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MEMORANDUM

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Date: April 3, 2024

Project: Flat Rock & Huroc Dam Removal Feasibility Study

To: Janeen McDermott, P.E.
GEI Consultants

CC:

SUBJECT: **Sediment Sampling Summary**

INTRODUCTION & EXECUTIVE SUMMARY

The scope of work for the project was to perform preliminary data collection and analyses to support the Flat Rock and Huroc Dam Removal Feasibility Study. The Flat Rock and Huroc Dams are located on the Huron River in Flat Rock, MI, approximately 9.8 river miles upstream from the mouth of the river at Lake Erie. The data collected during this phase of the project included a bathymetric survey of the impoundments, a depth of refusal survey of the sediment in the impoundments, sediment cores collection and analysis for legacy contamination for metals, polycyclic aromatic hydrocarbons (PAHs), and polychlorinated biphenyls (PCBs).

This data will be critical to inform the feasibility study, and any future design process. In particular, this data will be necessary to prepare a sediment management plan and restoration plan for the floodplains that will be exposed.

Some of the key findings from this study are:

- Based on the results of the depth of refusal survey, it is estimated that there are approximately 1,270,000 to 1,550,000 cubic yards of soft sediment trapped in the impoundment. Further analysis on the distribution of these sediments across the major impoundment areas shows that the 882,000 to 1,040,000 cubic yards are contained within the main upper impoundment and the lower impoundment area between the Flat Rock and Huroc Dams. Depending on the alternatives analyzed under the Feasibility study, there may be varying amounts of sediment that will be required for upstream channel and floodplain restoration. The remainder of the impounded sediment may require stabilization and restoration as a part of the floodplain adjacent to the river. The final project costs will depend heavily on the methods of removal, re-use (if possible), and/or disposal of the sediment required.
- The sediment sampling results show that none of the sampled locations in the Flat Rock and Huroc Dams impoundment had pollutants that exceed the sediment quality goals for public health. There were three locations (SED23-01, SED23-09, SED24-10) where the measured arsenic levels exceeded the Michigan EGLE Part 201 Residential Direct Contact Values (7.6

mg/kg), but all were below the levels identified in the Michigan Background Soil Survey Criteria as meeting background soil concentrations for this region (22.4 mg/kg).

- None of the sediment sampling locations had pollutant levels that exceed the guidelines for aquatic ecosystem protection for metals, PAHs, or PCBs.
- This feasibility study project included 10 sediment cores as a preliminary investigation to understand the sediment contamination levels. EGLE guidance for dredging and remediation projects would typically require approximately 94 to 109 samples to fully characterize the volumes of impounded sediment on this site.
- Sediment does not exceed the Part 201 guidelines for the adjacent land uses may be re-used as a fill, with appropriate handling and protection. It may require disposal in a landfill if further sampling shows pollutant levels that exceed the Part 201 guidelines, which will require the contractor to track the source through a chain of custody to the disposal site.
- Overall, the pollutant levels in the sediment are low enough that the majority of the sediment can be managed safely, and potentially re-used, either on site in the restored floodplain or upland areas, or offsite. Ideally, the site would be balanced between the amount of cut or sediment removal, and areas where the sediment could be placed on-site.

The design of the dam removal, sediment management plan, and channel and floodplain restoration design are interdependent processes that will evolve iteratively through the design process. This will require ongoing coordination with the grant funding and regulatory agencies, as well as with the project stakeholders.

BATHYMETRIC SURVEY & SEDIMENT VOLUME

We mapped the bathymetry across the area of study. The bathymetry was used in conjunction with a depth of refusal study to quantify and map the volume of sediment throughout the area of study in the Huron River. The areas of study included upstream of the Huroc Dam until the Flat Rock dam and approximately two miles upstream of the Flat Rock dam, including the Olmstead Bayou.

Bathymetry

The bathymetry was determined using two different techniques: sonar via a and via manual tape-down measurements.

Sonar

Bathymetry was measured using a Reason NaviSound 110 Single-beam Echosounder to measure the water depth. The elevations were calculated based on survey measurements of the water surface elevations at the beginning and end of each day at the upstream and downstream ends of the project. The use of the sonar survey equipment was limited to the Huroc Dam impoundment (between the Huroc and Flat Rock dams) and approximately 4,000 feet upstream of the Flat Rock

dam due to heavy aquatic vegetation growth in the upstream areas of the Flat Rock dam impoundment. Transects collected via sonar were spaced approximately every 100 feet.

Tape-down measurement

The manual tape-down measurements of water depth were collected throughout the entire area of study and were collected in tandem with a depth of refusal measurements. Transects for the manual tape-down measurements were spaced approximately 100-150 feet throughout both impoundments, and approximately 200 feet in the natural (original) channel, near the upstream end of the area of study.

Water level surveying

Water levels were determined via a Seco Survey Tripod, equipped with a Topcon Auto Level and a Seco 25-foot Survey Rod. Measurements were taken for land, water-level, land at two predetermined survey points before and after each day of bathymetry and depth of refusal work on the water. The predetermined survey points were provided and staked by Metro Consulting Associates.

Bathymetry data were shared with GEI for incorporating into the preliminary feasibility plans, and hydraulic modeling being performed to evaluate the dam removal scenarios.

Depth of Refusal Survey

LimnoTech performed a depth of refusal survey across the impoundment, using an AMS tile probe to measure the depths of soft sediment at cross section transects to estimate the volume of sediment within the impoundment. The probe was pushed as far as possible into the sediment using reasonable force. The depth of the probe was measured along with a manual water depth measurement. Probing was conducted at transects in the impoundment at approximately five locations per cross section. The transects were spaced at approximately 100-150 feet throughout both impoundments, and approximately 200 feet in the natural (original) channel, near the upstream end of the area of study. Each depth of refusal measurement also recorded a qualitative substrate type. The data from this survey, when combined with the bathymetry survey, was used to estimate pre-dam channel and floodplain surfaces and to develop an accurate sediment volume estimate.

Estimated Sediment Volumes

The soft sediment thickness was determined by subtracting the manual tape-down water depths from the depth of refusal measurements. Triangulated irregular networks (TINs) were created via ArcGIS to visualize the sediment thickness throughout the area of study, and to estimate the impounded sediment volume. The sediment volumes were analyzed for separate areas of the impoundments based on their geomorphic characteristics within the overall study area.

The Flat Rock impoundment was divided into 3 areas for analysis:

1. Main Impoundment: from the downstream end of the braided channel sections to the dam.

2. Upstream channels: the active channel and meander bends in the braided channel section of the river upstream of the main impoundment.
3. Bayou: The old meander bend that is located to the northwest of main impoundment. This area was noted on the 1921 survey as an existing cut off meander bend of the channel that had formed.
4. Lower impoundment: located downstream of the Flat Rock Dam and upstream of the Huroc Dam.

These areas are shown on the map in Attachment A. The estimated sediment volumes in each of these areas are listed below.

Table 1. Sediment Volumes by Project Area

Project Area	Estimated Soft Sediment Volumes (CY)	Mean Soft Sediment Depth (ft)
Main Impoundment	875,000 – 1,030,000	4.9
Upstream Channels	130,000 – 150,000	3.2
Bayou	260,000 – 360,000	5.1
Lower Impoundment	7,000 – 10,000	0.7
Total	**1,272,000 – 1,550,000**	**4.6**

These sediment volumes include some uncertainty in the range based on the extrapolation of the DOR data to the edges of the impoundment, extrapolation over some areas where data collection was inhibited by thick aquatic vegetation, and do not account for areas that are above the normal water line (islands – particularly with woody vegetation) that may have been accounted for in the topographic survey.

The estimated sediment volumes in the upstream channel areas are not necessarily considered impounded sediment and may be mobilized to further downstream into the impoundment under future high flow conditions. The 1921 survey showing the pre-dam river channels shows that the Bayou area existed as a cutoff river meander prior to the construction of the dam. Sediment deposition into that area would have naturally occurred without the construction of the dam, especially with vegetation growth, death, and decomposition into organic sediments. Based on the river hydraulics in that location, removal of the dam would not be likely to remobilize those sediments unless the upstream channel is modified to connect more directly to the Bayou.

The lower impoundment has a relatively small amount of soft sediment accumulated, which is to be expected based on the large amount of sediment capture in the upper impoundment, and the constrained channel between the dams that does not allow for deposition in this area.

The estimated volume of sediment contained within the main upper impoundment and the lower impoundment area between the Flat Rock and Huroc Dams is between 882,000 to 1,040,000 cubic

yards. The feasibility study will need to evaluate whether these sediments would need to be removed, managed, or kept in place as a part of the upstream channel restoration.

SEDIMENT SAMPLE COLLECTION & ANALYSIS

Sampling Summary

Sediment sample collection and analysis was performed in the Flat Rock and Huroc Dam impoundments to provide a preliminary analysis of pollutants present in the sediment that can harm public health or the natural ecosystem. While this phase of the project does not include development of remediation or management measures, this data will be necessary to properly manage the sediment on the site during dam removal and channel restoration. Combined with the sediment volume estimates, it will inform the management options available for the sediment that has built up in the impoundment, including the potential for on-site beneficial re-use, the impact of sediment mobilization and transport downstream, capping and armoring in place, and/or the need to dredge contaminated sediments for offsite disposal.

Sample Collection Locations

A total of ten sediment cores were collected via a hand driven SDI mini vibracore, outfitted with 3" diameter core tubes with catchers. All sediment cores were collected on September 21, 2023. The sediment core locations were chosen to fully represent the sediment build up in the impoundments due to the series of dams. The TIN surface of the sediment thickness developed from the DOR survey data was used to identify the proposed sampling locations. Additionally, a survey of the Huron River from 1921, prior to the construction of the Flat Rock and Huroc Dams, was used to estimate the original Huron River channel locations. Sediment cores were strategically chosen to both target the thickest sediment deposits and to coincide with the original river channel, since that is a likely location for a restored river channel if the Flat Rock dam is removed.

One sediment core was collected between the two dams, located upstream of Huroc Dam and downstream of Flat Rock Dam. The other nine sediment cores were collected in the impoundment upstream of the Flat Rock Dam, with one core located in the Olmstead Bayou. Table 2 below shows various characteristics of the sediment cores that were collected. Attachment B is a map of the area of study, including the locations of the sediment cores.

Lastly, one collection of riverbed aggregate was performed via shovel, downstream of Huroc Dam, for grain size analysis and to illustrate the infeasibility of sediment coring downstream of the dam.

Table 2. Sediment Core Locations Properties

Sample	Latitude	Longitude	Sediment Core Recovery Length (ft)	Collection Time
SED23-01	42.116031	-83.321695	3.7	11:20 AM
SED23-02	42.107162	-83.315937	4.7	11:55 AM
SED23-03	42.107523	-83.31019	6.3	12:20 PM
SED23-04	42.105209	-83.307377	2.1	2:15 PM
SED23-05	42.106103	-83.304287	3.1	1:45 PM
SED23-06	42.103166	-83.302578	6.6	2:35 PM
SED23-07	42.101554	-83.300333	5.7	3:00 PM
SED23-08	42.100796	-83.29814	4.9	3:20 PM
SED23-09	42.099904	-83.296462	2.1	3:30 PM
SED23-10	42.097631	-83.295289	1.1	9:35 AM
SED23-11	42.096804	-83.295529	N/A	9:15 AM

EGLE guidelines (MDEQ 2018) for sediment testing for dredging projects requires six (6) sediment samples for the first 10,000 cubic yards of sediment, and one (1) additional sample is required for each additional 10,000 cubic yards of sediment in the impoundment. Based on the results of the DOR survey, it is estimated that there are approximately 1,272,000 to 1,550,000 cubic yards of sediment trapped in the impoundment. While it is not likely that all of this material will be dredged or removed in the event of the removal of the Flat Rock and Huroc Dams, the sediment sampling for this project is intended to follow these requirements. Based on those guidelines, 94 to 109 samples will be required to characterize the sediments on this site (6 for the first 10,000 cubic yards, plus 88 to 103 for additional sediment volume based on the total range of sediment volume calculated).

Sediment Sample Processing

Each of the sediment samples collected was composited from each core by collecting selected intervals from each core. Duplicate samples were created from two cores (SED23-03 and SED23-06) to evaluate the QA/QC of the data.

Analytical Parameters

The analytical parameters for the sediment testing for the Flat Rock and Huroc Dam impoundments are based on the typical sediment related compounds that can negatively impact public health and ecosystem function. These include metals, polycyclic aromatic hydrocarbons (PAHs), and polychlorinated biphenyls (PCBs) within the impoundment.

The sediment samples within the impoundment were all tested for the "Michigan 10" metals, which include the following:

- Arsenic
- Barium
- Cadmium
- Chromium
- Copper
- Lead
- Selenium
- Silver
- Zinc
- Mercury

While many of these metals are naturally occurring in the native soils of this region, they were also commonly discharged from industrial sources, which were an important part of the development within the region. These heavy metals are persistent and can accumulate in the sediment over a long period. Given the age of the Flat Rock Dam, many of the sediments built up behind it could have been from before there were discharge limits and water quality controls from industrial and municipal wastewater discharges.

PAHs are also persistent pollutants that can build up and remain in the environment for long periods, although some PAHs can vaporize into the air under the right conditions. Most do not break down easily in water. There are many potential sources of PAHs, including historical and modern, and both natural and human sources (Baldwin, 2020). They can come from refined petroleum products, coal and crude oil, volcanic eruptions, and fires. Historic sources also include residential wood burning, pavement sealants, asphalt pavement, and coal-fired power plants. The sediment samples were analyzed for the content of the following PAH compounds:

- Acenaphthene
- Acenaphthylene
- Anthracene
- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Benzo(g,h,i)perylene
- Benzo(k)fluoranthene
- Chrysene
- Dibenz(a,h)anthracene

- Fluoranthene
- Fluorene
- Indeno(1,2,3-cd)pyrene
- Naphthalene
- Phenanthrene
- Pyrene
- 1-Methylnaphthalene
- 2-Methylnaphthalene

In addition to evaluating each of the individual PAH compounds, the total PAH concentration is also an important indicator of potential toxicity in the sediment.

The samples were also anaylzed for the following PCB arachlors:

- PCB-1016 (Arachlor 1016)
- PCB-1221 (Arachlor 1221)
- PCB-1232 (Arachlor 1232)
- PCB-1242 (Arachlor 1242)
- PCB-1248 (Arachlor 1248)
- PCB-1254 (Arachlor 1254)
- PCB-1260 (Arachlor 1260)
- PCB, Total

The additional parameters tested in the sediment include the following:

- Phosphorus
- Percent Moisture
- Total Organic Carbon

Phosphorus content in the sediment needs to be considered if the sediment from the Flat Rock and Huroc Dam impoundments is allowed to discharge downstream to Lake Erie, particularly with the concerns for harmful algal blooms.

Results and Data Analysis

The laboratory analyses of the sediment from the Flat Rock and Huroc Dam impoundment were compared with sediment and soil quality risk assessment screening criteria published by EGLE and/or other agencies. The primary purpose of the sediment quality investigation is to determine if the sediment contains pollutants that pose a risk to public health through direct contact with humans or pose a risk to the ecosystem. In general, the soil criteria for human contact will apply to all sediments in the future floodplain areas, and sediment quality criteria for ecological protection will apply for any sediment that is within the future channel.

For the human health protection criteria, a two-step process was followed based on the EGLE guidance for determining whether pollutants meet background concentration criteria. The first is to compare the results of the sediment sampling with the Part 201 Cleanup Criteria Requirements for Response Activity for Residential areas (EGLE 2018). If the pollutant levels in those sediment samples

are less than the Part 201 Residential Direct Contact Values criteria, they can be considered at background levels, and no additional cleanup or management actions are required. If they exceed the statewide default criteria from part 201, then the pollutant levels need to be compared with the Michigan Background Soil Survey based on the site location and the potential that the higher levels are from natural sources. This is particularly common with metals that may be present in the glacially deposited soils at higher levels in different parts of the State. Figure 1 shows a simplified flowchart of the process used to evaluate the sediment quality data to determine if it meets the levels to protect public health.

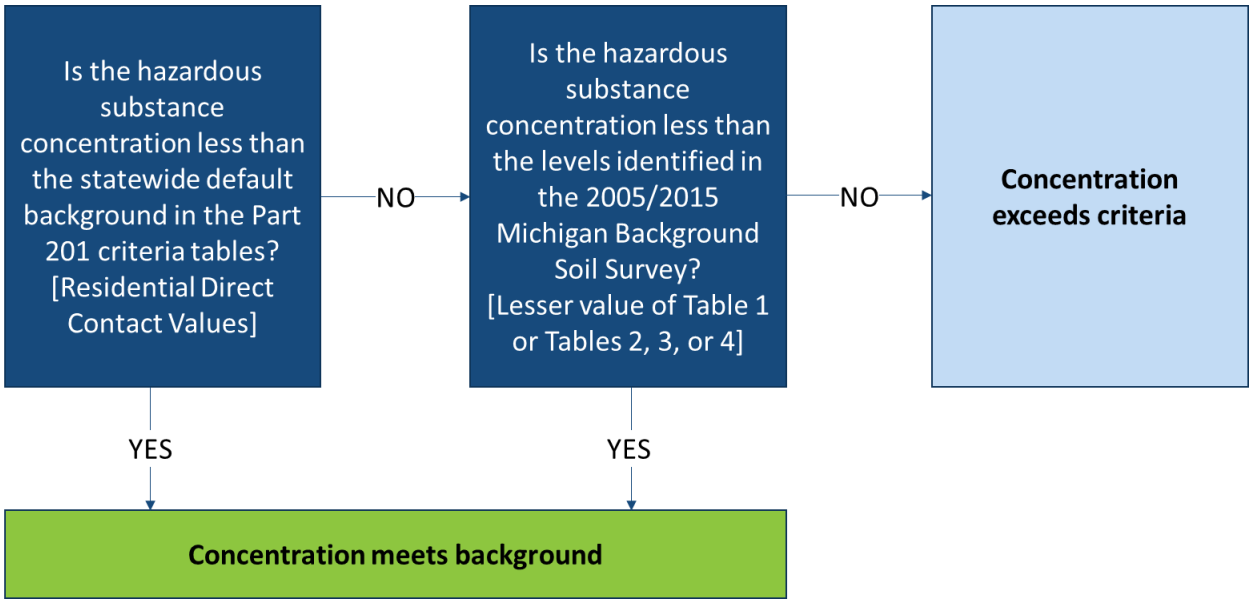

Figure 1. Flowchart for determining if sediment samples meet background criteria (adapted from flowchart in EGLE 2019, Appendix A).

The results of the comparison of the sediment pollutant levels with the Part 201 Residential Direct Contact Values and the Michigan Background Soil Survey Criteria is that none of the ten (10) sampling locations exceeded the criteria for any of the compounds tested. At sampling location SED23-01, SED23-09, and SED24-10, the arsenic levels measured in the sediment ranged from 8.3 to 9.9 mg/kg, which exceeded the Part 201 Residential Direct Contact Values. However, they were all well below the Michigan Background Soil Survey Criteria of 22.8 mg/kg. The rest of the pollutants at all locations were all below the levels considered background for soils or protection of public health for direct contact with soil on residential properties. This means that the sediments that were tested in the Flat Rock and Huroc Dam impoundments does not pose a public health risk, and the sediment management plan to be developed as a part of the dam removal design process will be able to consider leaving some of this sediment in place in the future floodplains (with appropriate restoration and armoring to prevent erosion), or using it in other areas on the floodplain around the site, or using it as fill offsite. The sediment management plan will be an integral part of the planning for the dam removal and channel restoration and will likely consider several options if this project proceeds.

For evaluating the potential risks to ecological health, the pollutant levels in the sediment samples were compared with the Consensus-Based Probable Effects Concentrations (PECs) published in MDEQ 2006 and WDNR 2003. For PAHs, PECs were compared with the criteria for each individual PAH compound, as well as for the total PAHs. The sediment sampling results had no exceedances of any of the ecological protection sediment quality guidelines at any of the ten (10) locations sampled. The PECs are shown in the data table in Attachment C for reference, along with a summary of the laboratory data results.

A sediment management plan for dam removal and channel restoration will be required if this project proceeds. It is recommended that the potential impacts of sediment mobility and phosphorus loads from the sediment be considered due to the potential impacts to Lake Erie downstream. In addition, if future sampling identified locations where the sediment exceeds ecological protection and direct human contact, the sediment management plan will need to consider appropriate mitigation measures in those locations.

REFERENCES

Michigan Department of Environment, Great Lakes, and Energy (EGLE), Remediation and Redevelopment Division. (2019) *Soil Background and use of the 2005 Michigan Background Soil Survey*. Retrieved from **https://www.michigan.gov/documents/egle/egle-rrd-SoilBackgroundResourceMaterials2019_667761_7.pdf**

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MDEQ, 2006. RRD Operational Memorandum No. 4, Site Characterization and Remediation Verification, Attachment 3 – Sediments, Interim Final, August 2, 2006. Retrieved from **https://www.michigan.gov/documents/deq/deq-rrd-OpMemo_4Attach3Sediments_250004_7.pdf**

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ATTACHMENTS

Attachment A: Map of Sediment Depths and Estimated Volumes (11” x 17”)

Attachment B: Sediment Core Location Map (11” x 17”)

Attachment C: Sediment Laboratory Analysis Data Table (11” x 17”)

Attachment D: Pace Laboratory Report

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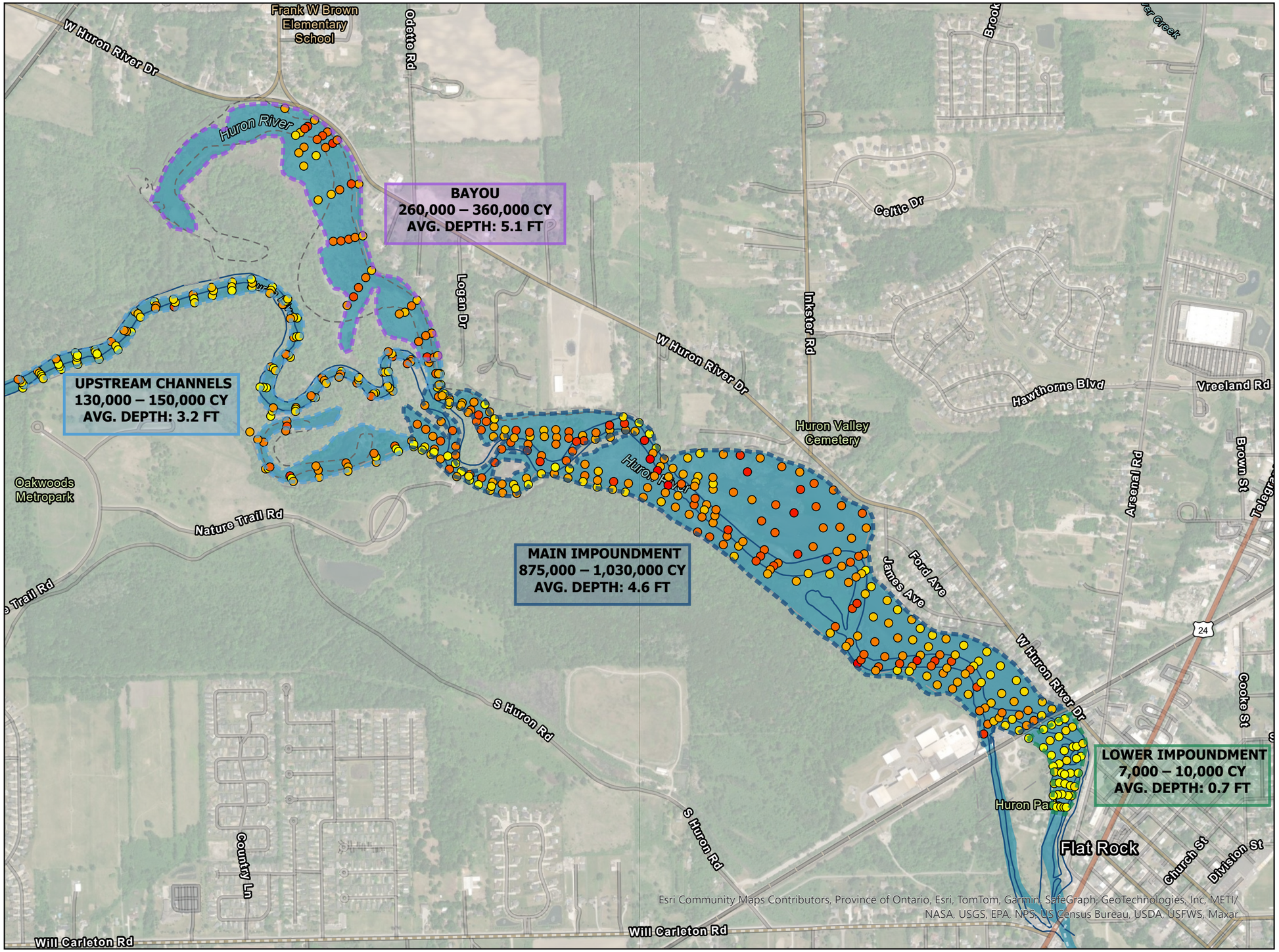
Flat Rock - Huroc Dam Removal Feasibility Study

