

Appendix A

WDNR Second Incompleteness Determination Letter dated March 11, 2025



March 11, 2025

FID # 663038310
Vernon County
SW/Correspondence

Ms. Stacie Sanborn
Vernon County, Director of Solid Waste
S3075 County Road LF
Viroqua, WI 54665

Subject: Second Incompleteness Determination for the Feasibility Report for the Proposed
Vernon County Landfill Eastern Expansion, License #3268

Dear Ms. Sanborn:

The Department of Natural Resources (department) has reviewed for completeness the report entitled "Feasibility Report Addendum 1- Proposed Eastern Expansion (WDNR License No. 3268)" dated November 19, 2024. The feasibility report (the report) was prepared by Short Elliot Hendrickson Inc., (SEH) on behalf the Vernon County Solid Waste Department. The department received the report on November 19, 2024. Based on the report review, the department has determined that the feasibility report does not contain the minimum information required by ch. NR 512, Wis. Adm. Code. Therefore, the report is not complete.

A brief summary section is provided below, highlighting areas of the geologic and hydrogeologic investigation that need additional attention. There are areas of the geotechnical investigation that do not yet meet code requirements, interpretations that remain unclear to the department due to lack of corroborating data, and areas of the site that have not yet been sufficiently characterized. The department is prepared to meet with your technical team and discuss these items in detail.

Also included in this letter are Vernon County's Responses (where applicable) to the initial incompleteness letter issued on December 19, 2023. The department has provided comments for each item noting where additional information is still needed. Vernon County's responses that appear to have sufficient information to satisfy completeness requirements are marked with a simple "response noted" statement. The final section of the letter contains new comments relevant to Section 4 of Addendum 1.

This information is intended for use by the public as well as the department in reviewing the proposed project. Be sure to provide a copy of all information submitted to the department to each recipient of the feasibility report as required by s. 289.23(4), Wis. Stats.

Summary of Incompleteness Issues

The following summary highlights areas of the of the geotechnical investigation that do not yet meet code requirements, interpretations that remain unclear to the department due to lack of corroborating data, and areas of the site that have not yet been sufficiently characterized.

The department has concluded that the relationship between the perched aquifer and regional aquifer remains not fully defined to the east of the landfill. Mounding in the regional water table around MW-16 and MW-18 is not defined to the extent that would allow tracking of a hypothetical release from the landfill. Additional regional water table elevation data are needed to the east of the MW-16/MW-18 well nests.

The feasibility report states that bedrock coring at the site has resulted in the following observations and conclusions:

- Dissolution cavities and bedrock fractures associated with dolomitic rock are primarily present above groundwater in bedrock on-site.
- Dissolution cavities occur primarily as small voids and do not appear to be interconnected.
- Bedrock in general, is often highly fractured and the fractures are likely interconnected.
- Under hydraulic conditions, fracture bedrock above the water table would likely function as a porous media with only localized shale and clay layers providing limitations to the vertical percolation of water.

However, the geotechnical investigation for the proposed expansion was not able to produce bedrock cores that would provide the capacity to analyze the fracture size and frequency and rock quality designations (RQD) critical to understanding the overall groundwater flow regime at the site. Any bedrock cores produced from the sonic drilling may not provide accurate information with respect to evaluating fractures and RQD because of the potential impact the drilling process has on the material. Sonic cores collected in bedrock are broken up and may have been mechanically fractured/partially pulverized during drilling, which is typical of the drilling method. Given the absence of corroborating evidence, the department assumes these cores are indicative of a highly fractured bedrock environment.

SEH has communicated to the department that obtaining usable bedrock cores at this site for this evaluation or performing geophysical logging in the boreholes designed to evaluate fractures would be very difficult or impossible. The gamma logging that was done may provide some information regarding the continuity of the geological formations; however, the gamma logging is not able to provide information on the fractures and voids. It does not appear that the gamma log marker horizons are sufficient to identify geological horizons as they extend through an apparent facies change to sandstone in the direction of wells MW-17WT and MW-19 (meaning the marker horizons do not serve to indicate a homogenous, isotropic geology, as indicated in the report).

Based on the available information, the department's understanding of the geological site conditions is that the groundwater flow beneath the proposed landfill expansion is controlled by fractured flow through dolomitic bedrock. However, it is not clear if the subsurface at the expansion area is representative of karst conditions. Boring log information (below) from the report identifies a number of features, such as crevices, voids, and water loss that may be indicative of karst conditions. In addition, hydraulic conductivities are fairly high. SEH attempts to provide some explanations related to the fractures and crevices reported in the boring logs, such as discussions about maintaining drilling fluids, the measured hydraulic conductivity in MW-14WT and fractures likely being in the weathered zone. However, without having bedrock cores or the appropriate geophysical data it is difficult to corroborate some of the inferences provided. For example, it is not clear to the department how available data definitively shows the fracture flow is behaving as a homogenous porous media as defined, how it has been determined that voids are not connected, and what is driving water loss during drilling efforts. The concerns with potential karst geology are with both site stability and effective groundwater monitoring capability.

Boring Log Information:

- The boring log for MW-14Z indicates some highly fractured zones
- The log for MW-14WT indicates a void and some fractured zones.
- The boring log for MW-3 indicates dolomite with crevices between 145 and 150 ft.
- The log for MW-4 indicates dolomite, hard with several crevices between 145 and 150 ft.
- The log for MW-5 indicates dolomite, broken up with crevices at 135 to 137 ft and between 158 and 160 ft.
- The log for MW-15WT indicates water loss at 75 ft to termination.

The presence of a perched aquifer associated with dolomitic bedrock may also be evidence that points to potential karst characteristics at this site. The dissolution process that creates karst features results in a complex network of cavities and conduits within the rock, leading to localized areas of high permeability where water can accumulate above less permeable layers, creating perched water tables at higher elevations than the regional groundwater level. This is sometimes more prevalent in the uppermost weathered zone of karst, known as the epikarst, which acts as a perched leaky aquifer due to its high porosity and permeability compared to deeper rock layers. In some cases, layers of less permeable rock or clay can exist within the karst system, acting as a barrier to downward water flow and creating perched aquifers above them.

At this site, the perched aquifer appears to be present in the upper portion of the dolomite, below the Saprolite, which is fractured and weathered bedrock, and flows through the Saprolite where it dips to the east and where the perched aquifer converges with the regional aquifer. Any hypothetical release from the landfill would move through the residuum material and the Saprolite, into the perched aquifer. Movement through the weathered material and fractures and through the perched aquifer is anticipated to be at a comparatively high rate. A concern is whether the monitoring well network would be capable of detecting a release, depending on the location of the release, the location of monitoring wells and the travel rate of the released contaminants.

Underlying carbonate rock is present throughout much of southern, southwestern and eastern Wisconsin with the potential for karst features; however, not all carbonate rock displays karst features or karst features that are significant enough to affect stability and monitoring. At this site, it is the department's opinion that it does not have sufficient information about karst characteristics of the underlying dolomitic rock, with the information currently available. The department has previously suggested that wireline coring or other geophysical methods should be attempted to obtain this information. However, based on the information provided to the department by SEH, it appears that obtaining this information may not be possible. The feasibility report has provided some general or regional geological information; however, this information may not be representative of localized site conditions. Without the information needed to provide a high confidence level of both the stability and monitorability of the proposed landfill, the department would not be able to issue a favorable feasibility determination.

Given the complexity of the geology and hydrogeology at this site, the department is evaluating the need to for an environmental impact statement (EIS) to help assess the site suitability for the proposed expansion. An EIS may provide the department another interpretation of the currently available information and an evaluation of options that may be available to obtain additional geotechnical information to fill in data gaps; however, an EIS would require additional time and costs at Vernon County's expense. The decision on an EIS will be made when the draft environmental analysis is completed.

Other incompleteness items include engineering design issues and the need to collect four rounds of monitoring data from all monitoring wells, including wells installed after the first round of geotechnical investigation. **Please review the sections below for a comprehensive summary of incompleteness items.**

December 19, 2023 Incompleteness Letter Section A - Comments and Responses

1. **DNR Comment- Site-Specific Geotechnical Information [s. NR 512.09(1)(c) and (d), Wis. Adm. Code]:** Soil boring B- 21 does not extend to at least 25 feet below sub-base grade.

Vernon County Response: *Because of the extensive fill in the vicinity of boring B-21, the boring did not extend to at least 25 feet below sub-base grade. During the 2024 addendum field investigation, boring B-22, was completed near the original B-21 and was completed at least 25 feet below sub-base grade. As of October 2024, 20 boring locations (10 are required) have been completed within 300-feet of the proposed 4.0-acre horizontal expansion and extend at least 25 feet below the proposed subbase grade as required within s. NR 512.09(1)(b), Wis. Adm. Code. Borings meeting s. NR 512.09(1)(b), Wis. Adm. Code are provided within Table 1.*

DNR Response Comment: Response noted.

2. **DNR Comment- Site-Specific Geotechnical Information [s. NR 512.09(2)(a), Wis. Adm. Code]:** The minimal requirement to adequately define the water table surface and horizontal gradients is not met to the east of the proposed expansion area, in part because new groundwater monitoring wells MW-15WT and MW- 16WT are dry. The flow toward the merger point of the perched aquifer and regional water table aquifer near the MW-16/MW-16WT groundwater monitoring well point as interpreted in the report needs to be more accurately defined by additional hydrogeological investigation (i.e., data from additional borings and groundwater monitoring wells), as this area would likely be the collection point of a hypothetical discharge from the proposed expansion. Once the assumed merger zone of the perched and regional water tables is confirmed, downgradient regional water table wells will be needed to monitor transport of a hypothetical discharge once it reaches the regional water table as required in s. NR 507.19 (1), Wis. Adm. Code.

Vernon County Response: *As requested, a 2024 addendum field investigation installed monitoring wells in the southeast portion of the project landfill expansion. Monitoring well MW-18WT was installed within the perched water table and MW-18 and MW-19 were installed within the regional water table. These monitoring wells further refine the perched and regional water tables but overall, the previously interpreted perched and regional water table surfaces are generally representative with the new wells refining flow conditions. The water table surface and horizontal gradients with 2024 addendum field investigation data are described further in Section 4.3 of this report. Perched and regional water table maps from the 2024 addendum field investigation are also provided within Figures 1 through 4 of this report. Past monitoring data, the understanding of unsaturated conditions, and the adequacy of the monitoring system is also described further below.*

Past Monitoring Data

The perched and the regional groundwater systems directly beneath the expansion footprint have been monitored for the last 30 years indicating both surfaces are predictable, and the horizontal gradients are quantifiable.

Unsaturated Conditions

We agree that the merger or transition zone on the east edge of the proposed expansion footprint corresponds with an eastern edge of the perched system. Further discussion on the hydrogeology of the perched water table systems is provided in Section 3.0. The percolation of water in the unsaturated zone occurs through gravity potential via interconnected pores and by moisture potential as a negative pressure due to soil-water interaction. Just like under any geologic conditions, preferred groundwater pathways may occur vertically and horizontally due to lithologic or porosity changes whether the thickness of the unsaturated zone is 10 feet or 100 feet.

A separation between the base of the landfill and groundwater is generally considered a good feature

for landfill development; a minimum of 10 feet separation between landfill base grades and the seasonal high-water table is stipulated by NR 504.6, Wis. Adm. Code. The difference here is the depth to groundwater can exceed 100 feet.

Adequacy of Monitoring System

The groundwater conditions described in Section 5.4.2 are conservative assuming the perched system “merges” or transitions to the regional system and the transition zone could represent a “collection point of a hypothetical discharge”. However, in reality there are only two scenarios for groundwater movement beneath the landfill that the existing monitoring system is already designed to monitor:

- Saturated groundwater flow: In the presence of saturated conditions, groundwater will move from high hydraulic head to low hydraulic head in the perched system. In the landfill expansion area, current downgradient wells in the perched groundwater system include MW-5A, MW-12, MW-16, MW-17WT, and MW-18WT.*
- Unsaturated groundwater flow: In unsaturated conditions, the transition zone indicates that infiltrating water will continue its downward vertical percolation until encountering the regional water table because there are no observed seeps or active surface water features at lower elevation in the valley east of the landfill property. For the expansion, downgradient wells in the regional groundwater system include MW-5 and MW-14. Additional wells located downgradient but stratigraphically lower than the regional watertable include MW-3, MW-6, and MW-14Z.*

To address concerns of the WDNR, a 2024 addendum field investigation was completed during July through October 2024. The results of the 2024 addendum field investigation are presented in Section 4.0.

DNR Response Comment: The installation of wells MW-18WT, MW18, and MW19 have provided information to better define, but not fully define, the relationship of the perched water table and the regional groundwater table to the east of the current landfill. However, the mounding in regional water table around MW-16 and MW-18 is not defined to the extent to allow tracking of hypothetical release from the landfill. Additional regional water table elevation data are needed to the east of the MW-16/MW-18 well nests. The text states that groundwater monitoring wells MW-5 and MW-14 serve as downgradient wells in the regional aquifer, but these wells do not define the flow paths to the east and northeast of the landfill should a release occur.

- 3. Subsurface Data Analysis [s. NR 512.10(4), Wis. Adm. Code]:** The report appendices do not include raw data for groundwater level measurements. Either field notes/forms or inclusion of measured depth-to-water readings on the data tables would satisfy the requirement.

Vernon County Response: *A table (Appendix C) includes all depth-to-water readings for all six rounds of groundwater level monitoring is provided as required within s. NR 512.10(4), Wis. Adm. Code. Depth-to-water readings for the 2024 addendum field investigation are provided within Appendix J.*

DNR Response Comment: Response noted.

- 4. Data Presentation [s. NR 512.11(2)(a), Wis. Adm Code]:** Inferred or questionable lithostratigraphic boundaries are not marked with a dashed line or question mark.

Vernon County Response: *Plans Sheets have been revised to include question marks or dashed lines where lithostratigraphic boundaries or groundwater contours are inferred per s. NR 512.11(2)(a), Wis. Adm. Code. Revised Plan Sheets 4 through 22 are provided. Please note that the*

lithostratigraphic boundaries on cross-sections were drawn based on combining the results from multiple sources or interpretive methods including soil boring logs, geophysical markers horizons, the bedrock contour map, and historical cross-sections.

DNR Response Comment: Response noted.

5. **DNR Comment- Section 1.3.1, Baseline Sampling of New Wells Subsection, Section 4.9, Section 5.4:** Manganese concentrations in groundwater monitoring well MW-14WT are significantly higher than in other groundwater monitoring wells at the facility, including but not limited to upgradient groundwater monitoring wells and groundwater monitoring wells for which manganese exemptions have been previously granted. Additional discussion on the potential source of the manganese in MW-14WT is needed to evaluate the requested exemption under s. NR 140.28, Wis. Adm. Code.

Vernon County Response: *Manganese occurs naturally in groundwater and extreme ranges in manganese concentrations are common locally (USGS, 1995). After further evaluation of the manganese concentrations present at MW-14WT, the following may contribute to the observed concentrations.*

- Upgradient of the existing and proposed disposal areas, MW-14WT is screened from 1141-1156 feet NAVD within a gray to brown dolostone of the Prairie du Chein aquifer. Representative analyses of water from the St. Peter-Prairie du Chein-Jordan aquifer show a large range in concentrations of manganese (USGS, 1995). The higher concentration of manganese observed may be in part due to the well screened in a slightly different portion of the Prairie du Chein aquifer than other perched water table wells.*
- Manganese is also often released from soil or bedrock when the soil or bedrock in contact with groundwater is disturbed (for example during drilling) and, as a result, manganese concentrations typically decrease over time to approach pre-drilling levels. While the manganese concentration within MW-14WT varied during the first six sampling events, there is a slight decreasing trend. Additional sampling is required prior to the Plan of Operations submittal and manganese concentrations at MW-14WT will be reevaluated further during the Plan of Operations Report.*

DNR Response Comment: Response noted.

6. **DNR Comment- Section 5, Alternative Geotechnical Investigation Plan and Geophysical Investigation:** Statements and other information provided in the feasibility report, including the boring logs, indicate that there is a respectable amount of fractured or preferential flow in the dolostone for the perched aquifer and the regional aquifer. Fractured and preferential groundwater flow may be challenging to effectively monitor because it may be difficult or impossible to determine the appropriate locations for groundwater monitoring wells with the capability to detect any hypothetical landfill leakage as required in s. NR 507.19 (1), Wis. Adm. Code. In addition, the reported horizontal flow velocities in section 5.4.2.10 of the report indicate a relatively fast groundwater flow regime. A relatively fast flow matrix is consistent with fractured flow behavior and makes it more difficult to effectively monitor groundwater at the landfill. It is not known if additional geotechnical work would provide sufficient additional information regarding the fractured flow matrix. The department is concerned about the ability to effectively monitor groundwater quality at the site. Vernon Co. may propose additional geophysical methods as part of the installation of additional borings and groundwater monitoring wells to define the groundwater flow of the perched aquifer as it converges with the regional aquifer or as part of any other additional work.

Additional geophysical methods to be considered should be applicable to investigation in an open

borehole and may include, but not are not limited to: electrical methods (e.g., resistivity and similar methods) electromagnetic methods (e.g., electromagnetic induction); additional nuclear methods; physical/imaging methods (e.g., caliper log, acoustic televiewer, optical televiewer, video camera); and fluid column methods (applicable to saturated portions of a borehole). Multiple test methods for each borehole would provide additional lines of evidence to predict groundwater flow. Again, it is not known how feasible any of these additional methods would be and if they would yield sufficient additional information or additional information favorable to the expansion of the landfill.

Vernon County Response: *As presented in Section 5.4.1 of the Feasibility Report, we agree fractures and dissolution cavities are present within the bedrock. However, it is also important to understand how and why the fractures and dissolution cavities were formed, the actual observed groundwater flow pathways, the likelihood of significant karst development, and the limitations of other geophysical methods. Each item is further described below. Note additional discussion on the geology and hydrogeology is provided in Section 3.0.*

Origin of Bedrock Fractures and Dissolution Cavities

Dissolution cavities and fractures are present at the site, particularly in the unsaturated zone. As described in Section 5.4.1 of the Feasibility Report, assessment of bedrock coring completed during 2022, and historically at the site, resulted in the following observations and conclusions:

- *Dissolution cavities occur primarily as small voids or vugs and do not appear to be interconnected. This is consistent with the published understanding of the Prairie duChien Group and its hydraulic properties:*
 - *The uppermost bedrock is in the Oneota Dolomite which regionally has been defined as a confining unit; the overlying Shakopee Formation (not present at our site) is defined regionally as an aquifer (Tipping et al, 2006). The predominant rock type/mineral in the Oneota Dolomite is dolomite (Tipping et al, 2006).*
 - *Dolomite is significantly less soluble than calcite, especially in the presence of calcite (Drever, 2002). More dissolution of carbonates occurs in open systems with exposure to the atmosphere where CO₂ is readily available; that is why there is less modern dissolution below the perched water table where atmospheric CO₂ would be less available.*
 - *The secondary porosity (fractures/vugs) are considerably lower in the Oneota than the overlying Shakopee (Tipping et al, 2006).*
- *Shallow bedrock, in general, is often highly fractured and the fractures are likely more interconnected.*

Hydraulic Properties and Groundwater Flow

As described in Section 5.4.2, the “relatively fast” average linear flow velocity calculated at the perched water table (ranging from 587 to over 4000 feet per year) is indicative of a porous media with a hydraulic conductivity similar to sand and gravel with some preferred flow paths. However, it is unlikely for perched groundwater to actually leave the landfill property due to the transition zone present in the downgradient direction of the landfill. The conditions of the low permeability unit within the Oneota Dolomite/Sandstone and where it is compromised to allow the perched water table to diminish and transition to the regional water table is described below in Section 3.0.

As indicated in Section 5.4.1.3, the average linear flow velocity calculated for the regional water table (248 feet per year), significantly lower than the perched system, is also indicative of a more uniform porous media with a hydraulic conductivity similar to sand. Monitoring of the regional water table over the past 30 years confirms it is consistent and predictable.

Section 5.4.2.6 of the Feasibility Report summarized the horizontal hydraulic conductivity at the Landfill. While some horizontal hydraulic conductivity values were as high as 6.67E-2 cm/sec, all in-field hydraulic conductivity testing indicated the formations screened are responding to testing as porous media without turbulent flow. Turbulent flow would be associated with highly interconnected dissolution cavities or fractures and would not be quantifiable during an in-field hydraulic conductivity test.

As stated above, fractured bedrock is common, and it is likely some fractures are interconnected. The in-field hydraulic conductivity testing indicated the wells are responding to testing as porous media, which indicates that although secondary porosity (interconnected fractures) may be present in the geologic units, the primary porosity (intergranular) dominates flow within the bedrock on-site. Therefore, groundwater within the perched water table, regional water table, and within the deeper aquifer (piezometers) on-site is monitorable.

Limitations on Geophysical Methods

There are a few concerns or issues with proposing geophysics within open boreholes at the Landfill.

- 1. Knowledge gained from geophysics would be on a small scale as only a few additional boreholes is realistic.*
- 2. Open borehole geophysical methods will only work in bedrock if the borehole remains open. During previous investigations, coring has been difficult due to weathering of the saprolite and layered heterogeneity of the dolostone. These characteristics of the bedrock increases the risk of geophysical tools being damaged or caught on uneven surfaces of the borehole wall; these risks are generally not taken due to costs of the equipment and that the borehole will likely not stay open for geophysics to be successfully completed.*

Despite the concerns above, additional methods of geophysics were assessed using the Fractured Rock Geophysical Toolbox Method Selection Tool (FRGT Tool). The FRGT Tool was published in 2015 in a joint effort by the United States Geological Survey, the United States Environmental Protection Agency, and the Environmental Security Technology Certification Program. The FRGT Tool is a spreadsheet-based tool that allows users to input site specific details and goals and then provides an output that summarizes which geophysical methods are feasible and useful for project goals.

The FRGT Tool was used to assess geophysical methods that would be applicable within open boreholes as suggested by the WDNR. The methods that the FRGT Tool output stated might be applicable on-site are listed below.

- Acoustic Televiewer: May be used to assess discrete fractures and lithologic contacts within open boreholes but may not be able to provide results within mud-filled boreholes. Mud was needed to advance borings during the 2022 investigation.*
- Caliper: May be used to assess discrete fractures within borehole. Although this may note fractures within boreholes, it does not determine the interconnection of fractures.*
- Electromagnetic (EM) Induction: May be used to delineate changes in rock types but is susceptible to interference from metal. Also, conductivity of thin beds cannot be determined.*
- Nuclear Magnetic Resonance (NMR): May be used to measure the water content in soils and rock. It may provide the total porosity/water content, pore-size distribution, and/or hydraulic*

conductivity variations and estimates. However, it could only be completed in a few open hole borings and would limit the effectiveness of this method. Flowmeter Logging and Induced Polarization and Normal Resistivity: Requires a waterfilled well or borehole so not applicable on-site as a large portion of the boreholes are set at the water table so only small portion of the borehole is saturated.

After review of the geophysical methods suggested by the FRGT Tool, it has been determined that the completion of additional geophysical methods on-site will only provide additional data on a small-scale and will not aid in the large-scale hydraulic properties of the site. Therefore, no additional geophysical methods are proposed at this time.

DNR Response Comment: The transition of the perched aquifer to the east and southeast of the current landfill is a significant hydrogeologic change that requires site-specific data to evaluate both groundwater flow and the potential stability of a landfill expansion. The existing geophysical assessment (gamma logging in the groundwater monitoring wells) that was proposed in lieu of wireline coring has not provided sufficient geological characterization to fully replace the wireline coring needs defined in s. NR 507.05(2), Wis. Adm. Code (assessment of fracture frequency, rock quality designation, and recovery). Further comments regarding SEH's response to Comment 6 are as follows.

- The marker horizons identified in the gamma log interpretations are not sufficient in themselves to identify geological horizons, and extend through an apparent facies change to sandstone in the direction of wells MW-17WT and MW-19 (meaning the marker horizons do not serve to indicate a homogenous, isotropic geology, as indicated in the report.).
- Sonic cores collected in bedrock are broken up and may have been mechanically fractured/partially pulverized during drilling, which is typical of the drilling method. However, given the absence of corroborating evidence the department assumes these cores are indicative of a highly fractured bedrock environment.
- The literature discussion regarding the origin of bedrock fractures and dissolution cavities is not pertinent to the site-specific scale of geologic characterization required to site a landfill, and requires the type of field verification that either wireline coring or geophysical evaluation can help to provide.
- Regarding the reason's provided for not implementing the suggested geophysical methods, the limitations described with respect scale and the ability to draw connections between borings are potential limitations of all site specific investigations using soil borings and monitoring wells, and the limitations of interpretation posed by an individual process (descriptive logging of the borehole, coring, geophysics, other tests) can be enhanced by using many processes in tandem. SEH's reason to dismiss acoustic televiwer (mud-filled boreholes) is not relevant to the 2024 follow-up investigation, which utilized mud-free sonic drilling techniques. Furthermore, drilling mud can be developed out of the borehole after drilling to facilitate this and other geophysical methods.

7. **DNR Comment- Section 5.4.1.2:** Provide the following additional information and clarification regarding the MW-16 groundwater monitoring well nest drilling.

- a. The MW-16 boring log provided in Appendix J states that the borehole lost water from 70 feet to termination. Further explain the interpretation provided in the report text that the water loss was due to the head pressure exerted by the confinement of weathered sandy dolostone between two shale layers, and whether the pressure/fluid loss characteristics changed after the lower shale layer was penetrated and the borehole advanced through similar sandy dolostone material. In addition, please indicate if a fractured flow regime and/or other reasons were considered as

the cause of the water loss, and why the confining layer was selected as the most probable reason.

- b. Clarify the source of the observation of groundwater at 68.4 feet below ground surface (bgs) on 8/24/2022 (during advancement of MW-16) on the MW-16WT boring log. This information was not provided on the MW-16 boring log.

Vernon County Response: *Additional information on geologic and hydrogeologic conditions in the vicinity of MW-16 were obtained as part of the 2024 addendum field investigation and presented in Section 4.0.*

In reviewing of the field notes, it was determined that water loss began at 60 feet bgs at the MW-16 boring and continue to termination (98 feet bgs). Grout was also noted to be lost during the well construction of MW-16 between the depths of 60 and 78 feet bgs. It was also determined when reviewing the field notes, that MW-15WT had water loss from 75 feet bgs to termination (99 feet bgs). The boring logs for MW-15WT and MW-16 have been revised and included within Appendix D.

While drilling with fluid, the ability of the borehole to contain drilling fluid indicates there are no significant interconnected fractures or solution cavities associated with karst. As indicated in the report, the loss of drilling fluid occurred into unsaturated weathered sandy dolostone from more than 60 feet of fluid pressure within the borehole. The weathered sandy dolostone encountered on-site appears to have a higher porosity and, as a result, provided a pathway for the drilling fluid to travel. While drilling fluid was lost through termination of the borings, drilling mud pressure returned allowing for borehole advancement without needing to seal off that portion of the borehole; therefore, it was determined that the unsaturated pathway within the weathered sandy dolostone could not be extensive in nature and likely a localized horizontal pathway within the weathered sandy dolostone as would be anticipated. The observation of groundwater at 68.4 feet bgs, was measured during drilling at MW-16 on 8/24/2022. The boring was drilled to 85 feet bgs on 8/23/2023 and then left open overnight to allow the water level to stabilize to approximately water table conditions in order to determine appropriate depths for MW-16WT and MW-16. As the water level was observed at 68.4 feet bgs the next day, it was determined that MW-16WT be screened between 65 to 75 feet bgs and MW-16 screened between 92 to 97 feet bgs. This measured water level was noted on MW-16WT to explain the reasoning for well placement. A similar note has also been added to MW-16 to clarify this measured water level.

DNR Response Comment: Response noted.

8. **DNR Comment- Section 5.4.1. 3:** Please clarify the statement that dissolution cavities and fractures are primarily present above groundwater and address or discuss what information indicates the absence of fractures and voids below the water table. Cored borings MW-10, MW-12, and MW-14Z document vugs and fractures, and other boring logs provided in Appendix K document numerous crevices below groundwater in bedrock.

Vernon County Response: *As described in the response to Comment 6, more dissolution of carbonates occurs in open systems...that is, exposed to the atmosphere where CO₂ is readily available; that is why there are a greater amount of dissolution cavities and fractures above groundwater and less dissolution below the perched water table where CO₂ may be less available. Additionally, the secondary porosity (fractures/vugs) are considerably lower in the Oneota than the overlying Shakopee, and they decrease even more with depth. In addition, Tipping et al (2006) describe an unconformity between the Shakopee and the top of the Oneota Dolomite that would indicate historic weathering and*

erosion in the upper Oneota Dolomite.

Drilling methods used on-site have varied over time. Traditional coring methods had a history of low recovery and therefore, in 2003, versa sonic was used to core borings MW-1RZ, MW-13P, and MW-14Z in attempts to improve recovery. While the use of sonic generally provided higher recovery within the unconsolidated zone, it had variable success with accurately logging actual bedrock conditions. The following further outlines the precautions that need to be used when interpreting the sonic boring logs completed on-site.

- As stated within the 2003 Feasibility Report, “Note that the cores obtained from MW-1RZ, MW-13P, and MW-14Z had generally higher fracture frequencies and lower RQD values than those obtained previously from MW-7 and MW-10. This probably reflects the fact that the recent cores were drilled using the versa-sonic method” (Central Wisconsin Engineers, Inc., August 2003).*
- No further description is provided on the versa sonic boring logs (e.g. mineralization along fractures, freshness of breakage) for the fracture zones that are noted and therefore, it cannot be determined if they were naturally formed or mechanically formed. Therefore, the “highly fractured zones” that are noted on the MW-14Z boring log are most likely less competent portions of bedrock (higher percentage of sand or silt) which fractured more readily during drilling. This is also most likely the case for other versa sonic boring logs completed on-site (MW-1RZ and MW-13P). The use of versa sonic provides high recovery and is useful but additional caution needs to be used when interpreting the boring logs. Other boreholes on-site were further reviewed and assessed in reference to fractures, vugs, or crevices noted below the water table. Notes on these boreholes are provided below.*
- Please note that MW-12 was not logged separately; MW-10 was cored, and the same log was used for the shallower nested wells MW-11 and MW-12. The boring log for MW-10 notes “occasional small vugs” and “numerous small vugs” below the water table but does not describe any fractures or crevices below the water table. A majority of RQD’s below the water table are above 70%, indicating competent bedrock.*
- MW-7 was cored with methods similar to MW-10 and notes minor vugs at depths below the water table, fractures were observed. RQD percentage ranges from 16% to 90% between the depth to water table (approximately 118 feet bgs) and boring termination. The lowest RQD’s (16 to 23%) are present at depths where sandstone interbeds are noted and therefore, the low RQD’s are noting the change in lithology from a hard dolostone to an interbedded dolostone, which fracturing from drilling is more likely.*
- MW-6 was logged from cuttings only and does not note any fractures, vugs, or crevices below the water table.*
- MW-5 was logged from cuttings only and does note two “crevices” below the water table. Since this borehole was not cored, the crevices noted are most likely notes from the driller on rods dropping during drilling. Monitoring well MW-5 was set at the depth of one of the crevices noted within the boring log. Slug testing was then completed at MW-5 and a hydraulic conductivity of 2.6E-04 cm/sec was measured. This hydraulic conductivity value suggests that this crevice is not highly interconnected, as the formation responded predicably and not as turbulent flow.*

During the 2024 addendum field investigation, Rotosonic drilling methods were utilized to increase

recovery and aid in determined depth to water. The 2024 boreholes are reviewed assessed in reference to fractures, vugs, or crevices below.

- *B-22: Sporadic vugs were noted within the dolostone encountered within B-22. No fractures or crevices were encountered within B-22. A void was thought to occur during drilling as the driller's note a drop in the drilling rods but once the soil was observed, it was discovered the "void" was a zone of weathered dolostone.*
- *MW-16Z: Sporadic vugs were noted within the dolostone encountered within MW-16Z. No fractures or crevices were encountered within MW-16Z.*
- *MW-18: No vugs, fractures, or crevices were encountered within MW-18.*
- *MW-19Z: No vugs, fractures, or crevices were encountered within MW-18*

As stated previously, fractures in bedrock are common and some fractures are likely to be interconnected. The 30 years of monitoring of on-site groundwater elevations confirm that the perched water table and regional water table are consistent. Fractures may be present and may be interconnected but the groundwater at the site is predictable and monitorable. Additional discussion on the geology and on-site coring efforts is provided in Section 3.0.

DNR Response Comment: The lack of wireline coring and geophysics makes it difficult to confirm the conclusions stated in the above response. The sonic cores were of sufficient recovery to indicate large voids do not appear to be present but are not of sufficient quality to evaluate the extent of fracturing within the formations. In absence of additional site-specific evidence, the department's default assumption is reported fractures in previous boring logs are accurate.

9. **DNR Comment- Section 5.4.1.4 Geophysical Horizons:** Explain the access issues that prevented geophysical investigation at the MW-16/ MW-16WT groundwater monitoring well nest, and whether the access issues are ongoing.

Vernon County Response: *Geophysics was not able to be completed at the MW-16/MW-16WT location due to steep slopes and muddy conditions at the time geophysics was completed. The MW-16WT/MW-16 well nest was able to be accessed for geophysics during September 2024. Surface water drainage will be updated with the proposed expansion and the access to MW-16/MW-16WT will be improved.*

DNR Response Comment: Response Noted.

10. **DNR Comment- Section 5.4.2.4, Section J-J' and Flow Net:** Based on the information provided in the feasibility report, the department questions the assumption stated in this section and others that the site represents a homogenous, isotropic system due to soil classifications and hydraulic conductivity values. Other comments pertinent to this section and the other sections referenced in the flow net assumptions discussion are as follows:

- a. Hydraulic conductivity values within each of the three dolostone zones identified (perched water table, regional water table, piezometers) vary by two or more orders of magnitude.
- b. Variations in lithology within the residuum layer and portions of saprolite and competent bedrock above groundwater, and variations in vertical hydraulic conductivity measurements, do not provide sufficient evidence to support a low likelihood of potential impacts from the landfill to the water table.
- c. Based on the limited data, vertical gradients within the upper portion of the regional water table formation vary by approximately one order of magnitude.

- d. Bedrock quality data with respect to fracture regimes or voids collected during the geotechnical investigation are limited; however, it is observed in Section 5.4.1.3 that bedrock is highly fractured in general with a likelihood of interconnected fractures. Boring logs are marked with zones consisting of fractures, vugs and voids.

Depending on the resolution of this comment and the results of any further groundwater investigation at the landfill, the flow net presented in cross section J-J' may need to be modified. The department notes that map view flow nets of both the perched water table and regional water table may enhance understanding of flow from the proposed expansion area to and within groundwater.

Vernon County Response: *The flow net (Plan Sheet 21) provides flow lines for the regional water table in the direction of groundwater flow (south to north) across the proposed expansion area. Based on the geologic descriptions and hydraulic conductivities of the monitoring wells in reference to the regional water table the assumption of a homogenous, isotropic system can be used. There are some shale interbeds noted within the MW-10 and MW-14Z locations but the interbedding noted is on a small scale that cannot be addressed within a flow net at this scale.*

As stated within Section 5.4.2.6 of the Feasibility Report, the hydraulic conductivity values within the regional water table vary by two orders of magnitude ($1.86E-4$ cm/sec to $6.67E-2$ cm/sec). A range of two orders of magnitude within the same geologic unit is typical. Unconsolidated soil and bedrock generally have spatial variations that cause differences in hydraulic conductivity that span one or two orders of magnitude. For assumptions needed to create a flow net, a range of two orders of magnitude can still be considered homogeneous and isotropic.

A flow net cannot be accurately constructed for the perched water table due to the lack of a consistent lower boundary condition. The degree of saturation between the perched water table and the regional water table is unmeasurable and therefore, a lower boundary condition cannot be accurately determined, and an accurate flow net cannot be constructed (U. S. EPA, 1986).

DNR Response Comment: The flow net provided with cross-section J-J' has no data to confirm regional water levels at the MW-10/11/12 well nest or to evaluate regional water levels under B-22 (or in the entire transition zone where the perched aquifer migrates down to the regional water table). Therefore, the department considers the flow net to be inferred in this area, and that a more complex flow regime is likely. Regional water table data is also lacking at the MW-3/4P/6 well nest. In addition, please provide additional discussion and evidence to support the statement that two orders of magnitude hydraulic conductivity difference can represent a homogenous and isotropic aquifer.

11. **DNR Comment- Appendix J:** Explain the differences in the SEH boring logs and the Braun Intertec Logs for the same borings, in particular differences in total borehole depth (B-19 and B-20), differences in depth to bedrock/saprolite (B-18 through B-20, MW-14WT, MW-16, MW-17WT), and differences in bedrock/saprolite lithology (B-20, MW-16, MW-17WT).

Vernon County Response: *Discrepancies within total depths of boring was discussed with the field staff and borings logs have been revised as applicable (Appendix D). SEH boring logs B-18 and B-19 still differ from Brauns boring logs due to differing interpretation of end of boring. At boring B-18 and B-19 a split spoon was attempted but refusal occurred within the first 6 inches and no recovery occurred. Therefore, the SEH boring logs for B-18 and B-19 end at 29.5 feet below ground surface or refusal. Brauns boring logs for B-18 and B-19 have an end of boring depth of 31 feet below ground surface, which would be the bottom of the attempted split spoon if all 18-inches were achieved.*

The difference in lithology and depth to saprolite/bedrock descriptions are due to different specialties of the SEH and Braun personnel. The SEH personnel on-site were geologists performing directly under the supervision of a licensed Professional Geologist (PG) and who specialize in geologic descriptions, lithology, and environmental conditions. Braun Intertec provided geotechnical services and did not view conditions in reference to bedrock weathering. Therefore, some differences in lithology and depth to saprolite/bedrock are present between SHE and Braun boring logs. SEH boring logs were used for all geologic interpretation, while all geotechnical information is provided by Braun.

DNR Response Comment: Response noted.

12. **DNR Comment- Table 5-4:** Clarify the “Frozen” designation for the March 2023 water table elevation at MW-17WT. Given that the static water level in this groundwater monitoring well is generally significantly below ground surface, a frozen water surface does not seem likely.

Vernon County Response: *On March 1, 2023, ice surrounding the inside of the PVC casing on MW-17WT most likely occurred from condensation accumulation at the “frost line” inside of the well, despite the monitoring well plug being tightly sealed. This obstruction made it unfeasible to obtain a water level measurement and/ or groundwater sample.*

DNR Response Comment: Response noted.

13. **DNR Comment- General Submittal Requirements [s. NR 500.05(6)(g), Wis. Adm. Code]:** The local survey grid used does not appear to be referenced to state plane coordinates or other datum accepted by the department, and the department did not find discussion or documentation that the coordinate system is based on monuments in the field.

Vernon County Response: *All existing construction is based on local site coordinates. All proposed construction presented in the Feasibility Study is also based on local site coordinates. A formula for converting coordinates for the proposed expansion to the Wisconsin State Plane coordinate system is presented on a revised Plan Sheet 2 and survey transformations are provided within Appendix E.*

DNR Response Comment: Response noted.

14. **DNR Comment- Performance Standards [s. NR 504.04(4)(d), Wis. Adm. Code] and General Submittal Requirements [s. NR 512.05, Wis. Adm. Code]:** The department was unable to locate in Appendix Q the recent nitrate + nitrite data that was referenced in Section 5.4.3.1. These data are necessary to justify how applicable s. NR 140.28, Wis. Adm. Code criteria are met.

Vernon County Response: *As noted within Section 5.4.3.1.1 of the Feasibility Report, a groundwater exemption of nitrate+nitrite for MW-6 is proposed as there are nine sampling events of nitrate+nitrite and all exceed the PAL. These nine events were completed between 1989 and 1995 so it is unclear why an exemption was never requested for nitrate+nitrite previously at the MW-6 location. No recent nitrate+nitrite data has been collected at the MW-6 location, but this exemption request is made using the historical data provided within Appendix Q. The MW-6 data provided within Appendix Q of the Feasibility Report is provided again within Appendix F of this Addendum.*

DNR Response Comment: Response noted.

15. **DNR Comment- Proposed Physical Changes [s. NR 512.16(2)(b), Wis. Adm. Code]:** The discharge rates provided are anticipated during active operations and do not compare to existing rates or rates anticipated following closure conditions.

Vernon County Response: *There should be no significant impacts or changes to aquatic resources including the potential impacts to streams, wetlands, ponds, lakes, and flowages. Primary local surface water flowages include the Seas Branch Creek and an unnamed tributary. The northern portion of the site drains to the north to Seas Branch Creek. Surface water from the southern portion of the site drains to the to an unnamed tributary which then flows northeast to Seas Branch Creek and then east to the west fork of the Kickapoo River. More regionally surface water drainage is to the southeast towards the Kickapoo River.*

Relatively minor surface water modeling parameter changes account for pre- and post-development conditions. Less than 10 percent imperviousness is added with gravel for development. Surface water model runoff calculations for pre- and post-development vegetation and soil types representing existing and proposed expansion landfill areas are similar. Existing and proposed vegetation conditions are grassland and soils for each are specified hydrologic soils group D. The difference is that soils on the landfill cover are assumed to be compacted. There are currently no direct discharge points or impacts to nearby wetlands. The surface water control system proposed for the expansion will not create any impacts to wetlands.

DNR Response Comment: Provide narrative on the sequencing of the removal of the existing stormwater pond and the construction of the proposed stormwater pond and how stormwater will be handled during that time.

16. **DNR Comment- Environmental Review [s. NR 512.16(2)(e), Wis. Adm. Code]:** Please provide clarification regarding whether the perimeter access road will be designed on the east side of the proposed expansion and how that may affect perimeter storm water ditches, toe drains, and other engineering features. Revise the plan set for consistency in depiction of the eastern side of the landfill.

Vernon County Response: *To conserve borrow soils, to minimize site traffic and minimize stormwater runoff, access roads will not be constructed on the eastern side of the final landfill expansion during final closure. Final access will be provided on the landfill's outboard slopes. Access roads will be presented on the Plan of Operation development drawings.*

DNR Response Comment: Provide further clarification on what final access will be provided on landfills outboard slope means and what that is compared to a traditional perimeter road. Provide clarification on if any operational or construction restrictions will come about due to not having an access road on the east face including but not limited to picking litter downslope of the landfill on the east face, leachate seeps on the landfills eastern outboard slope, perimeter fence, and constructability of final cover on the eastern face.

17. **DNR Comment- Existing Environment [s. NR 512.16(3), Wis. Adm. Code]:** The report does not discuss the dominant animal species found in the area of the expansion.

Vernon County Response: *The following information is added to Section 10.3.2. The proposed expansion area is in an upland prairie that covers the broad ridge between Westby and Viroqua and*

extends two miles to the west. This prairie-woodland interface provides good habitat for many types of mammals, birds, reptiles, amphibians, and invertebrates.

- *Mammals: white tail deer, fox squirrel, coyote, beaver, river otter and others.*
- *Birds: bald eagle, green herons, cerulean warbler, and many others.*
- *Reptiles: eastern garter snake, common snapping turtle, eastern painted turtle, and northern water snake.*
- *Amphibians: American bullfrog, green frog, northern leopard frog, eastern American toad, and spring peeper.*
- *Invertebrates: insects, arachnids, annelids, and mollusks.*

Reference: Kickapoo Valley Reserve (<http://kvr.state.wi.us/Natural-Features/Plants-Animals>)

DNR Response Comment: Response noted.

18. **DNR Comment- Environmental Review [s. 512.16(2)(c), Wis. Adm. Code]:** The report does not discuss the miles of access roads (or estimated length using other units) to be constructed.

Vernon County Response: *Final access road design will be completed in the Plan of Operation and shown on the development plans. Specific area quantities will be provided.*

DNR Response Comment: The estimation of length of access roads is required during the feasibility determination phase by s 512.16(2)(c), Wis. Adm. Code. Please provide an estimate of the anticipated length of access roads. Please note that this is only an estimate and can be modified in the plan of operation.

19. **DNR Comment- Environmental Review [s. 512.16(2)(d), Wis. Adm. Code]:** The report does not discuss the potential for post-closure gas production, emissions, or discharges.

Vernon County Response: *The potential for emissions and discharges listed in NR 512.16(2)(d) and as addressed in Section 10.2.4 of the Feasibility Report will largely decrease post closure. The potential for operational and construction related emissions such as engine exhaust, dust, and noise will greatly decrease due to the absence of heavy construction equipment and waste hauling vehicle traffic that would otherwise be present during active operations. Similarly, the potential for leachate generation, odors, and impacts to groundwater will be greatly reduced due to the placement of an impervious final cover and the continued operation of the leachate extraction system post closure. Landfill gas (LFG) generation potential will decrease post closure as the landfill achieves organic stability and the waste degrades over time.*

The potential for increased storm water runoff post closure will be reduced by the storm water control features implemented in the Expansion design. These will be further presented in the forthcoming Plan of Operation. Generally, storm water runoff could potentially increase as compared to pre-development conditions as storm water will be routed off the final cover as opposed to captured by the waste and into the leachate collection system during active operations. However, the storm water control features for the Expansion will be designed considering post closure conditions and in accordance with applicable standards of NR 504 and NR 151. Additionally, the potential for storm water runoff to pick up contaminants will be greatly reduced post closure due to the restored vegetated surface of the final cover.

