residential <sup>1</sup>	Unit	Location ID: Sample Date:	Upstream (South) Pipe 12/9/1977	Downstream (North) Pipe 12/14/1977
<b>Organics</b>					
Total Halogenated Organics	NS	%		0.55	0.38
<b>Pesticides/PCBs</b>					
4,4'-DDD	13000	µg/kg		20 U	20 U
4,4'-DDE	8900	µg/kg		20 U	20 U
4,4'-DDT	7900	µg/kg		20 U	20 U
alpha-BHC	480	µg/kg		20 U	20U
beta-BHC	360	µg/kg		40 U	40 U
Endrin	11000	µg/kg		20 U	20 U
gamma-BHC (lindane)	1300	µg/kg		140	80
Heptachlor	2100	µg/kg		20 U	20 U
Heptachlor Epoxide <sup>2</sup>	77	µg/kg		20 U	20 U
Hexachlorobenzene	1200	µg/kg		20 U	20 U
Methoxychlor <sup>2</sup>	100000	µg/kg		20 U	20 U
Mirex	NS			20 U	20 U
Total PCBs	1	mg/kg		<b>2.6</b>	<b>2.1</b>
<b>Metals</b>					
Cadmium	4.3	mg/kg		1 U	1 U
Chromium <sup>3</sup>	110	mg/kg		40	24
Copper	270	mg/kg		25	17
Lead	400	mg/kg		3 U	3 U
Mercury	0.81	mg/kg		<b>8.6</b>	<b>12.4</b>
Nickel	310	mg/kg		29	15
Zinc	10000	mg/kg		107	120

**Notes:**

<sup>1</sup> Restricted Residential criteria apply to active recreational uses.

<sup>2</sup> No standard is established in Part 375. The Supplemental Soil Cleanup Objective for Residential Use was applied from CP-51.

<sup>3</sup> Since the chromium compound is not specified, the more restrictive criteria for hexavalent chromium are used for comparison.

µg/kg Micrograms per kilogram (parts per billion [ppb]).

mg/kg Milligrams per kilogram (parts per million [ppm]).

NS No standard.

U Non-detect at the indicated reporting limit.

**2.6** Exceeds the indicated regulatory criteria.

**Table 2**  
**Town of Lewiston**  
**Riverfront Park Site Characterization**  
**Soil Sampling Results Summary**

	Location ID:	SB-1	SB-2	SB-2	SB-3
	Sample Name:	SO-11137156-072518-AG-001	SO-11137156-072518-AG-002	SO-11137156-083118-CS-002	SO-11137156-072518-AG-003
	Sample Date:	07/25/2018	07/25/2018	08/31/2018	07/25/2018
	Depth:	5'	0.5-4'	0-2'	0.5-6.5'
Parameters	NYSDEC Part 375 Restricted Residential <sup>1</sup>	Unit			
<b>Volatile Organic Compounds</b>					
1,1,1-Trichloroethane	100000	µg/kg	4.4 U	3.6 U	--
1,1-Dichloroethane	26000	µg/kg	4.4 U	3.6 U	--
1,1-Dichloroethene	100000	µg/kg	4.4 U	3.6 U	--
1,2,4-Trimethylbenzene	52000	µg/kg	4.4 U	3.6 U	--
1,2-Dichlorobenzene	100000	µg/kg	4.4 U	3.6 U	--
1,2-Dichloroethane	3100	µg/kg	4.4 U	3.6 U	--
1,3,5-Trimethylbenzene	52000	µg/kg	4.4 U	3.6 U	--
1,3-Dichlorobenzene	49000	µg/kg	4.4 U	3.6 U	--
1,4-Dichlorobenzene	13000	µg/kg	4.4 U	3.6 U	--
1,4-Dioxane	13000	µg/kg	88 U	72 U	--
2-Butanone (Methyl ethyl ketone) (MEK)	100000	µg/kg	3.3 J	18 U	--
2-Phenylbutane (sec-Butylbenzene)	100000	µg/kg	4.4 U	3.6 U	--
Acetone	100000	µg/kg	41	18 U	--
Benzene	4800	µg/kg	4.4 U	3.6 U	--
Carbon tetrachloride	2400	µg/kg	4.4 U	3.6 U	--
Chlorobenzene	100000	µg/kg	4.4 U	3.6 U	--
Chloroform (Trichloromethane)	49000	µg/kg	4.4 U	3.6 U	--
cis-1,2-Dichloroethene	100000	µg/kg	4.4 U	3.6 U	--
Ethylbenzene	41000	µg/kg	4.4 U	3.6 U	--
Methyl tert butyl ether (MTBE)	100000	µg/kg	4.4 U	3.6 U	--
Methylene chloride	100000	µg/kg	4.4 U	3.6 U	--
N-Butylbenzene	100000	µg/kg	4.4 U	3.6 U	--
N-Propylbenzene	100000	µg/kg	4.4 U	3.6 U	--
tert-Butylbenzene	100000	µg/kg	4.4 U	3.6 U	--
Tetrachloroethene	19000	µg/kg	4.4 U	3.6 U	--
Toluene	100000	µg/kg	4.4 U	3.6 U	--
trans-1,2-Dichloroethene	100000	µg/kg	4.4 U	3.6 U	--
Trichloroethene	21000	µg/kg	4.4 U	3.6 U	--
Vinyl chloride	900	µg/kg	4.4 U	3.6 U	--
Xylenes (total)	100000	µg/kg	8.8 U	7.2 U	--
<b>Semivolatile Organic Compounds</b>					
2-Methylphenol	100000	µg/kg	210 U	200 U	--
3-Methylphenol	100000	µg/kg	410 U	390 U	--
4-Methylphenol	100000	µg/kg	410 U	390 U	--
Acenaphthene	100000	µg/kg	210 U	200 U	--
Acenaphthylene	100000	µg/kg	210 U	200 U	--
Anthracene	100000	µg/kg	210 U	200 U	--
Benzo(a)anthracene	1000	µg/kg	210 U	200 U	--
Benzo(a)pyrene	1000	µg/kg	210 U	200 U	--
Benzo(b)fluoranthene	1000	µg/kg	210 U	200 U	--
Benzo(g,h,i)perylene	100000	µg/kg	210 U	200 U	--
Benzo(k)fluoranthene	3900	µg/kg	210 U	200 U	--
Chrysene	3900	µg/kg	210 U	200 U	--
Dibenz(a,h)anthracene	330	µg/kg	210 U	200 U	--

**Table 2**  
**Town of Lewiston**  
**Riverfront Park Site Characterization**  
**Soil Sampling Results Summary**

Parameters	NYSDEC Part 375 Restricted Residential <sup>1</sup>	Unit	Location ID:	SB-1	SB-2	SB-2	SB-3
			Sample Name:	SO-11137156-072518-AG-001	SO-11137156-072518-AG-002	SO-11137156-083118-CS-002	SO-11137156-072518-AG-003
			Sample Date:	07/25/2018	07/25/2018	08/31/2018	07/25/2018
			Depth:	5'	0.5-4'	0-2'	0.5-6.5'
<b>Dibenzofuran</b>							
	59000	µg/kg		210 U	200 U	--	190 U
<b>Fluoranthene</b>							
	100000	µg/kg		210 U	200 U	--	190 U
<b>Fluorene</b>							
	100000	µg/kg		210 U	200 U	--	190 U
<b>Hexachlorobenzene</b>							
	1200	µg/kg		210 U	200 U	--	190 U
<b>Indeno(1,2,3-cd)pyrene</b>							
	500	µg/kg		210 U	200 U	--	190 U
<b>Naphthalene</b>							
	100000	µg/kg		210 U	200 U	--	190 U
<b>Pentachlorophenol</b>							
	6700	µg/kg		410 U	390 U	--	370 U
<b>Phenanthrene</b>							
	100000	µg/kg		210 U	200 U	--	190 U
<b>Phenol</b>							
	100000	µg/kg		210 U	200 U	--	190 U
<b>Pyrene</b>							
	100000	µg/kg		210 U	200 U	--	190 U
<b>PCBs</b>							
Aroclor-1016 (PCB-1016)	1	mg/kg		0.25 U	0.23 U	--	0.25 U
Aroclor-1221 (PCB-1221)	1	mg/kg		0.25 U	0.23 U	--	0.25 U
Aroclor-1232 (PCB-1232)	1	mg/kg		0.25 U	0.23 U	--	0.25 U
Aroclor-1242 (PCB-1242)	1	mg/kg		0.25 U	0.23 U	--	0.25 U
Aroclor-1248 (PCB-1248)	1	mg/kg		0.25 U	0.23 U	--	0.25 U
Aroclor-1254 (PCB-1254)	1	mg/kg		0.25 U	0.23 U	--	0.25 U
Aroclor-1260 (PCB-1260)	1	mg/kg		0.25 U	0.23 U	--	0.25 U
<b>Herbicides</b>							
2,4,5-TP (Silvex)	100000	µg/kg		21 U	20 U	--	19 U
<b>Pesticides</b>							
4,4'-DDD	13000	µg/kg		2.1 U	1.9 U	--	1.9 U
4,4'-DDE	8900	µg/kg		2.1 U	1.9 U	--	1.9 U
4,4'-DDT	7900	µg/kg		2.1 U	1.9 U	--	1.9 U
Aldrin	97	µg/kg		2.1 U	1.9 U	--	1.9 U
alpha-BHC	480	µg/kg		2.1 U	1.9 U	--	1.9 U
alpha-Chlordane	4200	µg/kg		2.1 U	1.9 U	--	1.9 U
beta-BHC	360	µg/kg		2.1 U	1.9 U	--	1.9 U
delta-BHC	100000	µg/kg		2.1 U	1.9 U	--	1.9 U
Dieldrin	200	µg/kg		2.1 U	1.9 U	--	1.9 U
Endosulfan I	24000	µg/kg		2.1 U	1.9 U	--	1.9 U
Endosulfan II	24000	µg/kg		2.1 U	1.9 U	--	1.9 U
Endosulfan sulfate	24000	µg/kg		2.1 U	1.9 U	--	1.9 U
Endrin	11000	µg/kg		2.1 U	1.9 U	--	1.9 U
gamma-BHC (lindane)	1300	µg/kg		2.1 U	1.9 U	--	1.9 U
Heptachlor	2100	µg/kg		2.1 U	1.9 U	--	1.9 U
<b>Metals</b>							
Arsenic	16	mg/kg		12.6	30.4	17.4	26.0
Barium	400	mg/kg		39.1	35.7	--	38.6
Beryllium	72	mg/kg		0.52	0.56	--	0.58
Cadmium	4.3	mg/kg		0.26 U	0.24 U	--	0.23 U
Chromium III (trivalent)	180	mg/kg		16.6	19.8	--	15.7



**Table 2  
Town of Lewiston  
Riverfront Park Site Characterization  
Soil Sampling Results Summary**

Parameters	NYSDEC Part 375 Restricted Residential <sup>1</sup>	Unit	Location ID:	SB-1	SB-2	SB-2	SB-3
			Sample Name:	SO-11137156-072518-AG-001	SO-11137156-072518-AG-002	SO-11137156-083118-CS-002	SO-11137156-072518-AG-003
			Sample Date:	07/25/2018	07/25/2018	08/31/2018	07/25/2018
			Depth:	5'	0.5-4'	0-2'	0.5-6.5'
Chromium VI (hexavalent)	110	mg/kg		2.5 U	2.4 U	--	2.3 U
Copper	270	mg/kg		14.4	15.9	--	14.0
Lead	400	mg/kg		11.8	11.8	--	10.4
Manganese	2000	mg/kg		118	137	--	146
Mercury	0.81	mg/kg		0.026 U	0.017 J	--	0.014 J
Nickel	310	mg/kg		15.5	17.2	--	17.4
Selenium	180	mg/kg		5.2 U	4.7 U	--	4.5 U
Silver	180	mg/kg		0.78 U	0.71 U	--	0.68 U
Zinc	10000	mg/kg		34.4	38.1	--	39.6

**Notes:**

<sup>1</sup> Restricted Residential criteria apply to active recreational uses.

µg/kg Micrograms per kilogram (parts per billion [ppb])

mg/kg Milligrams per kilogram (parts per million [ppm])

J Result is less than the reporting limit, but greater than or equal to the method detection limit resulting in an approximate value.

U Non-detect at the indicated reporting limit.

**30.4** Exceeds the indicated regulatory criteria.

**Table 2**  
**Town of Lewiston**  
**Riverfront Park Site Characterization**  
**Soil Sampling Results Summary**

Parameters	NYSDEC Part 375 Restricted Residential <sup>1</sup>	Unit	Location ID:	SB-3	SB-4	SB-4	SB-5
			Sample Name:	SO-11137156-083118-CS-003	SO-11137156-072518-AG-004	SO-11137156-083118-CS-004	SO-11137156-072518-AG-005
			Sample Date:	08/31/2018	07/25/2018	08/31/2018	07/25/2018
			Depth:	0-2'	0.5-3'	0-2'	0.5-7.25'
<b>Volatile Organic Compounds</b>							
1,1,1-Trichloroethane	100000	µg/kg	--	--	3.0 U	--	4.3 U
1,1-Dichloroethane	26000	µg/kg	--	--	3.0 U	--	4.3 U
1,1-Dichloroethene	100000	µg/kg	--	--	3.0 U	--	4.3 U
1,2,4-Trimethylbenzene	52000	µg/kg	--	--	3.0 U	--	4.3 U
1,2-Dichlorobenzene	100000	µg/kg	--	--	3.0 U	--	4.3 U
1,2-Dichloroethane	3100	µg/kg	--	--	3.0 U	--	4.3 U
1,3,5-Trimethylbenzene	52000	µg/kg	--	--	3.0 U	--	4.3 U
1,3-Dichlorobenzene	49000	µg/kg	--	--	3.0 U	--	4.3 U
1,4-Dichlorobenzene	13000	µg/kg	--	--	3.0 U	--	4.3 U
1,4-Dioxane	13000	µg/kg	--	--	60 U	--	87 U
2-Butanone (Methyl ethyl ketone) (MEK)	100000	µg/kg	--	--	15 U	--	22 U
2-Phenylbutane (sec-Butylbenzene)	100000	µg/kg	--	--	3.0 U	--	4.3 U
Acetone	100000	µg/kg	--	--	12 J	--	8.6 J
Benzene	4800	µg/kg	--	--	3.0 U	--	4.3 U
Carbon tetrachloride	2400	µg/kg	--	--	3.0 U	--	4.3 U
Chlorobenzene	100000	µg/kg	--	--	3.0 U	--	4.3 U
Chloroform (Trichloromethane)	49000	µg/kg	--	--	3.0 U	--	4.3 U
cis-1,2-Dichloroethene	100000	µg/kg	--	--	3.0 U	--	4.3 U
Ethylbenzene	41000	µg/kg	--	--	3.0 U	--	4.3 U
Methyl tert butyl ether (MTBE)	100000	µg/kg	--	--	3.0 U	--	4.3 U
Methylene chloride	100000	µg/kg	--	--	3.0 U	--	4.3 U
N-Butylbenzene	100000	µg/kg	--	--	3.0 U	--	4.3 U
N-Propylbenzene	100000	µg/kg	--	--	3.0 U	--	4.3 U
tert-Butylbenzene	100000	µg/kg	--	--	3.0 U	--	4.3 U
Tetrachloroethene	19000	µg/kg	--	--	3.0 U	--	4.3 U
Toluene	100000	µg/kg	--	--	3.0 U	--	4.3 U
trans-1,2-Dichloroethene	100000	µg/kg	--	--	3.0 U	--	4.3 U
Trichloroethene	21000	µg/kg	--	--	3.0 U	--	4.3 U
Vinyl chloride	900	µg/kg	--	--	3.0 U	--	4.3 U
Xylenes (total)	100000	µg/kg	--	--	6.0 U	--	8.7 U
<b>Semivolatile Organic Compounds</b>							
2-Methylphenol	100000	µg/kg	--	--	190 U	--	180 U
3-Methylphenol	100000	µg/kg	--	--	360 U	--	340 U
4-Methylphenol	100000	µg/kg	--	--	360 U	--	340 U
Acenaphthene	100000	µg/kg	--	--	190 U	--	180 U
Acenaphthylene	100000	µg/kg	--	--	190 U	--	180 U
Anthracene	100000	µg/kg	--	--	190 U	--	180 U
Benzo(a)anthracene	1000	µg/kg	--	--	190 U	--	180 U
Benzo(a)pyrene	1000	µg/kg	--	--	190 U	--	180 U
Benzo(b)fluoranthene	1000	µg/kg	--	--	190 U	--	180 U
Benzo(g,h,i)perylene	100000	µg/kg	--	--	190 U	--	180 U
Benzo(k)fluoranthene	3900	µg/kg	--	--	190 U	--	180 U
Chrysene	3900	µg/kg	--	--	190 U	--	180 U
Dibenz(a,h)anthracene	330	µg/kg	--	--	190 U	--	180 U

**Table 2**  
**Town of Lewiston**  
**Riverfront Park Site Characterization**  
**Soil Sampling Results Summary**

	Location ID:	SB-3	SB-4	SB-4	SB-5	
	Sample Name:	SO-11137156-083118-CS-003	SO-11137156-072518-AG-004	SO-11137156-083118-CS-004	SO-11137156-072518-AG-005	
	Sample Date:	08/31/2018	07/25/2018	08/31/2018	07/25/2018	
	Depth:	0-2'	0.5-3'	0-2'	0.5-7.25'	
<b>Parameters</b>	<b>NYSDEC Part 375 Restricted Residential <sup>1</sup></b>	<b>Unit</b>				
Dibenzofuran	59000	µg/kg	--	190 U	--	180 U
Fluoranthene	100000	µg/kg	--	190 U	--	180 U
Fluorene	100000	µg/kg	--	190 U	--	180 U
Hexachlorobenzene	1200	µg/kg	--	190 U	--	180 U
Indeno(1,2,3-cd)pyrene	500	µg/kg	--	190 U	--	180 U
Naphthalene	100000	µg/kg	--	190 U	--	180 U
Pentachlorophenol	6700	µg/kg	--	360 U	--	340 U
Phenanthrene	100000	µg/kg	--	190 U	--	180 U
Phenol	100000	µg/kg	--	190 U	--	180 U
Pyrene	100000	µg/kg	--	190 U	--	180 U
<b>PCBs</b>						
Aroclor-1016 (PCB-1016)	1	mg/kg	--	0.25 U	--	0.20 U
Aroclor-1221 (PCB-1221)	1	mg/kg	--	0.25 U	--	0.20 U
Aroclor-1232 (PCB-1232)	1	mg/kg	--	0.25 U	--	0.20 U
Aroclor-1242 (PCB-1242)	1	mg/kg	--	0.25 U	--	0.20 U
Aroclor-1248 (PCB-1248)	1	mg/kg	--	0.25 U	--	0.20 U
Aroclor-1254 (PCB-1254)	1	mg/kg	--	0.25 U	--	0.20 U
Aroclor-1260 (PCB-1260)	1	mg/kg	--	0.25 U	--	0.20 U
<b>Herbicides</b>						
2,4,5-TP (Silvex)	100000	µg/kg	--	19 U	--	17 U
<b>Pesticides</b>						
4,4'-DDD	13000	µg/kg	--	0.41 J	--	0.36 J
4,4'-DDE	8900	µg/kg	--	1.9 U	--	1.7 U
4,4'-DDT	7900	µg/kg	--	1.9 U	--	1.7 U
Aldrin	97	µg/kg	--	1.9 U	--	1.7 U
alpha-BHC	480	µg/kg	--	1.9 U	--	1.7 U
alpha-Chlordane	4200	µg/kg	--	1.9 U	--	1.7 U
beta-BHC	360	µg/kg	--	1.9 U	--	1.7 U
delta-BHC	100000	µg/kg	--	1.9 U	--	1.7 U
Dieldrin	200	µg/kg	--	1.9 U	--	1.7 U
Endosulfan I	24000	µg/kg	--	1.9 U	--	1.7 U
Endosulfan II	24000	µg/kg	--	1.9 U	--	1.7 U
Endosulfan sulfate	24000	µg/kg	--	1.9 U	--	1.7 U
Endrin	11000	µg/kg	--	1.9 U	--	1.7 U
gamma-BHC (lindane)	1300	µg/kg	--	1.9 U	--	1.7 U
Heptachlor	2100	µg/kg	--	1.9 U	--	1.7 U
<b>Metals</b>						
Arsenic	16	mg/kg	12.1	21.1	10.7	15.6
Barium	400	mg/kg	--	57.9	--	41.2
Beryllium	72	mg/kg	--	0.73	--	0.59
Cadmium	4.3	mg/kg	--	0.22 U	--	0.21 U
Chromium III (trivalent)	180	mg/kg	--	18.7	--	16.2

**Table 2  
Town of Lewiston  
Riverfront Park Site Characterization  
Soil Sampling Results Summary**

Parameters	NYSDEC Part 375 Restricted Residential <sup>1</sup>	Unit	Location ID:	SB-3	SB-4	SB-4	SB-5
			Sample Name:	SO-11137156-083118-CS-003	SO-11137156-072518-AG-004	SO-11137156-083118-CS-004	SO-11137156-072518-AG-005
			Sample Date:	08/31/2018	07/25/2018	08/31/2018	07/25/2018
			Depth:	0-2'	0.5-3'	0-2'	0.5-7.25'
Chromium VI (hexavalent)	110	mg/kg		--	2.2 U	--	2.1 U
Copper	270	mg/kg		--	12.8	--	20.0
Lead	400	mg/kg		--	12.2	--	17.7
Manganese	2000	mg/kg		--	234	--	287
Mercury	0.81	mg/kg		--	0.019 J	--	0.021 U
Nickel	310	mg/kg		--	23.5	--	21.8
Selenium	180	mg/kg		--	4.4 U	--	4.1 U
Silver	180	mg/kg		--	0.65 U	--	0.62 U
Zinc	10000	mg/kg		--	58.2	--	59.9

**Notes:**

<sup>1</sup> Restricted Residential criteria apply to active recreational uses.

µg/kg Micrograms per kilogram (parts per billion [ppb])

mg/kg Milligrams per kilogram (parts per million [ppm])

J Result is less than the reporting limit, but greater than or equal to the method detection limit resulting in an approximate value.

U Non-detect at the indicated reporting limit.

**30.4** Exceeds the indicated regulatory criteria.

**Table 2**  
**Town of Lewiston**  
**Riverfront Park Site Characterization**  
**Soil Sampling Results Summary**

	Location ID:	SB-6	SB-6	SB-7	SB-8
	Sample Name:	SO-11137156-072518-AG-006	SO-11137156-083118-CS-006	SO-11137156-072518-AG-007	SO-11137156-072518-AG-008
	Sample Date:	07/25/2018	08/31/2018	07/25/2018	07/25/2018
	Depth:	0.5-6.5'	0-2'	0.75-6.25'	0.5-10.75'
Parameters	NYSDEC Part 375 Restricted Residential <sup>1</sup>	Unit			
<b>Volatile Organic Compounds</b>					
1,1,1-Trichloroethane	100000	µg/kg	4.1 U	--	4.0 U
1,1-Dichloroethane	26000	µg/kg	4.1 U	--	4.0 U
1,1-Dichloroethene	100000	µg/kg	4.1 U	--	4.0 U
1,2,4-Trimethylbenzene	52000	µg/kg	4.1 U	--	4.0 U
1,2-Dichlorobenzene	100000	µg/kg	4.1 U	--	4.0 U
1,2-Dichloroethane	3100	µg/kg	4.1 U	--	4.0 U
1,3,5-Trimethylbenzene	52000	µg/kg	4.1 U	--	4.0 U
1,3-Dichlorobenzene	49000	µg/kg	4.1 U	--	4.0 U
1,4-Dichlorobenzene	13000	µg/kg	4.1 U	--	4.0 U
1,4-Dioxane	13000	µg/kg	81 U	--	81 U
2-Butanone (Methyl ethyl ketone) (MEK)	100000	µg/kg	20 U	--	20 U
2-Phenylbutane (sec-Butylbenzene)	100000	µg/kg	4.1 U	--	4.0 U
Acetone	100000	µg/kg	37	--	19 J
Benzene	4800	µg/kg	4.1 U	--	4.0 U
Carbon tetrachloride	2400	µg/kg	4.1 U	--	4.0 U
Chlorobenzene	100000	µg/kg	4.1 U	--	4.0 U
Chloroform (Trichloromethane)	49000	µg/kg	4.1 U	--	4.0 U
cis-1,2-Dichloroethene	100000	µg/kg	4.1 U	--	4.0 U
Ethylbenzene	41000	µg/kg	4.1 U	--	4.0 U
Methyl tert butyl ether (MTBE)	100000	µg/kg	4.1 U	--	4.0 U
Methylene chloride	100000	µg/kg	4.1 U	--	4.0 U
N-Butylbenzene	100000	µg/kg	4.1 U	--	4.0 U
N-Propylbenzene	100000	µg/kg	4.1 U	--	4.0 U
tert-Butylbenzene	100000	µg/kg	4.1 U	--	4.0 U
Tetrachloroethene	19000	µg/kg	4.1 U	--	4.0 U
Toluene	100000	µg/kg	4.1 U	--	4.0 U
trans-1,2-Dichloroethene	100000	µg/kg	4.1 U	--	4.0 U
Trichloroethene	21000	µg/kg	4.1 U	--	4.0 U
Vinyl chloride	900	µg/kg	4.1 U	--	4.0 U
Xylenes (total)	100000	µg/kg	8.1 U	--	8.1 U
<b>Semivolatile Organic Compounds</b>					
2-Methylphenol	100000	µg/kg	190 U	--	180 U
3-Methylphenol	100000	µg/kg	360 U	--	350 U
4-Methylphenol	100000	µg/kg	360 U	--	350 U
Acenaphthene	100000	µg/kg	190 U	--	180 U
Acenaphthylene	100000	µg/kg	190 U	--	180 U
Anthracene	100000	µg/kg	190 U	--	180 U
Benzo(a)anthracene	1000	µg/kg	190 U	--	180 U
Benzo(a)pyrene	1000	µg/kg	190 U	--	180 U
Benzo(b)fluoranthene	1000	µg/kg	190 U	--	180 U
Benzo(g,h,i)perylene	100000	µg/kg	190 U	--	180 U
Benzo(k)fluoranthene	3900	µg/kg	190 U	--	180 U
Chrysene	3900	µg/kg	190 U	--	180 U
Dibenz(a,h)anthracene	330	µg/kg	190 U	--	180 U

**Table 2  
Town of Lewiston  
Riverfront Park Site Characterization  
Soil Sampling Results Summary**

	Location ID:	SB-6	SB-6	SB-7	SB-8	
	Sample Name:	SO-11137156-072518-AG-006	SO-11137156-083118-CS-006	SO-11137156-072518-AG-007	SO-11137156-072518-AG-008	
	Sample Date:	07/25/2018	08/31/2018	07/25/2018	07/25/2018	
	Depth:	0.5-6.5'	0-2'	0.75-6.25'	0.5-10.75'	
<b>Parameters</b>	<b>NYSDEC Part 375 Restricted Residential <sup>1</sup></b>	<b>Unit</b>				
Dibenzofuran	59000	µg/kg	190 U	--	180 U	190 U
Fluoranthene	100000	µg/kg	190 U	--	180 U	190 U
Fluorene	100000	µg/kg	190 U	--	180 U	190 U
Hexachlorobenzene	1200	µg/kg	190 U	--	180 U	190 U
Indeno(1,2,3-cd)pyrene	500	µg/kg	190 U	--	180 U	190 U
Naphthalene	100000	µg/kg	190 U	--	180 U	190 U
Pentachlorophenol	6700	µg/kg	360 U	--	350 U	380 U
Phenanthrene	100000	µg/kg	190 U	--	180 U	190 U
Phenol	100000	µg/kg	190 U	--	180 U	190 U
Pyrene	100000	µg/kg	190 U	--	180 U	190 U
<b>PCBs</b>						
Aroclor-1016 (PCB-1016)	1	mg/kg	0.25 U	--	0.22 U	0.27 U
Aroclor-1221 (PCB-1221)	1	mg/kg	0.25 U	--	0.22 U	0.27 U
Aroclor-1232 (PCB-1232)	1	mg/kg	0.25 U	--	0.22 U	0.27 U
Aroclor-1242 (PCB-1242)	1	mg/kg	0.25 U	--	0.22 U	0.27 U
Aroclor-1248 (PCB-1248)	1	mg/kg	0.25 U	--	0.22 U	0.27 U
Aroclor-1254 (PCB-1254)	1	mg/kg	0.25 U	--	0.22 U	0.27 U
Aroclor-1260 (PCB-1260)	1	mg/kg	0.25 U	--	0.22 U	0.27 U
<b>Herbicides</b>						
2,4,5-TP (Silvex)	100000	µg/kg	19 U	--	18 U	19 U
<b>Pesticides</b>						
4,4'-DDD	13000	µg/kg	1.8 U	--	1.8 U	0.42 J
4,4'-DDE	8900	µg/kg	1.8 U	--	1.8 U	1.9 U
4,4'-DDT	7900	µg/kg	1.8 U	--	1.8 U	1.9 U
Aldrin	97	µg/kg	1.8 U	--	1.8 U	1.9 U
alpha-BHC	480	µg/kg	1.8 U	--	1.8 U	1.9 U
alpha-Chlordane	4200	µg/kg	1.8 U	--	1.8 U	1.9 U
beta-BHC	360	µg/kg	1.8 U	--	1.8 U	1.9 U
delta-BHC	100000	µg/kg	1.8 U	--	1.8 U	1.9 U
Dieldrin	200	µg/kg	1.8 U	--	1.8 U	1.9 U
Endosulfan I	24000	µg/kg	1.8 U	--	1.8 U	1.9 U
Endosulfan II	24000	µg/kg	1.8 U	--	1.8 U	1.9 U
Endosulfan sulfate	24000	µg/kg	1.8 U	--	1.8 U	1.9 U
Endrin	11000	µg/kg	1.8 U	--	1.8 U	1.9 U
gamma-BHC (lindane)	1300	µg/kg	1.8 U	--	1.8 U	1.9 U
Heptachlor	2100	µg/kg	1.8 U	--	1.8 U	1.9 U
<b>Metals</b>						
Arsenic	16	mg/kg	<b>22.3</b>	13.2	6.8	<b>24.5</b>
Barium	400	mg/kg	28.0	--	23.4	30.0
Beryllium	72	mg/kg	0.71	--	0.47	0.42
Cadmium	4.3	mg/kg	0.23 U	--	0.22 U	0.23 U
Chromium III (trivalent)	180	mg/kg	18.2	--	12.8	15.9

**Table 2  
Town of Lewiston  
Riverfront Park Site Characterization  
Soil Sampling Results Summary**

Parameters	NYSDEC Part 375 Restricted Residential <sup>1</sup>	Unit	Location ID:	SB-6	SB-6	SB-7	SB-8
			Sample Name:	SO-11137156-072518-AG-006	SO-11137156-083118-CS-006	SO-11137156-072518-AG-007	SO-11137156-072518-AG-008
			Sample Date:	07/25/2018	08/31/2018	07/25/2018	07/25/2018
			Depth:	0.5-6.5'	0-2'	0.75-6.25'	0.5-10.75'
Chromium VI (hexavalent)	110	mg/kg		2.2 U	--	2.1 U	2.3 U
Copper	270	mg/kg		19.6	--	42.5	9.5
Lead	400	mg/kg		17.5	--	14.0	7.9
Manganese	2000	mg/kg		161	--	257	339
Mercury	0.81	mg/kg		0.022 U	--	0.012 J	0.013 J
Nickel	310	mg/kg		22.5	--	20.2	12.1
Selenium	180	mg/kg		4.5 U	--	4.3 U	4.6 U
Silver	180	mg/kg		0.68 U	--	0.65 U	0.69 U
Zinc	10000	mg/kg		71.0	--	60.4	72.2

**Notes:**

<sup>1</sup> Restricted Residential criteria apply to active recreational uses.

µg/kg Micrograms per kilogram (parts per billion [ppb])

mg/kg Milligrams per kilogram (parts per million [ppm])

J Result is less than the reporting limit, but greater than or equal to the method detection limit resulting in an approximate value.

U Non-detect at the indicated reporting limit.

**30.4** Exceeds the indicated regulatory criteria.

**Table 2**  
**Town of Lewiston**  
**Riverfront Park Site Characterization**  
**Soil Sampling Results Summary**

Parameters	NYSDEC Part 375 Restricted Residential <sup>1</sup>	Unit	Location ID:	SB-8	SB-9	SB-9	SB-9A
			Sample Name:	SO-11137156-083118-CS-008	SO-11137156-072518-AG-009	SO-1137156-101218-CJ-009	SO-1137156-101218-CJ-009A
			Sample Date:	08/31/2018	07/25/2018	10/12/2018	10/12/2018
			Depth:	0-2'	4-11'	0-2'	0-2'
<b>Volatile Organic Compounds</b>							
1,1,1-Trichloroethane	100000	µg/kg	--	--	3.6 U	--	--
1,1-Dichloroethane	26000	µg/kg	--	--	3.6 U	--	--
1,1-Dichloroethene	100000	µg/kg	--	--	3.6 U	--	--
1,2,4-Trimethylbenzene	52000	µg/kg	--	--	3.6 U	--	--
1,2-Dichlorobenzene	100000	µg/kg	--	--	3.6 U	--	--
1,2-Dichloroethane	3100	µg/kg	--	--	3.6 U	--	--
1,3,5-Trimethylbenzene	52000	µg/kg	--	--	3.6 U	--	--
1,3-Dichlorobenzene	49000	µg/kg	--	--	3.6 U	--	--
1,4-Dichlorobenzene	13000	µg/kg	--	--	3.6 U	--	--
1,4-Dioxane	13000	µg/kg	--	--	72 U	--	--
2-Butanone (Methyl ethyl ketone) (MEK)	100000	µg/kg	--	--	18 U	--	--
2-Phenylbutane (sec-Butylbenzene)	100000	µg/kg	--	--	3.6 U	--	--
Acetone	100000	µg/kg	--	--	17 J	--	--
Benzene	4800	µg/kg	--	--	3.6 U	--	--
Carbon tetrachloride	2400	µg/kg	--	--	3.6 U	--	--
Chlorobenzene	100000	µg/kg	--	--	3.6 U	--	--
Chloroform (Trichloromethane)	49000	µg/kg	--	--	3.6 U	--	--
cis-1,2-Dichloroethene	100000	µg/kg	--	--	3.6 U	--	--
Ethylbenzene	41000	µg/kg	--	--	3.6 U	--	--
Methyl tert butyl ether (MTBE)	100000	µg/kg	--	--	3.6 U	--	--
Methylene chloride	100000	µg/kg	--	--	3.6 U	--	--
N-Butylbenzene	100000	µg/kg	--	--	3.6 U	--	--
N-Propylbenzene	100000	µg/kg	--	--	3.6 U	--	--
tert-Butylbenzene	100000	µg/kg	--	--	3.6 U	--	--
Tetrachloroethene	19000	µg/kg	--	--	3.6 U	--	--
Toluene	100000	µg/kg	--	--	3.6 U	--	--
trans-1,2-Dichloroethene	100000	µg/kg	--	--	3.6 U	--	--
Trichloroethene	21000	µg/kg	--	--	3.6 U	--	--
Vinyl chloride	900	µg/kg	--	--	3.6 U	--	--
Xylenes (total)	100000	µg/kg	--	--	7.2 U	--	--
<b>Semivolatile Organic Compounds</b>							
2-Methylphenol	100000	µg/kg	--	--	180 U	--	--
3-Methylphenol	100000	µg/kg	--	--	350 U	--	--
4-Methylphenol	100000	µg/kg	--	--	350 U	--	--
Acenaphthene	100000	µg/kg	--	--	180 U	--	--
Acenaphthylene	100000	µg/kg	--	--	180 U	--	--
Anthracene	100000	µg/kg	--	--	180 U	--	--
Benzo(a)anthracene	1000	µg/kg	--	--	180 U	--	--
Benzo(a)pyrene	1000	µg/kg	--	--	180 U	--	--
Benzo(b)fluoranthene	1000	µg/kg	--	--	180 U	--	--
Benzo(g,h,i)perylene	100000	µg/kg	--	--	180 U	--	--
Benzo(k)fluoranthene	3900	µg/kg	--	--	180 U	--	--
Chrysene	3900	µg/kg	--	--	180 U	--	--
Dibenz(a,h)anthracene	330	µg/kg	--	--	180 U	--	--



**Table 2  
Town of Lewiston  
Riverfront Park Site Characterization  
Soil Sampling Results Summary**

	Location ID:	SB-8	SB-9	SB-9	SB-9A
	Sample Name:	SO-11137156-083118-CS-008	SO-11137156-072518-AG-009	SO-11137156-101218-CJ-009	SO-11137156-101218-CJ-009A
	Sample Date:	08/31/2018	07/25/2018	10/12/2018	10/12/2018
	Depth:	0-2'	4-11'	0-2'	0-2'
<b>Parameters</b>	<b>NYSDEC Part 375 Restricted Residential <sup>1</sup></b>	<b>Unit</b>			
Dibenzofuran	59000	µg/kg	--	180 U	--
Fluoranthene	100000	µg/kg	--	180 U	--
Fluorene	100000	µg/kg	--	180 U	--
Hexachlorobenzene	1200	µg/kg	--	180 U	--
Indeno(1,2,3-cd)pyrene	500	µg/kg	--	180 U	--
Naphthalene	100000	µg/kg	--	180 U	--
Pentachlorophenol	6700	µg/kg	--	350 U	--
Phenanthrene	100000	µg/kg	--	180 U	--
Phenol	100000	µg/kg	--	180 U	--
Pyrene	100000	µg/kg	--	180 U	--
<b>PCBs</b>					
Aroclor-1016 (PCB-1016)	1	mg/kg	--	0.22 U	--
Aroclor-1221 (PCB-1221)	1	mg/kg	--	0.22 U	--
Aroclor-1232 (PCB-1232)	1	mg/kg	--	0.22 U	--
Aroclor-1242 (PCB-1242)	1	mg/kg	--	0.22 U	--
Aroclor-1248 (PCB-1248)	1	mg/kg	--	0.22 U	--
Aroclor-1254 (PCB-1254)	1	mg/kg	--	0.22 U	--
Aroclor-1260 (PCB-1260)	1	mg/kg	--	0.22 U	--
<b>Herbicides</b>					
2,4,5-TP (Silvex)	100000	µg/kg	--	18 U	--
<b>Pesticides</b>					
4,4'-DDD	13000	µg/kg	--	0.53 J	--
4,4'-DDE	8900	µg/kg	--	1.8 U	--
4,4'-DDT	7900	µg/kg	--	1.8 U	--
Aldrin	97	µg/kg	--	1.8 U	--
alpha-BHC	480	µg/kg	--	1.8 U	--
alpha-Chlordane	4200	µg/kg	--	1.8 U	--
beta-BHC	360	µg/kg	--	1.8 U	--
delta-BHC	100000	µg/kg	--	1.8 U	--
Dieldrin	200	µg/kg	--	1.8 U	--
Endosulfan I	24000	µg/kg	--	1.8 U	--
Endosulfan II	24000	µg/kg	--	1.8 U	--
Endosulfan sulfate	24000	µg/kg	--	1.8 U	--
Endrin	11000	µg/kg	--	1.8 U	--
gamma-BHC (lindane)	1300	µg/kg	--	1.8 U	--
Heptachlor	2100	µg/kg	--	1.8 U	--
<b>Metals</b>					
Arsenic	16	mg/kg	13.2	4.5	28.7 J
Barium	400	mg/kg	--	32.0	59.6 J
Beryllium	72	mg/kg	--	0.54	0.72
Cadmium	4.3	mg/kg	--	0.22 U	0.33
Chromium III (trivalent)	180	mg/kg	--	13.7	17.3

**Table 2  
Town of Lewiston  
Riverfront Park Site Characterization  
Soil Sampling Results Summary**

Parameters	Location ID: SB-8		SB-9		SB-9		SB-9A	
	Sample Name:	SO-11137156-083118-CS-008	Sample Name:	SO-11137156-072518-AG-009	Sample Name:	SO-11137156-101218-CJ-009	Sample Name:	SO-11137156-101218-CJ-009A
	Sample Date:	08/31/2018	Sample Date:	07/25/2018	Sample Date:	10/12/2018	Sample Date:	10/12/2018
	Depth:	0-2'	Depth:	4-11'	Depth:	0-2'	Depth:	0-2'
	NYSDEC Part 375 Restricted Residential <sup>1</sup>	Unit						
Chromium VI (hexavalent)	110	mg/kg	--	2.1 U	2.3 U	2.4 U		
Copper	270	mg/kg	--	37.5	16.1	18.6		
Lead	400	mg/kg	--	11.5	24.4	15.5		
Manganese	2000	mg/kg	--	737	290	567		
Mercury	0.81	mg/kg	--	0.026	0.030	0.057		
Nickel	310	mg/kg	--	21.5	22.5	23.0		
Selenium	180	mg/kg	--	4.3 U	4.7 U	0.59 J		
Silver	180	mg/kg	--	0.65 U	0.71 U	0.69 U		
Zinc	10000	mg/kg	--	50.6	68.4	58.7		

**Notes:**

<sup>1</sup> Restricted Residential criteria apply to active recreational uses.

µg/kg Micrograms per kilogram (parts per billion [ppb])

mg/kg Milligrams per kilogram (parts per million [ppm])

J Result is less than the reporting limit, but greater than or equal to the method detection limit resulting in an approximate value.

U Non-detect at the indicated reporting limit.

**30.4** Exceeds the indicated regulatory criteria.

**Table 2  
Town of Lewiston  
Riverfront Park Site Characterization  
Soil Sampling Results Summary**

	Location ID:	SB-9B	SB-10	SB-10	SB-10A
	Sample Name:	SO-1137156-101218-CJ-009B	SO-1137156-072518-AG-010	SO-1137156-101218-CJ-010	SO-1137156-101218-CJ-010A
	Sample Date:	10/12/2018	07/25/2018	10/12/2018	10/12/2018
	Depth:	0-2'	2-7.5'	0-2'	0-2'
Parameters	NYSDEC Part 375 Restricted Residential <sup>1</sup>	Unit			
<b>Volatile Organic Compounds</b>					
1,1,1-Trichloroethane	100000	µg/kg	--	4.1 U	--
1,1-Dichloroethane	26000	µg/kg	--	4.1 U	--
1,1-Dichloroethene	100000	µg/kg	--	4.1 U	--
1,2,4-Trimethylbenzene	52000	µg/kg	--	4.1 U	--
1,2-Dichlorobenzene	100000	µg/kg	--	4.1 U	--
1,2-Dichloroethane	3100	µg/kg	--	4.1 U	--
1,3,5-Trimethylbenzene	52000	µg/kg	--	4.1 U	--
1,3-Dichlorobenzene	49000	µg/kg	--	4.1 U	--
1,4-Dichlorobenzene	13000	µg/kg	--	4.1 U	--
1,4-Dioxane	13000	µg/kg	--	81 U	--
2-Butanone (Methyl ethyl ketone) (MEK)	100000	µg/kg	--	20 U	--
2-Phenylbutane (sec-Butylbenzene)	100000	µg/kg	--	4.1 U	--
Acetone	100000	µg/kg	--	21	--
Benzene	4800	µg/kg	--	4.1 U	--
Carbon tetrachloride	2400	µg/kg	--	4.1 U	--
Chlorobenzene	100000	µg/kg	--	4.1 U	--
Chloroform (Trichloromethane)	49000	µg/kg	--	4.1 U	--
cis-1,2-Dichloroethene	100000	µg/kg	--	4.1 U	--
Ethylbenzene	41000	µg/kg	--	4.1 U	--
Methyl tert butyl ether (MTBE)	100000	µg/kg	--	4.1 U	--
Methylene chloride	100000	µg/kg	--	4.1 U	--
N-Butylbenzene	100000	µg/kg	--	4.1 U	--
N-Propylbenzene	100000	µg/kg	--	4.1 U	--
tert-Butylbenzene	100000	µg/kg	--	4.1 U	--
Tetrachloroethene	19000	µg/kg	--	4.1 U	--
Toluene	100000	µg/kg	--	4.1 U	--
trans-1,2-Dichloroethene	100000	µg/kg	--	4.1 U	--
Trichloroethene	21000	µg/kg	--	4.1 U	--
Vinyl chloride	900	µg/kg	--	4.1 U	--
Xylenes (total)	100000	µg/kg	--	8.1 U	--
<b>Semivolatile Organic Compounds</b>					
2-Methylphenol	100000	µg/kg	--	180 U	--
3-Methylphenol	100000	µg/kg	--	360 U	--
4-Methylphenol	100000	µg/kg	--	360 U	--
Acenaphthene	100000	µg/kg	--	180 U	--
Acenaphthylene	100000	µg/kg	--	38 J	--
Anthracene	100000	µg/kg	--	110 J	--
Benzo(a)anthracene	1000	µg/kg	--	270	--
Benzo(a)pyrene	1000	µg/kg	--	280	--
Benzo(b)fluoranthene	1000	µg/kg	--	320	--
Benzo(g,h,i)perylene	100000	µg/kg	--	250	--
Benzo(k)fluoranthene	3900	µg/kg	--	180	--
Chrysene	3900	µg/kg	--	270	--
Dibenz(a,h)anthracene	330	µg/kg	--	83 J	--

**Table 2**  
**Town of Lewiston**  
**Riverfront Park Site Characterization**  
**Soil Sampling Results Summary**

	Location ID:	SB-9B	SB-10	SB-10	SB-10A
	Sample Name:	SO-1137156-101218-CJ-009B	SO-1137156-072518-AG-010	SO-1137156-101218-CJ-010	SO-1137156-101218-CJ-010A
	Sample Date:	10/12/2018	07/25/2018	10/12/2018	10/12/2018
	Depth:	0-2'	2-7.5'	0-2'	0-2'
<b>Parameters</b>	<b>NYSDEC Part 375 Restricted Residential <sup>1</sup></b>	<b>Unit</b>			
Dibenzofuran	59000	µg/kg	--	180 U	--
Fluoranthene	100000	µg/kg	--	420	--
Fluorene	100000	µg/kg	--	35 J	--
Hexachlorobenzene	1200	µg/kg	--	73 J	--
Indeno(1,2,3-cd)pyrene	500	µg/kg	--	230	--
Naphthalene	100000	µg/kg	--	180 U	--
Pentachlorophenol	6700	µg/kg	--	190 J	--
Phenanthrene	100000	µg/kg	--	300	--
Phenol	100000	µg/kg	--	180 U	--
Pyrene	100000	µg/kg	--	410	--
<b>PCBs</b>					
Aroclor-1016 (PCB-1016)	1	mg/kg	--	0.25 U	--
Aroclor-1221 (PCB-1221)	1	mg/kg	--	0.25 U	--
Aroclor-1232 (PCB-1232)	1	mg/kg	--	0.25 U	--
Aroclor-1242 (PCB-1242)	1	mg/kg	--	0.25 U	--
Aroclor-1248 (PCB-1248)	1	mg/kg	--	0.25 U	--
Aroclor-1254 (PCB-1254)	1	mg/kg	--	0.25 U	--
Aroclor-1260 (PCB-1260)	1	mg/kg	--	0.25 U	--
<b>Herbicides</b>					
2,4,5-TP (Silvex)	100000	µg/kg	--	18 U	--
<b>Pesticides</b>					
4,4'-DDD	13000	µg/kg	--	1.8 U	--
4,4'-DDE	8900	µg/kg	--	1.8 U	--
4,4'-DDT	7900	µg/kg	--	1.8 U	--
Aldrin	97	µg/kg	--	1.8 U	--
alpha-BHC	480	µg/kg	--	0.69 J	--
alpha-Chlordane	4200	µg/kg	--	1.8 U	--
beta-BHC	360	µg/kg	--	10	--
delta-BHC	100000	µg/kg	--	1.8 U	--
Dieldrin	200	µg/kg	--	1.8 U	--
Endosulfan I	24000	µg/kg	--	1.8 U	--
Endosulfan II	24000	µg/kg	--	1.8 U	--
Endosulfan sulfate	24000	µg/kg	--	1.8 U	--
Endrin	11000	µg/kg	--	1.8 U	--
gamma-BHC (lindane)	1300	µg/kg	--	1.8 U	--
Heptachlor	2100	µg/kg	--	1.8 U	--
<b>Metals</b>					
Arsenic	16	mg/kg	12.9 J	9.4	9.4 J
Barium	400	mg/kg	113 J	113	125 J
Beryllium	72	mg/kg	0.75	0.57	0.67
Cadmium	4.3	mg/kg	0.33	0.24	0.41
Chromium III (trivalent)	180	mg/kg	19.8	21.1	16.9

**Table 2  
Town of Lewiston  
Riverfront Park Site Characterization  
Soil Sampling Results Summary**

Parameters	NYSDEC Part 375 Restricted Residential <sup>1</sup>	Unit	Location ID:	SB-9B	SB-10	SB-10	SB-10A
			Sample Name:	SO-1137156-101218-CJ-009B	SO-1137156-072518-AG-010	SO-1137156-101218-CJ-010	SO-1137156-101218-CJ-010A
			Sample Date:	10/12/2018	07/25/2018	10/12/2018	10/12/2018
			Depth:	0-2'	2-7.5'	0-2'	0-2'
Chromium VI (hexavalent)	110	mg/kg		2.3 U	2.2 U	2.4 U	2.4 U
Copper	270	mg/kg		14.3	34.4	20.9	15.4
Lead	400	mg/kg		15.8	24.8	22.9	18.8
Manganese	2000	mg/kg		427	<b>3750 <sup>1</sup></b>	1800	942
Mercury	0.81	mg/kg		0.044	<b>0.90 J <sup>1</sup></b>	0.11	0.089
Nickel	310	mg/kg		27.3	26.2	25.2	22.5
Selenium	180	mg/kg		4.6 U	4.4 U	0.70 J	4.8 U
Silver	180	mg/kg		0.69 U	0.65 U	0.71 U	0.72 U
Zinc	10000	mg/kg		60.9	88.9	66.0	62.4

**Notes:**

<sup>1</sup> Restricted Residential criteria apply to active recreational uses.

µg/kg Micrograms per kilogram (parts per billion [ppb])

mg/kg Milligrams per kilogram (parts per million [ppm])

J Result is less than the reporting limit, but greater than or equal to the method detection limit resulting in an approximate value.

U Non-detect at the indicated reporting limit.