Attachment A: Sediment Depths & Estimated Volumes



Legend

Impoundment Areas
- Lower Impoundment
- Main Impoundment
- Upstream Channels
- Bayou

1921 Survey Features
- Bayou Boundary
- Flow Line
- River Boundary

Sediment Depth (ft)
- 0.1 - 1.0
- 1 - 2
- 2 - 3
- 3 - 4
- 4 - 5
- 5 - 6
- 6 - 7
- 7 - 8
- 8 - 9
- 9 - 10
- 10 - 11

Water

0 500 1,000 2,000 Feet

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Removal Feasibility Study

Attachment B:
Sediment Core Locations

Legend

1921 Survey Features

- Bayou Boundary
- Flow Line
- River Boundary
- Water
- Sediment Core Locations

0 500 1,000 2,000 Feet

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Date: 4/3/2024

Huron-Clinton Metroparks
Flat Rock-Huroc Dam Removal Feasibility Study - Flat Rock, MI
Attachment C: 2023 Bulk Sediment Sampling Data

Sample ID *(Sampling Date)*			Predicted Effects Concentration (PEC)	No. of Samples >PEC	SED-01	SED-02	SED-03	SED-04	SED-05	SED-06	SED-07	SED-08	SED-09	SED-10	SED-03-DUP	SED-06-DUP
Parameter	**Units**	**Method**														
Phosphorus	mg/kg	EPA 365.4			716	220	395	489	623	456	498	462	507	364	460	940
Arsenic	mg/kg	EPA 6020B	33	0	9.9	3.5	5	6	5.7	5.9	7.3	6.4	8.3	8.4	6.2	6.4
Barium	mg/kg	EPA 6020B			146	32	42.1	55.5	64	57.1	64	51.4	73.2	71.1	43.1	52.4
Cadmium	mg/kg	EPA 6020B	4.98	0	1.8	0.71J	0.79J	0.47J	1.0J	1.8	1.7	1.4	0.92J	0.33J	0.79J	1.5
Chromium	mg/kg	EPA 6020B	111	0	36.8	8.6	11.6	13	18.7	16.6	16.3	15.1	19.3	13.1	11.2	14.9
Copper	mg/kg	EPA 6020B	149	0	36.3	6.8	10.3	13.5	18.9	15.7	20.8	18.3	26.2	11.3	11.5	15.6
Lead	mg/kg	EPA 6020B	128	0	45.8	25	27.8	19.4	32.2	45.5	72.4	51.7	36.2	9.6	30.3	44.2
Selenium	mg/kg	EPA 6020B			4.1	1.1	1.8	2	2.5	1.9	2	1.9	2.5	2.1	1.8	2
Silver	mg/kg	EPA 6020B	2.2	0	0.30J	<0.12	<0.14	0.14J	<0.15	0.16J	0.31J	<0.13	0.19J	<0.11	<0.14	<0.14
Zinc	mg/kg	EPA 6020B	459	0	167	92.4	85.2	64.5	143	158	231	154	127	54.7	103	154
Mercury	mg/kg	EPA 7471	0.486	0	0.2	<0.013	0.071	0.15	0.062	0.096	0.089	0.076	0.21	0.024J	0.053	0.084
Acenaphthene	ug/kg	EPA 8270E by SIM	89	0	44.7	<2.9	4.0J	<3.1	<3.6	<3.3	<3.5	<3.3	<3.6	<2.6	<3.4	<3.3
Acenaphthylene	ug/kg	EPA 8270E by SIM	128	0	19.4J	<2.8	<3.3	<3.1	<3.5	<3.3	<3.4	<3.2	<3.5	<2.5	<3.3	<3.2
Anthracene	ug/kg	EPA 8270E by SIM	845	0	21.3J	7.1J	<3.2	<3.0	<3.5	<3.2	<3.3	<3.1	<3.5	<2.5	<3.2	<3.2
Benzo(a)anthracene	ug/kg	EPA 8270E by SIM	1,050	0	37.6J	14.8J	5.1J	4.1J	6.9J	8.4J	6.1J	4.5J	11.6J	<2.6	<3.4	6.1J
Benzo(a)pyrene	ug/kg	EPA 8270E by SIM	1,450	0	41.2	11.6J	3.4J	<2.8	4.2J	7.9J	4.4J	<2.9	11.0J	<2.3	3.2J	3.9J
Benzo(b)fluoranthene	ug/kg	EPA 8270E by SIM	13,400	0	59.5	18.1J	4.5J	<3.4	5.8J	9.3J	6.3J	3.6J	16.7J	<2.8	<3.6	6.1J
Benzo(g,h,i)perylene	ug/kg	EPA 8270E by SIM	3,200	0	26.1J	4.1J	<4.5	<4.3	<4.9	5.3J	<4.7	<4.4	<4.9	<3.5	<4.6	<4.5
Benzo(k)fluoranthene	ug/kg	EPA 8270E by SIM	13,400	0	20.0J	8.1J	<3.3	<3.1	<3.6	5.1J	<3.4	<3.2	6.7J	<2.6	<3.3	<3.3
Chrysene	ug/kg	EPA 8270E by SIM	1,290	0	41.8	20.0J	<4.9	<4.6	5.4J	6.6J	5.1J	<4.7	11.3J	<3.8	<4.9	<4.8
Dibenz(a,h)anthracene	ug/kg	EPA 8270E by SIM	135	0	6.7J	<3.1	<3.6	<3.4	<3.9	<3.6	<3.7	<3.5	<3.9	<2.8	<3.6	<3.6
Fluoranthene	ug/kg	EPA 8270E by SIM	2,230	0	95.6	40.9	8.3J	7.0J	12.0J	12.6J	10.6J	7.4J	24.7J	<2.4	<3.1	8.3J
Fluorene	ug/kg	EPA 8270E by SIM	536	0	26.6J	3.1J	<3.1	<2.9	<3.4	<3.1	<3.2	<3.0	<3.4	<2.4	<3.1	<3.1
Indeno(1,2,3-cd)pyrene	ug/kg	EPA 8270E by SIM	3,200	0	21.7J	<4.7	<5.4	<5.1	<5.9	<5.4	<5.5	<5.2	<5.8	<4.2	<5.4	<5.3
Naphthalene	ug/kg	EPA 8270E by SIM	561	0	471	4.9J	54	<2.4	<2.7	<2.5	15.3J	<2.4	<2.7	<2.0	<2.5	<2.5
Phenanthrene	ug/kg	EPA 8270E by SIM	1,170	0	89	24.4	9.5J	3.7J	7.3J	3.6J	6.2J	3.3J	9.4J	<2.3	<3.0	3.7J
Pyrene	ug/kg	EPA 8270E by SIM	1,520	0	79.7	33.2	6.6J	4.6J	9.0J	10.0J	8.1J	5.6J	17.8J	<2.9	<3.8	6.4J
1-Methylnaphthalene	ug/kg	EPA 8270E by SIM			106	<3.3	8.8J	<3.5	<4.1	<3.8	<3.9	<3.7	<4.1	<2.9	<3.8	<3.7
2-Methylnaphthalene	ug/kg	EPA 8270E by SIM	201	0	151	<3.3	15.1J	<3.5	<4.1	<3.8	4.2J	<3.7	<4.1	<2.9	<3.8	<3.8
Mean TOC	mg/kg	EPA 9060 Modified			42600	12700	18300	19500	28800	22800	25500	19600	25000	15800	19400	15600
Total PCB	ug/kg	EPA 8082A	676	0	<37.5	44.3J	<23.7	<22.2	<25.6	27.4J	29.6J	<22.9	<25.7	<18.3	<23.6	55.5J
Total PAH	ug/kg	Calculation	22,800	0	1,357.6	210.4	150.6	67.6	93.8	100.8	100.9	70.7	148.7	50.0	65.0	78.8
Percent Moisture	%	ASTM D2974			59.3	25.6	35.4	31.1	40.6	35.2	37.1	33.5	40.6	16.7	35.8	34.8

Notes:
Qualifier J: Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
< indicates that the parameter was lower than the Adjusted Method Detection Limit
Calculation of Total PAH used Adjusted Method Detection Limit for values that were lower than the Adjusted Method Detection Limit

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
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(920)469-2436

October 05, 2023

Brendan Cousino
LimnoTech
501 Avis Drive
Ann Arbor, MI 48108

RE: Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Dear Brendan Cousino:

Enclosed are the analytical results for sample(s) received by the laboratory on September 26, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Green Bay

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tod Noltemeyer

Tod Noltemeyer
tod.noltemeyer@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: James Hartrick, LimnoTech

Pace Analytical Services, LLC
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CERTIFICATIONS

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Pace Analytical Services Green Bay
1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150
South Carolina Certification #: 83006001
Texas Certification #: T104704529-21-8
Virginia VELAP Certification ID: 11873
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-21-00008
Federal Fish & Wildlife Permit #: 51774A

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40268638001	**SED-01**	Solid	09/21/23 11:20	09/26/23 09:40
40268638002	**SED-02**	Solid	09/21/23 11:55	09/26/23 09:40
40268638003	**SED-03**	Solid	09/21/23 12:20	09/26/23 09:40
40268638004	**SED-04**	Solid	09/21/23 14:15	09/26/23 09:40
40268638005	**SED-05**	Solid	09/21/23 13:45	09/26/23 09:40
40268638006	**SED-06**	Solid	09/21/23 14:35	09/26/23 09:40
40268638007	**SED-07**	Solid	09/21/23 15:00	09/26/23 09:40
40268638008	**SED-08**	Solid	09/21/23 15:20	09/26/23 09:40
40268638009	**SED-09**	Solid	09/21/23 15:30	09/26/23 09:40
40268638010	**SED-10**	Solid	09/21/23 09:35	09/26/23 09:40
40268638011	**SED-03-DUP**	Solid	09/21/23 12:20	09/26/23 09:40
40268638012	**SED-06-DUP**	Solid	09/21/23 14:35	09/26/23 09:40

Pace Analytical Services, LLC
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SAMPLE ANALYTE COUNT

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40268638001	**SED-01**	EPA 8082A	BLM	10
		EPA 6020B	TXW	9
		EPA 7471	YER	1
		EPA 8270E by SIM	TPO	20
		ASTM D2974-87	SRG	1
		EPA 365.4	MT	1
		EPA 9060 Modified	TJJ	4
40268638002	**SED-02**	EPA 8082A	BLM	10
		EPA 6020B	TXW	9
		EPA 7471	YER	1
		EPA 8270E by SIM	TPO	20
		ASTM D2974-87	SRG	1
		EPA 365.4	MT	1
		EPA 9060 Modified	TJJ	4
40268638003	**SED-03**	EPA 8082A	BLM	10
		EPA 6020B	TXW	9
		EPA 7471	YER	1
		EPA 8270E by SIM	TPO	20
		ASTM D2974-87	SRG	1
		EPA 365.4	MT	1
		EPA 9060 Modified	TJJ	4
40268638004	**SED-04**	EPA 8082A	BLM	10
		EPA 6020B	TXW	9
		EPA 7471	YER	1
		EPA 8270E by SIM	TPO	20
		ASTM D2974-87	SRG	1
		EPA 365.4	MT	1
		EPA 9060 Modified	TJJ	4
40268638005	**SED-05**	EPA 8082A	BLM	10
		EPA 6020B	TXW	9
		EPA 7471	YER	1
		EPA 8270E by SIM	TPO	20
		ASTM D2974-87	SRG	1
		EPA 365.4	MT	1
		EPA 9060 Modified	TJJ	4
40268638006	**SED-06**	EPA 8082A	BLM	10
		EPA 6020B	TXW	9

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SAMPLE ANALYTE COUNT

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 7471	YER	1
		EPA 8270E by SIM	TPO	20
		ASTM D2974-87	SRG	1
		EPA 365.4	MT	1
		EPA 9060 Modified	TJJ	4
40268638007	**SED-07**	EPA 8082A	BLM	10
		EPA 6020B	TXW	9
		EPA 7471	YER	1
		EPA 8270E by SIM	TPO	20
		ASTM D2974-87	SRG	1
		EPA 365.4	MT	1
		EPA 9060 Modified	TJJ	4
40268638008	**SED-08**	EPA 8082A	BLM	10
		EPA 6020B	TXW	9
		EPA 7471	YER	1
		EPA 8270E by SIM	TPO	20
		ASTM D2974-87	SRG	1
		EPA 365.4	MT	1
		EPA 9060 Modified	TJJ	4
40268638009	**SED-09**	EPA 8082A	BLM	10
		EPA 6020B	TXW	9
		EPA 7471	YER	1
		EPA 8270E by SIM	TPO	20
		ASTM D2974-87	SRG	1
		EPA 365.4	MT	1
		EPA 9060 Modified	TJJ	4
40268638010	**SED-10**	EPA 8082A	BLM	10
		EPA 6020B	TXW	9
		EPA 7471	YER	1
		EPA 8270E by SIM	TPO	20
		ASTM D2974-87	SRG	1
		EPA 365.4	MT	1
		EPA 9060 Modified	TJJ	4
40268638011	**SED-03-DUP**	EPA 8082A	BLM	10
		EPA 6020B	TXW	9
		EPA 7471	YER	1
		EPA 8270E by SIM	TPO	20

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
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SAMPLE ANALYTE COUNT

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		ASTM D2974-87	SRG	1
		EPA 365.4	MT	1
		EPA 9060 Modified	TJJ	4
40268638012	**SED-06-DUP**	EPA 8082A	BLM	10
		EPA 6020B	TXW	9
		EPA 7471	YER	1
		EPA 8270E by SIM	TPO	20
		ASTM D2974-87	SRG	1
		EPA 365.4	MT	1
		EPA 9060 Modified	TJJ	4

PASI-G = Pace Analytical Services - Green Bay

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
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SUMMARY OF DETECTION

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40268638001	**SED-01**					
EPA 6020B	Arsenic	9.9	mg/kg	2.2	09/28/23 18:47	
EPA 6020B	Barium	146	mg/kg	2.1	09/28/23 18:47	M0
EPA 6020B	Cadmium	1.8	mg/kg	1.6	09/28/23 18:47	
EPA 6020B	Chromium	36.8	mg/kg	5.0	09/28/23 18:47	
EPA 6020B	Copper	36.3	mg/kg	4.4	09/28/23 18:47	
EPA 6020B	Lead	45.8	mg/kg	1.6	09/28/23 18:47	
EPA 6020B	Selenium	4.1	mg/kg	1.6	09/28/23 18:47	
EPA 6020B	Silver	0.30J	mg/kg	0.82	09/28/23 18:47	D3
EPA 6020B	Zinc	167	mg/kg	57.1	09/28/23 18:47	
EPA 7471	Mercury	0.20	mg/kg	0.084	10/02/23 09:58	
EPA 8270E by SIM	1-Methylnaphthalene	106	ug/kg	41.0	10/03/23 18:36	
EPA 8270E by SIM	2-Methylnaphthalene	151	ug/kg	41.0	10/03/23 18:36	
EPA 8270E by SIM	Acenaphthene	44.7	ug/kg	41.0	10/03/23 18:36	
EPA 8270E by SIM	Acenaphthylene	19.4J	ug/kg	41.0	10/03/23 18:36	
EPA 8270E by SIM	Anthracene	21.3J	ug/kg	41.0	10/03/23 18:36	
EPA 8270E by SIM	Benzo(a)anthracene	37.6J	ug/kg	41.0	10/03/23 18:36	
EPA 8270E by SIM	Benzo(a)pyrene	41.2	ug/kg	41.0	10/03/23 18:36	
EPA 8270E by SIM	Benzo(b)fluoranthene	59.5	ug/kg	41.0	10/03/23 18:36	
EPA 8270E by SIM	Benzo(g,h,i)perylene	26.1J	ug/kg	41.0	10/03/23 18:36	
EPA 8270E by SIM	Benzo(k)fluoranthene	20.0J	ug/kg	41.0	10/03/23 18:36	
EPA 8270E by SIM	Chrysene	41.8	ug/kg	41.0	10/03/23 18:36	
EPA 8270E by SIM	Dibenz(a,h)anthracene	6.7J	ug/kg	41.0	10/03/23 18:36	
EPA 8270E by SIM	Fluoranthene	95.6	ug/kg	41.0	10/03/23 18:36	
EPA 8270E by SIM	Fluorene	26.6J	ug/kg	41.0	10/03/23 18:36	
EPA 8270E by SIM	Indeno(1,2,3-cd)pyrene	21.7J	ug/kg	41.0	10/03/23 18:36	
EPA 8270E by SIM	Naphthalene	471	ug/kg	41.0	10/03/23 18:36	
EPA 8270E by SIM	Phenanthrene	89.0	ug/kg	41.0	10/03/23 18:36	
EPA 8270E by SIM	Pyrene	79.7	ug/kg	41.0	10/03/23 18:36	
ASTM D2974-87	Percent Moisture	59.3	%	0.10	10/04/23 16:39	
EPA 365.4	Phosphorus	716	mg/kg	42.7	10/03/23 12:58	M0
EPA 9060 Modified	RPD%	13.4	%	0.10	10/03/23 02:25	
EPA 9060 Modified	Total Organic Carbon	39800	mg/kg	10800	10/03/23 02:25	
EPA 9060 Modified	Total Organic Carbon	45500	mg/kg	10800	10/03/23 02:31	
EPA 9060 Modified	Mean Total Organic Carbon	42600	mg/kg	10800	10/03/23 02:25	
40268638002	**SED-02**					
EPA 8082A	PCB-1242 (Aroclor 1242)	21.3J	ug/kg	67.4	09/29/23 20:18	
EPA 8082A	PCB-1254 (Aroclor 1254)	23.0J	ug/kg	67.4	09/29/23 20:18	
EPA 8082A	PCB, Total	44.3J	ug/kg	67.4	09/29/23 20:18	
EPA 6020B	Arsenic	3.5	mg/kg	1.1	09/28/23 19:07	
EPA 6020B	Barium	32.0	mg/kg	1.1	09/28/23 19:07	
EPA 6020B	Cadmium	0.71J	mg/kg	0.85	09/28/23 19:07	D3
EPA 6020B	Chromium	8.6	mg/kg	2.6	09/28/23 19:07	
EPA 6020B	Copper	6.8	mg/kg	2.3	09/28/23 19:07	
EPA 6020B	Lead	25.0	mg/kg	0.85	09/28/23 19:07	
EPA 6020B	Selenium	1.1	mg/kg	0.85	09/28/23 19:07	
EPA 6020B	Zinc	92.4	mg/kg	29.7	09/28/23 19:07	
EPA 8270E by SIM	Anthracene	7.1J	ug/kg	22.5	09/28/23 15:48	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SUMMARY OF DETECTION

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40268638002	**SED-02**					
EPA 8270E by SIM	Benzo(a)anthracene	14.8J	ug/kg	22.5	09/28/23 15:48	
EPA 8270E by SIM	Benzo(a)pyrene	11.6J	ug/kg	22.5	09/28/23 15:48	
EPA 8270E by SIM	Benzo(b)fluoranthene	18.1J	ug/kg	22.5	09/28/23 15:48	
EPA 8270E by SIM	Benzo(g,h,i)perylene	4.1J	ug/kg	22.5	09/28/23 15:48	
EPA 8270E by SIM	Benzo(k)fluoranthene	8.1J	ug/kg	22.5	09/28/23 15:48	
EPA 8270E by SIM	Chrysene	20.0J	ug/kg	22.5	09/28/23 15:48	
EPA 8270E by SIM	Fluoranthene	40.9	ug/kg	22.5	09/28/23 15:48	
EPA 8270E by SIM	Fluorene	3.1J	ug/kg	22.5	09/28/23 15:48	
EPA 8270E by SIM	Naphthalene	4.9J	ug/kg	22.5	09/28/23 15:48	
EPA 8270E by SIM	Phenanthrene	24.4	ug/kg	22.5	09/28/23 15:48	
EPA 8270E by SIM	Pyrene	33.2	ug/kg	22.5	09/28/23 15:48	
ASTM D2974-87	Percent Moisture	25.6	%	0.10	10/04/23 16:39	
EPA 365.4	Phosphorus	220	mg/kg	23.4	10/03/23 13:01	
EPA 9060 Modified	RPD%	9.2	%	0.10	10/03/23 02:57	
EPA 9060 Modified	Total Organic Carbon	13300	mg/kg	6160	10/03/23 02:57	
EPA 9060 Modified	Total Organic Carbon	12100	mg/kg	5850	10/03/23 03:02	
EPA 9060 Modified	Mean Total Organic Carbon	12700	mg/kg	6010	10/03/23 02:57	
40268638003	**SED-03**					
EPA 6020B	Arsenic	5.0	mg/kg	1.3	09/28/23 19:18	
EPA 6020B	Barium	42.1	mg/kg	1.3	09/28/23 19:18	
EPA 6020B	Cadmium	0.79J	mg/kg	1.0	09/28/23 19:18	D3
EPA 6020B	Chromium	11.6	mg/kg	3.1	09/28/23 19:18	
EPA 6020B	Copper	10.3	mg/kg	2.7	09/28/23 19:18	
EPA 6020B	Lead	27.8	mg/kg	1.0	09/28/23 19:18	
EPA 6020B	Selenium	1.8	mg/kg	1.0	09/28/23 19:18	
EPA 6020B	Zinc	85.2	mg/kg	35.2	09/28/23 19:18	
EPA 7471	Mercury	0.071	mg/kg	0.054	10/02/23 10:02	
EPA 8270E by SIM	1-Methylnaphthalene	8.8J	ug/kg	25.9	09/28/23 12:04	
EPA 8270E by SIM	2-Methylnaphthalene	15.1J	ug/kg	25.9	09/28/23 12:04	
EPA 8270E by SIM	Acenaphthene	4.0J	ug/kg	25.9	09/28/23 12:04	
EPA 8270E by SIM	Benzo(a)anthracene	5.1J	ug/kg	25.9	09/28/23 12:04	
EPA 8270E by SIM	Benzo(a)pyrene	3.4J	ug/kg	25.9	09/28/23 12:04	
EPA 8270E by SIM	Benzo(b)fluoranthene	4.5J	ug/kg	25.9	09/28/23 12:04	
EPA 8270E by SIM	Fluoranthene	8.3J	ug/kg	25.9	09/28/23 12:04	
EPA 8270E by SIM	Naphthalene	54.0	ug/kg	25.9	09/28/23 12:04	
EPA 8270E by SIM	Phenanthrene	9.5J	ug/kg	25.9	09/28/23 12:04	
EPA 8270E by SIM	Pyrene	6.6J	ug/kg	25.9	09/28/23 12:04	
ASTM D2974-87	Percent Moisture	35.4	%	0.10	10/04/23 17:11	
EPA 365.4	Phosphorus	395	mg/kg	31.0	10/03/23 13:03	
EPA 9060 Modified	RPD%	0.44	%	0.10	10/03/23 03:38	
EPA 9060 Modified	Total Organic Carbon	18300	mg/kg	4200	10/03/23 03:38	
EPA 9060 Modified	Total Organic Carbon	18300	mg/kg	4200	10/03/23 03:44	
EPA 9060 Modified	Mean Total Organic Carbon	18300	mg/kg	4200	10/03/23 03:38	
40268638004	**SED-04**					
EPA 6020B	Arsenic	6.0	mg/kg	1.2	09/28/23 19:23	
EPA 6020B	Barium	55.5	mg/kg	1.2	09/28/23 19:23	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
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SUMMARY OF DETECTION