DNR Response Comment: Response noted.

20. **DNR Comment- Section 6.3 and 8.8.1, Maximum Open Area:** Clarify the maximum open acreage of landfill in these sections of the narrative.

Vernon County Response: *The statements in Section 6.3 and values used in Table 6-3 concerning open and closed areas are correct. The statement concerning landfill areas open and closed to leachate infiltration in Section 8.8.1 shall be corrected in accordance with the following paragraph. The maximum open acreage of the landfill anticipated is approximately 9.58 acres with 5.00 acres being closed. As shown on Table 6-3, this corresponds to final closure area C-1 (5.0 acres) being closed, and final closure areas C-2 (4.64 acres) and C-3 (4.94 acres) being open, which represents the entire proposed horizontal and vertical expansion area.*

DNR Response Comment: Response Noted

21. **DNR Comment- Section 8.8.2 Geotextile:** Clarify the minimum thickness of the geotextile used.

Vernon County Response: *Geotextile thicknesses will be specified in conjunction with aggregate gradation design during the Plan of Operation preparation process. All landfill geotextile will be greater than or equal to 12 oz/yd².*

DNR Response Comment: Response Noted

22. **DNR Comment- Table 8-1:** Include quantities of structural fill needed for support berms and other structure features for the expansion in the soil balance table.

Vernon County Response: *The volume for support berms and other earthwork features are included in the Common "Earthwork" Columns of Table 8-1.*

DNR Response Comment: Response Noted

23. **DNR Comment- Section 11, Need and Design Capacity:** Resolve the following apparent discrepancies in the needs and site life analysis:

- a. The starting estimated disposal rate for the landfill provided in Table 11-7 (59,000 cubic yards) is not consistent with the average waste acceptance rate at the landfill presented in Table 11-2 (25,235 cubic yards). Evaluate the service area and needs analysis factors to explain this discrepancy and whether a more representative starting disposal rate would be appropriate.
- b. The annual growth rate used in Table 11-5 is 1.56% which is taken from Table 11-2. However, this annual growth rate is significantly higher than the annual population growth rate of 0.22%. While the 1.56% growth rate may be the most conservative calculated from Table 11-2, the actual waste volumes accepted at the landfill fluctuate slightly from year to year. The 1.56% growth rate does not represent a rate that is exponential in growth to be compounded annually like the behavior of a population growth rate. Furthermore, the latest trend is a declining waste acceptance rate at the landfill. If the population growth rate is used, the proposed expansion volume would exceed a 15-year site-life. The department is allowed to approve landfills with a maximum 15-year site-life. Please provide any additional explanation available regarding this that may assist the department in its determination of estimated site-life.

Vernon County Response: *The design capacity of the proposed Expansion was based on historic*

tonnage data collected at the existing facility. Historic, site-specific data, was used to calculate anticipated future waste quantities, factoring in growth in waste generation, over the maximum 15-year life of the Expansion per NR 504.05(3). The projected site life of the Expansion based on historic tonnage data and calculated growth rate was presented in Table 11-5. Using a five-year average of the most recent tonnage data, a starting disposal rate of 25,235 CY (assuming a 1,500 lbs/CY waste density conversion) was utilized for this calculation. A second method (per capita method) for calculating waste quantities and evaluating need of the facility was presented in the FR which utilized the calculated statewide per capita average disposal rate and applying it back to the service area population to estimate waste generation. The second method calculated an annual service area waste disposal, or generation, rate of 59,000 CY which was not used for determining design capacity of the Expansion. The first method is the preferred method as it is based on empirical data collected at the existing facility. The second method is a good gauge for estimating the amount of waste potentially generated within the overall service area and gives an approximation of waste capture and waste potentially leaving the service area.

As discussed in Section 11.3.3, several waste growth rates were calculated utilizing historical tonnage data collected at the facility. The average annual disposal rate from year to year was chosen for calculating future waste growth over the life of the Expansion as it was most conservative. Growth rates ranged from 1.56% to 2.39% of which any these rates within this range are representative of the existing facility's increase in waste disposal over time. Waste growth rates were utilized as opposed to only population growth rate as other factors such as economic development/redevelopment, new industries, weather related disaster/damagers, etc. can lead to increased generation in non-MSW waste types like C&D waste. It is reasonable to infer that MSW generation can be commensurate with population growth, however population growth alone may not be commensurate with other wastes accepted at the facility. Therefore, using population growth rate alone would potentially exclude growth in other non-MSW streams.

Waste received by a solid waste facility can fluctuate from year to year. These fluctuations could be caused by a variety of factors such as new waste diversion efforts, hauler compliance/noncompliance in terms of contractual agreements, increase/decrease in local redevelopment or new development, economy, changes in population, new waste streams, etc. The recent trend experienced during 2020 to 2022 is not expected to be a lasting trend and is likely due to several reasons stated previously. In 2023, the facility received 18,415 tons of waste suggesting the facility may be returning to an increasing trend. Waste tonnage data provided by Vernon County for 2023 is included in Appendix G.

DNR Response Comment: Response noted.

24. **DNR Comment- Appendix S, Leachate Treatment Agreements [s. NR 512.13(3), Wis. Adm. Code]:** The leachate treatment agreements provided have expired prior to the submittal of this feasibility report. Provide updated leachate treatment agreements.

Vernon County Response: *The City of Viroqua Leachate Treatment Agreement provided within Appendix S is the active leachate agreement between the Vernon County Landfill and the City of Viroqua. The agreement states, "this agreement shall remain in effect for the period of time that the County is required to dispose of leachate from the County's solid waste disposal facility".*

The La Crosse County Leachate Treatment Agreement provided within Appendix S is the active leachate treatment agreement between the Vernon County Landfill and La Crosse County. The agreement states an automatic renewal.

The City of Sparta and the Vernon County Landfill currently have a draft leachate treatment agreement which is provided within Appendix H. A final copy will be provided to the WDNR once

completed.

DNR Response Comment: Response Noted

25. **DNR Comment- Plan Sheet 32, Detail 3-32, Leachate Extraction Building (Phase VII):** Please clarify the thickness of clay liner and rooting zone layer, as these thicknesses are inconsistent with other details provided on the plan sheets and in the narrative.

Vernon County Response: *The detail formerly recognized as Detail 3-32 on Plan Sheet 32 in the Feasibility Report has been revised and is attached as Detail 3-33 on Plan Sheet 33 and depicts a 5 ft. thick clay liner and 2 ft. thick rooting zone.*

DNR Response Comment: Provide clarification on revised detail 3-33 in the addendum, on if the final cover design is using a geocomposite drainage layer or a sand drainage layer. Feasibility addendum 01 detail 3-35 and the feasibility report narrative section 8.14.4 both note a sand drainage layer.

26. **DNR Comment- Appendix R, Sub Appendix B, Sheet 16 Leachate Headwells:** This sheet notes that multiple headwells on the landfill are damaged; please provide a current list of the headwells on site and the status of them as well as provide a history of headwells that are damaged, lost, or abandoned.

Vernon County Response: *A Plan Modification Request was submitted to the WDNR on October 2, 2020, summarizing the status of the headwells and requesting approval to use alternatives. This Plan Modification Request proposed to perform head monitoring at leachate cleanouts CO-3S, CO-7S, CO-3N, and CO-6N and leachate headwells LHW-5 and LHW-6. This Plan Modification Request was approved by the WDNR on February 9, 2021. The Plan Modification Request and the WDNR Approval Letter are included within Appendix I.*

The following is a summary of the leachate headwells history that was summarized within the October 2, 2020, Plan Modification Request.

- The 2005 plan of operation approval (July 29, 2005) require monthly leachate head well monitoring be conducted at six leachate head wells. The head wells specified included 3 vertical well heads (LHW-1, LHW-2 and LHW-3) that existed at the time of the approval, and three horizontal side slope head wells (LHW-4, LHW-5, and LHW-6). At the time of the 2005 approval, only horizontal LHW-5 was installed.*
- Upon investigation, LHW-1 could not be located (presumably abandoned as its location is in the same vicinity as an access road), and LHW-2 and LHW-3 are obstructed approximately 20 feet below the waste surface, which is 10-15 feet above the bottom of the well and top of liner. The vertical wells are very apparently bent and bowed, likely due to waste settlement forces, especially on the side slope. Discussions with site personnel indicate the vertical leachate head wells have been hit several times during mowing and site operations. It is likely each well is damaged in multiple locations, and it is likely that attempts to repair or refurbish the wells would be unsuccessful and costly.*
- It also does not appear that horizontal LHW-4 was installed during the 2008 Phase II, Module 3 liner construction. Of the original six leachate head wells in the plan of operation, only LHW-5 and LHW-6 remain in usable condition. Inspection of both leachate head wells did not indicate any damage or issue.*

DNR Response Comment: Provide narrative on why LHW-5 and LHW-6 need to be abandoned as noted in addendum 01 plan sheet 25. Provide discussion on if both need to be abandoned or if sweep bends can be installed to continue monitoring these two or what could be installed in their place to give each a replacement measurement and how they would be equivalent or greater.

27. **DNR Comment- Plan Sheets:** Provide a plan sheet with labeled leachate headwells, cleanouts, and leachate lines for the entire site with the proposed expansion.

Vernon County Response: *Plan Sheet 25, Existing and Phase VII Through IX Leachate Collection System has been added to show labeled headwells, cleanouts, and leachate collection lines for the entire site with the proposed expansion.*

DNR Response Comment: Response Noted.

28. **DNR Comment- Plan Sheet 24, Plan Sheet 33, Detail 2-33, Leachate Headwell:** Please provide narrative on the general design of the sweep bend noted on Plan Sheet 24 Note 8 for the leachate collection line cleanouts.

Vernon County Response: *The existing cleanout riser will be removed and a 6-inch PVC to HDPE stainless steel transition fitting will be connected. A 6-inch SDR 11 HDPE pipe will continue horizontally through a manufacturer recommended minimum 13-foot bend radius to exit the landfill directly to the south at the phase boundary through a vertically oriented 6-inch SDR11 HDPE 22.5 degree long radius bend. The full pipe length will be bedded on a minimum of 4-inch leachate pipe bedding aggregate and covered with a minimum 12-inch pipe bedding aggregate. This design will be depicted on a more detailed drawing in the Plan of Operation.*

DNR Response Comment: Response Noted.

29. **DNR Comment- Plan Sheet 23 Horizontal Footprint:** Please discuss the design rationale behind the divot in the waste limits between exiting Phase III Modules 1&2 and proposed Phase VII and the exiting Phase III Modules 3&4 and proposed Phase IX.

Vernon County Response: *In order to provide a continuous composite base liner system (5-ft of compacted clay and 60-mil HDPE Geomembrane) and to maintain continuous 4:1 maximum final closure slope, the expansion was controlled on a continuous line at the limits of composite liner as shown in Detail 3/34 in the Feasibility Report Drawings. The geometry of the final closure slopes, waste slopes, proposed perimeter berms and existing perimeter berm along the eastern side of the existing MSW landfill, create a horizontal change for the limits of waste as the waste slopes rise up and over the berm elevation along the composite liner splice as shown in Detail 7/30 in the Drawings. This “divot” is the result of liner design constraints placed at a convergence of slopes to maintain continuous liner limits to ensuring the integrity of the composite liner.*

DNR Response Comment: Response Noted.

30. **DNR Comment- Storm Water Controls:** Please discuss the impacts of the expansion to the existing sedimentation basin.

Vernon County Response: *Expansion of the Vernon County Landfill will have significant impacts on the existing sedimentation basin. The existing basin is located within the footprint of the landfill expansion and therefore is being moved to the east outside of the expansion footprint. The existing basin was sized to manage runoff from the existing landfill footprint. The landfill expansion will increase the amount of runoff draining to the basin. Therefore, the size of the existing basin is inadequate and needs to be enlarged to manage the increased runoff. There are four key criteria that were analyzed to meet the NR 504.09 standards. The criteria are:*

1. *settling the 0.015 mm particle in the 25-yr, 6-hour storm*

2. conveying the 25-yr, 6-hour storm through the primary spillway
3. conveying the 100-yr, 24-hour storm through the emergency spillway
4. dewatering the basin in no less than 3 days.

The table below summarizes the design calculations of the existing and proposed basins in order to meet criteria 1-3 above. Criteria 4 will be met during final design of the sedimentation basin and dewatering structure during the Plan of Operation. The table below shows the proposed basin is designed approximately 2-3 times larger than the existing basin.

DNR Response Comment: Response Noted.

December 19, 2023 Incompleteness Letter Section A – Comments and Responses

1. **DNR Comment-** The following apparent typographical errors are noted for the record.
 - a. Plan Sheet 9: Based on the groundwater elevation data presented, the date in the title should be May 2023.
 - b. Plan Sheet 15. The label of the D' location should be east instead of west.

Vernon County Response: *A revised Plan Sheet 9 and Plan Sheet 15 are provided.*

DNR Response Comment: Response Noted.

February 1 2024 Email from DNR to Vernon County – Comments and Responses

1. **DNR Comment-** Generally, there are a number of gaps in the geologic and hydrogeologic information presented within the feasibility report. Items that remain not well understood include groundwater flow conditions around the southeast corner of the expansion area where SEH has interpreted a merger zone between the perched and regional aquifers. Groundwater flow information presented here appears to be largely interpretive given the number of data points available. For example, you have defined equipotential lines and a complex groundwater flow regime with very few data points (e.g., MW-12, MW-16, and MW-17WT), most of which are seated outside of the southeast area. The grey area shown on Plan Sheets 4 through 7 indicating the merger zone of the perched and regional water tables, appears to have been defined with a single data point (MW-16) from dry wells. The characterization of this area is further confused by what appears to be a contradiction in the information presented in cross section (Plan Sheet 17, cross section F-F') vs. the water table maps 4-7. In cross-section, the merger point is shown at MW-16, but in maps 4-7 the area of the merger shown in gray is a much larger area. It is not well understood how this interpretation was developed given the lack of corresponding geologic and hydrogeologic data.

Vernon County Response: *Groundwater conditions at the site conform to anticipated conditions for the geologic units present and applying hydrogeologic principles and concepts. We have based much of our understanding of groundwater conditions on the hydrogeologic studies completed on the Prairie du Chien Group by Tipping, R. G., Runkel, A. C., Alexander, E. C., Jr., Alexander, S. C., and J. A. Green, 2006, Evidence of Hydraulic Heterogeneity And Anisotropy in the Mostly Carbonate Prairie du Chien Group, Southeastern Minnesota (in Sedimentary Geology 184 (2006) 305-330).*

Tipping, et al. (2006) establishes the overlying Shakopee Formation of the Prairie du Chien Group as an aquifer and the "intervals of relatively unfractured rock serve as confining units" within the underlying Oneota Dolostone (illustrated in the figure to the left). Fetter (1988) defines a confining layer as "... a

geologic unit as having little or no intrinsic permeability". Tipping et al. (2006) describes the layered heterogeneity of the Prairie du Chien in relationship to depositional environmental and erosional history. Although the Shakopee Formation is not present, regionally the lower portion of Oneota Dolostone (present onsite) consists of rock with low intrinsic permeability that inhibits downward percolation of groundwater. Given the depth to the regional water table occurs 100 to 135 feet below the landfill site, the presence of an intervening lower permeability rock (generally falling below the elevation of 1120 feet defined by the H2 marker horizon identified on gamma logs) provides the optimum conditions needed to develop a perched groundwater system, particularly when underlain by the higher permeability rock found in the basal Oneota Dolostone and underlying Jordan Sandstone. The continuity of a perched groundwater system depends on favorable hydrogeologic conditions remaining continuous and consistent. However, at the Vernon County Landfill, the lateral extent of the low permeability unit becomes compromised within a valley where much of the bedrock has weathered into saprolite and residuum (MW- 16WT/MW-16/MW-16Z) or where lithology changes (MW-19/MW-19Z). This is clearly illustrated in the geologic cross-section G-G' (Plan Sheet 18) and K-K' (Plan Sheet 22) and shown in the figure to the right.

Across the landfill property, the only location in which the elevation of 1120 feet (H2 marker horizon) has been weathered to saprolite is in the southeast. Based on the water level observations in well nests MW-16WT/-16/-16Z and MW-19/-19Z, it is clear that the intrinsic permeability of the confining unit has been compromised through the weathering process or changes in lithology. Fetter (1988) describes a perched aquifer as where "... water moves laterally above the low permeability layer up to the edge then seeps downward toward the main water table ...". In addition, the perched water table maps included in the Feasibility Study (Plan Sheets 4 and 5) apply principles described by Freeze & Cherry (1979) for the formation of a perched water table (shown to the left) indicating an increase in hydraulic gradient in the transition between the edge of a perched water table and the regional water table (using a river in this example to depict a discharge point).

A portion of the high perched water table map from August 2024 (Figure 1) is also shown to the left depicting the increase in hydraulic gradient along the transition zone applying the Dupuit-Forchheimer Theory of Free-Surface Flow (Freeze & Cherry, 1979).

It is difficult to illustrate groundwater conditions in the transition zone in the plan view. Therefore, to clarify groundwater conditions, the grayed area depicting the transition zone has been removed in Plan Sheets 4 through 7. Instead, refer to the intersecting geologic cross-sections in Plan Sheet 18 (G-G') and Plan Sheet 22 (K-K') illustrating the weathered bedrock's role in locally altering perched water table conditions. This relationship between the perched water table and regional water table has been well documented in research publications and is illustrated well in the following publications:

- Runkel, A. C., Tipping, R. G., Meyer, J. R., Steenberg, J. R., Retzler, A. J., Parker, B. L., Green, J. A., Barry, J. D., & Jones, P. M. (2018). A multidisciplinary-based conceptual model of a fractured sedimentary bedrock aquitard: improved prediction of aquitard integrity. *Hydrogeology Journal*, 26(7), 2133- 2159. <https://doi.org/10.1007/s10040-018-1794-2>.
- Nimmo, J. R., Creasey, K. M., Perkins, K., & Mirus, B. B. (2016). Preferential flow, diffuse flow, and perching in an interbedded fractured-rock unsaturated zone. *Hydrogeology Journal*, 25, 421-444. <https://doi.org/10.1007/s10040-016-1496-6>.

DNR Response Comment: The purpose of the feasibility process is to determine site-specific feasibility of siting a landfill at a particular location. The literature cited in this response could be used to guide a site-specific investigation but does not replace the need for developing a site-specific understanding of the merger zone between the perched and regional aquifers. The relationship between the perched and regional aquifers is somewhat better defined with new well information, but mounding of regional water table near the MW-18 well nest is not fully defined or understood resulting in gaps in the monitoring

network as mentioned in the response to Section 2.1, Comment 2. Additionally, the fact that MW-15WT is dry appears to present a data gap in the area of the merger zone as well.

2. **DNR Comment-** Additionally, the geological cross-sections show both the perched water table and the regional water table; however, the cross-sections and narrative in section 5.4.2 of the report don't show or attempt to explain what supports the perched aquifer above the regional aquifer, other than touching on vertical gradients that appear to be showing the presence of low permeability formations restricting downward groundwater movement. The cross-sections generally depict the two water levels for each through the same geological formation. It may be that there is currently not sufficient geotechnical information to provide a better explanation for what supports the perched aquifer. However, understanding geological formation that supports the perched aquifer may help to understand where and how it converges with the regional aquifer or the overall flow between the two aquifers.

Vernon County Response: *Conditions in the lower Oneota Dolostone that developed the perched water table are well documented in previous research and publications as described in the response to Comment 1. In addition, the localized weathered condition of the confining unit that modifies the lateral extent of the perched water table system are also clearly described in the response to Comment 1. Research by others on the Prairie du Chien Group confirms its heterogeneity and anisotropy. Tipping et al. (2006) describes the "... Oneota confining unit [as] consisting of thickly bedded dolostone". Bedded geologic units are commonly indicative of layered heterogeneity, with the perched groundwater at the Vernon County Landfill always observed above the H2 marker horizon defined by gamma logs. The geologic-cross-sections clearly illustrate that the lateral extent of the low permeability unit has become compromised within the valley on-site near MW- 16 where much of the bedrock has weathered into saprolite and residuum and near MW-19 where the lithology changes to sandstone. As long as the bedrock is dolostone and has not been weathered below approximately 1120 feet, the perched water table will be present and provides an appropriate upper monitoring system.*

In addition, the hydraulic gradient depiction of the transition zone must be gradual as shown on geologic cross-sections and water table contour maps; it would be impossible for the perched groundwater system to persist, likely over thousands of years, if the transition depicted significant flow velocity because the perched system would have drained dry. Routine purging and sample collection over the past 30 years have confirmed the sustainability of this perched groundwater system.

DNR Response Comment: The department concurs that the additional data support a gradual hydraulic gradient within the transition zone. However, as mentioned throughout, literature assumptions do not replace the development of a site-specific understanding of the geology of the transition zone.

3. **DNR Comment-** As stated in Comment 2 of the December 19, 2023, letter and as noted in Comment 1 above, additional hydrogeological investigation (data from additional test borings and groundwater monitoring wells) is needed to adequately define the water table surface(s) and flow regime in the area of the merger point between the perched aquifer and regional water table aquifers. Equipotential lines on Plan Sheets 4 and 5 to the north, west, and east of the interpreted merger zone are based largely on data from two dry monitoring wells (MW-15WT and MW-16WT). Therefore, many of the equipotential lines shown are inferred and should be represented with dashed lines or question marks (refer to Comment 4 of the December 19, 2023 letter).

Additional investigation could allow for additional perched aquifer wells to confirm the interpreted flow regime, or to provide data for an alternate flow scenario. A few potential areas to consider as starting points for additional investigation include, but are not limited to, the following areas:

- a. A test boring and groundwater monitoring well or well nest in the southern portion of the proposed expansion area, in the general area of test boring B-21, could better define flow to the

- west of the currently interpreted merger zone and could provide geotechnical data in the vicinity of the sump area of the proposed expansion, which is an area where additional pressure on top of a landfill liner would typically be expected. This would also provide an opportunity to obtain geotechnical information at least 25 feet below sub-base grade in this area (refer to Comment 1).
- b. Completion of a test boring and groundwater monitoring well nest between existing groundwater monitoring well nest MW-5/MW-5A and the currently interpreted merger zone, such as the MW-5R/MW-5AR well nest proposed on Plan Sheet 29, could better define groundwater flow in this area.
 - c. A test boring and groundwater monitoring well or well nest to the southeast of MW-15WT could better define groundwater flow in this area and could provide data that the merger zone area and groundwater flow from a potential release from the expansion area is adequately understood and preclude the need to characterize groundwater flow further on the eastern portion of the merger zone.

Vernon County Response:

- a. *As requested by the WDNR, additional boring B-22 was completed near the previously completed boring B-21 to a depth of at least 25 feet below the proposed sub-base grades. It should be noted that drilling through the perched water table may compromise the natural barrier properties of the low permeability unit supporting the perched water table. Therefore, B-22 was only drilled to the top of the perched water table so to not compromise the confining layer. Additional drilling was completed, outside the disposal area, to install additional longterm monitoring system wells; these additional wells are used to further define groundwater conditions in support of the groundwater monitoring system.*
- b. *Concur; the installation replacement wells for MW-5/MW-5A were completed as part of the 2024 addendum field investigation as described in Section 4.0. The wells completed were MW-18WT (perched water table) and MW-18 (regional water table).*
- c. *Due to the existing topography and direction of groundwater flow in the perched water table, installation of a well or well nest to the southeast of well MW-15WT, while would be ideal, the area is not accessible by drilling equipment and a well installation is not feasible. Given the direction of groundwater flow in the perched water table, the location of the proposed replacement wells for MW-5/MW-5A provide the best monitoring location and accessible location on the east side of the landfill expansion area. Details on the completed replacement wells (MW-18WT and MW-18) are provide in Section 4.0. Because water was observed during the installation of well MW-15WT, the well will be maintained and monitored for water levels to provide additional information for the perched water table contours.*

DNR Response Comment: Refer to the department's comments regarding the data gaps that remain in relation to the mounding of the regional water table near MW-18 (Response to comment 1 above and Section 2.1 comment 2). Additional test borings and well drilling performed in response to this letter could provide additional opportunity to utilize wire-line coring or geophysics to enhance site specific data and understanding.

- 4. **DNR Comment-** The department considered comments made during the January 19, 2024 Teams call that borehole geophysical methods that are not specific to saturated boreholes would only provide data specific to the individual boreholes, and does not concur with this assessment. The use of borehole geophysics could provide fracture and/or potential flow data that has the potential for interpretation between boreholes as does inspection of wireline cores. If the landfill feels strongly that borehole geophysics will not be effective, they may consider revisiting wireline coring of the additional test borings and select what they feel is the better option. The landfill could also consider inter-point methods such as dye tracing or surface imaging geophysical investigation techniques to augment the geotechnical investigation data.

Vernon County Response: *As described in Section 2.1, the application of other borehole geophysical methods was evaluating using FRGT Tool, developed by the USGS and EPA and determined too many limitations to add any value. While seismic surficial geophysical methods are better at distinguishing geologic units, electrical resistivity methods may distinguish saturated and unsaturated conditions with proper placement of nodes; at the landfill site, the topographic changes and the presence of the existing landfill limit the usefulness of these methods.*

Dye tracing tests are used for tracking and tracing various flows from an injection point to a reception point. For groundwater, a tracer is typically introduced into the aquifer through a naturally occurring recharge feature such as a sinkhole and monitored through reception points such as seeps or surface water features. There are no karst or recharge features on the landfill site and there are no seeps or surface water features. Introducing a dye and flushing it to move through 100 feet of unsaturated conditions is not practical.

Similarly, fracture analysis is generally conducted from aerial photographs, from visible quarry bottoms, and/or through tightly spaced drilling programs where caliper logs, localize dye traces, or visible fractures can be mapped and correlated. The conditions at the landfill are not conducive to fracture analysis techniques.

Therefore, any further investigation of the underlying natural conditions will need to have very clear objectives as presented within the Summary of Hydrogeologic Conditions in the Proposed Expansion Area Table provided below.

Note that because of the unsaturated conditions within the residuum, saprolite, and dolostone below the footprint of the proposed expansion, in the event that leachate does penetrate the 60 mil HDPE liner and the 5-feet of compacted clay it would move through the 77 feet of the unsaturated material through gravity potential and moisture potential; the moisture potential is a negative pressure due to the soil-water interaction and is likely greater than gravity potential under very dry conditions (Fetter, 1988). However, although the high clay content and liquid limit of the residuum results in very high moisture potential, the limited interconnectivity of pore spaces in clay will reduce rates of percolation through the unsaturated material.

The table below summarizing the hydrogeologic conditions in the proposed expansion area, including the information collected during the 2024 Addendum Field Investigation.

DNR Response Comment: Refer to the Section 2.1 Comment 6 response above.

Section 4 of Addendum 1 – New Comments

1. **Section 4.3.2.1:** The department does not concur that the gamma geophysical analysis confirms consistency of bedrock geology, given the extension of horizon markers through the apparent transition of sandstone to the east. In addition, the gamma geophysical analysis did not provide sufficient data regarding the specific geology and fracture zones to replace the requirement for wireline coring, which was the original intent of the geophysical investigation.
2. **Section 4.3.6.1:** The extent of mounding and the northwesterly flow component near MW-18 requires further definition, as noted in previous comments.
3. **Section 4.3.8.1:** Flow net accuracy is uncertain in area of MW 10/11/12 and through the perched water transition zone due to lack of data, as noted in the response to the Section 2.1 comment 10 comment above.
4. **Section 4.3.13.1:** The department notes the change in perched water hydraulic conductivity is most noticeable toward sandstone zone (MW-17WT). Please further define the geology supporting the perched

water zone in the MW-17WT area.

5. **Section 4.3.14.1:** Two rounds of analytical data have been reported to date for the five monitoring wells and piezometers installed during 2024 (MW-16Z, MW-18WT, MW-18, MW-19, and MW-19Z). Section NR 507.18(1)(b), Wis. Adm. Code requires a minimum of four baseline samples to be collected for a proposed facility prior to the plan of operation (with eight baseline rounds total). These four rounds of data are also necessary for the identification and review of any needed exemption requests under s. NR 140.28, Wis. Adm. Code. Please submit the minimum four rounds of data for the wells installed in 2024 as well as any additional wells installed as part of the feasibility investigation. Any additional exemptions needed under s. NR 140.28, Wis. Adm. Code, along with justification of the proposed exemptions, should be requested in an addendum to the feasibility report.

This incompleteness determination is not a denial of your report, but merely indicates that additional information is needed to continue the review. Submittal of this information does not ensure a favorable determination, nor does it preclude the department from requiring additional information if continued review indicates it is needed. Upon receipt of the additional information, the department has 60 days to determine whether or not the feasibility report is complete. Please do not hesitate to contact Mark Peters, Hydrogeologist at (608) 516-0820 or mark.peters@wisconsin.gov or Colin Maus, Waste Management Engineer at (608) 516-2462 or colin.maus@wisconsin.gov if you have any questions about this letter.

Sincerely,



Bridget Kelly
Waste and Materials Management Program
Supervisor South Central Region

cc: Brian Kent- SEH bkent@sehinc.com)
Colin Maus- DNR/WA (e-copy)
Mark Peters – DNR/WA (e copy)
Tess Brester – DNR/WA (e-copy)
Joe Lourigan – DNR/WA (e-copy)

Appendix B

WDNR Correspondence/Memorandum dated July 15, 2025

DATE: July 15, 2025 FILE REF: FID 663038310

TO: Vernon County Landfill File

FROM: Mark Peters, Hydrogeologist

SUBJECT: Summary of Vernon County Feasibility Discussion at Wisconsin Geological and Natural History Survey Offices, June 25, 2025

On June 25, 2025, members of the Department of Natural Resources (department) Waste and Materials Management (WA) program (Mark Peters, Joe Lourigan, Bridget Kelly) met with Dave Hart, hydrogeologist/geophysicist for the Wisconsin Geological and Natural History Survey (WGNHS) and Madeline Gotkowitz, hydrogeologist with the department's Drinking Water and Groundwater (DG) program at the WGNHS offices on Mineral Point Road in Madison, Wisconsin. The purpose of the discussion was to assess the information compiled to date in the feasibility report and addendum for the proposed Vernon County Landfill eastern expansion, and whether the information adequately addresses that the proposed expansion area is sufficiently monitorable and stable for siting of the landfill expansion. Hart and Gotkowitz offered a couple disclaimers to their comments. One is that neither Hart nor Gotkowitz are speaking to the applicability of ch. NR 500-538, Wis. Adm. Code requirements to the data assessed. A second disclaimer is that comments on site stability may need to be verified by a civil or geotechnical engineer.

Hart and Gotkowitz spent some time describing their experiences working in karst systems and more specifically, their experience working with the Prairie du Chien formation – the carbonate rock unit that comprises the bedrock at the site of the proposed landfill. Hart and Gotkowitz explained that karst is not a single feature such as a sinkhole or a cave; rather, karst is a landscape where dissolution of carbonate rock has created features such as sinkholes, conduits, and caves. In Wisconsin, groundwater flow often occurs in fracture networks in the carbonate rocks of the karst terrains. These networks can be dense and well connected or can be dominated by several larger scale fractures. And while karst terrain is common in many areas of Vernon County and much of southern WI, it does not necessarily mean that there are large sinkholes or caves that would impact the monitorability or stability of the landfill. It is well known from research studying the Prairie du Chien formation that it has small fractures and cavities and typically cavities are filled with soil. Substantive sinkhole development typically only occurs in the Prairie du Chien where bedrock is less than 30-feet deep, which is not the case at this site where bedrock is in excess of 40-feet from ground surface.

Hart confirmed the conclusion he made in a previous email that wireline rock coring of bedrock at the site would be difficult. The presence of sandstone and clay-filled voids may cause poor core recovery, and the reason for the poor recovery may not always be obvious. The heterogeneous nature of the rock may cause effects such as core already collected in the catcher spinning on intact rock, thereby eliminating fracture faces. Therefore, use of wireline coring for fracture characterization may not be representative. Downhole geophysical surveys such as borehole video, optical borehole imaging, or acoustic borehole imaging appear to be feasible at the site and have been collected elsewhere in the Prairie du Chien dolomite in Wisconsin.

There are several factors indicating that the site is relatively stable with regard to risk of sinkhole formation or other collapse features that may affect landfill stability. A landfill has already existed at the site for 30 years with no issues. There is a significant layer (approximately 40 feet) of residuum and

saprolite separating the base of the existing and proposed landfill from bedrock. No significant voids or caves have been identified in the bedrock in the numerous boreholes that have been completed at the site (the largest indicators of voids have been a few 1-2 foot bit drops during drilling). Peters offered that sonic core recoveries were good during borehole advancement during the feasibility investigation. The presence of an engineered landfill liner above the bedrock should stop water infiltration that could create a risk of sinkhole development in a karst environment. Furthermore, any sinkhole development that has already occurred historically in the bedrock is unlikely to impact the stability of the landfill due to the separation distance between the proposed landfill expansion and the bedrock.

The monitorability of the site is aided by the fact that gradient groundwater flow is observed in the area to the east where the perched aquifer appears to discharge to the regional aquifer. Where flow is primarily through fractures rather than primary porosity, water levels measured in monitoring wells may be anomalously high or low. Such anomalies are not present in the water level data from the site, supporting the conclusion that the site is dominated by porous media flow, rather than flow through fractures or conduits. The fact that mud rotary drilling has been performed at the site without complete loss of fluid circulation is further evidence that significant secondary fracture flow may not be a concern at the site. If anecdotal comments¹ made by SEH to Kelly are accurate, and flow in the newly installed MW-20 well nest indicates regional groundwater flow back toward the landfill (westward), mounding observed within the regional aquifer may be localized and defined.

Hart inquired as to whether the sedimentation basin located east of the current landfill could be a historical sinkhole feature. Peters indicated that the department could check old records and determine if this was the case. After the meeting, Peters reviewed feasibility drawings completed before landfill construction and Lourigan reviewed historic air photos. They concluded that there was no depression at the sedimentation basin before the landfill was constructed, and that the sedimentation basin was dug as an engineered feature during initial landfill construction.

Hart and Gotkowitz identified two possible activities that could be used to augment existing information for the site. One would be to observe beyond the immediate landfill area those elevations where groundwater may be expected to discharge, based on the elevations noted at the site and projection of those elevations to the greater region. Another task could be to identify if any quarries exist in Vernon County with exposed rock faces that correspond to the sections of the Prairie du Chien formation observed in boreholes at the landfill. The observations at a quarry could be used to obtain a general understanding of the nature of fracturing within the formation (due to the challenges of obtaining this information through wireline coring as described above), and perhaps corroborate some of the regional literature references presented in the feasibility report and addendum.

¹ In a meeting with Vernon County and the department on June 3, 2025, SEH noted to Kelly that they had completed drilling of another well (MW-20) and were able to confirm that groundwater at MW-20 (east side of the expansion area) is flowing back towards the existing landfill. The Department has not received a submittal relaying this information.

Appendix C

WDNR Correspondence/Memorandum dated August 26, 2025

DATE: 08/26/2025 FILE REF: Vernon County Landfill Lic #3268

TO: Vernon County Landfill and Representatives

FROM: Department of Natural Resources; Bridget Kelly – Waste Program Supervisor

SUBJECT: DNR + Vernon County Meeting to Discuss Outstanding Feasibility Items

On August 11, 2025, the Wisconsin Department of Natural Resources (department) met with Vernon County (County) representatives to discuss the status of the County's landfill feasibility. The meeting was held virtually over Teams. Meeting attendees are noted below.

Attendees:

DNR

- Colin Maus
- Mark Peters
- Bridget Kelly
- Joe Lourigan
- Tyler Sullivan (taking notes)

Vernon County

- Stacie Sanborn (Landfill Director)
- Lorn Goede (Vernon County Chairman)
- Cassandra Hanan (Admin Coordinator)

SEH

- Brian Kent (Project Manager)
- Melanie Niday (Hydrogeologist)
- Aaron Kutz (Field [Hydro]geologist)

Introduction

DNR started the meeting by stating that it is not their intention to go through every single incompleteness item from the second-round incompleteness letter – today's items are highlights. Any incompleteness items from department's incompleteness letter not discussed in today's meeting are still applicable

Vernon County/SEH's summary of field work completed in April and big take aways (SEH/Vernon County)

- SEH's field work involved drilling further east from line of existing wells
- SEH shared multiple figures with updated geotechnical information at the proposed expansion site (well location map, top of bedrock surface, sandstone isopach map, geologic cross-section)
- SEH shared multiple pictures of borings from 2025, Prairie du Chien (PdC) formation dolomite from various borings at various depths
 - SEH noted that boring material color is very distinct – color noticeably changes as you travel east and sand/sandstone becomes more prevalent.
 - MW-20 boring – all sandstone
 - SEH contacted Tony Runkel from Minnesota Geological Survey about the site and presence of sandstone. Runkel referred SEH to Dave Hart at Wisconsin geological Natural History Survey (WGNHS). SEH has not had a chance to speak with WGNHS.

- SEH shared “Bedrock Stratigraphic Units of Wisconsin” figure
 - SEH suspects that the sandstone observed in 2025 borings may be St. Peter formation sandstone. SEH formerly suspected that similar material observed on eastern side of site during previous drilling activities was weathered PdC formation dolomite.
- SEH shared a top-of-PdC-bedrock surface figure
 - PdC drops significantly to the east, with an additional valley in southern portion of site
- SEH shared an isopach map depicting sandstone thickness
 - Lateral change in geology in SE corner of site, where sandstone thickens
- SEH shared a geologic cross section-oriented W-E, noted that the figure is still a work in progress
 - Cross-section depicted sandstone thickening on east side of site
 - MW-20 well nest (WT and PZ) – MW-20WT well screened in perched water table
 - SEH used sonic drilling to avoid using drilling mud/fluid and minimize effects on perched water table
 - MW-20 (PZ) – deeper boring was drilled first to better identify perched and regional water table. Increased moisture was noted at about 46 ft bgs.
 - MW-20WT – drilled to 55 ft, set temp well screen overnight. SEH came out next day and water had stabilized at 46 ft. MW-20WT screen set at perched water table at 46 ft bgs
 - SEH noted that a temp well screen also used overnight in MW-20 before setting well screen for regional water table
 - MW-20WT – pre-development water table was at about 43 ft bgs
 - SEH noted that when sampling, MW-20WT is purged dry – obtaining a groundwater quality sample then becomes difficult. Water level can be sustained, but sampling is difficult after purging.
- SEH shared updated groundwater flow maps
 - similar to previous GW flow maps, but a broad dashed line has been added (“inferred boundary for sustainable perched groundwater system”) on east side of site on WT map
 - MW-15WT – had water when initially set, now is consistently dry.
 - Updated regional groundwater map (no date for water level readings)
 - In regional system, MW-20 shows highest water level.
 - Similar to previous flow figure(s), but more data points with additional wells
 - SEH has collected additional water quality samples as well, this would be discussed in 2nd addendum.
- Mark P – Is SEH seeing any geological separation in borings at/near MW-20?
 - SEH – no, however there is some variability in coloring. Seeing water level around 46 ft bgs. SEH suspects groundwater may be leaving one hydrogeologic unit and entering a unit that is more uniform. Seeing some consistency in water level readings in MW-20WT.
- Mark P – Has SEH observed any evidence of groundwater discharge points at a similar elevation of bedrock surface valley depicted on eastern side of site (as shown on figures presented)?
 - SEH – No. The eastern side of the site is heavily wooded. Also, there is a large difference between bedrock surface elevations and water level elevations measured in wells (water level deeper than bedrock). No GW seeps observed.
- SEH - DNR has previously stated that site monitorability is a concern; SEH believed the memo from WGNHS addresses that concern.
 - SEH also stated that 2025 drilling confirms findings for regional groundwater system. Recent drilling also clarifies the behavior of the perched system.
 - Mark P – Noted that it’s difficult for department to make conclusions based on preliminary figures shared during meeting. In future addendum, the department must see evidence that any leachate leaving the landfill (and entering GW) could be captured by the proposed expansion’s monitoring network. GW flow should be defined such that there are no questions about where GW is flowing in the area surrounding the landfill. If there was a theoretical leachate release, where would it flow? One area of particular interest is the GW mound to the east of the proposed expansion; would GW contaminants be able to travel beyond the GW mound? Items such as that must be addressed in addendum.
 - SEH noted that the perched GW system appears to end in SE corner of site, and that MW-20WT may serve as a sentinel well

- Mark P – GW goes from perched into regional system in SE corner of site. DNR needs to know that the regional system is well defined enough that any potential contaminants from the landfill could be detected in GW monitoring system. The area near MW-19 is a concern, as contaminants may flow south of MW-19 beyond existing GW monitoring network.
 - SEH – A new well could potentially be installed south of MW-19. That well would likely show flow back to the north/northeast
 - Mark P reiterated that anything flowing from landfill and/or proposed expansion must be captured by monitoring network. The department can't work off assumptions about what may be happening south of MW-19. The mapped GW flow at the proposed expansion has changed as new hydrogeologic info is gained through additional well installations
 - Brian K – Some Flow at MW-19 may be going towards to the south
 - SEH will look at MW-10, 11, and -12 well nest (near MW-19) and evaluate GW flow in that area.
- **Discussion of information from WGNHS**
 - DNR met with WGNHS to discuss geology at proposed expansion site. A memo was created by WGNHS and shared with the department. The department previously shared this memo with Vernon Cty/SEH.
 - Mark P - WGNHS confirmed:
 - wire line coring less feasible at this site due to voids and potential for incomplete recoveries
 - Downhole geophysics is feasible which would've been useful in meeting code requirements to define fracture zones
 - An additional well nest to east of the proposed expansion would better define regional aquifer.
 - Concluded that attempting to identify GW discharge points in drainages and area surrounding landfill would be valuable.
 - Also, observing bedrock at nearby quarries where PdC is visible could corroborate what is found at Vernon Cty site.
 - The department intends to include findings from WGNHS memo in its Environmental Analysis of feasibility completeness. SEH is also free to utilize information from the WGNHS memo in their addendum.
 - SEH - One takeaway from memo is that WGNHS concurred that gradient flow is present at the proposed expansion site and that GW can be monitored.
 - Mark P – WGNHS memo confirms that GW can be monitored in the sense that the site's geology is a gradient flow (and not fracture flow) environment. WGNHS is not concluding that the current monitoring network is complete.
 - SEH– another takeaway from memo is there is no evidence of karst at proposed expansion site
 - Mark P disagreed. The memo states that there is a potential for karst at the proposed expansion site, but it may not affect site stability/monitorability in a significant way. SEH would need to further demonstrate that in an addendum.
 - Bridget – WGNHS' terminology is different than ours. WGNHS used terms such as “poorly developed karst features”, which have less potential to affect the proposed expansion site. Writing in addendum that karst isn't present at the proposed expansion site wouldn't be accurate - WGNHS confirmed that. Karst is present but it may not affect the landfill in a significant way that would impact the site's monitorability and stability.
 - Joe summarized WGNHS' position - Karst is a type of landscape, not a specific feature. Based on drilling, while karst indicators are present, the degree may not be enough to affect the site's stability and monitorability in a significant way.
 - SEH (Melanie) - agrees with WGNHS' conclusion. Some individual features, but not significant enough to affect site's monitorability and stability. Suspects sandstone is playing an important role in hydrogeology and may be causing some of the behaviors seen on regional/water table maps.