**30.4** Exceeds the indicated regulatory criteria.

**Table 2**  
**Town of Lewiston**  
**Riverfront Park Site Characterization**  
**Soil Sampling Results Summary**

Parameters	NYSDEC Part 375 Restricted Residential <sup>1</sup>	Unit	Location ID:	SB-10B	SB-11	SB-12
			Sample Name:	SO-1137156-101218-CJ-010B	SO-1137156-072518-AG-011	SO-1137156-072518-AG-012
			Sample Date:	10/12/2018	07/25/2018	07/25/2018
			Depth:	0-2'	0.5-7.5'	0.5-7'
<b>Volatile Organic Compounds</b>						
1,1,1-Trichloroethane	100000	µg/kg	--	--	3.6 U	3.9 U
1,1-Dichloroethane	26000	µg/kg	--	--	3.6 U	3.9 U
1,1-Dichloroethene	100000	µg/kg	--	--	3.6 U	3.9 U
1,2,4-Trimethylbenzene	52000	µg/kg	--	--	3.6 U	3.9 U
1,2-Dichlorobenzene	100000	µg/kg	--	--	3.6 U	3.9 U
1,2-Dichloroethane	3100	µg/kg	--	--	3.6 U	3.9 U
1,3,5-Trimethylbenzene	52000	µg/kg	--	--	3.6 U	3.9 U
1,3-Dichlorobenzene	49000	µg/kg	--	--	3.6 U	3.9 U
1,4-Dichlorobenzene	13000	µg/kg	--	--	3.6 U	3.9 U
1,4-Dioxane	13000	µg/kg	--	--	73 U	78 U
2-Butanone (Methyl ethyl ketone) (MEK)	100000	µg/kg	--	--	18 U	19 U
2-Phenylbutane (sec-Butylbenzene)	100000	µg/kg	--	--	3.6 U	3.9 U
Acetone	100000	µg/kg	--	--	15 J	14 J
Benzene	4800	µg/kg	--	--	3.6 U	3.9 U
Carbon tetrachloride	2400	µg/kg	--	--	3.6 U	3.9 U
Chlorobenzene	100000	µg/kg	--	--	3.6 U	3.9 U
Chloroform (Trichloromethane)	49000	µg/kg	--	--	3.6 U	3.9 U
cis-1,2-Dichloroethene	100000	µg/kg	--	--	3.6 U	3.9 U
Ethylbenzene	41000	µg/kg	--	--	3.6 U	3.9 U
Methyl tert butyl ether (MTBE)	100000	µg/kg	--	--	3.6 U	3.9 U
Methylene chloride	100000	µg/kg	--	--	3.6 U	3.9 U
N-Butylbenzene	100000	µg/kg	--	--	3.6 U	3.9 U
N-Propylbenzene	100000	µg/kg	--	--	3.6 U	3.9 U
tert-Butylbenzene	100000	µg/kg	--	--	3.6 U	3.9 U
Tetrachloroethene	19000	µg/kg	--	--	3.6 U	3.9 U
Toluene	100000	µg/kg	--	--	3.6 U	3.9 U
trans-1,2-Dichloroethene	100000	µg/kg	--	--	3.6 U	3.9 U
Trichloroethene	21000	µg/kg	--	--	3.6 U	3.9 U
Vinyl chloride	900	µg/kg	--	--	3.6 U	3.9 U
Xylenes (total)	100000	µg/kg	--	--	7.3 U	7.8 U
<b>Semivolatile Organic Compounds</b>						
2-Methylphenol	100000	µg/kg	--	--	190 U	180 U
3-Methylphenol	100000	µg/kg	--	--	370 U	340 U
4-Methylphenol	100000	µg/kg	--	--	370 U	340 U
Acenaphthene	100000	µg/kg	--	--	190 U	180 U
Acenaphthylene	100000	µg/kg	--	--	190 U	180 U
Anthracene	100000	µg/kg	--	--	190 U	180 U
Benzo(a)anthracene	1000	µg/kg	--	--	190 U	180 U
Benzo(a)pyrene	1000	µg/kg	--	--	190 U	180 U
Benzo(b)fluoranthene	1000	µg/kg	--	--	190 U	180 U
Benzo(g,h,i)perylene	100000	µg/kg	--	--	190 U	180 U
Benzo(k)fluoranthene	3900	µg/kg	--	--	190 U	180 U
Chrysene	3900	µg/kg	--	--	190 U	180 U
Dibenz(a,h)anthracene	330	µg/kg	--	--	190 U	180 U

**Table 2**  
**Town of Lewiston**  
**Riverfront Park Site Characterization**  
**Soil Sampling Results Summary**

	Location ID:	SB-10B	SB-11	SB-12	
	Sample Name:	SO-11137156-101218-CJ-010B	SO-11137156-072518-AG-011	SO-11137156-072518-AG-012	
	Sample Date:	10/12/2018	07/25/2018	07/25/2018	
	Depth:	0-2'	0.5-7.5'	0.5-7'	
<b>Parameters</b>	<b>NYSDEC Part 375 Restricted Residential <sup>1</sup></b>	<b>Unit</b>			
Dibenzofuran	59000	µg/kg	--	190 U	180 U
Fluoranthene	100000	µg/kg	--	190 U	180 U
Fluorene	100000	µg/kg	--	190 U	180 U
Hexachlorobenzene	1200	µg/kg	--	190 U	180 U
Indeno(1,2,3-cd)pyrene	500	µg/kg	--	190 U	180 U
Naphthalene	100000	µg/kg	--	190 U	180 U
Pentachlorophenol	6700	µg/kg	--	370 U	340 U
Phenanthrene	100000	µg/kg	--	190 U	180 U
Phenol	100000	µg/kg	--	190 U	180 U
Pyrene	100000	µg/kg	--	190 U	180 U
<b>PCBs</b>					
Aroclor-1016 (PCB-1016)	1	mg/kg	--	0.25 U	0.25 U
Aroclor-1221 (PCB-1221)	1	mg/kg	--	0.25 U	0.25 U
Aroclor-1232 (PCB-1232)	1	mg/kg	--	0.25 U	0.25 U
Aroclor-1242 (PCB-1242)	1	mg/kg	--	0.25 U	0.25 U
Aroclor-1248 (PCB-1248)	1	mg/kg	--	0.25 U	0.25 U
Aroclor-1254 (PCB-1254)	1	mg/kg	--	0.25 U	0.25 U
Aroclor-1260 (PCB-1260)	1	mg/kg	--	0.25 U	0.25 U
<b>Herbicides</b>					
2,4,5-TP (Silvex)	100000	µg/kg	--	19 U	18 U
<b>Pesticides</b>					
4,4'-DDD	13000	µg/kg	--	1.8 U	1.7 U
4,4'-DDE	8900	µg/kg	--	1.8 U	1.7 U
4,4'-DDT	7900	µg/kg	--	1.8 U	1.7 U
Aldrin	97	µg/kg	--	1.8 U	1.7 U
alpha-BHC	480	µg/kg	--	1.8 U	1.7 U
alpha-Chlordane	4200	µg/kg	--	1.8 U	1.7 U
beta-BHC	360	µg/kg	--	1.8 U	1.7 U
delta-BHC	100000	µg/kg	--	1.8 U	1.7 U
Dieldrin	200	µg/kg	--	1.8 U	1.7 U
Endosulfan I	24000	µg/kg	--	1.8 U	1.7 U
Endosulfan II	24000	µg/kg	--	1.8 U	1.7 U
Endosulfan sulfate	24000	µg/kg	--	1.8 U	1.7 U
Endrin	11000	µg/kg	--	1.8 U	1.7 U
gamma-BHC (lindane)	1300	µg/kg	--	1.8 U	1.7 U
Heptachlor	2100	µg/kg	--	1.8 U	1.7 U
<b>Metals</b>					
Arsenic	16	mg/kg	7.6 J	6.7	11.2
Barium	400	mg/kg	116 J	36.7	44.6
Beryllium	72	mg/kg	0.76	0.69	0.54
Cadmium	4.3	mg/kg	0.19 J	0.23 U	0.21 U
Chromium III (trivalent)	180	mg/kg	19.9	18.0	15.0

**Table 2  
Town of Lewiston  
Riverfront Park Site Characterization  
Soil Sampling Results Summary**

Parameters	NYSDEC Part 375 Restricted Residential <sup>1</sup>	Unit	Location ID:	SB-10B	SB-11	SB-12
			Sample Name:	SO-1137156-101218-CJ-010B	SO-1137156-072518-AG-011	SO-1137156-072518-AG-012
			Sample Date:	10/12/2018	07/25/2018	07/25/2018
			Depth:	0-2'	0.5-7.5'	0.5-7'
Chromium VI (hexavalent)	110	mg/kg		2.3 U	2.2 U	2.1 U
Copper	270	mg/kg		19.3	62.2	31.1
Lead	400	mg/kg		12.4	30.9	16.0
Manganese	2000	mg/kg		578	973	843
Mercury	0.81	mg/kg		0.014 J	0.060	0.031
Nickel	310	mg/kg		28.7	27.1	18.9
Selenium	180	mg/kg		4.7 U	4.5 U	4.3 U
Silver	180	mg/kg		0.71 U	0.68 U	0.64 U
Zinc	10000	mg/kg		57.5	102	58.0

**Notes:**

<sup>1</sup> Restricted Residential criteria apply to active recreational uses.

µg/kg Micrograms per kilogram (parts per billion [ppb])

mg/kg Milligrams per kilogram (parts per million [ppm])

J Result is less than the reporting limit, but greater than or equal to the method detection limit resulting in an approximate value.

U Non-detect at the indicated reporting limit.

**30.4** Exceeds the indicated regulatory criteria.



# Appendix A Drilling Logs

7/25/18

Stratigraphy Log (Overburden)  
(Form SP-1A)  
Page 1 of 1

Project name:  
Project number:  
Client:  
Location:

Kayak Launch Site  
1137136  
Town of Lewiston  
Lower River Road @  
Pletcher Road, Town of Lewiston NY

Drilling contractor:  
Driller:  
Surface elevation:  
Weather (A.M.):  
(P.M.):

Trec Environmental  
ETC  
Cloudy, 76°F, Humid

Hole designation:  
Date/Time started:  
Date/Time completed:  
Drilling method:  
GHD supervisor:

SB-1  
9:35 am  
Alexandra Gearing

Stratigraphic Intervals (Depths in ft/m BGS)			Sample Description	Sample Number	Sampling Method	Sample Details						Sample Interval	PID/FID (ppm)	Chemical Analysis	Grain Size/ Other Analysis
From	At	To				Penetration Record Split Spoon Blows (Record N-Values & Recoveries)									
						6"	6"	6"	6"	N	R				
0		0.5	Topsoil ~ Silty Clay / Broken Down Organic Matter Dark Brown / Dark gray, medium moisture								4	0-4			
											4	4-8			
0.5		2	OL Silt, mostly silt, no plasticity, very loose, light brown, slight to no moisture												
2		4.5	Same as 0.5'-2' except yellowish orange in color												
4.5		8	CL Clay, medium plasticity, very dense, medium moisture, mixture of light brown, yellowish orange, and light gray												
Notes and Comments			Depth of borehole casing _____ Depth of first groundwater encounter _____ Topsoil thickness _____ Water level in open borehole on completion _____ After _____ Hours _____ Notes: _____ _____ _____												

\* Sample 001 taken @ 5 ft bgs (Darker in color)

7/25/18

Stratigraphy Log (Overburden)  
(Form SP-14)  
Page 1 of 1

Project name: Kayak Launch Site  
Project number: 11137156  
Client: Town of Lewiston  
Location: \_\_\_\_\_

Drilling contractor: Trec Environmental  
Driller: Eric  
Surface elevation: \_\_\_\_\_  
Weather (A.M.): Cloudy, 75°F, Humid  
(P.M.): \_\_\_\_\_

Hole designation: SB-2  
Date/Time started: 9:50am  
Date/Time completed: \_\_\_\_\_  
Drilling method: \_\_\_\_\_  
GHD supervisor: Alexandra Gearing

Stratigraphic Intervals (Depths in f/m BGS)			Sample Description	Sample Number	Sampling Method	Sample Details Penetration Record Split Spoon Blows (Record N-Values & Recoveries)						Sample Interval	FID/FID (ppm)	Chemical Analysis	Grain Size/Other Analysis
From	At	To	Order of descriptors: Soil type symbol(s) - primary component(s), (nature of deposit), secondary components, relative density/consistency, grain size/plasticity, gradation/structure, colour, moisture content; supplementary descriptors. Note: Plasticity determination requires the addition of moisture if the sample is too dry to roll (indicate if moisture was added or not).			6"	6"	6"	6"	N	R				
0		0.5	Topsoil - same as SB-1								3.5	0-4			
0.5		2.75	OL Silt - same as SB-1 except a light yellowish orange dry								4	4-8			
2.75		3	Same as 0.5-2.75' except more orange w/ trace fine to coarse gravel												
3		8	CL Clay w/ a little silt, medium plasticity, light to medium moisture. More dense farther bgs. Olive gray to dark gray.												
Notes and Comments			Depth of borehole casing _____ Depth of first groundwater encounter _____ Topsoil thickness _____ Water level in open borehole on completion _____ After _____ Hours _____ Notes: _____ _____ _____												

\* Sample 002 = Composite from 0.5-4 ft bgs)

7/25/18

Stratigraphy Log (Overburden)

(Form SP-14)

Page 1 of 1

Project name:  
Project number:  
Client:  
Location:

Kayak Launch Site  
11137156  
Town of Lewiston

Drilling contractor:  
Driller:  
Surface elevation:  
Weather (A.M.):  
(P.M.):

Trec Environmental  
Eric  
Cloudy 75°F, Humid

Hole designation:  
Date/Time started:  
Date/Time completed:  
Drilling method:  
GHD supervisor:

SB-3  
10:20am  
Alexandra Gearing

Stratigraphic Intervals (Depths in f/m BGS)			Sample Description	Sample Number	Sampling Method	Penetration Record Split Spoon Blows (Record N-Values & Recoveries)						Sample Interval	FID/FID (ppm)	Chemical Analysis	Grain Size/ Other Analysis
From	At	To	Order of descriptors: Soil type symbol(s) - primary component(s), (nature of deposit), secondary components, relative density/consistency, grain size/plasticity, gradation/structure, colour, moisture content, supplementary descriptors. Note: Plasticity determination requires the addition of moisture if the sample is too dry to roll (indicate if moisture was added or not).			6"	6"	6"	6"	N	R				
0		0.5	Topsoil - same as SB-1								15	0-4			
0.5		6	CL SPT - same as SB-1 except w/ some fine gravel from 3'-4')								4	4-8			
6		8	CL Clay - same as SB-2												
Notes and Comments			Depth of borehole casing _____ Depth of first groundwater encounter _____ Topsoil thickness _____ Water level in open borehole on completion _____ After _____ Hours _____ Notes: _____ _____ _____												

\* Sample 003 = Composite from 0.5 - 6.5 ft (BGS)

7/25/18

Stratigraphy Log (Overburden)  
(Form SP-14)  
Page 1 of 1

Hole designation: SB-4  
Date/Time started: 10:45 am  
Date/Time completed:  
Drilling method: Alexandria Geomig  
GHD supervisor:

Project name:  
Project number:  
Client:  
Location:

Kayak Launch Site  
1137156  
Town of Lewiston

Drilling contractor:  
Driller:  
Surface elevation:  
Weather (A.M.):  
(P.M.):

Trec Environmental  
ERIC  
Cloudy, 75°F, Humid

Stratigraphic Intervals (Depths in ft/m BGS)			Sample Description	Sample Details										Sample Interval	PID/FID (ppm)	Chemical Analysis	Grain Size/Other Analysis
From	At	To	Order of descriptors: Soil type symbol(s) - primary component(s), (nature of deposit), secondary components, relative density/consistency, grain size/plasticity, gradation/structure, colour, moisture content; supplementary descriptors. Note: Plasticity determination requires the addition of moisture if the sample is too dry to roll (indicate if moisture was added or not).	Penetration Record Split Spoon Blows (Record N-Values & Recoveries)						Sample Number	Sampling Method	N	R				
				6"	6"	6"	6"										
0		0.5	Topsoil - same as SB-1											3.75	0-4		
0.5		1	Especially loose w/ fine to coarse gravel											1.75	4-8		
2.5		8	CL Clay - same as SB-1 but light brown														

Depth of borehole casing \_\_\_\_\_ Depth of first groundwater encounter \_\_\_\_\_ Topsoil thickness \_\_\_\_\_  
Water level in open borehole on completion \_\_\_\_\_ After \_\_\_\_\_ Hours \_\_\_\_\_

Notes and Comments

\*Sample COH = Compost from 0.5 to 3ft bgs

7/25/18

Project name: Kayak Launch Site  
Project number: 113756  
Client: Town of Lewiston  
Location: \_\_\_\_\_

Drilling contractor: Trec Env  
Driller: Eric  
Surface elevation: \_\_\_\_\_  
Weather (A.M.): cloudy 75F, humid  
(P.M.): \_\_\_\_\_

Hole designation: SB-5  
Date/Time started: 7:00 am  
Date/Time completed: \_\_\_\_\_  
Drilling method: \_\_\_\_\_  
GHD supervisor: Alexandra Gearing

Stratigraphic Intervals (Depths in ft/m BGS)			Sample Description	Sample Details														
From	At	To	Order of descriptors: Soil type symbol(s) - primary component(s), (nature of deposit), secondary components, relative density/consistency, grain size/plasticity, gradation/structure, colour, moisture content, supplementary descriptors. Note: Plasticity determination requires the addition of moisture if the sample is too dry to roll (Indicate if moisture was added or not).	Sample Number	Sampling Method	Penetration Record Split Spoon Blows (Record N-Values & Recoveries)						Sample Interval	PID/FID (ppm)	Chemical Analysis	Grain Size/ Other Analysis			
						6"	8"	8"	8"	N	R							
0	0.5	0.5	Top soil - same as SB-1															
0.5	7	7	OL Silt - same as SB-1 except olive gray, mostly light brown															
	0.5	8	Especially loose w/ some fine gravel															
7	8	8	CL Clay, OL Silt, light brown															
Notes and Comments			Depth of borehole casing _____ Depth of first groundwater encounter _____ Topsoil thickness _____ Water level in open borehole on completion _____ After _____ Hours _____ Notes: _____ _____ _____															

\* Sample 005 = Composite from 0.5 - 7.25 ft bgs

7/25/18

Stratigraphy Log (Overburden)  
(Form SP-14)  
Page 1 of 1

Project name: Kayak Launch Site  
Project number: 1137156  
Client: Town of Lewiston  
Location: Town of Lewiston

Drilling contractor: Trec Env  
Driller: Eric  
Surface elevation: Eric  
Weather (A.M.): Cloudy, 75°F, humid  
(P.M.):

Hole designation: SB-6  
Date/Time started: 11:20 am  
Date/Time completed:  
Drilling method: Alexandria Geotesting  
GHD supervisor:

Stratigraphic Intervals (Depths in ft/m BGS)			Sample Description		Sample Details										
					Penetration Record Split Spoon Blows (Record N-Values & Recoveries)						Sample Interval	PID/FID (ppm)	Chemical Analysis	Grain Size/ Other Analysis	
From	At	To	Order of descriptors: Soil type symbol(s) - primary component(s), (nature of deposit), secondary components, relative density/consistency, grain size/plasticity, gradation/structure, colour, moisture content, supplementary descriptors. Note: Plasticity determination requires the addition of moisture if the sample is too dry to roll (indicate if moisture was added or not).	Sample Number	Sampling Method	6"	6"	6"	6"	N					R
0	0.75	0.75	Topsoil - same as SB-1									3	0-4		
	0.75	1.5	Fine to coarse gravel									2	4-8		
1.5		3.5	OL Silty Clay - same as SB-1, olive gray/light brown												
3.5		6	OL Silty Clay, little fine to coarse gravel, very loose, yellow/brown color												
6		8	CL Clay - loose, low plasticity, dry, olive gray mixed w/ light brown												
Notes and Comments	Depth of borehole caving _____		Depth of first groundwater encounter _____		Topsoil thickness _____		Water level in open borehole on completion _____		After _____ Hours _____		Notes:				

\* Sample 006 = Composite from 0.5 - 6.5 ft bgs

7/29/18

Stratigraphy Log (Overburden)  
(Form SP-14)  
Page 1 of 1

Project name: Koveek Launch Site  
Project number: 1137156  
Client: Town of Lewiston  
Location: Town of Lewiston

Drilling contractor: Tre Env  
Driller: Eric  
Surface elevation: Eric  
Weather (A.M.): Cloudy, 78°F, Humid  
(P.M.):

Hole designation: SB-7  
Date/Time started: 11:45 am  
Date/Time completed:  
Drilling method:  
GHD supervisor: Alexandra Gentry

Stratigraphic Intervals (Depths in ft/m BGS)			Sample Description	Sample Number	Sampling Method	Sample Details Penetration Record Split Spoon Blows (Record N-Values & Recoveries)						Sample Interval	PID/FID (ppm)	Chemical Analysis	Grain Size/ Other Analysis
From	At	To	Order of descriptors: Soil type symbol(s) - primary component(s), (nature of deposit), secondary components, relative density/consistency, grain size/plasticity, gradation/structure, colour, moisture content; supplementary descriptors. Note: Plasticity determination requires the addition of moisture if the sample is too dry to roll (indicate if moisture was added or not).			6"	6"	6"	6"	N	R				
0		0.5	Top soil, same as SB-1									3.5	0-4		
0.5		1	Fine to coarse gravel									25	4-8		
1		3	OL Silty clay - similar to SB-1, loose.												
3		4	Same as above except w/ little fine to coarse gravel, lighter in color												
4		6	OL Silty clay - yellowish orange, little fine to coarse gravel, loose, same as 3.5-6' on SB-6												
6		7.25	Coarse gravel, dry												
7.25		8	Cl Clay - same as SB-6												
Notes and Comments			Depth of borehole caving _____ Depth of first groundwater encounter _____ Topsoil thickness _____ Water level in open borehole on completion _____ After _____ Hours _____ Notes: _____ _____ _____												

\* Sample 007 = Composite from 0.75' - 6.25' 8' bgs



7/25/18

Stratigraphy Log (Overburden)  
(Form SP-14)  
Page 1 of 1

Project name:  
Project number:  
Client:  
Location:

Kayak Launch Site  
113756  
Town of Lewiston

Drilling contractor:  
Driller:  
Surface elevation:  
Weather (A.M.):  
(P.M.):

Trec Env  
ERTC  
75-80°F, Humid,  
Partly Cloudy

Hole designation:  
Date/Time started:  
Date/Time completed:  
Drilling method:  
GHD supervisor:

SB-8  
12:20 pm  
Alexandra Gearmg

Stratigraphic Intervals (Depths in ft/m BGS)			Sample Description	Sample Details											
From	At	To	Order of descriptors: Soil type symbol(s) - primary component(s), (nature of deposit), secondary components, relative density/consistency, grain size/plasticity, gradation/structure, colour, moisture content; supplementary descriptors. Note: Plasticity determination requires the addition of moisture if the sample is too dry to roll (Indicate if moisture was added or not).	Sample Number	Sampling Method	Penetration Record Split Spoon Blows (Record N-Values & Recoveries)						Sample Interval	PID/FID (ppm)	Chemical Analysis	Grain Size/ Other Analysis
						6"	6"	6"	6"	N	R				
0		0.5	Topsoil - Same as SB-1								4	0-4			
0.5			OL Clay/Silty, dry, light brown, same as SB-1								25	4-8			
											2	8-11			
	1	1.5	Fine to coarse gravel												
1.5		10	Fine to coarse gravel, Silty clay, light brown/dune gray mostly. Yellowish around 6ft, Low plasticity, dry												
10		10.5	Coarse gravel												
10.5		11	OL Silty clay, very reddish orange, low plasticity, low moisture												
		11	Red silty												
Notes and Comments			Depth of borehole caving _____ Depth of first groundwater encounter _____ Topsoil thickness _____ Water level in open borehole on completion _____ After _____ Hours _____ Notes: _____ _____ _____												

\*Sample 008 = Composite 0.5-10.75 ft bgs

7/25/18

Project name:  
Project number:  
Client:  
Location:

Kayak Launch Site  
1137156  
Town of Lewiston

Drilling contractor:  
Driller:  
Surface elevation:  
Weather (A.M.):  
(P.M.):

Trec Env  
EAC  
Partly cloudy, 75-80F, humid

Hole designation:  
Date/Time started:  
Date/Time completed:  
Drilling method:  
GHD supervisor:

SB-9  
12:40pm  
Alexandra Learning

Stratigraphic Intervals (Depths in f/m BGS)			Sample Description	Sample Number	Sampling Method	Penetration Record Split Spoon Blows (Record N-Values & Recoveries)						Sample Interval	P10/F10 (ppm)	Chemical Analysis	Grain Size/ Other Analysis
From	At	To	Order of descriptors: Soil type symbol(s) - primary component(s), (nature of deposit), secondary components, relative density/consistency, grain size/plasticity, gradation/structure, colour, moisture content, supplementary descriptors. Note: Plasticity determination requires the addition of moisture if the sample is too dry to roll (indicate if moisture was added or not).			6"	6"	6"	6"	N	R				
0		4	No recovery									0	0-4		
4		9.5	OL silt w/ fine gravel, low plasticity, dry, light brown mixed w/ light gray. Except for yellowish silt around 7'									3	4-8		
												25	8-11		
9.5		11	Same as OL silt above w/ slightly more color and some reddish light brown												
		11	Refusal												

Depth of borehole casing \_\_\_\_\_ Depth of first groundwater encounter \_\_\_\_\_ Topsoil thickness \_\_\_\_\_  
Water level in open borehole on completion \_\_\_\_\_ After \_\_\_\_\_ Hours \_\_\_\_\_

Notes and Comments

Notes: \_\_\_\_\_  
\_\_\_\_\_

\* Sample 0001 = Composite from 4 to 11 ft bgs

7/25/18

Stratigraphy Log (Overburden)  
(Form SP-14)  
Page 1 of 1

Project name:  
Project number:  
Client:  
Location:

Kayak Launch Site  
11/37/16  
Town of Lewiston

Drilling contractor:  
Driller:  
Surface elevation:  
Weather (A.M.):  
(P.M.):

Trec Env  
Eric  
  
Partly Cloudy, 75-80°F, Humid

Hole designation:  
Date/Time started:  
Date/Time completed:  
Drilling method:  
GHD supervisor:

SB-10  
1 pm  
Alexandra Cearns

Stratigraphic Intervals (Depths in ft/m BGS)			Sample Description Order of descriptors: Soil type symbol(s) - primary component(s), (nature of deposit), secondary components, relative density/consistency, grain size/plasticity, gradation/structure, colour, moisture content, supplementary descriptors. Note: Plasticity determination requires the addition of moisture if the sample is too dry to roll (indicate if moisture was added or not).	Sample Number	Sampling Method	Sample Details						Sample Interval	PID/FID (ppm)	Chemical Analysis	Grain Size/ Other Analysis	
From	At	To				Penetration Record Split Spoon Blows (Record N-Values & Recoveries)										
									6"	6"	6"	6"	N	R		
0		0.5	Topsoil - same as SB-1 except slightly darker										30-4			
													34-8			
0.5		2	Rock/gravel w/ some silt, light gray													
2		3	CL Silt - same as SB-1													
3		4	SM Sand, low plasticity, dry, lightish gray yellow color (Feels like beach sand)													
4		6	CL Silt w/ sand around it													
6		7	Fine to coarse gravel													
7		8	CL Clay, low plasticity, dry, very hard, very dark gray mostly, some light brown mixed in													

Notes and Comments

Depth of borehole caving \_\_\_\_\_ Depth of first groundwater encounter \_\_\_\_\_ Topsoil thickness \_\_\_\_\_  
Water level in open borehole on completion \_\_\_\_\_ After \_\_\_\_\_ Hours \_\_\_\_\_

Notes:  
\_\_\_\_\_  
\_\_\_\_\_

\*Sample C10 = Composite 2-7.5 ft bgs

7/25/18

Project name:  
Project number:  
Client:  
Location:

Kayak Launch Site  
11137156  
Town of Lewiston

Drilling contractor:  
Driller:  
Surface elevation:  
Weather (A.M.):  
(P.M.):

Trec Env  
ERIC  
7580'  
Partly Cloudy, 75 80% Humid

Hole designation:  
Date/Time started:  
Date/Time completed:  
Drilling method:  
GHD supervisor:

SB-11  
1:10 pm  
Alexandra Coarney

Stratigraphic Intervals (Depths in ft/m BGS)			Sample Description	Sample Details											
From	At	To	Order of descriptors: Soil type, symbol(s) - primary component(s), (nature of deposit), secondary components, relative density/consistency, grain size/plasticity, gradation/structure, colour, moisture content, supplementary descriptors. Note: Plasticity determination requires the addition of moisture if the sample is too dry to roll (indicate if moisture was added or not).	Sample Number	Sampling Method	Penetration Record Split Spoon Blows (Record N-Values & Recoveries)						Sample Interval	PID/FID (ppm)	Chemical Analysis	Grain Size/Other Analysis
						6"	6"	6"	6"	N	R				
0		0.5	Topsail - same as SB-1									30-4			
0.5		6.5	OL Silty Clay - similar to SB-1, except very compact, dry, low plasticity, some gravel mixed in									254-8			
6.5		7	Fine to coarse gravel												
7		8	CL Clay, medium plasticity, low moisture, reddish light brown mostly, light gray yellowish mixed in (silty clay some fine gravel)												
Notes and Comments			Depth of borehole casing _____			Depth of first groundwater encounter _____			Topsail thickness _____						
			Water level in open borehole on completion _____			After _____			Hours _____						
Notes:															

~~Sample 011~~ \* Sample 011 - Composite <sup>from</sup> 0.5 - 7.5 ft bgs

7/25/18

Project name:  
Project number:  
Client:  
Location:

Koyak Launch Site  
11137156  
Town of Lewiston

Drilling contractor:  
Driller:  
Surface elevation:  
Weather (A.M.):  
(P.M.):

Trec Env  
ERIC  
  
Partly Cloudy 75-80°F / humid

Hole designation:  
Date/Time started:  
Date/Time completed:  
Drilling method:  
GHD supervisor:

SB-12  
1:25 pm  
Alexandra Gearing

Stratigraphic Intervals (Depths in ft/m BGS)			Sample Description	Sample Number	Sampling Method	Sample Details Penetration Record Split Spoon Blows (Record N-Values & Recoveries)						Sample Interval	PID/FID (ppm)	Chemical Analysis	Grain Size/Other Analysis
From	At	To	Order of descriptors: Soil type symbol(s) - primary component(s), (nature of deposit), secondary components, relative density/consistency, grain size/plasticity, gradation/structure, colour, moisture content; supplementary descriptors. Note: Plasticity determination requires the addition of moisture if the sample is too dry to roll (Indicate if moisture was added or not).			6"	6"	6"	6"	N	R				
0	0.5		Topsoil, same as SB-1									3	0-4		
0.5	3.5		CL Silty Clay, light brown, dry, low plasticity									2	4-8		
3.5	6		Fine to coarse gravel w/ some silt												
6	7		Yellowish sandy gravelly fill - similar to SB-6 and SB-7 but more sandy												
7	7.25		Fine to coarse gravel												
7.25	7.75		CL Clay, silty - same as SB-11												
7.75	8		Fine to coarse gravel												
Notes and Comments			Depth of borehole caving _____ Depth of first groundwater encounter _____ Topsoil thickness _____ Water level in open borehole on completion _____ After _____ Hours _____ Notes: _____ _____ _____												

\*Sample 012 = Composite from 0.5 to 7 ft bgs

**Soil Classification System (U.S.C.S.)**  
(ASTM D2488 Visual-Manual Procedure)

Major Divisions		Group Symbol	Typical Description	
Highly Organic Soils (See note below)		PT	Peat and other highly organic soils	
Coarse-Grained Soils (more than half by weight larger than no. 200 sieve size)	Gravels more than half of coarse fraction larger than no. 4 sieve size	GW	Well graded gravel, gravel-sand mixtures, ≤ 5% fines	
		GP	Poorly graded gravels and gravel-sand mixtures, ≤ 5% fines	
		"Dirty" Gravels	GM	Silty gravels, gravel-sand-silt mixtures, ≥ 15% fines
			GC	Clayey gravels, gravel-sand-clay mixtures, ≥ 15% fines
	Sands more than half of coarse fraction smaller than no. 4 sieve size	"Clean" Sands	SW	Well graded sands, gravelly sands, ≤ 5% fines
			SP	Poorly graded sands, or gravelly sands, ≤ 5% fines
		"Dirty" Sands	SM	Silty sands, sand-silt mixtures, ≥ 15% fines
			SC	Clayey sands, sand-clay mixtures, ≥ 15% fines
Fine-Grained Soils (more than half by weight passes no. 200 sieve size)	Sills below "A" line on plasticity chart; negligible organic content	ML	Inorganic silts and very fine sand, rock flour, silty sands of slight plasticity	
		MH	Inorganic silts, micaceous or diatomaceous, fine sandy or silty soils	
	Clays above "A" line on plasticity chart; negligible organic content	CL	Inorganic clays of low to medium plasticity, gravelly, sandy, or silty clays, lean clays	
		CH	Inorganic clays of high plasticity, fat clays	
	Organic silts & organic clays below "A" line on plasticity chart	OL	Organic silts and organic silty clays of low plasticity	
		OH	Organic clays of high plasticity	

**Note:**

Use dual symbols for coarse-grained soils if soil is estimated to contain 5% to 15% fines (equals "with").

Non-Cohesive (Granular) Soil		Cohesive (Clayey) Soil	
Relative Density	Blows Per Foot (N-Value)	Consistency	Blows Per Foot (N-Value)
Very Loose	Less than 5	Very Soft	0 to 2
Loose	5 to 9	Soft	3 to 4
Compact	10 to 29	Firm	5 to 9
Dense	30 to 50	Stiff	9 to 15
Very Dense	Greater than 50	Very Stiff	15 to 30
		Hard	Greater than 30

Grain Size Classification  
(based on standard sieve sizes)

Cobbles	Greater than 3 inches (76 mm)
Gravel	Coarse Gravel
	Fine Gravel
	Sand
Silt	
Clay	

Component Percentage Descriptors  
(estimate to nearest 5%)

Coarse Grained Soils	Major Component
Noun(s) (e.g., sand, gravel)	Greater than 15%
Adjective (e.g., silty, clayey)	5% to 15%
With (e.g., with silt, with clay)	Less than 5%
Trace (e.g., trace silt, trace clay)	
Fine Grained Soils	Major Component
Noun(s) (e.g., silt, clay)	Greater than 30%
Adjective (e.g., sandy, gravelly)	15% to 30%
With (e.g., with sand)	5% to 15%
Few (e.g., few sand)	Less than 5%
Trace (e.g., trace sand)	

Soil Structure Terms		Moisture
Stratified	Blocky	Dry
Laminated	Leaves/Seams	Moist
Fissured	Homogeneous	Wet

# Appendix B

## Analytical Data Reports

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-139508-1

Client Project/Site: 11137156/118, Lewiston Kayak Launch Site

Revision: 1

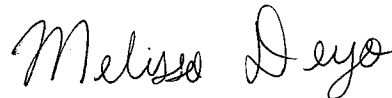
For:

GHD Services Inc.

2055 Niagara Falls Blvd., Suite 3

Niagara Falls, New York 14304

Attn: Kathleen Willy



Authorized for release by:

8/29/2018 7:02:02 PM

Melissa Deyo, Project Manager I

(716)504-9874

[melissa.deyo@testamericainc.com](mailto:melissa.deyo@testamericainc.com)

### LINKS

Review your project  
results through

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Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*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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# Definitions/Glossary

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits

## Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
E	Result exceeded calibration range.

## 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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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)

# Case Narrative

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Job ID: 480-139508-1**

**Laboratory: TestAmerica Buffalo**

## Narrative

### Job Narrative 480-139508-1

#### Receipt Exceptions

This report was revised to include Chromium (Total, Hexavalent and Trivalent).

#### Receipt

The samples were received on 7/25/2018 4:40 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 3.0° C and 4.0° C.

#### GC/MS VOA

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

#### GC/MS Semi VOA

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

#### GC Semi VOA

Method(s) 8081B: The recovery of the one surrogate in sample SO-11137156-072518-AG-010 (480-139508-10) exceeds quality control limits due to the sample matrix. The recovery of the secondary surrogate is within quality control criteria; no corrective action is required.

Method(s) 8082A: The following samples are associated with a continuing calibration verification (CCV 480-427240/32) that had recoveries for the surrogate Decachlorobiphenyl that were below acceptance limits: SO-11137156-072518-AG-001 (480-139508-1), SO-11137156-072518-AG-002 (480-139508-2), SO-11137156-072518-AG-003 (480-139508-3), SO-11137156-072518-AG-004 (480-139508-4), SO-11137156-072518-AG-005 (480-139508-5), SO-11137156-072518-AG-006 (480-139508-6), SO-11137156-072518-AG-007 (480-139508-7), SO-11137156-072518-AG-008 (480-139508-8), SO-11137156-072518-AG-009 (480-139508-9), SO-11137156-072518-AG-010 (480-139508-10), SO-11137156-072518-AG-011 (480-139508-11) and SO-11137156-072518-AG-012 (480-139508-12). The secondary surrogate Tetrachloro-m-xylene is within limits. Therefore, the data has been reported.

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

#### Metals

Method(s) 6010C: The method blank for preparation batch 480-427017 and analytical batch 480-427466 contained Total Manganese above the reporting limit (RL). Associated sample(s) SO-11137156-072518-AG-003 (480-139508-3), SO-11137156-072518-AG-004 (480-139508-4), SO-11137156-072518-AG-005 (480-139508-5), SO-11137156-072518-AG-006 (480-139508-6), SO-11137156-072518-AG-007 (480-139508-7), SO-11137156-072518-AG-009 (480-139508-9), SO-11137156-072518-AG-010 (480-139508-10), SO-11137156-072518-AG-011 (480-139508-11) and SO-11137156-072518-AG-012 (480-139508-12) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method(s) 6010C: The method blank for preparation batch 480-427017 and analytical batch 480-427466 contained Total Zinc above the reporting limit (RL). Associated sample(s) SO-11137156-072518-AG-003 (480-139508-3), SO-11137156-072518-AG-004 (480-139508-4), SO-11137156-072518-AG-005 (480-139508-5), SO-11137156-072518-AG-006 (480-139508-6), SO-11137156-072518-AG-007 (480-139508-7), SO-11137156-072518-AG-009 (480-139508-9), SO-11137156-072518-AG-010 (480-139508-10), SO-11137156-072518-AG-011 (480-139508-11) and SO-11137156-072518-AG-012 (480-139508-12) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method(s) 7471B: Result for LCSSRM exceeded calibration range, however percent recovery was within control limits. Data reported. (LCSSRM 480-428703/2-A)

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

#### Organic Prep

Method(s) 3550C: The following samples required a Florisil clean-up, via EPA Method 3620C, to reduce matrix interferences: SO-11137156-072518-AG-010 (480-139508-10) and SO-11137156-072518-AG-011 (480-139508-11).

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

# Detection Summary

Client: GHD Services Inc.  
 Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-001**

**Lab Sample ID: 480-139508-1**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	3.3	J	22	1.6	ug/Kg	1	☼	8260C	Total/NA
Acetone	41		22	3.7	ug/Kg	1	☼	8260C	Total/NA
Arsenic	12.6		2.6	0.52	mg/Kg	1	☼	6010C	Total/NA
Barium	39.1		0.65	0.14	mg/Kg	1	☼	6010C	Total/NA
Beryllium	0.52		0.26	0.036	mg/Kg	1	☼	6010C	Total/NA
Chromium	16.6	B	0.65	0.26	mg/Kg	1	☼	6010C	Total/NA
Copper	14.4		1.3	0.27	mg/Kg	1	☼	6010C	Total/NA
Lead	11.8		1.3	0.31	mg/Kg	1	☼	6010C	Total/NA
Manganese	118	B	0.26	0.042	mg/Kg	1	☼	6010C	Total/NA
Nickel	15.5		6.5	0.30	mg/Kg	1	☼	6010C	Total/NA
Zinc	34.4		2.5	0.80	mg/Kg	1	☼	6010C	Total/NA
Trivalent Chromium	16.6		1.5	0.63	mg/Kg	1		SM 3500 CR D	Total/NA

**Client Sample ID: SO-11137156-072518-AG-002**

**Lab Sample ID: 480-139508-2**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	30.4		2.4	0.47	mg/Kg	1	☼	6010C	Total/NA
Barium	35.7		0.59	0.13	mg/Kg	1	☼	6010C	Total/NA
Beryllium	0.56		0.24	0.033	mg/Kg	1	☼	6010C	Total/NA
Chromium	19.8	B	0.59	0.24	mg/Kg	1	☼	6010C	Total/NA
Copper	15.9		1.2	0.25	mg/Kg	1	☼	6010C	Total/NA
Lead	11.8		1.2	0.28	mg/Kg	1	☼	6010C	Total/NA
Manganese	137	B	0.24	0.038	mg/Kg	1	☼	6010C	Total/NA
Nickel	17.2		5.9	0.27	mg/Kg	1	☼	6010C	Total/NA
Zinc	38.1		2.3	0.75	mg/Kg	1	☼	6010C	Total/NA
Mercury	0.017	J	0.024	0.0099	mg/Kg	1	☼	7471B	Total/NA
Trivalent Chromium	19.8		1.5	0.63	mg/Kg	1		SM 3500 CR D	Total/NA

**Client Sample ID: SO-11137156-072518-AG-003**

**Lab Sample ID: 480-139508-3**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	9.4	J	18	3.1	ug/Kg	1	☼	8260C	Total/NA
Arsenic	26.0		2.3	0.45	mg/Kg	1	☼	6010C	Total/NA
Barium	38.6		0.57	0.12	mg/Kg	1	☼	6010C	Total/NA
Beryllium	0.58		0.23	0.032	mg/Kg	1	☼	6010C	Total/NA
Chromium	15.7	B	0.57	0.23	mg/Kg	1	☼	6010C	Total/NA
Copper	14.0		1.1	0.24	mg/Kg	1	☼	6010C	Total/NA
Lead	10.4		1.1	0.27	mg/Kg	1	☼	6010C	Total/NA
Manganese	146	B	0.23	0.036	mg/Kg	1	☼	6010C	Total/NA
Nickel	17.4		5.7	0.26	mg/Kg	1	☼	6010C	Total/NA
Zinc	39.6	B	2.3	0.73	mg/Kg	1	☼	6010C	Total/NA
Mercury	0.014	J	0.022	0.0091	mg/Kg	1	☼	7471B	Total/NA
Trivalent Chromium	15.7		1.5	0.63	mg/Kg	1		SM 3500 CR D	Total/NA

**Client Sample ID: SO-11137156-072518-AG-004**

**Lab Sample ID: 480-139508-4**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	12	J	15	2.5	ug/Kg	1	☼	8260C	Total/NA
4,4'-DDD	0.41	J	1.9	0.36	ug/Kg	1	☼	8081B	Total/NA
Arsenic	21.1		2.2	0.44	mg/Kg	1	☼	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: GHD Services Inc.  
 Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

## Client Sample ID: SO-11137156-072518-AG-004 (Continued)

## Lab Sample ID: 480-139508-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	57.9		0.55	0.12	mg/Kg	1	☼	6010C	Total/NA
Beryllium	0.73		0.22	0.031	mg/Kg	1	☼	6010C	Total/NA
Chromium	18.7	B	0.55	0.22	mg/Kg	1	☼	6010C	Total/NA
Copper	12.8		1.1	0.23	mg/Kg	1	☼	6010C	Total/NA
Lead	12.2		1.1	0.26	mg/Kg	1	☼	6010C	Total/NA
Manganese	234	B	0.22	0.035	mg/Kg	1	☼	6010C	Total/NA
Nickel	23.5		5.5	0.25	mg/Kg	1	☼	6010C	Total/NA
Zinc	58.2	B	2.2	0.70	mg/Kg	1	☼	6010C	Total/NA
Mercury	0.019	J	0.022	0.0091	mg/Kg	1	☼	7471B	Total/NA
Trivalent Chromium	18.7		1.5	0.63	mg/Kg	1		SM 3500 CR D	Total/NA

## Client Sample ID: SO-11137156-072518-AG-005

## Lab Sample ID: 480-139508-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	8.6	J	22	3.7	ug/Kg	1	☼	8260C	Total/NA
4,4'-DDD	0.36	J	1.7	0.33	ug/Kg	1	☼	8081B	Total/NA
Arsenic	15.6		2.1	0.41	mg/Kg	1	☼	6010C	Total/NA
Barium	41.2		0.52	0.11	mg/Kg	1	☼	6010C	Total/NA
Beryllium	0.59		0.21	0.029	mg/Kg	1	☼	6010C	Total/NA
Chromium	16.2	B	0.52	0.21	mg/Kg	1	☼	6010C	Total/NA
Copper	20.0		1.0	0.22	mg/Kg	1	☼	6010C	Total/NA
Lead	17.7		1.0	0.25	mg/Kg	1	☼	6010C	Total/NA
Manganese	287	B	0.21	0.033	mg/Kg	1	☼	6010C	Total/NA
Nickel	21.8		5.2	0.24	mg/Kg	1	☼	6010C	Total/NA
Zinc	59.9	B	2.1	0.66	mg/Kg	1	☼	6010C	Total/NA
Trivalent Chromium	16.2		1.5	0.63	mg/Kg	1		SM 3500 CR D	Total/NA

## Client Sample ID: SO-11137156-072518-AG-006

## Lab Sample ID: 480-139508-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	37		20	3.4	ug/Kg	1	☼	8260C	Total/NA
Arsenic	22.3		2.3	0.45	mg/Kg	1	☼	6010C	Total/NA
Barium	28.0		0.57	0.12	mg/Kg	1	☼	6010C	Total/NA
Beryllium	0.71		0.23	0.032	mg/Kg	1	☼	6010C	Total/NA
Chromium	18.2	B	0.57	0.23	mg/Kg	1	☼	6010C	Total/NA
Copper	19.6		1.1	0.24	mg/Kg	1	☼	6010C	Total/NA
Lead	17.5		1.1	0.27	mg/Kg	1	☼	6010C	Total/NA
Manganese	161	B	0.23	0.036	mg/Kg	1	☼	6010C	Total/NA
Nickel	22.5		5.7	0.26	mg/Kg	1	☼	6010C	Total/NA
Zinc	71.0	B	2.3	0.73	mg/Kg	1	☼	6010C	Total/NA
Trivalent Chromium	18.2		1.5	0.63	mg/Kg	1		SM 3500 CR D	Total/NA

## Client Sample ID: SO-11137156-072518-AG-007

## Lab Sample ID: 480-139508-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	19	J	20	3.4	ug/Kg	1	☼	8260C	Total/NA
Arsenic	6.8		2.2	0.43	mg/Kg	1	☼	6010C	Total/NA
Barium	23.4		0.54	0.12	mg/Kg	1	☼	6010C	Total/NA
Beryllium	0.47		0.22	0.030	mg/Kg	1	☼	6010C	Total/NA
Chromium	12.8	B	0.54	0.22	mg/Kg	1	☼	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

## Client Sample ID: SO-11137156-072518-AG-007 (Continued)

## Lab Sample ID: 480-139508-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	42.5		1.1	0.23	mg/Kg	1	☼	6010C	Total/NA
Lead	14.0		1.1	0.26	mg/Kg	1	☼	6010C	Total/NA
Manganese	257	B	0.22	0.034	mg/Kg	1	☼	6010C	Total/NA
Nickel	20.2		5.4	0.25	mg/Kg	1	☼	6010C	Total/NA
Zinc	60.4	B	2.2	0.69	mg/Kg	1	☼	6010C	Total/NA
Mercury	0.012	J	0.022	0.0089	mg/Kg	1	☼	7471B	Total/NA
Trivalent Chromium	12.8		1.5	0.63	mg/Kg	1		SM 3500 CR D	Total/NA

## Client Sample ID: SO-11137156-072518-AG-008

## Lab Sample ID: 480-139508-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	21		21	3.6	ug/Kg	1	☼	8260C	Total/NA
4,4'-DDD	0.42	J	1.9	0.37	ug/Kg	1	☼	8081B	Total/NA
Arsenic	24.5		2.3	0.46	mg/Kg	1	☼	6010C	Total/NA
Barium	30.0		0.58	0.13	mg/Kg	1	☼	6010C	Total/NA
Beryllium	0.42		0.23	0.032	mg/Kg	1	☼	6010C	Total/NA
Chromium	15.9		0.58	0.23	mg/Kg	1	☼	6010C	Total/NA
Copper	9.5		1.2	0.24	mg/Kg	1	☼	6010C	Total/NA
Lead	7.9		1.2	0.28	mg/Kg	1	☼	6010C	Total/NA
Manganese	339	B	0.23	0.037	mg/Kg	1	☼	6010C	Total/NA
Nickel	12.1		5.8	0.27	mg/Kg	1	☼	6010C	Total/NA
Zinc	72.2		2.3	0.75	mg/Kg	1	☼	6010C	Total/NA
Mercury	0.013	J	0.022	0.0090	mg/Kg	1	☼	7471B	Total/NA
Trivalent Chromium	15.9		1.5	0.63	mg/Kg	1		SM 3500 CR D	Total/NA

## Client Sample ID: SO-11137156-072518-AG-009

## Lab Sample ID: 480-139508-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	17	J	18	3.0	ug/Kg	1	☼	8260C	Total/NA
4,4'-DDD	0.53	J	1.8	0.35	ug/Kg	1	☼	8081B	Total/NA
Arsenic	4.5		2.2	0.43	mg/Kg	1	☼	6010C	Total/NA
Barium	32.0		0.54	0.12	mg/Kg	1	☼	6010C	Total/NA
Beryllium	0.54		0.22	0.030	mg/Kg	1	☼	6010C	Total/NA
Chromium	13.7	B	0.54	0.22	mg/Kg	1	☼	6010C	Total/NA
Copper	37.5		1.1	0.23	mg/Kg	1	☼	6010C	Total/NA
Lead	11.5		1.1	0.26	mg/Kg	1	☼	6010C	Total/NA
Manganese	737	B	0.22	0.035	mg/Kg	1	☼	6010C	Total/NA
Nickel	21.5		5.4	0.25	mg/Kg	1	☼	6010C	Total/NA
Zinc	50.6	B	2.2	0.69	mg/Kg	1	☼	6010C	Total/NA
Mercury	0.026		0.021	0.0085	mg/Kg	1	☼	7471B	Total/NA
Trivalent Chromium	13.7		1.5	0.63	mg/Kg	1		SM 3500 CR D	Total/NA

## Client Sample ID: SO-11137156-072518-AG-010

## Lab Sample ID: 480-139508-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	21		20	3.4	ug/Kg	1	☼	8260C	Total/NA
Acenaphthylene	38	J	180	24	ug/Kg	1	☼	8270D	Total/NA
Anthracene	110	J	180	46	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	270		180	18	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	280		180	27	ug/Kg	1	☼	8270D	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: GHD Services Inc.  
 Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

## Client Sample ID: SO-11137156-072518-AG-010 (Continued)

## Lab Sample ID: 480-139508-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzo[b]fluoranthene	320		180	29	ug/Kg	1	☼	8270D	Total/NA
Benzo[g,h,i]perylene	250		180	20	ug/Kg	1	☼	8270D	Total/NA
Benzo[k]fluoranthene	180		180	24	ug/Kg	1	☼	8270D	Total/NA
Chrysene	270		180	41	ug/Kg	1	☼	8270D	Total/NA
Dibenz(a,h)anthracene	83	J	180	33	ug/Kg	1	☼	8270D	Total/NA
Fluoranthene	420		180	20	ug/Kg	1	☼	8270D	Total/NA
Fluorene	35	J	180	22	ug/Kg	1	☼	8270D	Total/NA
Hexachlorobenzene	73	J	180	25	ug/Kg	1	☼	8270D	Total/NA
Indeno[1,2,3-cd]pyrene	230		180	23	ug/Kg	1	☼	8270D	Total/NA
Pentachlorophenol	190	J	360	180	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	300		180	27	ug/Kg	1	☼	8270D	Total/NA
Pyrene	410		180	22	ug/Kg	1	☼	8270D	Total/NA
alpha-BHC	0.69	J	1.8	0.32	ug/Kg	1	☼	8081B	Total/NA
beta-BHC	10		1.8	0.32	ug/Kg	1	☼	8081B	Total/NA
Arsenic	9.4		2.2	0.44	mg/Kg	1	☼	6010C	Total/NA
Barium	113		0.54	0.12	mg/Kg	1	☼	6010C	Total/NA
Beryllium	0.57		0.22	0.031	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.24		0.22	0.033	mg/Kg	1	☼	6010C	Total/NA
Chromium	21.1	B	0.54	0.22	mg/Kg	1	☼	6010C	Total/NA
Copper	34.4		1.1	0.23	mg/Kg	1	☼	6010C	Total/NA
Lead	24.8		1.1	0.26	mg/Kg	1	☼	6010C	Total/NA
Manganese	3750	B	0.22	0.035	mg/Kg	1	☼	6010C	Total/NA
Nickel	26.2		5.4	0.25	mg/Kg	1	☼	6010C	Total/NA
Zinc	88.9	B	2.2	0.70	mg/Kg	1	☼	6010C	Total/NA
Mercury	0.90	F1	0.022	0.0089	mg/Kg	1	☼	7471B	Total/NA
Trivalent Chromium	21.1		1.5	0.63	mg/Kg	1		SM 3500 CR D	Total/NA

## Client Sample ID: SO-11137156-072518-AG-011

## Lab Sample ID: 480-139508-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	15	J	18	3.1	ug/Kg	1	☼	8260C	Total/NA
Arsenic	6.7		2.3	0.45	mg/Kg	1	☼	6010C	Total/NA
Barium	36.7		0.57	0.12	mg/Kg	1	☼	6010C	Total/NA
Beryllium	0.69		0.23	0.032	mg/Kg	1	☼	6010C	Total/NA
Chromium	18.0	B	0.57	0.23	mg/Kg	1	☼	6010C	Total/NA
Copper	62.2		1.1	0.24	mg/Kg	1	☼	6010C	Total/NA
Lead	30.9		1.1	0.27	mg/Kg	1	☼	6010C	Total/NA
Manganese	973	B	0.23	0.036	mg/Kg	1	☼	6010C	Total/NA
Nickel	27.1		5.7	0.26	mg/Kg	1	☼	6010C	Total/NA
Zinc	102	B	2.3	0.72	mg/Kg	1	☼	6010C	Total/NA
Mercury	0.060		0.022	0.0088	mg/Kg	1	☼	7471B	Total/NA
Trivalent Chromium	18.0		1.5	0.63	mg/Kg	1		SM 3500 CR D	Total/NA

## Client Sample ID: SO-11137156-072518-AG-012

## Lab Sample ID: 480-139508-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	14	J	19	3.3	ug/Kg	1	☼	8260C	Total/NA
Arsenic	11.2		2.1	0.43	mg/Kg	1	☼	6010C	Total/NA
Barium	44.6		0.53	0.12	mg/Kg	1	☼	6010C	Total/NA
Beryllium	0.54		0.21	0.030	mg/Kg	1	☼	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

Client Sample ID: SO-11137156-072518-AG-012 (Continued)

Lab Sample ID: 480-139508-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	15.0	B	0.53	0.21	mg/Kg	1	☼	6010C	Total/NA
Copper	31.1		1.1	0.22	mg/Kg	1	☼	6010C	Total/NA
Lead	16.0		1.1	0.26	mg/Kg	1	☼	6010C	Total/NA
Manganese	843	B	0.21	0.034	mg/Kg	1	☼	6010C	Total/NA
Nickel	18.9		5.3	0.25	mg/Kg	1	☼	6010C	Total/NA
Zinc	58.0	B	2.1	0.68	mg/Kg	1	☼	6010C	Total/NA
Mercury	0.031		0.021	0.0087	mg/Kg	1	☼	7471B	Total/NA
Trivalent Chromium	15.0		1.5	0.63	mg/Kg	1		SM 3500 CR D	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo



# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-001**

**Lab Sample ID: 480-139508-1**

**Date Collected: 07/25/18 09:35**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 78.3**

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		4.4	0.32	ug/Kg	☼	07/25/18 18:00	08/01/18 15:35	1
1,1-Dichloroethane	ND		4.4	0.53	ug/Kg	☼	07/25/18 18:00	08/01/18 15:35	1
1,1-Dichloroethene	ND		4.4	0.54	ug/Kg	☼	07/25/18 18:00	08/01/18 15:35	1
1,2,4-Trimethylbenzene	ND		4.4	0.84	ug/Kg	☼	07/25/18 18:00	08/01/18 15:35	1
1,2-Dichlorobenzene	ND		4.4	0.34	ug/Kg	☼	07/25/18 18:00	08/01/18 15:35	1
1,2-Dichloroethane	ND		4.4	0.22	ug/Kg	☼	07/25/18 18:00	08/01/18 15:35	1
1,3,5-Trimethylbenzene	ND		4.4	0.28	ug/Kg	☼	07/25/18 18:00	08/01/18 15:35	1
1,3-Dichlorobenzene	ND		4.4	0.23	ug/Kg	☼	07/25/18 18:00	08/01/18 15:35	1
1,4-Dichlorobenzene	ND		4.4	0.61	ug/Kg	☼	07/25/18 18:00	08/01/18 15:35	1
1,4-Dioxane	ND		88	19	ug/Kg	☼	07/25/18 18:00	08/01/18 15:35	1
<b>2-Butanone (MEK)</b>	<b>3.3</b>	<b>J</b>	22	1.6	ug/Kg	☼	07/25/18 18:00	08/01/18 15:35	1
<b>Acetone</b>	<b>41</b>		22	3.7	ug/Kg	☼	07/25/18 18:00	08/01/18 15:35	1
Benzene	ND		4.4	0.21	ug/Kg	☼	07/25/18 18:00	08/01/18 15:35	1
Carbon tetrachloride	ND		4.4	0.42	ug/Kg	☼	07/25/18 18:00	08/01/18 15:35	1
Chlorobenzene	ND		4.4	0.58	ug/Kg	☼	07/25/18 18:00	08/01/18 15:35	1
Chloroform	ND		4.4	0.27	ug/Kg	☼	07/25/18 18:00	08/01/18 15:35	1
cis-1,2-Dichloroethene	ND		4.4	0.56	ug/Kg	☼	07/25/18 18:00	08/01/18 15:35	1
Ethylbenzene	ND		4.4	0.30	ug/Kg	☼	07/25/18 18:00	08/01/18 15:35	1
Methyl tert-butyl ether	ND		4.4	0.43	ug/Kg	☼	07/25/18 18:00	08/01/18 15:35	1
Methylene Chloride	ND		4.4	2.0	ug/Kg	☼	07/25/18 18:00	08/01/18 15:35	1
n-Butylbenzene	ND		4.4	0.38	ug/Kg	☼	07/25/18 18:00	08/01/18 15:35	1
n-Propylbenzene	ND		4.4	0.35	ug/Kg	☼	07/25/18 18:00	08/01/18 15:35	1
sec-Butylbenzene	ND		4.4	0.38	ug/Kg	☼	07/25/18 18:00	08/01/18 15:35	1
tert-Butylbenzene	ND		4.4	0.46	ug/Kg	☼	07/25/18 18:00	08/01/18 15:35	1
Tetrachloroethene	ND		4.4	0.59	ug/Kg	☼	07/25/18 18:00	08/01/18 15:35	1
Toluene	ND		4.4	0.33	ug/Kg	☼	07/25/18 18:00	08/01/18 15:35	1
trans-1,2-Dichloroethene	ND		4.4	0.45	ug/Kg	☼	07/25/18 18:00	08/01/18 15:35	1
Trichloroethene	ND		4.4	0.96	ug/Kg	☼	07/25/18 18:00	08/01/18 15:35	1
Vinyl chloride	ND		4.4	0.53	ug/Kg	☼	07/25/18 18:00	08/01/18 15:35	1
Xylenes, Total	ND		8.8	0.74	ug/Kg	☼	07/25/18 18:00	08/01/18 15:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		64 - 126	07/25/18 18:00	08/01/18 15:35	1
4-Bromofluorobenzene (Surr)	92		72 - 126	07/25/18 18:00	08/01/18 15:35	1
Dibromofluoromethane (Surr)	96		60 - 140	07/25/18 18:00	08/01/18 15:35	1
Toluene-d8 (Surr)	100		71 - 125	07/25/18 18:00	08/01/18 15:35	1

**Method: 8270D - Semivolatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	ND		210	25	ug/Kg	☼	08/03/18 06:56	08/14/18 16:23	1
3-Methylphenol	ND		410	33	ug/Kg	☼	08/03/18 06:56	08/14/18 16:23	1
4-Methylphenol	ND		410	25	ug/Kg	☼	08/03/18 06:56	08/14/18 16:23	1
Acenaphthene	ND		210	31	ug/Kg	☼	08/03/18 06:56	08/14/18 16:23	1
Acenaphthylene	ND		210	28	ug/Kg	☼	08/03/18 06:56	08/14/18 16:23	1
Anthracene	ND		210	53	ug/Kg	☼	08/03/18 06:56	08/14/18 16:23	1
Benzo[a]anthracene	ND		210	21	ug/Kg	☼	08/03/18 06:56	08/14/18 16:23	1
Benzo[a]pyrene	ND		210	31	ug/Kg	☼	08/03/18 06:56	08/14/18 16:23	1
Benzo[b]fluoranthene	ND		210	34	ug/Kg	☼	08/03/18 06:56	08/14/18 16:23	1
Benzo[g,h,i]perylene	ND		210	23	ug/Kg	☼	08/03/18 06:56	08/14/18 16:23	1
Benzo[k]fluoranthene	ND		210	28	ug/Kg	☼	08/03/18 06:56	08/14/18 16:23	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-001**

**Lab Sample ID: 480-139508-1**

**Date Collected: 07/25/18 09:35**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 78.3**

**Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chrysene	ND		210	48	ug/Kg	☼	08/03/18 06:56	08/14/18 16:23	1
Dibenz(a,h)anthracene	ND		210	38	ug/Kg	☼	08/03/18 06:56	08/14/18 16:23	1
Dibenzofuran	ND		210	25	ug/Kg	☼	08/03/18 06:56	08/14/18 16:23	1
Fluoranthene	ND		210	23	ug/Kg	☼	08/03/18 06:56	08/14/18 16:23	1
Fluorene	ND		210	25	ug/Kg	☼	08/03/18 06:56	08/14/18 16:23	1
Hexachlorobenzene	ND		210	29	ug/Kg	☼	08/03/18 06:56	08/14/18 16:23	1
Indeno[1,2,3-cd]pyrene	ND		210	26	ug/Kg	☼	08/03/18 06:56	08/14/18 16:23	1
Naphthalene	ND		210	28	ug/Kg	☼	08/03/18 06:56	08/14/18 16:23	1
Pentachlorophenol	ND		410	210	ug/Kg	☼	08/03/18 06:56	08/14/18 16:23	1
Phenanthrene	ND		210	31	ug/Kg	☼	08/03/18 06:56	08/14/18 16:23	1
Phenol	ND		210	33	ug/Kg	☼	08/03/18 06:56	08/14/18 16:23	1
Pyrene	ND		210	25	ug/Kg	☼	08/03/18 06:56	08/14/18 16:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	84		54 - 120	08/03/18 06:56	08/14/18 16:23	1
2-Fluorobiphenyl	85		60 - 120	08/03/18 06:56	08/14/18 16:23	1
2-Fluorophenol (Surr)	66		52 - 120	08/03/18 06:56	08/14/18 16:23	1
Nitrobenzene-d5 (Surr)	85		53 - 120	08/03/18 06:56	08/14/18 16:23	1
Phenol-d5 (Surr)	78		54 - 120	08/03/18 06:56	08/14/18 16:23	1
p-Terphenyl-d14 (Surr)	95		65 - 121	08/03/18 06:56	08/14/18 16:23	1

**Method: 8081B - Organochlorine Pesticides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		2.1	0.41	ug/Kg	☼	08/01/18 06:48	08/02/18 14:12	1
4,4'-DDE	ND		2.1	0.44	ug/Kg	☼	08/01/18 06:48	08/02/18 14:12	1
4,4'-DDT	ND		2.1	0.49	ug/Kg	☼	08/01/18 06:48	08/02/18 14:12	1
Aldrin	ND		2.1	0.51	ug/Kg	☼	08/01/18 06:48	08/02/18 14:12	1
alpha-BHC	ND		2.1	0.38	ug/Kg	☼	08/01/18 06:48	08/02/18 14:12	1
cis-Chlordane	ND		2.1	1.0	ug/Kg	☼	08/01/18 06:48	08/02/18 14:12	1
beta-BHC	ND		2.1	0.38	ug/Kg	☼	08/01/18 06:48	08/02/18 14:12	1
delta-BHC	ND		2.1	0.39	ug/Kg	☼	08/01/18 06:48	08/02/18 14:12	1
Dieldrin	ND		2.1	0.50	ug/Kg	☼	08/01/18 06:48	08/02/18 14:12	1
Endosulfan I	ND		2.1	0.40	ug/Kg	☼	08/01/18 06:48	08/02/18 14:12	1
Endosulfan II	ND		2.1	0.38	ug/Kg	☼	08/01/18 06:48	08/02/18 14:12	1
Endosulfan sulfate	ND		2.1	0.39	ug/Kg	☼	08/01/18 06:48	08/02/18 14:12	1
Endrin	ND		2.1	0.41	ug/Kg	☼	08/01/18 06:48	08/02/18 14:12	1
gamma-BHC (Lindane)	ND		2.1	0.38	ug/Kg	☼	08/01/18 06:48	08/02/18 14:12	1
Heptachlor	ND		2.1	0.45	ug/Kg	☼	08/01/18 06:48	08/02/18 14:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	95		45 - 120	08/01/18 06:48	08/02/18 14:12	1
Tetrachloro-m-xylene	77		30 - 124	08/01/18 06:48	08/02/18 14:12	1

**Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.25	0.048	mg/Kg	☼	07/31/18 07:45	07/31/18 23:11	1
PCB-1221	ND		0.25	0.048	mg/Kg	☼	07/31/18 07:45	07/31/18 23:11	1
PCB-1232	ND		0.25	0.048	mg/Kg	☼	07/31/18 07:45	07/31/18 23:11	1
PCB-1242	ND		0.25	0.048	mg/Kg	☼	07/31/18 07:45	07/31/18 23:11	1
PCB-1248	ND		0.25	0.048	mg/Kg	☼	07/31/18 07:45	07/31/18 23:11	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-001**

**Lab Sample ID: 480-139508-1**

Date Collected: 07/25/18 09:35

Matrix: Solid

Date Received: 07/25/18 16:40

Percent Solids: 78.3

**Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1254	ND		0.25	0.12	mg/Kg	☼	07/31/18 07:45	07/31/18 23:11	1
PCB-1260	ND		0.25	0.12	mg/Kg	☼	07/31/18 07:45	07/31/18 23:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	98		60 - 154				07/31/18 07:45	07/31/18 23:11	1
DCB Decachlorobiphenyl	80		65 - 174				07/31/18 07:45	07/31/18 23:11	1

**Method: 8151A - Herbicides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		21	7.5	ug/Kg	☼	08/02/18 07:55	08/08/18 22:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	54		28 - 129				08/02/18 07:55	08/08/18 22:30	1

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	12.6		2.6	0.52	mg/Kg	☼	07/30/18 11:20	07/31/18 18:25	1
Barium	39.1		0.65	0.14	mg/Kg	☼	07/30/18 11:20	07/31/18 18:25	1
Beryllium	0.52		0.26	0.036	mg/Kg	☼	07/30/18 11:20	07/31/18 18:25	1
Cadmium	ND		0.26	0.039	mg/Kg	☼	07/30/18 11:20	07/31/18 18:25	1
Chromium	16.6	B	0.65	0.26	mg/Kg	☼	07/30/18 11:20	07/31/18 18:25	1
Copper	14.4		1.3	0.27	mg/Kg	☼	07/30/18 11:20	07/31/18 18:25	1
Lead	11.8		1.3	0.31	mg/Kg	☼	07/30/18 11:20	07/31/18 18:25	1
Manganese	118	B	0.26	0.042	mg/Kg	☼	07/30/18 11:20	07/31/18 18:25	1
Nickel	15.5		6.5	0.30	mg/Kg	☼	07/30/18 11:20	07/31/18 18:25	1
Selenium	ND		5.2	0.52	mg/Kg	☼	07/30/18 11:20	07/31/18 18:25	1
Silver	ND		0.78	0.26	mg/Kg	☼	07/30/18 11:20	07/31/18 18:25	1
Zinc	34.4		2.5	0.80	mg/Kg	☼	08/02/18 09:30	08/03/18 14:25	1

**Method: 7471B - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.026	0.011	mg/Kg	☼	08/16/18 11:35	08/16/18 13:29	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		2.5	0.65	mg/Kg	☼	08/23/18 15:45	08/24/18 05:20	1
Trivalent Chromium	16.6		1.5	0.63	mg/Kg			08/27/18 16:26	1

**Client Sample ID: SO-11137156-072518-AG-002**

**Lab Sample ID: 480-139508-2**

Date Collected: 07/25/18 09:50

Matrix: Solid

Date Received: 07/25/18 16:40

Percent Solids: 83.3

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		3.6	0.26	ug/Kg	☼	07/25/18 18:00	08/01/18 16:01	1
1,1-Dichloroethane	ND		3.6	0.44	ug/Kg	☼	07/25/18 18:00	08/01/18 16:01	1
1,1-Dichloroethene	ND		3.6	0.44	ug/Kg	☼	07/25/18 18:00	08/01/18 16:01	1
1,2,4-Trimethylbenzene	ND		3.6	0.70	ug/Kg	☼	07/25/18 18:00	08/01/18 16:01	1
1,2-Dichlorobenzene	ND		3.6	0.28	ug/Kg	☼	07/25/18 18:00	08/01/18 16:01	1
1,2-Dichloroethane	ND		3.6	0.18	ug/Kg	☼	07/25/18 18:00	08/01/18 16:01	1
1,3,5-Trimethylbenzene	ND		3.6	0.23	ug/Kg	☼	07/25/18 18:00	08/01/18 16:01	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-002**

**Lab Sample ID: 480-139508-2**

**Date Collected: 07/25/18 09:50**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 83.3**

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		3.6	0.19	ug/Kg	☼	07/25/18 18:00	08/01/18 16:01	1
1,4-Dichlorobenzene	ND		3.6	0.51	ug/Kg	☼	07/25/18 18:00	08/01/18 16:01	1
1,4-Dioxane	ND		72	16	ug/Kg	☼	07/25/18 18:00	08/01/18 16:01	1
2-Butanone (MEK)	ND		18	1.3	ug/Kg	☼	07/25/18 18:00	08/01/18 16:01	1
Acetone	ND		18	3.1	ug/Kg	☼	07/25/18 18:00	08/01/18 16:01	1
Benzene	ND		3.6	0.18	ug/Kg	☼	07/25/18 18:00	08/01/18 16:01	1
Carbon tetrachloride	ND		3.6	0.35	ug/Kg	☼	07/25/18 18:00	08/01/18 16:01	1
Chlorobenzene	ND		3.6	0.48	ug/Kg	☼	07/25/18 18:00	08/01/18 16:01	1
Chloroform	ND		3.6	0.22	ug/Kg	☼	07/25/18 18:00	08/01/18 16:01	1
cis-1,2-Dichloroethene	ND		3.6	0.46	ug/Kg	☼	07/25/18 18:00	08/01/18 16:01	1
Ethylbenzene	ND		3.6	0.25	ug/Kg	☼	07/25/18 18:00	08/01/18 16:01	1
Methyl tert-butyl ether	ND		3.6	0.36	ug/Kg	☼	07/25/18 18:00	08/01/18 16:01	1
Methylene Chloride	ND		3.6	1.7	ug/Kg	☼	07/25/18 18:00	08/01/18 16:01	1
n-Butylbenzene	ND		3.6	0.32	ug/Kg	☼	07/25/18 18:00	08/01/18 16:01	1
n-Propylbenzene	ND		3.6	0.29	ug/Kg	☼	07/25/18 18:00	08/01/18 16:01	1
sec-Butylbenzene	ND		3.6	0.32	ug/Kg	☼	07/25/18 18:00	08/01/18 16:01	1
tert-Butylbenzene	ND		3.6	0.38	ug/Kg	☼	07/25/18 18:00	08/01/18 16:01	1
Tetrachloroethene	ND		3.6	0.49	ug/Kg	☼	07/25/18 18:00	08/01/18 16:01	1
Toluene	ND		3.6	0.27	ug/Kg	☼	07/25/18 18:00	08/01/18 16:01	1
trans-1,2-Dichloroethene	ND		3.6	0.37	ug/Kg	☼	07/25/18 18:00	08/01/18 16:01	1
Trichloroethene	ND		3.6	0.80	ug/Kg	☼	07/25/18 18:00	08/01/18 16:01	1
Vinyl chloride	ND		3.6	0.44	ug/Kg	☼	07/25/18 18:00	08/01/18 16:01	1
Xylenes, Total	ND		7.2	0.61	ug/Kg	☼	07/25/18 18:00	08/01/18 16:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		64 - 126	07/25/18 18:00	08/01/18 16:01	1
4-Bromofluorobenzene (Surr)	91		72 - 126	07/25/18 18:00	08/01/18 16:01	1
Dibromofluoromethane (Surr)	95		60 - 140	07/25/18 18:00	08/01/18 16:01	1
Toluene-d8 (Surr)	101		71 - 125	07/25/18 18:00	08/01/18 16:01	1

**Method: 8270D - Semivolatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	ND		200	23	ug/Kg	☼	08/03/18 06:56	08/14/18 16:51	1
3-Methylphenol	ND		390	30	ug/Kg	☼	08/03/18 06:56	08/14/18 16:51	1
4-Methylphenol	ND		390	23	ug/Kg	☼	08/03/18 06:56	08/14/18 16:51	1
Acenaphthene	ND		200	29	ug/Kg	☼	08/03/18 06:56	08/14/18 16:51	1
Acenaphthylene	ND		200	26	ug/Kg	☼	08/03/18 06:56	08/14/18 16:51	1
Anthracene	ND		200	49	ug/Kg	☼	08/03/18 06:56	08/14/18 16:51	1
Benzo[a]anthracene	ND		200	20	ug/Kg	☼	08/03/18 06:56	08/14/18 16:51	1
Benzo[a]pyrene	ND		200	29	ug/Kg	☼	08/03/18 06:56	08/14/18 16:51	1
Benzo[b]fluoranthene	ND		200	32	ug/Kg	☼	08/03/18 06:56	08/14/18 16:51	1
Benzo[g,h,i]perylene	ND		200	21	ug/Kg	☼	08/03/18 06:56	08/14/18 16:51	1
Benzo[k]fluoranthene	ND		200	26	ug/Kg	☼	08/03/18 06:56	08/14/18 16:51	1
Chrysene	ND		200	44	ug/Kg	☼	08/03/18 06:56	08/14/18 16:51	1
Dibenz(a,h)anthracene	ND		200	35	ug/Kg	☼	08/03/18 06:56	08/14/18 16:51	1
Dibenzofuran	ND		200	23	ug/Kg	☼	08/03/18 06:56	08/14/18 16:51	1
Fluoranthene	ND		200	21	ug/Kg	☼	08/03/18 06:56	08/14/18 16:51	1
Fluorene	ND		200	23	ug/Kg	☼	08/03/18 06:56	08/14/18 16:51	1
Hexachlorobenzene	ND		200	27	ug/Kg	☼	08/03/18 06:56	08/14/18 16:51	1
Indeno[1,2,3-cd]pyrene	ND		200	25	ug/Kg	☼	08/03/18 06:56	08/14/18 16:51	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-002**

**Lab Sample ID: 480-139508-2**

Date Collected: 07/25/18 09:50

Matrix: Solid

Date Received: 07/25/18 16:40

Percent Solids: 83.3

## Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		200	26	ug/Kg	☼	08/03/18 06:56	08/14/18 16:51	1
Pentachlorophenol	ND		390	200	ug/Kg	☼	08/03/18 06:56	08/14/18 16:51	1
Phenanthrene	ND		200	29	ug/Kg	☼	08/03/18 06:56	08/14/18 16:51	1
Phenol	ND		200	30	ug/Kg	☼	08/03/18 06:56	08/14/18 16:51	1
Pyrene	ND		200	23	ug/Kg	☼	08/03/18 06:56	08/14/18 16:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	87		54 - 120	08/03/18 06:56	08/14/18 16:51	1
2-Fluorobiphenyl	87		60 - 120	08/03/18 06:56	08/14/18 16:51	1
2-Fluorophenol (Surr)	70		52 - 120	08/03/18 06:56	08/14/18 16:51	1
Nitrobenzene-d5 (Surr)	83		53 - 120	08/03/18 06:56	08/14/18 16:51	1
Phenol-d5 (Surr)	76		54 - 120	08/03/18 06:56	08/14/18 16:51	1
p-Terphenyl-d14 (Surr)	103		65 - 121	08/03/18 06:56	08/14/18 16:51	1

## Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		1.9	0.38	ug/Kg	☼	08/01/18 06:48	08/02/18 15:30	1
4,4'-DDE	ND		1.9	0.41	ug/Kg	☼	08/01/18 06:48	08/02/18 15:30	1
4,4'-DDT	ND		1.9	0.45	ug/Kg	☼	08/01/18 06:48	08/02/18 15:30	1
Aldrin	ND		1.9	0.48	ug/Kg	☼	08/01/18 06:48	08/02/18 15:30	1
alpha-BHC	ND		1.9	0.35	ug/Kg	☼	08/01/18 06:48	08/02/18 15:30	1
cis-Chlordane	ND		1.9	0.97	ug/Kg	☼	08/01/18 06:48	08/02/18 15:30	1
beta-BHC	ND		1.9	0.35	ug/Kg	☼	08/01/18 06:48	08/02/18 15:30	1
delta-BHC	ND		1.9	0.36	ug/Kg	☼	08/01/18 06:48	08/02/18 15:30	1
Dieldrin	ND		1.9	0.47	ug/Kg	☼	08/01/18 06:48	08/02/18 15:30	1
Endosulfan I	ND		1.9	0.37	ug/Kg	☼	08/01/18 06:48	08/02/18 15:30	1
Endosulfan II	ND		1.9	0.35	ug/Kg	☼	08/01/18 06:48	08/02/18 15:30	1
Endosulfan sulfate	ND		1.9	0.36	ug/Kg	☼	08/01/18 06:48	08/02/18 15:30	1
Endrin	ND		1.9	0.38	ug/Kg	☼	08/01/18 06:48	08/02/18 15:30	1
gamma-BHC (Lindane)	ND		1.9	0.36	ug/Kg	☼	08/01/18 06:48	08/02/18 15:30	1
Heptachlor	ND		1.9	0.42	ug/Kg	☼	08/01/18 06:48	08/02/18 15:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	89		45 - 120	08/01/18 06:48	08/02/18 15:30	1
Tetrachloro-m-xylene	82		30 - 124	08/01/18 06:48	08/02/18 15:30	1

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.23	0.045	mg/Kg	☼	07/31/18 07:45	07/31/18 23:27	1
PCB-1221	ND		0.23	0.045	mg/Kg	☼	07/31/18 07:45	07/31/18 23:27	1
PCB-1232	ND		0.23	0.045	mg/Kg	☼	07/31/18 07:45	07/31/18 23:27	1
PCB-1242	ND		0.23	0.045	mg/Kg	☼	07/31/18 07:45	07/31/18 23:27	1
PCB-1248	ND		0.23	0.045	mg/Kg	☼	07/31/18 07:45	07/31/18 23:27	1
PCB-1254	ND		0.23	0.11	mg/Kg	☼	07/31/18 07:45	07/31/18 23:27	1
PCB-1260	ND		0.23	0.11	mg/Kg	☼	07/31/18 07:45	07/31/18 23:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	114		60 - 154	07/31/18 07:45	07/31/18 23:27	1
DCB Decachlorobiphenyl	96		65 - 174	07/31/18 07:45	07/31/18 23:27	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-002**

**Lab Sample ID: 480-139508-2**

Date Collected: 07/25/18 09:50

Matrix: Solid

Date Received: 07/25/18 16:40

Percent Solids: 83.3

**Method: 8151A - Herbicides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		20	7.1	ug/Kg	☼	08/02/18 07:55	08/08/18 23:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	60		28 - 129				08/02/18 07:55	08/08/18 23:00	1

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	30.4		2.4	0.47	mg/Kg	☼	07/30/18 11:20	07/31/18 18:28	1
Barium	35.7		0.59	0.13	mg/Kg	☼	07/30/18 11:20	07/31/18 18:28	1
Beryllium	0.56		0.24	0.033	mg/Kg	☼	07/30/18 11:20	07/31/18 18:28	1
Cadmium	ND		0.24	0.035	mg/Kg	☼	07/30/18 11:20	07/31/18 18:28	1
Chromium	19.8	B	0.59	0.24	mg/Kg	☼	07/30/18 11:20	07/31/18 18:28	1
Copper	15.9		1.2	0.25	mg/Kg	☼	07/30/18 11:20	07/31/18 18:28	1
Lead	11.8		1.2	0.28	mg/Kg	☼	07/30/18 11:20	07/31/18 18:28	1
Manganese	137	B	0.24	0.038	mg/Kg	☼	07/30/18 11:20	07/31/18 18:28	1
Nickel	17.2		5.9	0.27	mg/Kg	☼	07/30/18 11:20	07/31/18 18:28	1
Selenium	ND		4.7	0.47	mg/Kg	☼	07/30/18 11:20	07/31/18 18:28	1
Silver	ND		0.71	0.24	mg/Kg	☼	07/30/18 11:20	07/31/18 18:28	1
Zinc	38.1		2.3	0.75	mg/Kg	☼	08/02/18 09:30	08/03/18 14:29	1

**Method: 7471B - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.017	J	0.024	0.0099	mg/Kg	☼	08/16/18 11:35	08/16/18 13:31	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		2.4	0.62	mg/Kg	☼	08/23/18 15:45	08/24/18 05:20	1
Trivalent Chromium	19.8		1.5	0.63	mg/Kg			08/27/18 16:26	1

**Client Sample ID: SO-11137156-072518-AG-003**

**Lab Sample ID: 480-139508-3**

Date Collected: 07/25/18 10:20

Matrix: Solid

Date Received: 07/25/18 16:40

Percent Solids: 87.0

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		3.6	0.26	ug/Kg	☼	07/25/18 18:00	08/01/18 16:26	1
1,1-Dichloroethane	ND		3.6	0.44	ug/Kg	☼	07/25/18 18:00	08/01/18 16:26	1
1,1-Dichloroethene	ND		3.6	0.45	ug/Kg	☼	07/25/18 18:00	08/01/18 16:26	1
1,2,4-Trimethylbenzene	ND		3.6	0.70	ug/Kg	☼	07/25/18 18:00	08/01/18 16:26	1
1,2-Dichlorobenzene	ND		3.6	0.28	ug/Kg	☼	07/25/18 18:00	08/01/18 16:26	1
1,2-Dichloroethane	ND		3.6	0.18	ug/Kg	☼	07/25/18 18:00	08/01/18 16:26	1
1,3,5-Trimethylbenzene	ND		3.6	0.23	ug/Kg	☼	07/25/18 18:00	08/01/18 16:26	1
1,3-Dichlorobenzene	ND		3.6	0.19	ug/Kg	☼	07/25/18 18:00	08/01/18 16:26	1
1,4-Dichlorobenzene	ND		3.6	0.51	ug/Kg	☼	07/25/18 18:00	08/01/18 16:26	1
1,4-Dioxane	ND		73	16	ug/Kg	☼	07/25/18 18:00	08/01/18 16:26	1
2-Butanone (MEK)	ND		18	1.3	ug/Kg	☼	07/25/18 18:00	08/01/18 16:26	1
Acetone	9.4	J	18	3.1	ug/Kg	☼	07/25/18 18:00	08/01/18 16:26	1
Benzene	ND		3.6	0.18	ug/Kg	☼	07/25/18 18:00	08/01/18 16:26	1
Carbon tetrachloride	ND		3.6	0.35	ug/Kg	☼	07/25/18 18:00	08/01/18 16:26	1
Chlorobenzene	ND		3.6	0.48	ug/Kg	☼	07/25/18 18:00	08/01/18 16:26	1
Chloroform	ND		3.6	0.22	ug/Kg	☼	07/25/18 18:00	08/01/18 16:26	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-003**

**Lab Sample ID: 480-139508-3**

**Date Collected: 07/25/18 10:20**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 87.0**

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		3.6	0.47	ug/Kg	☼	07/25/18 18:00	08/01/18 16:26	1
Ethylbenzene	ND		3.6	0.25	ug/Kg	☼	07/25/18 18:00	08/01/18 16:26	1
Methyl tert-butyl ether	ND		3.6	0.36	ug/Kg	☼	07/25/18 18:00	08/01/18 16:26	1
Methylene Chloride	ND		3.6	1.7	ug/Kg	☼	07/25/18 18:00	08/01/18 16:26	1
n-Butylbenzene	ND		3.6	0.32	ug/Kg	☼	07/25/18 18:00	08/01/18 16:26	1
n-Propylbenzene	ND		3.6	0.29	ug/Kg	☼	07/25/18 18:00	08/01/18 16:26	1
sec-Butylbenzene	ND		3.6	0.32	ug/Kg	☼	07/25/18 18:00	08/01/18 16:26	1
tert-Butylbenzene	ND		3.6	0.38	ug/Kg	☼	07/25/18 18:00	08/01/18 16:26	1
Tetrachloroethene	ND		3.6	0.49	ug/Kg	☼	07/25/18 18:00	08/01/18 16:26	1
Toluene	ND		3.6	0.27	ug/Kg	☼	07/25/18 18:00	08/01/18 16:26	1
trans-1,2-Dichloroethene	ND		3.6	0.38	ug/Kg	☼	07/25/18 18:00	08/01/18 16:26	1
Trichloroethene	ND		3.6	0.80	ug/Kg	☼	07/25/18 18:00	08/01/18 16:26	1
Vinyl chloride	ND		3.6	0.44	ug/Kg	☼	07/25/18 18:00	08/01/18 16:26	1
Xylenes, Total	ND		7.3	0.61	ug/Kg	☼	07/25/18 18:00	08/01/18 16:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		64 - 126	07/25/18 18:00	08/01/18 16:26	1
4-Bromofluorobenzene (Surr)	92		72 - 126	07/25/18 18:00	08/01/18 16:26	1
Dibromofluoromethane (Surr)	95		60 - 140	07/25/18 18:00	08/01/18 16:26	1
Toluene-d8 (Surr)	99		71 - 125	07/25/18 18:00	08/01/18 16:26	1

## Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	ND		190	23	ug/Kg	☼	08/03/18 06:56	08/14/18 17:19	1
3-Methylphenol	ND		370	29	ug/Kg	☼	08/03/18 06:56	08/14/18 17:19	1
4-Methylphenol	ND		370	23	ug/Kg	☼	08/03/18 06:56	08/14/18 17:19	1
Acenaphthene	ND		190	28	ug/Kg	☼	08/03/18 06:56	08/14/18 17:19	1
Acenaphthylene	ND		190	25	ug/Kg	☼	08/03/18 06:56	08/14/18 17:19	1
Anthracene	ND		190	47	ug/Kg	☼	08/03/18 06:56	08/14/18 17:19	1
Benzo[a]anthracene	ND		190	19	ug/Kg	☼	08/03/18 06:56	08/14/18 17:19	1
Benzo[a]pyrene	ND		190	28	ug/Kg	☼	08/03/18 06:56	08/14/18 17:19	1
Benzo[b]fluoranthene	ND		190	30	ug/Kg	☼	08/03/18 06:56	08/14/18 17:19	1
Benzo[g,h,i]perylene	ND		190	20	ug/Kg	☼	08/03/18 06:56	08/14/18 17:19	1
Benzo[k]fluoranthene	ND		190	25	ug/Kg	☼	08/03/18 06:56	08/14/18 17:19	1
Chrysene	ND		190	43	ug/Kg	☼	08/03/18 06:56	08/14/18 17:19	1
Dibenz(a,h)anthracene	ND		190	34	ug/Kg	☼	08/03/18 06:56	08/14/18 17:19	1
Dibenzofuran	ND		190	23	ug/Kg	☼	08/03/18 06:56	08/14/18 17:19	1
Fluoranthene	ND		190	20	ug/Kg	☼	08/03/18 06:56	08/14/18 17:19	1
Fluorene	ND		190	23	ug/Kg	☼	08/03/18 06:56	08/14/18 17:19	1
Hexachlorobenzene	ND		190	26	ug/Kg	☼	08/03/18 06:56	08/14/18 17:19	1
Indeno[1,2,3-cd]pyrene	ND		190	24	ug/Kg	☼	08/03/18 06:56	08/14/18 17:19	1
Naphthalene	ND		190	25	ug/Kg	☼	08/03/18 06:56	08/14/18 17:19	1
Pentachlorophenol	ND		370	190	ug/Kg	☼	08/03/18 06:56	08/14/18 17:19	1
Phenanthrene	ND		190	28	ug/Kg	☼	08/03/18 06:56	08/14/18 17:19	1
Phenol	ND		190	29	ug/Kg	☼	08/03/18 06:56	08/14/18 17:19	1
Pyrene	ND		190	23	ug/Kg	☼	08/03/18 06:56	08/14/18 17:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	91		54 - 120	08/03/18 06:56	08/14/18 17:19	1
2-Fluorobiphenyl	91		60 - 120	08/03/18 06:56	08/14/18 17:19	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-003**

**Lab Sample ID: 480-139508-3**

Date Collected: 07/25/18 10:20

Matrix: Solid

Date Received: 07/25/18 16:40

Percent Solids: 87.0

## Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorophenol (Surr)	74		52 - 120	08/03/18 06:56	08/14/18 17:19	1
Nitrobenzene-d5 (Surr)	86		53 - 120	08/03/18 06:56	08/14/18 17:19	1
Phenol-d5 (Surr)	80		54 - 120	08/03/18 06:56	08/14/18 17:19	1
p-Terphenyl-d14 (Surr)	97		65 - 121	08/03/18 06:56	08/14/18 17:19	1

## Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		1.9	0.37	ug/Kg	☼	08/01/18 06:48	08/02/18 15:50	1
4,4'-DDE	ND		1.9	0.40	ug/Kg	☼	08/01/18 06:48	08/02/18 15:50	1
4,4'-DDT	ND		1.9	0.44	ug/Kg	☼	08/01/18 06:48	08/02/18 15:50	1
Aldrin	ND		1.9	0.47	ug/Kg	☼	08/01/18 06:48	08/02/18 15:50	1
alpha-BHC	ND		1.9	0.34	ug/Kg	☼	08/01/18 06:48	08/02/18 15:50	1
cis-Chlordane	ND		1.9	0.94	ug/Kg	☼	08/01/18 06:48	08/02/18 15:50	1
beta-BHC	ND		1.9	0.34	ug/Kg	☼	08/01/18 06:48	08/02/18 15:50	1
delta-BHC	ND		1.9	0.35	ug/Kg	☼	08/01/18 06:48	08/02/18 15:50	1
Dieldrin	ND		1.9	0.45	ug/Kg	☼	08/01/18 06:48	08/02/18 15:50	1
Endosulfan I	ND		1.9	0.36	ug/Kg	☼	08/01/18 06:48	08/02/18 15:50	1
Endosulfan II	ND		1.9	0.34	ug/Kg	☼	08/01/18 06:48	08/02/18 15:50	1
Endosulfan sulfate	ND		1.9	0.35	ug/Kg	☼	08/01/18 06:48	08/02/18 15:50	1
Endrin	ND		1.9	0.37	ug/Kg	☼	08/01/18 06:48	08/02/18 15:50	1
gamma-BHC (Lindane)	ND		1.9	0.35	ug/Kg	☼	08/01/18 06:48	08/02/18 15:50	1
Heptachlor	ND		1.9	0.41	ug/Kg	☼	08/01/18 06:48	08/02/18 15:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	99		45 - 120	08/01/18 06:48	08/02/18 15:50	1
Tetrachloro-m-xylene	81		30 - 124	08/01/18 06:48	08/02/18 15:50	1

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.25	0.048	mg/Kg	☼	07/31/18 07:45	07/31/18 23:43	1
PCB-1221	ND		0.25	0.048	mg/Kg	☼	07/31/18 07:45	07/31/18 23:43	1
PCB-1232	ND		0.25	0.048	mg/Kg	☼	07/31/18 07:45	07/31/18 23:43	1
PCB-1242	ND		0.25	0.048	mg/Kg	☼	07/31/18 07:45	07/31/18 23:43	1
PCB-1248	ND		0.25	0.048	mg/Kg	☼	07/31/18 07:45	07/31/18 23:43	1
PCB-1254	ND		0.25	0.12	mg/Kg	☼	07/31/18 07:45	07/31/18 23:43	1
PCB-1260	ND		0.25	0.12	mg/Kg	☼	07/31/18 07:45	07/31/18 23:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	101		60 - 154	07/31/18 07:45	07/31/18 23:43	1
DCB Decachlorobiphenyl	85		65 - 174	07/31/18 07:45	07/31/18 23:43	1

## Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		19	6.8	ug/Kg	☼	08/02/18 07:55	08/08/18 22:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	56		28 - 129	08/02/18 07:55	08/08/18 22:00	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	26.0		2.3	0.45	mg/Kg	☼	07/30/18 11:20	07/31/18 18:32	1

TestAmerica Buffalo



# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-003**

**Lab Sample ID: 480-139508-3**

Date Collected: 07/25/18 10:20

Matrix: Solid

Date Received: 07/25/18 16:40

Percent Solids: 87.0

**Method: 6010C - Metals (ICP) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	38.6		0.57	0.12	mg/Kg	☼	07/30/18 11:20	07/31/18 18:32	1
Beryllium	0.58		0.23	0.032	mg/Kg	☼	07/30/18 11:20	07/31/18 18:32	1
Cadmium	ND		0.23	0.034	mg/Kg	☼	07/30/18 11:20	07/31/18 18:32	1
Chromium	15.7	B	0.57	0.23	mg/Kg	☼	07/30/18 11:20	07/31/18 18:32	1
Copper	14.0		1.1	0.24	mg/Kg	☼	07/30/18 11:20	07/31/18 18:32	1
Lead	10.4		1.1	0.27	mg/Kg	☼	07/30/18 11:20	07/31/18 18:32	1
Manganese	146	B	0.23	0.036	mg/Kg	☼	07/30/18 11:20	07/31/18 18:32	1
Nickel	17.4		5.7	0.26	mg/Kg	☼	07/30/18 11:20	07/31/18 18:32	1
Selenium	ND		4.5	0.45	mg/Kg	☼	07/30/18 11:20	07/31/18 18:32	1
Silver	ND		0.68	0.23	mg/Kg	☼	07/30/18 11:20	07/31/18 18:32	1
Zinc	39.6	B	2.3	0.73	mg/Kg	☼	07/30/18 11:20	07/31/18 18:32	1

**Method: 7471B - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.014	J	0.022	0.0091	mg/Kg	☼	08/04/18 12:40	08/04/18 19:46	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		2.3	0.59	mg/Kg	☼	08/23/18 15:45	08/24/18 05:20	1
Trivalent Chromium	15.7		1.5	0.63	mg/Kg			08/27/18 16:26	1

**Client Sample ID: SO-11137156-072518-AG-004**

**Lab Sample ID: 480-139508-4**

Date Collected: 07/25/18 10:45

Matrix: Solid

Date Received: 07/25/18 16:40

Percent Solids: 89.3

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		3.0	0.22	ug/Kg	☼	07/25/18 18:00	08/01/18 16:52	1
1,1-Dichloroethane	ND		3.0	0.37	ug/Kg	☼	07/25/18 18:00	08/01/18 16:52	1
1,1-Dichloroethene	ND		3.0	0.37	ug/Kg	☼	07/25/18 18:00	08/01/18 16:52	1
1,2,4-Trimethylbenzene	ND		3.0	0.58	ug/Kg	☼	07/25/18 18:00	08/01/18 16:52	1
1,2-Dichlorobenzene	ND		3.0	0.24	ug/Kg	☼	07/25/18 18:00	08/01/18 16:52	1
1,2-Dichloroethane	ND		3.0	0.15	ug/Kg	☼	07/25/18 18:00	08/01/18 16:52	1
1,3,5-Trimethylbenzene	ND		3.0	0.19	ug/Kg	☼	07/25/18 18:00	08/01/18 16:52	1
1,3-Dichlorobenzene	ND		3.0	0.15	ug/Kg	☼	07/25/18 18:00	08/01/18 16:52	1
1,4-Dichlorobenzene	ND		3.0	0.42	ug/Kg	☼	07/25/18 18:00	08/01/18 16:52	1
1,4-Dioxane	ND		60	13	ug/Kg	☼	07/25/18 18:00	08/01/18 16:52	1
2-Butanone (MEK)	ND		15	1.1	ug/Kg	☼	07/25/18 18:00	08/01/18 16:52	1
Acetone	12	J	15	2.5	ug/Kg	☼	07/25/18 18:00	08/01/18 16:52	1
Benzene	ND		3.0	0.15	ug/Kg	☼	07/25/18 18:00	08/01/18 16:52	1
Carbon tetrachloride	ND		3.0	0.29	ug/Kg	☼	07/25/18 18:00	08/01/18 16:52	1
Chlorobenzene	ND		3.0	0.40	ug/Kg	☼	07/25/18 18:00	08/01/18 16:52	1
Chloroform	ND		3.0	0.19	ug/Kg	☼	07/25/18 18:00	08/01/18 16:52	1
cis-1,2-Dichloroethene	ND		3.0	0.38	ug/Kg	☼	07/25/18 18:00	08/01/18 16:52	1
Ethylbenzene	ND		3.0	0.21	ug/Kg	☼	07/25/18 18:00	08/01/18 16:52	1
Methyl tert-butyl ether	ND		3.0	0.30	ug/Kg	☼	07/25/18 18:00	08/01/18 16:52	1
Methylene Chloride	ND		3.0	1.4	ug/Kg	☼	07/25/18 18:00	08/01/18 16:52	1
n-Butylbenzene	ND		3.0	0.26	ug/Kg	☼	07/25/18 18:00	08/01/18 16:52	1
n-Propylbenzene	ND		3.0	0.24	ug/Kg	☼	07/25/18 18:00	08/01/18 16:52	1
sec-Butylbenzene	ND		3.0	0.26	ug/Kg	☼	07/25/18 18:00	08/01/18 16:52	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-004**

**Lab Sample ID: 480-139508-4**

**Date Collected: 07/25/18 10:45**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 89.3**

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
tert-Butylbenzene	ND		3.0	0.31	ug/Kg	☼	07/25/18 18:00	08/01/18 16:52	1
Tetrachloroethene	ND		3.0	0.40	ug/Kg	☼	07/25/18 18:00	08/01/18 16:52	1
Toluene	ND		3.0	0.23	ug/Kg	☼	07/25/18 18:00	08/01/18 16:52	1
trans-1,2-Dichloroethene	ND		3.0	0.31	ug/Kg	☼	07/25/18 18:00	08/01/18 16:52	1
Trichloroethene	ND		3.0	0.66	ug/Kg	☼	07/25/18 18:00	08/01/18 16:52	1
Vinyl chloride	ND		3.0	0.37	ug/Kg	☼	07/25/18 18:00	08/01/18 16:52	1
Xylenes, Total	ND		6.0	0.51	ug/Kg	☼	07/25/18 18:00	08/01/18 16:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		64 - 126	07/25/18 18:00	08/01/18 16:52	1
4-Bromofluorobenzene (Surr)	92		72 - 126	07/25/18 18:00	08/01/18 16:52	1
Dibromofluoromethane (Surr)	95		60 - 140	07/25/18 18:00	08/01/18 16:52	1
Toluene-d8 (Surr)	100		71 - 125	07/25/18 18:00	08/01/18 16:52	1

**Method: 8270D - Semivolatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	ND		190	22	ug/Kg	☼	08/03/18 06:56	08/14/18 17:47	1
3-Methylphenol	ND		360	29	ug/Kg	☼	08/03/18 06:56	08/14/18 17:47	1
4-Methylphenol	ND		360	22	ug/Kg	☼	08/03/18 06:56	08/14/18 17:47	1
Acenaphthene	ND		190	28	ug/Kg	☼	08/03/18 06:56	08/14/18 17:47	1
Acenaphthylene	ND		190	24	ug/Kg	☼	08/03/18 06:56	08/14/18 17:47	1
Anthracene	ND		190	46	ug/Kg	☼	08/03/18 06:56	08/14/18 17:47	1
Benzo[a]anthracene	ND		190	19	ug/Kg	☼	08/03/18 06:56	08/14/18 17:47	1
Benzo[a]pyrene	ND		190	28	ug/Kg	☼	08/03/18 06:56	08/14/18 17:47	1
Benzo[b]fluoranthene	ND		190	30	ug/Kg	☼	08/03/18 06:56	08/14/18 17:47	1
Benzo[g,h,i]perylene	ND		190	20	ug/Kg	☼	08/03/18 06:56	08/14/18 17:47	1
Benzo[k]fluoranthene	ND		190	24	ug/Kg	☼	08/03/18 06:56	08/14/18 17:47	1
Chrysene	ND		190	42	ug/Kg	☼	08/03/18 06:56	08/14/18 17:47	1
Dibenz(a,h)anthracene	ND		190	33	ug/Kg	☼	08/03/18 06:56	08/14/18 17:47	1
Dibenzofuran	ND		190	22	ug/Kg	☼	08/03/18 06:56	08/14/18 17:47	1
Fluoranthene	ND		190	20	ug/Kg	☼	08/03/18 06:56	08/14/18 17:47	1
Fluorene	ND		190	22	ug/Kg	☼	08/03/18 06:56	08/14/18 17:47	1
Hexachlorobenzene	ND		190	25	ug/Kg	☼	08/03/18 06:56	08/14/18 17:47	1
Indeno[1,2,3-cd]pyrene	ND		190	23	ug/Kg	☼	08/03/18 06:56	08/14/18 17:47	1
Naphthalene	ND		190	24	ug/Kg	☼	08/03/18 06:56	08/14/18 17:47	1
Pentachlorophenol	ND		360	190	ug/Kg	☼	08/03/18 06:56	08/14/18 17:47	1
Phenanthrene	ND		190	28	ug/Kg	☼	08/03/18 06:56	08/14/18 17:47	1
Phenol	ND		190	29	ug/Kg	☼	08/03/18 06:56	08/14/18 17:47	1
Pyrene	ND		190	22	ug/Kg	☼	08/03/18 06:56	08/14/18 17:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	94		54 - 120	08/03/18 06:56	08/14/18 17:47	1
2-Fluorobiphenyl	86		60 - 120	08/03/18 06:56	08/14/18 17:47	1
2-Fluorophenol (Surr)	68		52 - 120	08/03/18 06:56	08/14/18 17:47	1
Nitrobenzene-d5 (Surr)	80		53 - 120	08/03/18 06:56	08/14/18 17:47	1
Phenol-d5 (Surr)	71		54 - 120	08/03/18 06:56	08/14/18 17:47	1
p-Terphenyl-d14 (Surr)	109		65 - 121	08/03/18 06:56	08/14/18 17:47	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-004**

**Lab Sample ID: 480-139508-4**

**Date Collected: 07/25/18 10:45**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 89.3**

## Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	0.41	J	1.9	0.36	ug/Kg	☼	08/01/18 06:48	08/02/18 16:09	1
4,4'-DDE	ND		1.9	0.39	ug/Kg	☼	08/01/18 06:48	08/02/18 16:09	1
4,4'-DDT	ND		1.9	0.43	ug/Kg	☼	08/01/18 06:48	08/02/18 16:09	1
Aldrin	ND		1.9	0.45	ug/Kg	☼	08/01/18 06:48	08/02/18 16:09	1
alpha-BHC	ND		1.9	0.33	ug/Kg	☼	08/01/18 06:48	08/02/18 16:09	1
cis-Chlordane	ND		1.9	0.92	ug/Kg	☼	08/01/18 06:48	08/02/18 16:09	1
beta-BHC	ND		1.9	0.33	ug/Kg	☼	08/01/18 06:48	08/02/18 16:09	1
delta-BHC	ND		1.9	0.34	ug/Kg	☼	08/01/18 06:48	08/02/18 16:09	1
Dieldrin	ND		1.9	0.44	ug/Kg	☼	08/01/18 06:48	08/02/18 16:09	1
Endosulfan I	ND		1.9	0.35	ug/Kg	☼	08/01/18 06:48	08/02/18 16:09	1
Endosulfan II	ND		1.9	0.33	ug/Kg	☼	08/01/18 06:48	08/02/18 16:09	1
Endosulfan sulfate	ND		1.9	0.34	ug/Kg	☼	08/01/18 06:48	08/02/18 16:09	1
Endrin	ND		1.9	0.37	ug/Kg	☼	08/01/18 06:48	08/02/18 16:09	1
gamma-BHC (Lindane)	ND		1.9	0.34	ug/Kg	☼	08/01/18 06:48	08/02/18 16:09	1
Heptachlor	ND		1.9	0.40	ug/Kg	☼	08/01/18 06:48	08/02/18 16:09	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	91		45 - 120				08/01/18 06:48	08/02/18 16:09	1
Tetrachloro-m-xylene	76		30 - 124				08/01/18 06:48	08/02/18 16:09	1

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.25	0.049	mg/Kg	☼	07/31/18 07:45	07/31/18 23:59	1
PCB-1221	ND		0.25	0.049	mg/Kg	☼	07/31/18 07:45	07/31/18 23:59	1
PCB-1232	ND		0.25	0.049	mg/Kg	☼	07/31/18 07:45	07/31/18 23:59	1
PCB-1242	ND		0.25	0.049	mg/Kg	☼	07/31/18 07:45	07/31/18 23:59	1
PCB-1248	ND		0.25	0.049	mg/Kg	☼	07/31/18 07:45	07/31/18 23:59	1
PCB-1254	ND		0.25	0.12	mg/Kg	☼	07/31/18 07:45	07/31/18 23:59	1
PCB-1260	ND		0.25	0.12	mg/Kg	☼	07/31/18 07:45	07/31/18 23:59	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Tetrachloro-m-xylene	108		60 - 154				07/31/18 07:45	07/31/18 23:59	1
DCB Decachlorobiphenyl	88		65 - 174				07/31/18 07:45	07/31/18 23:59	1

## Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		19	6.7	ug/Kg	☼	08/02/18 07:55	08/08/18 23:30	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
2,4-Dichlorophenylacetic acid	51		28 - 129				08/02/18 07:55	08/08/18 23:30	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	21.1		2.2	0.44	mg/Kg	☼	07/30/18 11:20	07/31/18 18:35	1
Barium	57.9		0.55	0.12	mg/Kg	☼	07/30/18 11:20	07/31/18 18:35	1
Beryllium	0.73		0.22	0.031	mg/Kg	☼	07/30/18 11:20	07/31/18 18:35	1
Cadmium	ND		0.22	0.033	mg/Kg	☼	07/30/18 11:20	07/31/18 18:35	1
Chromium	18.7	B	0.55	0.22	mg/Kg	☼	07/30/18 11:20	07/31/18 18:35	1
Copper	12.8		1.1	0.23	mg/Kg	☼	07/30/18 11:20	07/31/18 18:35	1
Lead	12.2		1.1	0.26	mg/Kg	☼	07/30/18 11:20	07/31/18 18:35	1
Manganese	234	B	0.22	0.035	mg/Kg	☼	07/30/18 11:20	07/31/18 18:35	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-004**

**Lab Sample ID: 480-139508-4**

**Date Collected: 07/25/18 10:45**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 89.3**

**Method: 6010C - Metals (ICP) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Nickel</b>	<b>23.5</b>		5.5	0.25	mg/Kg	☼	07/30/18 11:20	07/31/18 18:35	1
Selenium	ND		4.4	0.44	mg/Kg	☼	07/30/18 11:20	07/31/18 18:35	1
Silver	ND		0.65	0.22	mg/Kg	☼	07/30/18 11:20	07/31/18 18:35	1
<b>Zinc</b>	<b>58.2</b>	<b>B</b>	2.2	0.70	mg/Kg	☼	07/30/18 11:20	07/31/18 18:35	1

**Method: 7471B - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Mercury</b>	<b>0.019</b>	<b>J</b>	0.022	0.0091	mg/Kg	☼	08/04/18 12:40	08/04/18 19:47	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		2.2	0.58	mg/Kg	☼	08/23/18 15:45	08/24/18 05:20	1
<b>Trivalent Chromium</b>	<b>18.7</b>		1.5	0.63	mg/Kg			08/27/18 16:26	1