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40268638004	**SED-04**					
EPA 6020B	Cadmium	0.47J	mg/kg	0.90	09/28/23 19:23	D3
EPA 6020B	Chromium	13.0	mg/kg	2.7	09/28/23 19:23	
EPA 6020B	Copper	13.5	mg/kg	2.4	09/28/23 19:23	
EPA 6020B	Lead	19.4	mg/kg	0.90	09/28/23 19:23	
EPA 6020B	Selenium	2.0	mg/kg	0.90	09/28/23 19:23	
EPA 6020B	Silver	0.14J	mg/kg	0.45	09/28/23 19:23	D3
EPA 6020B	Zinc	64.5	mg/kg	31.5	09/28/23 19:23	
EPA 7471	Mercury	0.15	mg/kg	0.051	10/02/23 10:05	
EPA 8270E by SIM	Benzo(a)anthracene	4.1J	ug/kg	24.3	09/28/23 12:22	
EPA 8270E by SIM	Fluoranthene	7.0J	ug/kg	24.3	09/28/23 12:22	
EPA 8270E by SIM	Phenanthrene	3.7J	ug/kg	24.3	09/28/23 12:22	
EPA 8270E by SIM	Pyrene	4.6J	ug/kg	24.3	09/28/23 12:22	
ASTM D2974-87	Percent Moisture	31.1	%	0.10	10/04/23 17:11	
EPA 365.4	Phosphorus	489	mg/kg	29.0	10/03/23 13:04	
EPA 9060 Modified	RPD%	9.5	%	0.10	10/03/23 03:49	
EPA 9060 Modified	Total Organic Carbon	18600	mg/kg	4300	10/03/23 03:49	
EPA 9060 Modified	Total Organic Carbon	20400	mg/kg	4210	10/03/23 03:55	
EPA 9060 Modified	Mean Total Organic Carbon	19500	mg/kg	4250	10/03/23 03:49	
40268638005	**SED-05**					
EPA 6020B	Arsenic	5.7	mg/kg	1.4	09/28/23 19:38	
EPA 6020B	Barium	64.0	mg/kg	1.4	09/28/23 19:38	
EPA 6020B	Cadmium	1.0J	mg/kg	1.0	09/28/23 19:38	D3
EPA 6020B	Chromium	18.7	mg/kg	3.1	09/28/23 19:38	
EPA 6020B	Copper	18.9	mg/kg	2.8	09/28/23 19:38	
EPA 6020B	Lead	32.2	mg/kg	1.0	09/28/23 19:38	
EPA 6020B	Selenium	2.5	mg/kg	1.0	09/28/23 19:38	
EPA 6020B	Zinc	143	mg/kg	36.1	09/28/23 19:38	
EPA 7471	Mercury	0.062	mg/kg	0.057	10/02/23 10:07	
EPA 8270E by SIM	Benzo(a)anthracene	6.9J	ug/kg	28.1	09/28/23 12:39	
EPA 8270E by SIM	Benzo(a)pyrene	4.2J	ug/kg	28.1	09/28/23 12:39	
EPA 8270E by SIM	Benzo(b)fluoranthene	5.8J	ug/kg	28.1	09/28/23 12:39	
EPA 8270E by SIM	Chrysene	5.4J	ug/kg	28.1	09/28/23 12:39	
EPA 8270E by SIM	Fluoranthene	12.0J	ug/kg	28.1	09/28/23 12:39	
EPA 8270E by SIM	Phenanthrene	7.3J	ug/kg	28.1	09/28/23 12:39	
EPA 8270E by SIM	Pyrene	9.0J	ug/kg	28.1	09/28/23 12:39	
ASTM D2974-87	Percent Moisture	40.6	%	0.10	10/04/23 17:11	
EPA 365.4	Phosphorus	623	mg/kg	32.1	10/03/23 13:05	
EPA 9060 Modified	RPD%	2.8	%	0.10	10/03/23 04:22	
EPA 9060 Modified	Total Organic Carbon	29300	mg/kg	4990	10/03/23 04:22	
EPA 9060 Modified	Total Organic Carbon	28400	mg/kg	4880	10/03/23 04:28	
EPA 9060 Modified	Mean Total Organic Carbon	28800	mg/kg	4930	10/03/23 04:22	
40268638006	**SED-06**					
EPA 8082A	PCB-1254 (Aroclor 1254)	27.4J	ug/kg	76.8	09/29/23 21:43	
EPA 8082A	PCB, Total	27.4J	ug/kg	76.8	09/29/23 21:43	
EPA 6020B	Arsenic	5.9	mg/kg	1.3	09/28/23 19:43	
EPA 6020B	Barium	57.1	mg/kg	1.3	09/28/23 19:43	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SUMMARY OF DETECTION

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40268638006	**SED-06**					
EPA 6020B	Cadmium	1.8	mg/kg	1.0	09/28/23 19:43	
EPA 6020B	Chromium	16.6	mg/kg	3.0	09/28/23 19:43	
EPA 6020B	Copper	15.7	mg/kg	2.7	09/28/23 19:43	
EPA 6020B	Lead	45.5	mg/kg	1.0	09/28/23 19:43	
EPA 6020B	Selenium	1.9	mg/kg	1.0	09/28/23 19:43	
EPA 6020B	Silver	0.16J	mg/kg	0.50	09/28/23 19:43	D3
EPA 6020B	Zinc	158	mg/kg	34.7	09/28/23 19:43	
EPA 7471	Mercury	0.096	mg/kg	0.053	10/02/23 10:09	
EPA 8270E by SIM	Benzo(a)anthracene	8.4J	ug/kg	25.8	09/28/23 13:30	
EPA 8270E by SIM	Benzo(a)pyrene	7.9J	ug/kg	25.8	09/28/23 13:30	
EPA 8270E by SIM	Benzo(b)fluoranthene	9.3J	ug/kg	25.8	09/28/23 13:30	
EPA 8270E by SIM	Benzo(g,h,i)perylene	5.3J	ug/kg	25.8	09/28/23 13:30	
EPA 8270E by SIM	Benzo(k)fluoranthene	5.1J	ug/kg	25.8	09/28/23 13:30	
EPA 8270E by SIM	Chrysene	6.6J	ug/kg	25.8	09/28/23 13:30	
EPA 8270E by SIM	Fluoranthene	12.6J	ug/kg	25.8	09/28/23 13:30	
EPA 8270E by SIM	Phenanthrene	3.6J	ug/kg	25.8	09/28/23 13:30	
EPA 8270E by SIM	Pyrene	10.0J	ug/kg	25.8	09/28/23 13:30	
ASTM D2974-87	Percent Moisture	35.2	%	0.10	10/04/23 17:11	
EPA 365.4	Phosphorus	456	mg/kg	26.8	10/03/23 13:06	
EPA 9060 Modified	RPD%	1.9	%	0.10	10/03/23 04:32	
EPA 9060 Modified	Total Organic Carbon	23000	mg/kg	5210	10/03/23 04:32	
EPA 9060 Modified	Total Organic Carbon	22600	mg/kg	5300	10/03/23 04:38	
EPA 9060 Modified	Mean Total Organic Carbon	22800	mg/kg	5260	10/03/23 04:32	
40268638007	**SED-07**					
EPA 8082A	PCB-1254 (Aroclor 1254)	29.6J	ug/kg	79.8	09/29/23 22:04	
EPA 8082A	PCB, Total	29.6J	ug/kg	79.8	09/29/23 22:04	
EPA 6020B	Arsenic	7.3	mg/kg	1.3	09/28/23 19:49	
EPA 6020B	Barium	64.0	mg/kg	1.3	09/28/23 19:49	
EPA 6020B	Cadmium	1.7	mg/kg	0.98	09/28/23 19:49	
EPA 6020B	Chromium	16.3	mg/kg	3.0	09/28/23 19:49	
EPA 6020B	Copper	20.8	mg/kg	2.6	09/28/23 19:49	
EPA 6020B	Lead	72.4	mg/kg	0.98	09/28/23 19:49	
EPA 6020B	Selenium	2.0	mg/kg	0.98	09/28/23 19:49	
EPA 6020B	Silver	0.31J	mg/kg	0.49	09/28/23 19:49	D3
EPA 6020B	Zinc	231	mg/kg	34.1	09/28/23 19:49	
EPA 7471	Mercury	0.089	mg/kg	0.054	10/02/23 10:12	
EPA 8270E by SIM	2-Methylnaphthalene	4.2J	ug/kg	26.6	09/28/23 13:47	
EPA 8270E by SIM	Benzo(a)anthracene	6.1J	ug/kg	26.6	09/28/23 13:47	
EPA 8270E by SIM	Benzo(a)pyrene	4.4J	ug/kg	26.6	09/28/23 13:47	
EPA 8270E by SIM	Benzo(b)fluoranthene	6.3J	ug/kg	26.6	09/28/23 13:47	
EPA 8270E by SIM	Chrysene	5.1J	ug/kg	26.6	09/28/23 13:47	
EPA 8270E by SIM	Fluoranthene	10.6J	ug/kg	26.6	09/28/23 13:47	
EPA 8270E by SIM	Naphthalene	15.3J	ug/kg	26.6	09/28/23 13:47	
EPA 8270E by SIM	Phenanthrene	6.2J	ug/kg	26.6	09/28/23 13:47	
EPA 8270E by SIM	Pyrene	8.1J	ug/kg	26.6	09/28/23 13:47	
ASTM D2974-87	Percent Moisture	37.1	%	0.10	10/04/23 17:11	
EPA 365.4	Phosphorus	498	mg/kg	26.5	10/03/23 13:09	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
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(920)469-2436

SUMMARY OF DETECTION

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40268638007	**SED-07**					
EPA 9060 Modified	RPD%	5.6	%	0.10	10/03/23 04:43	
EPA 9060 Modified	Total Organic Carbon	26200	mg/kg	4980	10/03/23 04:43	
EPA 9060 Modified	Total Organic Carbon	24800	mg/kg	4970	10/03/23 04:49	
EPA 9060 Modified	Mean Total Organic Carbon	25500	mg/kg	4980	10/03/23 04:43	
40268638008	**SED-08**					
EPA 6020B	Arsenic	6.4	mg/kg	1.2	09/28/23 19:54	
EPA 6020B	Barium	51.4	mg/kg	1.2	09/28/23 19:54	
EPA 6020B	Cadmium	1.4	mg/kg	0.94	09/28/23 19:54	
EPA 6020B	Chromium	15.1	mg/kg	2.9	09/28/23 19:54	
EPA 6020B	Copper	18.3	mg/kg	2.5	09/28/23 19:54	
EPA 6020B	Lead	51.7	mg/kg	0.94	09/28/23 19:54	
EPA 6020B	Selenium	1.9	mg/kg	0.94	09/28/23 19:54	
EPA 6020B	Zinc	154	mg/kg	32.7	09/28/23 19:54	
EPA 7471	Mercury	0.076	mg/kg	0.052	10/02/23 10:14	
EPA 8270E by SIM	Benzo(a)anthracene	4.5J	ug/kg	25.1	09/28/23 16:05	
EPA 8270E by SIM	Benzo(b)fluoranthene	3.6J	ug/kg	25.1	09/28/23 16:05	
EPA 8270E by SIM	Fluoranthene	7.4J	ug/kg	25.1	09/28/23 16:05	
EPA 8270E by SIM	Phenanthrene	3.3J	ug/kg	25.1	09/28/23 16:05	
EPA 8270E by SIM	Pyrene	5.6J	ug/kg	25.1	09/28/23 16:05	
ASTM D2974-87	Percent Moisture	33.5	%	0.10	10/04/23 17:11	
EPA 365.4	Phosphorus	462	mg/kg	25.1	10/03/23 13:10	
EPA 9060 Modified	RPD%	0.79	%	0.10	10/03/23 04:55	
EPA 9060 Modified	Total Organic Carbon	19700	mg/kg	4030	10/03/23 04:55	
EPA 9060 Modified	Total Organic Carbon	19600	mg/kg	4030	10/03/23 05:00	
EPA 9060 Modified	Mean Total Organic Carbon	19600	mg/kg	4030	10/03/23 04:55	
40268638009	**SED-09**					
EPA 6020B	Arsenic	8.3	mg/kg	1.4	09/28/23 19:59	
EPA 6020B	Barium	73.2	mg/kg	1.4	09/28/23 19:59	
EPA 6020B	Cadmium	0.92J	mg/kg	1.1	09/28/23 19:59	D3
EPA 6020B	Chromium	19.3	mg/kg	3.3	09/28/23 19:59	
EPA 6020B	Copper	26.2	mg/kg	2.9	09/28/23 19:59	
EPA 6020B	Lead	36.2	mg/kg	1.1	09/28/23 19:59	
EPA 6020B	Selenium	2.5	mg/kg	1.1	09/28/23 19:59	
EPA 6020B	Silver	0.19J	mg/kg	0.54	09/28/23 19:59	D3
EPA 6020B	Zinc	127	mg/kg	37.6	09/28/23 19:59	
EPA 7471	Mercury	0.21	mg/kg	0.059	10/02/23 10:21	
EPA 8270E by SIM	Benzo(a)anthracene	11.6J	ug/kg	28.1	09/28/23 16:22	
EPA 8270E by SIM	Benzo(a)pyrene	11.0J	ug/kg	28.1	09/28/23 16:22	
EPA 8270E by SIM	Benzo(b)fluoranthene	16.7J	ug/kg	28.1	09/28/23 16:22	
EPA 8270E by SIM	Benzo(k)fluoranthene	6.7J	ug/kg	28.1	09/28/23 16:22	
EPA 8270E by SIM	Chrysene	11.3J	ug/kg	28.1	09/28/23 16:22	
EPA 8270E by SIM	Fluoranthene	24.7J	ug/kg	28.1	09/28/23 16:22	
EPA 8270E by SIM	Phenanthrene	9.4J	ug/kg	28.1	09/28/23 16:22	
EPA 8270E by SIM	Pyrene	17.8J	ug/kg	28.1	09/28/23 16:22	
ASTM D2974-87	Percent Moisture	40.6	%	0.10	10/04/23 17:11	
EPA 365.4	Phosphorus	507	mg/kg	33.7	10/03/23 13:11	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SUMMARY OF DETECTION

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40268638009	**SED-09**					
EPA 9060 Modified	RPD%	0.52	%	0.10	10/03/23 05:06	
EPA 9060 Modified	Total Organic Carbon	25000	mg/kg	5250	10/03/23 05:06	
EPA 9060 Modified	Total Organic Carbon	25100	mg/kg	5160	10/03/23 05:11	
EPA 9060 Modified	Mean Total Organic Carbon	25000	mg/kg	5200	10/03/23 05:06	
40268638010	**SED-10**					
EPA 6020B	Arsenic	8.4	mg/kg	1.0	09/28/23 20:04	
EPA 6020B	Barium	71.1	mg/kg	1.0	09/28/23 20:04	
EPA 6020B	Cadmium	0.33J	mg/kg	0.79	09/28/23 20:04	D3
EPA 6020B	Chromium	13.1	mg/kg	2.4	09/28/23 20:04	
EPA 6020B	Copper	11.3	mg/kg	2.1	09/28/23 20:04	
EPA 6020B	Lead	9.6	mg/kg	0.79	09/28/23 20:04	
EPA 6020B	Selenium	2.1	mg/kg	0.79	09/28/23 20:04	
EPA 6020B	Zinc	54.7	mg/kg	27.4	09/28/23 20:04	
EPA 7471	Mercury	0.024J	mg/kg	0.041	10/02/23 10:23	
ASTM D2974-87	Percent Moisture	16.7	%	0.10	10/04/23 17:11	
EPA 365.4	Phosphorus	364	mg/kg	21.8	10/03/23 13:12	
EPA 9060 Modified	RPD%	7.7	%	0.10	10/03/23 05:17	
EPA 9060 Modified	Total Organic Carbon	15200	mg/kg	3170	10/03/23 05:17	
EPA 9060 Modified	Total Organic Carbon	16400	mg/kg	3170	10/03/23 05:22	
EPA 9060 Modified	Mean Total Organic Carbon	15800	mg/kg	3170	10/03/23 05:17	
40268638011	**SED-03-DUP**					
EPA 6020B	Arsenic	6.2	mg/kg	1.3	09/28/23 20:09	
EPA 6020B	Barium	43.1	mg/kg	1.3	09/28/23 20:09	
EPA 6020B	Cadmium	0.79J	mg/kg	0.97	09/28/23 20:09	D3
EPA 6020B	Chromium	11.2	mg/kg	3.0	09/28/23 20:09	
EPA 6020B	Copper	11.5	mg/kg	2.6	09/28/23 20:09	
EPA 6020B	Lead	30.3	mg/kg	0.97	09/28/23 20:09	
EPA 6020B	Selenium	1.8	mg/kg	0.97	09/28/23 20:09	
EPA 6020B	Zinc	103	mg/kg	33.9	09/28/23 20:09	
EPA 7471	Mercury	0.053	mg/kg	0.053	10/02/23 10:26	
EPA 8270E by SIM	Benzo(a)pyrene	3.2J	ug/kg	26.0	09/28/23 17:11	
ASTM D2974-87	Percent Moisture	35.8	%	0.10	10/04/23 17:11	
EPA 365.4	Phosphorus	460	mg/kg	28.1	10/03/23 13:13	
EPA 9060 Modified	RPD%	19.3	%	0.10	10/03/23 05:27	
EPA 9060 Modified	Total Organic Carbon	17500	mg/kg	4100	10/03/23 05:27	
EPA 9060 Modified	Total Organic Carbon	21300	mg/kg	4110	10/03/23 05:33	
EPA 9060 Modified	Mean Total Organic Carbon	19400	mg/kg	4110	10/03/23 05:27	
40268638012	**SED-06-DUP**					
EPA 8082A	PCB-1242 (Aroclor 1242)	23.6J	ug/kg	76.9	09/29/23 23:50	
EPA 8082A	PCB-1254 (Aroclor 1254)	31.9J	ug/kg	76.9	09/29/23 23:50	
EPA 8082A	PCB, Total	55.5J	ug/kg	76.9	09/29/23 23:50	
EPA 6020B	Arsenic	6.4	mg/kg	1.3	09/28/23 20:14	
EPA 6020B	Barium	52.4	mg/kg	1.3	09/28/23 20:14	
EPA 6020B	Cadmium	1.5	mg/kg	1.0	09/28/23 20:14	
EPA 6020B	Chromium	14.9	mg/kg	3.1	09/28/23 20:14	
EPA 6020B	Copper	15.6	mg/kg	2.7	09/28/23 20:14	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SUMMARY OF DETECTION

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40268638012	**SED-06-DUP**					
EPA 6020B	Lead	44.2	mg/kg	1.0	09/28/23 20:14	
EPA 6020B	Selenium	2.0	mg/kg	1.0	09/28/23 20:14	
EPA 6020B	Zinc	154	mg/kg	35.0	09/28/23 20:14	
EPA 7471	Mercury	0.084	mg/kg	0.052	10/02/23 10:28	
EPA 8270E by SIM	Benzo(a)anthracene	6.1J	ug/kg	25.7	09/28/23 17:28	
EPA 8270E by SIM	Benzo(a)pyrene	3.9J	ug/kg	25.7	09/28/23 17:28	
EPA 8270E by SIM	Benzo(b)fluoranthene	6.1J	ug/kg	25.7	09/28/23 17:28	
EPA 8270E by SIM	Fluoranthene	8.3J	ug/kg	25.7	09/28/23 17:28	
EPA 8270E by SIM	Phenanthrene	3.7J	ug/kg	25.7	09/28/23 17:28	
EPA 8270E by SIM	Pyrene	6.4J	ug/kg	25.7	09/28/23 17:28	
ASTM D2974-87	Percent Moisture	34.8	%	0.10	10/04/23 17:11	
EPA 365.4	Phosphorus	940	mg/kg	26.7	10/03/23 13:15	
EPA 9060 Modified	RPD%	9.1	%	0.10	10/03/23 05:38	
EPA 9060 Modified	Total Organic Carbon	14900	mg/kg	4910	10/03/23 05:38	
EPA 9060 Modified	Total Organic Carbon	16300	mg/kg	4900	10/03/23 05:44	
EPA 9060 Modified	Mean Total Organic Carbon	15600	mg/kg	4910	10/03/23 05:38	

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PROJECT NARRATIVE

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Method: **EPA 8082A**
Description: 8082A GCS PCB
Client: LimnoTech
Date: October 05, 2023

General Information:
12 samples were analyzed for EPA 8082A by Pace Analytical Services Green Bay. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3541 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
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PROJECT NARRATIVE

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Method: **EPA 6020B**
Description: 6020B MET ICPMS
Client: LimnoTech
Date: October 05, 2023

General Information:
12 samples were analyzed for EPA 6020B by Pace Analytical Services Green Bay. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3050B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 456021

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 40268638001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 2618893)
  - Barium
- MSD (Lab ID: 2618894)
  - Barium

Additional Comments:

Analyte Comments:

QC Batch: 456021

D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- SED-01 (Lab ID: 40268638001)
  - Silver

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PROJECT NARRATIVE

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Method: **EPA 6020B**
Description: 6020B MET ICPMS
Client: LimnoTech
Date: October 05, 2023

Analyte Comments:

QC Batch: 456021

D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- SED-02 (Lab ID: 40268638002)
  - Silver
  - Cadmium
- SED-03 (Lab ID: 40268638003)
  - Silver
  - Cadmium
- SED-03-DUP (Lab ID: 40268638011)
  - Silver
  - Cadmium
- SED-04 (Lab ID: 40268638004)
  - Silver
  - Cadmium
- SED-05 (Lab ID: 40268638005)
  - Silver
  - Cadmium
- SED-06 (Lab ID: 40268638006)
  - Silver
- SED-06-DUP (Lab ID: 40268638012)
  - Silver
- SED-07 (Lab ID: 40268638007)
  - Silver
- SED-08 (Lab ID: 40268638008)
  - Silver
- SED-09 (Lab ID: 40268638009)
  - Silver
  - Cadmium
- SED-10 (Lab ID: 40268638010)
  - Silver
  - Cadmium

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PROJECT NARRATIVE

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Method: **EPA 7471**
Description: 7471 Mercury
Client: LimnoTech
Date: October 05, 2023

General Information:
12 samples were analyzed for EPA 7471 by Pace Analytical Services Green Bay. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7471 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Method: **EPA 8270E by SIM**
Description: 8270E MSSV PAH by SIM
Client: LimnoTech
Date: October 05, 2023

General Information:
12 samples were analyzed for EPA 8270E by SIM by Pace Analytical Services Green Bay. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 456027

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 40268645003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2618911)
  - 2-Methylnaphthalene
  - Naphthalene
- MSD (Lab ID: 2618912)
  - 2-Methylnaphthalene
  - Naphthalene

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PROJECT NARRATIVE

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Method: **EPA 8270E by SIM**
Description: 8270E MSSV PAH by SIM
Client: LimnoTech
Date: October 05, 2023

QC Batch: 456409

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 40268497013

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2620826)
  - Naphthalene
- MSD (Lab ID: 2620827)
  - Naphthalene

Additional Comments:

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PROJECT NARRATIVE

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Method: **EPA 365.4**
Description: 365.4 Total Phosphorus
Client: LimnoTech
Date: October 05, 2023

General Information:
12 samples were analyzed for EPA 365.4 by Pace Analytical Services Green Bay. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 365.4 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 456265

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 40268638001,40268646006

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MSD (Lab ID: 2620379)
  - Phosphorus

Additional Comments:

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PROJECT NARRATIVE

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Method: **EPA 9060 Modified**
Description: Total Organic Carbon
Client: LimnoTech
Date: October 05, 2023