- General discussion around identifying karst and its impacts is challenging. Karst's perception is also challenging (presence of caves and caverns, sinkholes, etc., vs smaller features, and what do any present features mean for the site, pseudokarst, etc.)
 - Monitorability and stability is key – document what is observed, and what its impacts are on the site's monitorability and stability. DNR is less concerned on the word “karst” and more focused on the degree and significance of any present features – what is their applicability to the site's monitorability and stability?
 - DNR recommends avoiding the term pseudokarst; it causes confusion and is poorly understood. Stick with karst. Karst isn't an automatic deal-breaker; The question related to karst is what is its degree and significance to the landfill? Are the properties (i.e., dissolution cavities in carbonate bedrock) that cause karst, significant enough at the site to interfere with site stability and monitorability?
 - SEH – Wanted clarification that karst isn't something that SEH needs to further investigate/identify where it may or may not be present at the proposed expansion site. Do more borings need to be drilled? Is the current information sufficient?
 - Mark P – this leads into next agenda item
- **Discussion on geotechnical code requirements**
 - Mark P – Department cannot make guarantees at this point regarding a feasibility completeness determination; a completeness determination would be based off information presented in an addendum. However, in absence of additional geophysical work, the department *may* be able to state that with additional work completed by SEH in 2025, the existing information is sufficient. But first, department must gain clarity on the proposed expansion's multi-aquifer system.
 - Mark P – Assumptions the DNR is working under in developing these potential additional items.
 - Assumption 1- “aquifer is not homogeneous and isotropic” – DNR needs clarity on multi-aquifer system
 - Assumption 2- In the absence of data showing otherwise, assume bedrock in cored areas has fractures and possibly small voids.
 - Assumption 3- A conservative assumption is that the aquifer is not in a less fractured area of the PdC, and that the presence of an aquitard below cannot be assumed.
 - Existing information to reassess
 - site's stability w/ qualified (civil or geotechnical) engineer - qualitative assessment is good, if a simple qualitative model is available, it would be better
 - Evaluation of core recovery in sonic boreholes
 - Evaluation of gradient flow from perched to regional aquifer (assess presence of fractures)
 - Evaluation of how heterogeneities, such as facies change to sandier formations to east, affect groundwater flow (if any)
 - Evaluate fluid loss during drilling
 - Reassess any bit drops that may have occurred
 - Consider review of local geology (county owned property to SE of landfill (soil borrow location – North N Asbury Rd)) - shallower portions of PdC exposed, privately owned Milestone quarry near Vernon Cty landfill)
 - Consider calibrating groundwater contours to local surface water. May help enhance understanding of local flow (WGNHS idea - assess local surface water flow in nearby Seas Branch with what's known in GW system to corroborate flow)
 - Based on the available information, can the inferred groundwater contours be extended out around the ridge the landfill sits on and sensibly tied into the surface water elevations?
 - Do contour lines for perched and regional aquifers (as shown by SEH) make sense? Also, small, interconnected fractures could lend to a gradient flow system.
 - A karst aquifer would potentially show concentric circles, fingering of contours, etc. where water loss or rapid movement is occurring because

- of voids and unmeasurable high hydraulic conductivities. Are the groundwater contours displaying these types of orientation?
 - Is there physical evidence indicating the bedrock system primarily consists of small, interconnected fractures, rather than large, unconnected fractures or voids?
 - General theme – in areas where karst indicators show up, something in narrative should address why their presence is not an issue for proposed expansion's stability and monitorability
 - SEH stated that having meeting notes from the department would be helpful when creating addendum
 - General discussion around SEH/Vernon Cty visiting local quarries to supplement field investigation information
 - Milestone quarry (referenced by WGNHS)
 - Vernon Cty mentioned a Yahara quarry
 - SEH identified Seas quarry north of the landfill (unknown bedrock elevations – SEH shared street view of quarry via Google Earth)
 - SEH also identified Gudgeon quarry to the south of the landfill
 - Bridget – Geotechnical code requirements for feasibility have not been met without drilling of another borehole. It is not the department's intention to request SEH drill additional borings, but the department will need to discuss more internally whether additional borings are needed based on the information presented today. The department would consider accepting information provided that addresses the items Mark presented above as an alternative to additional boring drilling and geophysical work, to satisfy the outstanding geological items discussed in second incompleteness letter. The department is also open to considering any additional information SEH may present.
 - Mark P – Reiterated that SEH take a closer look at area near MW-19 to see if information gained to date is sufficient enough to address flow of contaminants in SE area of site
 - SEH believes that looking at MW-10, 11, and 12 may help define flow in that area
 - Department is happy to have another technical meeting with SEH/Vernon Cty before addendum submittal.
 - Bridget asked if SEH wanted more discussion on site stability topic from WGNHS memo
 - SEH said no, Mark explained the requirements clearly
 - Bridget asked if there were any additional questions on geological items?
 - Joe – any amended GW contour plan sheets, etc., in addendum should be presented in the main plan sheets, not in an appendix.
 - Joe – With new well MW-20, is SEH revising cross sections in that area?
 - SEH - Yes, cross sections are being revised in those areas
- **Outstanding items in feasibility report (e.g., engineering items, cross sections, plan sheets, etc.)**
 - Colin M – Incomplete engineering items would primarily be addressed by providing additional narrative. Items included but not limited to: sequencing, constructability, access on east side of site w/out perimeter road if there were ever issues in the future (seeps, gas maintenance), total length of road, etc.
 - SEH – Items will be addressed narratively, many of these engineering items are further developed in Plan of Op
 - Colin M – Agreed with SEH, the items don't necessarily need to be fully designed at the feasibility level. However, the department needs to look at certain design considerations at the feasibility level to ensure the proposed expansion is feasible.
- **Next steps and adjourn**
 - Addendum submittal date?
 - SEH needs to discuss internally if the current level of geotechnical info is sufficient to address department's needs.
 - SEH – one month (from meeting time) may be possible for addendum submittal. SEH needs to further evaluate existing information and other logistics (such as quarry site visit). Meeting notes will be helpful in determining what information is still needed and whether SEH's existing information is sufficient
 - Bridget – Department will provide meeting minutes within a week or so

- Bridget reiterated that department is willing to have another technical meeting with SEH/Vernon Cty if needed/desired.
- Meeting ended.

Appendix D

WDNR Status of Feasibility Report and Meeting Notes dated March 2026



Ms. Stacie Sanborn
Vernon County Landfill
S3705 County Road LF
Viroqua, WI 54665

FID 663038310
Vernon County
SW Corr

Subject: Vernon County Landfill (lic#3268) – Status of Feasibility Report and Meeting Notes

The Wisconsin Department of Natural Resources (department) met with Vernon County (the County) on March 9, 2026, to discuss the status of the feasibility report for the proposed vertical and horizontal expansion at the Vernon County Landfill (the landfill). During the meeting, our teams also discussed the available air space as a follow-up to recent surveys conducted at the landfill. The department will communicate with the County on items related to air space in a separate correspondence. The following letter summarizes the status of the feasibility report as discussed at the March 9th meeting. Meeting notes are also enclosed.

The department last spoke with the County about your feasibility report at technical assistance meetings held on August 11, 2025, and October 20, 2025. During those meetings our teams spoke extensively about items that had not yet been addressed in the feasibility report, as outlined in the department's second incompleteness letter issued March 11, 2025. Our teams spent the greatest amount of time discussing the complex geology and hydrogeology at the landfill site, the department noting the critical importance of understanding how bedrock fractures may impact groundwater flow conditions, and the overall monitorability and stability of the landfill.

As a reminder, the department noted in their March 30, 2022, approval of the alternate geotechnical investigation (AGIP), that in lieu of coring bedrock, downhole geophysical logging should be used to evaluate bedrock fractures (including their size, frequency, distribution, connectivity and hydraulic conductivity). The County's consultant attempted to address this requirement; however, the methods selected and executed (e.g., gamma logging) failed to address the department's primary concerns of being able to sufficiently characterize the bedrock fracture system, groundwater flow across the site and site stability. As gamma logging did not yield the necessary data to satisfy the geotechnical code requirements of NR 507.05(2) Wisconsin Administrative Code, the requirement remains unmet.

With the understanding that additional drilling had not been planned by your team, the department agreed to consider the evaluation of geologic conditions at local rock quarries as a possible pathway for meeting the geotechnical code requirements of the feasibility. The department cautioned the County that our approval of this alternate evaluation in the feasibility report would be highly dependent on what information was discovered at the quarries and how that information would be used to further characterize the site and address incompleteness items in the feasibility report. The department provided detailed meeting notes following the August 2025 meeting to assist the County with their understanding of what would be needed in the evaluation of the local geology to satisfy the outstanding geotechnical requirements. Those meeting notes have been enclosed for reference (see page 4; Discussion of geotechnical code requirements; Existing information to reassess).

When our teams met again in October 2025, your consultant walked us through some of the additional work they had completed with respect to developing a better understanding the geology and hydrogeology at the landfill site. The additional work included a comprehensive review of all of the boring logs for all wells onsite (historical and current), a complete reworking of the geologic interpretation for the landfill site, and discussion around the perched and regional aquifer systems. The continued evaluation of the geology and hydrogeology has helped to

answer some of the department's questions, such as the fate of the perched aquifer and the identified facies changes in bedrock to the east. Our teams also engaged in discussion on the fracture network as it remains one of the critical outstanding components of the feasibility investigation. The department agreed to review draft sections of the feasibility report related to the County's evaluation of the bedrock fracture network via quarry visits. The department received draft sections of the County's feasibility report in December 2025. The draft sections were not intended to be a comprehensive package to meet the outstanding requirements of the feasibility report; rather, they were sections developed and forwarded to the department for feedback prior to the County's submittal of a full addendum.

Our teams met on March 9th, 2026 to discuss the draft sections of the feasibility report that your consultant submitted in December 2025. As we discussed at the meeting, the draft narrative does not sufficiently explain how site-specific information observed at the quarries (such as groundwater elevation data or karst features within quarry walls) helps to address the concerns regarding the bedrock fracture network and how it relates to groundwater flow across the site. In preparation for the March 9 meeting, department staff reviewing the County's feasibility visited both the Seas Branch Quarry and the Gudgeon Pit Quarry on March 3, 2026 and put together a matrix which attempts to highlight areas that need additional evaluation by the County and their consultant. A copy of the matrix has been provided with this letter. The matrix includes the department's photos taken on March 3, 2026 that identify features observed by staff.

The department notes that the basis of the matrix document is the list of 'suggested information to reassess' that was prepared as part of the August 11, 2025 meeting notes that were provided to your team via email on August 27, 2025. The matrix document provides additional detail on what information has been addressed in the draft sections and what areas need additional attention. The department notes the following observations of the draft sections provided:

- Several items from the department's list of 'suggested information to reassess' were not addressed in the draft sections at all (e.g., site stability model, evaluation of core recovery in sonic borings, etc.)
- Some items from the department's list of 'suggested information to reassess' were addressed in earlier reports, but not in the draft sections (e.g., evaluate fluid loss during drilling); it is unclear to the department if the draft sections were meant to cover these omitted areas or if parts of the original report would cover these topic areas
- Observed structures at the quarries are not correlated by the County's consultant with rock borings from the landfill site
- Observed structures at the quarries were not correlated by the County's consultant with rock borings from the landfill site back to the monitorability and stability of the site
- Features observed at the quarries and discussed in the report must be well defined. For example, your images are labeled with the note 'no karst features' which the department felt was conflicting on the basis of department staff having observed karst features at the quarries themselves
 - The County's consultant noted that they considered karst to be defined as landscape features that include collapsed structures, which they did not observe at the quarries
 - The department noted that they considered karst to include the presence of dissolution features in the rock package which were very apparent at the quarries as evidenced by the photos taken by the department and included in the matrix

The department recommends to the County and their consultant that they define how they are using the term karst in their feasibility report and how they are evaluating observed site features against their definition so that there is no confusion about the interpretation of the geology at the site. Based on the regional geology, the potential for voids and/or dissolution features should be addressed with respect to the monitorability and stability of the proposed landfill site (regardless of how karst is defined).

The department reminds Vernon County that we have communicated with your team on the importance of addressing the geotechnical code requirements at this site consistently since 2022, when we issued the ISR letter. The department recognized the complex nature of the geology and hydrogeology at the landfill site early in the siting process and has continued to ask the County for a robust evaluation of the fracture network and groundwater flow as it pertains to monitorability and stability. The following list of communications each express the department's concerns about the complex geologic and hydrogeologic conditions on site; each one asking the County to work towards meeting the geotechnical code requirements of a feasibility report.

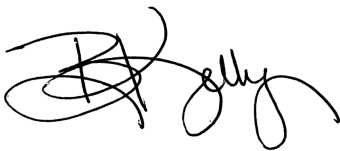
- Feb 15, 2022: Departments ISR letter to Vernon County
- March 30, 2022: AGIP approval letter
- Dec 19, 2023: First Incompleteness letter
- March 11, 2025: Second incompleteness letter
- June 3rd, 2025: DNR + Vernon County and Representatives (meeting notes)
- August 11, 2025: DNR + Vernon County Technical Assistance Meeting (meeting notes)

The department has received comments from your team stating that you are 'waiting on the DNR for a decision.' It is not typically the role of the department to direct applicants on how to conduct their feasibility investigation – it is our role to review the feasibility report and determine if it meets code requirements. Further, we have provided additional guidance on what areas of your feasibility report must be addressed for completeness but have been told that they would not provide any value. For example, your consultant has stated that it is their opinion that conducting geophysical surveys at the landfill site would not provide any value towards understanding the fracture network or monitorability and stability at the landfill site. The department is uncertain that we can provide any additional guidance beyond what we have already provided to assist you with meeting feasibility completion. The department cannot issue completeness until all of the items in the March 11, 2025 incompleteness letter have been sufficiently addressed. The department recommends that you review the correspondence listed above, as well as the matrix, as the best sources of information and guidance to assist you with completing your investigation and report.

At this time, the county has not submitted a final document for the department to respond to, and we await further direction from your team on what comes next. Any information you can provide as to an estimated timeline for your submittal of an addendum would be most appreciated. As we discussed last year after the issuance of the second incompleteness letter, the County will be invoiced for the review of any additional addendums.

If you have any questions about this letter, please feel free to call Bridget Kelly at 608-440-0448 or email at bridgetb.kelly@wisconsin.gov.

Sincerely,



Bridget Kelly
Waste Program Supervisor

Enclosures:

- 1) March 9, 2026 meeting notes
- 2) August 11, 2025 meeting notes
- 3) The matrix

CC: Mark Peters – DNR (ecopy)
Colin Maus – DNR (ecopy)
Joe Lourigan – DNR (ecopy)
Cassandra Hanan – VC (ecopy)
Lorn Goede – VC (ecopy)
Brian Kent – SEH (ecopy)
Manie Niday – SEH (ecopy)

DNR + Vernon County Technical Assistance Meeting

March 9, 2026; 1:00pm – 3:00pm

[Teams Link](#)

DNR requests attendees have cameras on for this meeting.

- Attendees
 - DNR
 - Natasha Gwidt
 - Bridget Kelly
 - Joe Lourigan
 - Colin Maus
 - Mark Peters
 - Tess Brester
 - Tyler Sullivan (notes)
 - Travis Nickel (notes)
 - John Wagner (notes)
 - Vernon County
 - Stacie Sanborn (landfill director)
 - Lorn Goede (chairman of Vernon County)
 - Cassandra Hanan (admin coordinator)
 - SEH
 - Brian Kent (Project Manager)
 - Melanie Niday (Hydrogeologist)

AGENDA

1) Air Space (Colin)

- a. Colin – talked through presentation on landfill's air space
 - i. SEH airspace survey shows approx. 18,000 cubic yards of volume remaining
 - ii. What is the practicality of filling remaining areas? And what is the approximate timeline to fill those areas? Any further updates on approx. site life? Will transfer station (once established by Vernon Cnty) extend landfill site life?
 - 1. Note that a plan mod would be necessary to place additional waste in the south/southeast portions of the landfill that are currently under intermediate cover

- iii. Stacie – Waste currently being placed in blue/purple area near southwest corner area of landfill (as depicted on figure in Colin's presentation). Once up to grade, waste will be covered, and operations will move to purple area in central-southeast area of landfill as depicted on figure (this area covered and some removal of intermediate cover may be needed)
 - 1. The next filling area would be blue/purple area on west slope of landfill. Vernon Cnty would pull back sand cover material before filling in this west slope area.
- b. Colin – Will transfer station be used to further divert waste from landfill? Does license still need to be approved? Any modifications to the transfer station building necessary?
- c. Stacie – No building modification is necessary (some arrangement but no structural work). *As of the time of these notes the license has been issued.*
 - i. Met with city of Viroqua in January regarding waste diversion (approx. 1,200 tons of waste to be diverted from landfill)
 - ii. Vernon Cnty continues working with landfill's main hauler – hauler established their own transfer station in event of landfill closure
 - iii. Vernon Cnty will be landfilling minimal waste once Vernon's transfer station approved
- d. Colin – What is a rough estimate of landfill's site life considering actions taken by Vernon Cnty?
- e. Stacie – Landfill site life likely good through 2026. The goal of Vernon Cnty transfer station is to divert everything possible until landfill expansion status is known. Minimal amt's would be placed in the landfill (anything transfer station couldn't handle – residual waste material, large bulky items, etc.).
 - i. Landfill currently accepts approx. 25-50 tons of waste daily.
 - ii. Vernon County's transfer station is currently approved to accept 50 tons of waste daily.
- f. Colin – Emphasized that even if minimal activity is occurring at landfill, DNR will still inspect the landfill. The landfill code (NR 500) and conditions of approval are still applicable and must be followed. DNR will continue to request waste surveys.
 - i. Overfilling the landfill is not an option. In general, overfilling a landfill is a significant concern to DNR. DNR knows the landfill is not currently overfilled but wants Vernon Cnty to avoid this scenario at all costs.
 - ii. There are two different ways a landfill may be considered overfilled:

1. Filling beyond the landfill's overall approved volume (excess waste would need to be removed and sent to a different landfill)
 2. Placing waste above the landfill's approved maximum waste grades (waste above max waste grades would need to be removed and placed in other sections of landfill so that no waste is above max waste grades)
- iii. All landfill regulations are still required to be followed. A few specific regulatory items were identified such as sections Nr 506.05-06, Wis. Adm. Code regarding daily and intermediate cover.
1. Daily cover code provision
 2. Intermediate code provision
 3. Condition 8 of DNR's 10/23/2025 plan approval – 120 hours of application of spray on material shall be covered by new waste placement or daily cover
 4. All areas of landfill with daily cover need to be internally draining
- g. No questions at this point from Vernon Cnty/SEH
- h. Colin - may have follow-up questions with Stacie regarding Vernon Cnty transfer station
- i. Bridget – In the event of a landfill overfill, considering the bad actor statute (section 289.34, Wis. Stats.), DNR would not be able to issue feasibility determination, and Vernon Cnty would potentially need to put up additional OFR funds
- i. Asked Vernon Cnty if that is understood- Stacie confirmed she understood
- j. Bridget – DNR was surprised to receive a copy of a memo stating Vernon Cnty landfill is overfilled. DNR received communications from community members regarding this overfill situation. Community members pointed to a community meeting where overfill situation was discussed. Community members asked DNR what actions would be taken. This situation took DNR by surprise.
- i. If landfill is ever overfilled – DNR should be contacted first.
- k. Stacie – Memo was given to infrastructure committee, then sent to DNR. Community members have been submitting open-records request to Vernon Cnty.
- l. Brian – Memo didn't state landfill was overfilled.

- m. Bridget – Disagree with Brian’s statement regarding memo and landfill overfill. Memo directly said the landfill is overfilled and waste would need to be removed from landfill. Community members took wording directly from memo and contacted DNR asking what would be done. DNR was not aware of memo.
- n. Colin – if there is an overfill situation, contact DNR first so this can be addressed. Don’t wait.
- o. Cassandra – any other components of bad actor statute that Vernon Cnty should be aware of?
- p. Colin – s. 289.34, Wis. Stats. – if facility is in noncompliance with an approved plan or order, the bad actor statute would trigger. DNR cannot issue feasibility determination or approve an operating license or any other siting documents until issue is resolved or financial assurance provided (noted that this could affect transfer station approval if landfill was overfilled)

2) Feasibility

- a. Bridget – Broadly addressed status of the feasibility report
 - i. DNR has heard externally that Vernon Cnty is waiting for DNR to make a decision on the feasibility report. DNR does not see the current situation this way and is instead waiting on Vernon Cnty to tell DNR how Vernon Cnty would like to proceed with feasibility.
 - ii. DNR has been repeating similar message to Vernon Cnty throughout the landfill siting project
 - 1. 2022 ISR Opinion Letter - DNR identified the suitability of the site’s bedrock as a possible constraint on site feasibility and listed multiple geotechnical items that should be considered and evaluated as part of the feasibility report.
 - 2. 2022 AGIP – DNR listed information to provide in feasibility report in lieu of bedrock core sampling.
 - 3. Previous feasibility incompleteness letters have addressed incomplete bedrock items.
 - 4. DNR provided August 2025 meeting notes. Karst geology and potential karst indicators were discussed. DNR noted that sufficient explanation not provided.
 - iii. Vernon Cnty attempted to meet bedrock criteria requirements with gamma logging, but the information collected was not sufficient.
 - iv. DNR is currently uncertain how to further assist. DNR continues to provide recommendations and recommendations are not taken.

- v. August 2025 Mtng notes – DNR provided a detailed list of bedrock items to evaluate. Many items not addressed in most recent draft submittal.
- vi. DNR's role is not directing or determining an applicant's path through the landfill siting process. If DNR made feasibility completeness decision today, the report would be considered incomplete.
- vii. DNR prefacing the following feasibility discussion with this information. DNR feels this is a conversation we've had before, and there is not a lot of new information to provide. DNR is not seeing that guidance provided so far is being followed.
- viii. DNR offers this info upfront as we go through the feasibility items in this meeting. DNR's perspective is that the ball is in Vernon Cnty's court
- b. Brian – Asked if DNR will be going through specific info that is missing from feasibility.
- c. Bridget – Yes. DNR took list of items shared during August 2025 meeting and determined whether information pertaining to each item is still missing from feasibility submittal.
- d. No further questions at this time from Vernon Cnty or SEH
- e. Mark - shared screen and presented an additional information matrix (three columns: 1) Suggested info to reassess per 8/11/2025 mtng, 2) Info provided in draft submittal, and 3) Suggested additional information needed
- f. Mark proceeded to talk through each item presented in the matrix
 - i. Consider review of local geology in areas near landfill where bedrock (primarily Prairie du Chien formation) is exposed.
 - 1. Vernon Cnty visited two local quarries, with some narrative and photos provided in draft submittal. However, the info provided may not be substantial enough considering it is replacing a geotechnical investigation
 - 2. DNR's suggested additional info needed:
 - a. Degree and nature of fractures observed at quarries, discussion of relative spacing and uniformity. Secondary evidence of GW seepage, such as staining on rock face (DNR noted evidence of GW seeps during DNR's winter visit to local quarry). Discussion of voids in upper portion of quarry walls and the degree and significant of those voids

3. DNR visited the same two quarries as SEH near the Vernon Cnty landfill recently (noted that Vernon Cnty and DNR visited quarry during different seasons of year, which may account for some visual differences). Matrix includes some pictures w/ annotations from DNR's visit. Some observations from DNR's quarry visit and items for Vernon Cnty to consider:
 - a. Cavities/voids observed in upper part of Prairie du Chien - how does this relate to landfill?
 - b. Frozen water observed in discreet locations – what's the significance of this relative to the landfill?
 - c. Large cave-like structure at Seas Branch quarry – how does this correlate or not correlate with rock borings at landfill site?
 4. General question for Vernon Cnty to consider as they prepare future submittal: what would you see in a karst environment and what are you seeing at the landfill site?
 5. Bridget – the Draft submittal from SEH said no karst observed, but DNR's observations don't reflect that conclusion. DNR saw karst indicators during its site visit. If karst indicators are observed, the feasibility report shouldn't deny that they exist. Instead, acknowledge and explain how it would affect landfill and monitorability.
 6. Melanie – Karst is a topography, rather than individual features. When evaluating local geology during quarry visits, SEH was primarily looking for collapsed features. SEH can go through wording in draft submittal and re-evaluate how it's being used. Reiterated that karst is a landscape feature, rather than individual features. Noted that DNR's point is taken about existing wording in draft submittal and addressing karst items in future submittals.
 7. Mark – SEH's definition of Karst should be explained in feasibility submittal. DNR (and community members) may be using a different definition for karst; all parties involved may be talking about different things and evaluating differently.
- ii. (Mark moved on to next discussion item in matrix) Stability and monitorability of site.

1. There have been some bit drops and small voids observed at landfill site. Is the site stable enough to support a landfill expansion?
 2. DNR's suggested additional info needed:
 - a. complete quantitative or qualitative assessment of stability of formations underlying proposed footprint.
This info was not provided in draft submittal.
 3. Brian – items on stability haven't been provided yet. Final feasibility addendum will provide more substantial additional information on site stability. The draft submittal primarily addressed geology and hydrogeology.
- iii. (Mark moved on to next discussion item in matrix) Evaluation of core recovery in sonic boreholes
1. This info was not provided in draft submittal.
 2. DNR's suggested additional info needed:
 - a. Tabulate or discuss in narrative recoveries in sonic boreholes, noting gaps or lack of gaps within the boreholes.
- iv. (Mark moved on to next discussion item in matrix) Evaluation of gradient flow from perched to regional aquifer (assess presence of fractures)
1. Draft submittal provided discussion on how transition to sandstone aids uniform dissipation of groundwater in the area where the perched aquifer discharges to the regional aquifer. Also includes discussion of horizontal gradients in perched and regional aquifers.
 2. DNR's suggested additional info needed:
 - a. Focus on gradient flow throughout the transition area, and the behavior of flow in the fractured dolomite (which must be present or there would be no groundwater flow within the dolomite). Expectations of non-uniform flow (water table losses, fingering of groundwater table contours) in karst-dominated flow and whether those conditions are seen at the site.
- v. (Mark moved on to next discussion item in matrix) – Evaluation of how heterogeneities, such as facies change to sandier formations to east, affect groundwater flow (if any)

1. Draft submittal provided discussion of facies change to east of proposed expansion area and characteristics of sandstone aquifer.
 2. DNR's suggested additional info needed:
 - a. See prior gradient flow item (2.f.iv) – evaluate degree of uniformity of flow across facies change
- vi. (Mark moved on to next discussion item in matrix) Evaluate fluid loss during drilling
1. No info provided in draft submittal
 2. DNR's suggested additional info needed:
 - a. Expand on degree of fluid loss (or lack thereof) during drilling and how it compares to what might be expected in karstic conditions
- vii. (Mark moved on to next discussion item in matrix) Reassess any bit drops that may have occurred
1. No info provided in draft submittal
 2. DNR's suggested additional info needed:
 - a. Tabulation or narrative of bit drops encountered and the significance of those drops with respect to site monitorability and stability. Could compare recovery data requested above with degree/lack of bit drops to correlate degree or lack of expected voids.
- viii. (Mark moved on to next discussion item in matrix) Consider review of local geology
1. This item was discussed earlier in meeting (Item 2.f.i.)
 2. Mark reiterated that quarry photos and how quarry observations correlate to landfill site should be re-evaluated. DNR's interpretation is quarry observations correlate fairly well.
- ix. (Mark moved on to next discussion item in matrix) Consider calibrating groundwater contours to local surface water. May help enhance understanding of local flow.
1. No info provided in draft submittal
 2. DNR's suggested additional info needed:
 - a. Consider brief narrative of correlation of regional water table elevations to nearby surface water and/or observations on quarry faces.

- x. (Mark moved on to next discussion item in matrix) Based on available information, can the inferred groundwater contours be extended out around the ridge the landfill sits on and sensibly tied into the surface water elevations?
 - 1. No info provided in draft submittal
 - 2. DNR's suggested additional info needed:
 - a. Consider similar narrative as item 2.f.ix.
- xi. (Mark moved on to next discussion item in matrix) Do contour lines for perched and regional aquifers (as shown by SEH) make sense? Also, small, interconnected fractures could lend to a gradient flow system.
 - 1. Draft submittal included some discussion of perched and regional aquifer flow lines and horizontal gradients.
 - 2. DNR's suggested additional info needed:
 - a. Nature of what is observed in flow versus what might be expected in a karst environment.
- xii. (Mark moved on to next discussion item in matrix) A karst aquifer would potentially show concentric circles, fingering of contours, etc. where water loss or rapid movement is occurring because of voids and unmeasurable high hydraulic conductivities. Are the groundwater contours displaying these types of orientation?
 - 1. No info provided in draft submittal
 - 2. DNR's suggested additional info needed:
 - a. Consider adding this discussion.
- g. Mark moved on to next section of the matrix. This section of the matrix contains additional notes for Vernon Cnty based on DNR's review of the draft submittal. DNR suggests that Vernon Cnty consider adding discussion of each item to the final submittal. Mark proceeded to talk through each item.
 - i. Is there physical evidence indicating the bedrock system primarily consists of small, interconnected fractures, rather than large, unconnected fractures or voids?
 - ii. (Mark moved on to next discussion item in matrix) Hydraulic conductivities were generally determined from slug tests. 1988 slug test results appear to be biased low due to older measurement technique (water level meter/stopwatch) and quick recovery. Consider doing new slug tests with pressure transducers or some pumping tests to check hydraulic conductivities and how well interconnected the fractures are.

1. Mark - performing new slug tests (to replace 1988 slug tests) may change some findings in the feasibility report
 2. Melanie – The well depths, combined with dedicated pumps in wells, may make it difficult to perform slug tests.
- iii. (Mark moved on to next discussion item in matrix) All subtitle D wells should be identified during feasibility and relevant baseline monitoring completed.
 1. Mark – reiterate that this needs to be completed during feasibility process, not plan of operation.
 2. Melanie – baseline monitoring has been completed since draft submittal
- iv. (Mark moved on to next discussion item in matrix) Review needs and site life and update as needed. Are there overlaps of other landfills to service area? Are there permanent changes to contracts that would affect needs and site life calcs
 1. Mark - it's been approx. 2.5 years since initial submittal of feasibility. Some aspects of needs and site life evaluation may have changed.
- v. (Mark moved on to next discussion item in matrix) Reminder to include exemption request for ES exceedances and corresponding cause and significant of exceedance
 1. Mark - recent benzene groundwater exceedance would need to be addressed in feasibility
 2. Joe – consider follow-up sample data. If no further benzene exceedances in follow-up sample data, Vernon Cnty may explain how the exceedance was potentially an artifact of drilling and exemption isn't warranted
 3. Brian – benzene not detected in follow-up samples
 4. Mark – submittal should address the follow-up sample results for benzene
 5. Melanie – additional baseline sampling has been completed
 6. Mark – original discussion didn't elaborate on cause or significance
- h. Melanie – appreciates Mark's walkthrough of geologic talking points to make sure everyone's on the same page
- i. Melanie – reiterated that slug tests not performed in some wells due to concern of pulling well pumps and depths of wells

- j. Joe – Strong chance that a contested case hearing will be requested.
Concerns may be related to geological observations at quarries. Be prepared to address concerns such as this if DNR determines feasibility is complete.
- k. Bridget – Quarry visits were conducted by Vernon Cnty to meet geotechnical code requirements in lieu of collecting additional geotechnical info. The feasibility's narrative discussion on geology, karst indicators, and what they mean for landfill needs to be exceptionally robust in order to meet the criteria and be used in lieu of collecting additional geophysical information.
- l. Melanie – Geophysical analyses need to be confirmed with observations. SEH sees little value in utilizing geophysics in this geologic environment. SEH understands that DNR needs to see that geological/geotechnical code requirements are met. SEH will amend how these items are addressed and presented in final submittal.
- m. Brian – Message from DNR is clear that geology discussion needs to be robust for DNR to accept in lieu of collecting additional geotechnical info. Point taken.
- n. Bridget – Karst indicators may or may not be at the landfill site. If present, evaluate how this may affect the landfill and if it matters.
 - i. SEH - understood
- o. Bridget – Any additional questions regarding needs or site life analysis?
 - i. Brian – Need to revisit site life calculations. Assuming SEH doesn't have to make revisions based on landfill's current need to divert waste, but rather what waste would be received if expansion occurred?
 - ii. Joe – Revisions would be based on any permanent changes since original feasibility submittal that may affect needs and site life. For example – has a competing landfill's service area changed resulting in an overlap with Vernon Cnty's service area (waste now being drawn from Vernon Cnty service area that wasn't previously)? Needs and site life may be a contentious point during comment period.
 - iii. Brian/Stacie – contracts are hard to acquire currently with landfill's future uncertain, so some aspects of needs and site life may be difficult to evaluate.
 - iv. Joe – Understood that it's difficult to quantify in some situations. Focusing on historical perspective would help in that effort. Ultimately comes down to economics. A landfill that's nearby will generally be cheaper for waste disposal than another located farther away.

3) Next Steps and Adjourn (All)

- a. Bridget – Estimated timeline on submitting final addendum?
 - i. Brian – ASAP. Need additional internal discussions. Once SEH receives additional info from Vernon Cnty then SEH will know how to proceed.
 - ii. Bridget – Updating DNR on anticipated submittal timing helps with work planning.
- b. Brian – Can Mark provide a copy of matrix spreadsheet he shared during meeting?
 - i. Mark – yes, will attach to meeting notes.
- c. No additional questions or concerns. Adjourn.

DATE: 08/26/2025 FILE REF: Vernon County Landfill Lic #3268

TO: Vernon County Landfill and Representatives

FROM: Department of Natural Resources; Bridget Kelly – Waste Program Supervisor

SUBJECT: DNR + Vernon County Meeting to Discuss Outstanding Feasibility Items

On August 11, 2025, the Wisconsin Department of Natural Resources (department) met with Vernon County (County) representatives to discuss the status of the County's landfill feasibility. The meeting was held virtually over Teams. Meeting attendees are noted below.

Attendees:

DNR

- Colin Maus
- Mark Peters
- Bridget Kelly
- Joe Lourigan
- Tyler Sullivan (taking notes)

Vernon County

- Stacie Sanborn (Landfill Director)
- Lorn Goede (Vernon County Chairman)
- Cassandra Hanan (Admin Coordinator)

SEH

- Brian Kent (Project Manager)
- Melanie Niday (Hydrogeologist)
- Aaron Kutz (Field [Hydro]geologist)

Introduction

DNR started the meeting by stating that it is not their intention to go through every single incompleteness item from the second-round incompleteness letter – today's items are highlights. Any incompleteness items from department's incompleteness letter not discussed in today's meeting are still applicable

Vernon County/SEH's summary of field work completed in April and big take aways (SEH/Vernon County)

- SEH's field work involved drilling further east from line of existing wells
- SEH shared multiple figures with updated geotechnical information at the proposed expansion site (well location map, top of bedrock surface, sandstone isopach map, geologic cross-section)
- SEH shared multiple pictures of borings from 2025, Prairie du Chien (PdC) formation dolomite from various borings at various depths
 - SEH noted that boring material color is very distinct – color noticeably changes as you travel east and sand/sandstone becomes more prevalent.
 - MW-20 boring – all sandstone
 - SEH contacted Tony Runkel from Minnesota Geological Survey about the site and presence of sandstone. Runkel referred SEH to Dave Hart at Wisconsin geological Natural History Survey (WGNHS). SEH has not had a chance to speak with WGNHS.

- SEH shared “Bedrock Stratigraphic Units of Wisconsin” figure
 - SEH suspects that the sandstone observed in 2025 borings may be St. Peter formation sandstone. SEH formerly suspected that similar material observed on eastern side of site during previous drilling activities was weathered PdC formation dolomite.
- SEH shared a top-of-PdC-bedrock surface figure
 - PdC drops significantly to the east, with an additional valley in southern portion of site
- SEH shared an isopach map depicting sandstone thickness
 - Lateral change in geology in SE corner of site, where sandstone thickens
- SEH shared a geologic cross section-oriented W-E, noted that the figure is still a work in progress
 - Cross-section depicted sandstone thickening on east side of site
 - MW-20 well nest (WT and PZ) – MW-20WT well screened in perched water table
 - SEH used sonic drilling to avoid using drilling mud/fluid and minimize effects on perched water table
 - MW-20 (PZ) – deeper boring was drilled first to better identify perched and regional water table. Increased moisture was noted at about 46 ft bgs.
 - MW-20WT – drilled to 55 ft, set temp well screen overnight. SEH came out next day and water had stabilized at 46 ft. MW-20WT screen set at perched water table at 46 ft bgs
 - SEH noted that a temp well screen also used overnight in MW-20 before setting well screen for regional water table
 - MW-20WT – pre-development water table was at about 43 ft bgs
 - SEH noted that when sampling, MW-20WT is purged dry – obtaining a groundwater quality sample then becomes difficult. Water level can be sustained, but sampling is difficult after purging.
- SEH shared updated groundwater flow maps
 - similar to previous GW flow maps, but a broad dashed line has been added (“inferred boundary for sustainable perched groundwater system”) on east side of site on WT map
 - MW-15WT – had water when initially set, now is consistently dry.
 - Updated regional groundwater map (no date for water level readings)
 - In regional system, MW-20 shows highest water level.
 - Similar to previous flow figure(s), but more data points with additional wells
 - SEH has collected additional water quality samples as well, this would be discussed in 2nd addendum.
- Mark P – Is SEH seeing any geological separation in borings at/near MW-20?
 - SEH – no, however there is some variability in coloring. Seeing water level around 46 ft bgs. SEH suspects groundwater may be leaving one hydrogeologic unit and entering a unit that is more uniform. Seeing some consistency in water level readings in MW-20WT.
- Mark P – Has SEH observed any evidence of groundwater discharge points at a similar elevation of bedrock surface valley depicted on eastern side of site (as shown on figures presented)?
 - SEH – No. The eastern side of the site is heavily wooded. Also, there is a large difference between bedrock surface elevations and water level elevations measured in wells (water level deeper than bedrock). No GW seeps observed.
- SEH - DNR has previously stated that site monitorability is a concern; SEH believed the memo from WGNHS addresses that concern.
 - SEH also stated that 2025 drilling confirms findings for regional groundwater system. Recent drilling also clarifies the behavior of the perched system.
 - Mark P – Noted that it’s difficult for department to make conclusions based on preliminary figures shared during meeting. In future addendum, the department must see evidence that any leachate leaving the landfill (and entering GW) could be captured by the proposed expansion’s monitoring network. GW flow should be defined such that there are no questions about where GW is flowing in the area surrounding the landfill. If there was a theoretical leachate release, where would it flow? One area of particular interest is the GW mound to the east of the proposed expansion; would GW contaminants be able to travel beyond the GW mound? Items such as that must be addressed in addendum.
 - SEH noted that the perched GW system appears to end in SE corner of site, and that MW-20WT may serve as a sentinel well

- Mark P – GW goes from perched into regional system in SE corner of site. DNR needs to know that the regional system is well defined enough that any potential contaminants from the landfill could be detected in GW monitoring system. The area near MW-19 is a concern, as contaminants may flow south of MW-19 beyond existing GW monitoring network.
 - SEH – A new well could potentially be installed south of MW-19. That well would likely show flow back to the north/northeast
 - Mark P reiterated that anything flowing from landfill and/or proposed expansion must be captured by monitoring network. The department can't work off assumptions about what may be happening south of MW-19. The mapped GW flow at the proposed expansion has changed as new hydrogeologic info is gained through additional well installations
 - Brian K – Some Flow at MW-19 may be going towards to the south
 - SEH will look at MW-10, 11, and -12 well nest (near MW-19) and evaluate GW flow in that area.
- **Discussion of information from WGNHS**
 - DNR met with WGNHS to discuss geology at proposed expansion site. A memo was created by WGNHS and shared with the department. The department previously shared this memo with Vernon Cty/SEH.
 - Mark P - WGNHS confirmed:
 - wire line coring less feasible at this site due to voids and potential for incomplete recoveries
 - Downhole geophysics is feasible which would've been useful in meeting code requirements to define fracture zones
 - An additional well nest to east of the proposed expansion would better define regional aquifer.
 - Concluded that attempting to identify GW discharge points in drainages and area surrounding landfill would be valuable.
 - Also, observing bedrock at nearby quarries where PdC is visible could corroborate what is found at Vernon Cty site.
 - The department intends to include findings from WGNHS memo in its Environmental Analysis of feasibility completeness. SEH is also free to utilize information from the WGNHS memo in their addendum.
 - SEH - One takeaway from memo is that WGNHS concurred that gradient flow is present at the proposed expansion site and that GW can be monitored.
 - Mark P – WGNHS memo confirms that GW can be monitored in the sense that the site's geology is a gradient flow (and not fracture flow) environment. WGNHS is not concluding that the current monitoring network is complete.
 - SEH– another takeaway from memo is there is no evidence of karst at proposed expansion site
 - Mark P disagreed. The memo states that there is a potential for karst at the proposed expansion site, but it may not affect site stability/monitorability in a significant way. SEH would need to further demonstrate that in an addendum.
 - Bridget – WGNHS' terminology is different than ours. WGNHS used terms such as “poorly developed karst features”, which have less potential to affect the proposed expansion site. Writing in addendum that karst isn't present at the proposed expansion site wouldn't be accurate - WGNHS confirmed that. Karst is present but it may not affect the landfill in a significant way that would impact the site's monitorability and stability.
 - Joe summarized WGNHS' position - Karst is a type of landscape, not a specific feature. Based on drilling, while karst indicators are present, the degree may not be enough to affect the site's stability and monitorability in a significant way.
 - SEH (Melanie) - agrees with WGNHS' conclusion. Some individual features, but not significant enough to affect site's monitorability and stability. Suspects sandstone is playing an important role in hydrogeology and may be causing some of the behaviors seen on regional/water table maps.

- General discussion around identifying karst and its impacts is challenging. Karst's perception is also challenging (presence of caves and caverns, sinkholes, etc., vs smaller features, and what do any present features mean for the site, pseudokarst, etc.)
- Monitorability and stability is key – document what is observed, and what its impacts are on the site's monitorability and stability. DNR is less concerned on the word “karst” and more focused on the degree and significance of any present features – what is their applicability to the site's monitorability and stability?
- DNR recommends avoiding the term pseudokarst; it causes confusion and is poorly understood. Stick with karst. Karst isn't an automatic deal-breaker; The question related to karst is what is its degree and significance to the landfill? Are the properties (i.e., dissolution cavities in carbonate bedrock) that cause karst, significant enough at the site to interfere with site stability and monitorability?
- SEH – Wanted clarification that karst isn't something that SEH needs to further investigate/identify where it may or may not be present at the proposed expansion site. Do more borings need to be drilled? Is the current information sufficient?
 - Mark P – this leads into next agenda item
- **Discussion on geotechnical code requirements**
 - Mark P – Department cannot make guarantees at this point regarding a feasibility completeness determination; a completeness determination would be based off information presented in an addendum. However, in absence of additional geophysical work, the department *may* be able to state that with additional work completed by SEH in 2025, the existing information is sufficient. But first, department must gain clarity on the proposed expansion's multi-aquifer system.
 - Mark P – Assumptions the DNR is working under in developing these potential additional items.
 - Assumption 1- “aquifer is not homogeneous and isotropic” – DNR needs clarity on multi-aquifer system
 - Assumption 2- In the absence of data showing otherwise, assume bedrock in cored areas has fractures and possibly small voids.
 - Assumption 3- A conservative assumption is that the aquifer is not in a less fractured area of the PdC, and that the presence of an aquitard below cannot be assumed.
 - Existing information to reassess
 - site's stability w/ qualified (civil or geotechnical) engineer - qualitative assessment is good, if a simple qualitative model is available, it would be better
 - Evaluation of core recovery in sonic boreholes
 - Evaluation of gradient flow from perched to regional aquifer (assess presence of fractures)
 - Evaluation of how heterogeneities, such as facies change to sandier formations to east, affect groundwater flow (if any)
 - Evaluate fluid loss during drilling
 - Reassess any bit drops that may have occurred
 - Consider review of local geology (county owned property to SE of landfill (soil borrow location – North N Asbury Rd)) - shallower portions of PdC exposed, privately owned Milestone quarry near Vernon Cty landfill)
 - Consider calibrating groundwater contours to local surface water. May help enhance understanding of local flow (WGNHS idea - assess local surface water flow in nearby Seas Branch with what's known in GW system to corroborate flow)
 - Based on the available information, can the inferred groundwater contours be extended out around the ridge the landfill sits on and sensibly tied into the surface water elevations?
 - Do contour lines for perched and regional aquifers (as shown by SEH) make sense? Also, small, interconnected fractures could lend to a gradient flow system.
 - A karst aquifer would potentially show concentric circles, fingering of contours, etc. where water loss or rapid movement is occurring because

- of voids and unmeasurable high hydraulic conductivities. Are the groundwater contours displaying these types of orientation?
 - Is there physical evidence indicating the bedrock system primarily consists of small, interconnected fractures, rather than large, unconnected fractures or voids?
 - General theme – in areas where karst indicators show up, something in narrative should address why their presence is not an issue for proposed expansion's stability and monitorability
 - SEH stated that having meeting notes from the department would be helpful when creating addendum
 - General discussion around SEH/Vernon Cty visiting local quarries to supplement field investigation information
 - Milestone quarry (referenced by WGNHS)
 - Vernon Cty mentioned a Yahara quarry
 - SEH identified Seas quarry north of the landfill (unknown bedrock elevations – SEH shared street view of quarry via Google Earth)
 - SEH also identified Gudgeon quarry to the south of the landfill
 - Bridget – Geotechnical code requirements for feasibility have not been met without drilling of another borehole. It is not the department's intention to request SEH drill additional borings, but the department will need to discuss more internally whether additional borings are needed based on the information presented today. The department would consider accepting information provided that addresses the items Mark presented above as an alternative to additional boring drilling and geophysical work, to satisfy the outstanding geological items discussed in second incompleteness letter. The department is also open to considering any additional information SEH may present.
 - Mark P – Reiterated that SEH take a closer look at area near MW-19 to see if information gained to date is sufficient enough to address flow of contaminants in SE area of site
 - SEH believes that looking at MW-10, 11, and 12 may help define flow in that area
 - Department is happy to have another technical meeting with SEH/Vernon Cty before addendum submittal.
 - Bridget asked if SEH wanted more discussion on site stability topic from WGNHS memo
 - SEH said no, Mark explained the requirements clearly
 - Bridget asked if there were any additional questions on geological items?
 - Joe – any amended GW contour plan sheets, etc., in addendum should be presented in the main plan sheets, not in an appendix.
 - Joe – With new well MW-20, is SEH revising cross sections in that area?
 - SEH - Yes, cross sections are being revised in those areas
- **Outstanding items in feasibility report (e.g., engineering items, cross sections, plan sheets, etc.)**
 - Colin M – Incomplete engineering items would primarily be addressed by providing additional narrative. Items included but not limited to: sequencing, constructability, access on east side of site w/out perimeter road if there were ever issues in the future (seeps, gas maintenance), total length of road, etc.
 - SEH – Items will be addressed narratively, many of these engineering items are further developed in Plan of Op
 - Colin M – Agreed with SEH, the items don't necessarily need to be fully designed at the feasibility level. However, the department needs to look at certain design considerations at the feasibility level to ensure the proposed expansion is feasible.
- **Next steps and adjourn**
 - Addendum submittal date?
 - SEH needs to discuss internally if the current level of geotechnical info is sufficient to address department's needs.
 - SEH – one month (from meeting time) may be possible for addendum submittal. SEH needs to further evaluate existing information and other logistics (such as quarry site visit). Meeting notes will be helpful in determining what information is still needed and whether SEH's existing information is sufficient
 - Bridget – Department will provide meeting minutes within a week or so

- Bridget reiterated that department is willing to have another technical meeting with SEH/Vernon Cty if needed/desired.
- Meeting ended.