**Client Sample ID: SO-11137156-072518-AG-005**

**Lab Sample ID: 480-139508-5**

**Date Collected: 07/25/18 11:00**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 94.8**

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		4.3	0.31	ug/Kg	☼	07/25/18 18:00	08/01/18 17:18	1
1,1-Dichloroethane	ND		4.3	0.53	ug/Kg	☼	07/25/18 18:00	08/01/18 17:18	1
1,1-Dichloroethene	ND		4.3	0.53	ug/Kg	☼	07/25/18 18:00	08/01/18 17:18	1
1,2,4-Trimethylbenzene	ND		4.3	0.83	ug/Kg	☼	07/25/18 18:00	08/01/18 17:18	1
1,2-Dichlorobenzene	ND		4.3	0.34	ug/Kg	☼	07/25/18 18:00	08/01/18 17:18	1
1,2-Dichloroethane	ND		4.3	0.22	ug/Kg	☼	07/25/18 18:00	08/01/18 17:18	1
1,3,5-Trimethylbenzene	ND		4.3	0.28	ug/Kg	☼	07/25/18 18:00	08/01/18 17:18	1
1,3-Dichlorobenzene	ND		4.3	0.22	ug/Kg	☼	07/25/18 18:00	08/01/18 17:18	1
1,4-Dichlorobenzene	ND		4.3	0.61	ug/Kg	☼	07/25/18 18:00	08/01/18 17:18	1
1,4-Dioxane	ND		87	19	ug/Kg	☼	07/25/18 18:00	08/01/18 17:18	1
2-Butanone (MEK)	ND		22	1.6	ug/Kg	☼	07/25/18 18:00	08/01/18 17:18	1
<b>Acetone</b>	<b>8.6</b>	<b>J</b>	22	3.7	ug/Kg	☼	07/25/18 18:00	08/01/18 17:18	1
Benzene	ND		4.3	0.21	ug/Kg	☼	07/25/18 18:00	08/01/18 17:18	1
Carbon tetrachloride	ND		4.3	0.42	ug/Kg	☼	07/25/18 18:00	08/01/18 17:18	1
Chlorobenzene	ND		4.3	0.57	ug/Kg	☼	07/25/18 18:00	08/01/18 17:18	1
Chloroform	ND		4.3	0.27	ug/Kg	☼	07/25/18 18:00	08/01/18 17:18	1
cis-1,2-Dichloroethene	ND		4.3	0.56	ug/Kg	☼	07/25/18 18:00	08/01/18 17:18	1
Ethylbenzene	ND		4.3	0.30	ug/Kg	☼	07/25/18 18:00	08/01/18 17:18	1
Methyl tert-butyl ether	ND		4.3	0.43	ug/Kg	☼	07/25/18 18:00	08/01/18 17:18	1
Methylene Chloride	ND		4.3	2.0	ug/Kg	☼	07/25/18 18:00	08/01/18 17:18	1
n-Butylbenzene	ND		4.3	0.38	ug/Kg	☼	07/25/18 18:00	08/01/18 17:18	1
n-Propylbenzene	ND		4.3	0.35	ug/Kg	☼	07/25/18 18:00	08/01/18 17:18	1
sec-Butylbenzene	ND		4.3	0.38	ug/Kg	☼	07/25/18 18:00	08/01/18 17:18	1
tert-Butylbenzene	ND		4.3	0.45	ug/Kg	☼	07/25/18 18:00	08/01/18 17:18	1
Tetrachloroethene	ND		4.3	0.58	ug/Kg	☼	07/25/18 18:00	08/01/18 17:18	1
Toluene	ND		4.3	0.33	ug/Kg	☼	07/25/18 18:00	08/01/18 17:18	1
trans-1,2-Dichloroethene	ND		4.3	0.45	ug/Kg	☼	07/25/18 18:00	08/01/18 17:18	1
Trichloroethene	ND		4.3	0.95	ug/Kg	☼	07/25/18 18:00	08/01/18 17:18	1
Vinyl chloride	ND		4.3	0.53	ug/Kg	☼	07/25/18 18:00	08/01/18 17:18	1
Xylenes, Total	ND		8.7	0.73	ug/Kg	☼	07/25/18 18:00	08/01/18 17:18	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-005**

**Lab Sample ID: 480-139508-5**

**Date Collected: 07/25/18 11:00**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 94.8**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		64 - 126	07/25/18 18:00	08/01/18 17:18	1
4-Bromofluorobenzene (Surr)	90		72 - 126	07/25/18 18:00	08/01/18 17:18	1
Dibromofluoromethane (Surr)	95		60 - 140	07/25/18 18:00	08/01/18 17:18	1
Toluene-d8 (Surr)	102		71 - 125	07/25/18 18:00	08/01/18 17:18	1

**Method: 8270D - Semivolatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	ND		180	21	ug/Kg	☼	08/03/18 06:56	08/14/18 18:14	1
3-Methylphenol	ND		340	27	ug/Kg	☼	08/03/18 06:56	08/14/18 18:14	1
4-Methylphenol	ND		340	21	ug/Kg	☼	08/03/18 06:56	08/14/18 18:14	1
Acenaphthene	ND		180	26	ug/Kg	☼	08/03/18 06:56	08/14/18 18:14	1
Acenaphthylene	ND		180	23	ug/Kg	☼	08/03/18 06:56	08/14/18 18:14	1
Anthracene	ND		180	44	ug/Kg	☼	08/03/18 06:56	08/14/18 18:14	1
Benzo[a]anthracene	ND		180	18	ug/Kg	☼	08/03/18 06:56	08/14/18 18:14	1
Benzo[a]pyrene	ND		180	26	ug/Kg	☼	08/03/18 06:56	08/14/18 18:14	1
Benzo[b]fluoranthene	ND		180	28	ug/Kg	☼	08/03/18 06:56	08/14/18 18:14	1
Benzo[g,h,i]perylene	ND		180	19	ug/Kg	☼	08/03/18 06:56	08/14/18 18:14	1
Benzo[k]fluoranthene	ND		180	23	ug/Kg	☼	08/03/18 06:56	08/14/18 18:14	1
Chrysene	ND		180	39	ug/Kg	☼	08/03/18 06:56	08/14/18 18:14	1
Dibenz(a,h)anthracene	ND		180	31	ug/Kg	☼	08/03/18 06:56	08/14/18 18:14	1
Dibenzofuran	ND		180	21	ug/Kg	☼	08/03/18 06:56	08/14/18 18:14	1
Fluoranthene	ND		180	19	ug/Kg	☼	08/03/18 06:56	08/14/18 18:14	1
Fluorene	ND		180	21	ug/Kg	☼	08/03/18 06:56	08/14/18 18:14	1
Hexachlorobenzene	ND		180	24	ug/Kg	☼	08/03/18 06:56	08/14/18 18:14	1
Indeno[1,2,3-cd]pyrene	ND		180	22	ug/Kg	☼	08/03/18 06:56	08/14/18 18:14	1
Naphthalene	ND		180	23	ug/Kg	☼	08/03/18 06:56	08/14/18 18:14	1
Pentachlorophenol	ND		340	180	ug/Kg	☼	08/03/18 06:56	08/14/18 18:14	1
Phenanthrene	ND		180	26	ug/Kg	☼	08/03/18 06:56	08/14/18 18:14	1
Phenol	ND		180	27	ug/Kg	☼	08/03/18 06:56	08/14/18 18:14	1
Pyrene	ND		180	21	ug/Kg	☼	08/03/18 06:56	08/14/18 18:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	80		54 - 120	08/03/18 06:56	08/14/18 18:14	1
2-Fluorobiphenyl	83		60 - 120	08/03/18 06:56	08/14/18 18:14	1
2-Fluorophenol (Surr)	65		52 - 120	08/03/18 06:56	08/14/18 18:14	1
Nitrobenzene-d5 (Surr)	72		53 - 120	08/03/18 06:56	08/14/18 18:14	1
Phenol-d5 (Surr)	67		54 - 120	08/03/18 06:56	08/14/18 18:14	1
p-Terphenyl-d14 (Surr)	108		65 - 121	08/03/18 06:56	08/14/18 18:14	1

**Method: 8081B - Organochlorine Pesticides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	0.36	J	1.7	0.33	ug/Kg	☼	08/01/18 06:48	08/02/18 16:29	1
4,4'-DDE	ND		1.7	0.36	ug/Kg	☼	08/01/18 06:48	08/02/18 16:29	1
4,4'-DDT	ND		1.7	0.40	ug/Kg	☼	08/01/18 06:48	08/02/18 16:29	1
Aldrin	ND		1.7	0.42	ug/Kg	☼	08/01/18 06:48	08/02/18 16:29	1
alpha-BHC	ND		1.7	0.31	ug/Kg	☼	08/01/18 06:48	08/02/18 16:29	1
cis-Chlordane	ND		1.7	0.85	ug/Kg	☼	08/01/18 06:48	08/02/18 16:29	1
beta-BHC	ND		1.7	0.31	ug/Kg	☼	08/01/18 06:48	08/02/18 16:29	1
delta-BHC	ND		1.7	0.32	ug/Kg	☼	08/01/18 06:48	08/02/18 16:29	1
Dieldrin	ND		1.7	0.41	ug/Kg	☼	08/01/18 06:48	08/02/18 16:29	1
Endosulfan I	ND		1.7	0.33	ug/Kg	☼	08/01/18 06:48	08/02/18 16:29	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-005**

**Lab Sample ID: 480-139508-5**

**Date Collected: 07/25/18 11:00**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 94.8**

### Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endosulfan II	ND		1.7	0.31	ug/Kg	☼	08/01/18 06:48	08/02/18 16:29	1
Endosulfan sulfate	ND		1.7	0.32	ug/Kg	☼	08/01/18 06:48	08/02/18 16:29	1
Endrin	ND		1.7	0.34	ug/Kg	☼	08/01/18 06:48	08/02/18 16:29	1
gamma-BHC (Lindane)	ND		1.7	0.31	ug/Kg	☼	08/01/18 06:48	08/02/18 16:29	1
Heptachlor	ND		1.7	0.37	ug/Kg	☼	08/01/18 06:48	08/02/18 16:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	93		45 - 120	08/01/18 06:48	08/02/18 16:29	1
Tetrachloro-m-xylene	82		30 - 124	08/01/18 06:48	08/02/18 16:29	1

### Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.20	0.039	mg/Kg	☼	07/31/18 07:45	08/01/18 00:15	1
PCB-1221	ND		0.20	0.039	mg/Kg	☼	07/31/18 07:45	08/01/18 00:15	1
PCB-1232	ND		0.20	0.039	mg/Kg	☼	07/31/18 07:45	08/01/18 00:15	1
PCB-1242	ND		0.20	0.039	mg/Kg	☼	07/31/18 07:45	08/01/18 00:15	1
PCB-1248	ND		0.20	0.039	mg/Kg	☼	07/31/18 07:45	08/01/18 00:15	1
PCB-1254	ND		0.20	0.093	mg/Kg	☼	07/31/18 07:45	08/01/18 00:15	1
PCB-1260	ND		0.20	0.093	mg/Kg	☼	07/31/18 07:45	08/01/18 00:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	115		60 - 154	07/31/18 07:45	08/01/18 00:15	1
DCB Decachlorobiphenyl	98		65 - 174	07/31/18 07:45	08/01/18 00:15	1

### Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		17	6.3	ug/Kg	☼	08/02/18 07:55	08/09/18 00:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	52		28 - 129	08/02/18 07:55	08/09/18 00:00	1

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	15.6		2.1	0.41	mg/Kg	☼	07/30/18 11:20	07/31/18 18:39	1
Barium	41.2		0.52	0.11	mg/Kg	☼	07/30/18 11:20	07/31/18 18:39	1
Beryllium	0.59		0.21	0.029	mg/Kg	☼	07/30/18 11:20	07/31/18 18:39	1
Cadmium	ND		0.21	0.031	mg/Kg	☼	07/30/18 11:20	07/31/18 18:39	1
Chromium	16.2	B	0.52	0.21	mg/Kg	☼	07/30/18 11:20	07/31/18 18:39	1
Copper	20.0		1.0	0.22	mg/Kg	☼	07/30/18 11:20	07/31/18 18:39	1
Lead	17.7		1.0	0.25	mg/Kg	☼	07/30/18 11:20	07/31/18 18:39	1
Manganese	287	B	0.21	0.033	mg/Kg	☼	07/30/18 11:20	07/31/18 18:39	1
Nickel	21.8		5.2	0.24	mg/Kg	☼	07/30/18 11:20	07/31/18 18:39	1
Selenium	ND		4.1	0.41	mg/Kg	☼	07/30/18 11:20	07/31/18 18:39	1
Silver	ND		0.62	0.21	mg/Kg	☼	07/30/18 11:20	07/31/18 18:39	1
Zinc	59.9	B	2.1	0.66	mg/Kg	☼	07/30/18 11:20	07/31/18 18:39	1

### Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.021	0.0086	mg/Kg	☼	08/16/18 11:35	08/16/18 13:32	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-005**

**Lab Sample ID: 480-139508-5**

**Date Collected: 07/25/18 11:00**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 94.8**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		2.1	0.54	mg/Kg	☼	08/23/18 15:45	08/24/18 05:20	1
<b>Trivalent Chromium</b>	<b>16.2</b>		1.5	0.63	mg/Kg			08/27/18 16:26	1

**Client Sample ID: SO-11137156-072518-AG-006**

**Lab Sample ID: 480-139508-6**

**Date Collected: 07/25/18 11:20**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 88.6**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		4.1	0.30	ug/Kg	☼	07/25/18 18:00	08/01/18 17:43	1
1,1-Dichloroethane	ND		4.1	0.50	ug/Kg	☼	07/25/18 18:00	08/01/18 17:43	1
1,1-Dichloroethene	ND		4.1	0.50	ug/Kg	☼	07/25/18 18:00	08/01/18 17:43	1
1,2,4-Trimethylbenzene	ND		4.1	0.78	ug/Kg	☼	07/25/18 18:00	08/01/18 17:43	1
1,2-Dichlorobenzene	ND		4.1	0.32	ug/Kg	☼	07/25/18 18:00	08/01/18 17:43	1
1,2-Dichloroethane	ND		4.1	0.20	ug/Kg	☼	07/25/18 18:00	08/01/18 17:43	1
1,3,5-Trimethylbenzene	ND		4.1	0.26	ug/Kg	☼	07/25/18 18:00	08/01/18 17:43	1
1,3-Dichlorobenzene	ND		4.1	0.21	ug/Kg	☼	07/25/18 18:00	08/01/18 17:43	1
1,4-Dichlorobenzene	ND		4.1	0.57	ug/Kg	☼	07/25/18 18:00	08/01/18 17:43	1
1,4-Dioxane	ND		81	18	ug/Kg	☼	07/25/18 18:00	08/01/18 17:43	1
2-Butanone (MEK)	ND		20	1.5	ug/Kg	☼	07/25/18 18:00	08/01/18 17:43	1
<b>Acetone</b>	<b>37</b>		20	3.4	ug/Kg	☼	07/25/18 18:00	08/01/18 17:43	1
Benzene	ND		4.1	0.20	ug/Kg	☼	07/25/18 18:00	08/01/18 17:43	1
Carbon tetrachloride	ND		4.1	0.39	ug/Kg	☼	07/25/18 18:00	08/01/18 17:43	1
Chlorobenzene	ND		4.1	0.54	ug/Kg	☼	07/25/18 18:00	08/01/18 17:43	1
Chloroform	ND		4.1	0.25	ug/Kg	☼	07/25/18 18:00	08/01/18 17:43	1
cis-1,2-Dichloroethene	ND		4.1	0.52	ug/Kg	☼	07/25/18 18:00	08/01/18 17:43	1
Ethylbenzene	ND		4.1	0.28	ug/Kg	☼	07/25/18 18:00	08/01/18 17:43	1
Methyl tert-butyl ether	ND		4.1	0.40	ug/Kg	☼	07/25/18 18:00	08/01/18 17:43	1
Methylene Chloride	ND		4.1	1.9	ug/Kg	☼	07/25/18 18:00	08/01/18 17:43	1
n-Butylbenzene	ND		4.1	0.35	ug/Kg	☼	07/25/18 18:00	08/01/18 17:43	1
n-Propylbenzene	ND		4.1	0.33	ug/Kg	☼	07/25/18 18:00	08/01/18 17:43	1
sec-Butylbenzene	ND		4.1	0.35	ug/Kg	☼	07/25/18 18:00	08/01/18 17:43	1
tert-Butylbenzene	ND		4.1	0.42	ug/Kg	☼	07/25/18 18:00	08/01/18 17:43	1
Tetrachloroethene	ND		4.1	0.55	ug/Kg	☼	07/25/18 18:00	08/01/18 17:43	1
Toluene	ND		4.1	0.31	ug/Kg	☼	07/25/18 18:00	08/01/18 17:43	1
trans-1,2-Dichloroethene	ND		4.1	0.42	ug/Kg	☼	07/25/18 18:00	08/01/18 17:43	1
Trichloroethene	ND		4.1	0.89	ug/Kg	☼	07/25/18 18:00	08/01/18 17:43	1
Vinyl chloride	ND		4.1	0.50	ug/Kg	☼	07/25/18 18:00	08/01/18 17:43	1
Xylenes, Total	ND		8.1	0.68	ug/Kg	☼	07/25/18 18:00	08/01/18 17:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		64 - 126	07/25/18 18:00	08/01/18 17:43	1
4-Bromofluorobenzene (Surr)	90		72 - 126	07/25/18 18:00	08/01/18 17:43	1
Dibromofluoromethane (Surr)	95		60 - 140	07/25/18 18:00	08/01/18 17:43	1
Toluene-d8 (Surr)	101		71 - 125	07/25/18 18:00	08/01/18 17:43	1

## Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	ND		190	22	ug/Kg	☼	08/03/18 06:56	08/14/18 18:42	1
3-Methylphenol	ND		360	29	ug/Kg	☼	08/03/18 06:56	08/14/18 18:42	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-006**

**Lab Sample ID: 480-139508-6**

**Date Collected: 07/25/18 11:20**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 88.6**

**Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methylphenol	ND		360	22	ug/Kg	☼	08/03/18 06:56	08/14/18 18:42	1
Acenaphthene	ND		190	28	ug/Kg	☼	08/03/18 06:56	08/14/18 18:42	1
Acenaphthylene	ND		190	24	ug/Kg	☼	08/03/18 06:56	08/14/18 18:42	1
Anthracene	ND		190	46	ug/Kg	☼	08/03/18 06:56	08/14/18 18:42	1
Benzo[a]anthracene	ND		190	19	ug/Kg	☼	08/03/18 06:56	08/14/18 18:42	1
Benzo[a]pyrene	ND		190	28	ug/Kg	☼	08/03/18 06:56	08/14/18 18:42	1
Benzo[b]fluoranthene	ND		190	30	ug/Kg	☼	08/03/18 06:56	08/14/18 18:42	1
Benzo[g,h,i]perylene	ND		190	20	ug/Kg	☼	08/03/18 06:56	08/14/18 18:42	1
Benzo[k]fluoranthene	ND		190	24	ug/Kg	☼	08/03/18 06:56	08/14/18 18:42	1
Chrysene	ND		190	42	ug/Kg	☼	08/03/18 06:56	08/14/18 18:42	1
Dibenz(a,h)anthracene	ND		190	33	ug/Kg	☼	08/03/18 06:56	08/14/18 18:42	1
Dibenzofuran	ND		190	22	ug/Kg	☼	08/03/18 06:56	08/14/18 18:42	1
Fluoranthene	ND		190	20	ug/Kg	☼	08/03/18 06:56	08/14/18 18:42	1
Fluorene	ND		190	22	ug/Kg	☼	08/03/18 06:56	08/14/18 18:42	1
Hexachlorobenzene	ND		190	25	ug/Kg	☼	08/03/18 06:56	08/14/18 18:42	1
Indeno[1,2,3-cd]pyrene	ND		190	23	ug/Kg	☼	08/03/18 06:56	08/14/18 18:42	1
Naphthalene	ND		190	24	ug/Kg	☼	08/03/18 06:56	08/14/18 18:42	1
Pentachlorophenol	ND		360	190	ug/Kg	☼	08/03/18 06:56	08/14/18 18:42	1
Phenanthrene	ND		190	28	ug/Kg	☼	08/03/18 06:56	08/14/18 18:42	1
Phenol	ND		190	29	ug/Kg	☼	08/03/18 06:56	08/14/18 18:42	1
Pyrene	ND		190	22	ug/Kg	☼	08/03/18 06:56	08/14/18 18:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	85		54 - 120	08/03/18 06:56	08/14/18 18:42	1
2-Fluorobiphenyl	84		60 - 120	08/03/18 06:56	08/14/18 18:42	1
2-Fluorophenol (Surr)	62		52 - 120	08/03/18 06:56	08/14/18 18:42	1
Nitrobenzene-d5 (Surr)	76		53 - 120	08/03/18 06:56	08/14/18 18:42	1
Phenol-d5 (Surr)	65		54 - 120	08/03/18 06:56	08/14/18 18:42	1
p-Terphenyl-d14 (Surr)	107		65 - 121	08/03/18 06:56	08/14/18 18:42	1

**Method: 8081B - Organochlorine Pesticides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		1.8	0.36	ug/Kg	☼	08/01/18 06:48	08/02/18 16:48	1
4,4'-DDE	ND		1.8	0.38	ug/Kg	☼	08/01/18 06:48	08/02/18 16:48	1
4,4'-DDT	ND		1.8	0.43	ug/Kg	☼	08/01/18 06:48	08/02/18 16:48	1
Aldrin	ND		1.8	0.45	ug/Kg	☼	08/01/18 06:48	08/02/18 16:48	1
alpha-BHC	ND		1.8	0.33	ug/Kg	☼	08/01/18 06:48	08/02/18 16:48	1
cis-Chlordane	ND		1.8	0.91	ug/Kg	☼	08/01/18 06:48	08/02/18 16:48	1
beta-BHC	ND		1.8	0.33	ug/Kg	☼	08/01/18 06:48	08/02/18 16:48	1
delta-BHC	ND		1.8	0.34	ug/Kg	☼	08/01/18 06:48	08/02/18 16:48	1
Dieldrin	ND		1.8	0.44	ug/Kg	☼	08/01/18 06:48	08/02/18 16:48	1
Endosulfan I	ND		1.8	0.35	ug/Kg	☼	08/01/18 06:48	08/02/18 16:48	1
Endosulfan II	ND		1.8	0.33	ug/Kg	☼	08/01/18 06:48	08/02/18 16:48	1
Endosulfan sulfate	ND		1.8	0.34	ug/Kg	☼	08/01/18 06:48	08/02/18 16:48	1
Endrin	ND		1.8	0.36	ug/Kg	☼	08/01/18 06:48	08/02/18 16:48	1
gamma-BHC (Lindane)	ND		1.8	0.34	ug/Kg	☼	08/01/18 06:48	08/02/18 16:48	1
Heptachlor	ND		1.8	0.40	ug/Kg	☼	08/01/18 06:48	08/02/18 16:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	96		45 - 120	08/01/18 06:48	08/02/18 16:48	1

TestAmerica Buffalo



# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-006**

**Lab Sample ID: 480-139508-6**

Date Collected: 07/25/18 11:20

Matrix: Solid

Date Received: 07/25/18 16:40

Percent Solids: 88.6

## Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	80		30 - 124	08/01/18 06:48	08/02/18 16:48	1

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.25	0.050	mg/Kg	☼	07/31/18 07:45	08/01/18 00:31	1
PCB-1221	ND		0.25	0.050	mg/Kg	☼	07/31/18 07:45	08/01/18 00:31	1
PCB-1232	ND		0.25	0.050	mg/Kg	☼	07/31/18 07:45	08/01/18 00:31	1
PCB-1242	ND		0.25	0.050	mg/Kg	☼	07/31/18 07:45	08/01/18 00:31	1
PCB-1248	ND		0.25	0.050	mg/Kg	☼	07/31/18 07:45	08/01/18 00:31	1
PCB-1254	ND		0.25	0.12	mg/Kg	☼	07/31/18 07:45	08/01/18 00:31	1
PCB-1260	ND		0.25	0.12	mg/Kg	☼	07/31/18 07:45	08/01/18 00:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	117		60 - 154	07/31/18 07:45	08/01/18 00:31	1
DCB Decachlorobiphenyl	99		65 - 174	07/31/18 07:45	08/01/18 00:31	1

## Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		19	6.7	ug/Kg	☼	08/02/18 07:55	08/09/18 00:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	59		28 - 129	08/02/18 07:55	08/09/18 00:30	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	22.3		2.3	0.45	mg/Kg	☼	07/30/18 11:20	07/31/18 18:42	1
Barium	28.0		0.57	0.12	mg/Kg	☼	07/30/18 11:20	07/31/18 18:42	1
Beryllium	0.71		0.23	0.032	mg/Kg	☼	07/30/18 11:20	07/31/18 18:42	1
Cadmium	ND		0.23	0.034	mg/Kg	☼	07/30/18 11:20	07/31/18 18:42	1
Chromium	18.2	B	0.57	0.23	mg/Kg	☼	07/30/18 11:20	07/31/18 18:42	1
Copper	19.6		1.1	0.24	mg/Kg	☼	07/30/18 11:20	07/31/18 18:42	1
Lead	17.5		1.1	0.27	mg/Kg	☼	07/30/18 11:20	07/31/18 18:42	1
Manganese	161	B	0.23	0.036	mg/Kg	☼	07/30/18 11:20	07/31/18 18:42	1
Nickel	22.5		5.7	0.26	mg/Kg	☼	07/30/18 11:20	07/31/18 18:42	1
Selenium	ND		4.5	0.45	mg/Kg	☼	07/30/18 11:20	07/31/18 18:42	1
Silver	ND		0.68	0.23	mg/Kg	☼	07/30/18 11:20	07/31/18 18:42	1
Zinc	71.0	B	2.3	0.73	mg/Kg	☼	07/30/18 11:20	07/31/18 18:42	1

## Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.022	0.0091	mg/Kg	☼	08/16/18 11:35	08/16/18 13:34	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		2.2	0.58	mg/Kg	☼	08/23/18 15:45	08/24/18 05:20	1
Trivalent Chromium	18.2		1.5	0.63	mg/Kg			08/27/18 16:26	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-007**

**Lab Sample ID: 480-139508-7**

**Date Collected: 07/25/18 11:45**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 92.9**

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		4.0	0.29	ug/Kg	☼	07/25/18 18:00	08/01/18 18:09	1
1,1-Dichloroethane	ND		4.0	0.49	ug/Kg	☼	07/25/18 18:00	08/01/18 18:09	1
1,1-Dichloroethene	ND		4.0	0.50	ug/Kg	☼	07/25/18 18:00	08/01/18 18:09	1
1,2,4-Trimethylbenzene	ND		4.0	0.78	ug/Kg	☼	07/25/18 18:00	08/01/18 18:09	1
1,2-Dichlorobenzene	ND		4.0	0.32	ug/Kg	☼	07/25/18 18:00	08/01/18 18:09	1
1,2-Dichloroethane	ND		4.0	0.20	ug/Kg	☼	07/25/18 18:00	08/01/18 18:09	1
1,3,5-Trimethylbenzene	ND		4.0	0.26	ug/Kg	☼	07/25/18 18:00	08/01/18 18:09	1
1,3-Dichlorobenzene	ND		4.0	0.21	ug/Kg	☼	07/25/18 18:00	08/01/18 18:09	1
1,4-Dichlorobenzene	ND		4.0	0.57	ug/Kg	☼	07/25/18 18:00	08/01/18 18:09	1
1,4-Dioxane	ND		81	18	ug/Kg	☼	07/25/18 18:00	08/01/18 18:09	1
2-Butanone (MEK)	ND		20	1.5	ug/Kg	☼	07/25/18 18:00	08/01/18 18:09	1
Acetone	19	J	20	3.4	ug/Kg	☼	07/25/18 18:00	08/01/18 18:09	1
Benzene	ND		4.0	0.20	ug/Kg	☼	07/25/18 18:00	08/01/18 18:09	1
Carbon tetrachloride	ND		4.0	0.39	ug/Kg	☼	07/25/18 18:00	08/01/18 18:09	1
Chlorobenzene	ND		4.0	0.53	ug/Kg	☼	07/25/18 18:00	08/01/18 18:09	1
Chloroform	ND		4.0	0.25	ug/Kg	☼	07/25/18 18:00	08/01/18 18:09	1
cis-1,2-Dichloroethene	ND		4.0	0.52	ug/Kg	☼	07/25/18 18:00	08/01/18 18:09	1
Ethylbenzene	ND		4.0	0.28	ug/Kg	☼	07/25/18 18:00	08/01/18 18:09	1
Methyl tert-butyl ether	ND		4.0	0.40	ug/Kg	☼	07/25/18 18:00	08/01/18 18:09	1
Methylene Chloride	ND		4.0	1.9	ug/Kg	☼	07/25/18 18:00	08/01/18 18:09	1
n-Butylbenzene	ND		4.0	0.35	ug/Kg	☼	07/25/18 18:00	08/01/18 18:09	1
n-Propylbenzene	ND		4.0	0.32	ug/Kg	☼	07/25/18 18:00	08/01/18 18:09	1
sec-Butylbenzene	ND		4.0	0.35	ug/Kg	☼	07/25/18 18:00	08/01/18 18:09	1
tert-Butylbenzene	ND		4.0	0.42	ug/Kg	☼	07/25/18 18:00	08/01/18 18:09	1
Tetrachloroethene	ND		4.0	0.54	ug/Kg	☼	07/25/18 18:00	08/01/18 18:09	1
Toluene	ND		4.0	0.31	ug/Kg	☼	07/25/18 18:00	08/01/18 18:09	1
trans-1,2-Dichloroethene	ND		4.0	0.42	ug/Kg	☼	07/25/18 18:00	08/01/18 18:09	1
Trichloroethene	ND		4.0	0.89	ug/Kg	☼	07/25/18 18:00	08/01/18 18:09	1
Vinyl chloride	ND		4.0	0.49	ug/Kg	☼	07/25/18 18:00	08/01/18 18:09	1
Xylenes, Total	ND		8.1	0.68	ug/Kg	☼	07/25/18 18:00	08/01/18 18:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		64 - 126	07/25/18 18:00	08/01/18 18:09	1
4-Bromofluorobenzene (Surr)	89		72 - 126	07/25/18 18:00	08/01/18 18:09	1
Dibromofluoromethane (Surr)	98		60 - 140	07/25/18 18:00	08/01/18 18:09	1
Toluene-d8 (Surr)	101		71 - 125	07/25/18 18:00	08/01/18 18:09	1

**Method: 8270D - Semivolatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	ND		180	21	ug/Kg	☼	08/03/18 06:56	08/14/18 19:10	1
3-Methylphenol	ND		350	28	ug/Kg	☼	08/03/18 06:56	08/14/18 19:10	1
4-Methylphenol	ND		350	21	ug/Kg	☼	08/03/18 06:56	08/14/18 19:10	1
Acenaphthene	ND		180	26	ug/Kg	☼	08/03/18 06:56	08/14/18 19:10	1
Acenaphthylene	ND		180	23	ug/Kg	☼	08/03/18 06:56	08/14/18 19:10	1
Anthracene	ND		180	45	ug/Kg	☼	08/03/18 06:56	08/14/18 19:10	1
Benzo[a]anthracene	ND		180	18	ug/Kg	☼	08/03/18 06:56	08/14/18 19:10	1
Benzo[a]pyrene	ND		180	26	ug/Kg	☼	08/03/18 06:56	08/14/18 19:10	1
Benzo[b]fluoranthene	ND		180	29	ug/Kg	☼	08/03/18 06:56	08/14/18 19:10	1
Benzo[g,h,i]perylene	ND		180	19	ug/Kg	☼	08/03/18 06:56	08/14/18 19:10	1
Benzo[k]fluoranthene	ND		180	23	ug/Kg	☼	08/03/18 06:56	08/14/18 19:10	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-007**

**Lab Sample ID: 480-139508-7**

**Date Collected: 07/25/18 11:45**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 92.9**

## Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chrysene	ND		180	40	ug/Kg	☼	08/03/18 06:56	08/14/18 19:10	1
Dibenz(a,h)anthracene	ND		180	32	ug/Kg	☼	08/03/18 06:56	08/14/18 19:10	1
Dibenzofuran	ND		180	21	ug/Kg	☼	08/03/18 06:56	08/14/18 19:10	1
Fluoranthene	ND		180	19	ug/Kg	☼	08/03/18 06:56	08/14/18 19:10	1
Fluorene	ND		180	21	ug/Kg	☼	08/03/18 06:56	08/14/18 19:10	1
Hexachlorobenzene	ND		180	24	ug/Kg	☼	08/03/18 06:56	08/14/18 19:10	1
Indeno[1,2,3-cd]pyrene	ND		180	22	ug/Kg	☼	08/03/18 06:56	08/14/18 19:10	1
Naphthalene	ND		180	23	ug/Kg	☼	08/03/18 06:56	08/14/18 19:10	1
Pentachlorophenol	ND		350	180	ug/Kg	☼	08/03/18 06:56	08/14/18 19:10	1
Phenanthrene	ND		180	26	ug/Kg	☼	08/03/18 06:56	08/14/18 19:10	1
Phenol	ND		180	28	ug/Kg	☼	08/03/18 06:56	08/14/18 19:10	1
Pyrene	ND		180	21	ug/Kg	☼	08/03/18 06:56	08/14/18 19:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	83		54 - 120	08/03/18 06:56	08/14/18 19:10	1
2-Fluorobiphenyl	86		60 - 120	08/03/18 06:56	08/14/18 19:10	1
2-Fluorophenol (Surr)	69		52 - 120	08/03/18 06:56	08/14/18 19:10	1
Nitrobenzene-d5 (Surr)	83		53 - 120	08/03/18 06:56	08/14/18 19:10	1
Phenol-d5 (Surr)	73		54 - 120	08/03/18 06:56	08/14/18 19:10	1
p-Terphenyl-d14 (Surr)	100		65 - 121	08/03/18 06:56	08/14/18 19:10	1

## Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		1.8	0.34	ug/Kg	☼	08/01/18 06:48	08/02/18 17:08	1
4,4'-DDE	ND		1.8	0.37	ug/Kg	☼	08/01/18 06:48	08/02/18 17:08	1
4,4'-DDT	ND		1.8	0.41	ug/Kg	☼	08/01/18 06:48	08/02/18 17:08	1
Aldrin	ND		1.8	0.43	ug/Kg	☼	08/01/18 06:48	08/02/18 17:08	1
alpha-BHC	ND		1.8	0.32	ug/Kg	☼	08/01/18 06:48	08/02/18 17:08	1
cis-Chlordane	ND		1.8	0.87	ug/Kg	☼	08/01/18 06:48	08/02/18 17:08	1
beta-BHC	ND		1.8	0.32	ug/Kg	☼	08/01/18 06:48	08/02/18 17:08	1
delta-BHC	ND		1.8	0.33	ug/Kg	☼	08/01/18 06:48	08/02/18 17:08	1
Dieldrin	ND		1.8	0.42	ug/Kg	☼	08/01/18 06:48	08/02/18 17:08	1
Endosulfan I	ND		1.8	0.34	ug/Kg	☼	08/01/18 06:48	08/02/18 17:08	1
Endosulfan II	ND		1.8	0.32	ug/Kg	☼	08/01/18 06:48	08/02/18 17:08	1
Endosulfan sulfate	ND		1.8	0.33	ug/Kg	☼	08/01/18 06:48	08/02/18 17:08	1
Endrin	ND		1.8	0.35	ug/Kg	☼	08/01/18 06:48	08/02/18 17:08	1
gamma-BHC (Lindane)	ND		1.8	0.32	ug/Kg	☼	08/01/18 06:48	08/02/18 17:08	1
Heptachlor	ND		1.8	0.38	ug/Kg	☼	08/01/18 06:48	08/02/18 17:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	92		45 - 120	08/01/18 06:48	08/02/18 17:08	1
Tetrachloro-m-xylene	80		30 - 124	08/01/18 06:48	08/02/18 17:08	1

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.22	0.043	mg/Kg	☼	07/31/18 07:45	08/01/18 00:47	1
PCB-1221	ND		0.22	0.043	mg/Kg	☼	07/31/18 07:45	08/01/18 00:47	1
PCB-1232	ND		0.22	0.043	mg/Kg	☼	07/31/18 07:45	08/01/18 00:47	1
PCB-1242	ND		0.22	0.043	mg/Kg	☼	07/31/18 07:45	08/01/18 00:47	1
PCB-1248	ND		0.22	0.043	mg/Kg	☼	07/31/18 07:45	08/01/18 00:47	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-007**

**Lab Sample ID: 480-139508-7**

Date Collected: 07/25/18 11:45

Matrix: Solid

Date Received: 07/25/18 16:40

Percent Solids: 92.9

**Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1254	ND		0.22	0.10	mg/Kg	☼	07/31/18 07:45	08/01/18 00:47	1
PCB-1260	ND		0.22	0.10	mg/Kg	☼	07/31/18 07:45	08/01/18 00:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	108		60 - 154				07/31/18 07:45	08/01/18 00:47	1
DCB Decachlorobiphenyl	93		65 - 174				07/31/18 07:45	08/01/18 00:47	1

**Method: 8151A - Herbicides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		18	6.4	ug/Kg	☼	08/02/18 07:55	08/09/18 01:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	50		28 - 129				08/02/18 07:55	08/09/18 01:29	1

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	6.8		2.2	0.43	mg/Kg	☼	07/30/18 11:20	07/31/18 18:46	1
Barium	23.4		0.54	0.12	mg/Kg	☼	07/30/18 11:20	07/31/18 18:46	1
Beryllium	0.47		0.22	0.030	mg/Kg	☼	07/30/18 11:20	07/31/18 18:46	1
Cadmium	ND		0.22	0.032	mg/Kg	☼	07/30/18 11:20	07/31/18 18:46	1
Chromium	12.8	B	0.54	0.22	mg/Kg	☼	07/30/18 11:20	07/31/18 18:46	1
Copper	42.5		1.1	0.23	mg/Kg	☼	07/30/18 11:20	07/31/18 18:46	1
Lead	14.0		1.1	0.26	mg/Kg	☼	07/30/18 11:20	07/31/18 18:46	1
Manganese	257	B	0.22	0.034	mg/Kg	☼	07/30/18 11:20	07/31/18 18:46	1
Nickel	20.2		5.4	0.25	mg/Kg	☼	07/30/18 11:20	07/31/18 18:46	1
Selenium	ND		4.3	0.43	mg/Kg	☼	07/30/18 11:20	07/31/18 18:46	1
Silver	ND		0.65	0.22	mg/Kg	☼	07/30/18 11:20	07/31/18 18:46	1
Zinc	60.4	B	2.2	0.69	mg/Kg	☼	07/30/18 11:20	07/31/18 18:46	1

**Method: 7471B - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.012	J	0.022	0.0089	mg/Kg	☼	08/16/18 11:35	08/16/18 13:35	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		2.1	0.55	mg/Kg	☼	08/23/18 15:45	08/24/18 05:20	1
Trivalent Chromium	12.8		1.5	0.63	mg/Kg			08/27/18 16:26	1

**Client Sample ID: SO-11137156-072518-AG-008**

**Lab Sample ID: 480-139508-8**

Date Collected: 07/25/18 12:20

Matrix: Solid

Date Received: 07/25/18 16:40

Percent Solids: 86.9

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		4.3	0.31	ug/Kg	☼	07/25/18 18:00	08/01/18 18:35	1
1,1-Dichloroethane	ND		4.3	0.52	ug/Kg	☼	07/25/18 18:00	08/01/18 18:35	1
1,1-Dichloroethene	ND		4.3	0.52	ug/Kg	☼	07/25/18 18:00	08/01/18 18:35	1
1,2,4-Trimethylbenzene	ND		4.3	0.82	ug/Kg	☼	07/25/18 18:00	08/01/18 18:35	1
1,2-Dichlorobenzene	ND		4.3	0.33	ug/Kg	☼	07/25/18 18:00	08/01/18 18:35	1
1,2-Dichloroethane	ND		4.3	0.21	ug/Kg	☼	07/25/18 18:00	08/01/18 18:35	1
1,3,5-Trimethylbenzene	ND		4.3	0.27	ug/Kg	☼	07/25/18 18:00	08/01/18 18:35	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-008**

**Lab Sample ID: 480-139508-8**

**Date Collected: 07/25/18 12:20**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 86.9**

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		4.3	0.22	ug/Kg	☼	07/25/18 18:00	08/01/18 18:35	1
1,4-Dichlorobenzene	ND		4.3	0.60	ug/Kg	☼	07/25/18 18:00	08/01/18 18:35	1
1,4-Dioxane	ND		85	19	ug/Kg	☼	07/25/18 18:00	08/01/18 18:35	1
2-Butanone (MEK)	ND		21	1.6	ug/Kg	☼	07/25/18 18:00	08/01/18 18:35	1
<b>Acetone</b>	<b>21</b>		21	3.6	ug/Kg	☼	07/25/18 18:00	08/01/18 18:35	1
Benzene	ND		4.3	0.21	ug/Kg	☼	07/25/18 18:00	08/01/18 18:35	1
Carbon tetrachloride	ND		4.3	0.41	ug/Kg	☼	07/25/18 18:00	08/01/18 18:35	1
Chlorobenzene	ND		4.3	0.56	ug/Kg	☼	07/25/18 18:00	08/01/18 18:35	1
Chloroform	ND		4.3	0.26	ug/Kg	☼	07/25/18 18:00	08/01/18 18:35	1
cis-1,2-Dichloroethene	ND		4.3	0.55	ug/Kg	☼	07/25/18 18:00	08/01/18 18:35	1
Ethylbenzene	ND		4.3	0.29	ug/Kg	☼	07/25/18 18:00	08/01/18 18:35	1
Methyl tert-butyl ether	ND		4.3	0.42	ug/Kg	☼	07/25/18 18:00	08/01/18 18:35	1
Methylene Chloride	ND		4.3	2.0	ug/Kg	☼	07/25/18 18:00	08/01/18 18:35	1
n-Butylbenzene	ND		4.3	0.37	ug/Kg	☼	07/25/18 18:00	08/01/18 18:35	1
n-Propylbenzene	ND		4.3	0.34	ug/Kg	☼	07/25/18 18:00	08/01/18 18:35	1
sec-Butylbenzene	ND		4.3	0.37	ug/Kg	☼	07/25/18 18:00	08/01/18 18:35	1
tert-Butylbenzene	ND		4.3	0.44	ug/Kg	☼	07/25/18 18:00	08/01/18 18:35	1
Tetrachloroethene	ND		4.3	0.57	ug/Kg	☼	07/25/18 18:00	08/01/18 18:35	1
Toluene	ND		4.3	0.32	ug/Kg	☼	07/25/18 18:00	08/01/18 18:35	1
trans-1,2-Dichloroethene	ND		4.3	0.44	ug/Kg	☼	07/25/18 18:00	08/01/18 18:35	1
Trichloroethene	ND		4.3	0.94	ug/Kg	☼	07/25/18 18:00	08/01/18 18:35	1
Vinyl chloride	ND		4.3	0.52	ug/Kg	☼	07/25/18 18:00	08/01/18 18:35	1
Xylenes, Total	ND		8.5	0.72	ug/Kg	☼	07/25/18 18:00	08/01/18 18:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		64 - 126	07/25/18 18:00	08/01/18 18:35	1
4-Bromofluorobenzene (Surr)	90		72 - 126	07/25/18 18:00	08/01/18 18:35	1
Dibromofluoromethane (Surr)	95		60 - 140	07/25/18 18:00	08/01/18 18:35	1
Toluene-d8 (Surr)	101		71 - 125	07/25/18 18:00	08/01/18 18:35	1

**Method: 8270D - Semivolatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	ND		190	23	ug/Kg	☼	08/03/18 06:56	08/14/18 19:38	1
3-Methylphenol	ND		380	30	ug/Kg	☼	08/03/18 06:56	08/14/18 19:38	1
4-Methylphenol	ND		380	23	ug/Kg	☼	08/03/18 06:56	08/14/18 19:38	1
Acenaphthene	ND		190	29	ug/Kg	☼	08/03/18 06:56	08/14/18 19:38	1
Acenaphthylene	ND		190	25	ug/Kg	☼	08/03/18 06:56	08/14/18 19:38	1
Anthracene	ND		190	48	ug/Kg	☼	08/03/18 06:56	08/14/18 19:38	1
Benzo[a]anthracene	ND		190	19	ug/Kg	☼	08/03/18 06:56	08/14/18 19:38	1
Benzo[a]pyrene	ND		190	29	ug/Kg	☼	08/03/18 06:56	08/14/18 19:38	1
Benzo[b]fluoranthene	ND		190	31	ug/Kg	☼	08/03/18 06:56	08/14/18 19:38	1
Benzo[g,h,i]perylene	ND		190	21	ug/Kg	☼	08/03/18 06:56	08/14/18 19:38	1
Benzo[k]fluoranthene	ND		190	25	ug/Kg	☼	08/03/18 06:56	08/14/18 19:38	1
Chrysene	ND		190	43	ug/Kg	☼	08/03/18 06:56	08/14/18 19:38	1
Dibenz(a,h)anthracene	ND		190	34	ug/Kg	☼	08/03/18 06:56	08/14/18 19:38	1
Dibenzofuran	ND		190	23	ug/Kg	☼	08/03/18 06:56	08/14/18 19:38	1
Fluoranthene	ND		190	21	ug/Kg	☼	08/03/18 06:56	08/14/18 19:38	1
Fluorene	ND		190	23	ug/Kg	☼	08/03/18 06:56	08/14/18 19:38	1
Hexachlorobenzene	ND		190	26	ug/Kg	☼	08/03/18 06:56	08/14/18 19:38	1
Indeno[1,2,3-cd]pyrene	ND		190	24	ug/Kg	☼	08/03/18 06:56	08/14/18 19:38	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-008**

**Lab Sample ID: 480-139508-8**

Date Collected: 07/25/18 12:20

Matrix: Solid

Date Received: 07/25/18 16:40

Percent Solids: 86.9

## Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		190	25	ug/Kg	☼	08/03/18 06:56	08/14/18 19:38	1
Pentachlorophenol	ND		380	190	ug/Kg	☼	08/03/18 06:56	08/14/18 19:38	1
Phenanthrene	ND		190	29	ug/Kg	☼	08/03/18 06:56	08/14/18 19:38	1
Phenol	ND		190	30	ug/Kg	☼	08/03/18 06:56	08/14/18 19:38	1
Pyrene	ND		190	23	ug/Kg	☼	08/03/18 06:56	08/14/18 19:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	79		54 - 120	08/03/18 06:56	08/14/18 19:38	1
2-Fluorobiphenyl	90		60 - 120	08/03/18 06:56	08/14/18 19:38	1
2-Fluorophenol (Surr)	68		52 - 120	08/03/18 06:56	08/14/18 19:38	1
Nitrobenzene-d5 (Surr)	86		53 - 120	08/03/18 06:56	08/14/18 19:38	1
Phenol-d5 (Surr)	75		54 - 120	08/03/18 06:56	08/14/18 19:38	1
p-Terphenyl-d14 (Surr)	95		65 - 121	08/03/18 06:56	08/14/18 19:38	1

## Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	0.42	J	1.9	0.37	ug/Kg	☼	08/01/18 06:48	08/02/18 17:28	1
4,4'-DDE	ND		1.9	0.39	ug/Kg	☼	08/01/18 06:48	08/02/18 17:28	1
4,4'-DDT	ND		1.9	0.44	ug/Kg	☼	08/01/18 06:48	08/02/18 17:28	1
Aldrin	ND		1.9	0.46	ug/Kg	☼	08/01/18 06:48	08/02/18 17:28	1
alpha-BHC	ND		1.9	0.34	ug/Kg	☼	08/01/18 06:48	08/02/18 17:28	1
cis-Chlordane	ND		1.9	0.94	ug/Kg	☼	08/01/18 06:48	08/02/18 17:28	1
beta-BHC	ND		1.9	0.34	ug/Kg	☼	08/01/18 06:48	08/02/18 17:28	1
delta-BHC	ND		1.9	0.35	ug/Kg	☼	08/01/18 06:48	08/02/18 17:28	1
Dieldrin	ND		1.9	0.45	ug/Kg	☼	08/01/18 06:48	08/02/18 17:28	1
Endosulfan I	ND		1.9	0.36	ug/Kg	☼	08/01/18 06:48	08/02/18 17:28	1
Endosulfan II	ND		1.9	0.34	ug/Kg	☼	08/01/18 06:48	08/02/18 17:28	1
Endosulfan sulfate	ND		1.9	0.35	ug/Kg	☼	08/01/18 06:48	08/02/18 17:28	1
Endrin	ND		1.9	0.37	ug/Kg	☼	08/01/18 06:48	08/02/18 17:28	1
gamma-BHC (Lindane)	ND		1.9	0.34	ug/Kg	☼	08/01/18 06:48	08/02/18 17:28	1
Heptachlor	ND		1.9	0.41	ug/Kg	☼	08/01/18 06:48	08/02/18 17:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	93		45 - 120	08/01/18 06:48	08/02/18 17:28	1
Tetrachloro-m-xylene	82		30 - 124	08/01/18 06:48	08/02/18 17:28	1

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.27	0.053	mg/Kg	☼	07/31/18 07:45	08/01/18 01:03	1
PCB-1221	ND		0.27	0.053	mg/Kg	☼	07/31/18 07:45	08/01/18 01:03	1
PCB-1232	ND		0.27	0.053	mg/Kg	☼	07/31/18 07:45	08/01/18 01:03	1
PCB-1242	ND		0.27	0.053	mg/Kg	☼	07/31/18 07:45	08/01/18 01:03	1
PCB-1248	ND		0.27	0.053	mg/Kg	☼	07/31/18 07:45	08/01/18 01:03	1
PCB-1254	ND		0.27	0.13	mg/Kg	☼	07/31/18 07:45	08/01/18 01:03	1
PCB-1260	ND		0.27	0.13	mg/Kg	☼	07/31/18 07:45	08/01/18 01:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	108		60 - 154	07/31/18 07:45	08/01/18 01:03	1
DCB Decachlorobiphenyl	95		65 - 174	07/31/18 07:45	08/01/18 01:03	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-008**

**Lab Sample ID: 480-139508-8**

Date Collected: 07/25/18 12:20

Matrix: Solid

Date Received: 07/25/18 16:40

Percent Solids: 86.9

**Method: 8151A - Herbicides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		19	6.8	ug/Kg	☼	08/02/18 07:55	08/09/18 01:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	53		28 - 129				08/02/18 07:55	08/09/18 01:59	1

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	24.5		2.3	0.46	mg/Kg	☼	07/30/18 11:20	07/31/18 18:49	1
Barium	30.0		0.58	0.13	mg/Kg	☼	07/30/18 11:20	07/31/18 18:49	1
Beryllium	0.42		0.23	0.032	mg/Kg	☼	07/30/18 11:20	07/31/18 18:49	1
Cadmium	ND		0.23	0.035	mg/Kg	☼	07/30/18 11:20	07/31/18 18:49	1
Chromium	15.9		0.58	0.23	mg/Kg	☼	08/02/18 09:30	08/03/18 14:33	1
Copper	9.5		1.2	0.24	mg/Kg	☼	07/30/18 11:20	07/31/18 18:49	1
Lead	7.9		1.2	0.28	mg/Kg	☼	07/30/18 11:20	07/31/18 18:49	1
Manganese	339	B	0.23	0.037	mg/Kg	☼	07/30/18 11:20	07/31/18 18:49	1
Nickel	12.1		5.8	0.27	mg/Kg	☼	07/30/18 11:20	07/31/18 18:49	1
Selenium	ND		4.6	0.46	mg/Kg	☼	07/30/18 11:20	07/31/18 18:49	1
Silver	ND		0.69	0.23	mg/Kg	☼	07/30/18 11:20	07/31/18 18:49	1
Zinc	72.2		2.3	0.75	mg/Kg	☼	08/02/18 09:30	08/03/18 14:33	1

**Method: 7471B - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.013	J	0.022	0.0090	mg/Kg	☼	08/16/18 11:35	08/16/18 13:37	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		2.3	0.59	mg/Kg	☼	08/23/18 17:44	08/24/18 05:20	1
Trivalent Chromium	15.9		1.5	0.63	mg/Kg			08/27/18 16:26	1

**Client Sample ID: SO-11137156-072518-AG-009**

**Lab Sample ID: 480-139508-9**

Date Collected: 07/25/18 12:40

Matrix: Solid

Date Received: 07/25/18 16:40

Percent Solids: 92.7

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		3.6	0.26	ug/Kg	☼	07/25/18 18:00	08/01/18 19:01	1
1,1-Dichloroethane	ND		3.6	0.44	ug/Kg	☼	07/25/18 18:00	08/01/18 19:01	1
1,1-Dichloroethene	ND		3.6	0.44	ug/Kg	☼	07/25/18 18:00	08/01/18 19:01	1
1,2,4-Trimethylbenzene	ND		3.6	0.69	ug/Kg	☼	07/25/18 18:00	08/01/18 19:01	1
1,2-Dichlorobenzene	ND		3.6	0.28	ug/Kg	☼	07/25/18 18:00	08/01/18 19:01	1
1,2-Dichloroethane	ND		3.6	0.18	ug/Kg	☼	07/25/18 18:00	08/01/18 19:01	1
1,3,5-Trimethylbenzene	ND		3.6	0.23	ug/Kg	☼	07/25/18 18:00	08/01/18 19:01	1
1,3-Dichlorobenzene	ND		3.6	0.18	ug/Kg	☼	07/25/18 18:00	08/01/18 19:01	1
1,4-Dichlorobenzene	ND		3.6	0.50	ug/Kg	☼	07/25/18 18:00	08/01/18 19:01	1
1,4-Dioxane	ND		72	16	ug/Kg	☼	07/25/18 18:00	08/01/18 19:01	1
2-Butanone (MEK)	ND		18	1.3	ug/Kg	☼	07/25/18 18:00	08/01/18 19:01	1
Acetone	17	J	18	3.0	ug/Kg	☼	07/25/18 18:00	08/01/18 19:01	1
Benzene	ND		3.6	0.18	ug/Kg	☼	07/25/18 18:00	08/01/18 19:01	1
Carbon tetrachloride	ND		3.6	0.35	ug/Kg	☼	07/25/18 18:00	08/01/18 19:01	1
Chlorobenzene	ND		3.6	0.47	ug/Kg	☼	07/25/18 18:00	08/01/18 19:01	1
Chloroform	ND		3.6	0.22	ug/Kg	☼	07/25/18 18:00	08/01/18 19:01	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-009**