General Information:
12 samples were analyzed for EPA 9060 Modified by Pace Analytical Services Green Bay. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Sample: SED-01 **Lab ID: 40268638001** Collected: 09/21/23 11:20 Received: 09/26/23 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082A GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3541 Pace Analytical Services - Green Bay								
PCB-1016 (Aroclor 1016)	**<37.5**	ug/kg	123	37.5	1	09/29/23 11:35	09/29/23 19:56	12674-11-2	
PCB-1221 (Aroclor 1221)	**<37.5**	ug/kg	123	37.5	1	09/29/23 11:35	09/29/23 19:56	11104-28-2	
PCB-1232 (Aroclor 1232)	**<37.5**	ug/kg	123	37.5	1	09/29/23 11:35	09/29/23 19:56	11141-16-5	
PCB-1242 (Aroclor 1242)	**<37.5**	ug/kg	123	37.5	1	09/29/23 11:35	09/29/23 19:56	53469-21-9	
PCB-1248 (Aroclor 1248)	**<37.5**	ug/kg	123	37.5	1	09/29/23 11:35	09/29/23 19:56	12672-29-6	
PCB-1254 (Aroclor 1254)	**<37.5**	ug/kg	123	37.5	1	09/29/23 11:35	09/29/23 19:56	11097-69-1	
PCB-1260 (Aroclor 1260)	**<37.5**	ug/kg	123	37.5	1	09/29/23 11:35	09/29/23 19:56	11096-82-5	
PCB, Total	**<37.5**	ug/kg	123	37.5	1	09/29/23 11:35	09/29/23 19:56	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	89	%	44-120		1	09/29/23 11:35	09/29/23 19:56	877-09-8	
Decachlorobiphenyl (S)	81	%	34-120		1	09/29/23 11:35	09/29/23 19:56	2051-24-3	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Green Bay								
Arsenic	**9.9**	mg/kg	2.2	0.65	6.667	09/28/23 07:16	09/28/23 18:47	7440-38-2	
Barium	**146**	mg/kg	2.1	0.65	6.667	09/28/23 07:16	09/28/23 18:47	7440-39-3	M0
Cadmium	**1.8**	mg/kg	1.6	0.24	6.667	09/28/23 07:16	09/28/23 18:47	7440-43-9	
Chromium	**36.8**	mg/kg	5.0	1.5	6.667	09/28/23 07:16	09/28/23 18:47	7440-47-3	
Copper	**36.3**	mg/kg	4.4	1.3	6.667	09/28/23 07:16	09/28/23 18:47	7440-50-8	
Lead	**45.8**	mg/kg	1.6	0.45	6.667	09/28/23 07:16	09/28/23 18:47	7439-92-1	
Selenium	**4.1**	mg/kg	1.6	0.45	6.667	09/28/23 07:16	09/28/23 18:47	7782-49-2	
Silver	**0.30J**	mg/kg	0.82	0.23	6.667	09/28/23 07:16	09/28/23 18:47	7440-22-4	D3
Zinc	**167**	mg/kg	57.1	17.1	6.667	09/28/23 07:16	09/28/23 18:47	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471 Pace Analytical Services - Green Bay								
Mercury	**0.20**	mg/kg	0.084	0.024	1	09/29/23 09:57	10/02/23 09:58	7439-97-6	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
1-Methylnaphthalene	**106**	ug/kg	41.0	6.0	1	10/03/23 07:54	10/03/23 18:36	90-12-0	
2-Methylnaphthalene	**151**	ug/kg	41.0	6.0	1	10/03/23 07:54	10/03/23 18:36	91-57-6	
Acenaphthene	**44.7**	ug/kg	41.0	5.3	1	10/03/23 07:54	10/03/23 18:36	83-32-9	
Acenaphthylene	**19.4J**	ug/kg	41.0	5.2	1	10/03/23 07:54	10/03/23 18:36	208-96-8	
Anthracene	**21.3J**	ug/kg	41.0	5.1	1	10/03/23 07:54	10/03/23 18:36	120-12-7	
Benzo(a)anthracene	**37.6J**	ug/kg	41.0	5.3	1	10/03/23 07:54	10/03/23 18:36	56-55-3	
Benzo(a)pyrene	**41.2**	ug/kg	41.0	4.7	1	10/03/23 07:54	10/03/23 18:36	50-32-8	
Benzo(b)fluoranthene	**59.5**	ug/kg	41.0	5.7	1	10/03/23 07:54	10/03/23 18:36	205-99-2	
Benzo(g,h,i)perylene	**26.1J**	ug/kg	41.0	7.2	1	10/03/23 07:54	10/03/23 18:36	191-24-2	
Benzo(k)fluoranthene	**20.0J**	ug/kg	41.0	5.2	1	10/03/23 07:54	10/03/23 18:36	207-08-9	
Chrysene	**41.8**	ug/kg	41.0	7.7	1	10/03/23 07:54	10/03/23 18:36	218-01-9	
Dibenz(a,h)anthracene	**6.7J**	ug/kg	41.0	5.7	1	10/03/23 07:54	10/03/23 18:36	53-70-3	
Fluoranthene	**95.6**	ug/kg	41.0	4.9	1	10/03/23 07:54	10/03/23 18:36	206-44-0	
Fluorene	**26.6J**	ug/kg	41.0	4.9	1	10/03/23 07:54	10/03/23 18:36	86-73-7	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Sample: SED-01 **Lab ID: 40268638001** Collected: 09/21/23 11:20 Received: 09/26/23 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
Indeno(1,2,3-cd)pyrene	**21.7J**	ug/kg	41.0	8.5	1	10/03/23 07:54	10/03/23 18:36	193-39-5	
Naphthalene	**471**	ug/kg	41.0	4.0	1	10/03/23 07:54	10/03/23 18:36	91-20-3	
Phenanthrene	**89.0**	ug/kg	41.0	4.7	1	10/03/23 07:54	10/03/23 18:36	85-01-8	
Pyrene	**79.7**	ug/kg	41.0	6.0	1	10/03/23 07:54	10/03/23 18:36	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	44	%	39-120		1	10/03/23 07:54	10/03/23 18:36	321-60-8	
Terphenyl-d14 (S)	56	%	36-120		1	10/03/23 07:54	10/03/23 18:36	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**59.3**	%	0.10	0.10	1		10/04/23 16:39		
365.4 Total Phosphorus	Analytical Method: EPA 365.4 Preparation Method: EPA 365.4 Pace Analytical Services - Green Bay								
Phosphorus	**716**	mg/kg	42.7	10.7	1	10/03/23 07:00	10/03/23 12:58	7723-14-0	M0
Total Organic Carbon	Analytical Method: EPA 9060 Modified Pace Analytical Services - Green Bay								
Surrogates									
RPD%	**13.4**	%	0.10	0.10	1		10/03/23 02:25		
Total Organic Carbon	**39800**	mg/kg	10800	3230	1		10/03/23 02:25	7440-44-0	
Total Organic Carbon	**45500**	mg/kg	10800	3210	1		10/03/23 02:31	7440-44-0	
Mean Total Organic Carbon	**42600**	mg/kg	10800	3220	1		10/03/23 02:25	7440-44-0	

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ANALYTICAL RESULTS

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Sample: SED-02 **Lab ID: 40268638002** Collected: 09/21/23 11:55 Received: 09/26/23 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082A GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3541 Pace Analytical Services - Green Bay								
PCB-1016 (Aroclor 1016)	**<20.5**	ug/kg	67.4	20.5	1	09/29/23 11:35	09/29/23 20:18	12674-11-2	
PCB-1221 (Aroclor 1221)	**<20.5**	ug/kg	67.4	20.5	1	09/29/23 11:35	09/29/23 20:18	11104-28-2	
PCB-1232 (Aroclor 1232)	**<20.5**	ug/kg	67.4	20.5	1	09/29/23 11:35	09/29/23 20:18	11141-16-5	
PCB-1242 (Aroclor 1242)	**21.3J**	ug/kg	67.4	20.5	1	09/29/23 11:35	09/29/23 20:18	53469-21-9	
PCB-1248 (Aroclor 1248)	**<20.5**	ug/kg	67.4	20.5	1	09/29/23 11:35	09/29/23 20:18	12672-29-6	
PCB-1254 (Aroclor 1254)	**23.0J**	ug/kg	67.4	20.5	1	09/29/23 11:35	09/29/23 20:18	11097-69-1	
PCB-1260 (Aroclor 1260)	**<20.5**	ug/kg	67.4	20.5	1	09/29/23 11:35	09/29/23 20:18	11096-82-5	
PCB, Total	**44.3J**	ug/kg	67.4	20.5	1	09/29/23 11:35	09/29/23 20:18	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	79	%	44-120		1	09/29/23 11:35	09/29/23 20:18	877-09-8	
Decachlorobiphenyl (S)	60	%	34-120		1	09/29/23 11:35	09/29/23 20:18	2051-24-3	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Green Bay								
Arsenic	**3.5**	mg/kg	1.1	0.34	6.667	09/28/23 07:16	09/28/23 19:07	7440-38-2	
Barium	**32.0**	mg/kg	1.1	0.34	6.667	09/28/23 07:16	09/28/23 19:07	7440-39-3	
Cadmium	**0.71J**	mg/kg	0.85	0.12	6.667	09/28/23 07:16	09/28/23 19:07	7440-43-9	D3
Chromium	**8.6**	mg/kg	2.6	0.78	6.667	09/28/23 07:16	09/28/23 19:07	7440-47-3	
Copper	**6.8**	mg/kg	2.3	0.69	6.667	09/28/23 07:16	09/28/23 19:07	7440-50-8	
Lead	**25.0**	mg/kg	0.85	0.23	6.667	09/28/23 07:16	09/28/23 19:07	7439-92-1	
Selenium	**1.1**	mg/kg	0.85	0.23	6.667	09/28/23 07:16	09/28/23 19:07	7782-49-2	
Silver	**<0.12**	mg/kg	0.43	0.12	6.667	09/28/23 07:16	09/28/23 19:07	7440-22-4	D3
Zinc	**92.4**	mg/kg	29.7	8.9	6.667	09/28/23 07:16	09/28/23 19:07	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471 Pace Analytical Services - Green Bay								
Mercury	**<0.013**	mg/kg	0.047	0.013	1	09/29/23 09:57	10/02/23 10:00	7439-97-6	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
1-Methylnaphthalene	**<3.3**	ug/kg	22.5	3.3	1	09/28/23 08:08	09/28/23 15:48	90-12-0	
2-Methylnaphthalene	**<3.3**	ug/kg	22.5	3.3	1	09/28/23 08:08	09/28/23 15:48	91-57-6	
Acenaphthene	**<2.9**	ug/kg	22.5	2.9	1	09/28/23 08:08	09/28/23 15:48	83-32-9	
Acenaphthylene	**<2.8**	ug/kg	22.5	2.8	1	09/28/23 08:08	09/28/23 15:48	208-96-8	
Anthracene	**7.1J**	ug/kg	22.5	2.8	1	09/28/23 08:08	09/28/23 15:48	120-12-7	
Benzo(a)anthracene	**14.8J**	ug/kg	22.5	2.9	1	09/28/23 08:08	09/28/23 15:48	56-55-3	
Benzo(a)pyrene	**11.6J**	ug/kg	22.5	2.6	1	09/28/23 08:08	09/28/23 15:48	50-32-8	
Benzo(b)fluoranthene	**18.1J**	ug/kg	22.5	3.1	1	09/28/23 08:08	09/28/23 15:48	205-99-2	
Benzo(g,h,i)perylene	**4.1J**	ug/kg	22.5	3.9	1	09/28/23 08:08	09/28/23 15:48	191-24-2	
Benzo(k)fluoranthene	**8.1J**	ug/kg	22.5	2.9	1	09/28/23 08:08	09/28/23 15:48	207-08-9	
Chrysene	**20.0J**	ug/kg	22.5	4.2	1	09/28/23 08:08	09/28/23 15:48	218-01-9	
Dibenz(a,h)anthracene	**<3.1**	ug/kg	22.5	3.1	1	09/28/23 08:08	09/28/23 15:48	53-70-3	
Fluoranthene	**40.9**	ug/kg	22.5	2.7	1	09/28/23 08:08	09/28/23 15:48	206-44-0	
Fluorene	**3.1J**	ug/kg	22.5	2.7	1	09/28/23 08:08	09/28/23 15:48	86-73-7	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Sample: SED-02 **Lab ID: 40268638002** Collected: 09/21/23 11:55 Received: 09/26/23 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
Indeno(1,2,3-cd)pyrene	**<4.7**	ug/kg	22.5	4.7	1	09/28/23 08:08	09/28/23 15:48	193-39-5	
Naphthalene	**4.9J**	ug/kg	22.5	2.2	1	09/28/23 08:08	09/28/23 15:48	91-20-3	
Phenanthrene	**24.4**	ug/kg	22.5	2.6	1	09/28/23 08:08	09/28/23 15:48	85-01-8	
Pyrene	**33.2**	ug/kg	22.5	3.3	1	09/28/23 08:08	09/28/23 15:48	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	58	%	39-120		1	09/28/23 08:08	09/28/23 15:48	321-60-8	
Terphenyl-d14 (S)	63	%	36-120		1	09/28/23 08:08	09/28/23 15:48	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**25.6**	%	0.10	0.10	1		10/04/23 16:39		
365.4 Total Phosphorus	Analytical Method: EPA 365.4 Preparation Method: EPA 365.4 Pace Analytical Services - Green Bay								
Phosphorus	**220**	mg/kg	23.4	5.8	1	10/03/23 07:00	10/03/23 13:01	7723-14-0	
Total Organic Carbon	Analytical Method: EPA 9060 Modified Pace Analytical Services - Green Bay								
Surrogates									
RPD%	**9.2**	%	0.10	0.10	1		10/03/23 02:57		
Total Organic Carbon	**13300**	mg/kg	6160	1840	1		10/03/23 02:57	7440-44-0	
Total Organic Carbon	**12100**	mg/kg	5850	1750	1		10/03/23 03:02	7440-44-0	
Mean Total Organic Carbon	**12700**	mg/kg	6010	1790	1		10/03/23 02:57	7440-44-0	

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ANALYTICAL RESULTS

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Sample: SED-03 **Lab ID: 40268638003** Collected: 09/21/23 12:20 Received: 09/26/23 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082A GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3541 Pace Analytical Services - Green Bay								
PCB-1016 (Aroclor 1016)	**<23.7**	ug/kg	77.7	23.7	1	09/29/23 11:35	09/29/23 20:39	12674-11-2	
PCB-1221 (Aroclor 1221)	**<23.7**	ug/kg	77.7	23.7	1	09/29/23 11:35	09/29/23 20:39	11104-28-2	
PCB-1232 (Aroclor 1232)	**<23.7**	ug/kg	77.7	23.7	1	09/29/23 11:35	09/29/23 20:39	11141-16-5	
PCB-1242 (Aroclor 1242)	**<23.7**	ug/kg	77.7	23.7	1	09/29/23 11:35	09/29/23 20:39	53469-21-9	
PCB-1248 (Aroclor 1248)	**<23.7**	ug/kg	77.7	23.7	1	09/29/23 11:35	09/29/23 20:39	12672-29-6	
PCB-1254 (Aroclor 1254)	**<23.7**	ug/kg	77.7	23.7	1	09/29/23 11:35	09/29/23 20:39	11097-69-1	
PCB-1260 (Aroclor 1260)	**<23.7**	ug/kg	77.7	23.7	1	09/29/23 11:35	09/29/23 20:39	11096-82-5	
PCB, Total	**<23.7**	ug/kg	77.7	23.7	1	09/29/23 11:35	09/29/23 20:39	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	82	%	44-120		1	09/29/23 11:35	09/29/23 20:39	877-09-8	
Decachlorobiphenyl (S)	65	%	34-120		1	09/29/23 11:35	09/29/23 20:39	2051-24-3	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Green Bay								
Arsenic	**5.0**	mg/kg	1.3	0.40	6.667	09/28/23 07:16	09/28/23 19:18	7440-38-2	
Barium	**42.1**	mg/kg	1.3	0.40	6.667	09/28/23 07:16	09/28/23 19:18	7440-39-3	
Cadmium	**0.79J**	mg/kg	1.0	0.15	6.667	09/28/23 07:16	09/28/23 19:18	7440-43-9	D3
Chromium	**11.6**	mg/kg	3.1	0.92	6.667	09/28/23 07:16	09/28/23 19:18	7440-47-3	
Copper	**10.3**	mg/kg	2.7	0.81	6.667	09/28/23 07:16	09/28/23 19:18	7440-50-8	
Lead	**27.8**	mg/kg	1.0	0.27	6.667	09/28/23 07:16	09/28/23 19:18	7439-92-1	
Selenium	**1.8**	mg/kg	1.0	0.28	6.667	09/28/23 07:16	09/28/23 19:18	7782-49-2	
Silver	**<0.14**	mg/kg	0.51	0.14	6.667	09/28/23 07:16	09/28/23 19:18	7440-22-4	D3
Zinc	**85.2**	mg/kg	35.2	10.6	6.667	09/28/23 07:16	09/28/23 19:18	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471 Pace Analytical Services - Green Bay								
Mercury	**0.071**	mg/kg	0.054	0.015	1	09/29/23 09:57	10/02/23 10:02	7439-97-6	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
1-Methylnaphthalene	**8.8J**	ug/kg	25.9	3.8	1	09/28/23 08:08	09/28/23 12:04	90-12-0	
2-Methylnaphthalene	**15.1J**	ug/kg	25.9	3.8	1	09/28/23 08:08	09/28/23 12:04	91-57-6	
Acenaphthene	**4.0J**	ug/kg	25.9	3.4	1	09/28/23 08:08	09/28/23 12:04	83-32-9	
Acenaphthylene	**<3.3**	ug/kg	25.9	3.3	1	09/28/23 08:08	09/28/23 12:04	208-96-8	
Anthracene	**<3.2**	ug/kg	25.9	3.2	1	09/28/23 08:08	09/28/23 12:04	120-12-7	
Benzo(a)anthracene	**5.1J**	ug/kg	25.9	3.3	1	09/28/23 08:08	09/28/23 12:04	56-55-3	
Benzo(a)pyrene	**3.4J**	ug/kg	25.9	2.9	1	09/28/23 08:08	09/28/23 12:04	50-32-8	
Benzo(b)fluoranthene	**4.5J**	ug/kg	25.9	3.6	1	09/28/23 08:08	09/28/23 12:04	205-99-2	
Benzo(g,h,i)perylene	**<4.5**	ug/kg	25.9	4.5	1	09/28/23 08:08	09/28/23 12:04	191-24-2	
Benzo(k)fluoranthene	**<3.3**	ug/kg	25.9	3.3	1	09/28/23 08:08	09/28/23 12:04	207-08-9	
Chrysene	**<4.9**	ug/kg	25.9	4.9	1	09/28/23 08:08	09/28/23 12:04	218-01-9	
Dibenz(a,h)anthracene	**<3.6**	ug/kg	25.9	3.6	1	09/28/23 08:08	09/28/23 12:04	53-70-3	
Fluoranthene	**8.3J**	ug/kg	25.9	3.1	1	09/28/23 08:08	09/28/23 12:04	206-44-0	
Fluorene	**<3.1**	ug/kg	25.9	3.1	1	09/28/23 08:08	09/28/23 12:04	86-73-7	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Sample: SED-03 **Lab ID: 40268638003** Collected: 09/21/23 12:20 Received: 09/26/23 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
Indeno(1,2,3-cd)pyrene	**<5.4**	ug/kg	25.9	5.4	1	09/28/23 08:08	09/28/23 12:04	193-39-5	
Naphthalene	**54.0**	ug/kg	25.9	2.5	1	09/28/23 08:08	09/28/23 12:04	91-20-3	
Phenanthrene	**9.5J**	ug/kg	25.9	3.0	1	09/28/23 08:08	09/28/23 12:04	85-01-8	
Pyrene	**6.6J**	ug/kg	25.9	3.8	1	09/28/23 08:08	09/28/23 12:04	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	71	%	39-120		1	09/28/23 08:08	09/28/23 12:04	321-60-8	
Terphenyl-d14 (S)	74	%	36-120		1	09/28/23 08:08	09/28/23 12:04	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**35.4**	%	0.10	0.10	1		10/04/23 17:11		
365.4 Total Phosphorus	Analytical Method: EPA 365.4 Preparation Method: EPA 365.4 Pace Analytical Services - Green Bay								
Phosphorus	**395**	mg/kg	31.0	7.7	1	10/03/23 07:00	10/03/23 13:03	7723-14-0	
Total Organic Carbon	Analytical Method: EPA 9060 Modified Pace Analytical Services - Green Bay								
Surrogates									
RPD%	**0.44**	%	0.10	0.10	1		10/03/23 03:38		
Total Organic Carbon	**18300**	mg/kg	4200	1250	1		10/03/23 03:38	7440-44-0	
Total Organic Carbon	**18300**	mg/kg	4200	1250	1		10/03/23 03:44	7440-44-0	
Mean Total Organic Carbon	**18300**	mg/kg	4200	1250	1		10/03/23 03:38	7440-44-0	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Sample: SED-04 **Lab ID: 40268638004** Collected: 09/21/23 14:15 Received: 09/26/23 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082A GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3541 Pace Analytical Services - Green Bay								
PCB-1016 (Aroclor 1016)	**<22.2**	ug/kg	72.8	22.2	1	09/29/23 11:35	09/29/23 21:00	12674-11-2	
PCB-1221 (Aroclor 1221)	**<22.2**	ug/kg	72.8	22.2	1	09/29/23 11:35	09/29/23 21:00	11104-28-2	
PCB-1232 (Aroclor 1232)	**<22.2**	ug/kg	72.8	22.2	1	09/29/23 11:35	09/29/23 21:00	11141-16-5	
PCB-1242 (Aroclor 1242)	**<22.2**	ug/kg	72.8	22.2	1	09/29/23 11:35	09/29/23 21:00	53469-21-9	
PCB-1248 (Aroclor 1248)	**<22.2**	ug/kg	72.8	22.2	1	09/29/23 11:35	09/29/23 21:00	12672-29-6	
PCB-1254 (Aroclor 1254)	**<22.2**	ug/kg	72.8	22.2	1	09/29/23 11:35	09/29/23 21:00	11097-69-1	
PCB-1260 (Aroclor 1260)	**<22.2**	ug/kg	72.8	22.2	1	09/29/23 11:35	09/29/23 21:00	11096-82-5	
PCB, Total	**<22.2**	ug/kg	72.8	22.2	1	09/29/23 11:35	09/29/23 21:00	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	90	%	44-120		1	09/29/23 11:35	09/29/23 21:00	877-09-8	
Decachlorobiphenyl (S)	85	%	34-120		1	09/29/23 11:35	09/29/23 21:00	2051-24-3	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Green Bay								
Arsenic	**6.0**	mg/kg	1.2	0.36	6.667	09/28/23 07:16	09/28/23 19:23	7440-38-2	
Barium	**55.5**	mg/kg	1.2	0.36	6.667	09/28/23 07:16	09/28/23 19:23	7440-39-3	
Cadmium	**0.47J**	mg/kg	0.90	0.13	6.667	09/28/23 07:16	09/28/23 19:23	7440-43-9	D3
Chromium	**13.0**	mg/kg	2.7	0.82	6.667	09/28/23 07:16	09/28/23 19:23	7440-47-3	
Copper	**13.5**	mg/kg	2.4	0.73	6.667	09/28/23 07:16	09/28/23 19:23	7440-50-8	
Lead	**19.4**	mg/kg	0.90	0.25	6.667	09/28/23 07:16	09/28/23 19:23	7439-92-1	
Selenium	**2.0**	mg/kg	0.90	0.25	6.667	09/28/23 07:16	09/28/23 19:23	7782-49-2	
Silver	**0.14J**	mg/kg	0.45	0.13	6.667	09/28/23 07:16	09/28/23 19:23	7440-22-4	D3
Zinc	**64.5**	mg/kg	31.5	9.4	6.667	09/28/23 07:16	09/28/23 19:23	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471 Pace Analytical Services - Green Bay								
Mercury	**0.15**	mg/kg	0.051	0.015	1	09/29/23 09:57	10/02/23 10:05	7439-97-6	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
1-Methylnaphthalene	**<3.5**	ug/kg	24.3	3.5	1	09/28/23 08:08	09/28/23 12:22	90-12-0	
2-Methylnaphthalene	**<3.5**	ug/kg	24.3	3.5	1	09/28/23 08:08	09/28/23 12:22	91-57-6	
Acenaphthene	**<3.1**	ug/kg	24.3	3.1	1	09/28/23 08:08	09/28/23 12:22	83-32-9	
Acenaphthylene	**<3.1**	ug/kg	24.3	3.1	1	09/28/23 08:08	09/28/23 12:22	208-96-8	
Anthracene	**<3.0**	ug/kg	24.3	3.0	1	09/28/23 08:08	09/28/23 12:22	120-12-7	
Benzo(a)anthracene	**4.1J**	ug/kg	24.3	3.1	1	09/28/23 08:08	09/28/23 12:22	56-55-3	
Benzo(a)pyrene	**<2.8**	ug/kg	24.3	2.8	1	09/28/23 08:08	09/28/23 12:22	50-32-8	
Benzo(b)fluoranthene	**<3.4**	ug/kg	24.3	3.4	1	09/28/23 08:08	09/28/23 12:22	205-99-2	
Benzo(g,h,i)perylene	**<4.3**	ug/kg	24.3	4.3	1	09/28/23 08:08	09/28/23 12:22	191-24-2	
Benzo(k)fluoranthene	**<3.1**	ug/kg	24.3	3.1	1	09/28/23 08:08	09/28/23 12:22	207-08-9	
Chrysene	**<4.6**	ug/kg	24.3	4.6	1	09/28/23 08:08	09/28/23 12:22	218-01-9	
Dibenz(a,h)anthracene	**<3.4**	ug/kg	24.3	3.4	1	09/28/23 08:08	09/28/23 12:22	53-70-3	
Fluoranthene	**7.0J**	ug/kg	24.3	2.9	1	09/28/23 08:08	09/28/23 12:22	206-44-0	
Fluorene	**<2.9**	ug/kg	24.3	2.9	1	09/28/23 08:08	09/28/23 12:22	86-73-7	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Sample: SED-04 **Lab ID: 40268638004** Collected: 09/21/23 14:15 Received: 09/26/23 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
Indeno(1,2,3-cd)pyrene	**<5.1**	ug/kg	24.3	5.1	1	09/28/23 08:08	09/28/23 12:22	193-39-5	
Naphthalene	**<2.4**	ug/kg	24.3	2.4	1	09/28/23 08:08	09/28/23 12:22	91-20-3	
Phenanthrene	**3.7J**	ug/kg	24.3	2.8	1	09/28/23 08:08	09/28/23 12:22	85-01-8	
Pyrene	**4.6J**	ug/kg	24.3	3.6	1	09/28/23 08:08	09/28/23 12:22	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	61	%	39-120		1	09/28/23 08:08	09/28/23 12:22	321-60-8	
Terphenyl-d14 (S)	62	%	36-120		1	09/28/23 08:08	09/28/23 12:22	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**31.1**	%	0.10	0.10	1		10/04/23 17:11		
365.4 Total Phosphorus	Analytical Method: EPA 365.4 Preparation Method: EPA 365.4 Pace Analytical Services - Green Bay								
Phosphorus	**489**	mg/kg	29.0	7.3	1	10/03/23 07:00	10/03/23 13:04	7723-14-0	
Total Organic Carbon	Analytical Method: EPA 9060 Modified Pace Analytical Services - Green Bay								
Surrogates									
RPD%	**9.5**	%	0.10	0.10	1		10/03/23 03:49		
Total Organic Carbon	**18600**	mg/kg	4300	1280	1		10/03/23 03:49	7440-44-0	
Total Organic Carbon	**20400**	mg/kg	4210	1260	1		10/03/23 03:55	7440-44-0	
Mean Total Organic Carbon	**19500**	mg/kg	4250	1270	1		10/03/23 03:49	7440-44-0	