Vernon County Feasibility Additional Information Matrix

Suggested information item to reassess per 8/11/2025 Meeting	Information provided in Draft Submittal	Suggested additional information needed
Site's stability w/ qualified (civil or geotechnical) engineer - qualitative assessment is good, if a simple qualitative model is available, it would be better	None	Complete quantitative or qualitative assessment of stability of formations underlying the proposed landfill footprint.
Evaluation of core recovery in sonic boreholes	None	Tabulate or discuss in narrative recoveries in sonic boreholes, noting gaps or lack of gaps within the boreholes.
Evaluation of gradient flow from perched to regional aquifer (assess presence of fractures)	Discussion of how transition to sandstone aids uniform dissipation of groundwater in the area where the perched aquifer discharges to the regional aquifer. Discussion of horizontal gradients in perched and regional aquifers.	Focus on gradient flow throughout the transition area, and the behavior of flow in the fractured dolomite (which must be present or there would be no groundwater flow within the dolomite). Expectations of non-uniform flow (water table losses, fingering of groundwater table contours) in karst-dominated flow and whether those conditions are seen at the site.
Evaluation of how heterogeneities, such as facies change to sandier formations to east, affect groundwater flow (if any)	Discussion of facies change to east of proposed expansion area, characteristics of sandstone aquifer.	See above- degree of uniformity of flow across facies change.
Evaluate fluid loss during drilling	None in draft addendum (brief discussion in earlier reports)	Expand on degree of fluid loss (or lack thereof) during drilling and how it compares to what might be expected in karstic conditions.
Reassess any bit drops that may have occurred	None in draft addendum (brief discussion in earlier reports)	Tabulation or narrative of bit drops encountered and the significance of those drops with respect to site monitorability and stability. Could compare recovery data requested above with degree/lack of bit drops to correlate degree or lack of expected voids.
Consider review of local geology (county owned property to SE of landfill (soil borrow location – North N Asbury Rd)) - shallower portions of PdC exposed, privately owned Milestone quarry near Vernon Cty landfill)	Visits conducted to two local quarries and annotated photos provided in draft submittal. Narrative description of quarry observations.	Degree and nature of fractures observed at the quarries, discussion of relative spacing and uniformity. Secondary evidence of groundwater seepage, such as staining on the rock face (direct evidence of groundwater seeps were noted during department's winter site visit). Discussion of voids in upper portion of quarry walls and the degree of significance of those voids (i.e. whether they are above or below groundwater table and therefore likelihood they would affect groundwater flow.
Consider calibrating groundwater contours to local surface water. May help enhance understanding of local flow (WGNHS idea - assess local surface water flow in nearby Seas Branch with what's known in GW system to corroborate flow)	None	Consider brief narrative of correlation of regional water table elevations to nearby surface water and/or observations on quarry faces.
Based on the available information, can the inferred groundwater contours be extended out around the ridge the landfill sits on and sensibly tied into the surface water elevations?	None	Consider narrative as above.
Do contour lines for perched and regional aquifers (as shown by SEH) make sense? Also, small, interconnected fractures could lend to a gradient flow system.	Discussion of perched and regional aquifer flow lines and horizontal gradients.	Nature of what is observed in flow versus what might be expected in a karst environment.

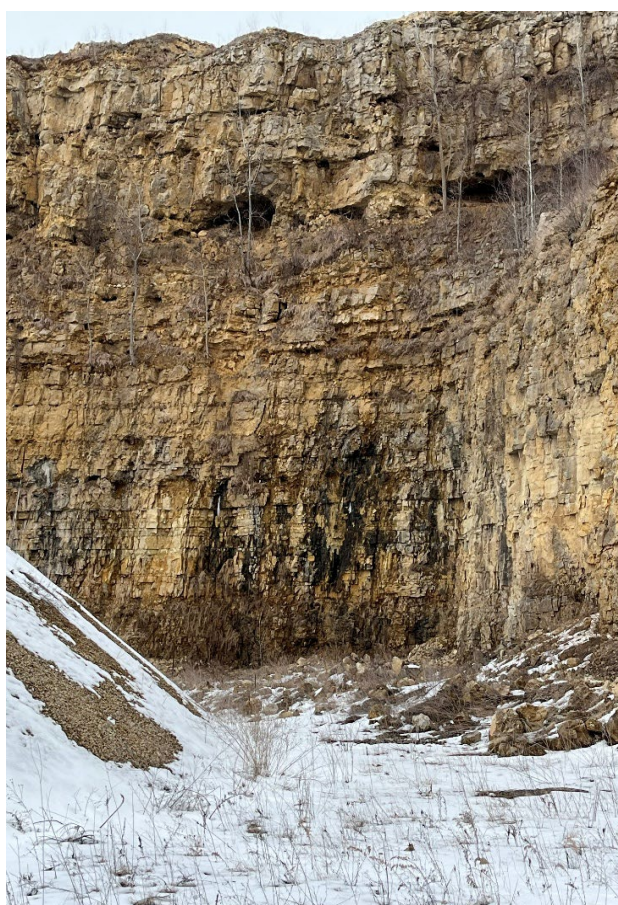
A karst aquifer would potentially show concentric circles, fingering of contours, etc. where water loss or rapid movement is occurring because of voids and unmeasurable high hydraulic conductivities. Are the groundwater contours displaying these types of orientation?		None	Consider adding this discussion.
Additional Notes			
Is there physical evidence indicating the bedrock system primarily consists of small, interconnected fractures, rather than large, unconnected fractures or voids?			Consider adding this discussion.
Hydraulic conductivities were generally determined from slug tests. 1988 slug test results appear to be biased low due to older measurement technique (WL meter/stopwatch) and quick recovery. Consider doing new slug tests with pressure transducers or some pumping tests to check hydraulic conductivities and how well interconnected the fractures are.			Consider adding this discussion.
All Subtitle D wells should be indentified during feasibility and relevant basline monitoring completed.			Consider adding this discussion.
Review needs and site life and update as needed. Are there overlaps of other landfills to service area? Are there permanent changes to contracts that would affect needs and site life calculations.			Consider adding this discussion.
Reminder to include expemption requests for ES exceedances and corresponding cause and significance of exceedancee.			Consider adding this discussion.



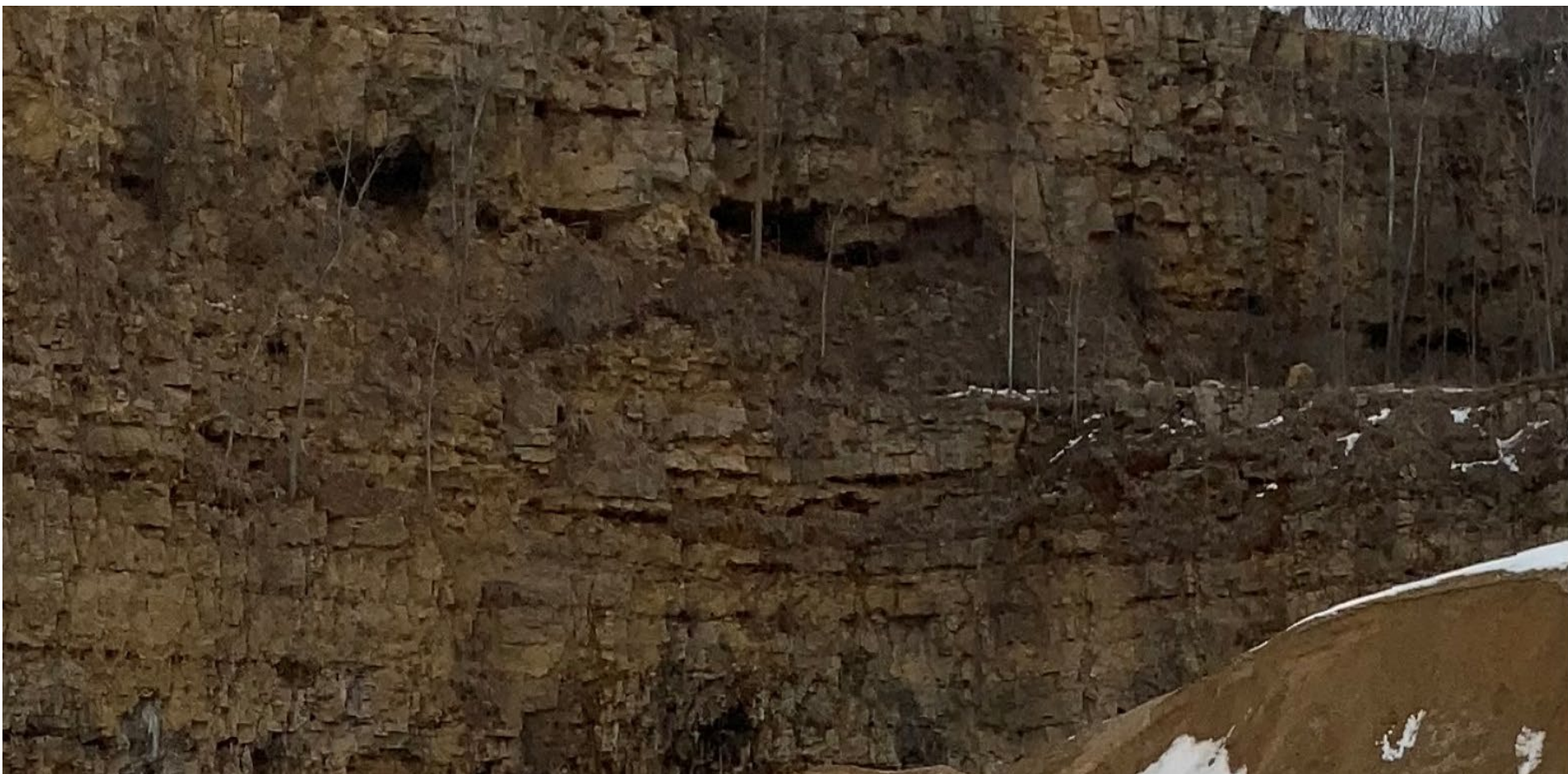
Large cave like structure observed at the Seas Branch Quarry. How does this observed structure correlate or not correlate with the rock borings at the landfill site?



Frozen water observed at discreet locations in the rock at Seas Branch Quarry. What is the significance of this as it relates to the landfill site?

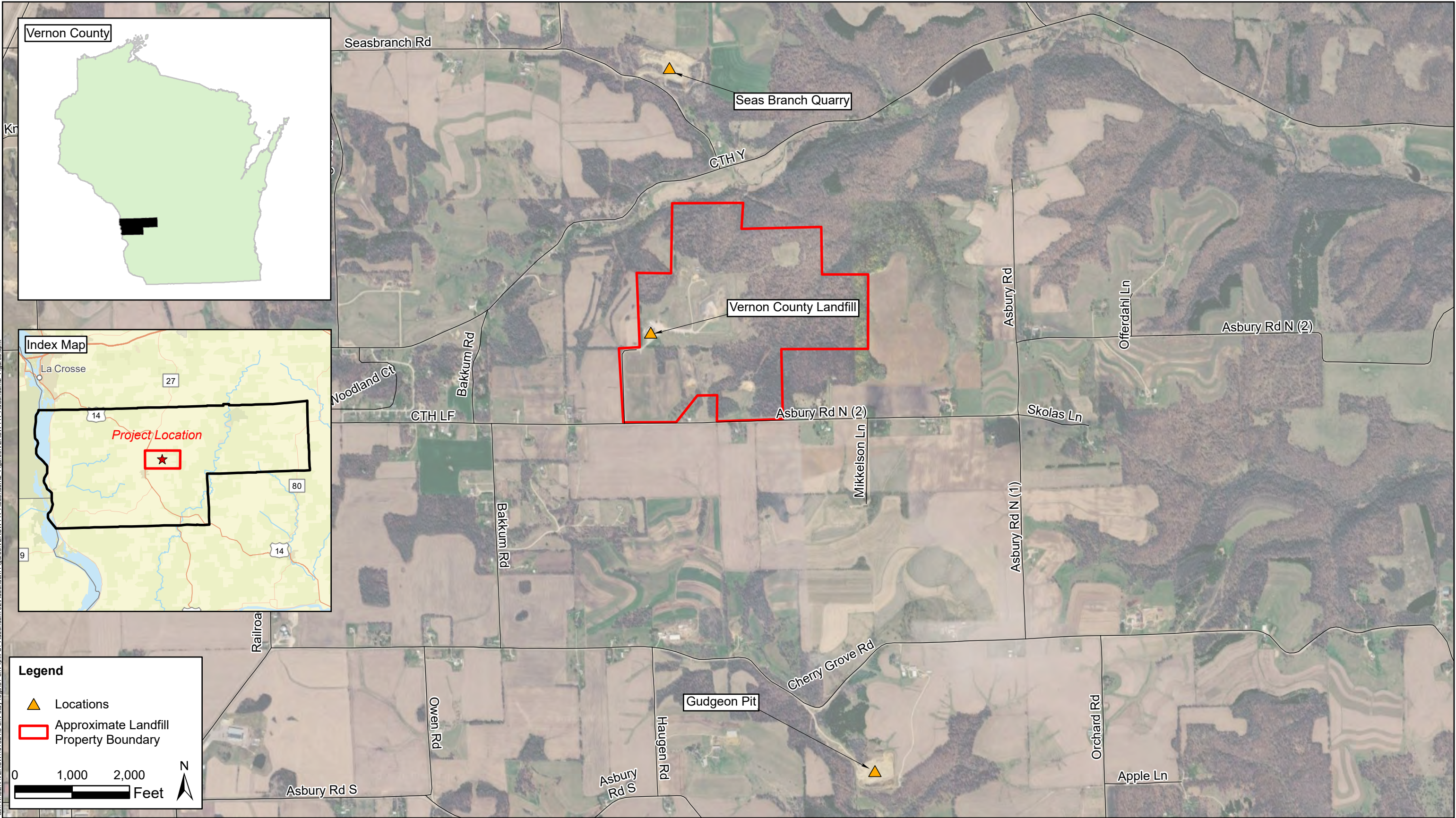


Cavities or voids observed in the upper part of the Praire du Chien. How does this relate to the landfill site?



Appendix E

Quarry Evaluation



	3535 VADNAIS CENTER DR. ST. PAUL, MN 55110 PHONE: (651) 490-2000 FAX: (888) 908-8166 TF: (800) 325-2055 www.sehinc.com	Project: VERSW 167824 Print Date: 5/12/2026
	Map Created By: jerickson Projection: NAD 1983 UTM Zone 15N Source: SEH, Wisconsin DOT, Vernon County	

Project Location

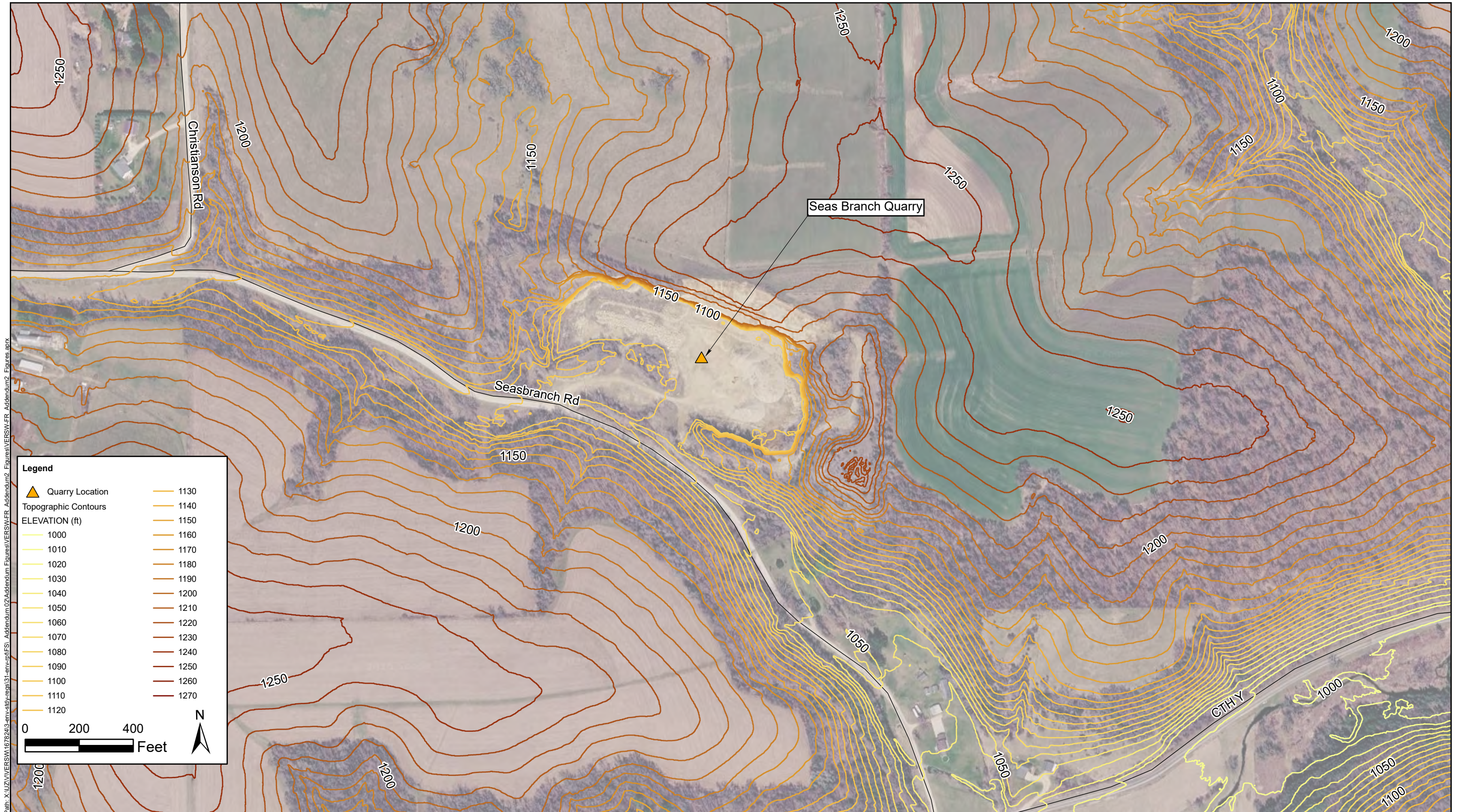
Vernon County Landfill

Feasibility Report Addendum 02 - Proposed Eastern Expansion

Viroqua, Wisconsin

Figure
1

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.



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Legend
▲ Quarry Location
Topographic Contours
ELEVATION (ft)
1000
1010
1020
1030
1040
1050
1060
1070
1080
1090
1100
1110
1120
1130
1140
1150
1160
1170
1180
1190
1200
1210
1220
1230
1240
1250
1260
1270

0 200 400 Feet

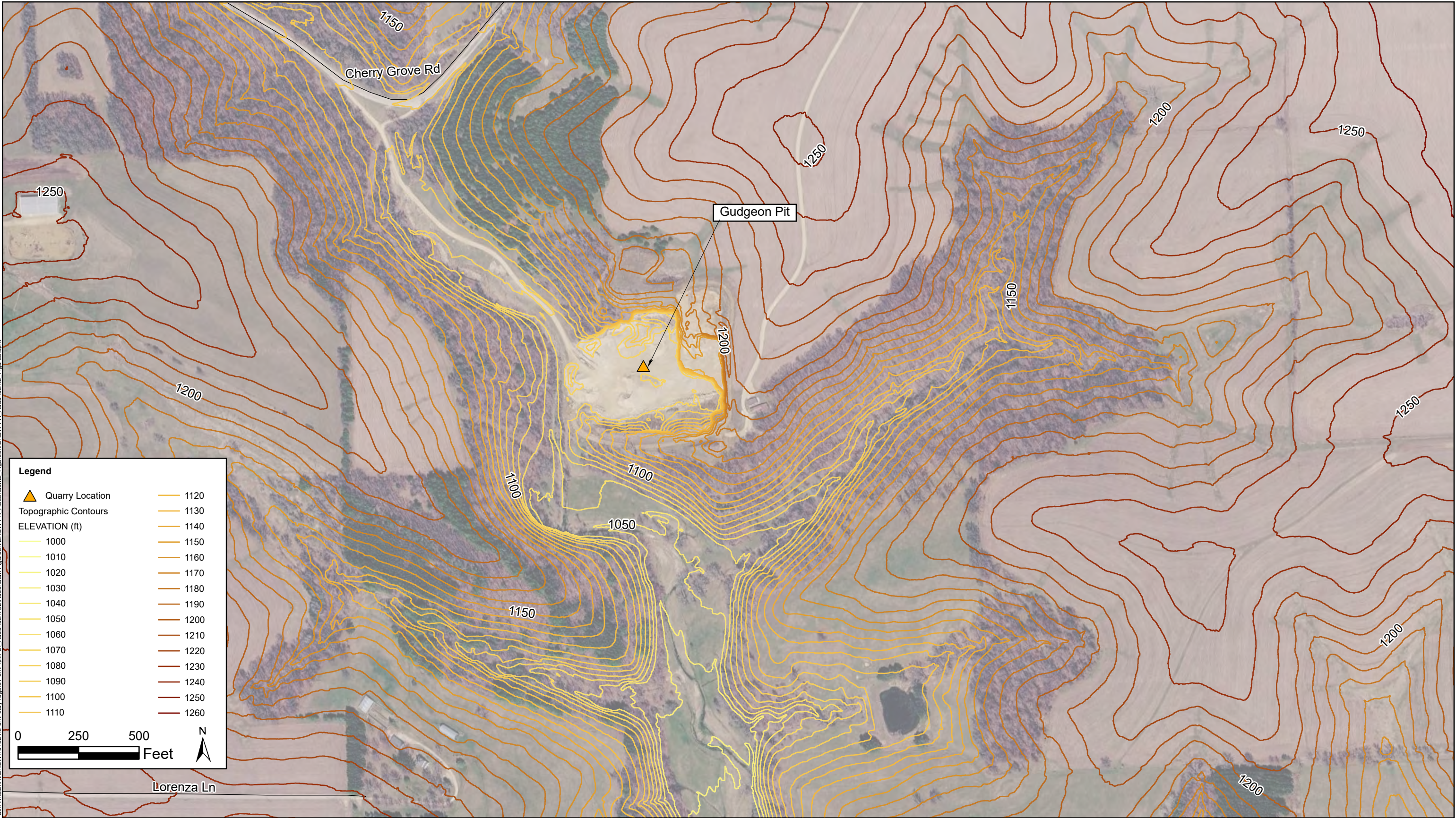
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Project: VERSW 167824
Print Date: 5/12/2026

Map Created By: jerickson
Projection: NAD 1983 UTM Zone 15N
Source: SEH, Wisconsin DOT,
Vernon County

Seas Branch Quarry
Vernon County Landfill
Feasibility Report Addendum 02 - Proposed Eastern Expansion
Viroqua, Wisconsin

Figure
2



Legend

▲ Quarry Location

Topographic Contours

ELEVATION (ft)

1000	1120
1010	1130
1020	1140
1030	1150
1040	1160
1050	1170
1060	1180
1070	1190
1080	1200
1090	1210
1100	1220
1110	1230
	1240
	1250
	1260

0 250 500 Feet

N

	3535 VADNAIS CENTER DR. ST. PAUL, MN 55110 PHONE: (651) 490-2000 FAX: (888) 908-8166 TF: (800) 325-2055 www.sehinc.com	Project: VERSW 167824 Print Date: 5/12/2026 Map Created By: jerickson Projection: NAD 1983 UTM Zone 15N Source: SEH, Wisconsin DOT, Vernon County	Gudgeon Pit Vernon County Landfill Feasibility Report Addendum 02 - Proposed Eastern Expansion Viroqua, Wisconsin	Figure 3
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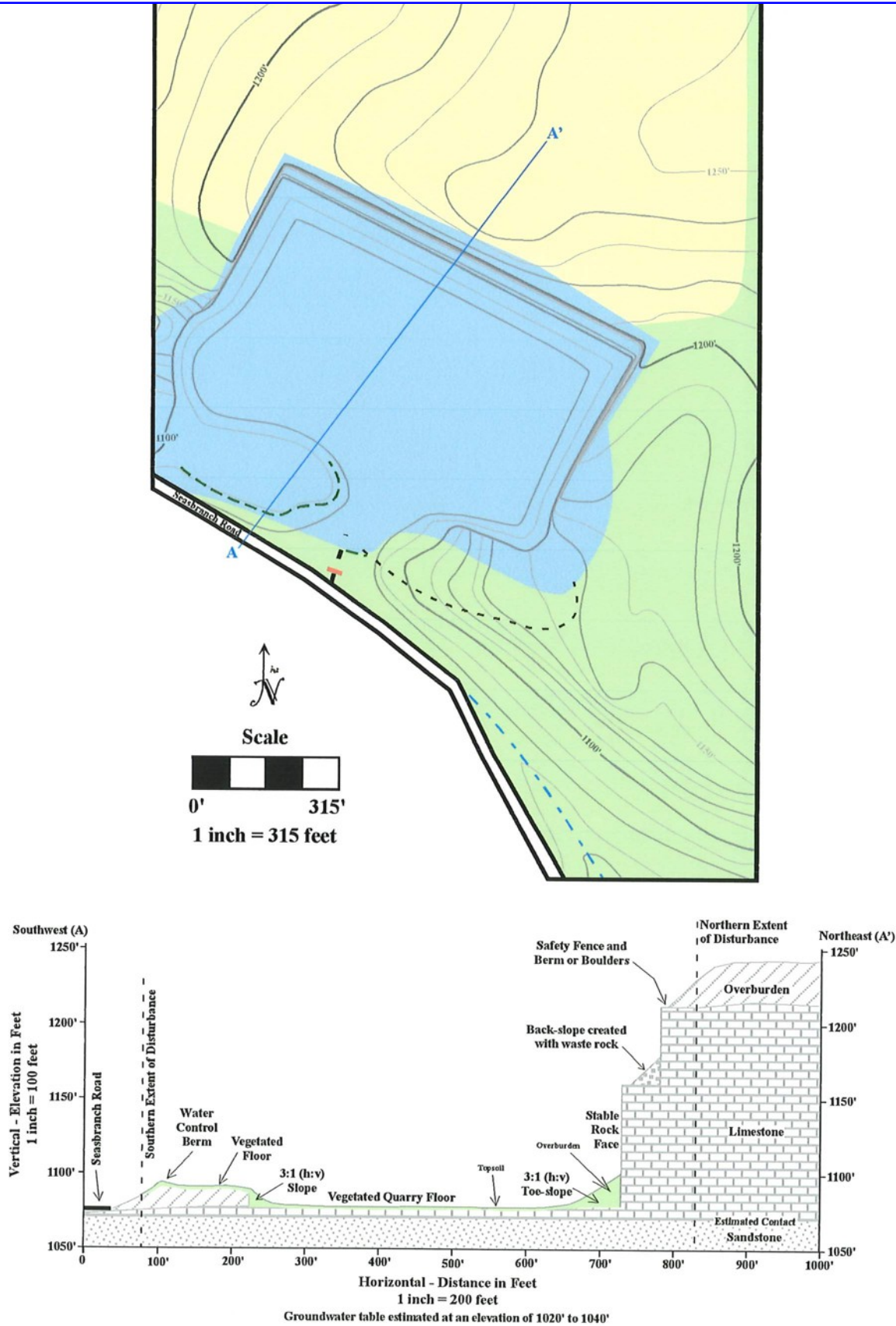
This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.



 3535 VADNAIS CENTER DR. ST. PAUL, MN 55110 PHONE: (651) 490-2000 FAX: (888) 908-8166 TF: (800) 325-2055 www.sehinc.com	Project: VERSW 167824 Print Date: 6/12/2026	Depth to Water Table Vernon County Landfill Feasibility Report Addendum 02 - Proposed Eastern Expansion Viroqua, Wisconsin	Figure 4
	Map Created By: jerickson Projection: NAD 1983 UTM Zone 15N Source: SEH, Wisconsin DOT, Wisconsin DNR, Vernon County		

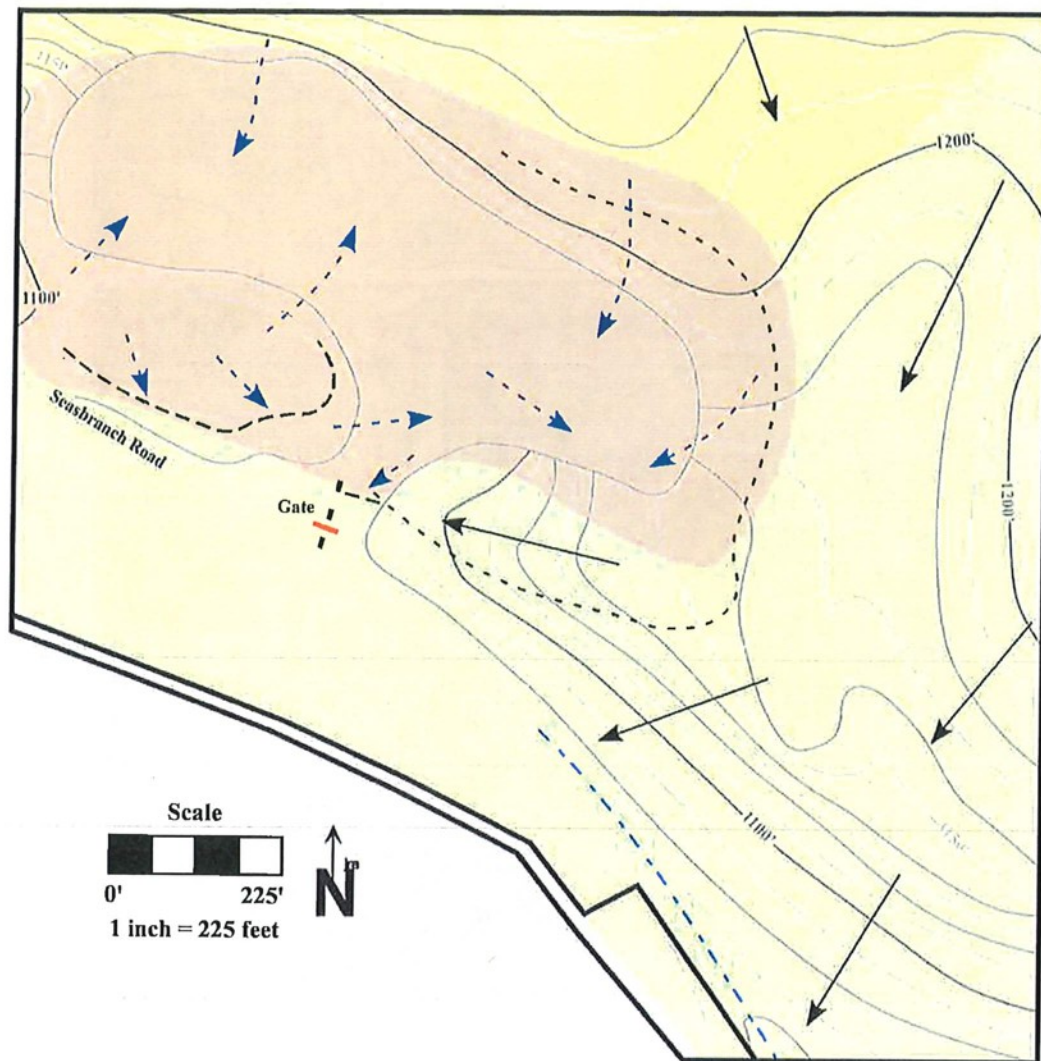
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Schematic cross-section from a Reclamation Plan submitted to Vernon County Land and Water Conservation Department for Seas Branch Quarry (March, 2004)



Map 11. Schematic Cross-Section of the Final Site Topography and Features at the Seas Branch Quarry.

Topographic Map from Reclamation Plan submitted to Vernon County Land and Water Conservation Department for Seas Branch Quarry. Shows general drainage pattern for surface water. (March, 2004)



Map 7. Topographic Map showing the general drainage pattern at the Seas Branch Quarry.
The drainage pattern of the disturbed quarry area (shaded orange) is internally drained and shown by dashed arrows.
The drainage pattern of the undisturbed area is toward the surrounding valleys or quarry and shown by solid arrows.

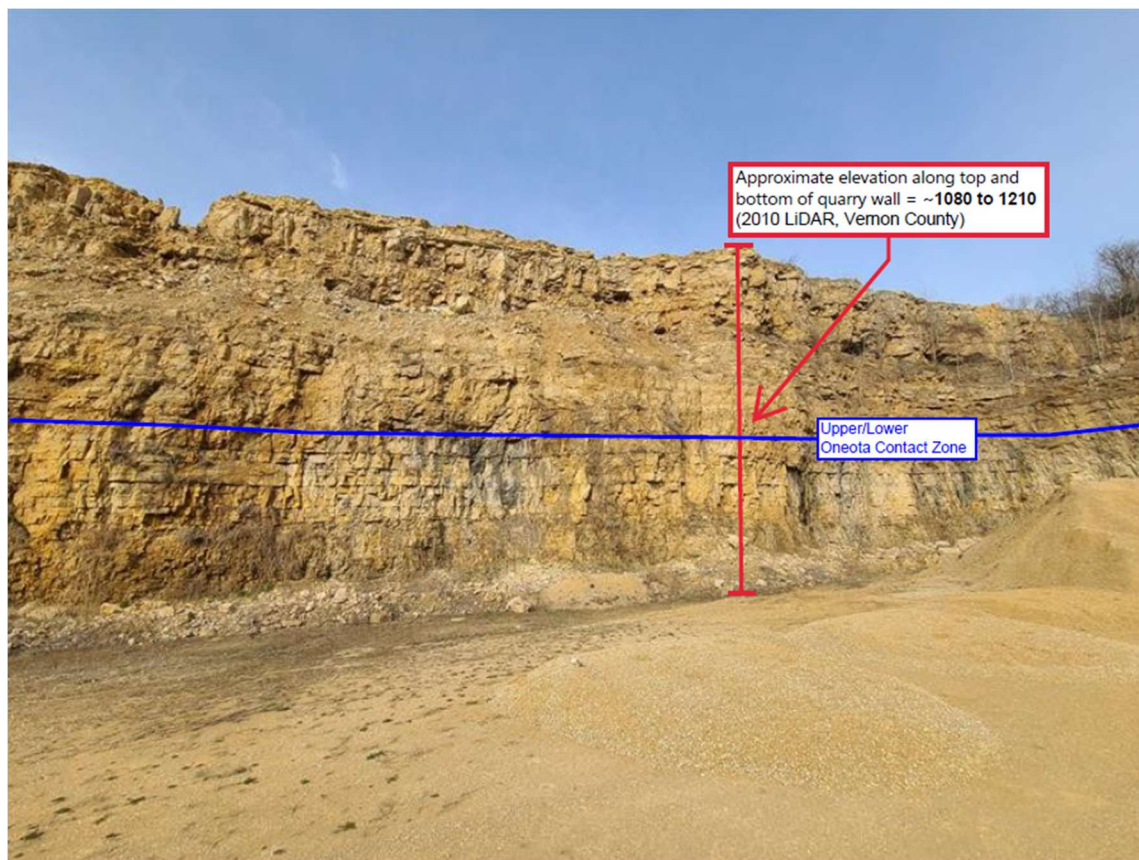


Photo 1 (SEH, April 2026) *Seas Branch Quarry* – The rocks and soils present at the quarry are representative of the Oneota Dolomite of the Prairie du Chien Group along with 10 to 20 feet of overlying unconsolidated soils near the top of the outcrop (residuum, colluvium, and/or loess). The bedrock outcrop provides an estimated 130-foot profile (approximately 1080 to 1210 feet above mean sea level [ft amsl]). Within the Oneota Dolomite, two distinct layers are visible, separated by a thin shaly layer of the dolomite unit serving as a contact. The upper bedrock layer is about 75 feet thick; near the surface or directly underlying the unconsolidated material the layer exhibits thinner bedding with more heterogeneity, fracturing, and vugs/cavities while the lower bedrock layer is about 55 feet thick and is more thickly bedded, less fractured, and more competent. Based on published geology, site observations, and quarry elevations, the carbonate bedrock is representative entirely of the Hager City member of the Oneota Dolomite.

Depth to the uppermost water table is estimated to be approximately 90 feet below the quarry floor (based on evaluation of static water levels in the area from the Wisconsin Well Inventory). Following precipitation events, that portion of surface water that percolates into the overlying soil and eventually enters bedrock is conveyed along fractures in the unsaturated upper bedrock layer; these pathways in the unsaturated bedrock layer may locally intersect the quarry wall, forming local seeps that are primarily indicated by black mineral precipitates on the rock face (also some epilithic algae) and seasonally the presence of wetness. No evidence of sinkholes or caverns was observed at the site. As commonly found in carbonate bedrock conditions, the frequency and size of voids decrease with depth on the quarry wall as dissolved carbon dioxide concentrations generally decrease with depth. The concentration of dissolved carbon dioxide nearer the surface generally contributes to the dissolution of minerals.



Photo 2 (SEH, April 2026) *Seas Branch Quarry* – Similar to Photo 1, another photograph of the Hager City Member of the Oneota Dolomite of the Prairie du Chien Group showing the upper and lower bedrock layers, along with a thin layer of shaly dolomite at the contact. The contact between the two bedrock layers is weathered as noted by evidence of greater rockfall activity on the quarry wall from the shaly layer at the base of the upper bedrock layer (noted towards the lefthand side of the photo). The shaly layer between the upper and lower bedrock layers within the Hager City Member of the Oneota Dolomite shows evidence of being a pathway for surface water percolating downward through the unsaturated bedrock; these pathways in the unsaturated bedrock layer may locally intersect the quarry wall and seasonally form seeps as noted by darker mineral precipitates on rock surface at/below contact. The carbonate rocks above the shaly layer have more frequent fracturing than the carbonate rocks below the shaly layer, with bedrock fractures evenly distributed throughout each unit. Depth to the uppermost water table is estimated to be approximately 90 feet below the quarry floor. See Photo 1 for more descriptive details.



Photo 3 (SEH, April 2026) *Seas Branch Quarry* – Another location along the quarry walls where the contact between the upper and lower bedrock layers of the Oneota Dolomite shows evidence of being a pathway for surface water percolating downward through the unsaturated bedrock. Dark staining on the rock surface is mineral precipitates on the rock surface (likely manganese oxide) as well as some epilithic algae. Depth to the uppermost water table is estimated to be approximately 90 feet below the quarry floor. See Photo 1 for more descriptive details.

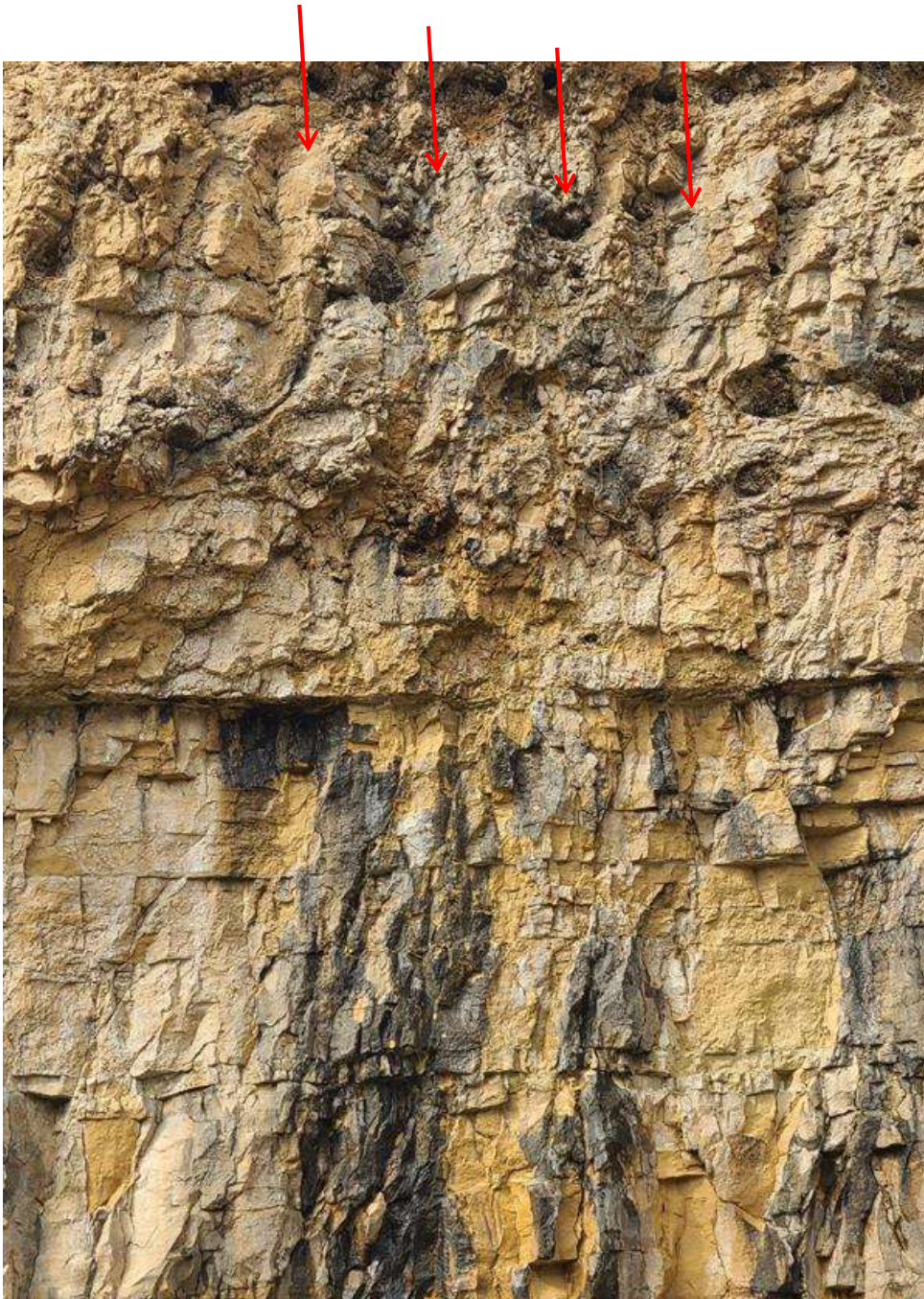


Photo 4 (SEH, April 2026) *Seas Branch Quarry* – Closer view of mineral precipitates on rock surface along quarry walls. Following precipitation events, that portion of surface water that percolates into the overlying soil and eventually enters bedrock is conveyed along fractures in the unsaturated upper bedrock layer; these pathways in the unsaturated bedrock layer may locally intersect the quarry wall, forming local seeps that are primarily indicated by black mineral precipitates on the rock face (also some epilithic algae) and seasonally the presence of wetness. Depth to the uppermost water table is estimated to be approximately 90 feet below the quarry floor. Arrows pointing to evidence of evenly spaced blasting and mining activities of the quarry. See Photo 1 for more descriptive details.