**Lab Sample ID: 480-139508-9**

**Date Collected: 07/25/18 12:40**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 92.7**

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		3.6	0.46	ug/Kg	☼	07/25/18 18:00	08/01/18 19:01	1
Ethylbenzene	ND		3.6	0.25	ug/Kg	☼	07/25/18 18:00	08/01/18 19:01	1
Methyl tert-butyl ether	ND		3.6	0.35	ug/Kg	☼	07/25/18 18:00	08/01/18 19:01	1
Methylene Chloride	ND		3.6	1.7	ug/Kg	☼	07/25/18 18:00	08/01/18 19:01	1
n-Butylbenzene	ND		3.6	0.31	ug/Kg	☼	07/25/18 18:00	08/01/18 19:01	1
n-Propylbenzene	ND		3.6	0.29	ug/Kg	☼	07/25/18 18:00	08/01/18 19:01	1
sec-Butylbenzene	ND		3.6	0.31	ug/Kg	☼	07/25/18 18:00	08/01/18 19:01	1
tert-Butylbenzene	ND		3.6	0.37	ug/Kg	☼	07/25/18 18:00	08/01/18 19:01	1
Tetrachloroethene	ND		3.6	0.48	ug/Kg	☼	07/25/18 18:00	08/01/18 19:01	1
Toluene	ND		3.6	0.27	ug/Kg	☼	07/25/18 18:00	08/01/18 19:01	1
trans-1,2-Dichloroethene	ND		3.6	0.37	ug/Kg	☼	07/25/18 18:00	08/01/18 19:01	1
Trichloroethene	ND		3.6	0.79	ug/Kg	☼	07/25/18 18:00	08/01/18 19:01	1
Vinyl chloride	ND		3.6	0.44	ug/Kg	☼	07/25/18 18:00	08/01/18 19:01	1
Xylenes, Total	ND		7.2	0.60	ug/Kg	☼	07/25/18 18:00	08/01/18 19:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		64 - 126	07/25/18 18:00	08/01/18 19:01	1
4-Bromofluorobenzene (Surr)	90		72 - 126	07/25/18 18:00	08/01/18 19:01	1
Dibromofluoromethane (Surr)	96		60 - 140	07/25/18 18:00	08/01/18 19:01	1
Toluene-d8 (Surr)	101		71 - 125	07/25/18 18:00	08/01/18 19:01	1

**Method: 8270D - Semivolatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	ND		180	21	ug/Kg	☼	08/03/18 06:56	08/14/18 20:06	1
3-Methylphenol	ND		350	27	ug/Kg	☼	08/03/18 06:56	08/14/18 20:06	1
4-Methylphenol	ND		350	21	ug/Kg	☼	08/03/18 06:56	08/14/18 20:06	1
Acenaphthene	ND		180	26	ug/Kg	☼	08/03/18 06:56	08/14/18 20:06	1
Acenaphthylene	ND		180	23	ug/Kg	☼	08/03/18 06:56	08/14/18 20:06	1
Anthracene	ND		180	44	ug/Kg	☼	08/03/18 06:56	08/14/18 20:06	1
Benzo[a]anthracene	ND		180	18	ug/Kg	☼	08/03/18 06:56	08/14/18 20:06	1
Benzo[a]pyrene	ND		180	26	ug/Kg	☼	08/03/18 06:56	08/14/18 20:06	1
Benzo[b]fluoranthene	ND		180	28	ug/Kg	☼	08/03/18 06:56	08/14/18 20:06	1
Benzo[g,h,i]perylene	ND		180	19	ug/Kg	☼	08/03/18 06:56	08/14/18 20:06	1
Benzo[k]fluoranthene	ND		180	23	ug/Kg	☼	08/03/18 06:56	08/14/18 20:06	1
Chrysene	ND		180	40	ug/Kg	☼	08/03/18 06:56	08/14/18 20:06	1
Dibenz(a,h)anthracene	ND		180	32	ug/Kg	☼	08/03/18 06:56	08/14/18 20:06	1
Dibenzofuran	ND		180	21	ug/Kg	☼	08/03/18 06:56	08/14/18 20:06	1
Fluoranthene	ND		180	19	ug/Kg	☼	08/03/18 06:56	08/14/18 20:06	1
Fluorene	ND		180	21	ug/Kg	☼	08/03/18 06:56	08/14/18 20:06	1
Hexachlorobenzene	ND		180	24	ug/Kg	☼	08/03/18 06:56	08/14/18 20:06	1
Indeno[1,2,3-cd]pyrene	ND		180	22	ug/Kg	☼	08/03/18 06:56	08/14/18 20:06	1
Naphthalene	ND		180	23	ug/Kg	☼	08/03/18 06:56	08/14/18 20:06	1
Pentachlorophenol	ND		350	180	ug/Kg	☼	08/03/18 06:56	08/14/18 20:06	1
Phenanthrene	ND		180	26	ug/Kg	☼	08/03/18 06:56	08/14/18 20:06	1
Phenol	ND		180	27	ug/Kg	☼	08/03/18 06:56	08/14/18 20:06	1
Pyrene	ND		180	21	ug/Kg	☼	08/03/18 06:56	08/14/18 20:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	91		54 - 120	08/03/18 06:56	08/14/18 20:06	1
2-Fluorobiphenyl	94		60 - 120	08/03/18 06:56	08/14/18 20:06	1

TestAmerica Buffalo



# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-009**

**Lab Sample ID: 480-139508-9**

Date Collected: 07/25/18 12:40

Matrix: Solid

Date Received: 07/25/18 16:40

Percent Solids: 92.7

## Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorophenol (Surr)	75		52 - 120	08/03/18 06:56	08/14/18 20:06	1
Nitrobenzene-d5 (Surr)	86		53 - 120	08/03/18 06:56	08/14/18 20:06	1
Phenol-d5 (Surr)	81		54 - 120	08/03/18 06:56	08/14/18 20:06	1
p-Terphenyl-d14 (Surr)	105		65 - 121	08/03/18 06:56	08/14/18 20:06	1

## Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	0.53	J	1.8	0.35	ug/Kg	☼	08/01/18 06:48	08/02/18 17:47	1
4,4'-DDE	ND		1.8	0.37	ug/Kg	☼	08/01/18 06:48	08/02/18 17:47	1
4,4'-DDT	ND		1.8	0.42	ug/Kg	☼	08/01/18 06:48	08/02/18 17:47	1
Aldrin	ND		1.8	0.44	ug/Kg	☼	08/01/18 06:48	08/02/18 17:47	1
alpha-BHC	ND		1.8	0.32	ug/Kg	☼	08/01/18 06:48	08/02/18 17:47	1
cis-Chlordane	ND		1.8	0.89	ug/Kg	☼	08/01/18 06:48	08/02/18 17:47	1
beta-BHC	ND		1.8	0.32	ug/Kg	☼	08/01/18 06:48	08/02/18 17:47	1
delta-BHC	ND		1.8	0.33	ug/Kg	☼	08/01/18 06:48	08/02/18 17:47	1
Dieldrin	ND		1.8	0.43	ug/Kg	☼	08/01/18 06:48	08/02/18 17:47	1
Endosulfan I	ND		1.8	0.34	ug/Kg	☼	08/01/18 06:48	08/02/18 17:47	1
Endosulfan II	ND		1.8	0.32	ug/Kg	☼	08/01/18 06:48	08/02/18 17:47	1
Endosulfan sulfate	ND		1.8	0.33	ug/Kg	☼	08/01/18 06:48	08/02/18 17:47	1
Endrin	ND		1.8	0.35	ug/Kg	☼	08/01/18 06:48	08/02/18 17:47	1
gamma-BHC (Lindane)	ND		1.8	0.33	ug/Kg	☼	08/01/18 06:48	08/02/18 17:47	1
Heptachlor	ND		1.8	0.39	ug/Kg	☼	08/01/18 06:48	08/02/18 17:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	99		45 - 120	08/01/18 06:48	08/02/18 17:47	1
Tetrachloro-m-xylene	86		30 - 124	08/01/18 06:48	08/02/18 17:47	1

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.22	0.043	mg/Kg	☼	07/31/18 07:45	08/01/18 01:19	1
PCB-1221	ND		0.22	0.043	mg/Kg	☼	07/31/18 07:45	08/01/18 01:19	1
PCB-1232	ND		0.22	0.043	mg/Kg	☼	07/31/18 07:45	08/01/18 01:19	1
PCB-1242	ND		0.22	0.043	mg/Kg	☼	07/31/18 07:45	08/01/18 01:19	1
PCB-1248	ND		0.22	0.043	mg/Kg	☼	07/31/18 07:45	08/01/18 01:19	1
PCB-1254	ND		0.22	0.10	mg/Kg	☼	07/31/18 07:45	08/01/18 01:19	1
PCB-1260	ND		0.22	0.10	mg/Kg	☼	07/31/18 07:45	08/01/18 01:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	105		60 - 154	07/31/18 07:45	08/01/18 01:19	1
DCB Decachlorobiphenyl	87		65 - 174	07/31/18 07:45	08/01/18 01:19	1

## Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		18	6.4	ug/Kg	☼	08/02/18 07:55	08/09/18 02:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	57		28 - 129	08/02/18 07:55	08/09/18 02:29	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.5		2.2	0.43	mg/Kg	☼	07/30/18 11:20	07/31/18 19:07	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-009**

**Lab Sample ID: 480-139508-9**

Date Collected: 07/25/18 12:40

Matrix: Solid

Date Received: 07/25/18 16:40

Percent Solids: 92.7

**Method: 6010C - Metals (ICP) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	32.0		0.54	0.12	mg/Kg	☼	07/30/18 11:20	07/31/18 19:07	1
Beryllium	0.54		0.22	0.030	mg/Kg	☼	07/30/18 11:20	07/31/18 19:07	1
Cadmium	ND		0.22	0.033	mg/Kg	☼	07/30/18 11:20	07/31/18 19:07	1
Chromium	13.7	B	0.54	0.22	mg/Kg	☼	07/30/18 11:20	07/31/18 19:07	1
Copper	37.5		1.1	0.23	mg/Kg	☼	07/30/18 11:20	07/31/18 19:07	1
Lead	11.5		1.1	0.26	mg/Kg	☼	07/30/18 11:20	07/31/18 19:07	1
Manganese	737	B	0.22	0.035	mg/Kg	☼	07/30/18 11:20	07/31/18 19:07	1
Nickel	21.5		5.4	0.25	mg/Kg	☼	07/30/18 11:20	07/31/18 19:07	1
Selenium	ND		4.3	0.43	mg/Kg	☼	07/30/18 11:20	07/31/18 19:07	1
Silver	ND		0.65	0.22	mg/Kg	☼	07/30/18 11:20	07/31/18 19:07	1
Zinc	50.6	B	2.2	0.69	mg/Kg	☼	07/30/18 11:20	07/31/18 19:07	1

**Method: 7471B - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.026		0.021	0.0085	mg/Kg	☼	08/04/18 12:40	08/04/18 19:55	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		2.1	0.55	mg/Kg	☼	08/23/18 17:44	08/24/18 05:20	1
Trivalent Chromium	13.7		1.5	0.63	mg/Kg			08/27/18 16:26	1

**Client Sample ID: SO-11137156-072518-AG-010**

**Lab Sample ID: 480-139508-10**

Date Collected: 07/25/18 13:00

Matrix: Solid

Date Received: 07/25/18 16:40

Percent Solids: 91.3

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		4.1	0.30	ug/Kg	☼	07/25/18 18:00	08/01/18 23:58	1
1,1-Dichloroethane	ND		4.1	0.50	ug/Kg	☼	07/25/18 18:00	08/01/18 23:58	1
1,1-Dichloroethene	ND		4.1	0.50	ug/Kg	☼	07/25/18 18:00	08/01/18 23:58	1
1,2,4-Trimethylbenzene	ND		4.1	0.78	ug/Kg	☼	07/25/18 18:00	08/01/18 23:58	1
1,2-Dichlorobenzene	ND		4.1	0.32	ug/Kg	☼	07/25/18 18:00	08/01/18 23:58	1
1,2-Dichloroethane	ND		4.1	0.20	ug/Kg	☼	07/25/18 18:00	08/01/18 23:58	1
1,3,5-Trimethylbenzene	ND		4.1	0.26	ug/Kg	☼	07/25/18 18:00	08/01/18 23:58	1
1,3-Dichlorobenzene	ND		4.1	0.21	ug/Kg	☼	07/25/18 18:00	08/01/18 23:58	1
1,4-Dichlorobenzene	ND		4.1	0.57	ug/Kg	☼	07/25/18 18:00	08/01/18 23:58	1
1,4-Dioxane	ND		81	18	ug/Kg	☼	07/25/18 18:00	08/01/18 23:58	1
2-Butanone (MEK)	ND		20	1.5	ug/Kg	☼	07/25/18 18:00	08/01/18 23:58	1
Acetone	21		20	3.4	ug/Kg	☼	07/25/18 18:00	08/01/18 23:58	1
Benzene	ND		4.1	0.20	ug/Kg	☼	07/25/18 18:00	08/01/18 23:58	1
Carbon tetrachloride	ND		4.1	0.39	ug/Kg	☼	07/25/18 18:00	08/01/18 23:58	1
Chlorobenzene	ND		4.1	0.54	ug/Kg	☼	07/25/18 18:00	08/01/18 23:58	1
Chloroform	ND		4.1	0.25	ug/Kg	☼	07/25/18 18:00	08/01/18 23:58	1
cis-1,2-Dichloroethene	ND		4.1	0.52	ug/Kg	☼	07/25/18 18:00	08/01/18 23:58	1
Ethylbenzene	ND		4.1	0.28	ug/Kg	☼	07/25/18 18:00	08/01/18 23:58	1
Methyl tert-butyl ether	ND		4.1	0.40	ug/Kg	☼	07/25/18 18:00	08/01/18 23:58	1
Methylene Chloride	ND		4.1	1.9	ug/Kg	☼	07/25/18 18:00	08/01/18 23:58	1
n-Butylbenzene	ND		4.1	0.35	ug/Kg	☼	07/25/18 18:00	08/01/18 23:58	1
n-Propylbenzene	ND		4.1	0.33	ug/Kg	☼	07/25/18 18:00	08/01/18 23:58	1
sec-Butylbenzene	ND		4.1	0.35	ug/Kg	☼	07/25/18 18:00	08/01/18 23:58	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-010**

**Lab Sample ID: 480-139508-10**

**Date Collected: 07/25/18 13:00**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 91.3**

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
tert-Butylbenzene	ND		4.1	0.42	ug/Kg	☼	07/25/18 18:00	08/01/18 23:58	1
Tetrachloroethene	ND		4.1	0.55	ug/Kg	☼	07/25/18 18:00	08/01/18 23:58	1
Toluene	ND		4.1	0.31	ug/Kg	☼	07/25/18 18:00	08/01/18 23:58	1
trans-1,2-Dichloroethene	ND		4.1	0.42	ug/Kg	☼	07/25/18 18:00	08/01/18 23:58	1
Trichloroethene	ND		4.1	0.89	ug/Kg	☼	07/25/18 18:00	08/01/18 23:58	1
Vinyl chloride	ND		4.1	0.50	ug/Kg	☼	07/25/18 18:00	08/01/18 23:58	1
Xylenes, Total	ND		8.1	0.68	ug/Kg	☼	07/25/18 18:00	08/01/18 23:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		64 - 126	07/25/18 18:00	08/01/18 23:58	1
4-Bromofluorobenzene (Surr)	91		72 - 126	07/25/18 18:00	08/01/18 23:58	1
Dibromofluoromethane (Surr)	94		60 - 140	07/25/18 18:00	08/01/18 23:58	1
Toluene-d8 (Surr)	100		71 - 125	07/25/18 18:00	08/01/18 23:58	1

**Method: 8270D - Semivolatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	ND		180	22	ug/Kg	☼	08/03/18 06:56	08/14/18 20:34	1
3-Methylphenol	ND		360	28	ug/Kg	☼	08/03/18 06:56	08/14/18 20:34	1
4-Methylphenol	ND		360	22	ug/Kg	☼	08/03/18 06:56	08/14/18 20:34	1
Acenaphthene	ND		180	27	ug/Kg	☼	08/03/18 06:56	08/14/18 20:34	1
<b>Acenaphthylene</b>	<b>38</b>	<b>J</b>	180	24	ug/Kg	☼	08/03/18 06:56	08/14/18 20:34	1
<b>Anthracene</b>	<b>110</b>	<b>J</b>	180	46	ug/Kg	☼	08/03/18 06:56	08/14/18 20:34	1
<b>Benzo[a]anthracene</b>	<b>270</b>		180	18	ug/Kg	☼	08/03/18 06:56	08/14/18 20:34	1
<b>Benzo[a]pyrene</b>	<b>280</b>		180	27	ug/Kg	☼	08/03/18 06:56	08/14/18 20:34	1
<b>Benzo[b]fluoranthene</b>	<b>320</b>		180	29	ug/Kg	☼	08/03/18 06:56	08/14/18 20:34	1
<b>Benzo[g,h,i]perylene</b>	<b>250</b>		180	20	ug/Kg	☼	08/03/18 06:56	08/14/18 20:34	1
<b>Benzo[k]fluoranthene</b>	<b>180</b>		180	24	ug/Kg	☼	08/03/18 06:56	08/14/18 20:34	1
<b>Chrysene</b>	<b>270</b>		180	41	ug/Kg	☼	08/03/18 06:56	08/14/18 20:34	1
<b>Dibenz(a,h)anthracene</b>	<b>83</b>	<b>J</b>	180	33	ug/Kg	☼	08/03/18 06:56	08/14/18 20:34	1
Dibenzofuran	ND		180	22	ug/Kg	☼	08/03/18 06:56	08/14/18 20:34	1
<b>Fluoranthene</b>	<b>420</b>		180	20	ug/Kg	☼	08/03/18 06:56	08/14/18 20:34	1
<b>Fluorene</b>	<b>35</b>	<b>J</b>	180	22	ug/Kg	☼	08/03/18 06:56	08/14/18 20:34	1
<b>Hexachlorobenzene</b>	<b>73</b>	<b>J</b>	180	25	ug/Kg	☼	08/03/18 06:56	08/14/18 20:34	1
<b>Indeno[1,2,3-cd]pyrene</b>	<b>230</b>		180	23	ug/Kg	☼	08/03/18 06:56	08/14/18 20:34	1
Naphthalene	ND		180	24	ug/Kg	☼	08/03/18 06:56	08/14/18 20:34	1
<b>Pentachlorophenol</b>	<b>190</b>	<b>J</b>	360	180	ug/Kg	☼	08/03/18 06:56	08/14/18 20:34	1
<b>Phenanthrene</b>	<b>300</b>		180	27	ug/Kg	☼	08/03/18 06:56	08/14/18 20:34	1
Phenol	ND		180	28	ug/Kg	☼	08/03/18 06:56	08/14/18 20:34	1
<b>Pyrene</b>	<b>410</b>		180	22	ug/Kg	☼	08/03/18 06:56	08/14/18 20:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	86		54 - 120	08/03/18 06:56	08/14/18 20:34	1
2-Fluorobiphenyl	93		60 - 120	08/03/18 06:56	08/14/18 20:34	1
2-Fluorophenol (Surr)	69		52 - 120	08/03/18 06:56	08/14/18 20:34	1
Nitrobenzene-d5 (Surr)	84		53 - 120	08/03/18 06:56	08/14/18 20:34	1
Phenol-d5 (Surr)	71		54 - 120	08/03/18 06:56	08/14/18 20:34	1
p-Terphenyl-d14 (Surr)	109		65 - 121	08/03/18 06:56	08/14/18 20:34	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-010**

**Lab Sample ID: 480-139508-10**

**Date Collected: 07/25/18 13:00**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 91.3**

## Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		1.8	0.35	ug/Kg	☼	08/01/18 06:48	08/02/18 18:07	1
4,4'-DDE	ND		1.8	0.38	ug/Kg	☼	08/01/18 06:48	08/02/18 18:07	1
4,4'-DDT	ND		1.8	0.42	ug/Kg	☼	08/01/18 06:48	08/02/18 18:07	1
Aldrin	ND		1.8	0.44	ug/Kg	☼	08/01/18 06:48	08/02/18 18:07	1
<b>alpha-BHC</b>	<b>0.69</b>	<b>J</b>	1.8	0.32	ug/Kg	☼	08/01/18 06:48	08/02/18 18:07	1
cis-Chlordane	ND		1.8	0.89	ug/Kg	☼	08/01/18 06:48	08/02/18 18:07	1
<b>beta-BHC</b>	<b>10</b>		1.8	0.32	ug/Kg	☼	08/01/18 06:48	08/02/18 18:07	1
delta-BHC	ND		1.8	0.33	ug/Kg	☼	08/01/18 06:48	08/02/18 18:07	1
Dieldrin	ND		1.8	0.43	ug/Kg	☼	08/01/18 06:48	08/02/18 18:07	1
Endosulfan I	ND		1.8	0.34	ug/Kg	☼	08/01/18 06:48	08/02/18 18:07	1
Endosulfan II	ND		1.8	0.32	ug/Kg	☼	08/01/18 06:48	08/02/18 18:07	1
Endosulfan sulfate	ND		1.8	0.33	ug/Kg	☼	08/01/18 06:48	08/02/18 18:07	1
Endrin	ND		1.8	0.35	ug/Kg	☼	08/01/18 06:48	08/02/18 18:07	1
gamma-BHC (Lindane)	ND		1.8	0.33	ug/Kg	☼	08/01/18 06:48	08/02/18 18:07	1
Heptachlor	ND		1.8	0.39	ug/Kg	☼	08/01/18 06:48	08/02/18 18:07	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>DCB Decachlorobiphenyl</i>	209	X	45 - 120				08/01/18 06:48	08/02/18 18:07	1
<i>Tetrachloro-m-xylene</i>	82		30 - 124				08/01/18 06:48	08/02/18 18:07	1

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.25	0.049	mg/Kg	☼	07/31/18 07:45	08/01/18 01:35	1
PCB-1221	ND		0.25	0.049	mg/Kg	☼	07/31/18 07:45	08/01/18 01:35	1
PCB-1232	ND		0.25	0.049	mg/Kg	☼	07/31/18 07:45	08/01/18 01:35	1
PCB-1242	ND		0.25	0.049	mg/Kg	☼	07/31/18 07:45	08/01/18 01:35	1
PCB-1248	ND		0.25	0.049	mg/Kg	☼	07/31/18 07:45	08/01/18 01:35	1
PCB-1254	ND		0.25	0.12	mg/Kg	☼	07/31/18 07:45	08/01/18 01:35	1
PCB-1260	ND		0.25	0.12	mg/Kg	☼	07/31/18 07:45	08/01/18 01:35	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>Tetrachloro-m-xylene</i>	109		60 - 154				07/31/18 07:45	08/01/18 01:35	1
<i>DCB Decachlorobiphenyl</i>	91		65 - 174				07/31/18 07:45	08/01/18 01:35	1

## Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		18	6.5	ug/Kg	☼	08/02/18 07:55	08/09/18 02:59	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>2,4-Dichlorophenylacetic acid</i>	59		28 - 129				08/02/18 07:55	08/09/18 02:59	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Arsenic</b>	<b>9.4</b>		2.2	0.44	mg/Kg	☼	07/30/18 11:20	07/31/18 19:11	1
<b>Barium</b>	<b>113</b>		0.54	0.12	mg/Kg	☼	07/30/18 11:20	07/31/18 19:11	1
<b>Beryllium</b>	<b>0.57</b>		0.22	0.031	mg/Kg	☼	07/30/18 11:20	07/31/18 19:11	1
<b>Cadmium</b>	<b>0.24</b>		0.22	0.033	mg/Kg	☼	07/30/18 11:20	07/31/18 19:11	1
<b>Chromium</b>	<b>21.1</b>	<b>B</b>	0.54	0.22	mg/Kg	☼	07/30/18 11:20	07/31/18 19:11	1
<b>Copper</b>	<b>34.4</b>		1.1	0.23	mg/Kg	☼	07/30/18 11:20	07/31/18 19:11	1
<b>Lead</b>	<b>24.8</b>		1.1	0.26	mg/Kg	☼	07/30/18 11:20	07/31/18 19:11	1
<b>Manganese</b>	<b>3750</b>	<b>B</b>	0.22	0.035	mg/Kg	☼	07/30/18 11:20	07/31/18 19:11	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-010**

**Lab Sample ID: 480-139508-10**

**Date Collected: 07/25/18 13:00**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 91.3**

**Method: 6010C - Metals (ICP) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Nickel</b>	<b>26.2</b>		5.4	0.25	mg/Kg	☼	07/30/18 11:20	07/31/18 19:11	1
Selenium	ND		4.4	0.44	mg/Kg	☼	07/30/18 11:20	07/31/18 19:11	1
Silver	ND		0.65	0.22	mg/Kg	☼	07/30/18 11:20	07/31/18 19:11	1
<b>Zinc</b>	<b>88.9</b>	<b>B</b>	2.2	0.70	mg/Kg	☼	07/30/18 11:20	07/31/18 19:11	1

**Method: 7471B - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Mercury</b>	<b>0.90</b>	<b>F1</b>	0.022	0.0089	mg/Kg	☼	08/16/18 11:35	08/16/18 13:38	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		2.2	0.57	mg/Kg	☼	08/23/18 17:44	08/24/18 05:20	1
<b>Trivalent Chromium</b>	<b>21.1</b>		1.5	0.63	mg/Kg			08/27/18 16:26	1

**Client Sample ID: SO-11137156-072518-AG-011**

**Lab Sample ID: 480-139508-11**

**Date Collected: 07/25/18 13:10**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 89.6**

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		3.6	0.26	ug/Kg	☼	07/25/18 18:00	08/02/18 00:24	1
1,1-Dichloroethane	ND		3.6	0.44	ug/Kg	☼	07/25/18 18:00	08/02/18 00:24	1
1,1-Dichloroethene	ND		3.6	0.44	ug/Kg	☼	07/25/18 18:00	08/02/18 00:24	1
1,2,4-Trimethylbenzene	ND		3.6	0.70	ug/Kg	☼	07/25/18 18:00	08/02/18 00:24	1
1,2-Dichlorobenzene	ND		3.6	0.28	ug/Kg	☼	07/25/18 18:00	08/02/18 00:24	1
1,2-Dichloroethane	ND		3.6	0.18	ug/Kg	☼	07/25/18 18:00	08/02/18 00:24	1
1,3,5-Trimethylbenzene	ND		3.6	0.23	ug/Kg	☼	07/25/18 18:00	08/02/18 00:24	1
1,3-Dichlorobenzene	ND		3.6	0.19	ug/Kg	☼	07/25/18 18:00	08/02/18 00:24	1
1,4-Dichlorobenzene	ND		3.6	0.51	ug/Kg	☼	07/25/18 18:00	08/02/18 00:24	1
1,4-Dioxane	ND		73	16	ug/Kg	☼	07/25/18 18:00	08/02/18 00:24	1
2-Butanone (MEK)	ND		18	1.3	ug/Kg	☼	07/25/18 18:00	08/02/18 00:24	1
<b>Acetone</b>	<b>15</b>	<b>J</b>	18	3.1	ug/Kg	☼	07/25/18 18:00	08/02/18 00:24	1
Benzene	ND		3.6	0.18	ug/Kg	☼	07/25/18 18:00	08/02/18 00:24	1
Carbon tetrachloride	ND		3.6	0.35	ug/Kg	☼	07/25/18 18:00	08/02/18 00:24	1
Chlorobenzene	ND		3.6	0.48	ug/Kg	☼	07/25/18 18:00	08/02/18 00:24	1
Chloroform	ND		3.6	0.22	ug/Kg	☼	07/25/18 18:00	08/02/18 00:24	1
cis-1,2-Dichloroethene	ND		3.6	0.46	ug/Kg	☼	07/25/18 18:00	08/02/18 00:24	1
Ethylbenzene	ND		3.6	0.25	ug/Kg	☼	07/25/18 18:00	08/02/18 00:24	1
Methyl tert-butyl ether	ND		3.6	0.36	ug/Kg	☼	07/25/18 18:00	08/02/18 00:24	1
Methylene Chloride	ND		3.6	1.7	ug/Kg	☼	07/25/18 18:00	08/02/18 00:24	1
n-Butylbenzene	ND		3.6	0.32	ug/Kg	☼	07/25/18 18:00	08/02/18 00:24	1
n-Propylbenzene	ND		3.6	0.29	ug/Kg	☼	07/25/18 18:00	08/02/18 00:24	1
sec-Butylbenzene	ND		3.6	0.32	ug/Kg	☼	07/25/18 18:00	08/02/18 00:24	1
tert-Butylbenzene	ND		3.6	0.38	ug/Kg	☼	07/25/18 18:00	08/02/18 00:24	1
Tetrachloroethene	ND		3.6	0.49	ug/Kg	☼	07/25/18 18:00	08/02/18 00:24	1
Toluene	ND		3.6	0.27	ug/Kg	☼	07/25/18 18:00	08/02/18 00:24	1
trans-1,2-Dichloroethene	ND		3.6	0.37	ug/Kg	☼	07/25/18 18:00	08/02/18 00:24	1
Trichloroethene	ND		3.6	0.80	ug/Kg	☼	07/25/18 18:00	08/02/18 00:24	1
Vinyl chloride	ND		3.6	0.44	ug/Kg	☼	07/25/18 18:00	08/02/18 00:24	1
Xylenes, Total	ND		7.3	0.61	ug/Kg	☼	07/25/18 18:00	08/02/18 00:24	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-011**

**Lab Sample ID: 480-139508-11**

**Date Collected: 07/25/18 13:10**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 89.6**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		64 - 126	07/25/18 18:00	08/02/18 00:24	1
4-Bromofluorobenzene (Surr)	92		72 - 126	07/25/18 18:00	08/02/18 00:24	1
Dibromofluoromethane (Surr)	92		60 - 140	07/25/18 18:00	08/02/18 00:24	1
Toluene-d8 (Surr)	100		71 - 125	07/25/18 18:00	08/02/18 00:24	1

**Method: 8270D - Semivolatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	ND		190	22	ug/Kg	☼	08/03/18 06:56	08/14/18 21:03	1
3-Methylphenol	ND		370	29	ug/Kg	☼	08/03/18 06:56	08/14/18 21:03	1
4-Methylphenol	ND		370	22	ug/Kg	☼	08/03/18 06:56	08/14/18 21:03	1
Acenaphthene	ND		190	28	ug/Kg	☼	08/03/18 06:56	08/14/18 21:03	1
Acenaphthylene	ND		190	24	ug/Kg	☼	08/03/18 06:56	08/14/18 21:03	1
Anthracene	ND		190	47	ug/Kg	☼	08/03/18 06:56	08/14/18 21:03	1
Benzo[a]anthracene	ND		190	19	ug/Kg	☼	08/03/18 06:56	08/14/18 21:03	1
Benzo[a]pyrene	ND		190	28	ug/Kg	☼	08/03/18 06:56	08/14/18 21:03	1
Benzo[b]fluoranthene	ND		190	30	ug/Kg	☼	08/03/18 06:56	08/14/18 21:03	1
Benzo[g,h,i]perylene	ND		190	20	ug/Kg	☼	08/03/18 06:56	08/14/18 21:03	1
Benzo[k]fluoranthene	ND		190	24	ug/Kg	☼	08/03/18 06:56	08/14/18 21:03	1
Chrysene	ND		190	42	ug/Kg	☼	08/03/18 06:56	08/14/18 21:03	1
Dibenz(a,h)anthracene	ND		190	33	ug/Kg	☼	08/03/18 06:56	08/14/18 21:03	1
Dibenzofuran	ND		190	22	ug/Kg	☼	08/03/18 06:56	08/14/18 21:03	1
Fluoranthene	ND		190	20	ug/Kg	☼	08/03/18 06:56	08/14/18 21:03	1
Fluorene	ND		190	22	ug/Kg	☼	08/03/18 06:56	08/14/18 21:03	1
Hexachlorobenzene	ND		190	25	ug/Kg	☼	08/03/18 06:56	08/14/18 21:03	1
Indeno[1,2,3-cd]pyrene	ND		190	23	ug/Kg	☼	08/03/18 06:56	08/14/18 21:03	1
Naphthalene	ND		190	24	ug/Kg	☼	08/03/18 06:56	08/14/18 21:03	1
Pentachlorophenol	ND		370	190	ug/Kg	☼	08/03/18 06:56	08/14/18 21:03	1
Phenanthrene	ND		190	28	ug/Kg	☼	08/03/18 06:56	08/14/18 21:03	1
Phenol	ND		190	29	ug/Kg	☼	08/03/18 06:56	08/14/18 21:03	1
Pyrene	ND		190	22	ug/Kg	☼	08/03/18 06:56	08/14/18 21:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	89		54 - 120	08/03/18 06:56	08/14/18 21:03	1
2-Fluorobiphenyl	95		60 - 120	08/03/18 06:56	08/14/18 21:03	1
2-Fluorophenol (Surr)	76		52 - 120	08/03/18 06:56	08/14/18 21:03	1
Nitrobenzene-d5 (Surr)	91		53 - 120	08/03/18 06:56	08/14/18 21:03	1
Phenol-d5 (Surr)	79		54 - 120	08/03/18 06:56	08/14/18 21:03	1
p-Terphenyl-d14 (Surr)	106		65 - 121	08/03/18 06:56	08/14/18 21:03	1

**Method: 8081B - Organochlorine Pesticides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		1.8	0.36	ug/Kg	☼	08/01/18 06:48	08/02/18 18:26	1
4,4'-DDE	ND		1.8	0.39	ug/Kg	☼	08/01/18 06:48	08/02/18 18:26	1
4,4'-DDT	ND		1.8	0.43	ug/Kg	☼	08/01/18 06:48	08/02/18 18:26	1
Aldrin	ND		1.8	0.45	ug/Kg	☼	08/01/18 06:48	08/02/18 18:26	1
alpha-BHC	ND		1.8	0.33	ug/Kg	☼	08/01/18 06:48	08/02/18 18:26	1
cis-Chlordane	ND		1.8	0.92	ug/Kg	☼	08/01/18 06:48	08/02/18 18:26	1
beta-BHC	ND		1.8	0.33	ug/Kg	☼	08/01/18 06:48	08/02/18 18:26	1
delta-BHC	ND		1.8	0.34	ug/Kg	☼	08/01/18 06:48	08/02/18 18:26	1
Dieldrin	ND		1.8	0.44	ug/Kg	☼	08/01/18 06:48	08/02/18 18:26	1
Endosulfan I	ND		1.8	0.35	ug/Kg	☼	08/01/18 06:48	08/02/18 18:26	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-011**

**Lab Sample ID: 480-139508-11**

Date Collected: 07/25/18 13:10

Matrix: Solid

Date Received: 07/25/18 16:40

Percent Solids: 89.6

## Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endosulfan II	ND		1.8	0.33	ug/Kg	☼	08/01/18 06:48	08/02/18 18:26	1
Endosulfan sulfate	ND		1.8	0.34	ug/Kg	☼	08/01/18 06:48	08/02/18 18:26	1
Endrin	ND		1.8	0.37	ug/Kg	☼	08/01/18 06:48	08/02/18 18:26	1
gamma-BHC (Lindane)	ND		1.8	0.34	ug/Kg	☼	08/01/18 06:48	08/02/18 18:26	1
Heptachlor	ND		1.8	0.40	ug/Kg	☼	08/01/18 06:48	08/02/18 18:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	89		45 - 120	08/01/18 06:48	08/02/18 18:26	1
Tetrachloro-m-xylene	66		30 - 124	08/01/18 06:48	08/02/18 18:26	1

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.25	0.050	mg/Kg	☼	07/31/18 07:45	08/01/18 01:51	1
PCB-1221	ND		0.25	0.050	mg/Kg	☼	07/31/18 07:45	08/01/18 01:51	1
PCB-1232	ND		0.25	0.050	mg/Kg	☼	07/31/18 07:45	08/01/18 01:51	1
PCB-1242	ND		0.25	0.050	mg/Kg	☼	07/31/18 07:45	08/01/18 01:51	1
PCB-1248	ND		0.25	0.050	mg/Kg	☼	07/31/18 07:45	08/01/18 01:51	1
PCB-1254	ND		0.25	0.12	mg/Kg	☼	07/31/18 07:45	08/01/18 01:51	1
PCB-1260	ND		0.25	0.12	mg/Kg	☼	07/31/18 07:45	08/01/18 01:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	120		60 - 154	07/31/18 07:45	08/01/18 01:51	1
DCB Decachlorobiphenyl	100		65 - 174	07/31/18 07:45	08/01/18 01:51	1

## Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		19	6.7	ug/Kg	☼	08/02/18 07:55	08/09/18 03:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	55		28 - 129	08/02/18 07:55	08/09/18 03:29	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	6.7		2.3	0.45	mg/Kg	☼	07/30/18 11:20	07/31/18 19:15	1
Barium	36.7		0.57	0.12	mg/Kg	☼	07/30/18 11:20	07/31/18 19:15	1
Beryllium	0.69		0.23	0.032	mg/Kg	☼	07/30/18 11:20	07/31/18 19:15	1
Cadmium	ND		0.23	0.034	mg/Kg	☼	07/30/18 11:20	07/31/18 19:15	1
Chromium	18.0	B	0.57	0.23	mg/Kg	☼	07/30/18 11:20	07/31/18 19:15	1
Copper	62.2		1.1	0.24	mg/Kg	☼	07/30/18 11:20	07/31/18 19:15	1
Lead	30.9		1.1	0.27	mg/Kg	☼	07/30/18 11:20	07/31/18 19:15	1
Manganese	973	B	0.23	0.036	mg/Kg	☼	07/30/18 11:20	07/31/18 19:15	1
Nickel	27.1		5.7	0.26	mg/Kg	☼	07/30/18 11:20	07/31/18 19:15	1
Selenium	ND		4.5	0.45	mg/Kg	☼	07/30/18 11:20	07/31/18 19:15	1
Silver	ND		0.68	0.23	mg/Kg	☼	07/30/18 11:20	07/31/18 19:15	1
Zinc	102	B	2.3	0.72	mg/Kg	☼	07/30/18 11:20	07/31/18 19:15	1

## Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.060		0.022	0.0088	mg/Kg	☼	08/04/18 12:40	08/04/18 20:01	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-011**

**Lab Sample ID: 480-139508-11**

Date Collected: 07/25/18 13:10

Matrix: Solid

Date Received: 07/25/18 16:40

Percent Solids: 89.6

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		2.2	0.57	mg/Kg	☼	08/23/18 17:44	08/24/18 05:20	1
<b>Trivalent Chromium</b>	<b>18.0</b>		1.5	0.63	mg/Kg			08/27/18 16:26	1

**Client Sample ID: SO-11137156-072518-AG-012**

**Lab Sample ID: 480-139508-12**

Date Collected: 07/25/18 13:25

Matrix: Solid

Date Received: 07/25/18 16:40

Percent Solids: 94.8

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		3.9	0.28	ug/Kg	☼	07/25/18 18:00	08/02/18 00:49	1
1,1-Dichloroethane	ND		3.9	0.47	ug/Kg	☼	07/25/18 18:00	08/02/18 00:49	1
1,1-Dichloroethene	ND		3.9	0.48	ug/Kg	☼	07/25/18 18:00	08/02/18 00:49	1
1,2,4-Trimethylbenzene	ND		3.9	0.75	ug/Kg	☼	07/25/18 18:00	08/02/18 00:49	1
1,2-Dichlorobenzene	ND		3.9	0.30	ug/Kg	☼	07/25/18 18:00	08/02/18 00:49	1
1,2-Dichloroethane	ND		3.9	0.20	ug/Kg	☼	07/25/18 18:00	08/02/18 00:49	1
1,3,5-Trimethylbenzene	ND		3.9	0.25	ug/Kg	☼	07/25/18 18:00	08/02/18 00:49	1
1,3-Dichlorobenzene	ND		3.9	0.20	ug/Kg	☼	07/25/18 18:00	08/02/18 00:49	1
1,4-Dichlorobenzene	ND		3.9	0.54	ug/Kg	☼	07/25/18 18:00	08/02/18 00:49	1
1,4-Dioxane	ND		78	17	ug/Kg	☼	07/25/18 18:00	08/02/18 00:49	1
2-Butanone (MEK)	ND		19	1.4	ug/Kg	☼	07/25/18 18:00	08/02/18 00:49	1
<b>Acetone</b>	<b>14 J</b>		19	3.3	ug/Kg	☼	07/25/18 18:00	08/02/18 00:49	1
Benzene	ND		3.9	0.19	ug/Kg	☼	07/25/18 18:00	08/02/18 00:49	1
Carbon tetrachloride	ND		3.9	0.38	ug/Kg	☼	07/25/18 18:00	08/02/18 00:49	1
Chlorobenzene	ND		3.9	0.51	ug/Kg	☼	07/25/18 18:00	08/02/18 00:49	1
Chloroform	ND		3.9	0.24	ug/Kg	☼	07/25/18 18:00	08/02/18 00:49	1
cis-1,2-Dichloroethene	ND		3.9	0.50	ug/Kg	☼	07/25/18 18:00	08/02/18 00:49	1
Ethylbenzene	ND		3.9	0.27	ug/Kg	☼	07/25/18 18:00	08/02/18 00:49	1
Methyl tert-butyl ether	ND		3.9	0.38	ug/Kg	☼	07/25/18 18:00	08/02/18 00:49	1
Methylene Chloride	ND		3.9	1.8	ug/Kg	☼	07/25/18 18:00	08/02/18 00:49	1
n-Butylbenzene	ND		3.9	0.34	ug/Kg	☼	07/25/18 18:00	08/02/18 00:49	1
n-Propylbenzene	ND		3.9	0.31	ug/Kg	☼	07/25/18 18:00	08/02/18 00:49	1
sec-Butylbenzene	ND		3.9	0.34	ug/Kg	☼	07/25/18 18:00	08/02/18 00:49	1
tert-Butylbenzene	ND		3.9	0.40	ug/Kg	☼	07/25/18 18:00	08/02/18 00:49	1
Tetrachloroethene	ND		3.9	0.52	ug/Kg	☼	07/25/18 18:00	08/02/18 00:49	1
Toluene	ND		3.9	0.29	ug/Kg	☼	07/25/18 18:00	08/02/18 00:49	1
trans-1,2-Dichloroethene	ND		3.9	0.40	ug/Kg	☼	07/25/18 18:00	08/02/18 00:49	1
Trichloroethene	ND		3.9	0.85	ug/Kg	☼	07/25/18 18:00	08/02/18 00:49	1
Vinyl chloride	ND		3.9	0.47	ug/Kg	☼	07/25/18 18:00	08/02/18 00:49	1
Xylenes, Total	ND		7.8	0.65	ug/Kg	☼	07/25/18 18:00	08/02/18 00:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		64 - 126	07/25/18 18:00	08/02/18 00:49	1
4-Bromofluorobenzene (Surr)	93		72 - 126	07/25/18 18:00	08/02/18 00:49	1
Dibromofluoromethane (Surr)	95		60 - 140	07/25/18 18:00	08/02/18 00:49	1
Toluene-d8 (Surr)	100		71 - 125	07/25/18 18:00	08/02/18 00:49	1

## Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	ND		180	21	ug/Kg	☼	08/03/18 06:56	08/14/18 21:31	1
3-Methylphenol	ND		340	27	ug/Kg	☼	08/03/18 06:56	08/14/18 21:31	1

TestAmerica Buffalo



# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-012**

**Lab Sample ID: 480-139508-12**

**Date Collected: 07/25/18 13:25**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 94.8**

**Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methylphenol	ND		340	21	ug/Kg	☼	08/03/18 06:56	08/14/18 21:31	1
Acenaphthene	ND		180	26	ug/Kg	☼	08/03/18 06:56	08/14/18 21:31	1
Acenaphthylene	ND		180	23	ug/Kg	☼	08/03/18 06:56	08/14/18 21:31	1
Anthracene	ND		180	43	ug/Kg	☼	08/03/18 06:56	08/14/18 21:31	1
Benzo[a]anthracene	ND		180	18	ug/Kg	☼	08/03/18 06:56	08/14/18 21:31	1
Benzo[a]pyrene	ND		180	26	ug/Kg	☼	08/03/18 06:56	08/14/18 21:31	1
Benzo[b]fluoranthene	ND		180	28	ug/Kg	☼	08/03/18 06:56	08/14/18 21:31	1
Benzo[g,h,i]perylene	ND		180	19	ug/Kg	☼	08/03/18 06:56	08/14/18 21:31	1
Benzo[k]fluoranthene	ND		180	23	ug/Kg	☼	08/03/18 06:56	08/14/18 21:31	1
Chrysene	ND		180	39	ug/Kg	☼	08/03/18 06:56	08/14/18 21:31	1
Dibenz(a,h)anthracene	ND		180	31	ug/Kg	☼	08/03/18 06:56	08/14/18 21:31	1
Dibenzofuran	ND		180	21	ug/Kg	☼	08/03/18 06:56	08/14/18 21:31	1
Fluoranthene	ND		180	19	ug/Kg	☼	08/03/18 06:56	08/14/18 21:31	1
Fluorene	ND		180	21	ug/Kg	☼	08/03/18 06:56	08/14/18 21:31	1
Hexachlorobenzene	ND		180	24	ug/Kg	☼	08/03/18 06:56	08/14/18 21:31	1
Indeno[1,2,3-cd]pyrene	ND		180	22	ug/Kg	☼	08/03/18 06:56	08/14/18 21:31	1
Naphthalene	ND		180	23	ug/Kg	☼	08/03/18 06:56	08/14/18 21:31	1
Pentachlorophenol	ND		340	180	ug/Kg	☼	08/03/18 06:56	08/14/18 21:31	1
Phenanthrene	ND		180	26	ug/Kg	☼	08/03/18 06:56	08/14/18 21:31	1
Phenol	ND		180	27	ug/Kg	☼	08/03/18 06:56	08/14/18 21:31	1
Pyrene	ND		180	21	ug/Kg	☼	08/03/18 06:56	08/14/18 21:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	90		54 - 120	08/03/18 06:56	08/14/18 21:31	1
2-Fluorobiphenyl	90		60 - 120	08/03/18 06:56	08/14/18 21:31	1
2-Fluorophenol (Surr)	74		52 - 120	08/03/18 06:56	08/14/18 21:31	1
Nitrobenzene-d5 (Surr)	86		53 - 120	08/03/18 06:56	08/14/18 21:31	1
Phenol-d5 (Surr)	79		54 - 120	08/03/18 06:56	08/14/18 21:31	1
p-Terphenyl-d14 (Surr)	104		65 - 121	08/03/18 06:56	08/14/18 21:31	1

**Method: 8081B - Organochlorine Pesticides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		1.7	0.34	ug/Kg	☼	08/01/18 06:48	08/02/18 18:46	1
4,4'-DDE	ND		1.7	0.36	ug/Kg	☼	08/01/18 06:48	08/02/18 18:46	1
4,4'-DDT	ND		1.7	0.40	ug/Kg	☼	08/01/18 06:48	08/02/18 18:46	1
Aldrin	ND		1.7	0.43	ug/Kg	☼	08/01/18 06:48	08/02/18 18:46	1
alpha-BHC	ND		1.7	0.31	ug/Kg	☼	08/01/18 06:48	08/02/18 18:46	1
cis-Chlordane	ND		1.7	0.86	ug/Kg	☼	08/01/18 06:48	08/02/18 18:46	1
beta-BHC	ND		1.7	0.31	ug/Kg	☼	08/01/18 06:48	08/02/18 18:46	1
delta-BHC	ND		1.7	0.32	ug/Kg	☼	08/01/18 06:48	08/02/18 18:46	1
Dieldrin	ND		1.7	0.41	ug/Kg	☼	08/01/18 06:48	08/02/18 18:46	1
Endosulfan I	ND		1.7	0.33	ug/Kg	☼	08/01/18 06:48	08/02/18 18:46	1
Endosulfan II	ND		1.7	0.31	ug/Kg	☼	08/01/18 06:48	08/02/18 18:46	1
Endosulfan sulfate	ND		1.7	0.32	ug/Kg	☼	08/01/18 06:48	08/02/18 18:46	1
Endrin	ND		1.7	0.34	ug/Kg	☼	08/01/18 06:48	08/02/18 18:46	1
gamma-BHC (Lindane)	ND		1.7	0.32	ug/Kg	☼	08/01/18 06:48	08/02/18 18:46	1
Heptachlor	ND		1.7	0.37	ug/Kg	☼	08/01/18 06:48	08/02/18 18:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	97		45 - 120	08/01/18 06:48	08/02/18 18:46	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-012**

**Lab Sample ID: 480-139508-12**

Date Collected: 07/25/18 13:25

Matrix: Solid

Date Received: 07/25/18 16:40

Percent Solids: 94.8

## Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	83		30 - 124	08/01/18 06:48	08/02/18 18:46	1

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.25	0.048	mg/Kg	☼	07/31/18 07:45	08/01/18 02:07	1
PCB-1221	ND		0.25	0.048	mg/Kg	☼	07/31/18 07:45	08/01/18 02:07	1
PCB-1232	ND		0.25	0.048	mg/Kg	☼	07/31/18 07:45	08/01/18 02:07	1
PCB-1242	ND		0.25	0.048	mg/Kg	☼	07/31/18 07:45	08/01/18 02:07	1
PCB-1248	ND		0.25	0.048	mg/Kg	☼	07/31/18 07:45	08/01/18 02:07	1
PCB-1254	ND		0.25	0.12	mg/Kg	☼	07/31/18 07:45	08/01/18 02:07	1
PCB-1260	ND		0.25	0.12	mg/Kg	☼	07/31/18 07:45	08/01/18 02:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	119		60 - 154	07/31/18 07:45	08/01/18 02:07	1
DCB Decachlorobiphenyl	105		65 - 174	07/31/18 07:45	08/01/18 02:07	1

## Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		18	6.3	ug/Kg	☼	08/02/18 07:55	08/09/18 03:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	68		28 - 129	08/02/18 07:55	08/09/18 03:59	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	11.2		2.1	0.43	mg/Kg	☼	07/30/18 11:20	07/31/18 19:18	1
Barium	44.6		0.53	0.12	mg/Kg	☼	07/30/18 11:20	07/31/18 19:18	1
Beryllium	0.54		0.21	0.030	mg/Kg	☼	07/30/18 11:20	07/31/18 19:18	1
Cadmium	ND		0.21	0.032	mg/Kg	☼	07/30/18 11:20	07/31/18 19:18	1
Chromium	15.0	B	0.53	0.21	mg/Kg	☼	07/30/18 11:20	07/31/18 19:18	1
Copper	31.1		1.1	0.22	mg/Kg	☼	07/30/18 11:20	07/31/18 19:18	1
Lead	16.0		1.1	0.26	mg/Kg	☼	07/30/18 11:20	07/31/18 19:18	1
Manganese	843	B	0.21	0.034	mg/Kg	☼	07/30/18 11:20	07/31/18 19:18	1
Nickel	18.9		5.3	0.25	mg/Kg	☼	07/30/18 11:20	07/31/18 19:18	1
Selenium	ND		4.3	0.43	mg/Kg	☼	07/30/18 11:20	07/31/18 19:18	1
Silver	ND		0.64	0.21	mg/Kg	☼	07/30/18 11:20	07/31/18 19:18	1
Zinc	58.0	B	2.1	0.68	mg/Kg	☼	07/30/18 11:20	07/31/18 19:18	1

## Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.031		0.021	0.0087	mg/Kg	☼	08/04/18 12:40	08/04/18 20:02	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		2.1	0.54	mg/Kg	☼	08/23/18 17:45	08/24/18 05:20	1
Trivalent Chromium	15.0		1.5	0.63	mg/Kg			08/27/18 16:26	1

TestAmerica Buffalo

# Surrogate Summary

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

## Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (64-126)	BFB (72-126)	DBFM (60-140)	TOL (71-125)
480-139508-1	SO-11137156-072518-AG-001	104	92	96	100
480-139508-2	SO-11137156-072518-AG-002	106	91	95	101
480-139508-3	SO-11137156-072518-AG-003	105	92	95	99
480-139508-4	SO-11137156-072518-AG-004	104	92	95	100
480-139508-5	SO-11137156-072518-AG-005	102	90	95	102
480-139508-6	SO-11137156-072518-AG-006	102	90	95	101
480-139508-7	SO-11137156-072518-AG-007	102	89	98	101
480-139508-8	SO-11137156-072518-AG-008	102	90	95	101
480-139508-9	SO-11137156-072518-AG-009	103	90	96	101
480-139508-10	SO-11137156-072518-AG-010	103	91	94	100
480-139508-11	SO-11137156-072518-AG-011	104	92	92	100
480-139508-12	SO-11137156-072518-AG-012	105	93	95	100
LCS 480-427455/1-A	Lab Control Sample	93	96	94	100
MB 480-427455/2-A	Method Blank	95	93	92	97

### Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)  
BFB = 4-Bromofluorobenzene (Surr)  
DBFM = Dibromofluoromethane (Surr)  
TOL = Toluene-d8 (Surr)

## Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TBP (54-120)	FBP (60-120)	2FP (52-120)	NBZ (53-120)	PHL (54-120)	TPHd14 (65-121)
480-139508-1	SO-11137156-072518-AG-001	84	85	66	85	78	95
480-139508-2	SO-11137156-072518-AG-002	87	87	70	83	76	103
480-139508-3	SO-11137156-072518-AG-003	91	91	74	86	80	97
480-139508-4	SO-11137156-072518-AG-004	94	86	68	80	71	109
480-139508-5	SO-11137156-072518-AG-005	80	83	65	72	67	108
480-139508-6	SO-11137156-072518-AG-006	85	84	62	76	65	107
480-139508-7	SO-11137156-072518-AG-007	83	86	69	83	73	100
480-139508-8	SO-11137156-072518-AG-008	79	90	68	86	75	95
480-139508-9	SO-11137156-072518-AG-009	91	94	75	86	81	105
480-139508-10	SO-11137156-072518-AG-010	86	93	69	84	71	109
480-139508-11	SO-11137156-072518-AG-011	89	95	76	91	79	106
480-139508-12	SO-11137156-072518-AG-012	90	90	74	86	79	104
LCS 480-427851/2-A	Lab Control Sample	85	72	58	64	61	87
MB 480-427851/1-A	Method Blank	56	81	61	81	67	94

### Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)  
FBP = 2-Fluorobiphenyl  
2FP = 2-Fluorophenol (Surr)  
NBZ = Nitrobenzene-d5 (Surr)  
PHL = Phenol-d5 (Surr)  
TPHd14 = p-Terphenyl-d14 (Surr)

TestAmerica Buffalo

# Surrogate Summary

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

## Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCBP2 (45-120)	TCX2 (30-124)
480-139508-1	SO-11137156-072518-AG-001	95	77
480-139508-2	SO-11137156-072518-AG-002	89	82
480-139508-3	SO-11137156-072518-AG-003	99	81
480-139508-4	SO-11137156-072518-AG-004	91	76
480-139508-5	SO-11137156-072518-AG-005	93	82
480-139508-6	SO-11137156-072518-AG-006	96	80
480-139508-7	SO-11137156-072518-AG-007	92	80
480-139508-8	SO-11137156-072518-AG-008	93	82
480-139508-9	SO-11137156-072518-AG-009	99	86
480-139508-10	SO-11137156-072518-AG-010	209 X	82
480-139508-11	SO-11137156-072518-AG-011	89	66
480-139508-12	SO-11137156-072518-AG-012	97	83
LCS 480-427415/2-A	Lab Control Sample	92	64
MB 480-427415/1-A	Method Blank	102	70

#### Surrogate Legend

DCBP = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TCX1 (60-154)	DCBP1 (65-174)
480-139508-1	SO-11137156-072518-AG-001	98	80
480-139508-2	SO-11137156-072518-AG-002	114	96
480-139508-3	SO-11137156-072518-AG-003	101	85
480-139508-4	SO-11137156-072518-AG-004	108	88
480-139508-5	SO-11137156-072518-AG-005	115	98
480-139508-6	SO-11137156-072518-AG-006	117	99
480-139508-7	SO-11137156-072518-AG-007	108	93
480-139508-8	SO-11137156-072518-AG-008	108	95
480-139508-9	SO-11137156-072518-AG-009	105	87
480-139508-10	SO-11137156-072518-AG-010	109	91
480-139508-11	SO-11137156-072518-AG-011	120	100
480-139508-12	SO-11137156-072518-AG-012	119	105
LCS 480-427174/2-A	Lab Control Sample	112	87
MB 480-427174/1-A	Method Blank	91	73

#### Surrogate Legend

TCX = Tetrachloro-m-xylene

DCBP = DCB Decachlorobiphenyl

# Surrogate Summary

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

## Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (28-129)
480-139508-1	SO-11137156-072518-AG-001	54
480-139508-2	SO-11137156-072518-AG-002	60
480-139508-3	SO-11137156-072518-AG-003	56
480-139508-3 MS	SO-11137156-072518-AG-003	56
480-139508-3 MSD	SO-11137156-072518-AG-003	56
480-139508-4	SO-11137156-072518-AG-004	51
480-139508-5	SO-11137156-072518-AG-005	52
480-139508-6	SO-11137156-072518-AG-006	59
480-139508-7	SO-11137156-072518-AG-007	50
480-139508-8	SO-11137156-072518-AG-008	53
480-139508-9	SO-11137156-072518-AG-009	57
480-139508-11	SO-11137156-072518-AG-011	55
480-139508-12	SO-11137156-072518-AG-012	68
LCS 480-427668/2-A	Lab Control Sample	54
MB 480-427668/1-A	Method Blank	56

#### Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid

## Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA2 (28-129)
480-139508-10	SO-11137156-072518-AG-010	59

#### Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid

# QC Sample Results

Client: GHD Services Inc.  
 Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

## Method: 8260C - Volatile Organic Compounds by GC/MS

**Lab Sample ID: MB 480-427455/2-A**  
**Matrix: Solid**  
**Analysis Batch: 427470**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 427455**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	0.36	ug/Kg		08/01/18 08:27	08/01/18 11:59	1
1,1-Dichloroethane	ND		5.0	0.61	ug/Kg		08/01/18 08:27	08/01/18 11:59	1
1,1-Dichloroethene	ND		5.0	0.61	ug/Kg		08/01/18 08:27	08/01/18 11:59	1
1,2,4-Trimethylbenzene	ND		5.0	0.96	ug/Kg		08/01/18 08:27	08/01/18 11:59	1
1,2-Dichlorobenzene	ND		5.0	0.39	ug/Kg		08/01/18 08:27	08/01/18 11:59	1
1,2-Dichloroethane	ND		5.0	0.25	ug/Kg		08/01/18 08:27	08/01/18 11:59	1
1,3,5-Trimethylbenzene	ND		5.0	0.32	ug/Kg		08/01/18 08:27	08/01/18 11:59	1
1,3-Dichlorobenzene	ND		5.0	0.26	ug/Kg		08/01/18 08:27	08/01/18 11:59	1
1,4-Dichlorobenzene	ND		5.0	0.70	ug/Kg		08/01/18 08:27	08/01/18 11:59	1
1,4-Dioxane	ND		100	22	ug/Kg		08/01/18 08:27	08/01/18 11:59	1
2-Butanone (MEK)	ND		25	1.8	ug/Kg		08/01/18 08:27	08/01/18 11:59	1
Acetone	ND		25	4.2	ug/Kg		08/01/18 08:27	08/01/18 11:59	1
Benzene	ND		5.0	0.25	ug/Kg		08/01/18 08:27	08/01/18 11:59	1
Carbon tetrachloride	ND		5.0	0.48	ug/Kg		08/01/18 08:27	08/01/18 11:59	1
Chlorobenzene	ND		5.0	0.66	ug/Kg		08/01/18 08:27	08/01/18 11:59	1
Chloroform	ND		5.0	0.31	ug/Kg		08/01/18 08:27	08/01/18 11:59	1
cis-1,2-Dichloroethene	ND		5.0	0.64	ug/Kg		08/01/18 08:27	08/01/18 11:59	1
Ethylbenzene	ND		5.0	0.35	ug/Kg		08/01/18 08:27	08/01/18 11:59	1
Methyl tert-butyl ether	ND		5.0	0.49	ug/Kg		08/01/18 08:27	08/01/18 11:59	1
Methylene Chloride	ND		5.0	2.3	ug/Kg		08/01/18 08:27	08/01/18 11:59	1
n-Butylbenzene	ND		5.0	0.44	ug/Kg		08/01/18 08:27	08/01/18 11:59	1
n-Propylbenzene	ND		5.0	0.40	ug/Kg		08/01/18 08:27	08/01/18 11:59	1
sec-Butylbenzene	ND		5.0	0.44	ug/Kg		08/01/18 08:27	08/01/18 11:59	1
tert-Butylbenzene	ND		5.0	0.52	ug/Kg		08/01/18 08:27	08/01/18 11:59	1
Tetrachloroethene	ND		5.0	0.67	ug/Kg		08/01/18 08:27	08/01/18 11:59	1
Toluene	ND		5.0	0.38	ug/Kg		08/01/18 08:27	08/01/18 11:59	1
trans-1,2-Dichloroethene	ND		5.0	0.52	ug/Kg		08/01/18 08:27	08/01/18 11:59	1
Trichloroethene	ND		5.0	1.1	ug/Kg		08/01/18 08:27	08/01/18 11:59	1
Vinyl chloride	ND		5.0	0.61	ug/Kg		08/01/18 08:27	08/01/18 11:59	1
Xylenes, Total	ND		10	0.84	ug/Kg		08/01/18 08:27	08/01/18 11:59	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		64 - 126	08/01/18 08:27	08/01/18 11:59	1
4-Bromofluorobenzene (Surr)	93		72 - 126	08/01/18 08:27	08/01/18 11:59	1
Dibromofluoromethane (Surr)	92		60 - 140	08/01/18 08:27	08/01/18 11:59	1
Toluene-d8 (Surr)	97		71 - 125	08/01/18 08:27	08/01/18 11:59	1

**Lab Sample ID: LCS 480-427455/1-A**  
**Matrix: Solid**  
**Analysis Batch: 427470**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 427455**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1,1,1-Trichloroethane	50.0	45.8		ug/Kg		92	77 - 121
1,1-Dichloroethane	50.0	53.2		ug/Kg		106	73 - 126
1,1-Dichloroethene	50.0	48.8		ug/Kg		98	59 - 125
1,2,4-Trimethylbenzene	50.0	53.3		ug/Kg		107	74 - 120
1,2-Dichlorobenzene	50.0	49.6		ug/Kg		99	75 - 120
1,2-Dichloroethane	50.0	46.1		ug/Kg		92	77 - 122

TestAmerica Buffalo

# QC Sample Results

Client: GHD Services Inc.  
 Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCS 480-427455/1-A**  
**Matrix: Solid**  
**Analysis Batch: 427470**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 427455**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trimethylbenzene	50.0	54.0		ug/Kg		108	74 - 120
1,3-Dichlorobenzene	50.0	52.4		ug/Kg		105	74 - 120
1,4-Dichlorobenzene	50.0	51.5		ug/Kg		103	73 - 120
1,4-Dioxane	1000	976		ug/Kg		98	64 - 124
2-Butanone (MEK)	250	255		ug/Kg		102	70 - 134
Acetone	250	201		ug/Kg		81	61 - 137
Benzene	50.0	54.1		ug/Kg		108	79 - 127
Carbon tetrachloride	50.0	47.8		ug/Kg		96	75 - 135
Chlorobenzene	50.0	52.6		ug/Kg		105	76 - 124
Chloroform	50.0	49.2		ug/Kg		98	80 - 120
cis-1,2-Dichloroethene	50.0	50.7		ug/Kg		101	81 - 120
Ethylbenzene	50.0	54.4		ug/Kg		109	80 - 120
Methyl tert-butyl ether	50.0	41.9		ug/Kg		84	63 - 125
Methylene Chloride	50.0	46.9		ug/Kg		94	61 - 127
n-Butylbenzene	50.0	54.3		ug/Kg		109	70 - 120
n-Propylbenzene	50.0	56.8		ug/Kg		114	70 - 130
sec-Butylbenzene	50.0	54.5		ug/Kg		109	74 - 120
tert-Butylbenzene	50.0	52.7		ug/Kg		105	73 - 120
Tetrachloroethene	50.0	52.6		ug/Kg		105	74 - 122
Toluene	50.0	53.4		ug/Kg		107	74 - 128
trans-1,2-Dichloroethene	50.0	51.2		ug/Kg		102	78 - 126
Trichloroethene	50.0	52.2		ug/Kg		104	77 - 129
Vinyl chloride	50.0	48.6		ug/Kg		97	61 - 133
Xylenes, Total	100	106		ug/Kg		106	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	93		64 - 126
4-Bromofluorobenzene (Surr)	96		72 - 126
Dibromofluoromethane (Surr)	94		60 - 140
Toluene-d8 (Surr)	100		71 - 125

## Method: 8270D - Semivolatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 480-427851/1-A**  
**Matrix: Solid**  
**Analysis Batch: 429505**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 427851**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	ND		170	19	ug/Kg		08/03/18 06:56	08/14/18 13:46	1
3-Methylphenol	ND		320	25	ug/Kg		08/03/18 06:56	08/14/18 13:46	1
4-Methylphenol	ND		320	19	ug/Kg		08/03/18 06:56	08/14/18 13:46	1
Acenaphthene	ND		170	24	ug/Kg		08/03/18 06:56	08/14/18 13:46	1
Acenaphthylene	ND		170	21	ug/Kg		08/03/18 06:56	08/14/18 13:46	1
Anthracene	ND		170	41	ug/Kg		08/03/18 06:56	08/14/18 13:46	1
Benzo[a]anthracene	ND		170	17	ug/Kg		08/03/18 06:56	08/14/18 13:46	1
Benzo[a]pyrene	ND		170	24	ug/Kg		08/03/18 06:56	08/14/18 13:46	1
Benzo[b]fluoranthene	ND		170	26	ug/Kg		08/03/18 06:56	08/14/18 13:46	1
Benzo[g,h,i]perylene	ND		170	17	ug/Kg		08/03/18 06:56	08/14/18 13:46	1

TestAmerica Buffalo

# QC Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

## Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 480-427851/1-A**  
**Matrix: Solid**  
**Analysis Batch: 429505**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 427851**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	ND		170	21	ug/Kg		08/03/18 06:56	08/14/18 13:46	1
Chrysene	ND		170	37	ug/Kg		08/03/18 06:56	08/14/18 13:46	1
Dibenz(a,h)anthracene	ND		170	29	ug/Kg		08/03/18 06:56	08/14/18 13:46	1
Dibenzofuran	ND		170	19	ug/Kg		08/03/18 06:56	08/14/18 13:46	1
Fluoranthene	ND		170	17	ug/Kg		08/03/18 06:56	08/14/18 13:46	1
Fluorene	ND		170	19	ug/Kg		08/03/18 06:56	08/14/18 13:46	1
Hexachlorobenzene	ND		170	22	ug/Kg		08/03/18 06:56	08/14/18 13:46	1
Indeno[1,2,3-cd]pyrene	ND		170	20	ug/Kg		08/03/18 06:56	08/14/18 13:46	1
Naphthalene	ND		170	21	ug/Kg		08/03/18 06:56	08/14/18 13:46	1
Pentachlorophenol	ND		320	170	ug/Kg		08/03/18 06:56	08/14/18 13:46	1
Phenanthrene	ND		170	24	ug/Kg		08/03/18 06:56	08/14/18 13:46	1
Phenol	ND		170	25	ug/Kg		08/03/18 06:56	08/14/18 13:46	1
Pyrene	ND		170	19	ug/Kg		08/03/18 06:56	08/14/18 13:46	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	56		54 - 120	08/03/18 06:56	08/14/18 13:46	1
2-Fluorobiphenyl	81		60 - 120	08/03/18 06:56	08/14/18 13:46	1
2-Fluorophenol (Surr)	61		52 - 120	08/03/18 06:56	08/14/18 13:46	1
Nitrobenzene-d5 (Surr)	81		53 - 120	08/03/18 06:56	08/14/18 13:46	1
Phenol-d5 (Surr)	67		54 - 120	08/03/18 06:56	08/14/18 13:46	1
p-Terphenyl-d14 (Surr)	94		65 - 121	08/03/18 06:56	08/14/18 13:46	1

**Lab Sample ID: LCS 480-427851/2-A**  
**Matrix: Solid**  
**Analysis Batch: 429505**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 427851**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
2-Methylphenol	1640	1120		ug/Kg		68	54 - 120
3-Methylphenol	1640	1260		ug/Kg		77	55 - 120
4-Methylphenol	1640	1260		ug/Kg		77	55 - 120
Acenaphthene	1640	1390		ug/Kg		85	62 - 120
Acenaphthylene	1640	1530		ug/Kg		93	58 - 121
Anthracene	1640	1470		ug/Kg		90	62 - 120
Benzo[a]anthracene	1640	1570		ug/Kg		96	65 - 120
Benzo[a]pyrene	1640	1540		ug/Kg		94	64 - 120
Benzo[b]fluoranthene	1640	1480		ug/Kg		90	64 - 120
Benzo[g,h,i]perylene	1640	1500		ug/Kg		92	45 - 145
Benzo[k]fluoranthene	1640	1520		ug/Kg		93	65 - 120
Chrysene	1640	1570		ug/Kg		96	64 - 120
Dibenz(a,h)anthracene	1640	1520		ug/Kg		93	54 - 132
Dibenzofuran	1640	1440		ug/Kg		88	63 - 120
Fluoranthene	1640	1570		ug/Kg		95	62 - 120
Fluorene	1640	1490		ug/Kg		91	63 - 120
Hexachlorobenzene	1640	1480		ug/Kg		90	60 - 120
Indeno[1,2,3-cd]pyrene	1640	1490		ug/Kg		91	56 - 134
Naphthalene	1640	1080		ug/Kg		66	55 - 120
Pentachlorophenol	3280	2630		ug/Kg		80	51 - 120
Phenanthrene	1640	1470		ug/Kg		90	60 - 120

TestAmerica Buffalo



# QC Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

## Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 480-427851/2-A**  
**Matrix: Solid**  
**Analysis Batch: 429505**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 427851**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phenol	1640	1120		ug/Kg		68	53 - 120
Pyrene	1640	1570		ug/Kg		96	61 - 133

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	85		54 - 120
2-Fluorobiphenyl	72		60 - 120
2-Fluorophenol (Surr)	58		52 - 120
Nitrobenzene-d5 (Surr)	64		53 - 120
Phenol-d5 (Surr)	61		54 - 120
p-Terphenyl-d14 (Surr)	87		65 - 121

## Method: 8081B - Organochlorine Pesticides (GC)

**Lab Sample ID: MB 480-427415/1-A**  
**Matrix: Solid**  
**Analysis Batch: 427713**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 427415**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		1.6	0.32	ug/Kg		08/01/18 06:48	08/02/18 12:34	1
4,4'-DDE	ND		1.6	0.34	ug/Kg		08/01/18 06:48	08/02/18 12:34	1
4,4'-DDT	ND		1.6	0.38	ug/Kg		08/01/18 06:48	08/02/18 12:34	1
Aldrin	ND		1.6	0.40	ug/Kg		08/01/18 06:48	08/02/18 12:34	1
alpha-BHC	ND		1.6	0.29	ug/Kg		08/01/18 06:48	08/02/18 12:34	1
cis-Chlordane	ND		1.6	0.81	ug/Kg		08/01/18 06:48	08/02/18 12:34	1
beta-BHC	ND		1.6	0.29	ug/Kg		08/01/18 06:48	08/02/18 12:34	1
delta-BHC	ND		1.6	0.30	ug/Kg		08/01/18 06:48	08/02/18 12:34	1
Dieldrin	ND		1.6	0.39	ug/Kg		08/01/18 06:48	08/02/18 12:34	1
Endosulfan I	ND		1.6	0.31	ug/Kg		08/01/18 06:48	08/02/18 12:34	1
Endosulfan II	ND		1.6	0.29	ug/Kg		08/01/18 06:48	08/02/18 12:34	1
Endosulfan sulfate	ND		1.6	0.30	ug/Kg		08/01/18 06:48	08/02/18 12:34	1
Endrin	ND		1.6	0.32	ug/Kg		08/01/18 06:48	08/02/18 12:34	1
gamma-BHC (Lindane)	ND		1.6	0.30	ug/Kg		08/01/18 06:48	08/02/18 12:34	1
Heptachlor	ND		1.6	0.35	ug/Kg		08/01/18 06:48	08/02/18 12:34	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	102		45 - 120	08/01/18 06:48	08/02/18 12:34	1
Tetrachloro-m-xylene	70		30 - 124	08/01/18 06:48	08/02/18 12:34	1

**Lab Sample ID: LCS 480-427415/2-A**  
**Matrix: Solid**  
**Analysis Batch: 427713**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 427415**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4,4'-DDD	16.6	15.5		ug/Kg		93	56 - 120
4,4'-DDE	16.6	13.6		ug/Kg		82	44 - 120
4,4'-DDT	16.6	15.7		ug/Kg		95	38 - 120
Aldrin	16.6	11.5		ug/Kg		70	38 - 120

TestAmerica Buffalo

# QC Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

## Method: 8081B - Organochlorine Pesticides (GC) (Continued)

**Lab Sample ID: LCS 480-427415/2-A**  
**Matrix: Solid**  
**Analysis Batch: 427713**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 427415**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
alpha-BHC	16.6	11.2		ug/Kg		67	39 - 120
cis-Chlordane	16.6	14.9		ug/Kg		90	47 - 120
beta-BHC	16.6	12.4		ug/Kg		75	40 - 120
delta-BHC	16.6	12.2		ug/Kg		74	45 - 120
Dieldrin	16.6	15.0		ug/Kg		90	58 - 120
Endosulfan I	16.6	13.1		ug/Kg		79	49 - 120
Endosulfan II	16.6	15.6		ug/Kg		94	55 - 120
Endosulfan sulfate	16.6	12.5		ug/Kg		75	49 - 124
Endrin	16.6	14.4		ug/Kg		87	58 - 120
gamma-BHC (Lindane)	16.6	12.3		ug/Kg		74	50 - 120
Heptachlor	16.6	13.3		ug/Kg		80	50 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	92		45 - 120
Tetrachloro-m-xylene	64		30 - 124

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

**Lab Sample ID: MB 480-427174/1-A**  
**Matrix: Solid**  
**Analysis Batch: 427240**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 427174**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.21	0.041	mg/Kg		07/31/18 07:45	07/31/18 19:59	1
PCB-1221	ND		0.21	0.041	mg/Kg		07/31/18 07:45	07/31/18 19:59	1
PCB-1232	ND		0.21	0.041	mg/Kg		07/31/18 07:45	07/31/18 19:59	1
PCB-1242	ND		0.21	0.041	mg/Kg		07/31/18 07:45	07/31/18 19:59	1
PCB-1248	ND		0.21	0.041	mg/Kg		07/31/18 07:45	07/31/18 19:59	1
PCB-1254	ND		0.21	0.099	mg/Kg		07/31/18 07:45	07/31/18 19:59	1
PCB-1260	ND		0.21	0.099	mg/Kg		07/31/18 07:45	07/31/18 19:59	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	91		60 - 154	07/31/18 07:45	07/31/18 19:59	1
DCB Decachlorobiphenyl	73		65 - 174	07/31/18 07:45	07/31/18 19:59	1

**Lab Sample ID: LCS 480-427174/2-A**  
**Matrix: Solid**  
**Analysis Batch: 427240**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 427174**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
PCB-1016	2.11	2.45		mg/Kg		116	51 - 185
PCB-1260	2.11	2.35		mg/Kg		111	61 - 184

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tetrachloro-m-xylene	112		60 - 154
DCB Decachlorobiphenyl	87		65 - 174

TestAmerica Buffalo

# QC Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

## Method: 8151A - Herbicides (GC)

**Lab Sample ID: MB 480-427668/1-A**  
**Matrix: Solid**  
**Analysis Batch: 428706**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 427668**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		17	6.0	ug/Kg		08/02/18 07:55	08/08/18 20:01	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	56		28 - 129				08/02/18 07:55	08/08/18 20:01	1

**Lab Sample ID: LCS 480-427668/2-A**  
**Matrix: Solid**  
**Analysis Batch: 428706**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 427668**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Silvex (2,4,5-TP)	65.3	40.8		ug/Kg		63	39 - 125
Surrogate	%Recovery	LCS Qualifier	Limits				%Rec.
2,4-Dichlorophenylacetic acid	54		28 - 129				

**Lab Sample ID: 480-139508-3 MS**  
**Matrix: Solid**  
**Analysis Batch: 428706**

**Client Sample ID: SO-11137156-072518-AG-003**  
**Prep Type: Total/NA**  
**Prep Batch: 427668**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Silvex (2,4,5-TP)	ND		75.6	49.0		ug/Kg	☼	65	22 - 140
Surrogate	%Recovery	MS Qualifier	Limits					%Rec.	
2,4-Dichlorophenylacetic acid	56		28 - 129						

**Lab Sample ID: 480-139508-3 MSD**  
**Matrix: Solid**  
**Analysis Batch: 428706**

**Client Sample ID: SO-11137156-072518-AG-003**  
**Prep Type: Total/NA**  
**Prep Batch: 427668**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Silvex (2,4,5-TP)	ND		76.2	48.4		ug/Kg	☼	64	22 - 140	1	50
Surrogate	%Recovery	MSD Qualifier	Limits					%Rec.			
2,4-Dichlorophenylacetic acid	56		28 - 129								

## Method: 6010C - Metals (ICP)

**Lab Sample ID: MB 480-427017/1-A**  
**Matrix: Solid**  
**Analysis Batch: 427466**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 427017**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		2.0	0.40	mg/Kg		07/30/18 11:20	07/31/18 17:49	1
Barium	ND		0.50	0.11	mg/Kg		07/30/18 11:20	07/31/18 17:49	1
Beryllium	ND		0.20	0.028	mg/Kg		07/30/18 11:20	07/31/18 17:49	1
Cadmium	ND		0.20	0.030	mg/Kg		07/30/18 11:20	07/31/18 17:49	1
Chromium	1.11		0.50	0.20	mg/Kg		07/30/18 11:20	07/31/18 17:49	1

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# QC Sample Results

Client: GHD Services Inc.  
 Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

## Method: 6010C - Metals (ICP) (Continued)

**Lab Sample ID: MB 480-427017/1-A**  
**Matrix: Solid**  
**Analysis Batch: 427466**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 427017**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	ND		1.0	0.21	mg/Kg		07/30/18 11:20	07/31/18 17:49	1
Lead	ND		1.0	0.24	mg/Kg		07/30/18 11:20	07/31/18 17:49	1
Manganese	0.241		0.20	0.032	mg/Kg		07/30/18 11:20	07/31/18 17:49	1
Nickel	ND		5.0	0.23	mg/Kg		07/30/18 11:20	07/31/18 17:49	1
Selenium	ND		4.0	0.40	mg/Kg		07/30/18 11:20	07/31/18 17:49	1
Silver	ND		0.60	0.20	mg/Kg		07/30/18 11:20	07/31/18 17:49	1
Zinc	3.41		2.0	0.64	mg/Kg		07/30/18 11:20	07/31/18 17:49	1

**Lab Sample ID: LCSSRM 480-427017/2-A**  
**Matrix: Solid**  
**Analysis Batch: 427466**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 427017**

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	178	139.0		mg/Kg		78.1	65.7 - 120.8
Barium	228	183.4		mg/Kg		80.4	68.4 - 118.4
Beryllium	61.3	49.87		mg/Kg		81.4	69.3 - 120.1
Cadmium	143	108.5		mg/Kg		75.9	65.9 - 114.0
Chromium	107	86.44		mg/Kg		80.8	65.9 - 123.4
Copper	116	92.05		mg/Kg		79.4	70.6 - 119.0
Lead	210	190.3		mg/Kg		90.6	71.9 - 121.0
Manganese	383	310.1		mg/Kg		81.0	73.1 - 120.1
Nickel	95.4	85.60		mg/Kg		89.7	65.6 - 117.4
Selenium	130	98.62		mg/Kg		75.9	59.2 - 120.0
Silver	91.2	72.73		mg/Kg		79.8	64.0 - 126.1
Zinc	254	197.5		mg/Kg		77.7	66.9 - 122.4

**Lab Sample ID: MB 480-427564/1-A**  
**Matrix: Solid**  
**Analysis Batch: 428155**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 427564**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND		0.50	0.20	mg/Kg		08/02/18 09:30	08/03/18 13:48	1
Zinc	ND		2.0	0.64	mg/Kg		08/02/18 09:30	08/03/18 13:48	1

# QC Sample Results

Client: GHD Services Inc.  
 Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

## Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCSSRM 480-427564/2-A  
 Matrix: Solid  
 Analysis Batch: 428155

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 427564

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	Limits
Chromium	107	85.29		mg/Kg		79.7	65.9 - 123.4
Zinc	254	192.0		mg/Kg		75.6	66.9 - 122.4

## Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 480-428703/1-A  
 Matrix: Solid  
 Analysis Batch: 428452

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 428703

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.020	0.0079	mg/Kg		08/04/18 12:40	08/04/18 19:25	1

Lab Sample ID: LCSSRM 480-428703/2-A  
 Matrix: Solid  
 Analysis Batch: 428452

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 428703

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	Limits
Mercury	23.7	10.30	E	mg/Kg		43.4	27.7 - 110.1

Lab Sample ID: 480-139508-12 MS  
 Matrix: Solid  
 Analysis Batch: 428452

Client Sample ID: SO-11137156-072518-AG-012  
 Prep Type: Total/NA  
 Prep Batch: 428703

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Mercury	0.031		0.343	0.357		mg/Kg	☼	95	80 - 120

Lab Sample ID: 480-139508-12 MSD  
 Matrix: Solid  
 Analysis Batch: 428452

Client Sample ID: SO-11137156-072518-AG-012  
 Prep Type: Total/NA  
 Prep Batch: 428703

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Mercury	0.031		0.341	0.355		mg/Kg	☼	95	80 - 120	1	20

Lab Sample ID: MB 480-429601/1-A  
 Matrix: Solid  
 Analysis Batch: 429632

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 429601

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.020	0.0082	mg/Kg		08/14/18 15:05	08/14/18 17:52	1

Lab Sample ID: MB 480-429601/1-A  
 Matrix: Solid  
 Analysis Batch: 430204

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 429601

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.020	0.0082	mg/Kg		08/14/18 15:05	08/14/18 18:37	1

TestAmerica Buffalo

# QC Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

## Method: 7471B - Mercury (CVAA) (Continued)

**Lab Sample ID: MB 480-429923/1-A**  
**Matrix: Solid**  
**Analysis Batch: 430090**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 429923**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.019	0.0077	mg/Kg		08/16/18 11:35	08/16/18 13:26	1

**Lab Sample ID: LCSSRM 480-429923/2-A ^10**  
**Matrix: Solid**  
**Analysis Batch: 430090**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 429923**

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	Limits
Mercury	23.7	11.82		mg/Kg		49.9	27.7 - 110. 1

**Lab Sample ID: 480-139508-10 MS**  
**Matrix: Solid**  
**Analysis Batch: 430090**

**Client Sample ID: SO-11137156-072518-AG-010**  
**Prep Type: Total/NA**  
**Prep Batch: 429923**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Mercury	0.90	F1	0.354	0.562	F1	mg/Kg	☼	-96	80 - 120

**Lab Sample ID: 480-139508-10 MSD**  
**Matrix: Solid**  
**Analysis Batch: 430090**

**Client Sample ID: SO-11137156-072518-AG-010**  
**Prep Type: Total/NA**  
**Prep Batch: 429923**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Mercury	0.90	F1	0.354	0.609	F1	mg/Kg	☼	-83	80 - 120	8	20

## Method: 7196A - Chromium, Hexavalent

**Lab Sample ID: MB 460-546843/1-A**  
**Matrix: Solid**  
**Analysis Batch: 547343**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 546843**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		2.0	0.52	mg/Kg		08/23/18 15:45	08/24/18 05:20	1

**Lab Sample ID: LCSI 460-546843/3-A**  
**Matrix: Solid**  
**Analysis Batch: 547343**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 546843**

Analyte	Spike Added	LCSI Result	LCSI Qualifier	Unit	D	%Rec	Limits
Hexavalent chromium	708	663.0		mg/Kg		94	80 - 120

**Lab Sample ID: LCSSRM 460-546843/2-A**  
**Matrix: Solid**  
**Analysis Batch: 547343**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 546843**

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	Limits
Hexavalent chromium	12.9	11.78		mg/Kg		91.4	84.0 - 114. 6

TestAmerica Buffalo

# QC Association Summary

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

## GC/MS VOA

### Prep Batch: 427455

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139508-1	SO-11137156-072518-AG-001	Total/NA	Solid	5035A_L	
480-139508-2	SO-11137156-072518-AG-002	Total/NA	Solid	5035A_L	
480-139508-3	SO-11137156-072518-AG-003	Total/NA	Solid	5035A_L	
480-139508-4	SO-11137156-072518-AG-004	Total/NA	Solid	5035A_L	
480-139508-5	SO-11137156-072518-AG-005	Total/NA	Solid	5035A_L	
480-139508-6	SO-11137156-072518-AG-006	Total/NA	Solid	5035A_L	
480-139508-7	SO-11137156-072518-AG-007	Total/NA	Solid	5035A_L	
480-139508-8	SO-11137156-072518-AG-008	Total/NA	Solid	5035A_L	
480-139508-9	SO-11137156-072518-AG-009	Total/NA	Solid	5035A_L	
480-139508-10	SO-11137156-072518-AG-010	Total/NA	Solid	5035A_L	
480-139508-11	SO-11137156-072518-AG-011	Total/NA	Solid	5035A_L	
480-139508-12	SO-11137156-072518-AG-012	Total/NA	Solid	5035A_L	
MB 480-427455/2-A	Method Blank	Total/NA	Solid	5035A_L	
LCS 480-427455/1-A	Lab Control Sample	Total/NA	Solid	5035A_L	

### Analysis Batch: 427470

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139508-1	SO-11137156-072518-AG-001	Total/NA	Solid	8260C	427455
480-139508-2	SO-11137156-072518-AG-002	Total/NA	Solid	8260C	427455
480-139508-3	SO-11137156-072518-AG-003	Total/NA	Solid	8260C	427455
480-139508-4	SO-11137156-072518-AG-004	Total/NA	Solid	8260C	427455
480-139508-5	SO-11137156-072518-AG-005	Total/NA	Solid	8260C	427455
480-139508-6	SO-11137156-072518-AG-006	Total/NA	Solid	8260C	427455
480-139508-7	SO-11137156-072518-AG-007	Total/NA	Solid	8260C	427455
480-139508-8	SO-11137156-072518-AG-008	Total/NA	Solid	8260C	427455
480-139508-9	SO-11137156-072518-AG-009	Total/NA	Solid	8260C	427455
MB 480-427455/2-A	Method Blank	Total/NA	Solid	8260C	427455
LCS 480-427455/1-A	Lab Control Sample	Total/NA	Solid	8260C	427455

### Analysis Batch: 427637

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139508-10	SO-11137156-072518-AG-010	Total/NA	Solid	8260C	427455
480-139508-11	SO-11137156-072518-AG-011	Total/NA	Solid	8260C	427455
480-139508-12	SO-11137156-072518-AG-012	Total/NA	Solid	8260C	427455

## GC/MS Semi VOA

### Prep Batch: 427851

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139508-1	SO-11137156-072518-AG-001	Total/NA	Solid	3550C	
480-139508-2	SO-11137156-072518-AG-002	Total/NA	Solid	3550C	
480-139508-3	SO-11137156-072518-AG-003	Total/NA	Solid	3550C	
480-139508-4	SO-11137156-072518-AG-004	Total/NA	Solid	3550C	
480-139508-5	SO-11137156-072518-AG-005	Total/NA	Solid	3550C	
480-139508-6	SO-11137156-072518-AG-006	Total/NA	Solid	3550C	
480-139508-7	SO-11137156-072518-AG-007	Total/NA	Solid	3550C	
480-139508-8	SO-11137156-072518-AG-008	Total/NA	Solid	3550C	
480-139508-9	SO-11137156-072518-AG-009	Total/NA	Solid	3550C	
480-139508-10	SO-11137156-072518-AG-010	Total/NA	Solid	3550C	
480-139508-11	SO-11137156-072518-AG-011	Total/NA	Solid	3550C	

TestAmerica Buffalo

# QC Association Summary

Client: GHD Services Inc.  
 Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

## GC/MS Semi VOA (Continued)

### Prep Batch: 427851 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139508-12	SO-11137156-072518-AG-012	Total/NA	Solid	3550C	
MB 480-427851/1-A	Method Blank	Total/NA	Solid	3550C	
LCS 480-427851/2-A	Lab Control Sample	Total/NA	Solid	3550C	

### Analysis Batch: 429505

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139508-1	SO-11137156-072518-AG-001	Total/NA	Solid	8270D	427851
480-139508-2	SO-11137156-072518-AG-002	Total/NA	Solid	8270D	427851
480-139508-3	SO-11137156-072518-AG-003	Total/NA	Solid	8270D	427851
480-139508-4	SO-11137156-072518-AG-004	Total/NA	Solid	8270D	427851
480-139508-5	SO-11137156-072518-AG-005	Total/NA	Solid	8270D	427851
480-139508-6	SO-11137156-072518-AG-006	Total/NA	Solid	8270D	427851
480-139508-7	SO-11137156-072518-AG-007	Total/NA	Solid	8270D	427851
480-139508-8	SO-11137156-072518-AG-008	Total/NA	Solid	8270D	427851
480-139508-9	SO-11137156-072518-AG-009	Total/NA	Solid	8270D	427851
480-139508-10	SO-11137156-072518-AG-010	Total/NA	Solid	8270D	427851
480-139508-11	SO-11137156-072518-AG-011	Total/NA	Solid	8270D	427851
480-139508-12	SO-11137156-072518-AG-012	Total/NA	Solid	8270D	427851
MB 480-427851/1-A	Method Blank	Total/NA	Solid	8270D	427851
LCS 480-427851/2-A	Lab Control Sample	Total/NA	Solid	8270D	427851

## GC Semi VOA

### Prep Batch: 427174

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139508-1	SO-11137156-072518-AG-001	Total/NA	Solid	3550C	
480-139508-2	SO-11137156-072518-AG-002	Total/NA	Solid	3550C	
480-139508-3	SO-11137156-072518-AG-003	Total/NA	Solid	3550C	
480-139508-4	SO-11137156-072518-AG-004	Total/NA	Solid	3550C	
480-139508-5	SO-11137156-072518-AG-005	Total/NA	Solid	3550C	
480-139508-6	SO-11137156-072518-AG-006	Total/NA	Solid	3550C	
480-139508-7	SO-11137156-072518-AG-007	Total/NA	Solid	3550C	
480-139508-8	SO-11137156-072518-AG-008	Total/NA	Solid	3550C	
480-139508-9	SO-11137156-072518-AG-009	Total/NA	Solid	3550C	
480-139508-10	SO-11137156-072518-AG-010	Total/NA	Solid	3550C	
480-139508-11	SO-11137156-072518-AG-011	Total/NA	Solid	3550C	
480-139508-12	SO-11137156-072518-AG-012	Total/NA	Solid	3550C	
MB 480-427174/1-A	Method Blank	Total/NA	Solid	3550C	
LCS 480-427174/2-A	Lab Control Sample	Total/NA	Solid	3550C	

### Analysis Batch: 427240

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139508-1	SO-11137156-072518-AG-001	Total/NA	Solid	8082A	427174
480-139508-2	SO-11137156-072518-AG-002	Total/NA	Solid	8082A	427174
480-139508-3	SO-11137156-072518-AG-003	Total/NA	Solid	8082A	427174
480-139508-4	SO-11137156-072518-AG-004	Total/NA	Solid	8082A	427174
480-139508-5	SO-11137156-072518-AG-005	Total/NA	Solid	8082A	427174
480-139508-6	SO-11137156-072518-AG-006	Total/NA	Solid	8082A	427174
480-139508-7	SO-11137156-072518-AG-007	Total/NA	Solid	8082A	427174
480-139508-8	SO-11137156-072518-AG-008	Total/NA	Solid	8082A	427174

TestAmerica Buffalo



# QC Association Summary

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

## GC Semi VOA (Continued)

### Analysis Batch: 427240 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139508-9	SO-11137156-072518-AG-009	Total/NA	Solid	8082A	427174
480-139508-10	SO-11137156-072518-AG-010	Total/NA	Solid	8082A	427174
480-139508-11	SO-11137156-072518-AG-011	Total/NA	Solid	8082A	427174
480-139508-12	SO-11137156-072518-AG-012	Total/NA	Solid	8082A	427174
MB 480-427174/1-A	Method Blank	Total/NA	Solid	8082A	427174
LCS 480-427174/2-A	Lab Control Sample	Total/NA	Solid	8082A	427174

### Prep Batch: 427415

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139508-1	SO-11137156-072518-AG-001	Total/NA	Solid	3550C	
480-139508-2	SO-11137156-072518-AG-002	Total/NA	Solid	3550C	
480-139508-3	SO-11137156-072518-AG-003	Total/NA	Solid	3550C	
480-139508-4	SO-11137156-072518-AG-004	Total/NA	Solid	3550C	
480-139508-5	SO-11137156-072518-AG-005	Total/NA	Solid	3550C	
480-139508-6	SO-11137156-072518-AG-006	Total/NA	Solid	3550C	
480-139508-7	SO-11137156-072518-AG-007	Total/NA	Solid	3550C	
480-139508-8	SO-11137156-072518-AG-008	Total/NA	Solid	3550C	
480-139508-9	SO-11137156-072518-AG-009	Total/NA	Solid	3550C	
480-139508-10	SO-11137156-072518-AG-010	Total/NA	Solid	3550C	
480-139508-11	SO-11137156-072518-AG-011	Total/NA	Solid	3550C	
480-139508-12	SO-11137156-072518-AG-012	Total/NA	Solid	3550C	
MB 480-427415/1-A	Method Blank	Total/NA	Solid	3550C	
LCS 480-427415/2-A	Lab Control Sample	Total/NA	Solid	3550C	

### Prep Batch: 427668

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139508-1	SO-11137156-072518-AG-001	Total/NA	Solid	8151A	
480-139508-2	SO-11137156-072518-AG-002	Total/NA	Solid	8151A	
480-139508-3	SO-11137156-072518-AG-003	Total/NA	Solid	8151A	
480-139508-4	SO-11137156-072518-AG-004	Total/NA	Solid	8151A	
480-139508-5	SO-11137156-072518-AG-005	Total/NA	Solid	8151A	
480-139508-6	SO-11137156-072518-AG-006	Total/NA	Solid	8151A	
480-139508-7	SO-11137156-072518-AG-007	Total/NA	Solid	8151A	
480-139508-8	SO-11137156-072518-AG-008	Total/NA	Solid	8151A	
480-139508-9	SO-11137156-072518-AG-009	Total/NA	Solid	8151A	
480-139508-10	SO-11137156-072518-AG-010	Total/NA	Solid	8151A	
480-139508-11	SO-11137156-072518-AG-011	Total/NA	Solid	8151A	
480-139508-12	SO-11137156-072518-AG-012	Total/NA	Solid	8151A	
MB 480-427668/1-A	Method Blank	Total/NA	Solid	8151A	
LCS 480-427668/2-A	Lab Control Sample	Total/NA	Solid	8151A	
480-139508-3 MS	SO-11137156-072518-AG-003	Total/NA	Solid	8151A	
480-139508-3 MSD	SO-11137156-072518-AG-003	Total/NA	Solid	8151A	

### Analysis Batch: 427713

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139508-1	SO-11137156-072518-AG-001	Total/NA	Solid	8081B	427415
480-139508-2	SO-11137156-072518-AG-002	Total/NA	Solid	8081B	427415
480-139508-3	SO-11137156-072518-AG-003	Total/NA	Solid	8081B	427415
480-139508-4	SO-11137156-072518-AG-004	Total/NA	Solid	8081B	427415
480-139508-5	SO-11137156-072518-AG-005	Total/NA	Solid	8081B	427415
480-139508-6	SO-11137156-072518-AG-006	Total/NA	Solid	8081B	427415

TestAmerica Buffalo

# QC Association Summary

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

## GC Semi VOA (Continued)

### Analysis Batch: 427713 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139508-7	SO-11137156-072518-AG-007	Total/NA	Solid	8081B	427415
480-139508-8	SO-11137156-072518-AG-008	Total/NA	Solid	8081B	427415
480-139508-9	SO-11137156-072518-AG-009	Total/NA	Solid	8081B	427415
480-139508-10	SO-11137156-072518-AG-010	Total/NA	Solid	8081B	427415
480-139508-11	SO-11137156-072518-AG-011	Total/NA	Solid	8081B	427415
480-139508-12	SO-11137156-072518-AG-012	Total/NA	Solid	8081B	427415
MB 480-427415/1-A	Method Blank	Total/NA	Solid	8081B	427415
LCS 480-427415/2-A	Lab Control Sample	Total/NA	Solid	8081B	427415

### Analysis Batch: 428706

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139508-1	SO-11137156-072518-AG-001	Total/NA	Solid	8151A	427668
480-139508-2	SO-11137156-072518-AG-002	Total/NA	Solid	8151A	427668
480-139508-3	SO-11137156-072518-AG-003	Total/NA	Solid	8151A	427668
480-139508-4	SO-11137156-072518-AG-004	Total/NA	Solid	8151A	427668
480-139508-5	SO-11137156-072518-AG-005	Total/NA	Solid	8151A	427668
480-139508-6	SO-11137156-072518-AG-006	Total/NA	Solid	8151A	427668
480-139508-7	SO-11137156-072518-AG-007	Total/NA	Solid	8151A	427668
480-139508-8	SO-11137156-072518-AG-008	Total/NA	Solid	8151A	427668
480-139508-9	SO-11137156-072518-AG-009	Total/NA	Solid	8151A	427668
480-139508-10	SO-11137156-072518-AG-010	Total/NA	Solid	8151A	427668
480-139508-11	SO-11137156-072518-AG-011	Total/NA	Solid	8151A	427668
480-139508-12	SO-11137156-072518-AG-012	Total/NA	Solid	8151A	427668
MB 480-427668/1-A	Method Blank	Total/NA	Solid	8151A	427668
LCS 480-427668/2-A	Lab Control Sample	Total/NA	Solid	8151A	427668
480-139508-3 MS	SO-11137156-072518-AG-003	Total/NA	Solid	8151A	427668
480-139508-3 MSD	SO-11137156-072518-AG-003	Total/NA	Solid	8151A	427668

## Metals

### Prep Batch: 427017

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139508-1	SO-11137156-072518-AG-001	Total/NA	Solid	3050B	
480-139508-2	SO-11137156-072518-AG-002	Total/NA	Solid	3050B	
480-139508-3	SO-11137156-072518-AG-003	Total/NA	Solid	3050B	
480-139508-4	SO-11137156-072518-AG-004	Total/NA	Solid	3050B	
480-139508-5	SO-11137156-072518-AG-005	Total/NA	Solid	3050B	
480-139508-6	SO-11137156-072518-AG-006	Total/NA	Solid	3050B	
480-139508-7	SO-11137156-072518-AG-007	Total/NA	Solid	3050B	
480-139508-8	SO-11137156-072518-AG-008	Total/NA	Solid	3050B	
480-139508-9	SO-11137156-072518-AG-009	Total/NA	Solid	3050B	
480-139508-10	SO-11137156-072518-AG-010	Total/NA	Solid	3050B	
480-139508-11	SO-11137156-072518-AG-011	Total/NA	Solid	3050B	
480-139508-12	SO-11137156-072518-AG-012	Total/NA	Solid	3050B	
MB 480-427017/1-A	Method Blank	Total/NA	Solid	3050B	
LCSSRM 480-427017/2-A	Lab Control Sample	Total/NA	Solid	3050B	

### Analysis Batch: 427466

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139508-1	SO-11137156-072518-AG-001	Total/NA	Solid	6010C	427017

TestAmerica Buffalo

# QC Association Summary

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

## Metals (Continued)

### Analysis Batch: 427466 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139508-2	SO-11137156-072518-AG-002	Total/NA	Solid	6010C	427017
480-139508-3	SO-11137156-072518-AG-003	Total/NA	Solid	6010C	427017
480-139508-4	SO-11137156-072518-AG-004	Total/NA	Solid	6010C	427017
480-139508-5	SO-11137156-072518-AG-005	Total/NA	Solid	6010C	427017
480-139508-6	SO-11137156-072518-AG-006	Total/NA	Solid	6010C	427017
480-139508-7	SO-11137156-072518-AG-007	Total/NA	Solid	6010C	427017
480-139508-8	SO-11137156-072518-AG-008	Total/NA	Solid	6010C	427017
480-139508-9	SO-11137156-072518-AG-009	Total/NA	Solid	6010C	427017
480-139508-10	SO-11137156-072518-AG-010	Total/NA	Solid	6010C	427017
480-139508-11	SO-11137156-072518-AG-011	Total/NA	Solid	6010C	427017
480-139508-12	SO-11137156-072518-AG-012	Total/NA	Solid	6010C	427017
MB 480-427017/1-A	Method Blank	Total/NA	Solid	6010C	427017
LCSSRM 480-427017/2-A	Lab Control Sample	Total/NA	Solid	6010C	427017

### Prep Batch: 427564

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139508-1	SO-11137156-072518-AG-001	Total/NA	Solid	3050B	
480-139508-2	SO-11137156-072518-AG-002	Total/NA	Solid	3050B	
480-139508-8	SO-11137156-072518-AG-008	Total/NA	Solid	3050B	
MB 480-427564/1-A	Method Blank	Total/NA	Solid	3050B	
LCSSRM 480-427564/2-A	Lab Control Sample	Total/NA	Solid	3050B	

### Analysis Batch: 428155

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139508-1	SO-11137156-072518-AG-001	Total/NA	Solid	6010C	427564
480-139508-2	SO-11137156-072518-AG-002	Total/NA	Solid	6010C	427564
480-139508-8	SO-11137156-072518-AG-008	Total/NA	Solid	6010C	427564
MB 480-427564/1-A	Method Blank	Total/NA	Solid	6010C	427564
LCSSRM 480-427564/2-A	Lab Control Sample	Total/NA	Solid	6010C	427564

### Analysis Batch: 428452

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139508-3	SO-11137156-072518-AG-003	Total/NA	Solid	7471B	428703
480-139508-4	SO-11137156-072518-AG-004	Total/NA	Solid	7471B	428703
480-139508-9	SO-11137156-072518-AG-009	Total/NA	Solid	7471B	428703
480-139508-11	SO-11137156-072518-AG-011	Total/NA	Solid	7471B	428703
480-139508-12	SO-11137156-072518-AG-012	Total/NA	Solid	7471B	428703
MB 480-428703/1-A	Method Blank	Total/NA	Solid	7471B	428703
LCSSRM 480-428703/2-A	Lab Control Sample	Total/NA	Solid	7471B	428703
480-139508-12 MS	SO-11137156-072518-AG-012	Total/NA	Solid	7471B	428703
480-139508-12 MSD	SO-11137156-072518-AG-012	Total/NA	Solid	7471B	428703

### Prep Batch: 428703

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139508-3	SO-11137156-072518-AG-003	Total/NA	Solid	7471B	
480-139508-4	SO-11137156-072518-AG-004	Total/NA	Solid	7471B	
480-139508-9	SO-11137156-072518-AG-009	Total/NA	Solid	7471B	
480-139508-11	SO-11137156-072518-AG-011	Total/NA	Solid	7471B	
480-139508-12	SO-11137156-072518-AG-012	Total/NA	Solid	7471B	
MB 480-428703/1-A	Method Blank	Total/NA	Solid	7471B	
LCSSRM 480-428703/2-A	Lab Control Sample	Total/NA	Solid	7471B	

TestAmerica Buffalo

# QC Association Summary

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

## Metals (Continued)

### Prep Batch: 428703 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139508-12 MS	SO-11137156-072518-AG-012	Total/NA	Solid	7471B	
480-139508-12 MSD	SO-11137156-072518-AG-012	Total/NA	Solid	7471B	

### Prep Batch: 429601

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 480-429601/1-A	Method Blank	Total/NA	Solid	7471B	

### Analysis Batch: 429632

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 480-429601/1-A	Method Blank	Total/NA	Solid	7471B	429601

### Prep Batch: 429923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139508-1	SO-11137156-072518-AG-001	Total/NA	Solid	7471B	
480-139508-2	SO-11137156-072518-AG-002	Total/NA	Solid	7471B	
480-139508-5	SO-11137156-072518-AG-005	Total/NA	Solid	7471B	
480-139508-6	SO-11137156-072518-AG-006	Total/NA	Solid	7471B	
480-139508-7	SO-11137156-072518-AG-007	Total/NA	Solid	7471B	
480-139508-8	SO-11137156-072518-AG-008	Total/NA	Solid	7471B	
480-139508-10	SO-11137156-072518-AG-010	Total/NA	Solid	7471B	
MB 480-429923/1-A	Method Blank	Total/NA	Solid	7471B	
LCSSRM 480-429923/2-A ^1	Lab Control Sample	Total/NA	Solid	7471B	
480-139508-10 MS	SO-11137156-072518-AG-010	Total/NA	Solid	7471B	
480-139508-10 MSD	SO-11137156-072518-AG-010	Total/NA	Solid	7471B	

### Analysis Batch: 430090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139508-1	SO-11137156-072518-AG-001	Total/NA	Solid	7471B	429923
480-139508-2	SO-11137156-072518-AG-002	Total/NA	Solid	7471B	429923
480-139508-5	SO-11137156-072518-AG-005	Total/NA	Solid	7471B	429923
480-139508-6	SO-11137156-072518-AG-006	Total/NA	Solid	7471B	429923
480-139508-7	SO-11137156-072518-AG-007	Total/NA	Solid	7471B	429923
480-139508-8	SO-11137156-072518-AG-008	Total/NA	Solid	7471B	429923
480-139508-10	SO-11137156-072518-AG-010	Total/NA	Solid	7471B	429923
MB 480-429923/1-A	Method Blank	Total/NA	Solid	7471B	429923
LCSSRM 480-429923/2-A ^1	Lab Control Sample	Total/NA	Solid	7471B	429923
480-139508-10 MS	SO-11137156-072518-AG-010	Total/NA	Solid	7471B	429923
480-139508-10 MSD	SO-11137156-072518-AG-010	Total/NA	Solid	7471B	429923

### Analysis Batch: 430204

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 480-429601/1-A	Method Blank	Total/NA	Solid	7471B	429601