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Sample: SED-05 **Lab ID: 40268638005** Collected: 09/21/23 13:45 Received: 09/26/23 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082A GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3541 Pace Analytical Services - Green Bay								
PCB-1016 (Aroclor 1016)	**<25.6**	ug/kg	84.1	25.6	1	09/29/23 11:35	09/29/23 21:21	12674-11-2	
PCB-1221 (Aroclor 1221)	**<25.6**	ug/kg	84.1	25.6	1	09/29/23 11:35	09/29/23 21:21	11104-28-2	
PCB-1232 (Aroclor 1232)	**<25.6**	ug/kg	84.1	25.6	1	09/29/23 11:35	09/29/23 21:21	11141-16-5	
PCB-1242 (Aroclor 1242)	**<25.6**	ug/kg	84.1	25.6	1	09/29/23 11:35	09/29/23 21:21	53469-21-9	
PCB-1248 (Aroclor 1248)	**<25.6**	ug/kg	84.1	25.6	1	09/29/23 11:35	09/29/23 21:21	12672-29-6	
PCB-1254 (Aroclor 1254)	**<25.6**	ug/kg	84.1	25.6	1	09/29/23 11:35	09/29/23 21:21	11097-69-1	
PCB-1260 (Aroclor 1260)	**<25.6**	ug/kg	84.1	25.6	1	09/29/23 11:35	09/29/23 21:21	11096-82-5	
PCB, Total	**<25.6**	ug/kg	84.1	25.6	1	09/29/23 11:35	09/29/23 21:21	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	74	%	44-120		1	09/29/23 11:35	09/29/23 21:21	877-09-8	
Decachlorobiphenyl (S)	69	%	34-120		1	09/29/23 11:35	09/29/23 21:21	2051-24-3	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Green Bay								
Arsenic	**5.7**	mg/kg	1.4	0.41	6.667	09/28/23 07:16	09/28/23 19:38	7440-38-2	
Barium	**64.0**	mg/kg	1.4	0.41	6.667	09/28/23 07:16	09/28/23 19:38	7440-39-3	
Cadmium	**1.0J**	mg/kg	1.0	0.15	6.667	09/28/23 07:16	09/28/23 19:38	7440-43-9	D3
Chromium	**18.7**	mg/kg	3.1	0.94	6.667	09/28/23 07:16	09/28/23 19:38	7440-47-3	
Copper	**18.9**	mg/kg	2.8	0.83	6.667	09/28/23 07:16	09/28/23 19:38	7440-50-8	
Lead	**32.2**	mg/kg	1.0	0.28	6.667	09/28/23 07:16	09/28/23 19:38	7439-92-1	
Selenium	**2.5**	mg/kg	1.0	0.28	6.667	09/28/23 07:16	09/28/23 19:38	7782-49-2	
Silver	**<0.15**	mg/kg	0.52	0.15	6.667	09/28/23 07:16	09/28/23 19:38	7440-22-4	D3
Zinc	**143**	mg/kg	36.1	10.8	6.667	09/28/23 07:16	09/28/23 19:38	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471 Pace Analytical Services - Green Bay								
Mercury	**0.062**	mg/kg	0.057	0.016	1	09/29/23 09:57	10/02/23 10:07	7439-97-6	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
1-Methylnaphthalene	**<4.1**	ug/kg	28.1	4.1	1	09/28/23 08:08	09/28/23 12:39	90-12-0	
2-Methylnaphthalene	**<4.1**	ug/kg	28.1	4.1	1	09/28/23 08:08	09/28/23 12:39	91-57-6	
Acenaphthene	**<3.6**	ug/kg	28.1	3.6	1	09/28/23 08:08	09/28/23 12:39	83-32-9	
Acenaphthylene	**<3.5**	ug/kg	28.1	3.5	1	09/28/23 08:08	09/28/23 12:39	208-96-8	
Anthracene	**<3.5**	ug/kg	28.1	3.5	1	09/28/23 08:08	09/28/23 12:39	120-12-7	
Benzo(a)anthracene	**6.9J**	ug/kg	28.1	3.6	1	09/28/23 08:08	09/28/23 12:39	56-55-3	
Benzo(a)pyrene	**4.2J**	ug/kg	28.1	3.2	1	09/28/23 08:08	09/28/23 12:39	50-32-8	
Benzo(b)fluoranthene	**5.8J**	ug/kg	28.1	3.9	1	09/28/23 08:08	09/28/23 12:39	205-99-2	
Benzo(g,h,i)perylene	**<4.9**	ug/kg	28.1	4.9	1	09/28/23 08:08	09/28/23 12:39	191-24-2	
Benzo(k)fluoranthene	**<3.6**	ug/kg	28.1	3.6	1	09/28/23 08:08	09/28/23 12:39	207-08-9	
Chrysene	**5.4J**	ug/kg	28.1	5.3	1	09/28/23 08:08	09/28/23 12:39	218-01-9	
Dibenz(a,h)anthracene	**<3.9**	ug/kg	28.1	3.9	1	09/28/23 08:08	09/28/23 12:39	53-70-3	
Fluoranthene	**12.0J**	ug/kg	28.1	3.3	1	09/28/23 08:08	09/28/23 12:39	206-44-0	
Fluorene	**<3.4**	ug/kg	28.1	3.4	1	09/28/23 08:08	09/28/23 12:39	86-73-7	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
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ANALYTICAL RESULTS

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Sample: SED-05 **Lab ID: 40268638005** Collected: 09/21/23 13:45 Received: 09/26/23 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
Indeno(1,2,3-cd)pyrene	**<5.9**	ug/kg	28.1	5.9	1	09/28/23 08:08	09/28/23 12:39	193-39-5	
Naphthalene	**<2.7**	ug/kg	28.1	2.7	1	09/28/23 08:08	09/28/23 12:39	91-20-3	
Phenanthrene	**7.3J**	ug/kg	28.1	3.2	1	09/28/23 08:08	09/28/23 12:39	85-01-8	
Pyrene	**9.0J**	ug/kg	28.1	4.1	1	09/28/23 08:08	09/28/23 12:39	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	62	%	39-120		1	09/28/23 08:08	09/28/23 12:39	321-60-8	
Terphenyl-d14 (S)	66	%	36-120		1	09/28/23 08:08	09/28/23 12:39	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**40.6**	%	0.10	0.10	1		10/04/23 17:11		
365.4 Total Phosphorus	Analytical Method: EPA 365.4 Preparation Method: EPA 365.4 Pace Analytical Services - Green Bay								
Phosphorus	**623**	mg/kg	32.1	8.0	1	10/03/23 07:00	10/03/23 13:05	7723-14-0	
Total Organic Carbon	Analytical Method: EPA 9060 Modified Pace Analytical Services - Green Bay								
Surrogates									
RPD%	**2.8**	%	0.10	0.10	1		10/03/23 04:22		
Total Organic Carbon	**29300**	mg/kg	4990	1490	1		10/03/23 04:22	7440-44-0	
Total Organic Carbon	**28400**	mg/kg	4880	1450	1		10/03/23 04:28	7440-44-0	
Mean Total Organic Carbon	**28800**	mg/kg	4930	1470	1		10/03/23 04:22	7440-44-0	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Sample: SED-06 **Lab ID: 40268638006** Collected: 09/21/23 14:35 Received: 09/26/23 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082A GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3541 Pace Analytical Services - Green Bay								
PCB-1016 (Aroclor 1016)	**<23.4**	ug/kg	76.8	23.4	1	09/29/23 11:35	09/29/23 21:43	12674-11-2	
PCB-1221 (Aroclor 1221)	**<23.4**	ug/kg	76.8	23.4	1	09/29/23 11:35	09/29/23 21:43	11104-28-2	
PCB-1232 (Aroclor 1232)	**<23.4**	ug/kg	76.8	23.4	1	09/29/23 11:35	09/29/23 21:43	11141-16-5	
PCB-1242 (Aroclor 1242)	**<23.4**	ug/kg	76.8	23.4	1	09/29/23 11:35	09/29/23 21:43	53469-21-9	
PCB-1248 (Aroclor 1248)	**<23.4**	ug/kg	76.8	23.4	1	09/29/23 11:35	09/29/23 21:43	12672-29-6	
PCB-1254 (Aroclor 1254)	**27.4J**	ug/kg	76.8	23.4	1	09/29/23 11:35	09/29/23 21:43	11097-69-1	
PCB-1260 (Aroclor 1260)	**<23.4**	ug/kg	76.8	23.4	1	09/29/23 11:35	09/29/23 21:43	11096-82-5	
PCB, Total	**27.4J**	ug/kg	76.8	23.4	1	09/29/23 11:35	09/29/23 21:43	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	76	%	44-120		1	09/29/23 11:35	09/29/23 21:43	877-09-8	
Decachlorobiphenyl (S)	75	%	34-120		1	09/29/23 11:35	09/29/23 21:43	2051-24-3	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Green Bay								
Arsenic	**5.9**	mg/kg	1.3	0.39	6.667	09/28/23 07:16	09/28/23 19:43	7440-38-2	
Barium	**57.1**	mg/kg	1.3	0.39	6.667	09/28/23 07:16	09/28/23 19:43	7440-39-3	
Cadmium	**1.8**	mg/kg	1.0	0.15	6.667	09/28/23 07:16	09/28/23 19:43	7440-43-9	
Chromium	**16.6**	mg/kg	3.0	0.91	6.667	09/28/23 07:16	09/28/23 19:43	7440-47-3	
Copper	**15.7**	mg/kg	2.7	0.80	6.667	09/28/23 07:16	09/28/23 19:43	7440-50-8	
Lead	**45.5**	mg/kg	1.0	0.27	6.667	09/28/23 07:16	09/28/23 19:43	7439-92-1	
Selenium	**1.9**	mg/kg	1.0	0.27	6.667	09/28/23 07:16	09/28/23 19:43	7782-49-2	
Silver	**0.16J**	mg/kg	0.50	0.14	6.667	09/28/23 07:16	09/28/23 19:43	7440-22-4	D3
Zinc	**158**	mg/kg	34.7	10.4	6.667	09/28/23 07:16	09/28/23 19:43	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471 Pace Analytical Services - Green Bay								
Mercury	**0.096**	mg/kg	0.053	0.015	1	09/29/23 09:57	10/02/23 10:09	7439-97-6	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
1-Methylnaphthalene	**<3.8**	ug/kg	25.8	3.8	1	09/28/23 08:08	09/28/23 13:30	90-12-0	
2-Methylnaphthalene	**<3.8**	ug/kg	25.8	3.8	1	09/28/23 08:08	09/28/23 13:30	91-57-6	
Acenaphthene	**<3.3**	ug/kg	25.8	3.3	1	09/28/23 08:08	09/28/23 13:30	83-32-9	
Acenaphthylene	**<3.3**	ug/kg	25.8	3.3	1	09/28/23 08:08	09/28/23 13:30	208-96-8	
Anthracene	**<3.2**	ug/kg	25.8	3.2	1	09/28/23 08:08	09/28/23 13:30	120-12-7	
Benzo(a)anthracene	**8.4J**	ug/kg	25.8	3.3	1	09/28/23 08:08	09/28/23 13:30	56-55-3	
Benzo(a)pyrene	**7.9J**	ug/kg	25.8	2.9	1	09/28/23 08:08	09/28/23 13:30	50-32-8	
Benzo(b)fluoranthene	**9.3J**	ug/kg	25.8	3.6	1	09/28/23 08:08	09/28/23 13:30	205-99-2	
Benzo(g,h,i)perylene	**5.3J**	ug/kg	25.8	4.5	1	09/28/23 08:08	09/28/23 13:30	191-24-2	
Benzo(k)fluoranthene	**5.1J**	ug/kg	25.8	3.3	1	09/28/23 08:08	09/28/23 13:30	207-08-9	
Chrysene	**6.6J**	ug/kg	25.8	4.9	1	09/28/23 08:08	09/28/23 13:30	218-01-9	
Dibenz(a,h)anthracene	**<3.6**	ug/kg	25.8	3.6	1	09/28/23 08:08	09/28/23 13:30	53-70-3	
Fluoranthene	**12.6J**	ug/kg	25.8	3.1	1	09/28/23 08:08	09/28/23 13:30	206-44-0	
Fluorene	**<3.1**	ug/kg	25.8	3.1	1	09/28/23 08:08	09/28/23 13:30	86-73-7	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Sample: SED-06 **Lab ID: 40268638006** Collected: 09/21/23 14:35 Received: 09/26/23 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
Indeno(1,2,3-cd)pyrene	**<5.4**	ug/kg	25.8	5.4	1	09/28/23 08:08	09/28/23 13:30	193-39-5	
Naphthalene	**<2.5**	ug/kg	25.8	2.5	1	09/28/23 08:08	09/28/23 13:30	91-20-3	
Phenanthrene	**3.6J**	ug/kg	25.8	3.0	1	09/28/23 08:08	09/28/23 13:30	85-01-8	
Pyrene	**10.0J**	ug/kg	25.8	3.8	1	09/28/23 08:08	09/28/23 13:30	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	53	%	39-120		1	09/28/23 08:08	09/28/23 13:30	321-60-8	
Terphenyl-d14 (S)	57	%	36-120		1	09/28/23 08:08	09/28/23 13:30	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**35.2**	%	0.10	0.10	1		10/04/23 17:11		
365.4 Total Phosphorus	Analytical Method: EPA 365.4 Preparation Method: EPA 365.4 Pace Analytical Services - Green Bay								
Phosphorus	**456**	mg/kg	26.8	6.7	1	10/03/23 07:00	10/03/23 13:06	7723-14-0	
Total Organic Carbon	Analytical Method: EPA 9060 Modified Pace Analytical Services - Green Bay								
Surrogates									
RPD%	**1.9**	%	0.10	0.10	1		10/03/23 04:32		
Total Organic Carbon	**23000**	mg/kg	5210	1550	1		10/03/23 04:32	7440-44-0	
Total Organic Carbon	**22600**	mg/kg	5300	1580	1		10/03/23 04:38	7440-44-0	
Mean Total Organic Carbon	**22800**	mg/kg	5260	1570	1		10/03/23 04:32	7440-44-0	

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Sample: SED-07 **Lab ID: 40268638007** Collected: 09/21/23 15:00 Received: 09/26/23 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082A GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3541 Pace Analytical Services - Green Bay								
PCB-1016 (Aroclor 1016)	**<24.3**	ug/kg	79.8	24.3	1	09/29/23 11:35	09/29/23 22:04	12674-11-2	
PCB-1221 (Aroclor 1221)	**<24.3**	ug/kg	79.8	24.3	1	09/29/23 11:35	09/29/23 22:04	11104-28-2	
PCB-1232 (Aroclor 1232)	**<24.3**	ug/kg	79.8	24.3	1	09/29/23 11:35	09/29/23 22:04	11141-16-5	
PCB-1242 (Aroclor 1242)	**<24.3**	ug/kg	79.8	24.3	1	09/29/23 11:35	09/29/23 22:04	53469-21-9	
PCB-1248 (Aroclor 1248)	**<24.3**	ug/kg	79.8	24.3	1	09/29/23 11:35	09/29/23 22:04	12672-29-6	
PCB-1254 (Aroclor 1254)	**29.6J**	ug/kg	79.8	24.3	1	09/29/23 11:35	09/29/23 22:04	11097-69-1	
PCB-1260 (Aroclor 1260)	**<24.3**	ug/kg	79.8	24.3	1	09/29/23 11:35	09/29/23 22:04	11096-82-5	
PCB, Total	**29.6J**	ug/kg	79.8	24.3	1	09/29/23 11:35	09/29/23 22:04	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	67	%	44-120		1	09/29/23 11:35	09/29/23 22:04	877-09-8	
Decachlorobiphenyl (S)	55	%	34-120		1	09/29/23 11:35	09/29/23 22:04	2051-24-3	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Green Bay								
Arsenic	**7.3**	mg/kg	1.3	0.39	6.667	09/28/23 07:16	09/28/23 19:49	7440-38-2	
Barium	**64.0**	mg/kg	1.3	0.39	6.667	09/28/23 07:16	09/28/23 19:49	7440-39-3	
Cadmium	**1.7**	mg/kg	0.98	0.14	6.667	09/28/23 07:16	09/28/23 19:49	7440-43-9	
Chromium	**16.3**	mg/kg	3.0	0.89	6.667	09/28/23 07:16	09/28/23 19:49	7440-47-3	
Copper	**20.8**	mg/kg	2.6	0.79	6.667	09/28/23 07:16	09/28/23 19:49	7440-50-8	
Lead	**72.4**	mg/kg	0.98	0.27	6.667	09/28/23 07:16	09/28/23 19:49	7439-92-1	
Selenium	**2.0**	mg/kg	0.98	0.27	6.667	09/28/23 07:16	09/28/23 19:49	7782-49-2	
Silver	**0.31J**	mg/kg	0.49	0.14	6.667	09/28/23 07:16	09/28/23 19:49	7440-22-4	D3
Zinc	**231**	mg/kg	34.1	10.2	6.667	09/28/23 07:16	09/28/23 19:49	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471 Pace Analytical Services - Green Bay								
Mercury	**0.089**	mg/kg	0.054	0.016	1	09/29/23 09:57	10/02/23 10:12	7439-97-6	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
1-Methylnaphthalene	**<3.9**	ug/kg	26.6	3.9	1	09/28/23 08:08	09/28/23 13:47	90-12-0	
2-Methylnaphthalene	**4.2J**	ug/kg	26.6	3.9	1	09/28/23 08:08	09/28/23 13:47	91-57-6	
Acenaphthene	**<3.5**	ug/kg	26.6	3.5	1	09/28/23 08:08	09/28/23 13:47	83-32-9	
Acenaphthylene	**<3.4**	ug/kg	26.6	3.4	1	09/28/23 08:08	09/28/23 13:47	208-96-8	
Anthracene	**<3.3**	ug/kg	26.6	3.3	1	09/28/23 08:08	09/28/23 13:47	120-12-7	
Benzo(a)anthracene	**6.1J**	ug/kg	26.6	3.4	1	09/28/23 08:08	09/28/23 13:47	56-55-3	
Benzo(a)pyrene	**4.4J**	ug/kg	26.6	3.0	1	09/28/23 08:08	09/28/23 13:47	50-32-8	
Benzo(b)fluoranthene	**6.3J**	ug/kg	26.6	3.7	1	09/28/23 08:08	09/28/23 13:47	205-99-2	
Benzo(g,h,i)perylene	**<4.7**	ug/kg	26.6	4.7	1	09/28/23 08:08	09/28/23 13:47	191-24-2	
Benzo(k)fluoranthene	**<3.4**	ug/kg	26.6	3.4	1	09/28/23 08:08	09/28/23 13:47	207-08-9	
Chrysene	**5.1J**	ug/kg	26.6	5.0	1	09/28/23 08:08	09/28/23 13:47	218-01-9	
Dibenz(a,h)anthracene	**<3.7**	ug/kg	26.6	3.7	1	09/28/23 08:08	09/28/23 13:47	53-70-3	
Fluoranthene	**10.6J**	ug/kg	26.6	3.1	1	09/28/23 08:08	09/28/23 13:47	206-44-0	
Fluorene	**<3.2**	ug/kg	26.6	3.2	1	09/28/23 08:08	09/28/23 13:47	86-73-7	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Sample: SED-07 **Lab ID: 40268638007** Collected: 09/21/23 15:00 Received: 09/26/23 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
Indeno(1,2,3-cd)pyrene	**<5.5**	ug/kg	26.6	5.5	1	09/28/23 08:08	09/28/23 13:47	193-39-5	
Naphthalene	**15.3J**	ug/kg	26.6	2.6	1	09/28/23 08:08	09/28/23 13:47	91-20-3	
Phenanthrene	**6.2J**	ug/kg	26.6	3.0	1	09/28/23 08:08	09/28/23 13:47	85-01-8	
Pyrene	**8.1J**	ug/kg	26.6	3.9	1	09/28/23 08:08	09/28/23 13:47	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	63	%	39-120		1	09/28/23 08:08	09/28/23 13:47	321-60-8	
Terphenyl-d14 (S)	62	%	36-120		1	09/28/23 08:08	09/28/23 13:47	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**37.1**	%	0.10	0.10	1		10/04/23 17:11		
365.4 Total Phosphorus	Analytical Method: EPA 365.4 Preparation Method: EPA 365.4 Pace Analytical Services - Green Bay								
Phosphorus	**498**	mg/kg	26.5	6.6	1	10/03/23 07:00	10/03/23 13:09	7723-14-0	
Total Organic Carbon	Analytical Method: EPA 9060 Modified Pace Analytical Services - Green Bay								
Surrogates									
RPD%	**5.6**	%	0.10	0.10	1		10/03/23 04:43		
Total Organic Carbon	**26200**	mg/kg	4980	1490	1		10/03/23 04:43	7440-44-0	
Total Organic Carbon	**24800**	mg/kg	4970	1480	1		10/03/23 04:49	7440-44-0	
Mean Total Organic Carbon	**25500**	mg/kg	4980	1480	1		10/03/23 04:43	7440-44-0	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
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ANALYTICAL RESULTS