Photo 5 (SEH, April 2026) *Seas Branch Quarry* – Closer view of mineral precipitates (and epilithic algae) on rock surface along quarry walls. Fresher rock face (yellow) where surficial staining had not occurred or stained surface has broken off exposing fresh rock. Bedrock fractures are evenly distributed throughout the layer not every fracture becomes a pathway for percolating water. Depth to the uppermost water table is estimated to be approximately 90 feet below the quarry floor. See Photo 1 for more descriptive details.

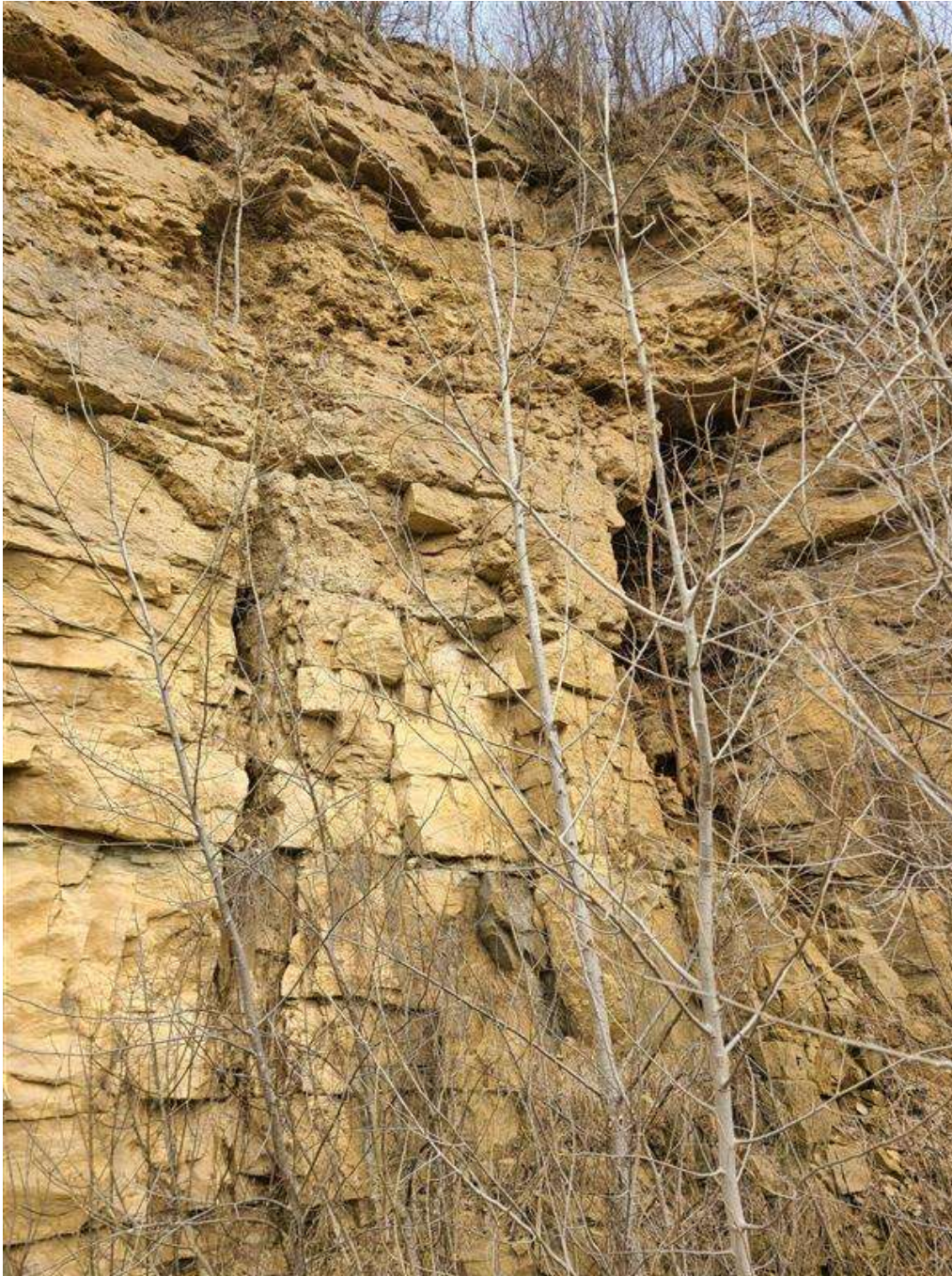


Photo 6 (SEH, April 2026) *Seas Branch Quarry* – The bedrock outcrop shows evidence of natural fractures, with greater heterogeneity, thinner bedding, and increased fracturing/voids observed in the upper bedrock layer of the Oneota Dolomite. These features transition downward to a more homogeneous and thicker bedded unit in the lower bedrock layer of the Oneota Dolomite. While natural fractures are present, the rock surface within the fracture did not contain evidence of mineral precipitates or secondary porosity. As a result, the larger fractures/cavities are likely the result of historic mining operations (blasting/ excavation) as well as accelerated weathering of bedrock along exposed quarry walls.



Photo 7 (SEH, April 2026) *Seas Branch Quarry* – Closer view of fractures/cavities in the upper bedrock layer of the Oneota Dolomite. While natural fractures are present, the rock surface within the fracture did not contain evidence of mineral precipitates or secondary porosity. As a result, the larger fractures/cavities are likely the result of historic mining operations (blasting/ excavation) as well as accelerated weathering of bedrock along exposed quarry walls.



Photo 8 (SEH, April 2026) *Seas Branch Quarry* – Larger fractures (primarily vertical) are the result of natural separation of the rock along the exposed quarry wall. While natural fractures are present, the rock surface within the fracture did not contain evidence of mineral precipitates or secondary porosity. As a result, the larger fractures/cavities are recent, likely the result of historic mining operations (blasting/excavation) as well as the freeze-thaw process accelerating weathering of bedrock along exposed quarry walls.



Photo 9 (SEH, April 2026) *Seas Branch Quarry* – Larger fractures (primarily vertical) are the result of natural separation of the rock along the exposed quarry wall. While natural fractures are present, the rock surface within the fracture did not contain evidence of mineral precipitates or secondary porosity. As a result, the larger fractures/cavities are recent, likely the result of historic mining operations (blasting/ excavation) as well as the freeze-thaw process accelerating weathering of bedrock along exposed quarry walls. Rockfall from weathering continues within the void space, with recent colluvium being deposited along the base of the quarry wall, fanning out from the void.



Photo 10



Photo 11



Photo 13



Photo 12

Photos 10-13 (clockwise) (SEH, April 2026)

Seas Branch Quarry – Boulders from the quarry walls are present on the quarry floor with evidence of secondary porosity and mineralization and likely representative of the upper bedrock layer of the Oneota Dolomite. Photo 10 illustrates vugs with some mineralization. Photo 11 includes a stromatolite, evidence of the algal depositional environment that formed portion of the Hager City Member of the Oneota Dolomite; stromatolites are characterized by thin to medium beds of laminated and stromatolitic dolostone with little to no silt or sand. Chert nodules are also present within the rock. Photos 12 illustrate the secondary porosity and mineralization that occurs in boulders from upper layer in the Oneota Dolomite, while the boulder from lower in the formation is shown in Photo 13, where there are less vugs are present and some fracturing mostly along bedding planes.



Photo 14 (SEH, October 2025) *Gudgeon Pit Quarry* – Similar to Seas Branch Quarry, the rocks and soil present at the quarry are representative of the Oneota Dolomite of the Prairie du Chen Group along with 10-15 feet of overlying unconsolidated soils near the top of the outcrop (residuum, colluvium, and/or loess). Bedrock outcrop provides an estimated 120-foot profile (approximately 1080 to 1200 ft amsl). Within the Oneota Dolomite, two distinct bedrock layers are visible, separated by a shaly layer of the dolomite unit serving as a contact. The upper bedrock layer is about 70 feet thick. Near the surface or directly underlying the unconsolidated material, the upper bedrock layer exhibits thinner bedding with more heterogeneity, fracturing, and vugs/cavities while the lower bedrock layer is about 50 feet thick and is thickly bedded, less fractured, and more competent.

Depth to the uppermost water table is estimated to be approximately 130 feet below the quarry floor (based on evaluation of static water levels in the area from the Wisconsin Well Inventory). Following precipitation events, that portion of surface water that percolates into the overlying soil and eventually enters bedrock is conveyed along fractures in the unsaturated upper bedrock layer; these pathways in the unsaturated bedrock layer may locally intersect the quarry wall, forming local seeps that are primarily indicated by black mineral precipitates on the rock face (also some epilithic algae) and seasonally the presence of wetness. No evidence of sinkholes or caverns was observed at the site. As commonly found in carbonate bedrock conditions, the frequency and size of voids decrease with depth on the quarry wall as dissolved carbon dioxide concentrations generally decrease with depth. The concentration of dissolved carbon dioxide nearer the surface generally contributes to the dissolution of minerals.



Photo 15 (SEH, October 2025) *Gudgeon Pit Quarry* – Similar to Seas Branch Quarry, the bedrock outcrop shows evidence of natural fractures, with greater heterogeneity, thinner bedding, and increased fracturing observed in the upper bedrock layer of the Oneota Dolomite and transitioning to a more homogeneous and thicker bedded unit in the lower bedrock layer of the Oneota Dolomite below. The shaly layer between the upper and lower bedrock layers within the Hager City Member of the Oneota Dolomite shows evidence of being a pathway for surface water percolating downward through the unsaturated bedrock; these pathways in the unsaturated bedrock layer may locally intersect the quarry wall and seasonally form seeps as noted by darker mineral precipitates on rock surface at/below contact (note darker mineral precipitation on rock surface at/below contact). The carbonate rocks above the shaly layer have more frequent fracturing than the carbonate rocks below the shaly layer, with bedrock fractures evenly distributed throughout each unit. Arrows pointing to evidence of evenly spaced blasting and mining activities of the quarry. See Photo 14 for more descriptive details.



Photo 16 (SEH, October 2025) *Gudgeon Pit Quarry* – Similar to observations made at Seas Branch Quarry, the shaly layer between the upper and lower bedrock layers within the Hager City Member of the Oneota Dolomite shows evidence of being a pathway for surface water percolating downward through the unsaturated bedrock; these pathways in the unsaturated bedrock layer may locally intersect the quarry wall and seasonally form seeps. See Photo 14 for more descriptive details.



Photo 17 (SEH, October 2025) *Gudgeon Pit Quarry* – Similar to observations made at Seas Branch Quarry, some larger voids/cavities were observed but are not entirely naturally occurring features. The example above shows evidence of both previous mining impacts to the bedrock surface along with natural weathering and separation of rock from the rock face. Rockfall and weathered material are still present below the cavities, deposited as recent colluvium along the base of the quarry wall. While and fractures, no evidence of sinkholes or caverns was observed at the site. As commonly found in carbonate bedrock conditions, the frequency and size of voids decrease with depth on the quarry wall as dissolved carbon dioxide concentrations generally decrease with depth. The concentration of dissolved carbon dioxide nearer the surface generally contributes to the dissolution of minerals. The carbonate rocks above the shaly layer have more frequent fracturing than the carbonate rocks below the shaly layer, with bedrock fractures evenly distributed throughout each unit. See Photo 14 for more descriptive details.

Appendix F

2025 Addendum 02 Field Investigation Summary Memorandum



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MEMORANDUM

TO: Brian Kent

FROM: Aaron Kutz, PG (WI), Melanie Niday, PG (WI), Mark Sherrill, PG (WI), Veronica Aranda, PG (WI), Jacob Erickson

DATE: May 14, 2026

RE: 2025-2026 Addendum Field Investigation Procedures
SEH No. VERSW 167824 14.00

INTRODUCTION

Vernon County submitted a Feasibility Report (FR) to the Wisconsin Department of Natural Resources (WDNR) dated September 11, 2023, for a proposed expansion of the Vernon County Landfill. The FR included information required to determine the feasibility for the proposed Eastern Expansion of the Vernon County Landfill, WDNR License No. 3268.

In response to an Incompleteness Determination and the additional written comments from the WDNR, additional work was completed and Vernon County submitted Feasibility Report Addendum 01 on November 19, 2024. The WDNR sent a second Incompleteness Determination dated March 11, 2025. Similarly, in response to the second Incompleteness Determination and the additional written comments from the WDNR, Vernon County completed addendum field investigation work in 2025 and 2026 to confirm and further define the geology and hydrogeology in the area of the proposed expansion.

In 2025, two new borings were completed (MW-20 and MW-20WT) to provide additional bedrock and groundwater data. One new perched water table monitoring well (MW-20WT) and one new regional monitoring well (MW-20) were completed during the addendum investigation of the proposed expansion area to provide additional groundwater data. The 2025 field investigation included completion of soil borings, construction and development of monitoring wells, in-field hydraulic conductivity testing, baseline water elevation monitoring, baseline groundwater monitoring, and survey.

In 2026, additional in-field hydraulic conductivity testing was completed for several older wells near the proposed expansion area (MW-3, MW-4P, MW-5, and MW-10) to verify previously calculated hydraulic conductivity values. A visit was also made to Seas Branch Quarry, an inactive quarry located about 0.5 miles north of the Landfill property to visually inspect the bedrock outcrops as an alternative to further drilling/geophysical work.

Drilling and well installation for MW-20WT and MW-20 was completed between April 22, 2025 and April 25, 2025 by Cascade Environmental (Cascade) utilizing a track mounted Rotasonic drill rig. Drilling oversight was provided by a SEH Professional Geologist, licensed in Wisconsin. SEH Professional Geologists also conducted groundwater monitoring and in-situ hydraulic conductivity analyses. Well development for MW-20WT and MW-20 was completed by Cascade, under the direction of the SEH

Engineers | Architects | Planners | Scientists

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Professional Geologist. Groundwater sample analysis was performed by Eurofins Environmental Testing and final well survey was provided by SEH.

The additional in-field hydraulic conductivity testing and quarry inspection was completed between April 1, 2026 and April 2, 2026. Similar to 2025, all addendum field investigation work was conducted by or under the direction of SEH Professional Geologists, licensed in Wisconsin.

Figures and drawings illustrating new well locations, groundwater contour maps, and updated geological cross-sections are incorporated into the Feasibility Report Addendum 02.

SOIL BORINGS

Drilling Program

To supplement the existing soil boring information, the following additional two soil borings were completed to assess soil and bedrock conditions and bedrock elevations:

- MW-20WT and MW-20 were drilled outside of the landfill expansion footprint but within 300 feet of the proposed waste boundary of the landfill expansion. An initial soil boring for well MW-20 was advanced into the regional water table for the installation of a monitoring well screened to intersect the regional water table. The perched water table was observed during the completion of MW-20 and a second soil boring was advanced into the perched water table for the installation of an additional monitoring well screened to intersect the perched water table.

Drilling and Sampling Methods

The soil borings were completed using Rotosonic methods. While Rotosonic does affect the fracture rate of the bedrock, it uses water only and drilling mud is generally not required. Therefore, it was more accurate in determining the depth to water immediately after drilling and enabled proper depth of perched water table and regional water table wells. Any fractures observed within bedrock during drilling were assessed for mechanical breakage or in-situ fractures to combat the fractures Rotosonic drilling may create.

Rotosonic samples were collected in the borings continuously throughout the entire boring length. Soil samples collected during drilling were visually classified in the field by a Wisconsin registered Professional Geologist in accordance with the Unified Soil Classification System (USCS, ASTM D2487-17 and D2488-00).

Drilling water was not utilized during the completion of the soil borings in order to more easily determine when the perched water table and regional water table were encountered.

Rock coring was not attempted within these borings as it was attempted during past field investigation with little to no success. The Rotosonic drilling method had successful recovery for a majority of the drilling program, with recovery rates within saprolite and bedrock ranging generally between 80 to 100 percent within MW-20 (some sporadic recoveries as low as 60% did occur when softer, wet soils and/or weathered bedrock were encountered).

Drilling Documentation

Upon completion of drilling, soil borings were converted to monitoring wells. Soil boring logs from the 2025 investigation are included in **Attachment A**. A summary of survey, depths, and geologic conditions for the soil borings completed in 2025 is provided in **Table 1**. The locations of the monitoring wells for the proposed expansion are illustrated in Feasibility Report Addendum 02. No soil samples were collected for

geotechnical analysis during the 2025 field investigation, but soil and bedrock samples have been retained on-site. The soil samples will be retained until a feasibility determination is obtained. Upon receipt of the feasibility determination, Vernon County Landfill personnel will be notified to determine the subsequent disposition of the soil samples. Photographs of the soil samples are provided within

Attachment B.

MONITORING WELLS

Well Installation Program

The drilling program conducted in 2025 included the installation of one perched water table monitoring well (MW-20WT) and one regional monitoring well (MW-20). The locations of the monitoring wells for the proposed expansion are illustrated in Feasibility Report Addendum 02. A summary of newly installed monitoring wells is as follows:

- Well MW-20WT was installed in the perched water table system to the east of the landfill expansion and was installed with a 10-foot screen.
- Well MW-20 was installed in the regional water table system to the east of the landfill expansion and was installed with a 10-foot screen.

Well Installation Methods

The monitoring wells were installed following completion of the associated soil boring described above. Because groundwater conditions could not always be observed during drilling, determining an appropriate depth of the proposed water table well at the drilling locations presented a challenge. Similar issues for establishing water levels during drilling was encountered during past well installations. Therefore, an attempt to estimate depth to groundwater was made by setting a temporary well within the outer casing of the borehole and allowing the borehole to sit overnight; depth to water then was measured the next day and used to establish well construction depth. This approach was successful with all monitoring wells installed during 2025.

Monitoring wells were constructed using 2-inch diameter, PVC screen, coupled with 2-inch, Schedule 40 or 80 PVC riser. All monitoring wells were constructed with a 10-foot screened interval. The borehole annular space was filled with a filter pack that extended approximately 2-feet above the top of the screen. An approximate 2-foot layer of fine sand was placed above the filter pack and a bentonite seal was placed above the fine sand. The bentonite seal was then followed by a high-solids bentonite grout to approximately ground surface. Wells were then completed with a protective casing with a locking vented cap, concrete collar/pad, and bollards. No significant grout loss or settling was present during well installation.

The observation and documentation of well installation was provided by a SEH Professional Geologist, licensed in Wisconsin. Final well construction logs prepared by Cascade are included within **Attachment C**. A summary of survey, depths, and screened geologic conditions for the monitoring wells completed in 2025 is provided in **Table 2**. The locations of the monitoring wells for the proposed expansion are illustrated as part of the Feasibility Report Addendum 02.

WELL DEVELOPMENT

Following installation, wells were developed on April 25, 2025, by Cascade in substantial conformance with NR141.21 and NR507.07 utilizing a surge block and pump. Procedures and equipment used for initial development were recorded and field forms are provided in **Attachment D**. No water, dispersing

agents, acids, or disinfectants were added to the well to assist development. Well development forms from the new wells installed for the 2025 investigation are included in **Attachment D**.

IN-FIELD HYDRAULIC CONDUCTIVITY ANALYSIS

NR 512.09(4)(d) Wisconsin Administrative Code requires that an in-field test be conducted on each newly installed well to determine the in-situ hydraulic conductivity as part of the feasibility study for landfill development. To fulfill this requirement, SEH field staff completed in-field hydraulic conductivity testing at one of the new monitoring wells (MW-20) on May 28, 2025. Due to limited water column present in the well screen for MW-20WT (less than 1-foot, set in the perched water table), no test could be performed.

In 2026, additional in-field hydraulic conductivity testing was completed for several older wells near the proposed expansion area to verify previously calculated hydraulic conductivity values. SEH field staff completed in-field hydraulic conductivity testing at wells MW-3, MW-4P, MW-5, and MW-10 between April 1, 2026 and April 2, 2026. It should be noted that multiple attempts were made to perform a test at well MW-14, but due to an issue with well construction, testing equipment could not be deployed properly within the well casing to complete testing.

After in-field hydraulic conductivity testing, the resulting data was processed through the hydrogeology program Aqtesolv®. The results from the data analysis in 2025 and 2026 are detailed in **Attachment E**. A summary of hydraulic conductivities from the 2025 and 2026 in-field testing is provided in **Table 3**.

In-Field Data Collection

The data collection process for hydraulic conductivity analysis was performed using in-field single well aquifer response tests, specifically through the use of slug tests. A slug test consists of displacing a volume of water in a well and monitoring the recovery of the aquifer to the pre-stressed condition. The insertion or removal of a slug tool from a well is equivalent to displacing an equal volume of water. By monitoring the transient water level in the well, it is possible to estimate the conductivity immediately surrounding the sand pack.

Equipment

During testing in both 2025 and 2026, the slug tool used to displace water in the monitoring wells was a nominal 1.5-inch by 48-inch Solid H₂O Slug® designed by Midwest Geosciences Group. This water-tight assembly displaces approximately 24 inches of water in a 2-inch diameter monitoring well.

In 2025, the water elevation and time required for the well to dissipate the water and return to the initial static level was measured using an In-Situ pressure transducer (vented Level TROLL 700 Data Logger with wireless TROLL com).

In 2026, the water elevation and time required for the well to dissipate the water and return to the initial static level was measured using a pressure transducer from Van Essen Instruments (Micro-Diver transducer with infrared optical reader communication device). The change in transducer was made for 2026 to allow for easier deployment of testing equipment in deeper wells with narrower inner diameters due to the tested wells being constructed with Schedule 80 PVC versus Schedule 40 PVC. The Micro-Diver was used in conjunction with a barometric transducer (Van Essen Baro Diver Sensor) to measure any ambient changes in barometric pressure, which could have an influence on the Micro-Diver recorded water levels and require a barometric correction to slug test water level data.

Both units provide uninterrupted water level monitoring using a pressure sensor when submerged at a fixed level under the water surface and measure the equivalent hydrostatic pressure of the water above the sensor diaphragm to calculate the total water depth. While the Level TROLL allows for real-time monitoring of water level data via Bluetooth and a cell phone application, the Micro-Diver required water levels to be checked manually using an electronic water level meter. Water elevation readings were collected at half second intervals during testing in 2025 and 2026.

Testing Setup

The pressure transducer was set at a depth greater than the slug was lowered, taking care not to set the transducer on the bottom of the well. The transducer was secured in place (using tape, hose clamps, twine, etc.) with care being taken not to pinch the lead to the pressure transducer.

In 2025, using the Level TROLL, once in place the pressure transducer was checked via monitoring the water column readings above the transducer on the wireless TROLL com through Bluetooth to the VuSitu Phone application. Prior to insertion of the slug, measurements of the water column were taken in the well to ensure the water level was at equilibrium and to check for background fluctuations in the water column.

A similar process was followed in 2026 using the Micro-Diver. Once in place, the pressure transducer was checked via manual measurements of the water column using an electronic water level meter (since real-time data from the transducer was not available).

The decontaminated slug was submerged into the water as quickly as possible, without dropping, as the impact on the water surface may damage the pressure transducer or create oscillations in the water level. Once in place, the slug was secured so it did not move. This was considered the "falling head" phase of the slug test, as the transducer measured the rate at which the water level took to return to the initial static elevation before the insertion of the slug.

After the well had dissipated at least 90 percent of the water deflected as part of the falling head phase of the test, the slug was removed from the well as quickly as it was submerged to initiate the "rising head" phase of the slug test. This created a drop in water level, and the transducer measured the rate at which the water level in the well took to recover to the initial static water level before the start of the test. This rising head phase of the test was considered complete after the water in the well has recovered to at least 90 percent of its pre-stressed level. The data logger was set up to record water levels during the recovery phase of the test at the same schedule as the dissipation phase of the test was recorded (at 0.5 second intervals).

Post Collection Analysis of Field Data

The 2025 data collected from both the rising head and falling head slug tests performed at MW-20 was downloaded from the VuSitu application. The 2026 data collected from both the rising and falling head slug tests performed at MW-3, MW-4P, MW-5, and MW-10 was downloaded from the Micro-Diver transducer utilizing the optical reader and Van Essen's Diver software program (including barometric data downloaded from the Baro Diver transducer). Due to the small time frame and minimal change in barometric level according to data obtained from the barometric transducer, corrections were not necessary for the water level data from the Micro-Diver. Results from the slug tests were analyzed within Aqtesolv® Aquifer Data Analysis software.

The Bower and Rice (1976) mathematical solution within Aqtesolv® was utilized in determining hydraulic conductivity for all slug tests. This solution allowed for a correction for the effective porosity of the filter

pack when a well is screened across the water table. Additionally, this solution is widely used in the analysis of slug tests in both unconfined and confined aquifers.

The purpose of these simulated 2-D groundwater models was to approximate hydraulic conductivity values for the near vicinity geologic material. Results for all tests completed in 2025 and 2026 are depicted in **Attachment E**.

2025 Results

A summary of hydraulic conductivities from the 2025 in-field testing is provided in **Table 3**. Monitoring well MW-20 analyzed for hydraulic conductivity during the 2025 investigation were screened within sandstone bedrock. Results indicate a hydraulic conductivity of $2.940\text{E-}5$ to $3.934\text{E-}5$ centimeters per second (cm/sec) or 0.0833 to 0.112 feet per day (ft/day).

As discussed above, both a Rising Head and Falling Head slug test were performed as part of the 2025 hydraulic conductivity analysis. Comparison of the two tests at MW-20 generally produced hydraulic conductivity values that were within acceptable ranges of each other and therefore, all results are presented on **Table 3**. Results from MW-20 are comparable with previous hydraulic conductivity testing results for wells in the area, ranging from $3.98\text{E-}3$ cm/sec (MW-5A) to $1.07\text{E-}4$ cm/sec (MW-17WT), indicating some heterogeneities within the bedrock. The hydraulic conductivity at MW-20 is similar to the lower hydraulic conductivity at MW-17WT and is most likely associated with the clayey sandstone that the wells are screened within.

2026 Results

A summary of hydraulic conductivities from the 2026 in-field testing is provided in **Table 3**. Most of the tested wells were screened within hard dolostone, while MW-10 spanned a dolomitic sandstone to sandy dolostone. Results for the sandstone-dolomite (MW-10) range from 1.28×10^{-3} to 1.45×10^{-3} cm/s or 3.64 to 4.11 ft/day while the hard dolostone (MW-3, MW-4P, and MW-5) range from 1.18×10^{-5} to 8.86×10^{-4} cm/s or 0.034 to 2.51 ft/day.

As discussed above, both a Rising Head and Falling Head slug test were performed as part of the 2026 hydraulic conductivity analysis. Comparison of the two tests at each of the wells produced hydraulic conductivity values that were within acceptable ranges of each other and therefore, all results are presented on **Table 3**. Results from MW-3 and MW-10 are comparable to previous hydraulic conductivity tests conducted on these wells in 1988-1989 and 2003, with MW-3 ranging between 1.16×10^{-4} to 1.67×10^{-3} cm/s (or 0.33 to 4.73 ft/day) and MW-10 ranging between 8.86×10^{-4} to 2.02×10^{-3} cm/s (or 2.51 to 5.71 ft/day). However, results from MW-4P and MW-5 were an order-of-magnitude lower than previous tests (5.93×10^{-3} cm/s or 16.82 ft/day for MW-4P and 2.26×10^{-4} cm/s or 0.74 ft/day for MW-5). A detailed comparison of hydraulic conductivity analysis and results will be provided in the Feasibility Report Addendum 02.

2025 BASELINE WATER ELEVATION MONITORING

Groundwater level measurements and sampling activities for the proposed expansion were performed in accordance with NR512.09(4)(f) and NR512.09(4)(g). Four rounds of water levels were collected within the newly installed wells (MW-20WT and MW-20). Depth-to-water measurements were collected using an electronic water level indicator and were recorded to the nearest 0.01 foot. For baseline water elevations, water level measurements were taken on May 14, 2025, June 19, 2025, July 28, 2025, and August 27, 2025. Water levels were also collected from all existing wells for the entire solid waste facility. Depth-to-water measurements recorded in the field were used to calculate groundwater elevations.

All available water elevation data collected over the past five years for all monitoring wells and piezometers at the site are provided on **Table 4**. A map showing the location of all site monitoring wells is provided as part of the Feasibility Report Addendum 02. The field form for water level monitoring is provided within **Attachment F**.

The groundwater elevations calculated for water table wells and piezometers were used to establish groundwater flow direction, vertical and horizontal gradients, and the position of the water table as part of the Feasibility Report Addendum 02.

2025 BASELINE GROUNDWATER MONITORING

Two rounds of baseline groundwater monitoring occurred on March 7, 2025 and April 14, 2025 for well installations completed in 2024 (MW-16Z, MW-18WT, MW-18, MW-19, and MW-19Z). The two monitoring events in 2025 were completed to fulfill the four required rounds of baseline groundwater monitoring for these wells. The initial two rounds of baseline groundwater monitoring for the 2024 well installations were completed on August 27, 2025 and September 2, 2024, with results reported in the Feasibility Report Addendum 01 submitted November 19, 2024 (before the remaining two rounds could be completed).

Additionally, four rounds of baseline groundwater monitoring were attempted for newly installed 2025 wells MW-20WT and MW-20 on May 14, 2025, June 19, 2025, July 28, 2025, and August 27, 2025. Baseline groundwater monitoring was only able to be completed for regional monitoring well (MW-20). The water column in the perched water table monitoring well (MW-20WT) was either not adequate for sampling or would not recharge following purging efforts. At this point, the perched water table well (MW-20WT) is only sufficient for evaluating water levels associated with the perched groundwater conditions at the site.

Groundwater samples collected from the monitoring wells used for observation for the landfill expansion were analyzed per NR507.17 and NR507.18 requirements for the baseline and detection monitoring parameters (summarized in NR507 and NR503) for landfills accepting municipal solid waste and construction and demolition material. VOCs were also analyzed at all monitoring locations during the baseline monitoring events. A list of the parameters utilized at each monitoring location during baseline monitoring is provided on **Table 5**. The analytical results for each monitoring location are provided on **Table 6**. The laboratory reports for the baseline groundwater quality monitoring for the proposed expansion are provided in **Attachment G**.

An update on the status of well-specific standards will be provided as part of the Plan of Operation report.

SURVEY

Horizontal locations and vertical elevations (i.e., ground surface, top of casing, and top of protective casing) were surveyed for the borings and wells installed as part of the AGIP. Survey activities were performed on May 9, 2025, by SEH.

Horizontal locations are referenced to the Vernon County coordinate system (Datum). The grid system is based in the southwest and southeast $\frac{1}{4}$ of Section 15, T13N, R4W, City of Viroqua, Vernon County, Wisconsin. Vertical elevations are referenced to feet above mean sea level (NAVD88(2011)) datum.

Elevations and horizontal locations were measured to 0.01 feet. Final survey elevations for 2025 wells are shown on **Table 1** and **Table 2**, respectively.

QUARRY VISIT/INSPECTION

On April 1, 2026, a visit was made to Seas Branch Quarry (an inactive quarry located about 0.5 miles north of the Landfill property). While onsite, a SEH Professional Geologist, licensed in Wisconsin, visually inspect the bedrock outcrops as an alternative to further drilling/geophysical work.

Photos and observation notes were collected documenting bedrock units, size/frequency of fractures, weathering, presences of groundwater, and other observations that will be used to compare against data collected from the soil borings and other investigation work completed at the Landfill site.

A detailed summary and discussion of the quarry inspection (including photos) will be provided in the Feasibility Report Addendum 02.

ATTACHMENTS

Table 1 – 2025 Soil Boring Summary

Table 2 – 2025 Monitoring Well Installation Summary

Table 3 – 2025-2026 In-Field Hydraulic Conductivity Summary

Table 4 – Groundwater Elevations (2021-2025)

Table 5 – 2025 Baseline Monitoring Parameters

Table 6 – 2025 Baseline Monitoring Results

Attachment A – 2025 Soil Boring Logs

Attachment B – Photographs of 2025 Soil Samples

Attachment C – 2025 Well Construction Logs

Attachment D – 2025 Well Development Forms

Attachment E – 2025-2026 In-Field Hydraulic Conductivity Results

Attachment F – 2025 Water Level Monitoring Field Form

Attachment G – Laboratory Reports (2025 Baseline Groundwater Monitoring Events)

Table 1
2025 Soil Boring Summary
Vernon County Landfill - Proposed Eastern Expansion

Boring ID	Coordinates*		Ground Surface Elevation (feet NAVD)	Depth to Bedrock (feet bgs)	Bedrock Elevation (feet NAVD)	Subbase Elevation (feet NAVD)	Total Depth of Boring (feet bgs)	Bottom Elevation of Boring (feet NAVD)
	Northing	Easting						
MW-20WT	583271.01	1746802.47	1174.4	38.0	1136.4	outside	55.0	1119.4
MW-20	583280.67	1746804.86	1174.3	38.0	1136.3	outside	80.0	1094.3

Notes:

- bgs - Below ground surface.
- NE - Not encountered.

Table 2
2025 Monitoring Well Installation Summary
Vernon County Landfill - Proposed Eastern Expansion

WDNR Point ID Number	Well Name	WI Unique Well No.	Date Installed	Ground Elevation (feet NAVD)	Top of Casing Elevation (feet NAVD)	Well Depth (feet bgs)	Screen Length (feet)	Screen Interval Elevation (feet NAVD)	Monitoring Point	Screened Geologic Unit
145	MW-20WT	WF441	04/24/25	1174.40	1176.32	53.0	10.0	1123.3 - 1133.3	Perched Water Table	Sandstone Bedrock
147	MW-20	WF440	04/23/25	1174.30	1176.58	79.0	10.0	1097.6 - 1107.6	Regional Water Table	Sandstone Bedrock

Notes:

bgs - below ground surface.

Table 3
2025-2026 In-Field Hydraulic Conductivity Summary
Vernon County Landfill - Proposed Eastern Expansion

Monitoring Well ID	Well Type/ Groundwater Zone	Screened Geologic Unit	Date Completed	Solution Method	Screened Elevation (feet NAVD)	Test Type	Hydraulic Conductivity (cm/sec)	Hydraulic Conductivity (ft/day)
Perched Water Table								
MW-4P	Perched Water Table	Dolostone, hard	4/2/2026	Bouwer-Rice	1138.3 - 1148.3	Falling Head	8.86E-04	2.511
						Rising Head	6.34E-04	1.798
Average:							7.60E-04	2.15
Geometric Mean:							7.50E-04	2.12
Minimum:							6.34E-04	1.80
Maximum:							8.86E-04	2.51
Regional Water Table								
MW-5	Regional Water Table	Dolostone, hard	4/2/2026	Bouwer-Rice	1072.6 - 1082.6	Falling Head	1.36E-05	0.038
						Rising Head	1.18E-05	0.034
MW-20	Regional Water Table	Sandstone, poorly consolidated	5/28/2025	Bouwer-Rice	1097.6 - 1107.6	Falling Head	3.93E-05	0.112
						Rising Head	2.94E-05	0.083
Average:							2.35E-05	0.07
Geometric Mean:							2.08E-05	0.06
Minimum:							1.18E-05	0.03
Maximum:							3.93E-05	0.11
Regional Water Table (Piezometers)								
MW-3	Piezometer, Upper Zone	Dolostone, hard	4/1/2026	Bouwer-Rice	1053.2 - 1058.2	Falling Head	1.41E-04	0.400
						Rising Head	2.34E-04	0.662
MW-10	Piezometer, Lower Zone	Dolomitic sandstone to sandy dolostone	4/1/2026	Bouwer-Rice	1034.0 - 1039.0	Falling Head	1.45E-03	4.105
						Rising Head	1.28E-03	3.640
Average:							7.77E-04	2.20
Geometric Mean:							4.98E-04	1.41
Minimum:							1.41E-04	0.40
Maximum:							1.45E-03	4.10

Notes:

- All of the tests performed were "slug tests".

cm/sec - centimeters per second.

ft/day - feet per day.

NAVD - North American Vertical Datum



Table 4
Existing Static Water Elevations for Landfill Property (2021-2025)
Vernon County Landfill - Proposed Eastern Expansion

WDNR Point ID Number	Well Name	Date Installed	Ground Elevation (feet NAVD)	Top of Casing Elevation (feet NAVD)	Well Depth (feet bgs)	Screen Length (feet)	Screen Interval Elevation (feet NAVD)	Well Type/ Groundwater Zone	Static Water Elevation by Date (feet NAVD)																				
									3/1/2021	9/1/2021	3/1/2022	9/22/2022	12/20/2022	1/24/2023	3/1/2023	3/27/2023	4/28/2023	5/30/2023	9/11/2023	3/11/2024	8/27/2024	10/2/2024	3/7/2025	4/14/2025	5/14/2025	6/19/2025	7/28/2025	8/27/2025	
102	MW-1P	12/30/1987	1236.4	1238.41	111.1	10.0	1125.4 - 1135.4	Perched Water Table	1131.67	1131.76	1131.42	1130.90	1130.02	1131.71	1131.70	1131.59	1131.98	1132.64	1132.58	1132.85	1132.63	1132.43	1132.26	1132.31	1131.91	1131.88	1131.92	1132.05	
101	MW-1	12/30/1987	1236.4	1238.11	158.0	10.0	1078.5 - 1088.5	Regional Water Table	1096.58	1093.67	1091.85	1089.95	1089.70	1089.62	1089.62	1090.36	1092.19	1094.43	1093.24	1089.42	1090.20	1090.17	1088.42	1089.23	1088.36	1088.46	1088.49	1088.44	
121	MW-1PR	1/12/1994	1245.0	1247.61	127.7	15.0	1119.9 - 1134.9	Perched Water Table	1134.80	1134.34	1134.23	1133.50	1134.07	1134.04	1134.22	1134.14	1134.72	1134.97	1134.09	1133.50	1134.47	1134.35	1134.41	1134.30	1134.30	1134.35	1134.32	1134.38	
120	MW-1R	1/12/1994	1244.6	1247.25	164.6	15.0	1082.6 - 1097.6	Regional Water Table	1096.50	1093.58	1091.81	1089.95	1090.85	1090.60	1089.61	1090.36	1092.13	1094.46	1093.06	1088.64	1090.46	1090.48	1088.54	1087.75	1088.39	1088.15	1088.35	1086.50	
123	MW-1RZ	3/12/2003	1244.0	1245.45	186.5	5.0	1057.5 - 1062.5	Piezometer, Upper Zone	1096.12	1093.19	1091.28	1089.51	1088.33	1089.11	1089.15	1089.84	1090.72	1093.86	1092.61	1088.21	1089.86	1089.43	1088.17	1087.84	1088.04	1087.83	1088.03	1088.20	
104	MW-2P	1/17/1988	1252.5	1254.88	124.8	10.0	1128.0 - 1138.0	Perched Water Table	1139.87	1139.39	1139.33	1138.79	1138.81	1138.45	1139.36	1139.24	1139.98	1141.11	1139.41	1138.69	1138.98	1139.65	1139.51	1139.63	1139.70	1139.69	1139.63	1139.67	
103	MW-2	1/17/1988	1252.5	1254.35	174.6	10.0	1078.3 - 1088.3	Regional Water Table	1091.56	1089.58	1087.79	1085.92	1086.19	1085.23	1086.01	1086.60	1087.51	1090.35	1089.29	1085.27	1086.88	1086.37	1083.66	1085.53	1085.59	1085.33	1085.69	1085.86	
105	MW-3	2/2/1988	1233.0	1235.25	180.0	5.0	1053.2 - 1058.2	Piezometer, Upper Zone	1076.06	1073.14	1070.69	1069.14	1068.69	1068.66	1068.69	1069.06	1069.19	1071.08	NM	1068.83	1068.90	1068.30	1067.49	1066.63	1067.87	1067.57	1067.62	1067.75	
107	MW-4P	1/29/1988	1232.9	1235.19	95.0	10.0	1138.3 - 1148.3	Perched Water Table	1149.32	1149.32	1148.16	1148.92	1147.07	1146.72	1148.30	1148.18	1148.24	1151.19	1149.58	1147.14	1150.67	1149.96	1148.73	1147.96	1148.68	1148.74	1148.74	1149.82	
109	MW-5A	11/8/1989	1224.0	1225.81	103.3	15.0	1122.9 - 1137.9	Perched Water Table	1136.34	1135.86	1135.52	1135.74	1134.78	1134.27	1134.29	1135.12	1135.58	1136.90	1135.73	1135.52	1135.50	1135.29	1135.19	1134.99	1135.18	1135.26	1135.41	1135.52	
108	MW-5	2/17/1988	1223.3	1225.32	150.6	10.0	1072.6 - 1082.6	Regional Water Table	1084.59	1084.36	1083.94	1084.05	1081.46	1082.51	1082.60	1083.14	1083.50	1086.28	1084.20	1083.29	1083.31	1082.90	1082.35	1080.27	1082.50	1083.14	1083.18	1082.85	
110	MW-6	1/12/1900	1233.0	1235.37	202.2	5.0	1025.7 - 1030.7	Piezometer, Lower Zone	1069.39	1067.35	1065.30	1063.84	1062.81	1062.48	1062.35	1062.48	1062.25	1063.27	1066.09	1062.71	1064.13	1063.81	NM ⁽¹⁾	NM ⁽¹⁾	NM ⁽¹⁾	NM ⁽¹⁾	NM ⁽¹⁾	NM ⁽¹⁾	
111	MW-7	11/7/1989	1255.7	1258.03	234.5	5.0	1023.5 - 1028.5	Piezometer, Lower Zone	1074.92	1072.83	1070.92	1069.39	1069.50	1068.20	1069.34	1074.93	1069.71	1070.14	1071.57	1068.29	1069.56	1069.25	1068.33	1068.32	1068.58	1068.49	1068.50	1068.46	
112	MW-8R	11/13/1989	1256.1	1258.84	202.5	15.0	1056.3 - 1071.3	Piezometer, Upper Zone	1082.78	1079.31	1077.00	1075.30	1076.74	1075.12	1075.04	1075.74	1076.15	1079.52	1078.77	1074.93	1077.32	1077.24	1074.19	1073.97	1073.17	1072.87	1074.22	1074.23	
113	MW-9	8/29/1989	1255.4	1257.50	126.8	15.0	1130.7 - 1145.7	Perched Water Table	1140.16	1139.74	1139.22	1138.73	1139.07	1139.25	1139.35	1139.24	1139.13	1139.79	1139.65	1138.94	1145.25	1143.16	1139.59	1139.78	1139.83	1139.81	1139.80	1139.89	
114	MW-10	9/15/1989	1215.6	1217.52	183.5	5.0	1034.0 - 1039.0	Piezometer, Lower Zone	1090.39	1086.65	1084.18	1082.08	1083.12	1081.66	1080.14	1082.75	1081.73	1086.63	1085.79	1080.78	1081.67	1081.25	1080.17	1080.18	1080.57	1080.29	1080.40	1080.20	
115	MW-11	9/29/1989	1216.4	1218.56	162.5	15.0	1056.0 - 1071.0	Piezometer, Upper Zone	1093.69	1089.81	1089.22	1085.59	1086.25	1086.73	1086.75	1087.68	1090.31	1092.04	1189.51	1084.33	1087.06	1087.21	1085.27	1085.69	1085.46	1085.42	1085.46	1089.13	
116	MW-12	9/22/1989	1216.4	1218.36	98.5	15.0	1119.9 - 1134.9	Perched Water Table	1130.62	1130.50	1129.69	1130.45	1128.48	1130.17	1130.87	1131.77	1133.62	1133.71	1130.34	1129.07	1132.66	1132.02	1130.49	1129.86	1131.39	1131.23	1131.10	1131.81	
117	MW-13P	2/26/2003	1224.5	1227.42	102.4	15.0	1122.1 - 1137.1	Perched Water Table	1134.00	1133.64	1133.46	1132.81	1133.40	1133.40	1133.21	1133.60	1134.40	1134.33	1133.34	1132.76	1133.89	1133.53	1133.58	1132.89	1133.61	1133.50	1133.64	1133.77	
125	MW-14WT	9/20/2022	1247.2	1249.70	106.0	15.0	1141.2 - 1156.2	Perched Water Table	--	--	--	--	1141.87	1146.01	1145.92	1146.67	1146.77	1146.98	NM	NM	1146.52	1146.16	1146.24	1146.07	1146.16	1146.31	1146.25	1146.28	
118	MW-14	3/12/2003	1247.5	1249.69	186.1	15.0	1061.4 - 1076.4	Regional Water Table	1081.36	1077.76	1075.24	1073.32	1073.63	1072.80	1072.54	1073.44	1073.91	1077.46	1076.76	1072.71	1074.77	1074.63	1071.25	1071.04	1068.52	1070.34	1071.43	1071.37	
119	MW-14Z	3/7/2003	1247.5	1250.22	210.8	5.0	1036.7 - 1041.7	Piezometer, Lower Zone	1078.69	1073.19	1072.26	1071.89	1071.20	1071.17	1071.09	1071.30	1071.96	1072.58	1075.15	1068.74	1072.01	1071.80	1070.23	1070.21	1069.97	1069.90	1070.56	1066.22	
127	MW-15WT	9/28/2022	1220.6	1223.24	85.0	10.0	1135.6 - 1145.6	Perched Water Table	--	--	--	--	DRY	DRY	DRY	DRY	DRY	DRY	NM	NM	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	
129	MW-16WT	9/21/2022	1184.7	1187.41	75.0	10.0	1109.7 - 1119.7	Perched Water Table	--	--	--	--	DRY	DRY	DRY	DRY	DRY	DRY	NM	NM	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	
131	MW-16	8/25/2022	1184.3	1186.92	97.0	5.0	1087.3 - 1092.3	Regional Water Table	--	--	--	--	1093.09*	1101.68	1102.48	1104.29	1104.38	1107.62	NM	NM	1099.47	1099.37	1100.37	1100.51	1103.04	1102.05	1102.16	1102.80	
135	MW-16Z	8/13/2024	1184.5	1186.50	120.0	5.0	1064.5 - 1069.5	Piezometer, Upper Zone	--	--	--	--	--	--	--	--	--	--	--	--	1093.88	1093.94	1093.85	1093.47	1094.81	1094.16	1094.11	1095.00	
133	MW-17WT	9/26/2022	1196.4	1199.18	92.0	10.0	1104.4 - 1114.4	Perched Water Table	--	--	--	--	1116.64	1117.78	FROZEN	1121.62	1124.88	1122.04	NM	NM	1120.55	1119.75	1117.67	1117.82	1120.58	1119.60	1119.86	1119.18	
137	MW-18WT	8/6/2024	1210.1	1212.24	87.0	10.0	1123.1 - 1133.1	Perched Water Table	--	--	--	--	--	--	--	--	--	--	--	--	1130.15	1132.41	1130.29	1130.23	1130.93	1130.53	1130.56	1130.80	
139	MW-18	7/31/2024	1209.8	1212.00	117.0	10.0	1092.8 - 1102.8	Regional Water Table	--	--	--	--	--	--	--	--	--	--	--	--	1104.35	1104.20	1103.43	1103.26	1103.53	1103.79	1103.55	1103.92	
141	MW-19	8/8/2024	1190.5	1192.82	103.0	10.0	1087.5 - 1097.5	Regional Water Table	--	--	--	--	--	--	--	--	--	--	--	--	1095.60	1092.96	1089.97	1091.18	1093.43	1093.43	1093.26	1092.45	
143	MW-19Z	8/12/2024	1190.2	1192.34	130.0	5.0	1060.2 - 1065.2	Piezometer, Upper Zone	--	--	--	--	--	--	--	--	--	--	--	--	1094.04	1093.77	1091.75	1091.89	1093.87	1094.02	1093.85	1093.09	
145	MW-20WT	4/24/2025	1174.4	1176.32	53.0	10.0	1121.4 - 1131.4	Perched Water Table	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1121.92	1124.05	1123.44	1121.37
147	MW-20	4/23/2025	1174.3	1176.58	79.																								