## General Chemistry

### Analysis Batch: 426909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139508-1	SO-11137156-072518-AG-001	Total/NA	Solid	Moisture	
480-139508-2	SO-11137156-072518-AG-002	Total/NA	Solid	Moisture	
480-139508-3	SO-11137156-072518-AG-003	Total/NA	Solid	Moisture	

TestAmerica Buffalo

# QC Association Summary

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

## General Chemistry (Continued)

### Analysis Batch: 426909 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139508-4	SO-11137156-072518-AG-004	Total/NA	Solid	Moisture	
480-139508-5	SO-11137156-072518-AG-005	Total/NA	Solid	Moisture	
480-139508-6	SO-11137156-072518-AG-006	Total/NA	Solid	Moisture	
480-139508-7	SO-11137156-072518-AG-007	Total/NA	Solid	Moisture	
480-139508-8	SO-11137156-072518-AG-008	Total/NA	Solid	Moisture	
480-139508-9	SO-11137156-072518-AG-009	Total/NA	Solid	Moisture	
480-139508-10	SO-11137156-072518-AG-010	Total/NA	Solid	Moisture	
480-139508-11	SO-11137156-072518-AG-011	Total/NA	Solid	Moisture	
480-139508-12	SO-11137156-072518-AG-012	Total/NA	Solid	Moisture	

### Analysis Batch: 431635

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139508-1	SO-11137156-072518-AG-001	Total/NA	Solid	SM 3500 CR D	
480-139508-2	SO-11137156-072518-AG-002	Total/NA	Solid	SM 3500 CR D	
480-139508-3	SO-11137156-072518-AG-003	Total/NA	Solid	SM 3500 CR D	
480-139508-4	SO-11137156-072518-AG-004	Total/NA	Solid	SM 3500 CR D	
480-139508-5	SO-11137156-072518-AG-005	Total/NA	Solid	SM 3500 CR D	
480-139508-6	SO-11137156-072518-AG-006	Total/NA	Solid	SM 3500 CR D	
480-139508-7	SO-11137156-072518-AG-007	Total/NA	Solid	SM 3500 CR D	
480-139508-8	SO-11137156-072518-AG-008	Total/NA	Solid	SM 3500 CR D	
480-139508-9	SO-11137156-072518-AG-009	Total/NA	Solid	SM 3500 CR D	
480-139508-10	SO-11137156-072518-AG-010	Total/NA	Solid	SM 3500 CR D	
480-139508-11	SO-11137156-072518-AG-011	Total/NA	Solid	SM 3500 CR D	
480-139508-12	SO-11137156-072518-AG-012	Total/NA	Solid	SM 3500 CR D	

### Prep Batch: 546843

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139508-1	SO-11137156-072518-AG-001	Total/NA	Solid	3060A	
480-139508-2	SO-11137156-072518-AG-002	Total/NA	Solid	3060A	
480-139508-3	SO-11137156-072518-AG-003	Total/NA	Solid	3060A	
480-139508-4	SO-11137156-072518-AG-004	Total/NA	Solid	3060A	
480-139508-5	SO-11137156-072518-AG-005	Total/NA	Solid	3060A	
480-139508-6	SO-11137156-072518-AG-006	Total/NA	Solid	3060A	
480-139508-7	SO-11137156-072518-AG-007	Total/NA	Solid	3060A	
480-139508-8	SO-11137156-072518-AG-008	Total/NA	Solid	3060A	
480-139508-9	SO-11137156-072518-AG-009	Total/NA	Solid	3060A	
480-139508-10	SO-11137156-072518-AG-010	Total/NA	Solid	3060A	
480-139508-11	SO-11137156-072518-AG-011	Total/NA	Solid	3060A	
480-139508-12	SO-11137156-072518-AG-012	Total/NA	Solid	3060A	
MB 460-546843/1-A	Method Blank	Total/NA	Solid	3060A	
LCSI 460-546843/3-A	Lab Control Sample	Total/NA	Solid	3060A	
LCSRM 460-546843/2-A	Lab Control Sample	Total/NA	Solid	3060A	

### Analysis Batch: 547343

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139508-1	SO-11137156-072518-AG-001	Total/NA	Solid	7196A	546843
480-139508-2	SO-11137156-072518-AG-002	Total/NA	Solid	7196A	546843
480-139508-3	SO-11137156-072518-AG-003	Total/NA	Solid	7196A	546843
480-139508-4	SO-11137156-072518-AG-004	Total/NA	Solid	7196A	546843
480-139508-5	SO-11137156-072518-AG-005	Total/NA	Solid	7196A	546843
480-139508-6	SO-11137156-072518-AG-006	Total/NA	Solid	7196A	546843

TestAmerica Buffalo

# QC Association Summary

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

## General Chemistry (Continued)

### Analysis Batch: 547343 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139508-7	SO-11137156-072518-AG-007	Total/NA	Solid	7196A	546843
480-139508-8	SO-11137156-072518-AG-008	Total/NA	Solid	7196A	546843
480-139508-9	SO-11137156-072518-AG-009	Total/NA	Solid	7196A	546843
480-139508-10	SO-11137156-072518-AG-010	Total/NA	Solid	7196A	546843
480-139508-11	SO-11137156-072518-AG-011	Total/NA	Solid	7196A	546843
480-139508-12	SO-11137156-072518-AG-012	Total/NA	Solid	7196A	546843
MB 460-546843/1-A	Method Blank	Total/NA	Solid	7196A	546843
LCSI 460-546843/3-A	Lab Control Sample	Total/NA	Solid	7196A	546843
LCSSRM 460-546843/2-A	Lab Control Sample	Total/NA	Solid	7196A	546843

# Lab Chronicle

Client: GHD Services Inc.  
 Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-001**

**Lab Sample ID: 480-139508-1**

**Date Collected: 07/25/18 09:35**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	426909	07/28/18 15:01	MDH	TAL BUF
Total/NA	Analysis	SM 3500 CR D		1	431635	08/27/18 16:26	JJP	TAL BUF

**Client Sample ID: SO-11137156-072518-AG-001**

**Lab Sample ID: 480-139508-1**

**Date Collected: 07/25/18 09:35**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 78.3**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			427455	07/25/18 18:00	CDC	TAL BUF
Total/NA	Analysis	8260C		1	427470	08/01/18 15:35	AEM	TAL BUF
Total/NA	Prep	3550C			427851	08/03/18 06:56	SMP	TAL BUF
Total/NA	Analysis	8270D		1	429505	08/14/18 16:23	PJQ	TAL BUF
Total/NA	Prep	3550C			427415	08/01/18 06:48	SMP	TAL BUF
Total/NA	Analysis	8081B		1	427713	08/02/18 14:12	JLS	TAL BUF
Total/NA	Prep	3550C			427174	07/31/18 07:45	RLT	TAL BUF
Total/NA	Analysis	8082A		1	427240	07/31/18 23:11	W1T	TAL BUF
Total/NA	Prep	8151A			427668	08/02/18 07:55	RLT	TAL BUF
Total/NA	Analysis	8151A		1	428706	08/08/18 22:30	GSR	TAL BUF
Total/NA	Prep	3050B			427564	08/02/18 09:30	KMP	TAL BUF
Total/NA	Analysis	6010C		1	428155	08/03/18 14:25	LMH	TAL BUF
Total/NA	Prep	3050B			427017	07/30/18 11:20	KMP	TAL BUF
Total/NA	Analysis	6010C		1	427466	07/31/18 18:25	AMH	TAL BUF
Total/NA	Prep	7471B			429923	08/16/18 11:35	VEG	TAL BUF
Total/NA	Analysis	7471B		1	430090	08/16/18 13:29	BMB	TAL BUF
Total/NA	Prep	3060A			546843	08/23/18 15:45	MBE	TAL EDI
Total/NA	Analysis	7196A		1	547343	08/24/18 05:20	KYN	TAL EDI

**Client Sample ID: SO-11137156-072518-AG-002**

**Lab Sample ID: 480-139508-2**

**Date Collected: 07/25/18 09:50**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	426909	07/28/18 15:01	MDH	TAL BUF
Total/NA	Analysis	SM 3500 CR D		1	431635	08/27/18 16:26	JJP	TAL BUF

**Client Sample ID: SO-11137156-072518-AG-002**

**Lab Sample ID: 480-139508-2**

**Date Collected: 07/25/18 09:50**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 83.3**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			427455	07/25/18 18:00	CDC	TAL BUF
Total/NA	Analysis	8260C		1	427470	08/01/18 16:01	AEM	TAL BUF

TestAmerica Buffalo

# Lab Chronicle

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-002**

**Lab Sample ID: 480-139508-2**

**Date Collected: 07/25/18 09:50**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 83.3**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C			427851	08/03/18 06:56	SMP	TAL BUF
Total/NA	Analysis	8270D		1	429505	08/14/18 16:51	PJQ	TAL BUF
Total/NA	Prep	3550C			427415	08/01/18 06:48	SMP	TAL BUF
Total/NA	Analysis	8081B		1	427713	08/02/18 15:30	JLS	TAL BUF
Total/NA	Prep	3550C			427174	07/31/18 07:45	RLT	TAL BUF
Total/NA	Analysis	8082A		1	427240	07/31/18 23:27	W1T	TAL BUF
Total/NA	Prep	8151A			427668	08/02/18 07:55	RLT	TAL BUF
Total/NA	Analysis	8151A		1	428706	08/08/18 23:00	GSR	TAL BUF
Total/NA	Prep	3050B			427564	08/02/18 09:30	KMP	TAL BUF
Total/NA	Analysis	6010C		1	428155	08/03/18 14:29	LMH	TAL BUF
Total/NA	Prep	3050B			427017	07/30/18 11:20	KMP	TAL BUF
Total/NA	Analysis	6010C		1	427466	07/31/18 18:28	AMH	TAL BUF
Total/NA	Prep	7471B			429923	08/16/18 11:35	VEG	TAL BUF
Total/NA	Analysis	7471B		1	430090	08/16/18 13:31	BMB	TAL BUF
Total/NA	Prep	3060A			546843	08/23/18 15:45	MBE	TAL EDI
Total/NA	Analysis	7196A		1	547343	08/24/18 05:20	KYN	TAL EDI

**Client Sample ID: SO-11137156-072518-AG-003**

**Lab Sample ID: 480-139508-3**

**Date Collected: 07/25/18 10:20**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	426909	07/28/18 15:01	MDH	TAL BUF
Total/NA	Analysis	SM 3500 CR D		1	431635	08/27/18 16:26	JJP	TAL BUF

**Client Sample ID: SO-11137156-072518-AG-003**

**Lab Sample ID: 480-139508-3**

**Date Collected: 07/25/18 10:20**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 87.0**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			427455	07/25/18 18:00	CDC	TAL BUF
Total/NA	Analysis	8260C		1	427470	08/01/18 16:26	AEM	TAL BUF
Total/NA	Prep	3550C			427851	08/03/18 06:56	SMP	TAL BUF
Total/NA	Analysis	8270D		1	429505	08/14/18 17:19	PJQ	TAL BUF
Total/NA	Prep	3550C			427415	08/01/18 06:48	SMP	TAL BUF
Total/NA	Analysis	8081B		1	427713	08/02/18 15:50	JLS	TAL BUF
Total/NA	Prep	3550C			427174	07/31/18 07:45	RLT	TAL BUF
Total/NA	Analysis	8082A		1	427240	07/31/18 23:43	W1T	TAL BUF
Total/NA	Prep	8151A			427668	08/02/18 07:55	RLT	TAL BUF
Total/NA	Analysis	8151A		1	428706	08/08/18 22:00	GSR	TAL BUF
Total/NA	Prep	3050B			427017	07/30/18 11:20	KMP	TAL BUF
Total/NA	Analysis	6010C		1	427466	07/31/18 18:32	AMH	TAL BUF
Total/NA	Prep	7471B			428703	08/04/18 12:40	CLA	TAL BUF

TestAmerica Buffalo



# Lab Chronicle

Client: GHD Services Inc.  
 Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-003**

**Lab Sample ID: 480-139508-3**

**Date Collected: 07/25/18 10:20**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 87.0**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7471B		1	428452	08/04/18 19:46	CLA	TAL BUF
Total/NA	Prep	3060A			546843	08/23/18 15:45	MBE	TAL EDI
Total/NA	Analysis	7196A		1	547343	08/24/18 05:20	KYN	TAL EDI

**Client Sample ID: SO-11137156-072518-AG-004**

**Lab Sample ID: 480-139508-4**

**Date Collected: 07/25/18 10:45**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	426909	07/28/18 15:01	MDH	TAL BUF
Total/NA	Analysis	SM 3500 CR D		1	431635	08/27/18 16:26	JJP	TAL BUF

**Client Sample ID: SO-11137156-072518-AG-004**

**Lab Sample ID: 480-139508-4**

**Date Collected: 07/25/18 10:45**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 89.3**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			427455	07/25/18 18:00	CDC	TAL BUF
Total/NA	Analysis	8260C		1	427470	08/01/18 16:52	AEM	TAL BUF
Total/NA	Prep	3550C			427851	08/03/18 06:56	SMP	TAL BUF
Total/NA	Analysis	8270D		1	429505	08/14/18 17:47	PJQ	TAL BUF
Total/NA	Prep	3550C			427415	08/01/18 06:48	SMP	TAL BUF
Total/NA	Analysis	8081B		1	427713	08/02/18 16:09	JLS	TAL BUF
Total/NA	Prep	3550C			427174	07/31/18 07:45	RLT	TAL BUF
Total/NA	Analysis	8082A		1	427240	07/31/18 23:59	W1T	TAL BUF
Total/NA	Prep	8151A			427668	08/02/18 07:55	RLT	TAL BUF
Total/NA	Analysis	8151A		1	428706	08/08/18 23:30	GSR	TAL BUF
Total/NA	Prep	3050B			427017	07/30/18 11:20	KMP	TAL BUF
Total/NA	Analysis	6010C		1	427466	07/31/18 18:35	AMH	TAL BUF
Total/NA	Prep	7471B			428703	08/04/18 12:40	CLA	TAL BUF
Total/NA	Analysis	7471B		1	428452	08/04/18 19:47	CLA	TAL BUF
Total/NA	Prep	3060A			546843	08/23/18 15:45	MBE	TAL EDI
Total/NA	Analysis	7196A		1	547343	08/24/18 05:20	KYN	TAL EDI

**Client Sample ID: SO-11137156-072518-AG-005**

**Lab Sample ID: 480-139508-5**

**Date Collected: 07/25/18 11:00**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	426909	07/28/18 15:01	MDH	TAL BUF
Total/NA	Analysis	SM 3500 CR D		1	431635	08/27/18 16:26	JJP	TAL BUF

TestAmerica Buffalo

# Lab Chronicle

Client: GHD Services Inc.  
 Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-005**

**Lab Sample ID: 480-139508-5**

**Date Collected: 07/25/18 11:00**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 94.8**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			427455	07/25/18 18:00	CDC	TAL BUF
Total/NA	Analysis	8260C		1	427470	08/01/18 17:18	AEM	TAL BUF
Total/NA	Prep	3550C			427851	08/03/18 06:56	SMP	TAL BUF
Total/NA	Analysis	8270D		1	429505	08/14/18 18:14	PJQ	TAL BUF
Total/NA	Prep	3550C			427415	08/01/18 06:48	SMP	TAL BUF
Total/NA	Analysis	8081B		1	427713	08/02/18 16:29	JLS	TAL BUF
Total/NA	Prep	3550C			427174	07/31/18 07:45	RLT	TAL BUF
Total/NA	Analysis	8082A		1	427240	08/01/18 00:15	W1T	TAL BUF
Total/NA	Prep	8151A			427668	08/02/18 07:55	RLT	TAL BUF
Total/NA	Analysis	8151A		1	428706	08/09/18 00:00	GSR	TAL BUF
Total/NA	Prep	3050B			427017	07/30/18 11:20	KMP	TAL BUF
Total/NA	Analysis	6010C		1	427466	07/31/18 18:39	AMH	TAL BUF
Total/NA	Prep	7471B			429923	08/16/18 11:35	VEG	TAL BUF
Total/NA	Analysis	7471B		1	430090	08/16/18 13:32	BMB	TAL BUF
Total/NA	Prep	3060A			546843	08/23/18 15:45	MBE	TAL EDI
Total/NA	Analysis	7196A		1	547343	08/24/18 05:20	KYN	TAL EDI

**Client Sample ID: SO-11137156-072518-AG-006**

**Lab Sample ID: 480-139508-6**

**Date Collected: 07/25/18 11:20**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	426909	07/28/18 15:01	MDH	TAL BUF
Total/NA	Analysis	SM 3500 CR D		1	431635	08/27/18 16:26	JJP	TAL BUF

**Client Sample ID: SO-11137156-072518-AG-006**

**Lab Sample ID: 480-139508-6**

**Date Collected: 07/25/18 11:20**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 88.6**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			427455	07/25/18 18:00	CDC	TAL BUF
Total/NA	Analysis	8260C		1	427470	08/01/18 17:43	AEM	TAL BUF
Total/NA	Prep	3550C			427851	08/03/18 06:56	SMP	TAL BUF
Total/NA	Analysis	8270D		1	429505	08/14/18 18:42	PJQ	TAL BUF
Total/NA	Prep	3550C			427415	08/01/18 06:48	SMP	TAL BUF
Total/NA	Analysis	8081B		1	427713	08/02/18 16:48	JLS	TAL BUF
Total/NA	Prep	3550C			427174	07/31/18 07:45	RLT	TAL BUF
Total/NA	Analysis	8082A		1	427240	08/01/18 00:31	W1T	TAL BUF
Total/NA	Prep	8151A			427668	08/02/18 07:55	RLT	TAL BUF
Total/NA	Analysis	8151A		1	428706	08/09/18 00:30	GSR	TAL BUF
Total/NA	Prep	3050B			427017	07/30/18 11:20	KMP	TAL BUF
Total/NA	Analysis	6010C		1	427466	07/31/18 18:42	AMH	TAL BUF
Total/NA	Prep	7471B			429923	08/16/18 11:35	VEG	TAL BUF

TestAmerica Buffalo

# Lab Chronicle

Client: GHD Services Inc.  
 Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-006**

**Lab Sample ID: 480-139508-6**

**Date Collected: 07/25/18 11:20**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 88.6**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7471B		1	430090	08/16/18 13:34	BMB	TAL BUF
Total/NA	Prep	3060A			546843	08/23/18 15:45	MBE	TAL EDI
Total/NA	Analysis	7196A		1	547343	08/24/18 05:20	KYN	TAL EDI

**Client Sample ID: SO-11137156-072518-AG-007**

**Lab Sample ID: 480-139508-7**

**Date Collected: 07/25/18 11:45**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	426909	07/28/18 15:01	MDH	TAL BUF
Total/NA	Analysis	SM 3500 CR D		1	431635	08/27/18 16:26	JJP	TAL BUF

**Client Sample ID: SO-11137156-072518-AG-007**

**Lab Sample ID: 480-139508-7**

**Date Collected: 07/25/18 11:45**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 92.9**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			427455	07/25/18 18:00	CDC	TAL BUF
Total/NA	Analysis	8260C		1	427470	08/01/18 18:09	AEM	TAL BUF
Total/NA	Prep	3550C			427851	08/03/18 06:56	SMP	TAL BUF
Total/NA	Analysis	8270D		1	429505	08/14/18 19:10	PJQ	TAL BUF
Total/NA	Prep	3550C			427415	08/01/18 06:48	SMP	TAL BUF
Total/NA	Analysis	8081B		1	427713	08/02/18 17:08	JLS	TAL BUF
Total/NA	Prep	3550C			427174	07/31/18 07:45	RLT	TAL BUF
Total/NA	Analysis	8082A		1	427240	08/01/18 00:47	W1T	TAL BUF
Total/NA	Prep	8151A			427668	08/02/18 07:55	RLT	TAL BUF
Total/NA	Analysis	8151A		1	428706	08/09/18 01:29	GSR	TAL BUF
Total/NA	Prep	3050B			427017	07/30/18 11:20	KMP	TAL BUF
Total/NA	Analysis	6010C		1	427466	07/31/18 18:46	AMH	TAL BUF
Total/NA	Prep	7471B			429923	08/16/18 11:35	VEG	TAL BUF
Total/NA	Analysis	7471B		1	430090	08/16/18 13:35	BMB	TAL BUF
Total/NA	Prep	3060A			546843	08/23/18 15:45	MBE	TAL EDI
Total/NA	Analysis	7196A		1	547343	08/24/18 05:20	KYN	TAL EDI

**Client Sample ID: SO-11137156-072518-AG-008**

**Lab Sample ID: 480-139508-8**

**Date Collected: 07/25/18 12:20**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	426909	07/28/18 15:01	MDH	TAL BUF
Total/NA	Analysis	SM 3500 CR D		1	431635	08/27/18 16:26	JJP	TAL BUF

TestAmerica Buffalo

# Lab Chronicle

Client: GHD Services Inc.  
 Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-008**

**Lab Sample ID: 480-139508-8**

**Date Collected: 07/25/18 12:20**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 86.9**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			427455	07/25/18 18:00	CDC	TAL BUF
Total/NA	Analysis	8260C		1	427470	08/01/18 18:35	AEM	TAL BUF
Total/NA	Prep	3550C			427851	08/03/18 06:56	SMP	TAL BUF
Total/NA	Analysis	8270D		1	429505	08/14/18 19:38	PJQ	TAL BUF
Total/NA	Prep	3550C			427415	08/01/18 06:48	SMP	TAL BUF
Total/NA	Analysis	8081B		1	427713	08/02/18 17:28	JLS	TAL BUF
Total/NA	Prep	3550C			427174	07/31/18 07:45	RLT	TAL BUF
Total/NA	Analysis	8082A		1	427240	08/01/18 01:03	W1T	TAL BUF
Total/NA	Prep	8151A			427668	08/02/18 07:55	RLT	TAL BUF
Total/NA	Analysis	8151A		1	428706	08/09/18 01:59	GSR	TAL BUF
Total/NA	Prep	3050B			427564	08/02/18 09:30	KMP	TAL BUF
Total/NA	Analysis	6010C		1	428155	08/03/18 14:33	LMH	TAL BUF
Total/NA	Prep	3050B			427017	07/30/18 11:20	KMP	TAL BUF
Total/NA	Analysis	6010C		1	427466	07/31/18 18:49	AMH	TAL BUF
Total/NA	Prep	7471B			429923	08/16/18 11:35	VEG	TAL BUF
Total/NA	Analysis	7471B		1	430090	08/16/18 13:37	BMB	TAL BUF
Total/NA	Prep	3060A			546843	08/23/18 17:44	MBE	TAL EDI
Total/NA	Analysis	7196A		1	547343	08/24/18 05:20	KYN	TAL EDI

**Client Sample ID: SO-11137156-072518-AG-009**

**Lab Sample ID: 480-139508-9**

**Date Collected: 07/25/18 12:40**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	426909	07/28/18 15:01	MDH	TAL BUF
Total/NA	Analysis	SM 3500 CR D		1	431635	08/27/18 16:26	JJP	TAL BUF

**Client Sample ID: SO-11137156-072518-AG-009**

**Lab Sample ID: 480-139508-9**

**Date Collected: 07/25/18 12:40**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 92.7**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			427455	07/25/18 18:00	CDC	TAL BUF
Total/NA	Analysis	8260C		1	427470	08/01/18 19:01	AEM	TAL BUF
Total/NA	Prep	3550C			427851	08/03/18 06:56	SMP	TAL BUF
Total/NA	Analysis	8270D		1	429505	08/14/18 20:06	PJQ	TAL BUF
Total/NA	Prep	3550C			427415	08/01/18 06:48	SMP	TAL BUF
Total/NA	Analysis	8081B		1	427713	08/02/18 17:47	JLS	TAL BUF
Total/NA	Prep	3550C			427174	07/31/18 07:45	RLT	TAL BUF
Total/NA	Analysis	8082A		1	427240	08/01/18 01:19	W1T	TAL BUF
Total/NA	Prep	8151A			427668	08/02/18 07:55	RLT	TAL BUF
Total/NA	Analysis	8151A		1	428706	08/09/18 02:29	GSR	TAL BUF
Total/NA	Prep	3050B			427017	07/30/18 11:20	KMP	TAL BUF

TestAmerica Buffalo

# Lab Chronicle

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-009**

**Lab Sample ID: 480-139508-9**

**Date Collected: 07/25/18 12:40**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 92.7**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	6010C		1	427466	07/31/18 19:07	AMH	TAL BUF
Total/NA	Prep	7471B			428703	08/04/18 12:40	CLA	TAL BUF
Total/NA	Analysis	7471B		1	428452	08/04/18 19:55	CLA	TAL BUF
Total/NA	Prep	3060A			546843	08/23/18 17:44	MBE	TAL EDI
Total/NA	Analysis	7196A		1	547343	08/24/18 05:20	KYN	TAL EDI

**Client Sample ID: SO-11137156-072518-AG-010**

**Lab Sample ID: 480-139508-10**

**Date Collected: 07/25/18 13:00**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	426909	07/28/18 15:01	MDH	TAL BUF
Total/NA	Analysis	SM 3500 CR D		1	431635	08/27/18 16:26	JJP	TAL BUF

**Client Sample ID: SO-11137156-072518-AG-010**

**Lab Sample ID: 480-139508-10**

**Date Collected: 07/25/18 13:00**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 91.3**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			427455	07/25/18 18:00	CDC	TAL BUF
Total/NA	Analysis	8260C		1	427637	08/01/18 23:58	CDC	TAL BUF
Total/NA	Prep	3550C			427851	08/03/18 06:56	SMP	TAL BUF
Total/NA	Analysis	8270D		1	429505	08/14/18 20:34	PJQ	TAL BUF
Total/NA	Prep	3550C			427415	08/01/18 06:48	SMP	TAL BUF
Total/NA	Analysis	8081B		1	427713	08/02/18 18:07	JLS	TAL BUF
Total/NA	Prep	3550C			427174	07/31/18 07:45	RLT	TAL BUF
Total/NA	Analysis	8082A		1	427240	08/01/18 01:35	W1T	TAL BUF
Total/NA	Prep	8151A			427668	08/02/18 07:55	RLT	TAL BUF
Total/NA	Analysis	8151A		1	428706	08/09/18 02:59	GSR	TAL BUF
Total/NA	Prep	3050B			427017	07/30/18 11:20	KMP	TAL BUF
Total/NA	Analysis	6010C		1	427466	07/31/18 19:11	AMH	TAL BUF
Total/NA	Prep	7471B			429923	08/16/18 11:35	VEG	TAL BUF
Total/NA	Analysis	7471B		1	430090	08/16/18 13:38	BMB	TAL BUF
Total/NA	Prep	3060A			546843	08/23/18 17:44	MBE	TAL EDI
Total/NA	Analysis	7196A		1	547343	08/24/18 05:20	KYN	TAL EDI

**Client Sample ID: SO-11137156-072518-AG-011**

**Lab Sample ID: 480-139508-11**

**Date Collected: 07/25/18 13:10**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	426909	07/28/18 15:01	MDH	TAL BUF
Total/NA	Analysis	SM 3500 CR D		1	431635	08/27/18 16:26	JJP	TAL BUF

TestAmerica Buffalo

# Lab Chronicle

Client: GHD Services Inc.  
 Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-011**

**Lab Sample ID: 480-139508-11**

**Date Collected: 07/25/18 13:10**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 89.6**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			427455	07/25/18 18:00	CDC	TAL BUF
Total/NA	Analysis	8260C		1	427637	08/02/18 00:24	CDC	TAL BUF
Total/NA	Prep	3550C			427851	08/03/18 06:56	SMP	TAL BUF
Total/NA	Analysis	8270D		1	429505	08/14/18 21:03	PJQ	TAL BUF
Total/NA	Prep	3550C			427415	08/01/18 06:48	SMP	TAL BUF
Total/NA	Analysis	8081B		1	427713	08/02/18 18:26	JLS	TAL BUF
Total/NA	Prep	3550C			427174	07/31/18 07:45	RLT	TAL BUF
Total/NA	Analysis	8082A		1	427240	08/01/18 01:51	W1T	TAL BUF
Total/NA	Prep	8151A			427668	08/02/18 07:55	RLT	TAL BUF
Total/NA	Analysis	8151A		1	428706	08/09/18 03:29	GSR	TAL BUF
Total/NA	Prep	3050B			427017	07/30/18 11:20	KMP	TAL BUF
Total/NA	Analysis	6010C		1	427466	07/31/18 19:15	AMH	TAL BUF
Total/NA	Prep	7471B			428703	08/04/18 12:40	CLA	TAL BUF
Total/NA	Analysis	7471B		1	428452	08/04/18 20:01	CLA	TAL BUF
Total/NA	Prep	3060A			546843	08/23/18 17:44	MBE	TAL EDI
Total/NA	Analysis	7196A		1	547343	08/24/18 05:20	KYN	TAL EDI

**Client Sample ID: SO-11137156-072518-AG-012**

**Lab Sample ID: 480-139508-12**

**Date Collected: 07/25/18 13:25**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	426909	07/28/18 15:01	MDH	TAL BUF
Total/NA	Analysis	SM 3500 CR D		1	431635	08/27/18 16:26	JJP	TAL BUF

**Client Sample ID: SO-11137156-072518-AG-012**

**Lab Sample ID: 480-139508-12**

**Date Collected: 07/25/18 13:25**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 94.8**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			427455	07/25/18 18:00	CDC	TAL BUF
Total/NA	Analysis	8260C		1	427637	08/02/18 00:49	CDC	TAL BUF
Total/NA	Prep	3550C			427851	08/03/18 06:56	SMP	TAL BUF
Total/NA	Analysis	8270D		1	429505	08/14/18 21:31	PJQ	TAL BUF
Total/NA	Prep	3550C			427415	08/01/18 06:48	SMP	TAL BUF
Total/NA	Analysis	8081B		1	427713	08/02/18 18:46	JLS	TAL BUF
Total/NA	Prep	3550C			427174	07/31/18 07:45	RLT	TAL BUF
Total/NA	Analysis	8082A		1	427240	08/01/18 02:07	W1T	TAL BUF
Total/NA	Prep	8151A			427668	08/02/18 07:55	RLT	TAL BUF
Total/NA	Analysis	8151A		1	428706	08/09/18 03:59	GSR	TAL BUF
Total/NA	Prep	3050B			427017	07/30/18 11:20	KMP	TAL BUF
Total/NA	Analysis	6010C		1	427466	07/31/18 19:18	AMH	TAL BUF
Total/NA	Prep	7471B			428703	08/04/18 12:40	CLA	TAL BUF

TestAmerica Buffalo

# Lab Chronicle

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

**Client Sample ID: SO-11137156-072518-AG-012**

**Lab Sample ID: 480-139508-12**

**Date Collected: 07/25/18 13:25**

**Matrix: Solid**

**Date Received: 07/25/18 16:40**

**Percent Solids: 94.8**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7471B		1	428452	08/04/18 20:02	CLA	TAL BUF
Total/NA	Prep	3060A			546843	08/23/18 17:45	MBE	TAL EDI
Total/NA	Analysis	7196A		1	547343	08/24/18 05:20	KYN	TAL EDI

#### Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL EDI = TestAmerica Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

# Accreditation/Certification Summary

Client: GHD Services Inc.  
 Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

## Laboratory: TestAmerica Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-19

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids
SM 3500 CR D		Solid	Trivalent Chromium

## Laboratory: TestAmerica Edison

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Connecticut	State Program	1	PH-0200	09-30-18
DE Haz. Subst. Cleanup Act (HSCA)	State Program	3	N/A	12-31-18
New Jersey	NELAP	2	12028	06-30-19
New York	NELAP	2	11452	04-01-19
Pennsylvania	NELAP	3	68-00522	02-28-19
Rhode Island	State Program	1	LAO00132	12-30-18
USDA	Federal		NJCA-003-08	06-13-20



# Method Summary

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL BUF
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL BUF
8081B	Organochlorine Pesticides (GC)	SW846	TAL BUF
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL BUF
8151A	Herbicides (GC)	SW846	TAL BUF
6010C	Metals (ICP)	SW846	TAL BUF
7471B	Mercury (CVAA)	SW846	TAL BUF
7196A	Chromium, Hexavalent	SW846	TAL EDI
Moisture	Percent Moisture	EPA	TAL BUF
SM 3500 CR D	Chromium, Trivalent	SM	TAL BUF
3050B	Preparation, Metals	SW846	TAL BUF
3060A	Alkaline Digestion (Chromium, Hexavalent)	SW846	TAL EDI
3550C	Ultrasonic Extraction	SW846	TAL BUF
5035A_L	Closed System Purge and Trap	SW846	TAL BUF
7471B	Preparation, Mercury	SW846	TAL BUF
8151A	Extraction (Herbicides)	SW846	TAL BUF

#### Protocol References:

EPA = US Environmental Protection Agency

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

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL EDI = TestAmerica Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

# Sample Summary

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-139508-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-139508-1	SO-11137156-072518-AG-001	Solid	07/25/18 09:35	07/25/18 16:40
480-139508-2	SO-11137156-072518-AG-002	Solid	07/25/18 09:50	07/25/18 16:40
480-139508-3	SO-11137156-072518-AG-003	Solid	07/25/18 10:20	07/25/18 16:40
480-139508-4	SO-11137156-072518-AG-004	Solid	07/25/18 10:45	07/25/18 16:40
480-139508-5	SO-11137156-072518-AG-005	Solid	07/25/18 11:00	07/25/18 16:40
480-139508-6	SO-11137156-072518-AG-006	Solid	07/25/18 11:20	07/25/18 16:40
480-139508-7	SO-11137156-072518-AG-007	Solid	07/25/18 11:45	07/25/18 16:40
480-139508-8	SO-11137156-072518-AG-008	Solid	07/25/18 12:20	07/25/18 16:40
480-139508-9	SO-11137156-072518-AG-009	Solid	07/25/18 12:40	07/25/18 16:40
480-139508-10	SO-11137156-072518-AG-010	Solid	07/25/18 13:00	07/25/18 16:40
480-139508-11	SO-11137156-072518-AG-011	Solid	07/25/18 13:10	07/25/18 16:40
480-139508-12	SO-11137156-072518-AG-012	Solid	07/25/18 13:25	07/25/18 16:40



**CHAIN OF CUSTODY RECORD** - Buffalo NY  
 COC NO.: 56119  
 Address: 285 Delaware Avenue, Suite 500  
 Phone: 716-856-2172  
 Page 1 of 1

Project No/ Phase/Task Code: 1137156-118  
 Project Name: Kayak Launch Site  
 Project Location: Lewiston, NY - Parks + Rec Park (Near River Road)  
 GHD Chemistry Contact: Kathleen Willy  
 Sampler(s): Alexandra Everhart Gearing

Laboratory Name: Test America Amherst  
 Lab Location: 10 Hazlewood Drive Amherst NY  
 Lab Contact:  
 Carrier: 18493/139508  
 Airbill No:  
 Total # of Containers:  
 Cooler No: 1+2

ANALYSIS REQUESTED (See Back of COC for Definitions)

Item	SAMPLE IDENTIFICATION		DATE (mm/dd/yyyy)	TIME (hh:mm)	Matrix Code	Grab (g) or Comp (c)	Filtered (Y/N)	ANALYSIS REQUESTED					Total Containers/sample	MS/MSD Request	
	Containers for each sample may be combined on one line.	Containers for each sample may be combined on one line.						VOCs	SVOCs	PCBs	Pesticides	Metals/Mercury			Herbicides
1	SD-1137156-072518-A6-001	17/25/18	9:35am	SO C				✓	✓	✓	✓	✓	✓	✓	480-139508 COC
2	SD-1137156-072518-A6-002	7/25/18	9:30am	SO C				✓	✓	✓	✓	✓	✓	✓	
3	" - " - " - " - 003	"	10:20am	C				✓	✓	✓	✓	✓	✓	✓	
4	" - " - " - " - 004	"	10:45am	C				✓	✓	✓	✓	✓	✓	✓	
5	" - " - " - " - 005	"	11:00am	C				✓	✓	✓	✓	✓	✓	✓	
6	" - " - " - " - 006	"	11:20am	C				✓	✓	✓	✓	✓	✓	✓	
7	" - " - " - " - 007	"	11:45am	C				✓	✓	✓	✓	✓	✓	✓	
8	" - " - " - " - 008	"	12:20pm	C				✓	✓	✓	✓	✓	✓	✓	
9	" - " - " - " - 009	"	12:40pm	C				✓	✓	✓	✓	✓	✓	✓	
10	" - " - " - " - 010	"	1:00pm	C				✓	✓	✓	✓	✓	✓	✓	
11	" - " - " - " - 011	"	1:10pm	C				✓	✓	✓	✓	✓	✓	✓	
12	" - " - " - " - 012	"	1:25pm	C				✓	✓	✓	✓	✓	✓	✓	

Notes/Special Requirements:

TAT Required in business days (use separate COCs for different TATs):  
 1 Day  2 Days  3 Days  1 Week  2 Week  Other, Standard

RELINQUISHED BY: Alexandra Everhart Gearing  
 COMPANY: GHD  
 DATE: 7/25/18  
 TIME: 1640

RECEIVED BY: [Signature]  
 COMPANY: FAB  
 DATE: 7/25/18  
 TIME: 1640

Distribution:  
 WHITE - Fully Executed Copy (CRA)  
 YELLOW - Receiving Laboratory Copy  
 PINK - Shipper  
 GOLDENROD - Sampling Crew

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT - ALL FIELDS MUST BE COMPLETED ACCURATELY  
 GHD Form: COC-10B (20110804)



**TestAmerica Buffalo**  
10 Hazelwood Drive  
Amherst, NY 14228-2298  
Phone (716) 691-2600 Fax (716) 691-7991

**Client Information (Sub Contract Lab)**

Client Contact: TestAmerica Laboratories, Inc.  
Shipping/Receiving  
Company: TestAmerica Laboratories, Inc.  
Address: 777 New Durham Road,  
City: Edison  
State: NJ, Zip: 08817  
Phone: 732-549-3900 (Tel) 732-549-3679 (Fax)  
Email: 111371566/118, Lewis/ton Kayak Launch Site  
Project Name: 111371566/118, Lewis/ton Kayak Launch Site  
Site: SSOV#:

Sampler: Lab P.M.: Devo, Melissa L  
Phone: E-Mail: melissa.devo@testamericainc.com  
Due Date Requested: 8/24/2018  
TAT Requested (days):  
Accreditations Required (See note): NELAP - New York

Carrier Tracking No(s):  
State of Origin: New York  
COC No: 480-44305-1  
Page: Page 1 of 2  
Job #: 480-139508-1

Analysis Requested

Sample ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	MATRIX (W=Water, S=solid, O=Oven-dried, BT=Tissue, Ash)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Analysis Requested	Total Number of containers	Special Instructions/Note:
SO-11137156-072518-AG-001 (480-139508-1)	7/25/18	09:35 Eastern		Solid	X	X	7196A/3060A Hexavalent Chromium	1	
SO-11137156-072518-AG-002 (480-139508-2)	7/25/18	09:50 Eastern		Solid	X	X		1	
SO-11137156-072518-AG-003 (480-139508-3)	7/25/18	10:20 Eastern		Solid	X	X		1	
SO-11137156-072518-AG-004 (480-139508-4)	7/25/18	10:45 Eastern		Solid	X	X		1	
SO-11137156-072518-AG-005 (480-139508-5)	7/25/18	11:00 Eastern		Solid	X	X		1	
SO-11137156-072518-AG-006 (480-139508-6)	7/25/18	11:20 Eastern		Solid	X	X		1	
SO-11137156-072518-AG-007 (480-139508-7)	7/25/18	11:45 Eastern		Solid	X	X		1	
SO-11137156-072518-AG-008 (480-139508-8)	7/25/18	12:20 Eastern		Solid	X	X		1	
SO-11137156-072518-AG-009 (480-139508-9)	7/25/18	12:40 Eastern		Solid	X	X		1	

Preservation Codes:  
A - HCl  
B - NaOH  
C - Zn Acetate  
D - Nitric Acid  
E - Nitric Acid  
F - MeOH  
G - Amchlor  
H - Ascorbic Acid  
I - Ice  
J - DI Water  
K - EDTA  
L - EDTA  
M - Hexane  
N - None  
O - AsnA2O2  
P - Na2O4S  
Q - Na2SO3  
R - Na2S2O3  
S - H2SO4  
T - TSP Dodecalhydrate  
U - Acetone  
V - MCAA  
W - pH 4.5  
Z - other (Specify)  
Other:

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/testmatrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

**Possible Hazard Identification**  
Unconfirmed  
Deliverable Requested: I, II, III, IV, Other (Specify) Primary Deliverable Rank: 2  
Special Instructions/QC Requirements:  Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months  
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:

Custody Seal Intact: [Custody Seal No.: NC CS] Cooler Temperature(s) °C and Other Remarks: 42°C FR9

10 Hazelwood Drive  
Amherst, NY 14228-2298  
Phone (716) 691-2600 Fax (716) 691-7991

Chain of Custody Record

**Client Information (Sub Contract Lab)**  
Client Contact: **Shipping/Receiving** Phone: \_\_\_\_\_  
Company: **TestAmerica Laboratories, Inc.** E-Mail: **melissa.deyo@testamericainc.com**  
Address: **7777 New Durham Road** Due Date Requested: **8/24/2018** Lab P/N: **Deyo, Melissa L** Carrier/Tracking No(s): \_\_\_\_\_  
City: **Edison** TAT Requested (days): \_\_\_\_\_ State of Origin: **New York**  
State Zip: **NJ, 08817** PO #: \_\_\_\_\_  
Phone: **732-549-3900(Tel) 732-549-3679(Fax)** WO #: \_\_\_\_\_  
Email: \_\_\_\_\_ Project #: **48018493** SSO/W#: \_\_\_\_\_

Accreditations Required (See note): **NELAP - New York**  
Analysis Requested:  
**Field Filtered Sample (Yes or No)**  
**Perform MS/MSD (Yes or No)**  
**7196A/3060A Hexavalent Chromium**

Job #: **480-443058-1**  
Page: **Page 2 of 2**  
COC No: **480-443058-2**  
Preservation Codes:  
A - HCL  
B - NaOH  
C - Zr Acetate  
D - Nitric Acid  
E - NaHSO4  
F - MeOH  
G - Amchlor  
H - Ascorbic Acid  
I - Ice  
J - DI Water  
K - EDTA  
L - EDA  
M - Hexane  
N - None  
O - As2O2  
P - Na2OAS  
Q - Na2SO3  
R - Na2S2O3  
S - H2SO4  
T - TSP Dodecahydrate  
U - Acetone  
V - MCAA  
W - pH 4.5  
Z - other (specify)  
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C-Comp, G-grab)	Matrix (W-walk, S-solid, Overstool, G-grab, A-add)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of containers	Special Instructions/Note:
SO-11137156-072518-A-G-010 (480-139508-10)	7/25/18	13:00		Solid			1	
SO-11137156-072518-A-G-011 (480-139508-11)	7/25/18	13:10		Solid			1	
SO-11137156-072518-A-G-012 (480-139508-12)	7/25/18	13:25		Solid	X	X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/assess/mark being analyzed, the samples must be shipped back to the TestAmerica Laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

**Possible Hazard Identification**  
**Unconfirmed**  
Deliverable Requested: **I, II, III, IV, Other (specify)** Primary Deliverable Rank: **2**  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

**Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)**  
Empty Kit Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Method of Shipment: \_\_\_\_\_  
Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_ Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_ Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_  
Custody Seals Intact:  Yes  No Custody Seal No.: \_\_\_\_\_ Cooler Temperature(s) °C and Other Remarks: \_\_\_\_\_

Ver: 09/20/2016

## Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 480-139508-1

**Login Number: 139508**

**List Number: 1**

**Creator: Kinecki, Kenneth P**

**List Source: TestAmerica Buffalo**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	GHD
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

## Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 480-139508-1

**Login Number: 139508**

**List Number: 2**

**Creator: Armbruster, Chris**

**List Source: TestAmerica Edison**

**List Creation: 08/23/18 11:10 AM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.2°C IR9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-141136-1

Client Project/Site: 11137156/118, Lewiston Kayak Launch Site

For:

GHD Services Inc.

2055 Niagara Falls Blvd., Suite 3

Niagara Falls, New York 14304

Attn: Kathleen Willy



Authorized for release by:

9/6/2018 5:05:59 PM

Rebecca Jones, Project Management Assistant I

[rebecca.jones@testamericainc.com](mailto:rebecca.jones@testamericainc.com)

Designee for

Melissa Deyo, Project Manager I

(716)504-9874

[melissa.deyo@testamericainc.com](mailto:melissa.deyo@testamericainc.com)

### LINKS

Review your project  
results through

TotalAccess

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*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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## Definitions/Glossary

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-141136-1

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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)

# Case Narrative

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-141136-1

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**Job ID: 480-141136-1**

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**Laboratory: TestAmerica Buffalo**

## Narrative

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**Job Narrative**  
**480-141136-1**

## Receipt

The samples were received on 8/31/2018 12:15 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.8° C.

## Metals

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

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# Detection Summary

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-141136-1

## Client Sample ID: SO-11137156-083118-CS-002

Lab Sample ID: 480-141136-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	17.4		2.3	0.47	mg/Kg	1	☼	6010C	Total/NA

## Client Sample ID: SO-11137156-083118-CS-003

Lab Sample ID: 480-141136-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	12.1		2.3	0.46	mg/Kg	1	☼	6010C	Total/NA

## Client Sample ID: SO-11137156-083118-CS-004

Lab Sample ID: 480-141136-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	10.7		2.2	0.44	mg/Kg	1	☼	6010C	Total/NA

## Client Sample ID: SO-11137156-083118-CS-006

Lab Sample ID: 480-141136-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	13.2		2.3	0.47	mg/Kg	1	☼	6010C	Total/NA

## Client Sample ID: SO-11137156-083118-CS-008

Lab Sample ID: 480-141136-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	13.2		2.3	0.46	mg/Kg	1	☼	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
 Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-141136-1

**Client Sample ID: SO-11137156-083118-CS-002**

**Lab Sample ID: 480-141136-1**

Date Collected: 08/31/18 08:45  
 Date Received: 08/31/18 12:15

Matrix: Solid  
 Percent Solids: 86.0

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	17.4		2.3	0.47	mg/Kg	☼	09/05/18 10:13	09/06/18 10:46	1

**Client Sample ID: SO-11137156-083118-CS-003**

**Lab Sample ID: 480-141136-2**

Date Collected: 08/31/18 09:30  
 Date Received: 08/31/18 12:15

Matrix: Solid  
 Percent Solids: 88.2

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	12.1		2.3	0.46	mg/Kg	☼	09/05/18 10:13	09/06/18 10:50	1

**Client Sample ID: SO-11137156-083118-CS-004**

**Lab Sample ID: 480-141136-3**

Date Collected: 08/31/18 10:00  
 Date Received: 08/31/18 12:15

Matrix: Solid  
 Percent Solids: 89.5

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	10.7		2.2	0.44	mg/Kg	☼	09/05/18 10:13	09/06/18 10:54	1

**Client Sample ID: SO-11137156-083118-CS-006**

**Lab Sample ID: 480-141136-4**

Date Collected: 08/31/18 10:40  
 Date Received: 08/31/18 12:15

Matrix: Solid  
 Percent Solids: 85.9

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	13.2		2.3	0.47	mg/Kg	☼	09/05/18 10:13	09/06/18 11:12	1

**Client Sample ID: SO-11137156-083118-CS-008**

**Lab Sample ID: 480-141136-5**

Date Collected: 08/31/18 11:15  
 Date Received: 08/31/18 12:15

Matrix: Solid  
 Percent Solids: 87.3

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	13.2		2.3	0.46	mg/Kg	☼	09/05/18 10:13	09/06/18 11:16	1

# QC Sample Results

Client: GHD Services Inc.  
 Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-141136-1

## Method: 6010C - Metals (ICP)

**Lab Sample ID: MB 480-432613/1-A**  
**Matrix: Solid**  
**Analysis Batch: 433120**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 432613**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		2.0	0.41	mg/Kg		09/05/18 10:13	09/06/18 09:56	1

**Lab Sample ID: LCSSRM 480-432613/2-A**  
**Matrix: Solid**  
**Analysis Batch: 433120**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 432613**

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	178	146.8		mg/Kg		82.5	65.7 - 120. 8



# QC Association Summary

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-141136-1

## Metals

### Prep Batch: 432613

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-141136-1	SO-11137156-083118-CS-002	Total/NA	Solid	3050B	
480-141136-2	SO-11137156-083118-CS-003	Total/NA	Solid	3050B	
480-141136-3	SO-11137156-083118-CS-004	Total/NA	Solid	3050B	
480-141136-4	SO-11137156-083118-CS-006	Total/NA	Solid	3050B	
480-141136-5	SO-11137156-083118-CS-008	Total/NA	Solid	3050B	
MB 480-432613/1-A	Method Blank	Total/NA	Solid	3050B	
LCSSRM 480-432613/2-A	Lab Control Sample	Total/NA	Solid	3050B	

### Analysis Batch: 433120

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-141136-1	SO-11137156-083118-CS-002	Total/NA	Solid	6010C	432613
480-141136-2	SO-11137156-083118-CS-003	Total/NA	Solid	6010C	432613
480-141136-3	SO-11137156-083118-CS-004	Total/NA	Solid	6010C	432613
480-141136-4	SO-11137156-083118-CS-006	Total/NA	Solid	6010C	432613
480-141136-5	SO-11137156-083118-CS-008	Total/NA	Solid	6010C	432613
MB 480-432613/1-A	Method Blank	Total/NA	Solid	6010C	432613
LCSSRM 480-432613/2-A	Lab Control Sample	Total/NA	Solid	6010C	432613

## General Chemistry

### Analysis Batch: 432526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-141136-1	SO-11137156-083118-CS-002	Total/NA	Solid	Moisture	
480-141136-2	SO-11137156-083118-CS-003	Total/NA	Solid	Moisture	
480-141136-3	SO-11137156-083118-CS-004	Total/NA	Solid	Moisture	
480-141136-4	SO-11137156-083118-CS-006	Total/NA	Solid	Moisture	
480-141136-5	SO-11137156-083118-CS-008	Total/NA	Solid	Moisture	

# Lab Chronicle

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-141136-1

**Client Sample ID: SO-11137156-083118-CS-002**

**Lab Sample ID: 480-141136-1**

Date Collected: 08/31/18 08:45

Matrix: Solid

Date Received: 08/31/18 12:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	432526	09/01/18 06:33	CSW	TAL BUF

**Client Sample ID: SO-11137156-083118-CS-002**

**Lab Sample ID: 480-141136-1**

Date Collected: 08/31/18 08:45

Matrix: Solid

Date Received: 08/31/18 12:15

Percent Solids: 86.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			432613	09/05/18 10:13	KMP	TAL BUF
Total/NA	Analysis	6010C		1	433120	09/06/18 10:46	LMH	TAL BUF

**Client Sample ID: SO-11137156-083118-CS-003**

**Lab Sample ID: 480-141136-2**

Date Collected: 08/31/18 09:30

Matrix: Solid

Date Received: 08/31/18 12:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	432526	09/01/18 06:33	CSW	TAL BUF

**Client Sample ID: SO-11137156-083118-CS-003**

**Lab Sample ID: 480-141136-2**

Date Collected: 08/31/18 09:30

Matrix: Solid

Date Received: 08/31/18 12:15

Percent Solids: 88.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			432613	09/05/18 10:13	KMP	TAL BUF
Total/NA	Analysis	6010C		1	433120	09/06/18 10:50	LMH	TAL BUF

**Client Sample ID: SO-11137156-083118-CS-004**

**Lab Sample ID: 480-141136-3**

Date Collected: 08/31/18 10:00

Matrix: Solid

Date Received: 08/31/18 12:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	432526	09/01/18 06:33	CSW	TAL BUF

**Client Sample ID: SO-11137156-083118-CS-004**

**Lab Sample ID: 480-141136-3**

Date Collected: 08/31/18 10:00

Matrix: Solid

Date Received: 08/31/18 12:15

Percent Solids: 89.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			432613	09/05/18 10:13	KMP	TAL BUF
Total/NA	Analysis	6010C		1	433120	09/06/18 10:54	LMH	TAL BUF

TestAmerica Buffalo



# Lab Chronicle

Client: GHD Services Inc.  
 Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-141136-1

**Client Sample ID: SO-11137156-083118-CS-006**

**Lab Sample ID: 480-141136-4**

Date Collected: 08/31/18 10:40

Matrix: Solid

Date Received: 08/31/18 12:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	432526	09/01/18 06:33	CSW	TAL BUF

**Client Sample ID: SO-11137156-083118-CS-006**

**Lab Sample ID: 480-141136-4**

Date Collected: 08/31/18 10:40

Matrix: Solid

Date Received: 08/31/18 12:15

Percent Solids: 85.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			432613	09/05/18 10:13	KMP	TAL BUF
Total/NA	Analysis	6010C		1	433120	09/06/18 11:12	LMH	TAL BUF

**Client Sample ID: SO-11137156-083118-CS-008**

**Lab Sample ID: 480-141136-5**

Date Collected: 08/31/18 11:15

Matrix: Solid

Date Received: 08/31/18 12:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	432526	09/01/18 06:33	CSW	TAL BUF

**Client Sample ID: SO-11137156-083118-CS-008**

**Lab Sample ID: 480-141136-5**

Date Collected: 08/31/18 11:15

Matrix: Solid

Date Received: 08/31/18 12:15

Percent Solids: 87.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			432613	09/05/18 10:13	KMP	TAL BUF
Total/NA	Analysis	6010C		1	433120	09/06/18 11:16	LMH	TAL BUF

**Laboratory References:**

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

# Accreditation/Certification Summary

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-141136-1

## Laboratory: TestAmerica Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-19

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

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# Method Summary

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-141136-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL BUF
Moisture	Percent Moisture	EPA	TAL BUF
3050B	Preparation, Metals	SW846	TAL BUF

**Protocol References:**

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600



# Sample Summary

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-141136-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-141136-1	SO-11137156-083118-CS-002	Solid	08/31/18 08:45	08/31/18 12:15
480-141136-2	SO-11137156-083118-CS-003	Solid	08/31/18 09:30	08/31/18 12:15
480-141136-3	SO-11137156-083118-CS-004	Solid	08/31/18 10:00	08/31/18 12:15
480-141136-4	SO-11137156-083118-CS-006	Solid	08/31/18 10:40	08/31/18 12:15
480-141136-5	SO-11137156-083118-CS-008	Solid	08/31/18 11:15	08/31/18 12:15

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# CHAIN OF CUSTODY RECORD

COC NO.: 56120

Address: 285 DELAWARE AVE, SUITE 500, BUFFALO, NY 14202  
Phone: (716) 856-2142  
Page 1 OF 1

Project No/ Phase/Task Code: 11137156-118  
 Project Name: KAYAK LAUNCH SITE  
 Laboratory Name: TEST AMERICA AMHERST  
 Lab Contact: [Signature]

Project Location: LEWISTON, NY - PARKS + REC BUILDING  
 GHD Chemistry Contact: KATHLEEN WILLY  
 S: [Signature]

Project Location: 10 HAZELWOOD DR AMHERST, NY 14228  
 Carrier: [Blank]  
 Airbill No: [Blank]  
 Total # of Containers: [Blank]  
 MS/MSD Request: [Blank]  
 Total Containers/sample: [Blank]  
 SPEC: [Blank]

Item	SAMPLE IDENTIFICATION		DATE (mm/dd/yyyy)	TIME (hh:mm)	Matrix Code (see back of COC)	Grab (G) or Comp (C)	Filtered (Y/N)	ANALYSIS REQUESTED (See Back of COC for Definitions)	Total Containers/sample	MS/MSD Request	Carrier
	Containers for each sample may be combined on one line)	(Containers for each sample may be combined on one line)									
PRESERVATION - (SEE BACK OF COC FOR ABBREVIATIONS)											
1	50-11137156-083118-CJ-002	08/31/18	0845	50	4	X	ARSENIC				
2	-003	↓	0930	↓	↓	↓	↓				
3	-004	↓	1000	↓	↓	↓	↓				
4	-006	↓	1040	↓	↓	↓	↓				
5	-008	↓	1115	↓	↓	↓	↓				
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11											
12											

TAT Required in business days (use separate COCs for different TATs):  
 1 Day  2 Days  3 Days  1 Week  2 Week  Other:

Notes/ Special Requirements: TEMP 418 #1

RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
1. CHAD JOHNSON	GHD	8/31/18	1215	1. KAREN FUEHL	TA	8/31/18	13:15
2.				2.			
3.				3.			

## Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 480-141136-1

**Login Number: 141136**

**List Source: TestAmerica Buffalo**

**List Number: 1**

**Creator: Kolb, Chris M**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	GHD
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-143590-1

Client Project/Site: 11137156/118, Lewiston Kayak Launch Site

For:

GHD Services Inc.

2055 Niagara Falls Blvd., Suite 3

Niagara Falls, New York 14304

Attn: Kathleen Willy



Authorized for release by:

10/23/2018 5:39:23 PM

Rebecca Jones, Project Management Assistant I

[rebecca.jones@testamericainc.com](mailto:rebecca.jones@testamericainc.com)

Designee for

Melissa Deyo, Project Manager I

(716)504-9874

[melissa.deyo@testamericainc.com](mailto:melissa.deyo@testamericainc.com)

### LINKS

Review your project  
results through

TotalAccess

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*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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# Definitions/Glossary

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-143590-1

## Qualifiers

### Metals

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
B	Compound was found in the blank and sample.
F2	MS/MSD RPD exceeds control limits
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## 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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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)

# Case Narrative

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-143590-1

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**Job ID: 480-143590-1**

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**Laboratory: TestAmerica Buffalo**

## Narrative

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**Job Narrative**  
**480-143590-1**

### Receipt

The samples were received on 10/12/2018 12:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.0° C.

### Metals

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

### General Chemistry

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

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# Detection Summary

Client: GHD Services Inc.  
 Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-143590-1

## Client Sample ID: SO-1137156-101218-CJ-009

## Lab Sample ID: 480-143590-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	28.7	F1	2.4	0.47	mg/Kg	1	☼	6010C	Total/NA
Barium	59.6	F1	0.59	0.13	mg/Kg	1	☼	6010C	Total/NA
Beryllium	0.72		0.24	0.033	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.33		0.24	0.035	mg/Kg	1	☼	6010C	Total/NA
Copper	16.1	F1	1.2	0.25	mg/Kg	1	☼	6010C	Total/NA
Lead	24.4		1.2	0.28	mg/Kg	1	☼	6010C	Total/NA
Manganese	290	F2 B	0.24	0.038	mg/Kg	1	☼	6010C	Total/NA
Nickel	22.5		5.9	0.27	mg/Kg	1	☼	6010C	Total/NA
Zinc	68.4	F1	2.4	0.76	mg/Kg	1	☼	6010C	Total/NA
Mercury	0.030		0.023	0.0095	mg/Kg	1	☼	7471B	Total/NA
Trivalent Chromium	17.3		1.5	0.63	mg/Kg	1		SM 3500 CR D	Total/NA

## Client Sample ID: SO-1137156-101218-CJ-009A

## Lab Sample ID: 480-143590-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	14.9		2.3	0.46	mg/Kg	1	☼	6010C	Total/NA
Barium	69.6		0.57	0.13	mg/Kg	1	☼	6010C	Total/NA
Beryllium	0.64		0.23	0.032	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.31		0.23	0.034	mg/Kg	1	☼	6010C	Total/NA
Copper	18.6		1.1	0.24	mg/Kg	1	☼	6010C	Total/NA
Lead	15.5		1.1	0.27	mg/Kg	1	☼	6010C	Total/NA
Manganese	567	B	0.23	0.037	mg/Kg	1	☼	6010C	Total/NA
Nickel	23.0		5.7	0.26	mg/Kg	1	☼	6010C	Total/NA
Selenium	0.59	J	4.6	0.46	mg/Kg	1	☼	6010C	Total/NA
Zinc	58.7		2.3	0.73	mg/Kg	1	☼	6010C	Total/NA
Mercury	0.057		0.023	0.0093	mg/Kg	1	☼	7471B	Total/NA
Trivalent Chromium	19.6		1.5	0.63	mg/Kg	1		SM 3500 CR D	Total/NA

## Client Sample ID: SO-1137156-101218-CJ-009B

## Lab Sample ID: 480-143590-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	12.9		2.3	0.46	mg/Kg	1	☼	6010C	Total/NA
Barium	113		0.58	0.13	mg/Kg	1	☼	6010C	Total/NA
Beryllium	0.75		0.23	0.032	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.33		0.23	0.035	mg/Kg	1	☼	6010C	Total/NA
Copper	14.3		1.2	0.24	mg/Kg	1	☼	6010C	Total/NA
Lead	15.8		1.2	0.28	mg/Kg	1	☼	6010C	Total/NA
Manganese	427	B	0.23	0.037	mg/Kg	1	☼	6010C	Total/NA
Nickel	27.3		5.8	0.27	mg/Kg	1	☼	6010C	Total/NA
Zinc	60.9		2.3	0.74	mg/Kg	1	☼	6010C	Total/NA
Mercury	0.044		0.021	0.0086	mg/Kg	1	☼	7471B	Total/NA
Trivalent Chromium	19.8		1.5	0.63	mg/Kg	1		SM 3500 CR D	Total/NA

## Client Sample ID: SO-1137156-101218-CJ-010

## Lab Sample ID: 480-143590-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	9.4		2.4	0.48	mg/Kg	1	☼	6010C	Total/NA
Barium	125		0.60	0.13	mg/Kg	1	☼	6010C	Total/NA
Beryllium	0.67		0.24	0.033	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.41		0.24	0.036	mg/Kg	1	☼	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-143590-1

## Client Sample ID: SO-1137156-101218-CJ-010 (Continued)

Lab Sample ID: 480-143590-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	20.9		1.2	0.25	mg/Kg	1	☼	6010C	Total/NA
Lead	22.9		1.2	0.29	mg/Kg	1	☼	6010C	Total/NA
Manganese	1800	B	0.24	0.038	mg/Kg	1	☼	6010C	Total/NA
Nickel	25.2		6.0	0.27	mg/Kg	1	☼	6010C	Total/NA
Selenium	0.70	J	4.8	0.48	mg/Kg	1	☼	6010C	Total/NA
Zinc	66.0		2.4	0.76	mg/Kg	1	☼	6010C	Total/NA
Mercury	0.11		0.023	0.0091	mg/Kg	1	☼	7471B	Total/NA
Trivalent Chromium	16.9		1.5	0.63	mg/Kg	1		SM 3500 CR D	Total/NA

## Client Sample ID: SO-1137156-101218-CJ-010A

Lab Sample ID: 480-143590-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	7.7		2.4	0.48	mg/Kg	1	☼	6010C	Total/NA
Barium	107		0.60	0.13	mg/Kg	1	☼	6010C	Total/NA
Beryllium	0.67		0.24	0.033	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.38		0.24	0.036	mg/Kg	1	☼	6010C	Total/NA
Copper	15.4		1.2	0.25	mg/Kg	1	☼	6010C	Total/NA
Lead	18.8		1.2	0.29	mg/Kg	1	☼	6010C	Total/NA
Manganese	942	B	0.24	0.038	mg/Kg	1	☼	6010C	Total/NA
Nickel	22.5		6.0	0.28	mg/Kg	1	☼	6010C	Total/NA
Zinc	62.4		2.4	0.77	mg/Kg	1	☼	6010C	Total/NA
Mercury	0.089		0.023	0.0092	mg/Kg	1	☼	7471B	Total/NA
Trivalent Chromium	17.2		1.5	0.63	mg/Kg	1		SM 3500 CR D	Total/NA

## Client Sample ID: SO-1137156-101218-CJ-010B

Lab Sample ID: 480-143590-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	7.6		2.4	0.47	mg/Kg	1	☼	6010C	Total/NA
Barium	116		0.59	0.13	mg/Kg	1	☼	6010C	Total/NA
Beryllium	0.76		0.24	0.033	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.19	J	0.24	0.035	mg/Kg	1	☼	6010C	Total/NA
Copper	19.3		1.2	0.25	mg/Kg	1	☼	6010C	Total/NA
Lead	12.4		1.2	0.28	mg/Kg	1	☼	6010C	Total/NA
Manganese	578	B	0.24	0.038	mg/Kg	1	☼	6010C	Total/NA
Nickel	28.7		5.9	0.27	mg/Kg	1	☼	6010C	Total/NA
Zinc	57.5		2.4	0.75	mg/Kg	1	☼	6010C	Total/NA
Mercury	0.014	J	0.023	0.0094	mg/Kg	1	☼	7471B	Total/NA
Trivalent Chromium	19.9		1.5	0.63	mg/Kg	1		SM 3500 CR D	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
 Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-143590-1

**Client Sample ID: SO-1137156-101218-CJ-009**

**Lab Sample ID: 480-143590-1**

Date Collected: 10/12/18 11:15

Matrix: Solid

Date Received: 10/12/18 12:30

Percent Solids: 86.1

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	28.7	F1	2.4	0.47	mg/Kg	☼	10/19/18 07:43	10/19/18 13:22	1
Barium	59.6	F1	0.59	0.13	mg/Kg	☼	10/19/18 07:43	10/19/18 13:22	1
Beryllium	0.72		0.24	0.033	mg/Kg	☼	10/19/18 07:43	10/19/18 13:22	1
Cadmium	0.33		0.24	0.035	mg/Kg	☼	10/19/18 07:43	10/19/18 13:22	1
Copper	16.1	F1	1.2	0.25	mg/Kg	☼	10/19/18 07:43	10/19/18 13:22	1
Lead	24.4		1.2	0.28	mg/Kg	☼	10/19/18 07:43	10/19/18 13:22	1
Manganese	290	F2 B	0.24	0.038	mg/Kg	☼	10/19/18 07:43	10/19/18 13:22	1
Nickel	22.5		5.9	0.27	mg/Kg	☼	10/19/18 07:43	10/19/18 13:22	1
Selenium	ND		4.7	0.47	mg/Kg	☼	10/19/18 07:43	10/19/18 13:22	1
Silver	ND		0.71	0.24	mg/Kg	☼	10/19/18 07:43	10/19/18 13:22	1
Zinc	68.4	F1	2.4	0.76	mg/Kg	☼	10/19/18 07:43	10/19/18 13:22	1

**Method: 7471B - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.030		0.023	0.0095	mg/Kg	☼	10/19/18 11:50	10/19/18 13:52	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		2.3	0.81	mg/Kg	☼	10/21/18 09:56	10/23/18 03:56	1
Trivalent Chromium	17.3		1.5	0.63	mg/Kg			10/23/18 17:14	1

**Client Sample ID: SO-1137156-101218-CJ-009A**

**Lab Sample ID: 480-143590-2**

Date Collected: 10/12/18 11:30

Matrix: Solid

Date Received: 10/12/18 12:30

Percent Solids: 86.2

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	14.9		2.3	0.46	mg/Kg	☼	10/19/18 07:43	10/19/18 13:52	1
Barium	69.6		0.57	0.13	mg/Kg	☼	10/19/18 07:43	10/19/18 13:52	1
Beryllium	0.64		0.23	0.032	mg/Kg	☼	10/19/18 07:43	10/19/18 13:52	1
Cadmium	0.31		0.23	0.034	mg/Kg	☼	10/19/18 07:43	10/19/18 13:52	1
Copper	18.6		1.1	0.24	mg/Kg	☼	10/19/18 07:43	10/19/18 13:52	1
Lead	15.5		1.1	0.27	mg/Kg	☼	10/19/18 07:43	10/19/18 13:52	1
Manganese	567	B	0.23	0.037	mg/Kg	☼	10/19/18 07:43	10/19/18 13:52	1
Nickel	23.0		5.7	0.26	mg/Kg	☼	10/19/18 07:43	10/19/18 13:52	1
Selenium	0.59	J	4.6	0.46	mg/Kg	☼	10/19/18 07:43	10/19/18 13:52	1
Silver	ND		0.69	0.23	mg/Kg	☼	10/19/18 07:43	10/19/18 13:52	1
Zinc	58.7		2.3	0.73	mg/Kg	☼	10/19/18 07:43	10/19/18 13:52	1

**Method: 7471B - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.057		0.023	0.0093	mg/Kg	☼	10/19/18 11:50	10/19/18 13:59	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		2.4	0.85	mg/Kg	☼	10/21/18 09:56	10/23/18 03:56	1
Trivalent Chromium	19.6		1.5	0.63	mg/Kg			10/23/18 17:14	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
 Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-143590-1

**Client Sample ID: SO-1137156-101218-CJ-009B**

**Lab Sample ID: 480-143590-3**

Date Collected: 10/12/18 11:00

Matrix: Solid

Date Received: 10/12/18 12:30

Percent Solids: 86.2

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	12.9		2.3	0.46	mg/Kg	☼	10/19/18 07:43	10/19/18 13:56	1
Barium	113		0.58	0.13	mg/Kg	☼	10/19/18 07:43	10/19/18 13:56	1
Beryllium	0.75		0.23	0.032	mg/Kg	☼	10/19/18 07:43	10/19/18 13:56	1
Cadmium	0.33		0.23	0.035	mg/Kg	☼	10/19/18 07:43	10/19/18 13:56	1
Copper	14.3		1.2	0.24	mg/Kg	☼	10/19/18 07:43	10/19/18 13:56	1
Lead	15.8		1.2	0.28	mg/Kg	☼	10/19/18 07:43	10/19/18 13:56	1
Manganese	427	B	0.23	0.037	mg/Kg	☼	10/19/18 07:43	10/19/18 13:56	1
Nickel	27.3		5.8	0.27	mg/Kg	☼	10/19/18 07:43	10/19/18 13:56	1
Selenium	ND		4.6	0.46	mg/Kg	☼	10/19/18 07:43	10/19/18 13:56	1
Silver	ND		0.69	0.23	mg/Kg	☼	10/19/18 07:43	10/19/18 13:56	1
Zinc	60.9		2.3	0.74	mg/Kg	☼	10/19/18 07:43	10/19/18 13:56	1

**Method: 7471B - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.044		0.021	0.0086	mg/Kg	☼	10/19/18 11:50	10/19/18 14:01	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		2.3	0.84	mg/Kg	☼	10/21/18 09:56	10/23/18 03:56	1
Trivalent Chromium	19.8		1.5	0.63	mg/Kg			10/23/18 17:14	1

**Client Sample ID: SO-1137156-101218-CJ-010**

**Lab Sample ID: 480-143590-4**

Date Collected: 10/12/18 10:00

Matrix: Solid

Date Received: 10/12/18 12:30

Percent Solids: 83.1

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	9.4		2.4	0.48	mg/Kg	☼	10/19/18 07:43	10/19/18 14:00	1
Barium	125		0.60	0.13	mg/Kg	☼	10/19/18 07:43	10/19/18 14:00	1
Beryllium	0.67		0.24	0.033	mg/Kg	☼	10/19/18 07:43	10/19/18 14:00	1
Cadmium	0.41		0.24	0.036	mg/Kg	☼	10/19/18 07:43	10/19/18 14:00	1
Copper	20.9		1.2	0.25	mg/Kg	☼	10/19/18 07:43	10/19/18 14:00	1
Lead	22.9		1.2	0.29	mg/Kg	☼	10/19/18 07:43	10/19/18 14:00	1
Manganese	1800	B	0.24	0.038	mg/Kg	☼	10/19/18 07:43	10/19/18 14:00	1
Nickel	25.2		6.0	0.27	mg/Kg	☼	10/19/18 07:43	10/19/18 14:00	1
Selenium	0.70	J	4.8	0.48	mg/Kg	☼	10/19/18 07:43	10/19/18 14:00	1
Silver	ND		0.71	0.24	mg/Kg	☼	10/19/18 07:43	10/19/18 14:00	1
Zinc	66.0		2.4	0.76	mg/Kg	☼	10/19/18 07:43	10/19/18 14:00	1

**Method: 7471B - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.11		0.023	0.0091	mg/Kg	☼	10/19/18 11:50	10/19/18 14:02	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		2.4	0.87	mg/Kg	☼	10/21/18 09:56	10/23/18 03:56	1
Trivalent Chromium	16.9		1.5	0.63	mg/Kg			10/23/18 17:14	1

TestAmerica Buffalo

# Client Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-143590-1

**Client Sample ID: SO-1137156-101218-CJ-010A**

**Lab Sample ID: 480-143590-5**

Date Collected: 10/12/18 09:45

Matrix: Solid

Date Received: 10/12/18 12:30

Percent Solids: 83.3

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	7.7		2.4	0.48	mg/Kg	☼	10/19/18 07:43	10/19/18 14:04	1
Barium	107		0.60	0.13	mg/Kg	☼	10/19/18 07:43	10/19/18 14:04	1
Beryllium	0.67		0.24	0.033	mg/Kg	☼	10/19/18 07:43	10/19/18 14:04	1
Cadmium	0.38		0.24	0.036	mg/Kg	☼	10/19/18 07:43	10/19/18 14:04	1
Copper	15.4		1.2	0.25	mg/Kg	☼	10/19/18 07:43	10/19/18 14:04	1
Lead	18.8		1.2	0.29	mg/Kg	☼	10/19/18 07:43	10/19/18 14:04	1
Manganese	942	B	0.24	0.038	mg/Kg	☼	10/19/18 07:43	10/19/18 14:04	1
Nickel	22.5		6.0	0.28	mg/Kg	☼	10/19/18 07:43	10/19/18 14:04	1
Selenium	ND		4.8	0.48	mg/Kg	☼	10/19/18 07:43	10/19/18 14:04	1
Silver	ND		0.72	0.24	mg/Kg	☼	10/19/18 07:43	10/19/18 14:04	1
Zinc	62.4		2.4	0.77	mg/Kg	☼	10/19/18 07:43	10/19/18 14:04	1

**Method: 7471B - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.089		0.023	0.0092	mg/Kg	☼	10/19/18 11:50	10/19/18 14:07	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		2.4	0.86	mg/Kg	☼	10/21/18 09:56	10/23/18 03:56	1
Trivalent Chromium	17.2		1.5	0.63	mg/Kg			10/23/18 17:14	1

**Client Sample ID: SO-1137156-101218-CJ-010B**

**Lab Sample ID: 480-143590-6**

Date Collected: 10/12/18 10:30

Matrix: Solid

Date Received: 10/12/18 12:30

Percent Solids: 87.1

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	7.6		2.4	0.47	mg/Kg	☼	10/19/18 07:43	10/19/18 14:23	1
Barium	116		0.59	0.13	mg/Kg	☼	10/19/18 07:43	10/19/18 14:23	1
Beryllium	0.76		0.24	0.033	mg/Kg	☼	10/19/18 07:43	10/19/18 14:23	1
Cadmium	0.19	J	0.24	0.035	mg/Kg	☼	10/19/18 07:43	10/20/18 12:37	1
Copper	19.3		1.2	0.25	mg/Kg	☼	10/19/18 07:43	10/19/18 14:23	1
Lead	12.4		1.2	0.28	mg/Kg	☼	10/19/18 07:43	10/19/18 14:23	1
Manganese	578	B	0.24	0.038	mg/Kg	☼	10/19/18 07:43	10/19/18 14:23	1
Nickel	28.7		5.9	0.27	mg/Kg	☼	10/19/18 07:43	10/19/18 14:23	1
Selenium	ND		4.7	0.47	mg/Kg	☼	10/19/18 07:43	10/19/18 14:23	1
Silver	ND		0.71	0.24	mg/Kg	☼	10/19/18 07:43	10/19/18 14:23	1
Zinc	57.5		2.4	0.75	mg/Kg	☼	10/19/18 07:43	10/20/18 12:37	1

**Method: 7471B - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.014	J	0.023	0.0094	mg/Kg	☼	10/19/18 11:50	10/19/18 14:09	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		2.3	0.81	mg/Kg	☼	10/21/18 09:56	10/23/18 03:56	1
Trivalent Chromium	19.9		1.5	0.63	mg/Kg			10/23/18 17:14	1

TestAmerica Buffalo

# QC Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-143590-1

## Method: 6010C - Metals (ICP)

**Lab Sample ID: MB 480-440258/1-A**  
**Matrix: Solid**  
**Analysis Batch: 440555**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 440258**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		2.0	0.40	mg/Kg		10/19/18 07:43	10/19/18 13:14	1
Barium	ND		0.50	0.11	mg/Kg		10/19/18 07:43	10/19/18 13:14	1
Beryllium	ND		0.20	0.028	mg/Kg		10/19/18 07:43	10/19/18 13:14	1
Cadmium	ND		0.20	0.030	mg/Kg		10/19/18 07:43	10/19/18 13:14	1
Copper	ND		1.0	0.21	mg/Kg		10/19/18 07:43	10/19/18 13:14	1
Lead	ND		1.0	0.24	mg/Kg		10/19/18 07:43	10/19/18 13:14	1
Manganese	0.0726	J	0.20	0.032	mg/Kg		10/19/18 07:43	10/19/18 13:14	1
Nickel	ND		5.0	0.23	mg/Kg		10/19/18 07:43	10/19/18 13:14	1
Selenium	ND		4.0	0.40	mg/Kg		10/19/18 07:43	10/19/18 13:14	1
Silver	ND		0.60	0.20	mg/Kg		10/19/18 07:43	10/19/18 13:14	1
Zinc	ND		2.0	0.64	mg/Kg		10/19/18 07:43	10/19/18 13:14	1

**Lab Sample ID: LCSSRM 480-440258/2-A**  
**Matrix: Solid**  
**Analysis Batch: 440555**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 440258**

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	171	133.7		mg/Kg		78.2	66.1 - 122.2
Barium	272	216.8		mg/Kg		79.7	71.7 - 119.5
Beryllium	102	79.62		mg/Kg		78.1	71.8 - 119.6
Cadmium	225	182.7		mg/Kg		81.2	70.2 - 117.3
Copper	174	138.6		mg/Kg		79.6	71.3 - 119.0
Lead	111	103.0		mg/Kg		92.8	71.0 - 128.8
Manganese	232	192.9		mg/Kg		83.1	71.1 - 125.4
Nickel	98.3	85.36		mg/Kg		86.8	65.4 - 121.1
Selenium	206	161.1		mg/Kg		78.2	63.6 - 122.3
Silver	45.5	34.94		mg/Kg		76.8	66.2 - 124.2
Zinc	207	165.5		mg/Kg		80.0	67.1 - 125.1

**Lab Sample ID: 480-143590-1 MS**  
**Matrix: Solid**  
**Analysis Batch: 440555**

**Client Sample ID: SO-1137156-101218-CJ-009**  
**Prep Type: Total/NA**  
**Prep Batch: 440258**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	28.7	F1	46.8	55.96	F1	mg/Kg	☼	58	75 - 125
Barium	59.6	F1	46.8	138.7	F1	mg/Kg	☼	169	75 - 125
Beryllium	0.72		46.8	39.33		mg/Kg	☼	83	75 - 125
Cadmium	0.33		46.8	42.67		mg/Kg	☼	91	75 - 125
Copper	16.1	F1	46.8	52.06		mg/Kg	☼	77	75 - 125
Lead	24.4		46.8	61.65		mg/Kg	☼	80	75 - 125

TestAmerica Buffalo



# QC Sample Results

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-143590-1

## Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 480-143590-1 MS

Matrix: Solid

Analysis Batch: 440555

Client Sample ID: SO-1137156-101218-CJ-009

Prep Type: Total/NA

Prep Batch: 440258

Analyte	Sample	Sample	Spike	MS		Unit	D	%Rec	%Rec.	
	Result	Qualifier		Result	Qualifier				Limits	Limits
Manganese	290	F2 B	46.8	407.8	4	mg/Kg	✱	252	75 - 125	
Nickel	22.5		46.8	68.89		mg/Kg	✱	99	75 - 125	
Selenium	ND		46.8	39.80		mg/Kg	✱	85	75 - 125	
Silver	ND		11.7	9.97		mg/Kg	✱	85	75 - 125	
Zinc	68.4	F1	46.8	104.2		mg/Kg	✱	77	75 - 125	

Lab Sample ID: 480-143590-1 MSD

Matrix: Solid

Analysis Batch: 440555

Client Sample ID: SO-1137156-101218-CJ-009

Prep Type: Total/NA

Prep Batch: 440258

Analyte	Sample	Sample	Spike	MSD		Unit	D	%Rec	%Rec.		RPD	
	Result	Qualifier		Result	Qualifier				Limits	RPD	Limit	
Arsenic	28.7	F1	46.5	54.40	F1	mg/Kg	✱	55	75 - 125		3	20
Barium	59.6	F1	46.5	124.8	F1	mg/Kg	✱	140	75 - 125		10	20
Beryllium	0.72		46.5	36.63		mg/Kg	✱	77	75 - 125		7	20
Cadmium	0.33		46.5	39.84		mg/Kg	✱	85	75 - 125		7	20
Copper	16.1	F1	46.5	49.76	F1	mg/Kg	✱	72	75 - 125		5	20
Lead	24.4		46.5	59.47		mg/Kg	✱	75	75 - 125		4	20
Manganese	290	F2 B	46.5	296.6	4 F2	mg/Kg	✱	14	75 - 125		32	20
Nickel	22.5		46.5	62.53		mg/Kg	✱	86	75 - 125		10	20
Selenium	ND		46.5	37.39		mg/Kg	✱	80	75 - 125		6	20
Silver	ND		11.6	8.75		mg/Kg	✱	75	75 - 125		13	20
Zinc	68.4	F1	46.5	98.80	F1	mg/Kg	✱	65	75 - 125		5	20

## Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 480-440500/1-A

Matrix: Solid

Analysis Batch: 440550

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 440500

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil	Fac
	Result	Qualifier								
Mercury	ND		0.020	0.0079	mg/Kg		10/19/18 11:50	10/19/18 13:38		1

Lab Sample ID: LCSSRM 480-440500/2-A ^10

Matrix: Solid

Analysis Batch: 440550

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 440500

Analyte	Spike	LCSSRM		Unit	D	%Rec	%Rec.	
		Added	Result				Qualifier	Limits
Mercury	12.0	10.18		mg/Kg		84.8	57.3 - 133.3	

Lab Sample ID: 480-143590-1 MS

Matrix: Solid

Analysis Batch: 440550

Client Sample ID: SO-1137156-101218-CJ-009

Prep Type: Total/NA

Prep Batch: 440500

Analyte	Sample	Sample	Spike	MS		Unit	D	%Rec	%Rec.	
	Result	Qualifier		Result	Qualifier				Limits	Limits
Mercury	0.030		0.358	0.362		mg/Kg	✱	93	80 - 120	

TestAmerica Buffalo

# QC Sample Results

Client: GHD Services Inc.  
 Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-143590-1

## Method: 7471B - Mercury (CVAA) (Continued)

Lab Sample ID: 480-143590-1 MSD

Matrix: Solid

Analysis Batch: 440550

Client Sample ID: SO-1137156-101218-CJ-009

Prep Type: Total/NA

Prep Batch: 440500

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.030		0.387	0.381		mg/Kg	☼	91	80 - 120	5	20

## Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 460-561867/1-A

Matrix: Solid

Analysis Batch: 562289

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 561867

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		2.0	0.72	mg/Kg		10/21/18 09:56	10/23/18 03:56	1

Lab Sample ID: LCS1 460-561867/3-A

Matrix: Solid

Analysis Batch: 562289

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 561867

Analyte	Spike Added	LCSI Result	LCSI Qualifier	Unit	D	%Rec	%Rec. Limits
Hexavalent chromium	708	743.3		mg/Kg		105	80 - 120

Lab Sample ID: LCSSRM 460-561867/2-A

Matrix: Solid

Analysis Batch: 562289

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 561867

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Hexavalent chromium	12.9	12.07		mg/Kg		93.7	84.0 - 114.6

# QC Association Summary

Client: GHD Services Inc.  
 Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-143590-1

## Metals

### Prep Batch: 440258

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143590-1	SO-1137156-101218-CJ-009	Total/NA	Solid	3050B	
480-143590-2	SO-1137156-101218-CJ-009A	Total/NA	Solid	3050B	
480-143590-3	SO-1137156-101218-CJ-009B	Total/NA	Solid	3050B	
480-143590-4	SO-1137156-101218-CJ-010	Total/NA	Solid	3050B	
480-143590-5	SO-1137156-101218-CJ-010A	Total/NA	Solid	3050B	
480-143590-6	SO-1137156-101218-CJ-010B	Total/NA	Solid	3050B	
MB 480-440258/1-A	Method Blank	Total/NA	Solid	3050B	
LCSSRM 480-440258/2-A	Lab Control Sample	Total/NA	Solid	3050B	
480-143590-1 MS	SO-1137156-101218-CJ-009	Total/NA	Solid	3050B	
480-143590-1 MSD	SO-1137156-101218-CJ-009	Total/NA	Solid	3050B	

### Prep Batch: 440500

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143590-1	SO-1137156-101218-CJ-009	Total/NA	Solid	7471B	
480-143590-2	SO-1137156-101218-CJ-009A	Total/NA	Solid	7471B	
480-143590-3	SO-1137156-101218-CJ-009B	Total/NA	Solid	7471B	
480-143590-4	SO-1137156-101218-CJ-010	Total/NA	Solid	7471B	
480-143590-5	SO-1137156-101218-CJ-010A	Total/NA	Solid	7471B	
480-143590-6	SO-1137156-101218-CJ-010B	Total/NA	Solid	7471B	
MB 480-440500/1-A	Method Blank	Total/NA	Solid	7471B	
LCSSRM 480-440500/2-A ^10	Lab Control Sample	Total/NA	Solid	7471B	
480-143590-1 MS	SO-1137156-101218-CJ-009	Total/NA	Solid	7471B	
480-143590-1 MSD	SO-1137156-101218-CJ-009	Total/NA	Solid	7471B	

### Analysis Batch: 440550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143590-1	SO-1137156-101218-CJ-009	Total/NA	Solid	7471B	440500
480-143590-2	SO-1137156-101218-CJ-009A	Total/NA	Solid	7471B	440500
480-143590-3	SO-1137156-101218-CJ-009B	Total/NA	Solid	7471B	440500
480-143590-4	SO-1137156-101218-CJ-010	Total/NA	Solid	7471B	440500
480-143590-5	SO-1137156-101218-CJ-010A	Total/NA	Solid	7471B	440500
480-143590-6	SO-1137156-101218-CJ-010B	Total/NA	Solid	7471B	440500
MB 480-440500/1-A	Method Blank	Total/NA	Solid	7471B	440500
LCSSRM 480-440500/2-A ^10	Lab Control Sample	Total/NA	Solid	7471B	440500
480-143590-1 MS	SO-1137156-101218-CJ-009	Total/NA	Solid	7471B	440500
480-143590-1 MSD	SO-1137156-101218-CJ-009	Total/NA	Solid	7471B	440500

### Analysis Batch: 440555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143590-1	SO-1137156-101218-CJ-009	Total/NA	Solid	6010C	440258
480-143590-2	SO-1137156-101218-CJ-009A	Total/NA	Solid	6010C	440258
480-143590-3	SO-1137156-101218-CJ-009B	Total/NA	Solid	6010C	440258
480-143590-4	SO-1137156-101218-CJ-010	Total/NA	Solid	6010C	440258
480-143590-5	SO-1137156-101218-CJ-010A	Total/NA	Solid	6010C	440258
480-143590-6	SO-1137156-101218-CJ-010B	Total/NA	Solid	6010C	440258
MB 480-440258/1-A	Method Blank	Total/NA	Solid	6010C	440258
LCSSRM 480-440258/2-A	Lab Control Sample	Total/NA	Solid	6010C	440258
480-143590-1 MS	SO-1137156-101218-CJ-009	Total/NA	Solid	6010C	440258
480-143590-1 MSD	SO-1137156-101218-CJ-009	Total/NA	Solid	6010C	440258

TestAmerica Buffalo

# QC Association Summary

Client: GHD Services Inc.  
 Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-143590-1

## Metals (Continued)

### Analysis Batch: 440780

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143590-6	SO-1137156-101218-CJ-010B	Total/NA	Solid	6010C	440258

## General Chemistry

### Analysis Batch: 440831

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143590-1	SO-1137156-101218-CJ-009	Total/NA	Solid	Moisture	
480-143590-2	SO-1137156-101218-CJ-009A	Total/NA	Solid	Moisture	
480-143590-3	SO-1137156-101218-CJ-009B	Total/NA	Solid	Moisture	
480-143590-4	SO-1137156-101218-CJ-010	Total/NA	Solid	Moisture	
480-143590-5	SO-1137156-101218-CJ-010A	Total/NA	Solid	Moisture	
480-143590-6	SO-1137156-101218-CJ-010B	Total/NA	Solid	Moisture	

### Analysis Batch: 441240

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143590-1	SO-1137156-101218-CJ-009	Total/NA	Solid	SM 3500 CR D	
480-143590-2	SO-1137156-101218-CJ-009A	Total/NA	Solid	SM 3500 CR D	
480-143590-3	SO-1137156-101218-CJ-009B	Total/NA	Solid	SM 3500 CR D	
480-143590-4	SO-1137156-101218-CJ-010	Total/NA	Solid	SM 3500 CR D	
480-143590-5	SO-1137156-101218-CJ-010A	Total/NA	Solid	SM 3500 CR D	
480-143590-6	SO-1137156-101218-CJ-010B	Total/NA	Solid	SM 3500 CR D	

### Prep Batch: 561867

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143590-1	SO-1137156-101218-CJ-009	Total/NA	Solid	3060A	
480-143590-2	SO-1137156-101218-CJ-009A	Total/NA	Solid	3060A	
480-143590-3	SO-1137156-101218-CJ-009B	Total/NA	Solid	3060A	
480-143590-4	SO-1137156-101218-CJ-010	Total/NA	Solid	3060A	
480-143590-5	SO-1137156-101218-CJ-010A	Total/NA	Solid	3060A	
480-143590-6	SO-1137156-101218-CJ-010B	Total/NA	Solid	3060A	
MB 460-561867/1-A	Method Blank	Total/NA	Solid	3060A	
LCSI 460-561867/3-A	Lab Control Sample	Total/NA	Solid	3060A	
LCSSRM 460-561867/2-A	Lab Control Sample	Total/NA	Solid	3060A	

### Analysis Batch: 562289

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143590-1	SO-1137156-101218-CJ-009	Total/NA	Solid	7196A	561867
480-143590-2	SO-1137156-101218-CJ-009A	Total/NA	Solid	7196A	561867
480-143590-3	SO-1137156-101218-CJ-009B	Total/NA	Solid	7196A	561867
480-143590-4	SO-1137156-101218-CJ-010	Total/NA	Solid	7196A	561867
480-143590-5	SO-1137156-101218-CJ-010A	Total/NA	Solid	7196A	561867
480-143590-6	SO-1137156-101218-CJ-010B	Total/NA	Solid	7196A	561867
MB 460-561867/1-A	Method Blank	Total/NA	Solid	7196A	561867
LCSI 460-561867/3-A	Lab Control Sample	Total/NA	Solid	7196A	561867
LCSSRM 460-561867/2-A	Lab Control Sample	Total/NA	Solid	7196A	561867

# Lab Chronicle

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-143590-1

**Client Sample ID: SO-1137156-101218-CJ-009**

**Lab Sample ID: 480-143590-1**

Date Collected: 10/12/18 11:15

Matrix: Solid

Date Received: 10/12/18 12:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	440831	10/22/18 09:58	KPK	TAL BUF
Total/NA	Analysis	SM 3500 CR D		1	441240	10/23/18 17:14	LMH	TAL BUF

**Client Sample ID: SO-1137156-101218-CJ-009**

**Lab Sample ID: 480-143590-1**

Date Collected: 10/12/18 11:15

Matrix: Solid

Date Received: 10/12/18 12:30

Percent Solids: 86.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			440258	10/19/18 07:43	JMP	TAL BUF
Total/NA	Analysis	6010C		1	440555	10/19/18 13:22	LMH	TAL BUF
Total/NA	Prep	7471B			440500	10/19/18 11:50	BMB	TAL BUF
Total/NA	Analysis	7471B		1	440550	10/19/18 13:52	BMB	TAL BUF
Total/NA	Prep	3060A			561867	10/21/18 09:56	EMS	TAL EDI
Total/NA	Analysis	7196A		1	562289	10/23/18 03:56	KYN	TAL EDI

**Client Sample ID: SO-1137156-101218-CJ-009A**

**Lab Sample ID: 480-143590-2**

Date Collected: 10/12/18 11:30

Matrix: Solid

Date Received: 10/12/18 12:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	440831	10/22/18 09:58	KPK	TAL BUF
Total/NA	Analysis	SM 3500 CR D		1	441240	10/23/18 17:14	LMH	TAL BUF

**Client Sample ID: SO-1137156-101218-CJ-009A**

**Lab Sample ID: 480-143590-2**

Date Collected: 10/12/18 11:30

Matrix: Solid

Date Received: 10/12/18 12:30

Percent Solids: 86.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			440258	10/19/18 07:43	JMP	TAL BUF
Total/NA	Analysis	6010C		1	440555	10/19/18 13:52	LMH	TAL BUF
Total/NA	Prep	7471B			440500	10/19/18 11:50	BMB	TAL BUF
Total/NA	Analysis	7471B		1	440550	10/19/18 13:59	BMB	TAL BUF
Total/NA	Prep	3060A			561867	10/21/18 09:56	EMS	TAL EDI
Total/NA	Analysis	7196A		1	562289	10/23/18 03:56	KYN	TAL EDI

**Client Sample ID: SO-1137156-101218-CJ-009B**

**Lab Sample ID: 480-143590-3**

Date Collected: 10/12/18 11:00

Matrix: Solid

Date Received: 10/12/18 12:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	440831	10/22/18 09:58	KPK	TAL BUF
Total/NA	Analysis	SM 3500 CR D		1	441240	10/23/18 17:14	LMH	TAL BUF

TestAmerica Buffalo

# Lab Chronicle

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-143590-1

**Client Sample ID: SO-1137156-101218-CJ-009B**

**Lab Sample ID: 480-143590-3**

Date Collected: 10/12/18 11:00

Matrix: Solid

Date Received: 10/12/18 12:30

Percent Solids: 86.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			440258	10/19/18 07:43	JMP	TAL BUF
Total/NA	Analysis	6010C		1	440555	10/19/18 13:56	LMH	TAL BUF
Total/NA	Prep	7471B			440500	10/19/18 11:50	BMB	TAL BUF
Total/NA	Analysis	7471B		1	440550	10/19/18 14:01	BMB	TAL BUF
Total/NA	Prep	3060A			561867	10/21/18 09:56	EMS	TAL EDI
Total/NA	Analysis	7196A		1	562289	10/23/18 03:56	KYN	TAL EDI

**Client Sample ID: SO-1137156-101218-CJ-010**

**Lab Sample ID: 480-143590-4**

Date Collected: 10/12/18 10:00

Matrix: Solid

Date Received: 10/12/18 12:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	440831	10/22/18 09:58	KPK	TAL BUF
Total/NA	Analysis	SM 3500 CR D		1	441240	10/23/18 17:14	LMH	TAL BUF

**Client Sample ID: SO-1137156-101218-CJ-010**

**Lab Sample ID: 480-143590-4**

Date Collected: 10/12/18 10:00

Matrix: Solid

Date Received: 10/12/18 12:30

Percent Solids: 83.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			440258	10/19/18 07:43	JMP	TAL BUF
Total/NA	Analysis	6010C		1	440555	10/19/18 14:00	LMH	TAL BUF
Total/NA	Prep	7471B			440500	10/19/18 11:50	BMB	TAL BUF
Total/NA	Analysis	7471B		1	440550	10/19/18 14:02	BMB	TAL BUF
Total/NA	Prep	3060A			561867	10/21/18 09:56	EMS	TAL EDI
Total/NA	Analysis	7196A		1	562289	10/23/18 03:56	KYN	TAL EDI

**Client Sample ID: SO-1137156-101218-CJ-010A**

**Lab Sample ID: 480-143590-5**

Date Collected: 10/12/18 09:45

Matrix: Solid

Date Received: 10/12/18 12:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	440831	10/22/18 09:58	KPK	TAL BUF
Total/NA	Analysis	SM 3500 CR D		1	441240	10/23/18 17:14	LMH	TAL BUF

**Client Sample ID: SO-1137156-101218-CJ-010A**

**Lab Sample ID: 480-143590-5**

Date Collected: 10/12/18 09:45

Matrix: Solid

Date Received: 10/12/18 12:30

Percent Solids: 83.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			440258	10/19/18 07:43	JMP	TAL BUF
Total/NA	Analysis	6010C		1	440555	10/19/18 14:04	LMH	TAL BUF

TestAmerica Buffalo

# Lab Chronicle

Client: GHD Services Inc.  
 Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-143590-1

**Client Sample ID: SO-1137156-101218-CJ-010A**

**Lab Sample ID: 480-143590-5**

Date Collected: 10/12/18 09:45

Matrix: Solid

Date Received: 10/12/18 12:30

Percent Solids: 83.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7471B			440500	10/19/18 11:50	BMB	TAL BUF
Total/NA	Analysis	7471B		1	440550	10/19/18 14:07	BMB	TAL BUF
Total/NA	Prep	3060A			561867	10/21/18 09:56	EMS	TAL EDI
Total/NA	Analysis	7196A		1	562289	10/23/18 03:56	KYN	TAL EDI

**Client Sample ID: SO-1137156-101218-CJ-010B**

**Lab Sample ID: 480-143590-6**

Date Collected: 10/12/18 10:30

Matrix: Solid

Date Received: 10/12/18 12:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	440831	10/22/18 09:58	KPK	TAL BUF
Total/NA	Analysis	SM 3500 CR D		1	441240	10/23/18 17:14	LMH	TAL BUF

**Client Sample ID: SO-1137156-101218-CJ-010B**

**Lab Sample ID: 480-143590-6**

Date Collected: 10/12/18 10:30

Matrix: Solid

Date Received: 10/12/18 12:30

Percent Solids: 87.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			440258	10/19/18 07:43	JMP	TAL BUF
Total/NA	Analysis	6010C		1	440555	10/19/18 14:23	LMH	TAL BUF
Total/NA	Prep	3050B			440258	10/19/18 07:43	JMP	TAL BUF
Total/NA	Analysis	6010C		1	440780	10/20/18 12:37	LMH	TAL BUF
Total/NA	Prep	7471B			440500	10/19/18 11:50	BMB	TAL BUF
Total/NA	Analysis	7471B		1	440550	10/19/18 14:09	BMB	TAL BUF
Total/NA	Prep	3060A			561867	10/21/18 09:56	EMS	TAL EDI
Total/NA	Analysis	7196A		1	562289	10/23/18 03:56	KYN	TAL EDI

**Laboratory References:**

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL EDI = TestAmerica Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

# Accreditation/Certification Summary

Client: GHD Services Inc.  
 Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-143590-1

## Laboratory: TestAmerica Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids
SM 3500 CR D		Solid	Trivalent Chromium

## Laboratory: TestAmerica Edison

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Connecticut	State Program	1	PH-0200	09-30-20
DE Haz. Subst. Cleanup Act (HSCA)	State Program	3	N/A	12-31-18
New Jersey	NELAP	2	12028	06-30-19
New York	NELAP	2	11452	04-01-19
Pennsylvania	NELAP	3	68-00522	02-28-19
Rhode Island	State Program	1	LAO00132	12-30-18
USDA	Federal		NJCA-003-08	06-13-20



# Method Summary

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-143590-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL BUF
7471B	Mercury (CVAA)	SW846	TAL BUF
7196A	Chromium, Hexavalent	SW846	TAL EDI
Moisture	Percent Moisture	EPA	TAL BUF
SM 3500 CR D	Chromium, Trivalent	SM	TAL BUF
3050B	Preparation, Metals	SW846	TAL BUF
3060A	Alkaline Digestion (Chromium, Hexavalent)	SW846	TAL EDI
7471B	Preparation, Mercury	SW846	TAL BUF

**Protocol References:**

EPA = US Environmental Protection Agency

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

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL EDI = TestAmerica Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900



# Sample Summary

Client: GHD Services Inc.  
Project/Site: 11137156/118, Lewiston Kayak Launch Site

TestAmerica Job ID: 480-143590-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-143590-1	SO-1137156-101218-CJ-009	Solid	10/12/18 11:15	10/12/18 12:30
480-143590-2	SO-1137156-101218-CJ-009A	Solid	10/12/18 11:30	10/12/18 12:30
480-143590-3	SO-1137156-101218-CJ-009B	Solid	10/12/18 11:00	10/12/18 12:30
480-143590-4	SO-1137156-101218-CJ-010	Solid	10/12/18 10:00	10/12/18 12:30
480-143590-5	SO-1137156-101218-CJ-010A	Solid	10/12/18 09:45	10/12/18 12:30
480-143590-6	SO-1137156-101218-CJ-010B	Solid	10/12/18 10:30	10/12/18 12:30





# CHAIN OF CUSTODY RECORD

COC NO.: 58927

Address: 285 DELAWARE AVE, SUITE 500, BUFFALO, NY 14202 PAGE 1 OF 1  
Phone: (716) 850-2142 Fax: \_\_\_\_\_

Project No/ Phase/Task Code: 1137156-118  
 Project Name: KAYAK LAUNCH SITE  
 Project Location: LEWISTON, NY - PARKS + REC BUILDING  
 GHD Chemistry Contact: KATHLEEN WILLY  
 Sampler(s): CHADWICK JOHNSON

Laboratory Name: TEST AMERICA - AMHERST  
 Lab Location: 10 HAZELWOOD DR  
 AMHERST, NY 14228  
 Lab Contact: \_\_\_\_\_  
 SSWO ID: 1137156-118-001  
 Cooler No: \_\_\_\_\_

Item	SAMPLE IDENTIFICATION		DATE (mm/dd/yyyy)	TIME (hh:mm)	SAMPLE TYPE		ANALYSIS REQUESTED (See Back of COC for Definitions)						Carrier:	Airbill No:	MS/MSD Request	Total Containers/sample	Total # of Containers:	COMMENTS/ SPECIAL INSTRUCTIONS:
	(Containers for each sample may be combined on one line)	PRESERVATION - (SEE BACK OF COC FOR ABBREVIATIONS)			(see back of COC)	Grab (g) or Comp (c)	Filtered (Y/N)	Hg	Cr+3	Cr+6								
1	50-1137156-1012-18-CJ--009	10/12/18	1115	50	G	X	X	X										
2	-009A		1130															
3	-009B		1100															
4	-010		1000															
5	-010A		0945															
6	-010B		1030															
7																		
8																		
9																		
10																		
11																		
12																		



480-143590 COC

TAT Required in business days (use separate COCs for different TATs):  
 1 Day  2 Days  3 Days  1 Week  2 Week  Other:

Notes/ Special Requirements: 14.0°C #3

RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
1. CHADWICK JOHNSON	GHD	10/12/18	1230	[Signature]	[Signature]	10/11/18	1230
2.							
3.							

**TestAmerica Buffalo**  
10 Hazelwood Drive  
Amherst, NY 14228-2298  
Phone (716) 691-2600 Fax (716) 691-7991

**Chain of Custody Record**



**TestAmerica**  
THE LEADER IN ENVIRONMENTAL TESTING

**Client Information (Sub Contract Lab)**

Client Contact: **TestAmerica Laboratories, Inc.** Phone: \_\_\_\_\_  
 Shipping/Receiving: \_\_\_\_\_  
 Address: **777 New Durham Road, 10/18/2018**  
 City: **Edison** State: **NJ** Zip: **08817** TAT Requested (days):  
 Phone: **732-549-3900 (Tel) 732-549-3679 (Fax)** PO #: \_\_\_\_\_  
 Email: **W/C #:** \_\_\_\_\_  
 Project Name: **1137156/18, Lewiston Kayak Launch Site** Project #: **48018493**  
 Site: \_\_\_\_\_ SSOV#: \_\_\_\_\_

Lab Pk#: \_\_\_\_\_  
 Dept: **Melissa L** E-Mail: **melissa.deyo@testamericainc.com**  
 Accreditations Required (See note): **NEIAP - New York**  
 Carrier Tracking No(s): \_\_\_\_\_  
 State of Origin: **New York**  
 Job #: **480-45770-1** Page: **1 of 1**  
 Job #: **480-143590-1** Page: **1 of 1**

**Analysis Requested**

Field Filtered: Sample (Yes or No) \_\_\_\_\_  
 Perform MS/MSD (Yes or No) \_\_\_\_\_  
**7196A/3060A Hexavalent Chromium**

Preservation Codes:  
 A - HCL  
 B - NaOH  
 C - Zn Acetate  
 D - Nitric Acid  
 E - NaHSO4  
 F - MeOH  
 G - Amplier  
 H - Ascorbic Acid  
 I - Ice  
 J - DI Water  
 K - EDTA  
 L - EDTA  
 M - Hexane  
 N - None  
 O - AsNaO2  
 P - Na2CO3  
 Q - Na2SO3  
 R - Na2S2O3  
 S - H2SO4  
 T - TSP Docecalytrate  
 U - Acetone  
 V - MCAA  
 W - pH 4.5  
 Z - other (specify) \_\_\_\_\_  
 Other: \_\_\_\_\_

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Unwater, Sealed, Overweight, In-transit, AML)	Field Filtered: Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of Containers	Special Instructions/Note:
SO-1137156-101218-CJ-009 (480-143590-1)	10/12/18	11:15	Solid	Solid	X	X		
SO-1137156-101218-CJ-009A (480-143590-2)	10/12/18	11:30	Solid	Solid	X	X		
SO-1137156-101218-CJ-009B (480-143590-3)	10/12/18	11:00	Solid	Solid	X	X		
SO-1137156-101218-CJ-010 (480-143590-4)	10/12/18	10:00	Solid	Solid	X	X		
SO-1137156-101218-CJ-010A (480-143590-5)	10/12/18	09:45	Solid	Solid	X	X		
SO-1137156-101218-CJ-010B (480-143590-6)	10/12/18	10:30	Solid	Solid	X	X		

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontracted laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/assessments being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

**Possible Hazard Identification**

Deliverable Requested: I, II, III, IV, Other (specify) \_\_\_\_\_ Primary Deliverable Rank: **2**  
 Empty Kit Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Relinquished by: **Melissa L** Date/Time: **10/18/18 1730** Company: **TA**  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

**Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)**

Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months  
 Method of Shipment: \_\_\_\_\_  
 Received by: **via FedEx** Date/Time: **10/19/18 0940** Company: **TA**  
 Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_  
 Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Custody Seals Intact: \_\_\_\_\_ Custody Seal No.: **526292**  
 Cooler Temperature(s) °C and Other Remarks: **5-3°C**  
 Ver: 09/20/2016

## Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 480-143590-1

**Login Number: 143590**

**List Source: TestAmerica Buffalo**

**List Number: 1**

**Creator: Kinecki, Kenneth P**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	GHD
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

## Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 480-143590-1

**Login Number: 143590**

**List Number: 2**

**Creator: Armbruster, Chris**

**List Source: TestAmerica Edison**

**List Creation: 10/19/18 11:23 AM**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	526297
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	5.3°C IR9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



# about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

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