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Sample: SED-08 **Lab ID: 40268638008** Collected: 09/21/23 15:20 Received: 09/26/23 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082A GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3541 Pace Analytical Services - Green Bay								
PCB-1016 (Aroclor 1016)	**<22.9**	ug/kg	75.3	22.9	1	09/29/23 11:35	09/29/23 22:25	12674-11-2	
PCB-1221 (Aroclor 1221)	**<22.9**	ug/kg	75.3	22.9	1	09/29/23 11:35	09/29/23 22:25	11104-28-2	
PCB-1232 (Aroclor 1232)	**<22.9**	ug/kg	75.3	22.9	1	09/29/23 11:35	09/29/23 22:25	11141-16-5	
PCB-1242 (Aroclor 1242)	**<22.9**	ug/kg	75.3	22.9	1	09/29/23 11:35	09/29/23 22:25	53469-21-9	
PCB-1248 (Aroclor 1248)	**<22.9**	ug/kg	75.3	22.9	1	09/29/23 11:35	09/29/23 22:25	12672-29-6	
PCB-1254 (Aroclor 1254)	**<22.9**	ug/kg	75.3	22.9	1	09/29/23 11:35	09/29/23 22:25	11097-69-1	
PCB-1260 (Aroclor 1260)	**<22.9**	ug/kg	75.3	22.9	1	09/29/23 11:35	09/29/23 22:25	11096-82-5	
PCB, Total	**<22.9**	ug/kg	75.3	22.9	1	09/29/23 11:35	09/29/23 22:25	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	78	%	44-120		1	09/29/23 11:35	09/29/23 22:25	877-09-8	
Decachlorobiphenyl (S)	73	%	34-120		1	09/29/23 11:35	09/29/23 22:25	2051-24-3	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Green Bay								
Arsenic	**6.4**	mg/kg	1.2	0.37	6.667	09/28/23 07:16	09/28/23 19:54	7440-38-2	
Barium	**51.4**	mg/kg	1.2	0.37	6.667	09/28/23 07:16	09/28/23 19:54	7440-39-3	
Cadmium	**1.4**	mg/kg	0.94	0.14	6.667	09/28/23 07:16	09/28/23 19:54	7440-43-9	
Chromium	**15.1**	mg/kg	2.9	0.86	6.667	09/28/23 07:16	09/28/23 19:54	7440-47-3	
Copper	**18.3**	mg/kg	2.5	0.75	6.667	09/28/23 07:16	09/28/23 19:54	7440-50-8	
Lead	**51.7**	mg/kg	0.94	0.26	6.667	09/28/23 07:16	09/28/23 19:54	7439-92-1	
Selenium	**1.9**	mg/kg	0.94	0.26	6.667	09/28/23 07:16	09/28/23 19:54	7782-49-2	
Silver	**<0.13**	mg/kg	0.47	0.13	6.667	09/28/23 07:16	09/28/23 19:54	7440-22-4	D3
Zinc	**154**	mg/kg	32.7	9.8	6.667	09/28/23 07:16	09/28/23 19:54	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471 Pace Analytical Services - Green Bay								
Mercury	**0.076**	mg/kg	0.052	0.015	1	09/29/23 09:57	10/02/23 10:14	7439-97-6	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
1-Methylnaphthalene	**<3.7**	ug/kg	25.1	3.7	1	09/28/23 08:08	09/28/23 16:05	90-12-0	
2-Methylnaphthalene	**<3.7**	ug/kg	25.1	3.7	1	09/28/23 08:08	09/28/23 16:05	91-57-6	
Acenaphthene	**<3.3**	ug/kg	25.1	3.3	1	09/28/23 08:08	09/28/23 16:05	83-32-9	
Acenaphthylene	**<3.2**	ug/kg	25.1	3.2	1	09/28/23 08:08	09/28/23 16:05	208-96-8	
Anthracene	**<3.1**	ug/kg	25.1	3.1	1	09/28/23 08:08	09/28/23 16:05	120-12-7	
Benzo(a)anthracene	**4.5J**	ug/kg	25.1	3.2	1	09/28/23 08:08	09/28/23 16:05	56-55-3	
Benzo(a)pyrene	**<2.9**	ug/kg	25.1	2.9	1	09/28/23 08:08	09/28/23 16:05	50-32-8	
Benzo(b)fluoranthene	**3.6J**	ug/kg	25.1	3.5	1	09/28/23 08:08	09/28/23 16:05	205-99-2	
Benzo(g,h,i)perylene	**<4.4**	ug/kg	25.1	4.4	1	09/28/23 08:08	09/28/23 16:05	191-24-2	
Benzo(k)fluoranthene	**<3.2**	ug/kg	25.1	3.2	1	09/28/23 08:08	09/28/23 16:05	207-08-9	
Chrysene	**<4.7**	ug/kg	25.1	4.7	1	09/28/23 08:08	09/28/23 16:05	218-01-9	
Dibenz(a,h)anthracene	**<3.5**	ug/kg	25.1	3.5	1	09/28/23 08:08	09/28/23 16:05	53-70-3	
Fluoranthene	**7.4J**	ug/kg	25.1	3.0	1	09/28/23 08:08	09/28/23 16:05	206-44-0	
Fluorene	**<3.0**	ug/kg	25.1	3.0	1	09/28/23 08:08	09/28/23 16:05	86-73-7	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Sample: SED-08 **Lab ID: 40268638008** Collected: 09/21/23 15:20 Received: 09/26/23 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
Indeno(1,2,3-cd)pyrene	**<5.2**	ug/kg	25.1	5.2	1	09/28/23 08:08	09/28/23 16:05	193-39-5	
Naphthalene	**<2.4**	ug/kg	25.1	2.4	1	09/28/23 08:08	09/28/23 16:05	91-20-3	
Phenanthrene	**3.3J**	ug/kg	25.1	2.9	1	09/28/23 08:08	09/28/23 16:05	85-01-8	
Pyrene	**5.6J**	ug/kg	25.1	3.7	1	09/28/23 08:08	09/28/23 16:05	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	70	%	39-120		1	09/28/23 08:08	09/28/23 16:05	321-60-8	
Terphenyl-d14 (S)	72	%	36-120		1	09/28/23 08:08	09/28/23 16:05	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**33.5**	%	0.10	0.10	1		10/04/23 17:11		
365.4 Total Phosphorus	Analytical Method: EPA 365.4 Preparation Method: EPA 365.4 Pace Analytical Services - Green Bay								
Phosphorus	**462**	mg/kg	25.1	6.3	1	10/03/23 07:00	10/03/23 13:10	7723-14-0	
Total Organic Carbon	Analytical Method: EPA 9060 Modified Pace Analytical Services - Green Bay								
Surrogates									
RPD%	**0.79**	%	0.10	0.10	1		10/03/23 04:55		
Total Organic Carbon	**19700**	mg/kg	4030	1200	1		10/03/23 04:55	7440-44-0	
Total Organic Carbon	**19600**	mg/kg	4030	1200	1		10/03/23 05:00	7440-44-0	
Mean Total Organic Carbon	**19600**	mg/kg	4030	1200	1		10/03/23 04:55	7440-44-0	

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Sample: SED-09 **Lab ID: 40268638009** Collected: 09/21/23 15:30 Received: 09/26/23 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082A GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3541 Pace Analytical Services - Green Bay								
PCB-1016 (Aroclor 1016)	**<25.7**	ug/kg	84.5	25.7	1	09/29/23 11:35	09/29/23 22:46	12674-11-2	
PCB-1221 (Aroclor 1221)	**<25.7**	ug/kg	84.5	25.7	1	09/29/23 11:35	09/29/23 22:46	11104-28-2	
PCB-1232 (Aroclor 1232)	**<25.7**	ug/kg	84.5	25.7	1	09/29/23 11:35	09/29/23 22:46	11141-16-5	
PCB-1242 (Aroclor 1242)	**<25.7**	ug/kg	84.5	25.7	1	09/29/23 11:35	09/29/23 22:46	53469-21-9	
PCB-1248 (Aroclor 1248)	**<25.7**	ug/kg	84.5	25.7	1	09/29/23 11:35	09/29/23 22:46	12672-29-6	
PCB-1254 (Aroclor 1254)	**<25.7**	ug/kg	84.5	25.7	1	09/29/23 11:35	09/29/23 22:46	11097-69-1	
PCB-1260 (Aroclor 1260)	**<25.7**	ug/kg	84.5	25.7	1	09/29/23 11:35	09/29/23 22:46	11096-82-5	
PCB, Total	**<25.7**	ug/kg	84.5	25.7	1	09/29/23 11:35	09/29/23 22:46	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	86	%	44-120		1	09/29/23 11:35	09/29/23 22:46	877-09-8	
Decachlorobiphenyl (S)	82	%	34-120		1	09/29/23 11:35	09/29/23 22:46	2051-24-3	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Green Bay								
Arsenic	**8.3**	mg/kg	1.4	0.43	6.667	09/28/23 07:16	09/28/23 19:59	7440-38-2	
Barium	**73.2**	mg/kg	1.4	0.42	6.667	09/28/23 07:16	09/28/23 19:59	7440-39-3	
Cadmium	**0.92J**	mg/kg	1.1	0.16	6.667	09/28/23 07:16	09/28/23 19:59	7440-43-9	D3
Chromium	**19.3**	mg/kg	3.3	0.98	6.667	09/28/23 07:16	09/28/23 19:59	7440-47-3	
Copper	**26.2**	mg/kg	2.9	0.87	6.667	09/28/23 07:16	09/28/23 19:59	7440-50-8	
Lead	**36.2**	mg/kg	1.1	0.29	6.667	09/28/23 07:16	09/28/23 19:59	7439-92-1	
Selenium	**2.5**	mg/kg	1.1	0.29	6.667	09/28/23 07:16	09/28/23 19:59	7782-49-2	
Silver	**0.19J**	mg/kg	0.54	0.15	6.667	09/28/23 07:16	09/28/23 19:59	7440-22-4	D3
Zinc	**127**	mg/kg	37.6	11.3	6.667	09/28/23 07:16	09/28/23 19:59	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471 Pace Analytical Services - Green Bay								
Mercury	**0.21**	mg/kg	0.059	0.017	1	09/29/23 09:57	10/02/23 10:21	7439-97-6	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
1-Methylnaphthalene	**<4.1**	ug/kg	28.1	4.1	1	09/28/23 08:08	09/28/23 16:22	90-12-0	
2-Methylnaphthalene	**<4.1**	ug/kg	28.1	4.1	1	09/28/23 08:08	09/28/23 16:22	91-57-6	
Acenaphthene	**<3.6**	ug/kg	28.1	3.6	1	09/28/23 08:08	09/28/23 16:22	83-32-9	
Acenaphthylene	**<3.5**	ug/kg	28.1	3.5	1	09/28/23 08:08	09/28/23 16:22	208-96-8	
Anthracene	**<3.5**	ug/kg	28.1	3.5	1	09/28/23 08:08	09/28/23 16:22	120-12-7	
Benzo(a)anthracene	**11.6J**	ug/kg	28.1	3.6	1	09/28/23 08:08	09/28/23 16:22	56-55-3	
Benzo(a)pyrene	**11.0J**	ug/kg	28.1	3.2	1	09/28/23 08:08	09/28/23 16:22	50-32-8	
Benzo(b)fluoranthene	**16.7J**	ug/kg	28.1	3.9	1	09/28/23 08:08	09/28/23 16:22	205-99-2	
Benzo(g,h,i)perylene	**<4.9**	ug/kg	28.1	4.9	1	09/28/23 08:08	09/28/23 16:22	191-24-2	
Benzo(k)fluoranthene	**6.7J**	ug/kg	28.1	3.6	1	09/28/23 08:08	09/28/23 16:22	207-08-9	
Chrysene	**11.3J**	ug/kg	28.1	5.3	1	09/28/23 08:08	09/28/23 16:22	218-01-9	
Dibenz(a,h)anthracene	**<3.9**	ug/kg	28.1	3.9	1	09/28/23 08:08	09/28/23 16:22	53-70-3	
Fluoranthene	**24.7J**	ug/kg	28.1	3.3	1	09/28/23 08:08	09/28/23 16:22	206-44-0	
Fluorene	**<3.4**	ug/kg	28.1	3.4	1	09/28/23 08:08	09/28/23 16:22	86-73-7	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Sample: SED-09 **Lab ID: 40268638009** Collected: 09/21/23 15:30 Received: 09/26/23 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
Indeno(1,2,3-cd)pyrene	**<5.8**	ug/kg	28.1	5.8	1	09/28/23 08:08	09/28/23 16:22	193-39-5	
Naphthalene	**<2.7**	ug/kg	28.1	2.7	1	09/28/23 08:08	09/28/23 16:22	91-20-3	
Phenanthrene	**9.4J**	ug/kg	28.1	3.2	1	09/28/23 08:08	09/28/23 16:22	85-01-8	
Pyrene	**17.8J**	ug/kg	28.1	4.1	1	09/28/23 08:08	09/28/23 16:22	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	59	%	39-120		1	09/28/23 08:08	09/28/23 16:22	321-60-8	
Terphenyl-d14 (S)	67	%	36-120		1	09/28/23 08:08	09/28/23 16:22	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**40.6**	%	0.10	0.10	1		10/04/23 17:11		
365.4 Total Phosphorus	Analytical Method: EPA 365.4 Preparation Method: EPA 365.4 Pace Analytical Services - Green Bay								
Phosphorus	**507**	mg/kg	33.7	8.4	1	10/03/23 07:00	10/03/23 13:11	7723-14-0	
Total Organic Carbon	Analytical Method: EPA 9060 Modified Pace Analytical Services - Green Bay								
Surrogates									
RPD%	**0.52**	%	0.10	0.10	1		10/03/23 05:06		
Total Organic Carbon	**25000**	mg/kg	5250	1570	1		10/03/23 05:06	7440-44-0	
Total Organic Carbon	**25100**	mg/kg	5160	1540	1		10/03/23 05:11	7440-44-0	
Mean Total Organic Carbon	**25000**	mg/kg	5200	1550	1		10/03/23 05:06	7440-44-0	

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Sample: SED-10 **Lab ID: 40268638010** Collected: 09/21/23 09:35 Received: 09/26/23 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082A GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3541 Pace Analytical Services - Green Bay								
PCB-1016 (Aroclor 1016)	**<18.3**	ug/kg	60.2	18.3	1	09/29/23 11:35	09/29/23 23:08	12674-11-2	
PCB-1221 (Aroclor 1221)	**<18.3**	ug/kg	60.2	18.3	1	09/29/23 11:35	09/29/23 23:08	11104-28-2	
PCB-1232 (Aroclor 1232)	**<18.3**	ug/kg	60.2	18.3	1	09/29/23 11:35	09/29/23 23:08	11141-16-5	
PCB-1242 (Aroclor 1242)	**<18.3**	ug/kg	60.2	18.3	1	09/29/23 11:35	09/29/23 23:08	53469-21-9	
PCB-1248 (Aroclor 1248)	**<18.3**	ug/kg	60.2	18.3	1	09/29/23 11:35	09/29/23 23:08	12672-29-6	
PCB-1254 (Aroclor 1254)	**<18.3**	ug/kg	60.2	18.3	1	09/29/23 11:35	09/29/23 23:08	11097-69-1	
PCB-1260 (Aroclor 1260)	**<18.3**	ug/kg	60.2	18.3	1	09/29/23 11:35	09/29/23 23:08	11096-82-5	
PCB, Total	**<18.3**	ug/kg	60.2	18.3	1	09/29/23 11:35	09/29/23 23:08	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	85	%	44-120		1	09/29/23 11:35	09/29/23 23:08	877-09-8	
Decachlorobiphenyl (S)	71	%	34-120		1	09/29/23 11:35	09/29/23 23:08	2051-24-3	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Green Bay								
Arsenic	**8.4**	mg/kg	1.0	0.31	6.667	09/28/23 07:16	09/28/23 20:04	7440-38-2	
Barium	**71.1**	mg/kg	1.0	0.31	6.667	09/28/23 07:16	09/28/23 20:04	7440-39-3	
Cadmium	**0.33J**	mg/kg	0.79	0.11	6.667	09/28/23 07:16	09/28/23 20:04	7440-43-9	D3
Chromium	**13.1**	mg/kg	2.4	0.72	6.667	09/28/23 07:16	09/28/23 20:04	7440-47-3	
Copper	**11.3**	mg/kg	2.1	0.63	6.667	09/28/23 07:16	09/28/23 20:04	7440-50-8	
Lead	**9.6**	mg/kg	0.79	0.21	6.667	09/28/23 07:16	09/28/23 20:04	7439-92-1	
Selenium	**2.1**	mg/kg	0.79	0.21	6.667	09/28/23 07:16	09/28/23 20:04	7782-49-2	
Silver	**<0.11**	mg/kg	0.39	0.11	6.667	09/28/23 07:16	09/28/23 20:04	7440-22-4	D3
Zinc	**54.7**	mg/kg	27.4	8.2	6.667	09/28/23 07:16	09/28/23 20:04	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471 Pace Analytical Services - Green Bay								
Mercury	**0.024J**	mg/kg	0.041	0.012	1	09/29/23 09:57	10/02/23 10:23	7439-97-6	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
1-Methylnaphthalene	**<2.9**	ug/kg	20.1	2.9	1	09/28/23 08:08	09/28/23 16:54	90-12-0	
2-Methylnaphthalene	**<2.9**	ug/kg	20.1	2.9	1	09/28/23 08:08	09/28/23 16:54	91-57-6	
Acenaphthene	**<2.6**	ug/kg	20.1	2.6	1	09/28/23 08:08	09/28/23 16:54	83-32-9	
Acenaphthylene	**<2.5**	ug/kg	20.1	2.5	1	09/28/23 08:08	09/28/23 16:54	208-96-8	
Anthracene	**<2.5**	ug/kg	20.1	2.5	1	09/28/23 08:08	09/28/23 16:54	120-12-7	
Benzo(a)anthracene	**<2.6**	ug/kg	20.1	2.6	1	09/28/23 08:08	09/28/23 16:54	56-55-3	
Benzo(a)pyrene	**<2.3**	ug/kg	20.1	2.3	1	09/28/23 08:08	09/28/23 16:54	50-32-8	
Benzo(b)fluoranthene	**<2.8**	ug/kg	20.1	2.8	1	09/28/23 08:08	09/28/23 16:54	205-99-2	
Benzo(g,h,i)perylene	**<3.5**	ug/kg	20.1	3.5	1	09/28/23 08:08	09/28/23 16:54	191-24-2	
Benzo(k)fluoranthene	**<2.6**	ug/kg	20.1	2.6	1	09/28/23 08:08	09/28/23 16:54	207-08-9	
Chrysene	**<3.8**	ug/kg	20.1	3.8	1	09/28/23 08:08	09/28/23 16:54	218-01-9	
Dibenz(a,h)anthracene	**<2.8**	ug/kg	20.1	2.8	1	09/28/23 08:08	09/28/23 16:54	53-70-3	
Fluoranthene	**<2.4**	ug/kg	20.1	2.4	1	09/28/23 08:08	09/28/23 16:54	206-44-0	
Fluorene	**<2.4**	ug/kg	20.1	2.4	1	09/28/23 08:08	09/28/23 16:54	86-73-7	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Sample: SED-10 **Lab ID: 40268638010** Collected: 09/21/23 09:35 Received: 09/26/23 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
Indeno(1,2,3-cd)pyrene	**<4.2**	ug/kg	20.1	4.2	1	09/28/23 08:08	09/28/23 16:54	193-39-5	
Naphthalene	**<2.0**	ug/kg	20.1	2.0	1	09/28/23 08:08	09/28/23 16:54	91-20-3	
Phenanthrene	**<2.3**	ug/kg	20.1	2.3	1	09/28/23 08:08	09/28/23 16:54	85-01-8	
Pyrene	**<2.9**	ug/kg	20.1	2.9	1	09/28/23 08:08	09/28/23 16:54	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	53	%	39-120		1	09/28/23 08:08	09/28/23 16:54	321-60-8	
Terphenyl-d14 (S)	63	%	36-120		1	09/28/23 08:08	09/28/23 16:54	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**16.7**	%	0.10	0.10	1		10/04/23 17:11		
365.4 Total Phosphorus	Analytical Method: EPA 365.4 Preparation Method: EPA 365.4 Pace Analytical Services - Green Bay								
Phosphorus	**364**	mg/kg	21.8	5.5	1	10/03/23 07:00	10/03/23 13:12	7723-14-0	
Total Organic Carbon	Analytical Method: EPA 9060 Modified Pace Analytical Services - Green Bay								
Surrogates									
RPD%	**7.7**	%	0.10	0.10	1		10/03/23 05:17		
Total Organic Carbon	**15200**	mg/kg	3170	944	1		10/03/23 05:17	7440-44-0	
Total Organic Carbon	**16400**	mg/kg	3170	947	1		10/03/23 05:22	7440-44-0	
Mean Total Organic Carbon	**15800**	mg/kg	3170	945	1		10/03/23 05:17	7440-44-0	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Sample: SED-03-DUP **Lab ID: 40268638011** Collected: 09/21/23 12:20 Received: 09/26/23 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082A GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3541 Pace Analytical Services - Green Bay								
PCB-1016 (Aroclor 1016)	**<23.6**	ug/kg	77.6	23.6	1	09/29/23 11:35	09/29/23 23:29	12674-11-2	
PCB-1221 (Aroclor 1221)	**<23.6**	ug/kg	77.6	23.6	1	09/29/23 11:35	09/29/23 23:29	11104-28-2	
PCB-1232 (Aroclor 1232)	**<23.6**	ug/kg	77.6	23.6	1	09/29/23 11:35	09/29/23 23:29	11141-16-5	
PCB-1242 (Aroclor 1242)	**<23.6**	ug/kg	77.6	23.6	1	09/29/23 11:35	09/29/23 23:29	53469-21-9	
PCB-1248 (Aroclor 1248)	**<23.6**	ug/kg	77.6	23.6	1	09/29/23 11:35	09/29/23 23:29	12672-29-6	
PCB-1254 (Aroclor 1254)	**<23.6**	ug/kg	77.6	23.6	1	09/29/23 11:35	09/29/23 23:29	11097-69-1	
PCB-1260 (Aroclor 1260)	**<23.6**	ug/kg	77.6	23.6	1	09/29/23 11:35	09/29/23 23:29	11096-82-5	
PCB, Total	**<23.6**	ug/kg	77.6	23.6	1	09/29/23 11:35	09/29/23 23:29	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	84	%	44-120		1	09/29/23 11:35	09/29/23 23:29	877-09-8	
Decachlorobiphenyl (S)	74	%	34-120		1	09/29/23 11:35	09/29/23 23:29	2051-24-3	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Green Bay								
Arsenic	**6.2**	mg/kg	1.3	0.38	6.667	09/28/23 07:16	09/28/23 20:09	7440-38-2	
Barium	**43.1**	mg/kg	1.3	0.38	6.667	09/28/23 07:16	09/28/23 20:09	7440-39-3	
Cadmium	**0.79J**	mg/kg	0.97	0.14	6.667	09/28/23 07:16	09/28/23 20:09	7440-43-9	D3
Chromium	**11.2**	mg/kg	3.0	0.89	6.667	09/28/23 07:16	09/28/23 20:09	7440-47-3	
Copper	**11.5**	mg/kg	2.6	0.78	6.667	09/28/23 07:16	09/28/23 20:09	7440-50-8	
Lead	**30.3**	mg/kg	0.97	0.26	6.667	09/28/23 07:16	09/28/23 20:09	7439-92-1	
Selenium	**1.8**	mg/kg	0.97	0.27	6.667	09/28/23 07:16	09/28/23 20:09	7782-49-2	
Silver	**<0.14**	mg/kg	0.49	0.14	6.667	09/28/23 07:16	09/28/23 20:09	7440-22-4	D3
Zinc	**103**	mg/kg	33.9	10.2	6.667	09/28/23 07:16	09/28/23 20:09	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471 Pace Analytical Services - Green Bay								
Mercury	**0.053**	mg/kg	0.053	0.015	1	09/29/23 09:57	10/02/23 10:26	7439-97-6	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
1-Methylnaphthalene	**<3.8**	ug/kg	26.0	3.8	1	09/28/23 08:08	09/28/23 17:11	90-12-0	
2-Methylnaphthalene	**<3.8**	ug/kg	26.0	3.8	1	09/28/23 08:08	09/28/23 17:11	91-57-6	
Acenaphthene	**<3.4**	ug/kg	26.0	3.4	1	09/28/23 08:08	09/28/23 17:11	83-32-9	
Acenaphthylene	**<3.3**	ug/kg	26.0	3.3	1	09/28/23 08:08	09/28/23 17:11	208-96-8	
Anthracene	**<3.2**	ug/kg	26.0	3.2	1	09/28/23 08:08	09/28/23 17:11	120-12-7	
Benzo(a)anthracene	**<3.4**	ug/kg	26.0	3.4	1	09/28/23 08:08	09/28/23 17:11	56-55-3	
Benzo(a)pyrene	**3.2J**	ug/kg	26.0	3.0	1	09/28/23 08:08	09/28/23 17:11	50-32-8	
Benzo(b)fluoranthene	**<3.6**	ug/kg	26.0	3.6	1	09/28/23 08:08	09/28/23 17:11	205-99-2	
Benzo(g,h,i)perylene	**<4.6**	ug/kg	26.0	4.6	1	09/28/23 08:08	09/28/23 17:11	191-24-2	
Benzo(k)fluoranthene	**<3.3**	ug/kg	26.0	3.3	1	09/28/23 08:08	09/28/23 17:11	207-08-9	
Chrysene	**<4.9**	ug/kg	26.0	4.9	1	09/28/23 08:08	09/28/23 17:11	218-01-9	
Dibenz(a,h)anthracene	**<3.6**	ug/kg	26.0	3.6	1	09/28/23 08:08	09/28/23 17:11	53-70-3	
Fluoranthene	**<3.1**	ug/kg	26.0	3.1	1	09/28/23 08:08	09/28/23 17:11	206-44-0	
Fluorene	**<3.1**	ug/kg	26.0	3.1	1	09/28/23 08:08	09/28/23 17:11	86-73-7	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Sample: SED-03-DUP **Lab ID: 40268638011** Collected: 09/21/23 12:20 Received: 09/26/23 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
Indeno(1,2,3-cd)pyrene	**<5.4**	ug/kg	26.0	5.4	1	09/28/23 08:08	09/28/23 17:11	193-39-5	
Naphthalene	**<2.5**	ug/kg	26.0	2.5	1	09/28/23 08:08	09/28/23 17:11	91-20-3	
Phenanthrene	**<3.0**	ug/kg	26.0	3.0	1	09/28/23 08:08	09/28/23 17:11	85-01-8	
Pyrene	**<3.8**	ug/kg	26.0	3.8	1	09/28/23 08:08	09/28/23 17:11	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	48	%	39-120		1	09/28/23 08:08	09/28/23 17:11	321-60-8	
Terphenyl-d14 (S)	58	%	36-120		1	09/28/23 08:08	09/28/23 17:11	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**35.8**	%	0.10	0.10	1		10/04/23 17:11		
365.4 Total Phosphorus	Analytical Method: EPA 365.4 Preparation Method: EPA 365.4 Pace Analytical Services - Green Bay								
Phosphorus	**460**	mg/kg	28.1	7.0	1	10/03/23 07:00	10/03/23 13:13	7723-14-0	
Total Organic Carbon	Analytical Method: EPA 9060 Modified Pace Analytical Services - Green Bay								
Surrogates									
RPD%	**19.3**	%	0.10	0.10	1		10/03/23 05:27		
Total Organic Carbon	**17500**	mg/kg	4100	1220	1		10/03/23 05:27	7440-44-0	
Total Organic Carbon	**21300**	mg/kg	4110	1230	1		10/03/23 05:33	7440-44-0	
Mean Total Organic Carbon	**19400**	mg/kg	4110	1230	1		10/03/23 05:27	7440-44-0	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
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ANALYTICAL RESULTS