Notes:
NM - Not measured.
NAVD - North American Vertical Datum
-- - Data not available due to monitoring point not yet installed.
* - Groundwater elevation not representative due to well still stabilizing post-well development.
BOLD - Monitoring well or piezometer used in monitoring of the proposed landfill expansion area.
(1) - inaccessible (dedicated pump in the way)

Table 5
Analytical Parameters included in Baseline Monitoring
Vernon County Landfill - Proposed Eastern Expansion

Analytical Parameters	Monitoring Well						
	MW-16Z	MW-18WT	MW-18	MW-19	MW-19Z	MW-20WT	MW-20
Baseline/Detection							
Alkalinity	X	X	X	X	X	X	X
Chloride	X	X	X	X	X	X	X
Hardness	X	X	X	X	X	X	X
Conductivity (field)	X	X	X	X	X	X	X
pH (field)	X	X	X	X	X	X	X
Temperature (field)	X	X	X	X	X	X	X
Public Welfare							
Copper	X	X	X	X	X	X	X
Manganese	X	X	X	X	X	X	X
Sulfate	X	X	X	X	X	X	X
Zinc	X	X	X	X	X	X	X
Public Health							
Arsenic	X	X	X	X	X	X	X
Barium	X	X	X	X	X	X	X
Cadmium	X	X	X	X	X	X	X
Chromium	X	X	X	X	X	X	X
Flouride	X	X	X	X	X	X	X
Lead	X	X	X	X	X	X	X
Mercury	X	X	X	X	X	X	X
N+N	X	X	X	X	X	X	X
Selenium	X	X	X	X	X	X	X
Silver	X	X	X	X	X	X	X
Boron	X	X	X	X	X	X	X
Subtitle D Well Background							
Antimony		X ^(A)					
Beryllium		X ^(A)					
Cobalt		X ^(A)					
Nickel		X ^(A)					
Thallium		X ^(A)					
Vanadium		X ^(A)					
Other							
VOCs (8260)				X		X	X

Notes:

x

- Parameter is analyzed for

(A)

- Subtitle D Well Background sampling only completed during one sampling event (3/7/2025)

Table 6
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Baseline Groundwater Analytical Results Summary
Vernon County Landfill - Proposed Eastern Expansion
Monitoring Well: MW-16Z

Analytical Parameters	NR 140 Standards		Well No./Sampling Date			
			MW-16Z			
	PAL	ES	8/27/2024	10/2/2024	3/7/2025	4/14/2025
VOCs (ug/L)						
1,1,1,2-Tetrachloroethane	7	70	<0.67	<0.67	--	--
1,1,1-Trichloroethane	40	200	<0.45	<0.45	--	--
1,1,2,2-Tetrachloroethane	0.02	0.2	<0.65	<0.65	--	--
1,1,2-Trichloroethane	0.5	5	<0.73	<0.73	--	--
1,1-Dichloroethane	85	850	<0.36	<0.36	--	--
1,1-Dichloroethene	0.7	7	<0.48	<0.48	--	--
1,1-Dichloropropene	NE	NE	<0.33	<0.33	--	--
1,2,3-Trichlorobenzene	NE	NE	<0.35	<0.35	--	--
1,2,3-Trichloropropane	12	60	<1.5	<1.5	--	--
1,2,4-Trichlorobenzene	14	70	<0.31	<0.31	--	--
1,2,4-Trimethylbenzene	96	480	<0.3	<0.3	--	--
1,2-Dibromo-3-Chloropropane	0.02	0.2	<3.9	<3.9	--	--
1,2-Dibromoethane (EDB)	0.005	0.05	<0.56	<0.56	--	--
1,2-Dichlorobenzene	60	600	<0.48	<0.48	--	--
1,2-Dichloroethane	0.5	5	<0.58	<0.58	--	--
1,2-Dichloropropane	0.5	5	<0.37	<0.37	--	--
1,3,5-Trimethylbenzene	96	480	<0.29	<0.29	--	--
1,3-Dichlorobenzene	120	600	<0.41	<0.41	--	--
1,3-Dichloropropane	NE	NE	<0.56	<0.56	--	--
1,4-Dichlorobenzene	15	75	<0.45	<0.45	--	--
2,2-Dichloropropane	NE	NE	<0.48	<0.48	--	--
2-Butanone (MEK)	800	4000	<2.3	<2.3	--	--
2-Chlorotoluene	NE	NE	<0.36	<0.36	--	--
4-Chlorotoluene	NE	NE	<0.34	<0.34	--	--
Acetone	1800	9000	<4.3	<4.3	--	--
Benzene	0.5	5	<0.18	<0.18	--	--
Bromobenzene	NE	NE	<0.6	<0.6	--	--
Bromochloromethane	NE	NE	<0.5	<0.5	--	--
Bromodichloromethane	0.06	0.6	<0.57	<0.57	--	--
Bromoform	0.44	4.4	<0.96	<0.96	--	--
Bromomethane	1	10	<1.8	<1.8	--	--
Carbon disulfide	200	1000	<1.1	<1.1	--	--
Carbon tetrachloride	0.5	5	<0.41	<0.41	--	--
Chlorobenzene	20	100	<0.41	<0.41	--	--
Chlorodibromomethane	6	60	<0.83	<0.83	--	--
Chloroethane	80	400	<0.47	<0.47	--	--
Chloroform	0.6	6	<0.92	<0.92	--	--
Chloromethane	3	30	<0.79	<0.79	--	--
cis-1,2-Dichloroethene	7	70	<0.42	<0.42	--	--
cis-1,3-Dichloropropene	NE	NE	<0.52	<0.52	--	--
Dibromomethane	NE	NE	<0.58	<0.58	--	--
Dichlorodifluoromethane	200	1000	<1.8	<1.8	--	--
Ethylbenzene	140	700	<0.2	<0.2	--	--
Hexachlorobutadiene	NE	NE	<0.54	<0.54	--	--
Isopropyl ether	NE	NE	<0.38	<0.38	--	--
Isopropylbenzene	NE	NE	<0.29	<0.29	--	--
Methyl tert-butyl ether	12	60	<0.43	<0.43	--	--
Methylene Chloride	0.5	5	<3.6	<3.6	--	--
Naphthalene	10	100	<0.44	<0.44	--	--
n-Butylbenzene	NE	NE	<0.33	<0.33	--	--
N-Propylbenzene	NE	NE	<0.32	<0.32	--	--
p-Isopropyltoluene	NE	NE	<0.29	<0.29	--	--
sec-Butylbenzene	NE	NE	<0.27	<0.27	--	--
Styrene	10	100	<0.31	<0.31	--	--
tert-Butylbenzene	NE	NE	<0.26	<0.26	--	--
Tetrachloroethene	0.5	5	<0.39	<0.39	--	--
Tetrahydrofuran	10	50	<3.9	<3.9	--	--
Toluene	160	800	<0.21	<0.21	--	--
trans-1,2-Dichloroethene	20	100	<0.44	<0.44	--	--
trans-1,3-Dichloropropene	NE	NE	<0.63	<0.63	--	--
Trichloroethene	0.5	5	<0.15	<0.15	--	--
Trichlorofluoromethane	698	3490	<0.44	<0.44	--	--
Vinyl chloride	0.02	0.2	<0.47	<0.47	--	--
Xylenes, Total	400	2000	<0.3	<0.3	--	--

Table 6
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Baseline Groundwater Analytical Results Summary
Vernon County Landfill - Proposed Eastern Expansion
Monitoring Well: MW-16Z

Analytical Parameters	NR 140 Standards		Well No./Sampling Date			
	PAL	ES	MW-16Z			
			8/27/2024	10/2/2024	3/7/2025	4/14/2025
Inorganics						
Alkalinity - mg/L	NE	NE	300	310	310	320
Arsenic - ug/L	1	10	0.25	0.23	<1.2	<0.23
Barium - ug/L	400	2000	98	74	350	55
Boron - mg/L	0.2	1	0.024	0.045	--	0.018
Cadmium - ug/L	0.5	5	<0.17	0.5	<u>1.4</u>	<0.17
Chloride - mg/L	125	250	9.0	10	11	9.7
Chromium - ug/L	10	100	<1.1	<1.1	<5.7	<1.1
Copper - ug/L	130	1300	1.9	2.7	7.0	2.0
Fluoride - mg/L	0.8	4	<0.19	<0.19	--	<0.43
Hardness as calcium carbonate - mg/L	NE	NE	320	340	1700	340
Lead - ug/L	1.5	15	<0.19	0.23	<0.93	<0.19
Manganese - ug/L	60	300	530	71	52	18
Mercury - ug/L	0.2	2	<0.076	<0.076	<0.076	<0.076
Nitrate Nitrite as N - mg/L	2	10	1.0	0.087	1.5	0.74
Selenium - ug/L	10	50	<0.98	<0.98	5.3	<0.98
Silver - ug/L	10	50	<0.12	<0.12	<0.58	<0.12
Sodium - mg/L	NE	NE	--	--	56	--
Sulfate - mg/L	125	250	12	11	11	10
Zinc - ug/L	250	500	<6.9	92	340	33
Field Parameters						
Depth to Water (ft from MP)	NE	NE	92.62	92.56	92.65	93.03
Field Conductivity	NE	NE	540	606	633	6.01
Field pH	NE	NE	7.52	7.49	7.67	8.0
Field Temperature	NE	NE	14.4	10.3	9.9	9.0

Notes:

NE: No standard established.

-- : Not analyzed.

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

B : Detection is suspect due to blank contamination.

< : Indicates the analyte was analyzed for but not detected above the detection limit.

0.0 - Exceeds ch. NR 140 Public Health or Public Welfare Groundwater Quality Preventative Action Limit (PAL).

0.0 - Exceeds ch. NR 140 Public Health or Public Welfare Groundwater Quality Enforcement Standard (ES).

Table 6
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Baseline Groundwater Analytical Results Summary
Vernon County Landfill - Proposed Eastern Expansion
Monitoring Well: MW-18WT

Analytical Parameters	NR 140 Standards		Well No./Sampling Date			
	PAL	ES	MW-18WT			
			8/27/2024	10/2/2024	3/7/2025	4/14/2025
VOCs (ug/L)						
1,1,1,2-Tetrachloroethane	7	70	<0.67	<0.67	--	--
1,1,1-Trichloroethane	40	200	<0.45	<0.45	--	--
1,1,2,2-Tetrachloroethane	0.02	0.2	<0.65	<0.65	--	--
1,1,2-Trichloroethane	0.5	5	<0.73	<0.73	--	--
1,1-Dichloroethane	85	850	<0.36	<0.36	--	--
1,1-Dichloroethene	0.7	7	<0.48	<0.48	--	--
1,1-Dichloropropene	NE	NE	<0.33	<0.33	--	--
1,2,3-Trichlorobenzene	NE	NE	<0.35	<0.35	--	--
1,2,3-Trichloropropane	12	60	<1.5	<1.5	--	--
1,2,4-Trichlorobenzene	14	70	<0.31	<0.31	--	--
1,2,4-Trimethylbenzene	96	480	<0.3	<0.3	--	--
1,2-Dibromo-3-Chloropropane	0.02	0.2	<3.9	<3.9	--	--
1,2-Dibromoethane (EDB)	0.005	0.05	<0.56	<0.56	--	--
1,2-Dichlorobenzene	60	600	<0.48	<0.48	--	--
1,2-Dichloroethane	0.5	5	<0.58	<0.58	--	--
1,2-Dichloropropane	0.5	5	<0.37	<0.37	--	--
1,3,5-Trimethylbenzene	96	480	<0.29	<0.29	--	--
1,3-Dichlorobenzene	120	600	<0.41	<0.41	--	--
1,3-Dichloropropane	NE	NE	<0.56	<0.56	--	--
1,4-Dichlorobenzene	15	75	<0.45	<0.45	--	--
2,2-Dichloropropane	NE	NE	<0.48	<0.48	--	--
2-Butanone (MEK)	800	4000	<2.3	<2.3	--	--
2-Chlorotoluene	NE	NE	<0.36	<0.36	--	--
4-Chlorotoluene	NE	NE	<0.34	<0.34	--	--
Acetone	1800	9000	<4.3	<4.3	--	--
Benzene	0.5	5	<0.18	<0.18	--	--
Bromobenzene	NE	NE	<0.6	<0.6	--	--
Bromochloromethane	NE	NE	<0.5	<0.5	--	--
Bromodichloromethane	0.06	0.6	<0.57	<0.57	--	--
Bromoform	0.44	4.4	<0.96	<0.96	--	--
Bromomethane	1	10	<1.8	<1.8	--	--
Carbon disulfide	200	1000	<1.1	<1.1	--	--
Carbon tetrachloride	0.5	5	<0.41	<0.41	--	--
Chlorobenzene	20	100	<0.41	<0.41	--	--
Chlorodibromomethane	6	60	<0.83	<0.83	--	--
Chloroethane	80	400	<0.47	<0.47	--	--
Chloroform	0.6	6	<0.92	<0.92	--	--
Chloromethane	3	30	<0.79	<0.79	--	--
cis-1,2-Dichloroethene	7	70	<0.42	<0.42	--	--
cis-1,3-Dichloropropene	NE	NE	<0.52	<0.52	--	--
Dibromomethane	NE	NE	<0.58	<0.58	--	--
Dichlorodifluoromethane	200	1000	<1.8	<1.8	--	--
Ethylbenzene	140	700	<0.2	<0.2	--	--
Hexachlorobutadiene	NE	NE	<0.54	<0.54	--	--
Isopropyl ether	NE	NE	<0.38	<0.38	--	--
Isopropylbenzene	NE	NE	<0.29	<0.29	--	--
Methyl tert-butyl ether	12	60	<0.43	<0.43	--	--
Methylene Chloride	0.5	5	<3.6	<3.6	--	--
Naphthalene	10	100	<0.44	<0.44	--	--
n-Butylbenzene	NE	NE	<0.33	<0.33	--	--
N-Propylbenzene	NE	NE	<0.32	<0.32	--	--
p-Isopropyltoluene	NE	NE	<0.29	<0.29	--	--
sec-Butylbenzene	NE	NE	<0.27	<0.27	--	--
Styrene	10	100	<0.31	<0.31	--	--
tert-Butylbenzene	NE	NE	<0.26	<0.26	--	--
Tetrachloroethene	0.5	5	<0.39	<0.39	--	--
Tetrahydrofuran	10	50	<3.9	<3.9	--	--
Toluene	160	800	<0.21	<0.21	--	--
trans-1,2-Dichloroethene	20	100	<0.44	<0.44	--	--
trans-1,3-Dichloropropene	NE	NE	<0.63	<0.63	--	--
Trichloroethene	0.5	5	<0.15	<0.15	--	--
Trichlorofluoromethane	698	3490	<0.44	<0.44	--	--
Vinyl chloride	0.02	0.2	<0.47	<0.47	--	--
Xylenes, Total	400	2000	<0.3	<0.3	--	--

Table 6
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Baseline Groundwater Analytical Results Summary
Vernon County Landfill - Proposed Eastern Expansion
Monitoring Well: MW-18WT

Analytical Parameters	NR 140 Standards		Well No./Sampling Date			
	PAL	ES	MW-18WT			
			8/27/2024	10/2/2024	3/7/2025	4/14/2025
Inorganics						
Alkalinity - mg/L	NE	NE	280	280	280	270
Antimony - ug/L	1.2	6	--	--	<1.3	<1.3
Arsenic - ug/L	1	10	<u>11</u>	<0.23	<0.23	<u>1.4</u>
Barium - ug/L	400	2000	210	39	36	59
Boron - mg/L	0.2	1	0.031	0.024	0.014	0.022
Beryllium	0.4	4	--	--	<0.53	<0.53
Cadmium - ug/L	0.5	5	0.39	<0.17	<0.17	<0.17
Chloride - mg/L	125	250	2.7	2.6	3.4	2.5
Chromium - ug/L	10	100	35	<1.1	<1.1	5.8
Copper - ug/L	130	1300	42	<0.50	<0.50	5.8
Fluoride - mg/L	0.8	4	<0.19	<0.19	<0.43	<0.43
Hardness as calcium carbonate - mg/L	NE	NE	640	330	320	340
Lead - ug/L	1.5	15	<u>18</u>	<0.19	<0.19	<u>2.0</u>
Manganese - ug/L	60	300	<u>1800</u>	3.3	1.5	<u>220</u>
Mercury - ug/L	0.2	2	<0.076	<0.076	<0.076	<0.076
Nitrate Nitrite as N - mg/L	2	10	<u>3.9</u>	1.3	<0.041	<u>3.7</u>
Selenium - ug/L	10	50	3.4	<0.98	<0.98	<0.98
Silver - ug/L	10	50	0.13	<0.12	<0.12	<0.12
Sulfate - mg/L	125	250	7.6	7.5	7.5	7.8
Vanadium - ug/L	6	30	--	--	<2.2	<u>11</u>
Zinc - ug/L	250	500	64	<6.9	<6.9	7.8
Field Parameters						
Depth to Water (ft from MP)	NE	NE	82.09	79.83	81.95	82.01
Field Conductivity	NE	NE	492	540	570	532
Field pH	NE	NE	7.46	7.29	7.62	7.48
Field Temperature	NE	NE	14.8	9.7	11.8	10.2

Notes:

NE: No standard established.

-- : Not analyzed.

< : Indicates the analyte was analyzed for but not detected above the detection limit.

0.0 - Exceeds ch. NR 140 Public Health or Public Welfare Groundwater Quality Preventative Action Limit (PAL).

0.0 - Exceeds ch. NR 140 Public Health or Public Welfare Groundwater Quality Enforcement Standard (ES).

Table 6
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Baseline Groundwater Analytical Results Summary
Vernon County Landfill - Proposed Eastern Expansion
Monitoring Well: MW-18

Analytical Parameters	NR 140 Standards		Well No./Sampling Date			
			MW-18			
	PAL	ES	8/27/2024	10/2/2024	3/7/2025	4/14/2025
VOCs (ug/L)						
1,1,1,2-Tetrachloroethane	7	70	<0.67	<0.67	--	--
1,1,1-Trichloroethane	40	200	<0.45	<0.45	--	--
1,1,2,2-Tetrachloroethane	0.02	0.2	<0.65	<0.65	--	--
1,1,2-Trichloroethane	0.5	5	<0.73	<0.73	--	--
1,1-Dichloroethane	85	850	<0.36	<0.36	--	--
1,1-Dichloroethene	0.7	7	<0.48	<0.48	--	--
1,1-Dichloropropene	NE	NE	<0.33	<0.33	--	--
1,2,3-Trichlorobenzene	NE	NE	<0.35	<0.35	--	--
1,2,3-Trichloropropane	12	60	<1.5	<1.5	--	--
1,2,4-Trichlorobenzene	14	70	<0.31	<0.31	--	--
1,2,4-Trimethylbenzene	96	480	<0.3	<0.3	--	--
1,2-Dibromo-3-Chloropropane	0.02	0.2	<3.9	<3.9	--	--
1,2-Dibromoethane (EDB)	0.005	0.05	<0.56	<0.56	--	--
1,2-Dichlorobenzene	60	600	<0.48	<0.48	--	--
1,2-Dichloroethane	0.5	5	<0.58	<0.58	--	--
1,2-Dichloropropane	0.5	5	<0.37	<0.37	--	--
1,3,5-Trimethylbenzene	96	480	<0.29	<0.29	--	--
1,3-Dichlorobenzene	120	600	<0.41	<0.41	--	--
1,3-Dichloropropane	NE	NE	<0.56	<0.56	--	--
1,4-Dichlorobenzene	15	75	<0.45	<0.45	--	--
2,2-Dichloropropane	NE	NE	<0.48	<0.48	--	--
2-Butanone (MEK)	800	4000	<2.3	<2.3	--	--
2-Chlorotoluene	NE	NE	<0.36	<0.36	--	--
4-Chlorotoluene	NE	NE	<0.34	<0.34	--	--
Acetone	1800	9000	<4.3	<4.3	--	--
Benzene	0.5	5	<0.18	<0.18	--	--
Bromobenzene	NE	NE	<0.6	<0.6	--	--
Bromochloromethane	NE	NE	<0.5	<0.5	--	--
Bromodichloromethane	0.06	0.6	<0.57	<0.57	--	--
Bromoform	0.44	4.4	<0.96	<0.96	--	--
Bromomethane	1	10	<1.8	<1.8	--	--
Carbon disulfide	200	1000	<1.1	<1.1	--	--
Carbon tetrachloride	0.5	5	<0.41	<0.41	--	--
Chlorobenzene	20	100	<0.41	<0.41	--	--
Chlorodibromomethane	6	60	<0.83	<0.83	--	--
Chloroethane	80	400	<0.47	<0.47	--	--
Chloroform	0.6	6	<0.92	<0.92	--	--
Chloromethane	3	30	<0.79	<0.79	--	--
cis-1,2-Dichloroethene	7	70	<0.42	<0.42	--	--
cis-1,3-Dichloropropene	NE	NE	<0.52	<0.52	--	--
Dibromomethane	NE	NE	<0.58	<0.58	--	--
Dichlorodifluoromethane	200	1000	<1.8	<1.8	--	--
Ethylbenzene	140	700	<0.2	<0.2	--	--
Hexachlorobutadiene	NE	NE	<0.54	<0.54	--	--
Isopropyl ether	NE	NE	<0.38	<0.38	--	--
Isopropylbenzene	NE	NE	<0.29	<0.29	--	--
Methyl tert-butyl ether	12	60	<0.43	<0.43	--	--
Methylene Chloride	0.5	5	<3.6	<3.6	--	--
Naphthalene	10	100	<0.44	<0.44	--	--
n-Butylbenzene	NE	NE	<0.33	<0.33	--	--
N-Propylbenzene	NE	NE	<0.32	<0.32	--	--
p-Isopropyltoluene	NE	NE	<0.29	<0.29	--	--
sec-Butylbenzene	NE	NE	<0.27	<0.27	--	--
Styrene	10	100	<0.31	<0.31	--	--
tert-Butylbenzene	NE	NE	<0.26	<0.26	--	--
Tetrachloroethene	0.5	5	<0.39	<0.39	--	--
Tetrahydrofuran	10	50	<3.9	<3.9	--	--
Toluene	160	800	<0.21	<0.21	--	--
trans-1,2-Dichloroethene	20	100	<0.44	<0.44	--	--
trans-1,3-Dichloropropene	NE	NE	<0.63	<0.63	--	--
Trichloroethene	0.5	5	<0.15	<0.15	--	--
Trichlorofluoromethane	698	3490	<0.44	<0.44	--	--
Vinyl chloride	0.02	0.2	<0.47	<0.47	--	--
Xylenes, Total	400	2000	<0.3	<0.3	--	--

Table 6
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Baseline Groundwater Analytical Results Summary
Vernon County Landfill - Proposed Eastern Expansion
Monitoring Well: MW-18

Analytical Parameters	NR 140 Standards		Well No./Sampling Date			
	PAL	ES	MW-18			
			8/27/2024	10/2/2024	3/7/2025	4/14/2025
Inorganics						
Alkalinity - mg/L	NE	NE	230	260	250	270
Arsenic - ug/L	1	10	<0.23	<0.23	<0.23	<0.23
Barium - ug/L	400	2000	38	36	32	34
Boron - mg/L	0.2	1	0.017	0.027	<0.013	0.018
Cadmium - ug/L	0.5	5	<0.17	<0.17	<0.17	<0.17
Chloride - mg/L	125	250	4.8	4.2	3.8	3.0
Chromium - ug/L	10	100	<1.1	<1.1	<1.1	<1.1
Copper - ug/L	130	1300	1.4	<0.50	<0.5	0.8
Fluoride - mg/L	0.8	4	<0.19	<0.19	<0.43	<0.43
Hardness as calcium carbonate - mg/L	NE	NE	320	320	320	310
Lead - ug/L	1.5	15	<0.19	<0.19	<0.19	<0.19
Manganese - ug/L	60	300	12	2.9	1.0	1.7
Mercury - ug/L	0.2	2	<0.076	<0.076	<0.076	<0.076
Nitrate Nitrite as N - mg/L	2	10	5.2	0.76	<0.041	5.7
Selenium - ug/L	10	50	<0.98	<0.98	<0.98	<0.98
Silver - ug/L	10	50	<0.12	<0.12	<0.12	<0.12
Sulfate - mg/L	125	250	9.7	9.9	27	9.3
Zinc - ug/L	250	500	<6.9	<6.9	<6.9	<6.9
Field Parameters						
Depth to Water (ft from MP)	NE	NE	107.65	107.8	108.57	108.74
Field Conductivity	NE	NE	480	534	560	524
Field pH	NE	NE	7.43	7.63	7.89	7.52
Field Temperature	NE	NE	14.3	9.5	9.5	9.6

Notes:

NE: No standard established.

-- : Not analyzed.

< : Indicates the analyte was analyzed for but not detected above the detection limit.

0.0 - Exceeds ch. NR 140 Public Health or Public Welfare Groundwater Quality Preventative Action Limit (PAL).

0.0 - Exceeds ch. NR 140 Public Health or Public Welfare Groundwater Quality Enforcement Standard (ES).

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Baseline Groundwater Analytical Results Summary
Vernon County Landfill - Proposed Eastern Expansion
Monitoring Well: MW-19

Analytical Parameters	NR 140 Standards		Well No./Sampling Date			
	PAL	ES	MW-19			
			8/27/2024	10/2/2024	3/7/2025	4/14/2025
VOCs (ug/L)						
1,1,1,2-Tetrachloroethane	7	70	<0.67	<0.67	<0.67	<0.67
1,1,1-Trichloroethane	40	200	<0.45	<0.45	<0.45	<0.45
1,1,2,2-Tetrachloroethane	0.02	0.2	<0.65	<0.65	<0.65	<0.65
1,1,2-Trichloroethane	0.5	5	<0.73	<0.73	<0.73	<0.73
1,1-Dichloroethane	85	850	<0.36	<0.36	<0.36	<0.36
1,1-Dichloroethene	0.7	7	<0.48	<0.48	<0.48	<0.48
1,1-Dichloropropene	NE	NE	<0.33	<0.33	<0.33	<0.33
1,2,3-Trichlorobenzene	NE	NE	<0.35	<0.35	<0.35	<0.35
1,2,3-Trichloropropane	12	60	<1.5	<1.5	<1.5	<1.5
1,2,4-Trichlorobenzene	14	70	<0.31	<0.31	<0.31	<0.31
1,2,4-Trimethylbenzene	96	480	2.1	<0.3	<0.3	<0.3
1,2-Dibromo-3-Chloropropane	0.02	0.2	<3.9	<3.9	<3.9	<3.9
1,2-Dibromoethane (EDB)	0.005	0.05	<0.56	<0.56	<0.56	<0.56
1,2-Dichlorobenzene	60	600	<0.48	<0.48	<0.48	<0.48
1,2-Dichloroethane	0.5	5	<0.58	<0.58	<0.58	<0.58
1,2-Dichloropropane	0.5	5	<0.37	<0.37	<0.37	<0.37
1,3,5-Trimethylbenzene	96	480	0.34	<0.29	<0.29	<0.29
1,3-Dichlorobenzene	120	600	<0.41	<0.41	<0.41	<0.41
1,3-Dichloropropane	NE	NE	<0.56	<0.56	<0.56	<0.56
1,4-Dichlorobenzene	15	75	<0.45	<0.45	<0.46	<0.45
2,2-Dichloropropane	NE	NE	<0.48	<0.48	<0.48	<0.48
2-Butanone (MEK)	800	4000	<2.3	<2.3	<2.3	<2.3
2-Chlorotoluene	NE	NE	<0.36	<0.36	<0.36	<0.36
4-Chlorotoluene	NE	NE	<0.34	<0.34	<0.34	<0.34
Acetone	1800	9000	16	4.8	<4.3	<4.3
Benzene	0.5	5	47	0.38	<0.18	<0.18
Bromobenzene	NE	NE	<0.60	<0.6	<0.6	<0.6
Bromochloromethane	NE	NE	<0.50	<0.5	<0.5	<0.5
Bromodichloromethane	0.06	0.6	<0.57	<0.57	<0.57	<0.57
Bromoform	0.44	4.4	<0.96	<0.96	<0.96	<0.96
Bromomethane	1	10	<1.8	<1.8	<1.8	<1.8
Carbon disulfide	200	1000	<1.1	<1.1	<1.1	<1.1
Carbon tetrachloride	0.5	5	<0.41	<0.41	<0.42	<0.41
Chlorobenzene	20	100	<0.41	<0.41	<0.41	<0.41
Chlorodibromomethane	6	60	<0.83	<0.83	<0.83	<0.83
Chloroethane	80	400	<0.47	<0.47	<0.47	<0.47
Chloroform	0.6	6	<0.92	<0.92	<0.92	<0.92
Chloromethane	3	30	<0.79	<0.79	<0.79	<0.79
cis-1,2-Dichloroethene	7	70	<0.42	<0.42	<0.42	<0.42
cis-1,3-Dichloropropene	NE	NE	<0.52	<0.52	<0.52	<0.52
Dibromomethane	NE	NE	<0.58	<0.58	<0.58	<0.58
Dichlorodifluoromethane	200	1000	<1.8	<1.8	<1.8	<1.8
Ethylbenzene	140	700	9.5	<0.2	<0.2	<0.2
Hexachlorobutadiene	NE	NE	<0.54	<0.54	<0.54	<0.54
Isopropyl ether	NE	NE	<0.38	<0.38	<0.39	<0.38
Isopropylbenzene	NE	NE	0.6	<0.29	<0.29	<0.29
Methyl tert-butyl ether	12	60	<0.43	<0.43	<0.43	<0.43
Methylene Chloride	0.5	5	<3.6	<3.6	<3.6	<3.6
Naphthalene	10	100	9.5	<0.44	<0.44	<0.44
n-Butylbenzene	NE	NE	0.79	<0.33	<0.33	<0.33
N-Propylbenzene	NE	NE	2.7	<0.32	<0.32	<0.32
p-Isopropyltoluene	NE	NE	<0.29	<0.29	<0.29	<0.29
sec-Butylbenzene	NE	NE	<0.27	<0.27	<0.27	<0.27
Styrene	10	100	<0.31	<0.31	<0.31	<0.31
tert-Butylbenzene	NE	NE	<0.26	<0.26	<0.27	<0.26
Tetrachloroethene	0.5	5	<0.39	<0.39	<0.39	<0.39
Tetrahydrofuran	10	50	<3.9	<3.9	<3.9	<3.9
Toluene	160	800	35	0.23	<0.21	<0.21
trans-1,2-Dichloroethene	20	100	<0.44	<0.44	<0.44	<0.44
trans-1,3-Dichloropropene	NE	NE	<0.63	<0.63	<0.63	<0.63
Trichloroethene	0.5	5	<0.15	<0.15	<0.15	<0.15
Trichlorofluoromethane	698	3490	<0.44	<0.44	<0.44	<0.44
Vinyl chloride	0.02	0.2	<0.47	<0.47	<0.2	<0.2
Xylenes, Total	400	2000	17	<0.3	<0.3	<0.3

Table 6
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Baseline Groundwater Analytical Results Summary
Vernon County Landfill - Proposed Eastern Expansion
Monitoring Well: MW-19

Analytical Parameters	NR 140 Standards		Well No./Sampling Date			
	PAL	ES	MW-19			
			8/27/2024	10/2/2024	3/7/2025	4/14/2025
Inorganics						
Alkalinity - mg/L	NE	NE	140	1.3	41	39
Arsenic - ug/L	1	10	5.3	<0.23	0.28	<0.23
Barium - ug/L	400	2000	120	2.7	17	30
Boron - mg/L	0.2	1	0.025	0.025	<0.013	0.014
Cadmium - ug/L	0.5	5	0.23	0.36	<0.17	<0.17
Chloride - mg/L	125	250	1.5	16	3.0	3.1
Chromium - ug/L	10	100	62	0.021	<1.1	<1.1
Copper - ug/L	130	1300	81	<0.50	0.81	1.6
Fluoride - mg/L	0.8	4	<0.19	<0.19	<0.43	<0.43
Hardness as calcium carbonate - mg/L	NE	NE	120	0.74	39	40
Lead - ug/L	1.5	15	7.0	<0.19	<0.19	<0.19
Manganese - ug/L	60	300	2400	1400	380	240
Mercury - ug/L	0.2	2	<0.076	<0.076	<0.076	<0.076
Nitrate Nitrite as N - mg/L	2	10	0.27	<0.020	0.42	0.59
Selenium - ug/L	10	50	1.5	<0.98	<0.98	<0.98
Silver - ug/L	10	50	0.13	<0.12	<0.12	<0.12
Sulfate - mg/L	125	250	3.1	61	3.8	4.0
Zinc - ug/L	250	500	21	56	<6.9	<6.9
Field Parameters						
Depth to Water (ft from MP)	NE	NE	97.22	99.86	102.85	101.64
Field Conductivity	NE	NE	195	137	161	111
Field pH	NE	NE	7.61	6.09	7.05	6.12
Field Temperature	NE	NE	15.3	10.4	9.2	9.5

Notes:

NE: No standard established.

< : Indicates the analyte was analyzed for but not detected above the detection limit.

0.0 - Exceeds ch. NR 140 Public Health or Public Welfare Groundwater Quality Preventative Action Limit (PAL).

0.0 - Exceeds ch. NR 140 Public Health or Public Welfare Groundwater Quality Enforcement Standard (ES).

Table 6
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Baseline Groundwater Analytical Results Summary
Vernon County Landfill - Proposed Eastern Expansion
Monitoring Well: MW-19Z

Analytical Parameters	NR 140 Standards		Well No./Sampling Date			
			MW-19Z			
	PAL	ES	8/27/2024	10/2/2024	3/7/2025	4/14/2025
VOCs (ug/L)						
1,1,1,2-Tetrachloroethane	7	70	<0.67	<0.67	--	--
1,1,1-Trichloroethane	40	200	<0.45	<0.45	--	--
1,1,2,2-Tetrachloroethane	0.02	0.2	<0.65	<0.65	--	--
1,1,2-Trichloroethane	0.5	5	<0.73	<0.73	--	--
1,1-Dichloroethane	85	850	<0.36	<0.36	--	--
1,1-Dichloroethene	0.7	7	<0.48	<0.48	--	--
1,1-Dichloropropene	NE	NE	<0.33	<0.33	--	--
1,2,3-Trichlorobenzene	NE	NE	<0.35	<0.35	--	--
1,2,3-Trichloropropane	12	60	<1.5	<1.5	--	--
1,2,4-Trichlorobenzene	14	70	<0.31	<0.31	--	--
1,2,4-Trimethylbenzene	96	480	<0.30	<0.3	--	--
1,2-Dibromo-3-Chloropropane	0.02	0.2	<3.9	<3.9	--	--
1,2-Dibromoethane (EDB)	0.005	0.05	<0.56	<0.56	--	--
1,2-Dichlorobenzene	60	600	<0.48	<0.48	--	--
1,2-Dichloroethane	0.5	5	<0.58	<0.58	--	--
1,2-Dichloropropane	0.5	5	<0.37	<0.37	--	--
1,3,5-Trimethylbenzene	96	480	<0.29	<0.29	--	--
1,3-Dichlorobenzene	120	600	<0.41	<0.41	--	--
1,3-Dichloropropane	NE	NE	<0.56	<0.56	--	--
1,4-Dichlorobenzene	15	75	<0.45	<0.45	--	--
2,2-Dichloropropane	NE	NE	<0.48	<0.48	--	--
2-Butanone (MEK)	800	4000	<2.3	<2.3	--	--
2-Chlorotoluene	NE	NE	<0.36	<0.36	--	--
4-Chlorotoluene	NE	NE	<0.34	<0.34	--	--
Acetone	1800	9000	<4.3	<4.3	--	--
Benzene	0.5	5	<0.18	<0.18	--	--
Bromobenzene	NE	NE	<0.60	<0.6	--	--
Bromochloromethane	NE	NE	<0.50	<0.5	--	--
Bromodichloromethane	0.06	0.6	<0.57	<0.57	--	--
Bromoform	0.44	4.4	<0.96	<0.96	--	--
Bromomethane	1	10	<1.8	<1.8	--	--
Carbon disulfide	200	1000	<1.1	<1.1	--	--
Carbon tetrachloride	0.5	5	<0.41	<0.41	--	--
Chlorobenzene	20	100	<0.41	<0.41	--	--
Chlorodibromomethane	6	60	<0.83	<0.83	--	--
Chloroethane	80	400	<0.47	<0.47	--	--
Chloroform	0.6	6	<0.92	<0.92	--	--
Chloromethane	3	30	<0.79	<0.79	--	--
cis-1,2-Dichloroethene	7	70	<0.42	<0.42	--	--
cis-1,3-Dichloropropene	NE	NE	<0.52	<0.52	--	--
Dibromomethane	NE	NE	<0.58	<0.58	--	--
Dichlorodifluoromethane	200	1000	<1.8	<1.8	--	--
Ethylbenzene	140	700	<0.20	<0.2	--	--
Hexachlorobutadiene	NE	NE	<0.54	<0.54	--	--
Isopropyl ether	NE	NE	<0.38	<0.38	--	--
Isopropylbenzene	NE	NE	<0.29	<0.29	--	--
Methyl tert-butyl ether	12	60	<0.43	<0.43	--	--
Methylene Chloride	0.5	5	<3.6	<3.6	--	--
Naphthalene	10	100	<0.44	<0.44	--	--
n-Butylbenzene	NE	NE	<0.33	<0.33	--	--
N-Propylbenzene	NE	NE	<0.32	<0.32	--	--
p-Isopropyltoluene	NE	NE	<0.29	<0.29	--	--
sec-Butylbenzene	NE	NE	<0.27	<0.27	--	--
Styrene	10	100	<0.31	<0.31	--	--
tert-Butylbenzene	NE	NE	<0.26	<0.26	--	--
Tetrachloroethene	0.5	5	<0.39	<0.39	--	--
Tetrahydrofuran	10	50	<3.9	<3.9	--	--
Toluene	160	800	0.34	<0.21	--	--
trans-1,2-Dichloroethene	20	100	<0.44	<0.44	--	--
trans-1,3-Dichloropropene	NE	NE	<0.63	<0.63	--	--
Trichloroethene	0.5	5	<0.15	<0.15	--	--
Trichlorofluoromethane	698	3490	<0.44	<0.44	--	--
Vinyl chloride	0.02	0.2	<0.47	<0.47	--	--
Xylenes, Total	400	2000	<0.30	<0.3	--	--

Table 6
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Baseline Groundwater Analytical Results Summary
Vernon County Landfill - Proposed Eastern Expansion
Monitoring Well: MW-19Z

Analytical Parameters	NR 140 Standards		Well No./Sampling Date			
			MW-19Z			
	PAL	ES	8/27/2024	10/2/2024	3/7/2025	4/14/2025
Inorganics						
Alkalinity - mg/L	NE	NE	82	83	77	81
Arsenic - ug/L	1	10	<0.23	<0.23	<0.23	<0.23
Barium - ug/L	400	2000	34	43	39	38
Boron - mg/L	0.2	1	0.018	0.024	<0.013	0.014
Cadmium - ug/L	0.5	5	<0.17	<0.17	<0.17	<0.17
Chloride - mg/L	125	250	3.7	3.1	3.4	3
Chromium - ug/L	10	100	<1.1	<1.1	<1.1	<1.1
Copper - ug/L	130	1300	1.7	1.9	1.2	2.5
Fluoride - mg/L	0.8	4	<0.19	<0.19	<0.43	<0.43
Hardness as calcium carbonate - mg/L	NE	NE	85	88	86	83
Lead - ug/L	1.5	15	<0.19	<0.19	<0.19	<0.19
Manganese - ug/L	60	300	690	330	42	27
Mercury - ug/L	0.2	2	<0.076	<0.076	<0.076	<0.076
Nitrate Nitrite as N - mg/L	2	10	0.61	0.054	<0.041	0.89
Selenium - ug/L	10	50	<0.98	<0.98	<0.98	<0.98
Silver - ug/L	10	50	<0.12	<0.12	<0.12	<0.12
Sulfate - mg/L	125	250	3.3	2.7	2.8	3.1
Zinc - ug/L	250	500	<6.9	33	7.2	14
Field Parameters						
Depth to Water (ft from MP)	NE	NE	98.3	98.57	100.59	100.45
Field Conductivity	NE	NE	166	176	238	161
Field pH	NE	NE	7.52	6.49	6.90	6.44
Field Temperature	NE	NE	15.4	9.1	8.7	8.9

Notes:

NE: No standard established.

< : Indicates the analyte was analyzed for but not detected above the detection limit.

0.0 - Exceeds ch. NR 140 Public Health or Public Welfare Groundwater Quality Preventative Action Limit (PAL).

0.0 - Exceeds ch. NR 140 Public Health or Public Welfare Groundwater Quality Enforcement Standard (ES).