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Sample: SED-06-DUP **Lab ID: 40268638012** Collected: 09/21/23 14:35 Received: 09/26/23 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082A GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3541 Pace Analytical Services - Green Bay								
PCB-1016 (Aroclor 1016)	**<23.4**	ug/kg	76.9	23.4	1	09/29/23 11:35	09/29/23 23:50	12674-11-2	
PCB-1221 (Aroclor 1221)	**<23.4**	ug/kg	76.9	23.4	1	09/29/23 11:35	09/29/23 23:50	11104-28-2	
PCB-1232 (Aroclor 1232)	**<23.4**	ug/kg	76.9	23.4	1	09/29/23 11:35	09/29/23 23:50	11141-16-5	
PCB-1242 (Aroclor 1242)	**23.6J**	ug/kg	76.9	23.4	1	09/29/23 11:35	09/29/23 23:50	53469-21-9	
PCB-1248 (Aroclor 1248)	**<23.4**	ug/kg	76.9	23.4	1	09/29/23 11:35	09/29/23 23:50	12672-29-6	
PCB-1254 (Aroclor 1254)	**31.9J**	ug/kg	76.9	23.4	1	09/29/23 11:35	09/29/23 23:50	11097-69-1	
PCB-1260 (Aroclor 1260)	**<23.4**	ug/kg	76.9	23.4	1	09/29/23 11:35	09/29/23 23:50	11096-82-5	
PCB, Total	**55.5J**	ug/kg	76.9	23.4	1	09/29/23 11:35	09/29/23 23:50	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	82	%	44-120		1	09/29/23 11:35	09/29/23 23:50	877-09-8	
Decachlorobiphenyl (S)	80	%	34-120		1	09/29/23 11:35	09/29/23 23:50	2051-24-3	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Green Bay								
Arsenic	**6.4**	mg/kg	1.3	0.40	6.667	09/28/23 07:16	09/28/23 20:14	7440-38-2	
Barium	**52.4**	mg/kg	1.3	0.40	6.667	09/28/23 07:16	09/28/23 20:14	7440-39-3	
Cadmium	**1.5**	mg/kg	1.0	0.15	6.667	09/28/23 07:16	09/28/23 20:14	7440-43-9	
Chromium	**14.9**	mg/kg	3.1	0.92	6.667	09/28/23 07:16	09/28/23 20:14	7440-47-3	
Copper	**15.6**	mg/kg	2.7	0.81	6.667	09/28/23 07:16	09/28/23 20:14	7440-50-8	
Lead	**44.2**	mg/kg	1.0	0.27	6.667	09/28/23 07:16	09/28/23 20:14	7439-92-1	
Selenium	**2.0**	mg/kg	1.0	0.27	6.667	09/28/23 07:16	09/28/23 20:14	7782-49-2	
Silver	**<0.14**	mg/kg	0.50	0.14	6.667	09/28/23 07:16	09/28/23 20:14	7440-22-4	D3
Zinc	**154**	mg/kg	35.0	10.5	6.667	09/28/23 07:16	09/28/23 20:14	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471 Pace Analytical Services - Green Bay								
Mercury	**0.084**	mg/kg	0.052	0.015	1	09/29/23 09:57	10/02/23 10:28	7439-97-6	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
1-Methylnaphthalene	**<3.7**	ug/kg	25.7	3.7	1	09/28/23 08:08	09/28/23 17:28	90-12-0	
2-Methylnaphthalene	**<3.8**	ug/kg	25.7	3.8	1	09/28/23 08:08	09/28/23 17:28	91-57-6	
Acenaphthene	**<3.3**	ug/kg	25.7	3.3	1	09/28/23 08:08	09/28/23 17:28	83-32-9	
Acenaphthylene	**<3.2**	ug/kg	25.7	3.2	1	09/28/23 08:08	09/28/23 17:28	208-96-8	
Anthracene	**<3.2**	ug/kg	25.7	3.2	1	09/28/23 08:08	09/28/23 17:28	120-12-7	
Benzo(a)anthracene	**6.1J**	ug/kg	25.7	3.3	1	09/28/23 08:08	09/28/23 17:28	56-55-3	
Benzo(a)pyrene	**3.9J**	ug/kg	25.7	2.9	1	09/28/23 08:08	09/28/23 17:28	50-32-8	
Benzo(b)fluoranthene	**6.1J**	ug/kg	25.7	3.6	1	09/28/23 08:08	09/28/23 17:28	205-99-2	
Benzo(g,h,i)perylene	**<4.5**	ug/kg	25.7	4.5	1	09/28/23 08:08	09/28/23 17:28	191-24-2	
Benzo(k)fluoranthene	**<3.3**	ug/kg	25.7	3.3	1	09/28/23 08:08	09/28/23 17:28	207-08-9	
Chrysene	**<4.8**	ug/kg	25.7	4.8	1	09/28/23 08:08	09/28/23 17:28	218-01-9	
Dibenz(a,h)anthracene	**<3.6**	ug/kg	25.7	3.6	1	09/28/23 08:08	09/28/23 17:28	53-70-3	
Fluoranthene	**8.3J**	ug/kg	25.7	3.0	1	09/28/23 08:08	09/28/23 17:28	206-44-0	
Fluorene	**<3.1**	ug/kg	25.7	3.1	1	09/28/23 08:08	09/28/23 17:28	86-73-7	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Sample: SED-06-DUP **Lab ID: 40268638012** Collected: 09/21/23 14:35 Received: 09/26/23 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
Indeno(1,2,3-cd)pyrene	**<5.3**	ug/kg	25.7	5.3	1	09/28/23 08:08	09/28/23 17:28	193-39-5	
Naphthalene	**<2.5**	ug/kg	25.7	2.5	1	09/28/23 08:08	09/28/23 17:28	91-20-3	
Phenanthrene	**3.7J**	ug/kg	25.7	2.9	1	09/28/23 08:08	09/28/23 17:28	85-01-8	
Pyrene	**6.4J**	ug/kg	25.7	3.8	1	09/28/23 08:08	09/28/23 17:28	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	58	%	39-120		1	09/28/23 08:08	09/28/23 17:28	321-60-8	
Terphenyl-d14 (S)	63	%	36-120		1	09/28/23 08:08	09/28/23 17:28	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**34.8**	%	0.10	0.10	1		10/04/23 17:11		
365.4 Total Phosphorus	Analytical Method: EPA 365.4 Preparation Method: EPA 365.4 Pace Analytical Services - Green Bay								
Phosphorus	**940**	mg/kg	26.7	6.7	1	10/03/23 07:00	10/03/23 13:15	7723-14-0	
Total Organic Carbon	Analytical Method: EPA 9060 Modified Pace Analytical Services - Green Bay								
Surrogates									
RPD%	**9.1**	%	0.10	0.10	1		10/03/23 05:38		
Total Organic Carbon	**14900**	mg/kg	4910	1470	1		10/03/23 05:38	7440-44-0	
Total Organic Carbon	**16300**	mg/kg	4900	1460	1		10/03/23 05:44	7440-44-0	
Mean Total Organic Carbon	**15600**	mg/kg	4910	1460	1		10/03/23 05:38	7440-44-0	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
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(920)469-2436

QUALITY CONTROL DATA

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

QC Batch: 456157
QC Batch Method: EPA 7471
Analysis Method: EPA 7471
Analysis Description: 7471 Mercury
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40268638001, 40268638002, 40268638003, 40268638004, 40268638005, 40268638006, 40268638007, 40268638008, 40268638009, 40268638010, 40268638011, 40268638012

METHOD BLANK: 2619524 Matrix: Solid
Associated Lab Samples: 40268638001, 40268638002, 40268638003, 40268638004, 40268638005, 40268638006, 40268638007, 40268638008, 40268638009, 40268638010, 40268638011, 40268638012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/kg	<0.010	0.035	0.010	10/02/23 09:25	

LABORATORY CONTROL SAMPLE: 2619525

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	0.83	0.81	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2619526 2619527

Parameter	Units	40268736001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	<0.043	1	1	1.1	1.0	102	101	85-115	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

QC Batch: 456021
QC Batch Method: EPA 3050B
Analysis Method: EPA 6020B
Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40268638001, 40268638002, 40268638003, 40268638004, 40268638005, 40268638006, 40268638007, 40268638008, 40268638009, 40268638010, 40268638011, 40268638012

METHOD BLANK: 2618891 Matrix: Solid
Associated Lab Samples: 40268638001, 40268638002, 40268638003, 40268638004, 40268638005, 40268638006, 40268638007, 40268638008, 40268638009, 40268638010, 40268638011, 40268638012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/kg	<0.040	0.13	0.040	09/28/23 18:36	
Barium	mg/kg	<0.039	0.13	0.039	09/28/23 18:36	
Cadmium	mg/kg	<0.015	0.10	0.015	09/28/23 18:36	
Chromium	mg/kg	<0.091	0.30	0.091	09/28/23 18:36	
Copper	mg/kg	<0.080	0.27	0.080	09/28/23 18:36	
Lead	mg/kg	<0.027	0.10	0.027	09/28/23 18:36	
Selenium	mg/kg	<0.027	0.10	0.027	09/28/23 18:36	
Silver	mg/kg	<0.014	0.050	0.014	09/28/23 18:36	
Zinc	mg/kg	<1.0	3.5	1.0	09/28/23 18:36	

LABORATORY CONTROL SAMPLE: 2618892

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	25	26.8	107	80-120	
Barium	mg/kg	25	25.1	100	80-120	
Cadmium	mg/kg	25	26.1	105	80-120	
Chromium	mg/kg	25	25.4	102	80-120	
Copper	mg/kg	25	25.8	103	80-120	
Lead	mg/kg	25	25.0	100	80-120	
Selenium	mg/kg	25	27.2	109	80-120	
Silver	mg/kg	12.5	12.9	103	80-120	
Zinc	mg/kg	25	26.3	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2618893 2618894

Parameter	Units	40268638001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	9.9	61.2	61.4	74.4	72.6	106	102	75-125	2	20	
Barium	mg/kg	146	61.2	61.4	260	240	187	153	75-125	8	20	M0
Cadmium	mg/kg	1.8	61.2	61.4	65.0	63.7	103	101	75-125	2	20	
Chromium	mg/kg	36.8	61.2	61.4	110	103	119	108	75-125	6	20	
Copper	mg/kg	36.3	61.2	61.4	98.5	94.7	102	95	75-125	4	20	
Lead	mg/kg	45.8	61.2	61.4	107	103	101	93	75-125	4	20	
Selenium	mg/kg	4.1	61.2	61.4	68.8	67.6	106	103	75-125	2	20	
Silver	mg/kg	0.30J	30.5	30.7	31.3	30.8	101	99	75-125	2	20	
Zinc	mg/kg	167	61.2	61.4	233	218	108	84	75-125	6	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(920)469-2436

QUALITY CONTROL DATA

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

QC Batch: 456195
QC Batch Method: EPA 3541
Analysis Method: EPA 8082A
Analysis Description: 8082 GCS PCB
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40268638001, 40268638002, 40268638003, 40268638004, 40268638005, 40268638006, 40268638007, 40268638008, 40268638009, 40268638010, 40268638011, 40268638012

METHOD BLANK: 2619763 Matrix: Solid
Associated Lab Samples: 40268638001, 40268638002, 40268638003, 40268638004, 40268638005, 40268638006, 40268638007, 40268638008, 40268638009, 40268638010, 40268638011, 40268638012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	<15.2	50.0	15.2	09/29/23 14:59	
PCB-1221 (Aroclor 1221)	ug/kg	<15.2	50.0	15.2	09/29/23 14:59	
PCB-1232 (Aroclor 1232)	ug/kg	<15.2	50.0	15.2	09/29/23 14:59	
PCB-1242 (Aroclor 1242)	ug/kg	<15.2	50.0	15.2	09/29/23 14:59	
PCB-1248 (Aroclor 1248)	ug/kg	<15.2	50.0	15.2	09/29/23 14:59	
PCB-1254 (Aroclor 1254)	ug/kg	<15.2	50.0	15.2	09/29/23 14:59	
PCB-1260 (Aroclor 1260)	ug/kg	<15.2	50.0	15.2	09/29/23 14:59	
Decachlorobiphenyl (S)	%	80	34-120		09/29/23 14:59	
Tetrachloro-m-xylene (S)	%	93	44-120		09/29/23 14:59	

LABORATORY CONTROL SAMPLE: 2619764

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg		<15.2			
PCB-1221 (Aroclor 1221)	ug/kg		<15.2			
PCB-1232 (Aroclor 1232)	ug/kg		<15.2			
PCB-1242 (Aroclor 1242)	ug/kg		<15.2			
PCB-1248 (Aroclor 1248)	ug/kg		<15.2			
PCB-1254 (Aroclor 1254)	ug/kg		<15.2			
PCB-1260 (Aroclor 1260)	ug/kg	500	470	94	69-120	
Decachlorobiphenyl (S)	%			78	34-120	
Tetrachloro-m-xylene (S)	%			95	44-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2619765 2619766

Parameter	Units	40268475001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	<16.9			<16.9	<16.9					20	
PCB-1221 (Aroclor 1221)	ug/kg	<16.9			<16.9	<16.9					20	
PCB-1232 (Aroclor 1232)	ug/kg	<16.9			<16.9	<16.9					20	
PCB-1242 (Aroclor 1242)	ug/kg	<16.9			<16.9	<16.9					20	
PCB-1248 (Aroclor 1248)	ug/kg	<16.9			<16.9	<16.9					20	
PCB-1254 (Aroclor 1254)	ug/kg	<16.9			<16.9	<16.9					20	
PCB-1260 (Aroclor 1260)	ug/kg	<16.9	554	554	498	530	90	96	51-120	6	20	
Decachlorobiphenyl (S)	%						69	88	34-120			
Tetrachloro-m-xylene (S)	%						89	96	44-120			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

QC Batch: 456027
QC Batch Method: EPA 3546
Analysis Method: EPA 8270E by SIM
Analysis Description: 8270E/3546 MSSV PAH by SIM
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40268638002, 40268638003, 40268638004, 40268638005, 40268638006, 40268638007, 40268638008, 40268638009, 40268638010, 40268638011, 40268638012

METHOD BLANK: 2618909 Matrix: Solid
Associated Lab Samples: 40268638002, 40268638003, 40268638004, 40268638005, 40268638006, 40268638007, 40268638008, 40268638009, 40268638010, 40268638011, 40268638012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/kg	<2.4	16.7	2.4	09/28/23 10:21	
2-Methylnaphthalene	ug/kg	<2.4	16.7	2.4	09/28/23 10:21	
Acenaphthene	ug/kg	<2.2	16.7	2.2	09/28/23 10:21	
Acenaphthylene	ug/kg	<2.1	16.7	2.1	09/28/23 10:21	
Anthracene	ug/kg	<2.1	16.7	2.1	09/28/23 10:21	
Benzo(a)anthracene	ug/kg	<2.2	16.7	2.2	09/28/23 10:21	
Benzo(a)pyrene	ug/kg	<1.9	16.7	1.9	09/28/23 10:21	
Benzo(b)fluoranthene	ug/kg	<2.3	16.7	2.3	09/28/23 10:21	
Benzo(g,h,i)perylene	ug/kg	<2.9	16.7	2.9	09/28/23 10:21	
Benzo(k)fluoranthene	ug/kg	<2.1	16.7	2.1	09/28/23 10:21	
Chrysene	ug/kg	<3.2	16.7	3.2	09/28/23 10:21	
Dibenz(a,h)anthracene	ug/kg	<2.3	16.7	2.3	09/28/23 10:21	
Fluoranthene	ug/kg	<2.0	16.7	2.0	09/28/23 10:21	
Fluorene	ug/kg	<2.0	16.7	2.0	09/28/23 10:21	
Indeno(1,2,3-cd)pyrene	ug/kg	<3.5	16.7	3.5	09/28/23 10:21	
Naphthalene	ug/kg	<1.6	16.7	1.6	09/28/23 10:21	
Phenanthrene	ug/kg	<1.9	16.7	1.9	09/28/23 10:21	
Pyrene	ug/kg	<2.5	16.7	2.5	09/28/23 10:21	
2-Fluorobiphenyl (S)	%	83	39-120		09/28/23 10:21	
Terphenyl-d14 (S)	%	93	36-120		09/28/23 10:21	

LABORATORY CONTROL SAMPLE: 2618910

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	333	250	75	62-120	
2-Methylnaphthalene	ug/kg	333	252	75	61-120	
Acenaphthene	ug/kg	333	251	75	66-120	
Acenaphthylene	ug/kg	333	246	74	63-120	
Anthracene	ug/kg	333	270	81	72-120	
Benzo(a)anthracene	ug/kg	333	242	73	64-120	
Benzo(a)pyrene	ug/kg	333	273	82	76-120	
Benzo(b)fluoranthene	ug/kg	333	256	77	62-120	
Benzo(g,h,i)perylene	ug/kg	333	253	76	73-120	
Benzo(k)fluoranthene	ug/kg	333	270	81	69-120	
Chrysene	ug/kg	333	244	73	70-120	
Dibenz(a,h)anthracene	ug/kg	333	260	78	72-120	
Fluoranthene	ug/kg	333	269	81	71-120	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
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(920)469-2436

QUALITY CONTROL DATA

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

LABORATORY CONTROL SAMPLE: 2618910

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluorene	ug/kg	333	252	76	68-120	
Indeno(1,2,3-cd)pyrene	ug/kg	333	273	82	72-120	
Naphthalene	ug/kg	333	240	72	60-120	
Phenanthrene	ug/kg	333	261	78	66-120	
Pyrene	ug/kg	333	263	79	65-120	
2-Fluorobiphenyl (S)	%			77	39-120	
Terphenyl-d14 (S)	%			82	36-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2618911 2618912

Parameter	Units	40268645003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1-Methylnaphthalene	ug/kg	86.0	418	419	310	319	53	56	50-120	3	34	
2-Methylnaphthalene	ug/kg	127	418	419	313	321	45	46	48-120	3	29	M1
Acenaphthene	ug/kg	39.3	418	419	308	318	64	66	51-120	3	26	
Acenaphthylene	ug/kg	14.6J	418	419	304	311	69	71	49-120	2	22	
Anthracene	ug/kg	12.3J	418	419	323	345	74	79	52-120	7	25	
Benzo(a)anthracene	ug/kg	3.2J	418	419	288	290	68	68	47-120	1	37	
Benzo(a)pyrene	ug/kg	<2.4	418	419	319	326	76	78	53-120	2	33	
Benzo(b)fluoranthene	ug/kg	<2.9	418	419	298	304	71	72	43-120	2	43	
Benzo(g,h,i)perylene	ug/kg	<3.7	418	419	284	289	68	69	38-120	2	36	
Benzo(k)fluoranthene	ug/kg	<2.7	418	419	314	317	75	76	49-120	1	30	
Chrysene	ug/kg	<4.0	418	419	287	288	68	68	45-120	1	28	
Dibenz(a,h)anthracene	ug/kg	<2.9	418	419	293	298	70	71	41-120	1	33	
Fluoranthene	ug/kg	9.1J	418	419	323	342	75	79	50-120	6	43	
Fluorene	ug/kg	17.8J	418	419	309	315	70	71	47-120	2	27	
Indeno(1,2,3-cd)pyrene	ug/kg	<4.4	418	419	308	313	73	75	35-120	2	33	
Naphthalene	ug/kg	405	418	419	297	306	-26	-24	42-120	3	26	M1
Phenanthrene	ug/kg	50.3	418	419	313	338	63	69	45-120	8	24	
Pyrene	ug/kg	11.5J	418	419	306	309	71	71	42-120	1	41	
2-Fluorobiphenyl (S)	%						74	70	39-120			
Terphenyl-d14 (S)	%						74	72	36-120			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(920)469-2436

QUALITY CONTROL DATA

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

QC Batch: 456409
QC Batch Method: EPA 3546
Analysis Method: EPA 8270E by SIM
Analysis Description: 8270E/3546 MSSV PAH by SIM
Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 40268638001