Table 6
Page 1 of 2
Baseline Groundwater Analytical Results Summary
Vernon County Landfill - Proposed Eastern Expansion
Monitoring Well: MW-20WT

Analytical Parameters	NR 140 Standards		Well No./Sampling Date			
	PAL	ES	MW-20WT			
			5/14/2025	6/19/2025	7/28/2025	8/27/2025
VOCs (ug/L)						
1,1,1,2-Tetrachloroethane	7	70	NS	NS	NS	NS
1,1,1-Trichloroethane	40	200	NS	NS	NS	NS
1,1,2,2-Tetrachloroethane	0.02	0.2	NS	NS	NS	NS
1,1,2-Trichloroethane	0.5	5	NS	NS	NS	NS
1,1-Dichloroethane	85	850	NS	NS	NS	NS
1,1-Dichloroethene	0.7	7	NS	NS	NS	NS
1,1-Dichloropropene	NE	NE	NS	NS	NS	NS
1,2,3-Trichlorobenzene	NE	NE	NS	NS	NS	NS
1,2,3-Trichloropropane	12	60	NS	NS	NS	NS
1,2,4-Trichlorobenzene	14	70	NS	NS	NS	NS
1,2,4-Trimethylbenzene	96	480	NS	NS	NS	NS
1,2-Dibromo-3-Chloropropane	0.02	0.2	NS	NS	NS	NS
1,2-Dibromoethane (EDB)	0.005	0.05	NS	NS	NS	NS
1,2-Dichlorobenzene	60	600	NS	NS	NS	NS
1,2-Dichloroethane	0.5	5	NS	NS	NS	NS
1,2-Dichloropropane	0.5	5	NS	NS	NS	NS
1,3,5-Trimethylbenzene	96	480	NS	NS	NS	NS
1,3-Dichlorobenzene	120	600	NS	NS	NS	NS
1,3-Dichloropropane	NE	NE	NS	NS	NS	NS
1,4-Dichlorobenzene	15	75	NS	NS	NS	NS
2,2-Dichloropropane	NE	NE	NS	NS	NS	NS
2-Butanone (MEK)	800	4000	NS	NS	NS	NS
2-Chlorotoluene	NE	NE	NS	NS	NS	NS
4-Chlorotoluene	NE	NE	NS	NS	NS	NS
Acetone	1800	9000	NS	NS	NS	NS
Benzene	0.5	5	NS	NS	NS	NS
Bromobenzene	NE	NE	NS	NS	NS	NS
Bromochloromethane	NE	NE	NS	NS	NS	NS
Bromodichloromethane	0.06	0.6	NS	NS	NS	NS
Bromoform	0.44	4.4	NS	NS	NS	NS
Bromomethane	1	10	NS	NS	NS	NS
Carbon disulfide	200	1000	NS	NS	NS	NS
Carbon tetrachloride	0.5	5	NS	NS	NS	NS
Chlorobenzene	20	100	NS	NS	NS	NS
Chlorodibromomethane	6	60	NS	NS	NS	NS
Chloroethane	80	400	NS	NS	NS	NS
Chloroform	0.6	6	NS	NS	NS	NS
Chloromethane	3	30	NS	NS	NS	NS
cis-1,2-Dichloroethene	7	70	NS	NS	NS	NS
cis-1,3-Dichloropropene	0.04	0.4	NS	NS	NS	NS
Dibromomethane	NE	NE	NS	NS	NS	NS
Dichlorodifluoromethane	200	1000	NS	NS	NS	NS
Ethylbenzene	140	700	NS	NS	NS	NS
Hexachlorobutadiene	NE	NE	NS	NS	NS	NS
Isopropyl ether	NE	NE	NS	NS	NS	NS
Isopropylbenzene	NE	NE	NS	NS	NS	NS
Methyl tert-butyl ether	12	60	NS	NS	NS	NS
Methylene Chloride	0.5	5	NS	NS	NS	NS
Naphthalene	10	100	NS	NS	NS	NS
n-Butylbenzene	NE	NE	NS	NS	NS	NS
N-Propylbenzene	NE	NE	NS	NS	NS	NS
p-Isopropyltoluene	NE	NE	NS	NS	NS	NS
sec-Butylbenzene	NE	NE	NS	NS	NS	NS
Styrene	10	100	NS	NS	NS	NS
tert-Butylbenzene	NE	NE	NS	NS	NS	NS
Tetrachloroethene	0.5	5	NS	NS	NS	NS
Tetrahydrofuran	10	50	NS	NS	NS	NS
Toluene	160	800	NS	NS	NS	NS
trans-1,2-Dichloroethene	20	100	NS	NS	NS	NS
trans-1,3-Dichloropropene	0.04	0.4	NS	NS	NS	NS
Trichloroethene	0.5	5	NS	NS	NS	NS
Trichlorofluoromethane	698	3490	NS	NS	NS	NS
Vinyl chloride	0.02	0.2	NS	NS	NS	NS
Xylenes, Total	400	2000	NS	NS	NS	NS

Table 6
Page 2 of 2
Baseline Groundwater Analytical Results Summary
Vernon County Landfill - Proposed Eastern Expansion
Monitoring Well: MW-20WT

Analytical Parameters	NR 140 Standards		Well No./Sampling Date			
	PAL	ES	MW-20WT			
			5/14/2025	6/19/2025	7/28/2025	8/27/2025
Inorganics						
Alkalinity - mg/L	NE	NE	NS	NS	NS	NS
Arsenic - ug/L	1	10	NS	NS	NS	NS
Barium - ug/L	400	2000	NS	NS	NS	NS
Boron - mg/L	0.2	1	NS	NS	NS	NS
Cadmium - ug/L	0.5	5	NS	NS	NS	NS
Chemical Oxygen Demand - mg/L	NE	NE	NS	NS	NS	NS
Chloride - mg/L	125	250	NS	NS	NS	NS
Chromium - ug/L	10	100	NS	NS	NS	NS
Copper - ug/L	130	1300	NS	NS	NS	NS
Fluoride - mg/L	0.8	4	NS	NS	NS	NS
Hardness as calcium carbonate - mg/L	NE	NE	NS	NS	NS	NS
Lead - ug/L	1.5	15	NS	NS	NS	NS
Manganese - ug/L	60	300	NS	NS	NS	NS
Mercury - ug/L	0.2	2	NS	NS	NS	NS
Nitrate Nitrite as N - mg/L	2	10	NS	NS	NS	NS
Selenium - ug/L	10	50	NS	NS	NS	NS
Silver - ug/L	10	50	NS	NS	NS	NS
Sulfate - mg/L	125	250	NS	NS	NS	NS
Total Suspended Solids - mg/L	NE	NE	NS	NS	NS	NS
Zinc - ug/L	2500	5000	NS	NS	NS	NS
Field Parameters						
Depth to Water (ft from MP)	NE	NE	54.40	52.27	52.88	54.95
Field Conductivity	NE	NE	NS	NS	NS	NS
Field pH	NE	NE	NS	NS	NS	NS
Field Temperature	NE	NE	NS	NS	NS	NS

Notes:

NE: No standard established.

NS: Not sampled (well did not recharge quickly enough following purging to collect sample)

-- : Not analyzed.

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

B: Detection is suspect due to blank contamination.

< : Indicates the analyte was analyzed for but not detected above the detection limit.

0.0 - Exceeds ch. NR 140 Public Health or Public Welfare Groundwater Quality Preventative Action Limit (PAL).

0.0 - Exceeds ch. NR 140 Public Health or Public Welfare Groundwater Quality Enforcement Standard (ES).



Table 6
Page 1 of 2
Baseline Groundwater Analytical Results Summary
Vernon County Landfill - Proposed Eastern Expansion
Monitoring Well: MW-20

Analytical Parameters	NR 140 Standards		Well No./Sampling Date			
	PAL	ES	MW-20			
			5/14/2025	6/19/2025	7/28/2025	8/27/2025
VOCs (ug/L)						
1,1,1,2-Tetrachloroethane	7	70	<0.67	<0.67	<0.67	<0.67
1,1,1-Trichloroethane	40	200	<0.45	<0.45	<0.45	<0.45
1,1,2,2-Tetrachloroethane	0.02	0.2	<0.65	<0.65	<0.65	<0.65
1,1,2-Trichloroethane	0.5	5	<0.73	<0.73	<0.73	<0.73
1,1-Dichloroethane	85	850	<0.36	<0.36	<0.36	<0.36
1,1-Dichloroethene	0.7	7	<0.48	<0.48	<0.48	<0.48
1,1-Dichloropropene	NE	NE	<0.33	<0.33	<0.33	<0.33
1,2,3-Trichlorobenzene	NE	NE	<0.35	<0.35	<0.35	<0.35
1,2,3-Trichloropropane	12	60	<1.5	<1.5	<1.5	<1.5
1,2,4-Trichlorobenzene	14	70	<0.31	<0.31	<0.31	<0.31
1,2,4-Trimethylbenzene	96	480	<0.30	<0.30	<0.30	<0.30
1,2-Dibromo-3-Chloropropane	0.02	0.2	<3.9	<3.9	<3.9	<3.9
1,2-Dibromoethane (EDB)	0.005	0.05	<0.56	<0.56	<0.56	<0.56
1,2-Dichlorobenzene	60	600	<0.48	<0.48	<0.48	<0.48
1,2-Dichloroethane	0.5	5	<0.58	<0.58	<0.58	<0.58
1,2-Dichloropropane	0.5	5	<0.37	<0.37	<0.37	<0.37
1,3,5-Trimethylbenzene	96	480	<0.29	<0.29	<0.29	<0.29
1,3-Dichlorobenzene	120	600	<0.41	<0.41	<0.41	<0.41
1,3-Dichloropropane	NE	NE	<0.56	<0.56	<0.56	<0.56
1,4-Dichlorobenzene	15	75	<0.45	<0.45	<0.45	<0.45
2,2-Dichloropropane	NE	NE	<0.48	<0.48	<0.48	<0.48
2-Butanone (MEK)	800	4000	<2.3	<2.3	<2.3	<2.3
2-Chlorotoluene	NE	NE	<0.36	<0.36	<0.36	<0.36
4-Chlorotoluene	NE	NE	<0.34	<0.34	<0.34	<0.34
Acetone	1800	9000	<4.3	<4.3	<4.3	<4.3
Benzene	0.5	5	<0.18	<0.18	<0.18	<0.18
Bromobenzene	NE	NE	<0.60	<0.60	<0.60	<0.60
Bromochloromethane	NE	NE	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	0.06	0.6	<0.57	<0.57	<0.57	<0.57
Bromoform	0.44	4.4	<0.96	<0.96	<0.96	<0.96
Bromomethane	1	10	<1.8	<1.8	<1.8	<1.8
Carbon disulfide	200	1000	<1.1	<1.1	<1.1	<1.1
Carbon tetrachloride	0.5	5	<0.41	<0.41	<0.41	<0.41
Chlorobenzene	20	100	<0.41	<0.41	<0.41	<0.41
Chlorodibromomethane	6	60	<0.83	<0.83	<0.83	<0.83
Chloroethane	80	400	<0.47	<0.47	<0.47	<0.47
Chloroform	0.6	6	<0.92	<0.92	<0.92	<0.92
Chloromethane	3	30	<0.79	<0.79	<0.79	<0.79
cis-1,2-Dichloroethene	7	70	<0.42	<0.42	<0.42	<0.42
cis-1,3-Dichloropropene	0.04	0.4	<0.52	<0.52	<0.52	<0.52
Dibromomethane	NE	NE	<0.58	<0.58	<0.58	<0.58
Dichlorodifluoromethane	200	1000	<1.8	<1.8	<1.8	<1.8
Ethylbenzene	140	700	<0.20	<0.20	<0.20	<0.20
Hexachlorobutadiene	NE	NE	<0.54	<0.54	<0.54	<0.54
Isopropyl ether	NE	NE	<0.38	<0.38	<0.38	<0.38
Isopropylbenzene	NE	NE	<0.29	<0.29	<0.29	<0.29
Methyl tert-butyl ether	12	60	<0.43	<0.43	<0.43	<0.43
Methylene Chloride	0.5	5	<3.6	<3.6	<3.6	<3.6
Naphthalene	10	100	0.54	<0.44	<0.44	<0.44
n-Butylbenzene	NE	NE	<0.33	<0.33	<0.33	<0.33
N-Propylbenzene	NE	NE	<0.32	<0.32	<0.32	<0.32
p-Isopropyltoluene	NE	NE	<0.29	<0.29	<0.29	<0.29
sec-Butylbenzene	NE	NE	<0.27	<0.27	<0.27	<0.27
Styrene	10	100	<0.31	<0.31	<0.31	<0.31
tert-Butylbenzene	NE	NE	<0.26	<0.26	<0.26	<0.26
Tetrachloroethene	0.5	5	<0.39	<0.39	<0.39	<0.39
Tetrahydrofuran	10	50	<3.9	<3.9	<3.9	<3.9
Toluene	160	800	<0.21	<0.21	<0.21	<0.21
trans-1,2-Dichloroethene	20	100	<0.44	<0.44	<0.44	<0.44
trans-1,3-Dichloropropene	0.04	0.4	<0.63	<0.63	<0.63	<0.63
Trichloroethene	0.5	5	<0.15	<0.15	<0.15	<0.15
Trichlorofluoromethane	698	3490	<0.44	<0.44	<0.44	<0.44
Vinyl chloride	0.02	0.2	<0.20	<0.20	<0.20	<0.20
Xylenes, Total	400	2000	<0.30	<0.30	<0.30	<0.30

Table 6
Page 2 of 2
Baseline Groundwater Analytical Results Summary
Vernon County Landfill - Proposed Eastern Expansion
Monitoring Well: MW-20

Analytical Parameters	NR 140 Standards		Well No./Sampling Date			
	PAL	ES	MW-20			
			5/14/2025	6/19/2025	7/28/2025	8/27/2025
Inorganics						
Alkalinity - mg/L	NE	NE	43	21	16	5.4
Arsenic - ug/L	1	10	<0.23	<0.23	<0.23	<0.23
Barium - ug/L	400	2000	33	33	30	9.4
Boron - mg/L	0.2	1	0.039 (J)	0.016 (J)	<0.013	<0.013
Cadmium - ug/L	0.5	5	<0.17	<0.17	<0.17	<0.17
Chemical Oxygen Demand	NE	NE	7.2 (J)	--	--	--
Chloride - mg/L	125	250	1.7	3.1	1.8	2.5
Chromium - ug/L	10	100	<1.1	<1.1	<1.1	<1.1
Copper - ug/L	130	1300	4.1	3.8	<0.50	3.2
Fluoride - mg/L	0.8	4	<0.43	<0.43	<0.43	<0.43
Hardness as calcium carbonate - mg/L	NE	NE	46	30	24	260
Lead - ug/L	1.5	15	<0.19	<0.19	<0.19	<0.19
Manganese - ug/L	60	300	280	220	140	150
Mercury - ug/L	0.2	2	<0.076	<0.076	<0.076	<0.076
Nitrate Nitrite as N - mg/L	2	10	0.49	0.85	0.81	0.72
Selenium - ug/L	10	50	<0.98	<0.98	<0.98	<0.98
Silver - ug/L	10	50	<0.12	<0.12	<0.12	<0.12
Sulfate - mg/L	125	250	14	12	12	13
Total Suspended Solids	NE	NE	4300	--	--	--
Zinc - ug/L	2500	5000	<6.9	<6.9	<6.9	<6.9
Field Parameters						
Depth to Water (ft from MP)	NE	NE	68.48	67.95	67.67	67.42
Field Conductivity	NE	NE	119	195	202	--
Field pH	NE	NE	7.71	6.73	6.79	8.16
Field Temperature	NE	NE	13.3	18.1	18.3	--

Notes:

NE: No standard established.

-- : Not analyzed.

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

B: Detection is suspect due to blank contamination.

< : Indicates the analyte was analyzed for but not detected above the detection limit.

0.0 - Exceeds ch. NR 140 Public Health or Public Welfare Groundwater Quality Preventative Action Limit (PAL).

0.0 - Exceeds ch. NR 140 Public Health or Public Welfare Groundwater Quality Enforcement Standard (ES).

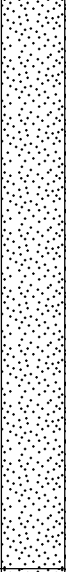
Attachment A

2025 Soil Boring Logs

Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

Page 1 of 3

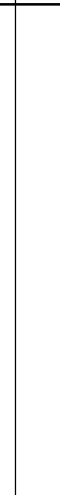
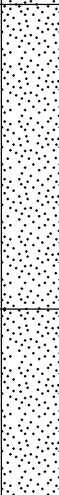
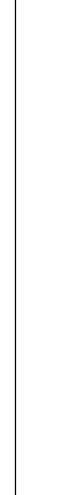
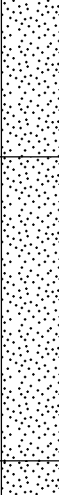
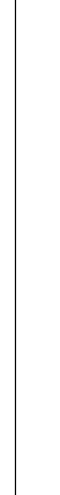
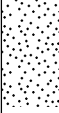
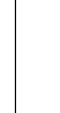
Facility/Project Name Vernon County Landfill Expansion			License/Permit/Monitoring Number 3268		Boring Number MW-20	
Boring Drilled By: Name of crew chief (first, last) and Firm Cascade Environmental			Date Drilling Started 4/22/2025		Date Drilling Completed 4/23/2025	
Drilling Method Rotasonic						
WI Unique Well No. WF440	DNR Well ID No. TBD	Common Well Name MW-20	Final Static Water Level 1,104.7 Feet MSL	Surface Elevation 1,174.3 Feet MSL	Borehole Diameter 6.0 inches	
Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ State Plane 583,281 N, 1,746,805 E S/C/N SW 1/4 of SE 1/4 of Section 15, T 13 N, R 4 W			Lat ° ' " Long ° ' "		Local Grid Location ☐ N ☐ E ☐ S ☐ W	
Facility ID 3268		County Vernon	County Code 63	Civil Town/City/ or Village Viroqua		

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
1 GP	60 48		2	FAT CLAY (CH), dark yellowish brown (10YR, 4/6), moist, medium stiff, homogeneous, high plasticity, no odor, no staining, (Residuum),	CH									
2 GP	60 36		6	POORLY GRADED SAND (SP), yellow (10Y, 7/8), poorly graded, fine grained, moist, medium dense, no odor, no staining, some pieces of sandstone fragments throughout layer, (Weathered Sandstone - poorly consolidated).	SP									
3 GP	60 48		10	Note: Darker gray seams with some silt noted around 13 ft bgs.	SP									
4 GP	60 48		16	Note: Darker gray seams with some silt noted around 15 ft bgs.	SP									
5 GP	60 48		20	Note: Darker gray seams with some silt noted around 19 ft bgs.	SP									
			22	POORLY GRADED SAND (SP), very pale brown (10YR, 8/3), poorly graded, fine grained, moist, medium dense, no odor, no staining, some pieces of sandstone fragments throughout layer, (Weathered Sandstone -	SP									
			24											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature 	Firm Short Elliott Hendrickson 3535 Vadnais Center Drive Vadnais Heights, MN 55110	Tel: 651.490.2000 Fax:
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This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
6 GP	60 36		26	poorly consolidated). Note: Darker gray seam with some silt noted around 24 ft bgs.	SP									
		28	POORLY GRADED SAND (SP), very pale brown (10YR, 8/3), poorly graded, fine grained, moist, medium dense, no odor, no staining, some pieces of sandstone fragments throughout layer, (Weathered Sandstone - poorly consolidated). (continued)											
7 GP	60 48	30	Note: Increase in moisture noted around 27 ft bgs.											
		32												
		34												
8 GP	60 36		36		SP									
		38	Note: Increase in moisture noted around 38 ft bgs.											
9 GP	60 60	40	POORLY GRADED SAND (SP), yellowish brown (10YR, 5/8), poorly graded, fine grained, moist, medium dense, no odor, no staining, finer sands with potentially some silt and pieces of sandstone fragments throughout layer, (Sandstone - poorly consolidated).											
		42												
		44												
10 GP	60 36		46	POORLY GRADED SAND (SP), yellowish brown (10YR, 5/8), poorly graded, fine grained, wet, medium dense, no odor, no staining, finer sands with potentially some silt and pieces of sandstone fragments throughout layer, (Sandstone - poorly consolidated).	SP									
		48												
11 GP	60 48	50	Note: Wet soils noted from 46 to 55 ft bgs, likely perched water table.											
		52												
		54												
12 GP	36 30		56	POORLY GRADED SAND (SP),light gray to white (10YR, 7/2 to 10YR, 8/1), poorly graded, fine grained, moist, medium dense, no odor, no staining, (Sandstone - poorly consolidated).	SP									
		58	Note: Increased pieces of poorly cemented sandstone fragments from 58 to 61 ft bgs.											
13 GP	60 42	60												
		62												
		64												
14 GP	84 66		66		SP									

[illegible]

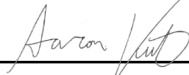
Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

Page 1 of 2

Facility/Project Name Vernon County Landfill Expansion		License/Permit/Monitoring Number 3268		Boring Number MW-20WT	
Boring Drilled By: Name of crew chief (first, last) and Firm Cascade Environmental		Date Drilling Started 4/23/2025		Date Drilling Completed 4/24/2025	
Drilling Method Rotasonic					
WI Unique Well No. WF441	DNR Well ID No. TBD	Common Well Name MW-20WT	Final Static Water Level 1,128.3 Feet MSL	Surface Elevation 1,174.4 Feet MSL	Borehole Diameter 6.0 inches
Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ State Plane 583,271 N, 1,746,802 E S/C/N SW 1/4 of SE 1/4 of Section 15, T 13 N, R 4 W			Local Grid Location Lat ° ' " Long ° ' " ☐ N ☐ E ☐ S ☐ W		
Facility ID 3268		County Vernon	County Code 63	Civil Town/City/ or Village Viroqua	

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
1 GP	660 0		2 4 6 8 10 12 14 16 18 20 22 24	SEE BORING LOG FROM MW-20. Borehole for installation of well MW-20WT was blind drilled to 55 ft bgs based on geologic information provide by adjacent exploratory borehole for deeper well MW-20 that was completed to 80 ft bgs the previous day.										

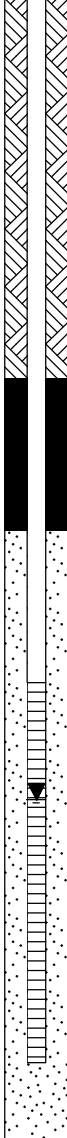
I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature 	Firm Short Elliott Hendrickson 3535 Vadnais Center Drive Vadnais Heights, MN 55110	Tel: 651.490.2000 Fax:
--	---	---------------------------

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Boring Number **MW-20WT** Use only as an attachment to Form 4400-122.

Page **2** of **2**

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
			26	SEE BORING LOG FROM MW-20. Borehole for installation of well MW-20WT was blind drilled to 55 ft bgs based on geologic information provide by adjacent exploratory borehole for deeper well MW-20 that was completed to 80 ft bgs the previous day. <i>(continued)</i>										
			28											
			30											
			32											
			34											
			36											
			38											
			40											
			42											
			44											
			46											
			48											
			50											
			52											
			54											
				Boring Terminated at 55 feet.										

Note: Wet soils indicating perched water
table encountered at 45 ft bgs.

Attachment B

Photographs of 2025 Soil Samples

MW-20

0-10ft

10-20ft

20-30ft

30-40ft

40-50ft

50-60ft

60-70ft

70-80ft



Attachment C

2025 Well Construction Logs

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name <u>Hessman Vernon Cty L.F.</u>		Local Grid Location of Well ft. ☐ N. ☐ S. ☐ E. ☐ W.		Well Name <u>mw-20 WT</u>	
Facility License, Permit or Monitoring No.		Local Grid Origin (estimated: ☐) or Well Location ☐		Wis. Unique Well No. <u>WF441</u> DNR Well ID No. _____	
Facility ID <u>3268</u>		St. Plane _____ ft. N. _____ ft. E. S/C/N		Date Well Installed <u>04/24/2025</u> m m d d y y v v	
Type of Well <u>monitoring</u> Well Code <u>1</u>		Section Location of Waste/Source <u>SW 1/4 of SE 1/4 of Sec. 15, T. 13 N. R. 4 E</u>		Well Installed By: Name (first, last) and Firm <u>Don Weeks</u> <u>Cascade Drilling</u>	
Distance from Waste/Source _____ ft.		Enf. Stds. Apply ☐		Gov. Lot Number _____	
		Location of Well Relative to Waste/Source u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☒ Not Known			

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation _____ ft. MSL
C. Land surface elevation 1190 ft. MSL
D. Surface seal, bottom _____ ft. MSL or 140 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☐ 41
Sonic Other ☒

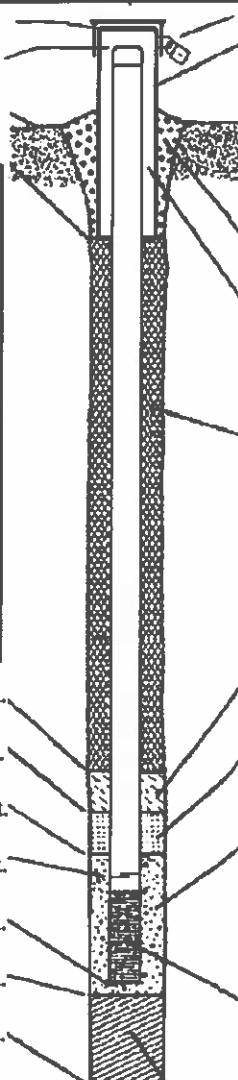
15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe _____

17. Source of water (attach analysis, if required):

E. Bentonite seal, top _____ ft. MSL or 35 ft.
F. Fine sand, top _____ ft. MSL or 39 ft.
G. Filter pack, top _____ ft. MSL or 41 ft.
H. Screen joint, top _____ ft. MSL or 43 ft.
I. Well bottom _____ ft. MSL or 53 ft.
J. Filter pack, bottom _____ ft. MSL or 54 ft.
K. Borehole, bottom _____ ft. MSL or 58 ft.
L. Borehole, diameter 6 in.
M. O.D. well casing _____ in.
N. I.D. well casing 2 in.



1. Cap and lock? ☐ Yes ☐ No
2. Protective cover pipe:
 - a. Inside diameter: 4 in.
 - b. Length: 2 ft.
 - c. Material: Steel ☒ 04
Other ☐
 - d. Additional protection? ☒ Yes ☐ No
If yes, describe: Bump Posts
3. Surface seal: Bentonite ☐ 30
Concrete ☒ 01
Other ☐
4. Material between well casing and protective pipe: Bentonite ☐ 30
Other ☒ Sand
5. Annular space seal:
 - a. Granular/Chipped Bentonite ☐ 33
 - b. _____ Lbs/gal mud weight... Bentonite-sand slurry ☐ 35
 - c. _____ Lbs/gal mud weight... Bentonite slurry ☒ 31
 - d. _____ % Bentonite... Bentonite-cement grout ☐ 50
 - e. _____ Ft³ volume added for any of the above
 - f. How installed: Tremie ☐ 01
Tremie pumped ☒ 02
Gravity ☐ 08
6. Bentonite seal:
 - a. Bentonite granules ☐ 33
 - b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 32
 - c. _____ Other ☐
7. Fine sand material: Manufacturer, product name & mesh size
a. Red Flint 65
- b. Volume added 1 Bag ft³
8. Filter pack material: Manufacturer, product name & mesh size
a. Red Flint 30-40
- b. Volume added 3 Bags ft³
9. Well casing: Flush threaded PVC schedule 40 ☒ 23
Flush threaded PVC schedule 80 ☐ 24
Other ☐
10. Screen material: PVC
 - a. Screen type: Factory cut ☒ 11
Continuous slot ☐ 01
Other ☐
 - b. Manufacturer Johnson
 - c. Slot size: 0.10 in.
 - d. Slotted length: 10 ft.
11. Backfill material (below filter pack): None ☒ 14
Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature

Firm

Don Weeks Cascade Drilling

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name <u>Verona Cty. L.F.</u>	Local Grid Location of Well ft. ☐ N. ☐ S. ☐ E. ☐ W.	Well Name <u>MW-20</u>
Facility License, Permit or Monitoring No.	Local Grid Origin (estimated: ☐) or Well Location ☐ Lat. <u>43:59.7351</u> " Long. <u>90:23.6942</u> " or	Wis. Unique Well No. <u>WF440</u> DNR Well ID No.
Facility ID <u>3268</u>	St. Plane _____ ft. N. _____ ft. E. S/C/N	Date Well Installed <u>8/23/2025</u>
Type of Well <u>monitoring</u> Well Code <u>1</u>	Section Location of Waste/Source <u>SE 1/4 of SE 1/4 of Sec. 15, T. 13, N. R. 4</u> ☒ E	Well Installed By: Name (first, last) and Firm <u>Jon Weeks</u> <u>Cascade Drilling</u>
Distance from Waste/Source _____ ft.	Enf. Stds. Apply ☐	
	Location of Well Relative to Waste/Source u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation _____ ft. MSL
C. Land surface elevation 1090 ft. MSL
D. Surface seal, bottom _____ ft. MSL or 1.0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ OC ☐ OW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☐ 41
Sonic Other ☒

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe _____

17. Source of water (attach analysis, if required):

E. Bentonite seal, top _____ ft. MSL or 60 ft.

F. Fine sand, top _____ ft. MSL or 65 ft.

G. Filter pack, top _____ ft. MSL or 67 ft.

H. Screen joint, top _____ ft. MSL or 69 ft.

I. Well bottom _____ ft. MSL or 79 ft.

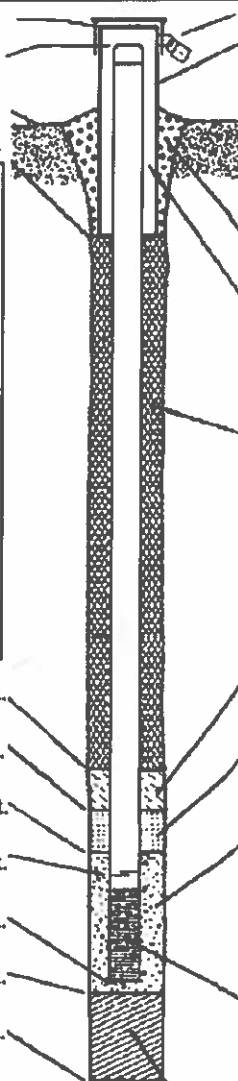
J. Filter pack, bottom _____ ft. MSL or 80 ft.

K. Borehole, bottom _____ ft. MSL or 80 ft.

L. Borehole, diameter 6 in.

M. O.D. well casing _____ in.

N. I.D. well casing 2 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4 in.
b. Length: 7 ft.
c. Material: Steel ☒ 04
Other ☐
d. Additional protection? ☒ Yes ☐ No
If yes, describe: Bumper Posts

3. Surface seal: Bentonite ☐ 30
Concrete ☒ 01
Other ☐

4. Material between well casing and protective pipe: Bentonite ☐ 30
Other ☒ sand

5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
b. _____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight ... Bentonite slurry ☒ 31
d. _____ % Bentonite ... Bentonite-cement grout ☐ 50
e. _____ Ft³ volume added for any of the above

f. How installed: Tremie ☒ 01
Tremie pumped ☒ 02
Gravity ☐ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 32
c. _____ Other ☐

7. Fine sand material: Manufacturer, product name & mesh size
a. Red Flint 65
b. Volume added 50 lbs ft³

8. Filter pack material: Manufacturer, product name & mesh size
a. Red Flint 30-40
b. Volume added 150 lbs ft³

9. Well casing: Flush threaded PVC schedule 40 ☐ 23
Flush threaded PVC schedule 80 ☒ 24
Other ☐

10. Screen material: PVC
a. Screen type: Factory cut ☒ 11
Continuous slot ☐ 01
Other ☐

b. Manufacturer Johnson
c. Slot size: 0.10 in.
d. Slotted length: 10 ft.

11. Backfill material (below filter pack): None ☒ 14
Other ☐ Natural

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Jon Weeks

Firm Cascade Drilling

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

Attachment D

2025 Well Development Forms

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name <u>Vernon CTY LF.</u>	County Name <u>Vernon</u>	Well Name <u>MW-201AT</u>
Facility License, Permit or Monitoring Number <u>3268</u>	County Code <u>63</u>	Wis. Unique Well Number <u>WF441</u>
		DNR Well ID Number _____

1. Can this well be purged dry? ☒ Yes ☐ No

2. Well development method

- surged with bailer and bailed ☐ 41
surged with bailer and pumped ☐ 61
surged with block and bailed ☐ 42
surged with block and pumped ☐ 62
surged with block, bailed and pumped ☐ 70
compressed air ☐ 20
bailed only ☐ 10
pumped only ☐ 51
pumped slowly ☐ 50

Other Surge w/ Pump ☒

3. Time spent developing well 90 min.

4. Depth of well (from top of well casing) 55.5 ft.

5. Inside diameter of well 2 in.

6. Volume of water in filter pack and well casing _____ gal.

7. Volume of water removed from well 30 gal.

8. Volume of water added (if any) _____ gal.

9. Source of water added _____

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

17. Additional comments on development:

11. Depth to Water Before Development After Development
(from top of well casing) 48.5 ft. _____ ft.

Date 04/24/2025 04/25/2025
m m d d y y y y m m d d y y y y

Time 1:00 ☐ a.m. ☒ p.m. 2:30 ☐ a.m. ☐ p.m.

12. Sediment in well bottom 0 inches 0 inches

13. Water clarity Clear ☐ 10 Turbid ☐ 15
(Describe) Tan Dark LT TAN

Fill in if drilling fluids were used and well is at solid waste facility

14. Total suspended _____ mg/l _____ mg/l
solids

15. COD _____ mg/l _____ mg/l

16. Well developed by: Name (first, last) and Firm

First Name: Jon Last Name: Weeks

Firm: Cascade Drilling

Name and Address of Facility Contact/Owner/Responsible Party

First Name: _____ Last Name: _____
Name: _____

Facility/Firm: _____

Street: _____

City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: _____

Print Name: _____

Firm: _____

NOTE: See instructions for more information including a list of county codes and well type codes.

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name <u>Vernon City L.F.</u>	County Name <u>Vernon</u>	Well Name <u>MW-20</u>
Facility License, Permit or Monitoring Number <u>3268</u>	County Code <u>62</u>	Wis. Unique Well Number <u>WF 440</u>
		DNR Well ID Number _____

1. Can this well be purged dry? ☒ Yes ☐ No

2. Well development method

- surged with bailer and bailed ☐ 41
surged with bailer and pumped ☐ 61
surged with block and bailed ☐ 42
surged with block and pumped ☐ 62
surged with block, bailed and pumped ☐ 70
compressed air ☐ 20
bailed only ☐ 10
pumped only ☐ 51
pumped slowly ☐ 50
Other surged w/ Pump ☒

3. Time spent developing well 90 min.

4. Depth of well (from top of well casing) 81.5 ft.

5. Inside diameter of well 2 in.

6. Volume of water in filter pack and well casing _____ gal.

7. Volume of water removed from well _____ gal.

8. Volume of water added (if any) _____ gal.

9. Source of water added _____

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

17. Additional comments on development:

11. Depth to Water Before Development After Development

(from top of well casing) 68.87 ft. _____ ft.

Date 04/24/2025 04/24/2025
m m d d y y y y m m d d y y y y

Time 2:45 ☐ a.m. ☒ p.m. 4:15 ☐ a.m. ☒ p.m.

12. Sediment in well bottom 0 inches _____ inches

13. Water clarity Clear ☐ 10 Turbid ☐ 15
(Describe) DK TAN LT Brown

Fill in if drilling fluids were used and well is at solid waste facility

14. Total suspended _____ mg/l _____ mg/l
solids

15. COD _____ mg/l _____ mg/l

16. Well developed by: Name (first, last) and Firm

First Name: Jon Last Name: Weeks

Firm: Cgs code Drilling

Name and Address of Facility Contact /Owner/Responsible Party

First Name: _____ Last Name: _____
Name: _____

Facility/Firm: _____

Street: _____

City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: _____

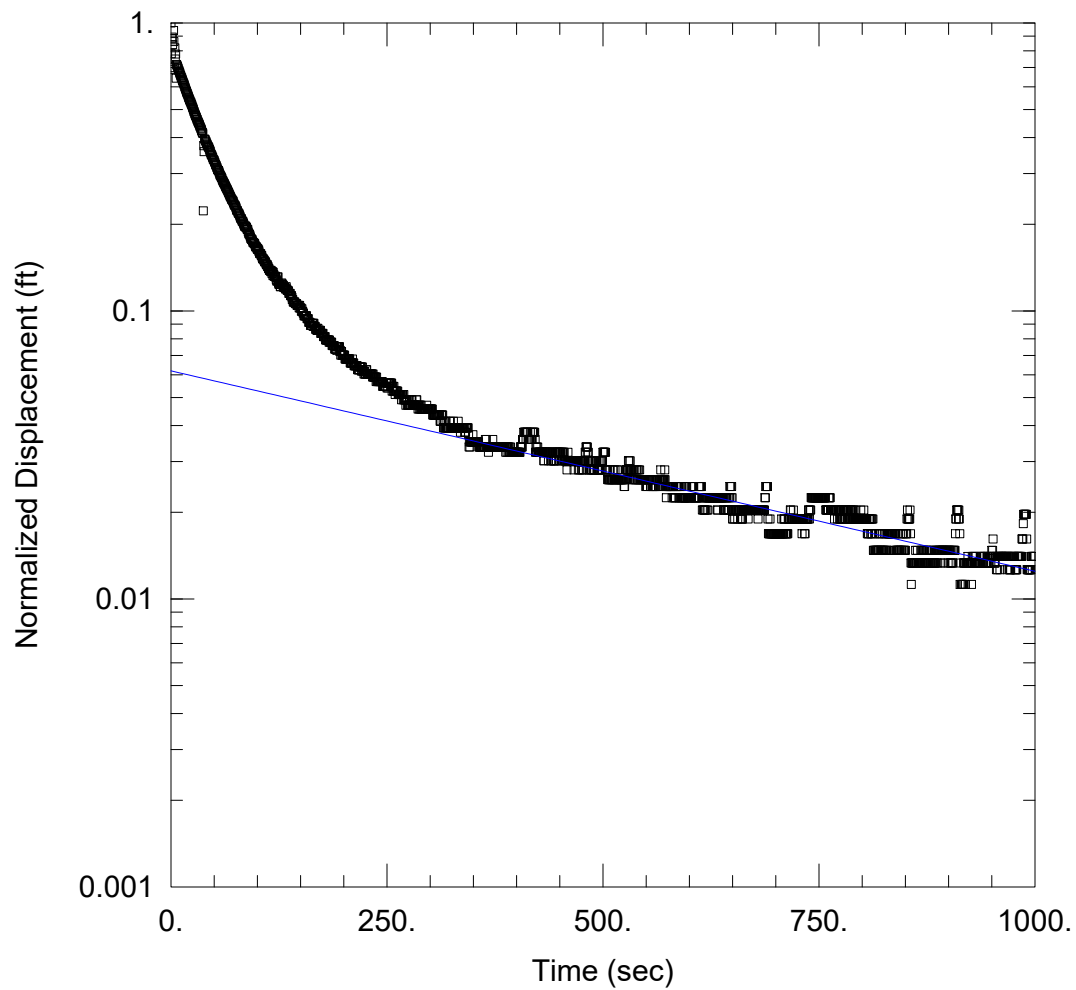
Print Name: _____

Firm: _____

NOTE: See instructions for more information including a list of county codes and well type codes.