METHOD BLANK: 2620824 Matrix: Solid
Associated Lab Samples: 40268638001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/kg	<2.4	16.7	2.4	10/03/23 14:19	
2-Methylnaphthalene	ug/kg	<2.4	16.7	2.4	10/03/23 14:19	
Acenaphthene	ug/kg	<2.2	16.7	2.2	10/03/23 14:19	
Acenaphthylene	ug/kg	<2.1	16.7	2.1	10/03/23 14:19	
Anthracene	ug/kg	<2.1	16.7	2.1	10/03/23 14:19	
Benzo(a)anthracene	ug/kg	<2.2	16.7	2.2	10/03/23 14:19	
Benzo(a)pyrene	ug/kg	<1.9	16.7	1.9	10/03/23 14:19	
Benzo(b)fluoranthene	ug/kg	<2.3	16.7	2.3	10/03/23 14:19	
Benzo(g,h,i)perylene	ug/kg	<2.9	16.7	2.9	10/03/23 14:19	
Benzo(k)fluoranthene	ug/kg	<2.1	16.7	2.1	10/03/23 14:19	
Chrysene	ug/kg	<3.1	16.7	3.1	10/03/23 14:19	
Dibenz(a,h)anthracene	ug/kg	<2.3	16.7	2.3	10/03/23 14:19	
Fluoranthene	ug/kg	<2.0	16.7	2.0	10/03/23 14:19	
Fluorene	ug/kg	<2.0	16.7	2.0	10/03/23 14:19	
Indeno(1,2,3-cd)pyrene	ug/kg	<3.5	16.7	3.5	10/03/23 14:19	
Naphthalene	ug/kg	<1.6	16.7	1.6	10/03/23 14:19	
Phenanthrene	ug/kg	<1.9	16.7	1.9	10/03/23 14:19	
Pyrene	ug/kg	<2.5	16.7	2.5	10/03/23 14:19	
2-Fluorobiphenyl (S)	%	66	39-120		10/03/23 14:19	
Terphenyl-d14 (S)	%	84	36-120		10/03/23 14:19	

LABORATORY CONTROL SAMPLE: 2620825

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	334	239	72	62-120	
2-Methylnaphthalene	ug/kg	334	242	73	61-120	
Acenaphthene	ug/kg	334	244	73	66-120	
Acenaphthylene	ug/kg	334	242	73	63-120	
Anthracene	ug/kg	334	273	82	72-120	
Benzo(a)anthracene	ug/kg	334	255	76	64-120	
Benzo(a)pyrene	ug/kg	334	276	83	76-120	
Benzo(b)fluoranthene	ug/kg	334	283	85	62-120	
Benzo(g,h,i)perylene	ug/kg	334	247	74	73-120	
Benzo(k)fluoranthene	ug/kg	334	247	74	69-120	
Chrysene	ug/kg	334	251	75	70-120	
Dibenz(a,h)anthracene	ug/kg	334	254	76	72-120	
Fluoranthene	ug/kg	334	284	85	71-120	
Fluorene	ug/kg	334	258	77	68-120	
Indeno(1,2,3-cd)pyrene	ug/kg	334	267	80	72-120	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
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(920)469-2436

QUALITY CONTROL DATA

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

LABORATORY CONTROL SAMPLE: 2620825

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Naphthalene	ug/kg	334	219	66	60-120	
Phenanthrene	ug/kg	334	263	79	66-120	
Pyrene	ug/kg	334	273	82	65-120	
2-Fluorobiphenyl (S)	%			74	39-120	
Terphenyl-d14 (S)	%			89	36-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2620826 2620827

Parameter	Units	40268497013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1-Methylnaphthalene	ug/kg	21.2	419	418	298	294	66	65	50-120	1	34	
2-Methylnaphthalene	ug/kg	35.3	419	418	303	299	64	63	48-120	1	29	
Acenaphthene	ug/kg	21.7	419	418	278	292	61	65	51-120	5	26	
Acenaphthylene	ug/kg	<2.6	419	418	289	292	69	70	49-120	1	22	
Anthracene	ug/kg	5.7J	419	418	311	309	73	73	52-120	0	25	
Benzo(a)anthracene	ug/kg	3.7J	419	418	282	287	66	68	47-120	2	37	
Benzo(a)pyrene	ug/kg	<2.4	419	418	300	301	71	72	53-120	0	33	
Benzo(b)fluoranthene	ug/kg	3.6J	419	418	313	317	74	75	43-120	1	43	
Benzo(g,h,i)perylene	ug/kg	<3.7	419	418	268	267	63	63	38-120	0	36	
Benzo(k)fluoranthene	ug/kg	<2.7	419	418	270	268	64	64	49-120	1	30	
Chrysene	ug/kg	<4.0	419	418	260	255	61	60	45-120	2	28	
Dibenz(a,h)anthracene	ug/kg	<2.9	419	418	278	282	66	67	41-120	1	33	
Fluoranthene	ug/kg	7.3J	419	418	329	322	77	75	50-120	2	43	
Fluorene	ug/kg	6.7J	419	418	300	302	70	71	47-120	1	27	
Indeno(1,2,3-cd)pyrene	ug/kg	<4.4	419	418	292	296	69	70	35-120	1	33	
Naphthalene	ug/kg	122	419	418	276	278	37	37	42-120	1	26	M1
Phenanthrene	ug/kg	21.5	419	418	311	307	69	68	45-120	1	24	
Pyrene	ug/kg	7.9J	419	418	310	301	72	70	42-120	3	41	
2-Fluorobiphenyl (S)	%						68	71	39-120			
Terphenyl-d14 (S)	%						71	77	36-120			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

QC Batch: 456615
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 40268638001, 40268638002

SAMPLE DUPLICATE: 2621923

Parameter	Units	40268646008 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	18.1	18.6	3	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

QC Batch: 456620
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40268638003, 40268638004, 40268638005, 40268638006, 40268638007, 40268638008, 40268638009, 40268638010, 40268638011, 40268638012

SAMPLE DUPLICATE: 2621959

Parameter	Units	40268646005 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	16.0	16.5	3	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(920)469-2436

QUALITY CONTROL DATA

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

QC Batch: 456265
QC Batch Method: EPA 365.4
Analysis Method: EPA 365.4
Analysis Description: 365.4 Total Phosphorus
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40268638001, 40268638002, 40268638003, 40268638004, 40268638005, 40268638006, 40268638007, 40268638008, 40268638009, 40268638010, 40268638011, 40268638012

METHOD BLANK: 2620376 Matrix: Solid
Associated Lab Samples: 40268638001, 40268638002, 40268638003, 40268638004, 40268638005, 40268638006, 40268638007, 40268638008, 40268638009, 40268638010, 40268638011, 40268638012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Phosphorus	mg/kg	5.7J	20.0	5.0	10/03/23 14:25	

LABORATORY CONTROL SAMPLE: 2620377

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/kg	500	485	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2620378 2620379

Parameter	Units	40268638001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Phosphorus	mg/kg	716	1020	1120	1540	1590	81	78	80-120	3	20	M0

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2620380 2620381

Parameter	Units	40268646006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Phosphorus	mg/kg	646	556	583	1170	1330	95	117	80-120	12	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

QC Batch: 456257
QC Batch Method: EPA 9060 Modified
Analysis Method: EPA 9060 Modified
Analysis Description: 9060 TOC Average
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40268638001, 40268638002, 40268638003, 40268638004, 40268638005, 40268638006, 40268638007, 40268638008, 40268638009, 40268638010, 40268638011, 40268638012

METHOD BLANK: 2620351 Matrix: Solid
Associated Lab Samples: 40268638001, 40268638002, 40268638003, 40268638004, 40268638005, 40268638006, 40268638007, 40268638008, 40268638009, 40268638010, 40268638011, 40268638012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mean Total Organic Carbon	mg/kg	<179	600	179	10/03/23 01:43	

LABORATORY CONTROL SAMPLE: 2620352

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mean Total Organic Carbon	mg/kg	120000	119000	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2620353 2620354

Parameter	Units	40268638001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mean Total Organic Carbon	mg/kg	42600	108000	109000	144000	147000	94	96	46-150	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2620355 2620356

Parameter	Units	40268638002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mean Total Organic Carbon	mg/kg	12700	60600	60500	62300	61700	82	81	46-150	1	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

Pace Analytical Services, LLC
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40268638001	**SED-01**	EPA 3541	456195	EPA 8082A	456196
40268638002	**SED-02**	EPA 3541	456195	EPA 8082A	456196
40268638003	**SED-03**	EPA 3541	456195	EPA 8082A	456196
40268638004	**SED-04**	EPA 3541	456195	EPA 8082A	456196
40268638005	**SED-05**	EPA 3541	456195	EPA 8082A	456196
40268638006	**SED-06**	EPA 3541	456195	EPA 8082A	456196
40268638007	**SED-07**	EPA 3541	456195	EPA 8082A	456196
40268638008	**SED-08**	EPA 3541	456195	EPA 8082A	456196
40268638009	**SED-09**	EPA 3541	456195	EPA 8082A	456196
40268638010	**SED-10**	EPA 3541	456195	EPA 8082A	456196
40268638011	**SED-03-DUP**	EPA 3541	456195	EPA 8082A	456196
40268638012	**SED-06-DUP**	EPA 3541	456195	EPA 8082A	456196
40268638001	**SED-01**	EPA 3050B	456021	EPA 6020B	456095
40268638002	**SED-02**	EPA 3050B	456021	EPA 6020B	456095
40268638003	**SED-03**	EPA 3050B	456021	EPA 6020B	456095
40268638004	**SED-04**	EPA 3050B	456021	EPA 6020B	456095
40268638005	**SED-05**	EPA 3050B	456021	EPA 6020B	456095
40268638006	**SED-06**	EPA 3050B	456021	EPA 6020B	456095
40268638007	**SED-07**	EPA 3050B	456021	EPA 6020B	456095
40268638008	**SED-08**	EPA 3050B	456021	EPA 6020B	456095
40268638009	**SED-09**	EPA 3050B	456021	EPA 6020B	456095
40268638010	**SED-10**	EPA 3050B	456021	EPA 6020B	456095
40268638011	**SED-03-DUP**	EPA 3050B	456021	EPA 6020B	456095
40268638012	**SED-06-DUP**	EPA 3050B	456021	EPA 6020B	456095
40268638001	**SED-01**	EPA 7471	456157	EPA 7471	456217
40268638002	**SED-02**	EPA 7471	456157	EPA 7471	456217
40268638003	**SED-03**	EPA 7471	456157	EPA 7471	456217
40268638004	**SED-04**	EPA 7471	456157	EPA 7471	456217
40268638005	**SED-05**	EPA 7471	456157	EPA 7471	456217
40268638006	**SED-06**	EPA 7471	456157	EPA 7471	456217
40268638007	**SED-07**	EPA 7471	456157	EPA 7471	456217
40268638008	**SED-08**	EPA 7471	456157	EPA 7471	456217
40268638009	**SED-09**	EPA 7471	456157	EPA 7471	456217
40268638010	**SED-10**	EPA 7471	456157	EPA 7471	456217
40268638011	**SED-03-DUP**	EPA 7471	456157	EPA 7471	456217
40268638012	**SED-06-DUP**	EPA 7471	456157	EPA 7471	456217
40268638001	**SED-01**	EPA 3546	456409	EPA 8270E by SIM	456448
40268638002	**SED-02**	EPA 3546	456027	EPA 8270E by SIM	456053
40268638003	**SED-03**	EPA 3546	456027	EPA 8270E by SIM	456053
40268638004	**SED-04**	EPA 3546	456027	EPA 8270E by SIM	456053
40268638005	**SED-05**	EPA 3546	456027	EPA 8270E by SIM	456053
40268638006	**SED-06**	EPA 3546	456027	EPA 8270E by SIM	456053
40268638007	**SED-07**	EPA 3546	456027	EPA 8270E by SIM	456053
40268638008	**SED-08**	EPA 3546	456027	EPA 8270E by SIM	456053
40268638009	**SED-09**	EPA 3546	456027	EPA 8270E by SIM	456053
40268638010	**SED-10**	EPA 3546	456027	EPA 8270E by SIM	456053
40268638011	**SED-03-DUP**	EPA 3546	456027	EPA 8270E by SIM	456053

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40268638012	**SED-06-DUP**	EPA 3546	456027	EPA 8270E by SIM	456053
40268638001	**SED-01**	ASTM D2974-87	456615		
40268638002	**SED-02**	ASTM D2974-87	456615		
40268638003	**SED-03**	ASTM D2974-87	456620		
40268638004	**SED-04**	ASTM D2974-87	456620		
40268638005	**SED-05**	ASTM D2974-87	456620		
40268638006	**SED-06**	ASTM D2974-87	456620		
40268638007	**SED-07**	ASTM D2974-87	456620		
40268638008	**SED-08**	ASTM D2974-87	456620		
40268638009	**SED-09**	ASTM D2974-87	456620		
40268638010	**SED-10**	ASTM D2974-87	456620		
40268638011	**SED-03-DUP**	ASTM D2974-87	456620		
40268638012	**SED-06-DUP**	ASTM D2974-87	456620		
40268638001	**SED-01**	EPA 365.4	456265	EPA 365.4	456419
40268638002	**SED-02**	EPA 365.4	456265	EPA 365.4	456419
40268638003	**SED-03**	EPA 365.4	456265	EPA 365.4	456419
40268638004	**SED-04**	EPA 365.4	456265	EPA 365.4	456419
40268638005	**SED-05**	EPA 365.4	456265	EPA 365.4	456419
40268638006	**SED-06**	EPA 365.4	456265	EPA 365.4	456419
40268638007	**SED-07**	EPA 365.4	456265	EPA 365.4	456419
40268638008	**SED-08**	EPA 365.4	456265	EPA 365.4	456419
40268638009	**SED-09**	EPA 365.4	456265	EPA 365.4	456419
40268638010	**SED-10**	EPA 365.4	456265	EPA 365.4	456419
40268638011	**SED-03-DUP**	EPA 365.4	456265	EPA 365.4	456419
40268638012	**SED-06-DUP**	EPA 365.4	456265	EPA 365.4	456419
40268638001	**SED-01**	EPA 9060 Modified	456257		
40268638001	**SED-01**	EPA 9060 Modified	456258		
40268638002	**SED-02**	EPA 9060 Modified	456257		
40268638002	**SED-02**	EPA 9060 Modified	456258		
40268638003	**SED-03**	EPA 9060 Modified	456257		
40268638003	**SED-03**	EPA 9060 Modified	456258		
40268638004	**SED-04**	EPA 9060 Modified	456257		
40268638004	**SED-04**	EPA 9060 Modified	456258		
40268638005	**SED-05**	EPA 9060 Modified	456257		
40268638005	**SED-05**	EPA 9060 Modified	456258		
40268638006	**SED-06**	EPA 9060 Modified	456257		
40268638006	**SED-06**	EPA 9060 Modified	456258		
40268638007	**SED-07**	EPA 9060 Modified	456257		
40268638007	**SED-07**	EPA 9060 Modified	456258		
40268638008	**SED-08**	EPA 9060 Modified	456257		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 00132825-LIMNOTECH-FLAT ROCK
Pace Project No.: 40268638

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40268638008	**SED-08**	EPA 9060 Modified	456258		
40268638009	**SED-09**	EPA 9060 Modified	456257		
40268638009	**SED-09**	EPA 9060 Modified	456258		
40268638010	**SED-10**	EPA 9060 Modified	456257		
40268638010	**SED-10**	EPA 9060 Modified	456258		
40268638011	**SED-03-DUP**	EPA 9060 Modified	456257		
40268638011	**SED-03-DUP**	EPA 9060 Modified	456258		
40268638012	**SED-06-DUP**	EPA 9060 Modified	456257		
40268638012	**SED-06-DUP**	EPA 9060 Modified	456258		

CHAIN-OF-CUSTODY Analytical Request Document

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Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

402686638

ALL SHADED AREAS are for LAB USE ONLY

Company: LimnoTech	Billing Information: LimnoTech 501 Avis Dr. #1 Ann Arbor, MI 48108
Address: 501 Avis Dr. #1, Ann Arbor, MI 48108	
Report To: Brendan Cousino	Email To: bcousino@limno.com
Copy To: James Hartrick	Site Collection Info/Address: Huron River, Flat Rock, MI
Customer Project Name/Number: 00132825-LimnoTech-Flat Rock	State: MI County/City: Wayne/FlatRock Time Zone Collected: [ ] PT [ ] MT [ ] CT [X] ET
Phone: (734) 821-3142 Email: bcousino@limno.com	Site/Facility ID #: Compliance Monitoring? [ ] Yes [X] No
Collected By (print): James Hartrick	Purchase Order #: Quote #: 00132825 DW PWS ID #: DW Location Code:
Collected By (signature): James M	Turnaround Date Required: 10 day Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply) Field Filtered (if applicable): [ ] Yes [X] No Analysis:

Container Preservative Type **

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Analyses

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips:	
Sample pH Acceptable	Y N NA
pH Strips:	
Sulfide Present	Y N NA
Lead Acetate Strips:	

LAB USE ONLY:
Lab Sample # / Comments:

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	MI 10 Metals, EPA 6010/7471	PAH, EPA 8270	PCBs, EPA 8082	% Moisture/Dry Weight, Sm 2540G	Phosphorus, Total, EPA 365.4	Total Organic Carbon, EPA 9060						
SED-01	SL	Comp	9/21/23	1120				2	X	X	X	X	X	X						001
SED-02	SL	Comp	9/21/23	1155				2	X	X	X	X	X	X						002
SED-03	SL	Comp	9/21/23	1220				2	X	X	X	X	X	X						003
SED-04	SL	Comp	9/21/23	1415				2	X	X	X	X	X	X						004
SED-05	SL	Comp	9/21/23	1345				2	X	X	X	X	X	X						005
SED-06	SL	Comp	9/21/23	1435				2	X	X	X	X	X	X						006
SED-07	SL	Comp	9/21/23	1500				2	X	X	X	X	X	X						007
SED-08	SL	Comp	9/21/23	1520				2	X	X	X	X	X	X						008
SED-09	SL	Comp	9/21/23	1530				2	X	X	X	X	X	X						009
SED-10	SL	Comp	9/21/23	0935				2	X	X	X	X	X	X						010

*Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2891089

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#:
Cooler 1 Temp Upon Receipt: ____ oC
Cooler 1 Therm Corr. Factor: ____ oC
Cooler 1 Corrected Temp: ____ oC
Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
James M / LimnoTech	9/25/23 1430		
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
FedEx	9/26/23 0940		9/26/23 0940
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: ____ of: ____

CHAIN-OF-CUSTODY Analytical Request Document

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Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

402686038

ALL SHADED AREAS are for LAB USE ONLY

Company: LimnoTech	Billing Information: LimnoTech 501 Avis Dr. #1 Ann Arbor, MI 48108
Address: 501 Avis Dr, Ann Arbor, MI 48108	
Report To: Brendan Cousino	Email To: bcousino@limno.com
Copy To: James Hartrick	Site Collection Info/Address: Huron River, Flat Rock, MI
Customer Project Name/Number: 00132825-LimnoTech - Flat Rock	State: MI County/City: Wayne/Flat Rock Time Zone Collected: [ ] PT [ ] MT [ ] CT [X] ET
Phone: (734)821-3142 Email: bcousino@limno.com	Site/Facility ID #: Compliance Monitoring? [ ] Yes [X] No
Collected By (print): James Hartrick	Purchase Order #: Quote #: 00132825 DW PWS ID #: DW Location Code:
Collected By (signature): James H	Turnaround Date Required: 10 day Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply) Field Filtered (if applicable): [ ] Yes [X] No Analysis: _____

Container Preservative Type **

Lab Project Manager:

** Preservative Types. (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Analyses

Lab Profile/Line:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	MI 10 Metals, EPA 6010/7471	PAH, EPA 8270	PCBs, EPA 8082	% Moisture/dry weight, SM2540G	Phosphorus, Total, EPA 365.4	Total organic Carbon, EPA 9060					Lab Sample # / Comments:
SED-03-DUP	SL	Comp	9/21/23	1220				2	X	X	X	X	X	X					01
SED-06-DUP	SL	Comp	9/21/23	1435				2	X	X	X	X	X	X					02

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples Received on Ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in Holding Time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

LAB USE ONLY:

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used: 1

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2891088

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:

Temp Blank Received: Y N NA

Therm ID#: _____

Cooler 1 Temp Upon Receipt: _____ oC

Cooler 1 Therm Corr. Factor: _____ oC

Cooler 1 Corrected Temp: _____ oC

Comments: 1

Relinquished by/Company: (Signature) James H / LimnoTech	Date/Time: 9/25/23 1430	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature) Fedex	Date/Time: 9/26/23 0940	Received by/Company: (Signature)	Date/Time: 9/26/23 0940
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY

Table #:

Acctnum:

Template:

Prelogin:

PM:

PB:

Trip Blank Received: Y N NA

HCL MeOH TSP Other

Non Conformance(s): YES / NO

Sample Preservation Receipt Form

Client Name: Umno Tech Project # 402Le8Le38

All containers needing preservation have been checked and noted below. ☐Yes ☐No ☐N/A Initial when completed: Date/ Time

Lab Lot# of pH paper Lab Std #ID of preservation (if pH adjusted):

Pace Lab #	Glass: AG1U	BG1U	AG1H	AG4S	AG5U	AG2S	BG3U	Plastic: BP1U	BP3U	BP3B	BP3N	BP3S	BP2Z	Vials: VG9C	DG9T	VG9U	VG9H	VG9M	VG9D	Jars: JGFU	JG9U	WGFU	WPFU	General: SP5T	ZPLC	GN 1	GN 2	VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
001																				2														2.5 / 5
002																				2														2.5 / 5
003																				2														2.5 / 5
004																				2														2.5 / 5
005																				2														2.5 / 5
006																				2														2.5 / 5
007																				2														2.5 / 5
008																				2														2.5 / 5
009																				2														2.5 / 5
010																				2														2.5 / 5
011																				2														2.5 / 5
012																				2														2.5 / 5
013																																		2.5 / 5
014																																		2.5 / 5
015																																		2.5 / 5
016																																		2.5 / 5
017																																		2.5 / 5
018				mtl 4/26/23																														2.5 / 5
019																																		2.5 / 5
020																																		2.5 / 5

Exceptions to preservation check VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other_____ Headspace in VOA Vials (>6mm): ☐Yes ☐No ☐N/A ***If yes look in headspace column**

AG1U	1 liter amber glass	BP1U	1 liter plastic unpres	VG9C	40 mL clear ascorbic w/ HCl	JGFU	4 oz amber jar unpres
BG1U	1 liter clear glass	BP3U	250 mL plastic unpres	DG9T	40 mL amber Na Thio	JG9U	9 oz amber jar unpres
AG1H	1 liter amber glass HCL	BP3B	250 mL plastic NaOH	VG9U	40 mL clear vial unpres	WGFU	4 oz clear jar unpres
AG4S	125 mL amber glass H2SO4	BP3N	250 mL plastic HNO3	VG9H	40 mL clear vial HCL	WPFU	4 oz plastic jar unpres
AG5U	100 mL amber glass unpres	BP3S	250 mL plastic H2SO4	VG9M	40 mL clear vial MeOH	SP5T	120 mL plastic Na Thiosulfate
AG2S	500 mL amber glass H2SO4	BP2Z	500 mL plastic NaOH + Zn	VG9D	40 mL clear vial DI	ZPLC	ziploc bag
BG3U	250 mL clear glass unpres					GN 1	
						GN 2	

Page 1 of 2

Sample Condition Upon Receipt Form (SCUR)

Project #:

WO# : 40268638

40268638

Client Name: Limno Tech

Courier: ☐ CS Logistics ☑ Fed Ex ☐ Speedee ☐ UPS ☐ Waltco ☐ Client ☐ Pace Other:

Tracking #: 7842 1273 4123

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no

Custody Seal on Samples Present: ☐ yes ☑ no Seals intact: ☐ yes ☑ no

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other

Thermometer Used SR - 120 **Type of Ice:** (Wet) Blue Dry None ☐ Meltwater Only

Cooler Temperature Uncorr: 3.0 /Corr: 3.0

Temp Blank Present: ☑ yes ☐ no **Biological Tissue is Frozen:** ☐ yes ☐ no

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C if shipped on Dry Ice.

Person examining contents:
Date: 9/26/23 /Initials: MH

Labeled By Initials: SB

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☐Yes ☑No ☐N/A	2. pg#, preser. MH 9/26/23
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No	5.
- DI VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☐Yes ☑No	6.
Rush Turn Around Time Requested:	☐Yes ☑No	7.
Sufficient Volume:		8.
For Analysis: ☑Yes ☐No MS/MSD:	☐Yes ☑No ☐N/A	
Correct Containers Used:	☑Yes ☐No	9.
Correct Type: Pace Green Bay, Pace IR, Non-Pace		
Containers Intact:	☑Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: S		
Trip Blank Present:	☐Yes ☐No ☑N/A	13.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: Date/Time:

Comments/ Resolution:

PM Review is documented electronically in LIMs. By releasing the project, the PM acknowledges they have reviewed the sample logi

Page 2 of 2