Attachment E

2025-2026 In-Field Hydraulic Conductivity Results



MW-3 FALLING HEAD

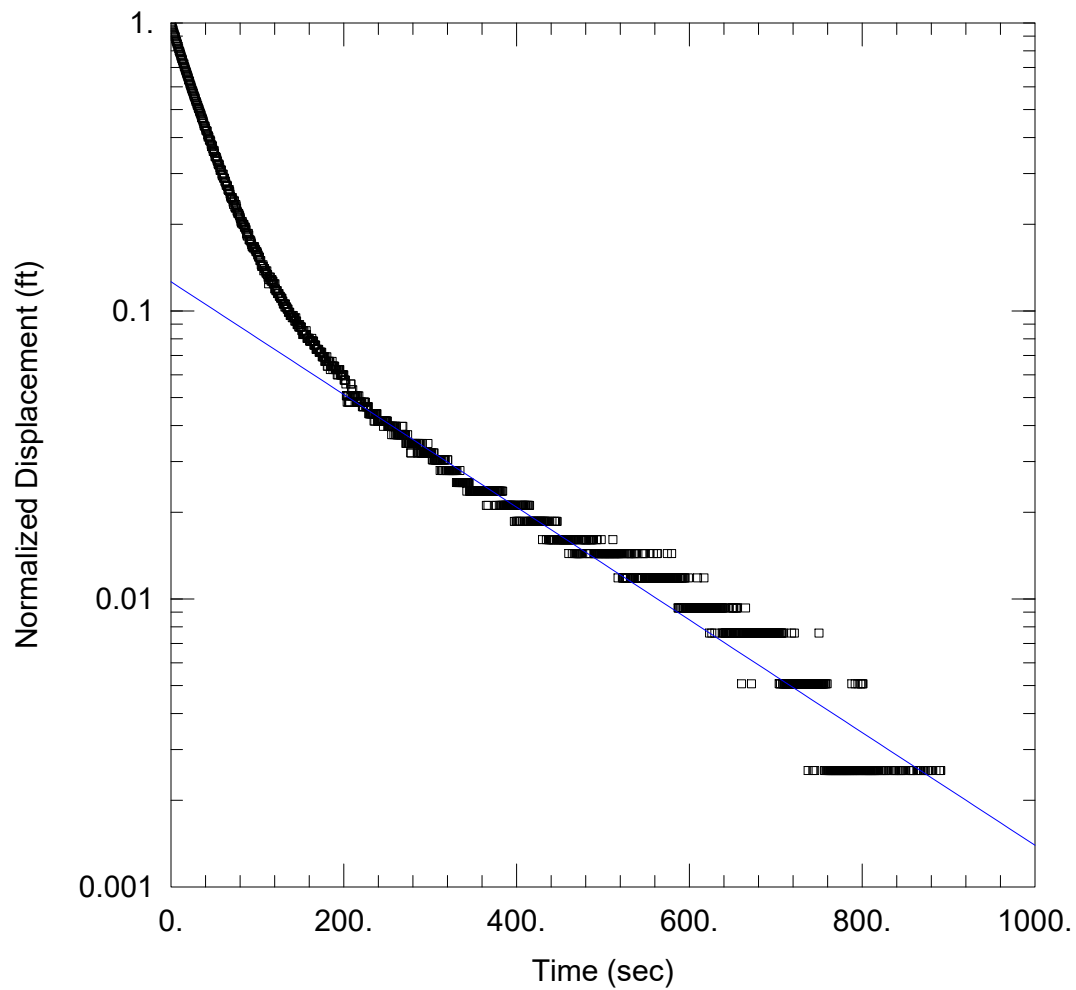
SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 0.0001411 cm/sec

y0 = 0.06193 ft



MW-3 RISING HEAD

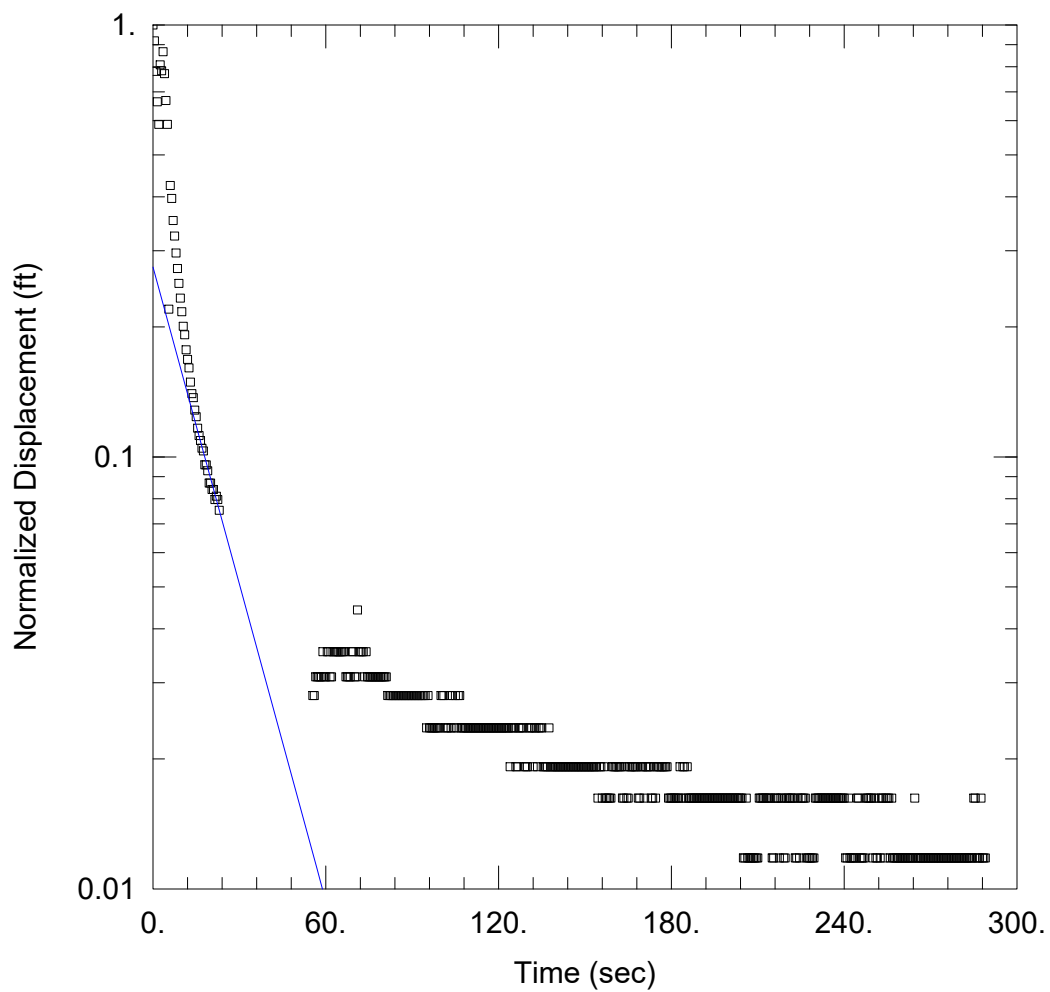
SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 0.0002337 cm/sec

y0 = 0.1262 ft



MW-4P FALLING HEAD

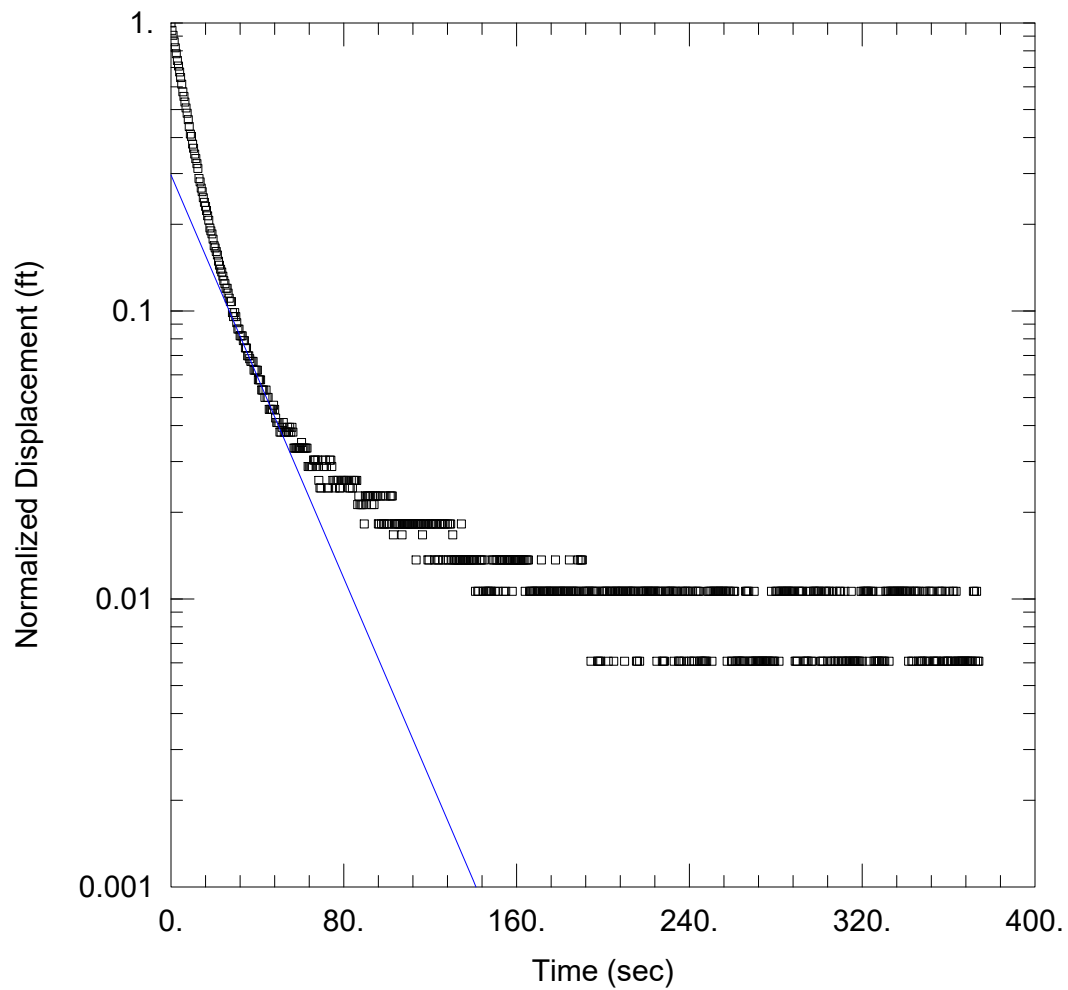
SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 0.0008859 cm/sec

y0 = 0.275 ft



MW-4P RISING HEAD

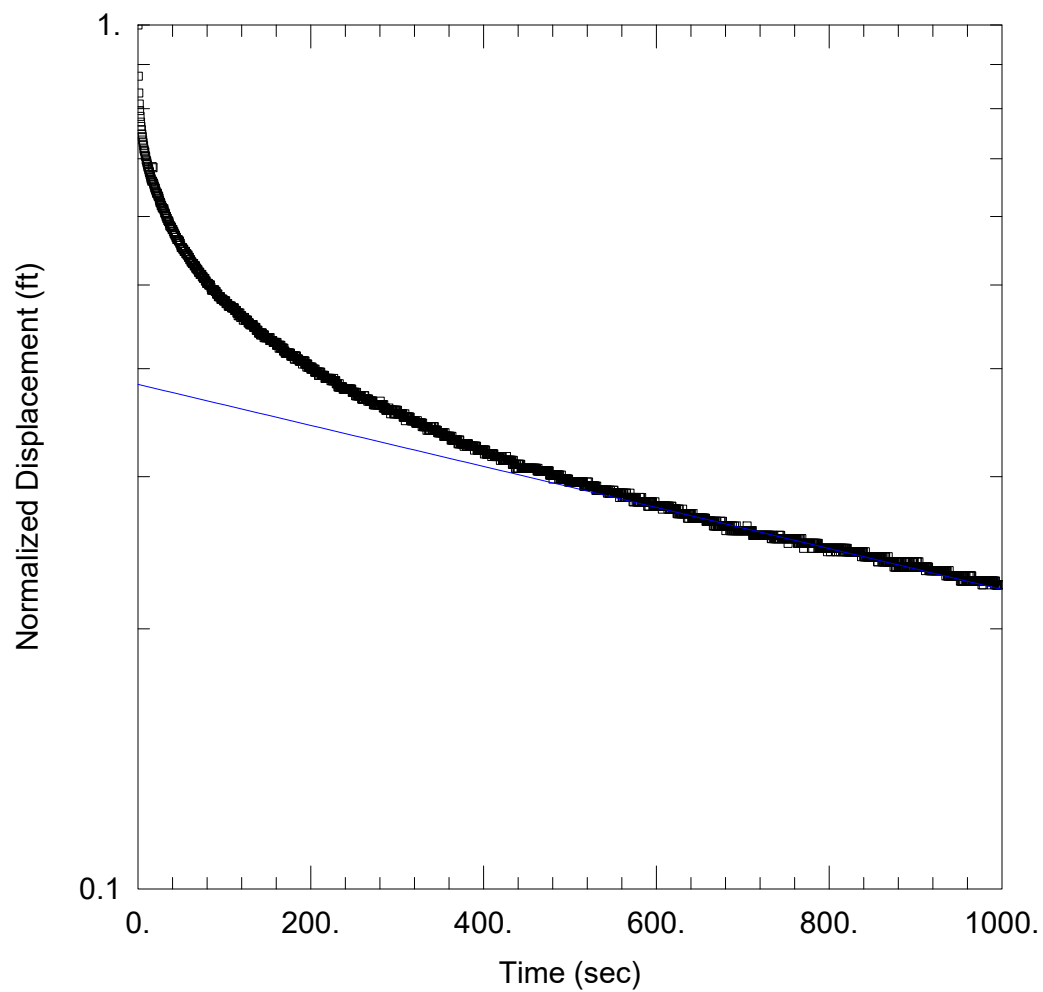
SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 0.0006342 cm/sec

y0 = 0.2966 ft



MW-5 FALLING HEAD

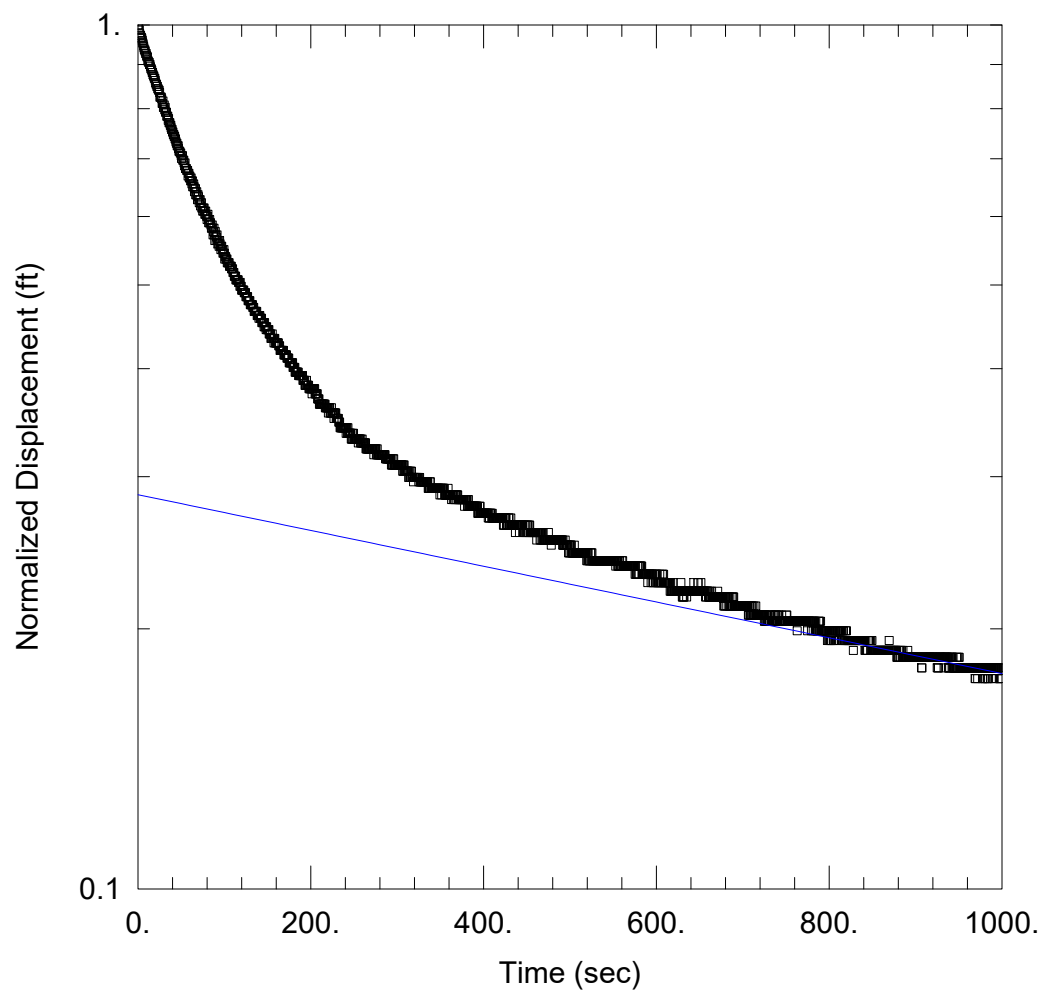
SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 1.356E-5 cm/sec

y0 = 0.3837 ft



MW-5 RISING HEAD

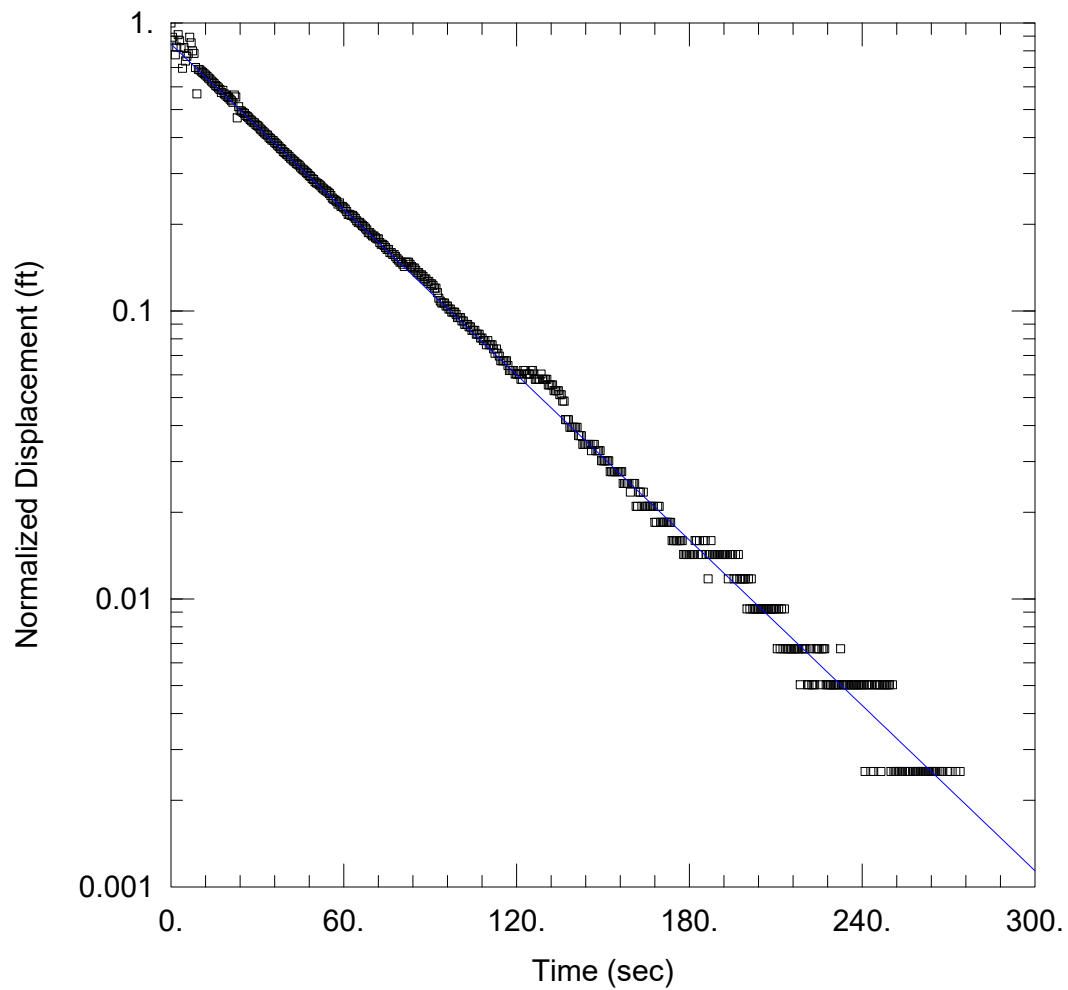
SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 1.183E-5 cm/sec

y0 = 0.286 ft



MW-10 FALLING HEAD

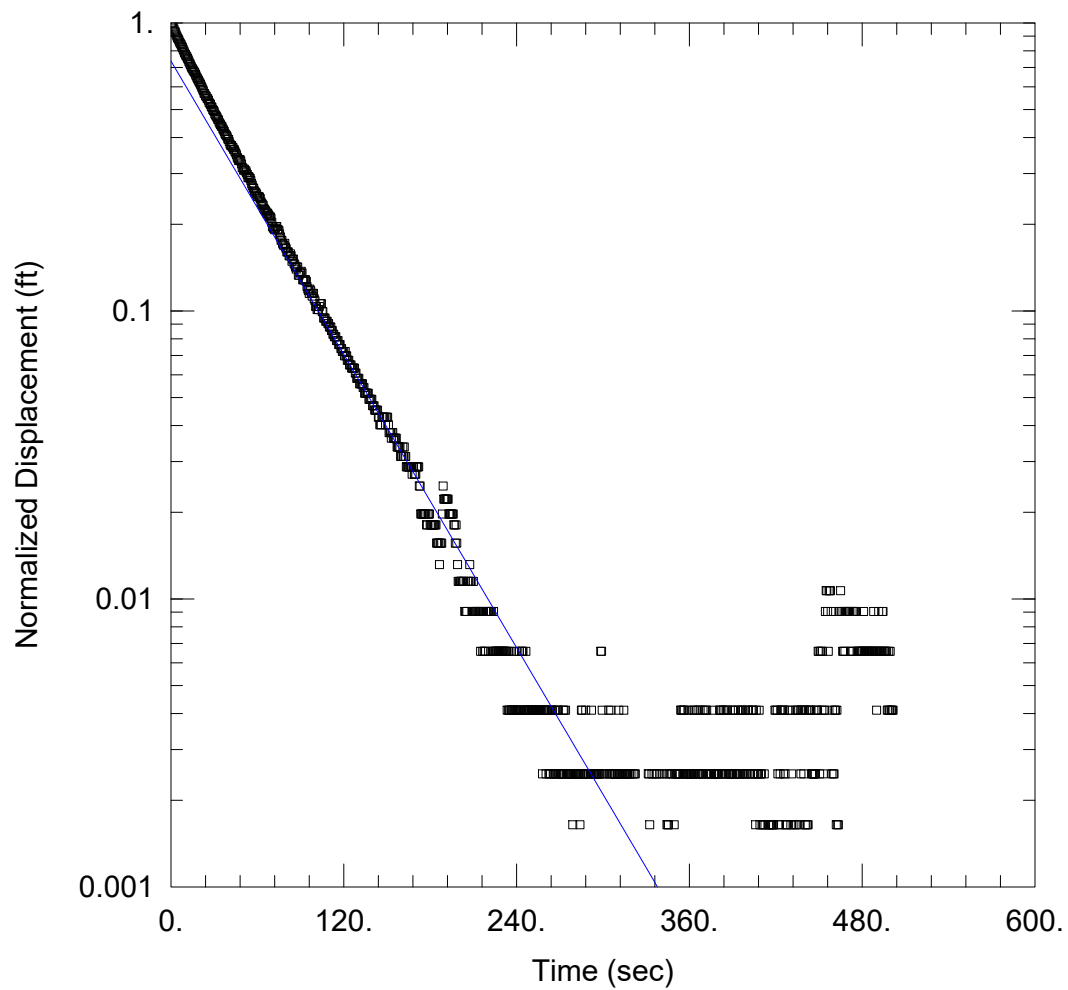
SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 0.001448 cm/sec

y0 = 0.8444 ft



MW-10 RISING HEAD

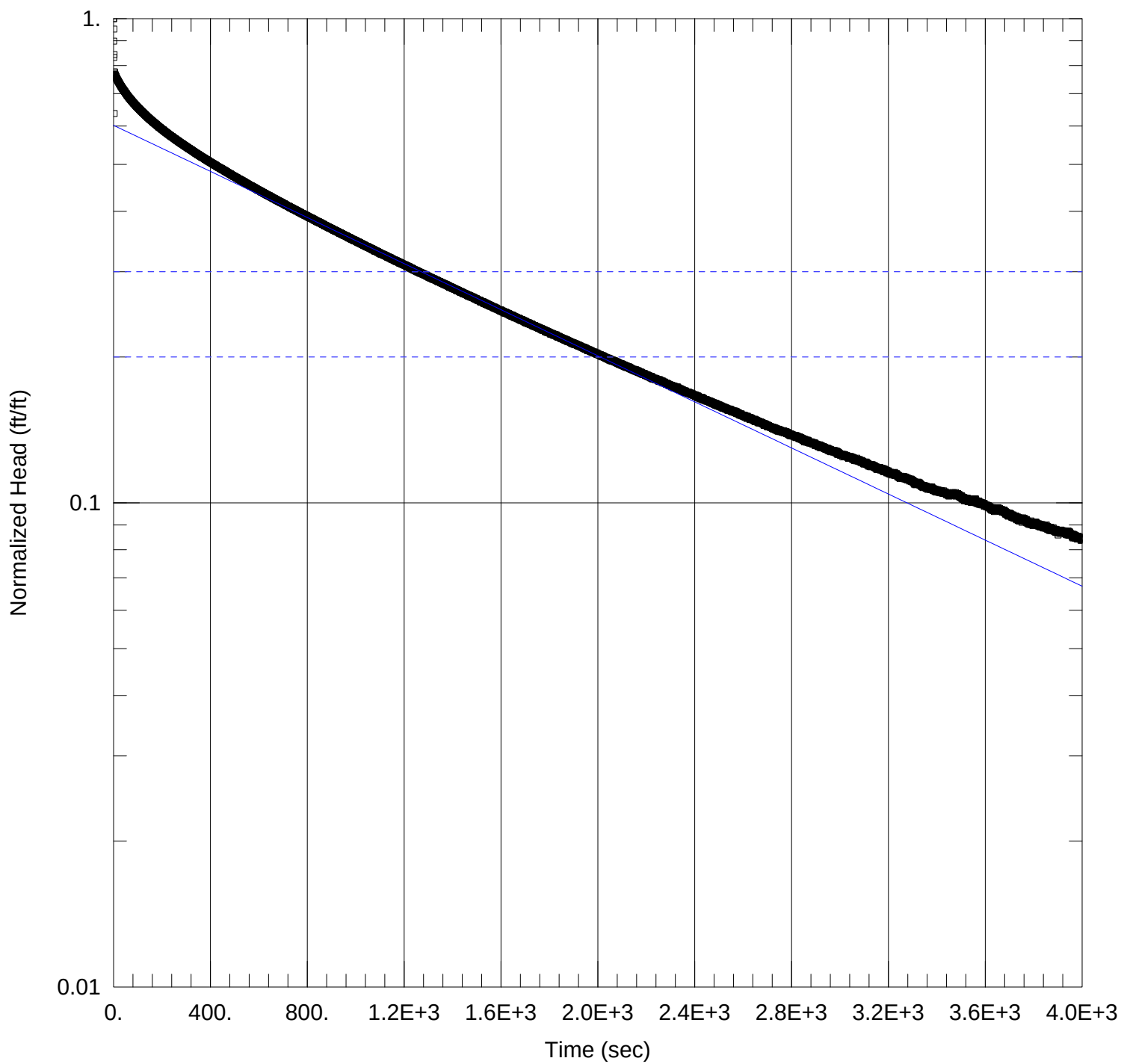
SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 0.001284 cm/sec

y0 = 0.7369 ft



MW-20 FALLING HEAD TEST

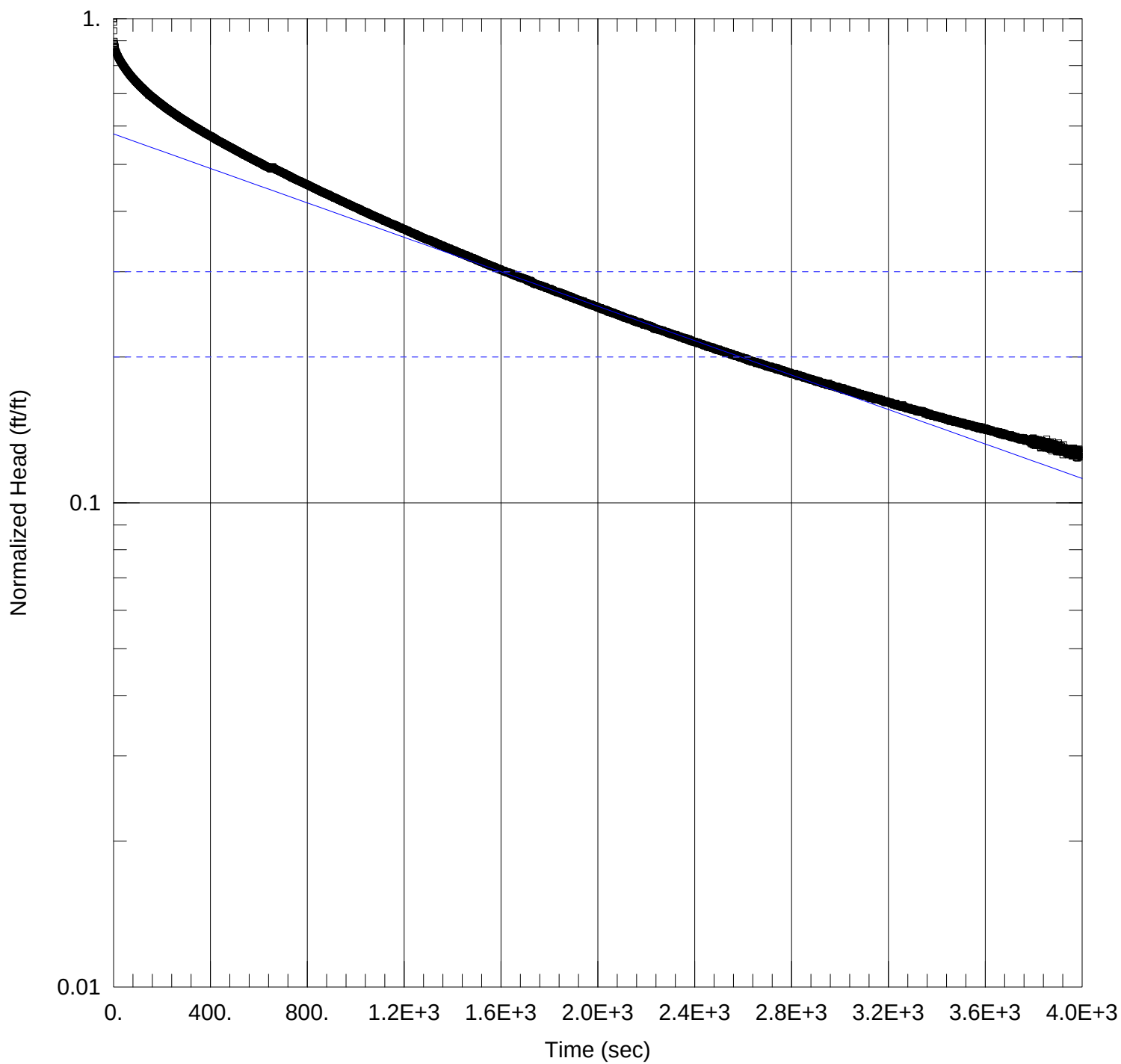
SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 3.934E-5 cm/sec

y0 = 1.604 ft



MW-20 RISING HEAD TEST

SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 2.94E-5 cm/sec

y0 = 1.369 ft

Attachment F

2025 Water Level Monitoring Field Form

**Water Level Monitoring Field Form
Vernon County Landfill**

WDNR Point ID Number	Well Name	Date Installed	Ground Elevation (feet NGVD)	Top of Casing Elevation (feet NGVD)	Well Depth (feet btoc)	Screen Length (feet)	Screen Interval Elevation (feet NGVD)	Previous Depths to Water (feet btoc)	Measured Depth to Water (feet btoc)	Measured Depth to Water (feet btoc)	Measured Depth to Water (feet btoc)	Measured Depth to Water (feet btoc)
									Date: 05.14.2025	Date: 06.19.2025	Date: 07.28.2025	Date: 08.27.2025
2025 Monitoring Wells and Piezometers												
137	MW-18WT	8/2/2024	1210.1	1212.24	91.5	10.0	1120.7 - 1130.7	N/A	81.31	81.71	81.68	81.44
139	MW-18	7/31/2024	1209.8	1212.00	122.4	10.0	1089.6 - 1099.6	N/A	108.47	108.21	108.45	108.08
135	MW-16Z	8/6/2024	1184.5	1186.50	124.7	5.0	1061.8 - 1066.8	N/A	91.69	92.34	92.39	91.5
141	MW-19	8/13/2024	1190.5	1192.82	107.5	10.0	1085.3 - 1095.3	N/A	99.39	99.39	99.56	100.37
143	MW-19Z	8/9/2024	1190.2	1192.34	134.9	5.0	1057.4 - 1062.4	N/A	98.47	98.32	98.49	99.25
145	MW-20WT	4/24/2025	1174.4	1176.32	55.5	10.0	1119.0 1129.0	N/A	54.4	52.27	52.88	54.95
147	MW-20	4/23/2025	1174.3	1176.58	82.2	10.0	1092.1 1102.1	N/A	68.48	67.95	67.67	67.42
2022 Monitoring Wells and Piezometers												
125	MW-14WT	9/20/2022	1247.2	1249.70	107.6	15.0	1142.2 - 1157.2	103.3	103.54	103.39	103.45	103.42
127	MW-15WT	9/28/2022	1220.6	1223.24	85.4	10.0	1137.8 - 1147.8	DRY	DRY	DRY	DRY	DRY
129	MW-16WT	9/21/2022	1184.7	1187.41	77.6	10.0	1109.8 - 1119.8	DRY	DRY	DRY	DRY	DRY
131	MW-16	8/25/2022	1184.3	1186.92	99.6	5.0	1087.3 - 1092.3	84.5	83.88	84.87	84.76	84.12
133	MW-17WT	9/26/2022	1196.4	1199.18	89.6	10.0	1109.6 - 1119.6	85.5	78.6	79.58	79.32	80
Monitoring Wells and Piezometers Inside Expansion Footprint												
109	MW-5A	11/8/1989	1224.0	1225.81	105.1	15.0	1120.7 - 1135.7	90.3	90.63	90.55	90.40	90.29
108	MW-5	2/17/1988	1223.3	1225.32	152.6	10.0	1072.7 - 1082.7	141.4	142.82	142.18	142.14	142.47
119	MW-14Z	3/7/2003	1247.5	1250.22	213.5	5.0	1036.7 - 1041.7	178.0	180.25	180.32	179.66	184
Monitoring Wells and Piezometers Within 150-feet												
118	MW-14	3/12/2003	1247.5	1249.69	188.3	15.0	1061.4 - 1076.4	174.5	181.17	179.35	178.26	178.32
Monitoring Wells and Piezometers Within 300-feet												
105	MW-3	2/2/1988	1233.0	1235.25	182.3	5.0	1053.0 - 1058.0	164.6	167.38	167.68	167.63	167.5
107	MW-4P	1/29/1988	1232.9	1235.19	97.3	10.0	1137.9 - 1147.9	87.0	86.51	86.45	86.45	85.37
110	MW-6	2/20/1988	1233.0	1235.37	204.6	5.0	1030.8 - 1035.8	170.1	inaccessible (dedicated pump in the way)	inaccessible (dedicated pump in the way)	inaccessible (dedicated pump in the way)	inaccessible (dedicated pump in the way)
114	MW-10	9/15/1989	1215.6	1217.52	185.4	5.0	1032.1 - 1037.1	133.3	136.95	137.23	137.12	137.32
115	MW-11	9/29/1989	1216.4	1218.56	164.7	15.0	1053.9 - 1068.9	129.3	133.1	133.14	133.10	129.43
116	MW-12	9/22/1989	1216.4	1218.36	100.5	15.0	1117.9 - 1132.9	88.7	86.97	87.13	87.26	86.55
Monitoring Wells and Piezometers Outside 300-feet ⁽¹⁾												
102	MW-1P	12/30/1987	1236.4	1238.41	113.1	10.0	1125.3 - 1135.3	107.0	106.5	106.53	106.49	106.36
101	MW-1	12/30/1987	1236.4	1238.11	159.7	10.0	1078.4 - 1088.4	146.3	149.75	149.65	149.62	149.67
121	MW-1PR	1/12/1994	1245.0	1247.61	130.3	15.0	1117.3 - 1132.3	113.4	113.31	113.26	113.29	113.23
120	MW-1R	1/12/1994	1244.6	1247.25	167.3	15.0	1080.0 - 1095.0	155.4	158.86	159.1	158.90	160.75
123	MW-1RZ	3/12/2003	1244.0	1245.45	188.0	5.0	1057.5 - 1062.5	154.2	157.41	157.62	157.42	157.25
104	MW-2P	1/17/1988	1252.5	1254.88	127.2	10.0	1127.7 - 1137.7	115.6	115.18	115.19	115.25	115.21
103	MW-2	1/17/1988	1252.5	1254.35	176.5	10.0	1077.9 - 1087.9	166.6	168.76	169.02	168.66	168.49
111	MW-7	11/7/1989	1255.7	1258.03	236.8	5.0	1021.2 - 1026.2	187.1	189.45	189.54	189.53	189.57
112	MW-8R	11/13/1989	1256.1	1258.84	205.2	15.0	1053.6 - 1068.6	181.8	185.67	185.97	184.62	184.61
113	MW-9	8/29/1989	1255.4	1257.50	128.9	15.0	1128.6 - 1143.6	118.3	117.67	117.69	117.7	117.61
117	MW-13P	2/26/2003	1224.5	1227.42	105.3	15.0	1122.1 - 1137.1	94.0	93.81	93.92	93.78	93.65

Notes:
 NA - Information not available.
 bgs - Below ground surface.
 btoc - Below top of casing.
 (1) - Monitoring wells outside 300-feet of the proposed expansion are not required to be monitored for water level but should be monitored during at least the first two water level monitoring events to assess groundwater conditions across the site.

Attachment G

Laboratory Reports (2025 Baseline Groundwater Monitoring)

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Brian L. Kent
Short Elliott Hendrickson, Inc. dba SEH
10 North Bridge Street
Chippewa Falls, Wisconsin 54729-3374

Generated 4/16/2025 10:55:39 AM Revision 1

JOB DESCRIPTION

Vernon County LF

JOB NUMBER

500-264951-1

Eurofins Chicago

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

Results relate only to the items tested and the sample(s) as received by the laboratory. The results, detection limits (LOD) and Quantitation Limits (LOQ) have been adjusted for sample dilutions and/or solids content.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Chicago Project Manager.

Compliance Statement

The LOD and LOQ reported are adjusted by the dilution factor when a dilution factor greater than 1 is needed. Additionally, where results are indicated as being reported on a dry weight basis, the LOD and LOQ are adjusted for moisture content as well.

Definitions of Limits

- LOD = Limit of Detection = MDL as defined by 40 CFR part 136 Appendix B
- LOQ = Limit of Quantitation = $3.33 \times \text{LOD}$ as defined by Wisconsin
- RL = Report Limit = a concentration supported by a standard in the calibration curves

Authorization



Generated
4/16/2025 10:55:39 AM
Revision 1

Authorized for release by
Sandie Fredrick, Senior Project Manager
Sandra.Fredrick@et.eurofinsus.com
(920)261-1660

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Case Narrative

Client: Short Elliott Hendrickson, Inc. dba SEH
Project: Vernon County LF

Job ID: 500-264951-1

Job ID: 500-264951-1

Eurofins Chicago

Job Narrative 500-264951-1

Revision

The report being provided is a revision of the original report sent on 3/20/2025. The report (revision 1) is being revised due to: Client added more metals to the analyte list for sample 1.

Receipt

The samples were received on 3/8/2025 10:05 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 3.0° C and 5.7° C.

Receipt Exceptions

Did not receive sample MW-16Z in initial shipment.

GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 500-809392 was outside the method criteria for the following analyte(s): 1,4-Dichlorobenzene, Ethylbenzene, m-Xylene & p-Xylene, o-Xylene and Tetrachloroethene. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 500-809592 was outside the method criteria for the following analyte(s): Bromomethane and Carbon disulfide. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

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

Metals

Method 6020B: The method blank for preparation batch 500-809538 and analytical batch 500-810390 contained Sodium above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

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

Field Service / Mobile Lab

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

General Chemistry

Method SM 2320B: The method blank for analytical batch 500-810034 contained Alkalinity above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-analysis of samples was not performed.

Method N07-0003: The associated Initial Calibration Verification (ICV) failed slightly high at 111% recovery (limit is 90-110%). MW-18WT (500-264951-1), MW-18 (500-264951-2), MW-19 (500-264951-3), MW-19Z (500-264951-4) and MW-16Z (500-264951-6)

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

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Detection Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon County LF

Job ID: 500-264951-1

Client Sample ID: MW-18WT

Lab Sample ID: 500-264951-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	36		2.5	0.73	ug/L	1		6020B	Dissolved
Boron	14	J	50	13	ug/L	1		6020B	Dissolved
Manganese	1.5	J	2.5	0.79	ug/L	1		6020B	Dissolved
Hardness as calcium carbonate	320		0.91	0.46	mg/L	1		SM 2340B	Dissolved
Chloride	3.4		1.0	0.42	mg/L	1		300.0	Dissolved
Sulfate	7.5		1.0	0.47	mg/L	1		300.0	Dissolved
Alkalinity	280	B	5.0	3.7	mg/L	1		SM 2320B	Dissolved
Depth to Water (ft from MP)	81.95				ft	1		Field Sampling	Total/NA
Field Conductivity	570				umhos/cm	1		Field Sampling	Total/NA
Field pH	7.62				SU	1		Field Sampling	Total/NA
Field Temperature	11.8				Degrees C	1		Field Sampling	Total/NA

Client Sample ID: MW-18

Lab Sample ID: 500-264951-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	32		2.5	0.73	ug/L	1		6020B	Dissolved
Manganese	1.0	J	2.5	0.79	ug/L	1		6020B	Dissolved
Hardness as calcium carbonate	320		0.91	0.46	mg/L	1		SM 2340B	Dissolved
Chloride	3.8		1.0	0.42	mg/L	1		300.0	Dissolved
Sulfate	27		1.0	0.47	mg/L	1		300.0	Dissolved
Alkalinity	250		5.0	3.7	mg/L	1		SM 2320B	Dissolved
Depth to Water (ft from MP)	108.57				ft	1		Field Sampling	Total/NA
Field Conductivity	560				umhos/cm	1		Field Sampling	Total/NA
Field pH	7.89				SU	1		Field Sampling	Total/NA
Field Temperature	9.5				Degrees C	1		Field Sampling	Total/NA

Client Sample ID: MW-19

Lab Sample ID: 500-264951-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.28	J	1.0	0.23	ug/L	1		6020B	Dissolved
Barium	17		2.5	0.73	ug/L	1		6020B	Dissolved
Copper	0.81	J	2.0	0.50	ug/L	1		6020B	Dissolved
Manganese	380		2.5	0.79	ug/L	1		6020B	Dissolved
Hardness as calcium carbonate	39		0.91	0.46	mg/L	1		SM 2340B	Dissolved
Chloride	3.0		1.0	0.42	mg/L	1		300.0	Dissolved
Sulfate	3.8		1.0	0.47	mg/L	1		300.0	Dissolved
Nitrate Nitrite as N	0.42	^1+	0.10	0.041	mg/L	1		N07-0003	Dissolved
Alkalinity	41		5.0	3.7	mg/L	1		SM 2320B	Dissolved
Depth to Water (ft from MP)	102.85				ft	1		Field Sampling	Total/NA
Field Conductivity	161				umhos/cm	1		Field Sampling	Total/NA
Field pH	7.05				SU	1		Field Sampling	Total/NA
Field Temperature	9.2				Degrees C	1		Field Sampling	Total/NA

Client Sample ID: MW-19Z

Lab Sample ID: 500-264951-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	39		2.5	0.73	ug/L	1		6020B	Dissolved
Copper	1.2	J	2.0	0.50	ug/L	1		6020B	Dissolved
Manganese	42		2.5	0.79	ug/L	1		6020B	Dissolved
Zinc	7.2	J	20	6.9	ug/L	1		6020B	Dissolved
Hardness as calcium carbonate	86		0.91	0.46	mg/L	1		SM 2340B	Dissolved
Chloride	3.4		1.0	0.42	mg/L	1		300.0	Dissolved

This Detection Summary does not include radiochemical test results.

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Detection Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon County LF

Job ID: 500-264951-1

Client Sample ID: MW-19Z (Continued)

Lab Sample ID: 500-264951-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	2.8		1.0	0.47	mg/L	1		300.0	Dissolved
Alkalinity	77		5.0	3.7	mg/L	1		SM 2320B	Dissolved
Depth to Water (ft from MP)	100.59				ft	1		Field Sampling	Total/NA
Field Conductivity	238				umhos/cm	1		Field Sampling	Total/NA
Field pH	6.9				SU	1		Field Sampling	Total/NA
Field Temperature	8.7				Degrees C	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank-VOC

Lab Sample ID: 500-264951-5

No Detections.

Client Sample ID: MW-16Z

Lab Sample ID: 500-264951-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	350		13	3.7	ug/L	1		6020B	Dissolved
Cadmium	1.4	J	2.5	0.84	ug/L	1		6020B	Dissolved
Copper	7.0	J	10	2.5	ug/L	1		6020B	Dissolved
Manganese	52		13	4.0	ug/L	1		6020B	Dissolved
Selenium	5.3	J	13	4.9	ug/L	1		6020B	Dissolved
Sodium	56000	B	1000	390	ug/L	1		6020B	Dissolved
Zinc	340		100	35	ug/L	1		6020B	Dissolved
Hardness as calcium carbonate	1700		4.6	2.3	mg/L	1		SM 2340B	Dissolved
Chloride	11		1.0	0.42	mg/L	1		300.0	Dissolved
Sulfate	11		1.0	0.47	mg/L	1		300.0	Dissolved
Nitrate Nitrite as N	1.5	^1+	0.10	0.041	mg/L	1		N07-0003	Dissolved
Alkalinity	310		5.0	3.7	mg/L	1		SM 2320B	Dissolved
Depth to Water (ft from MP)	92.65				ft	1		Field Sampling	Total/NA
Field Conductivity	633				umhos/cm	1		Field Sampling	Total/NA
Field pH	7.67				SU	1		Field Sampling	Total/NA
Field Temperature	9.9				Degrees C	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

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Method Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon County LF

Job ID: 500-264951-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CHI
6020B	Metals (ICP/MS)	SW846	EET CHI
7470A	Mercury (CVAA)	SW846	EET CHI
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	EET CHI
300.0	Anions, Ion Chromatography	EPA	EET CHI
N07-0003	Enzymatic Nitrate-Nitrite Nitrogen	EPA	EET CHI
SM 2320B	Alkalinity	SM	EET CHI
Field Sampling	Field Sampling	EPA	EET CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CHI
5030B	Purge and Trap	SW846	EET CHI
7470A	Preparation, Mercury	SW846	EET CHI

Protocol References:

EPA = US Environmental Protection Agency

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

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CHI = Eurofins Chicago, 18410 Crossing Drive, Suite E, Tinley Park, IL 60487, TEL (708)534-5200

Sample Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon County LF

Job ID: 500-264951-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-264951-1	MW-18WT	Water	03/07/25 10:00	03/08/25 10:05
500-264951-2	MW-18	Water	03/07/25 10:30	03/08/25 10:05
500-264951-3	MW-19	Water	03/07/25 08:50	03/08/25 10:05
500-264951-4	MW-19Z	Water	03/07/25 08:00	03/08/25 10:05
500-264951-5	Trip Blank-VOC	Water	03/07/25 00:00	03/08/25 10:05
500-264951-6	MW-16Z	Water	03/07/25 12:00	03/11/25 09:55

Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon County LF

Job ID: 500-264951-1

Client Sample ID: MW-18WT

Lab Sample ID: 500-264951-1

Date Collected: 03/07/25 10:00

Matrix: Water

Date Received: 03/08/25 10:05

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.3		3.0	1.3	ug/L		03/11/25 08:32	03/12/25 15:04	1
Arsenic	<0.23		1.0	0.23	ug/L		03/11/25 08:32	03/12/25 15:04	1
Barium	36		2.5	0.73	ug/L		03/11/25 08:32	03/12/25 15:04	1
Beryllium	<0.53		1.0	0.53	ug/L		03/11/25 08:32	03/12/25 15:04	1
Boron	14 J		50	13	ug/L		03/11/25 08:32	03/12/25 15:04	1
Cadmium	<0.17		0.50	0.17	ug/L		03/11/25 08:32	03/12/25 15:04	1
Chromium	<1.1		5.0	1.1	ug/L		03/11/25 08:32	03/12/25 15:04	1
Cobalt	<0.40		1.0	0.40	ug/L		03/11/25 08:32	03/12/25 15:04	1
Copper	<0.50		2.0	0.50	ug/L		03/11/25 08:32	03/12/25 15:04	1
Lead	<0.19		0.50	0.19	ug/L		03/11/25 08:32	03/12/25 15:04	1
Manganese	1.5 J		2.5	0.79	ug/L		03/11/25 08:32	03/12/25 15:04	1
Nickel	<0.63		2.0	0.63	ug/L		03/11/25 08:32	03/17/25 15:21	1
Selenium	<0.98		2.5	0.98	ug/L		03/11/25 08:32	03/12/25 15:04	1
Silver	<0.12		0.50	0.12	ug/L		03/11/25 08:32	03/12/25 15:04	1
Thallium	<0.57		2.0	0.57	ug/L		03/11/25 08:32	03/12/25 15:04	1
Vanadium	<2.2		5.0	2.2	ug/L		03/11/25 08:32	03/12/25 15:04	1
Zinc	<6.9		20	6.9	ug/L		03/11/25 08:32	03/12/25 15:04	1

Method: SW846 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.076		0.20	0.076	ug/L		03/18/25 10:25	03/19/25 11:13	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	320		0.91	0.46	mg/L		03/11/25 08:32	03/13/25 09:33	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	3.4		1.0	0.42	mg/L			03/13/25 04:35	1
Fluoride (EPA 300.0)	<0.43		1.0	0.43	mg/L			03/13/25 04:35	1
Sulfate (EPA 300.0)	7.5		1.0	0.47	mg/L			03/13/25 04:35	1
Nitrate Nitrite as N (EPA N07-0003)	<0.041	^1+	0.10	0.041	mg/L			03/19/25 12:44	1
Alkalinity (SM 2320B)	280 B		5.0	3.7	mg/L			03/13/25 17:39	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Depth to Water (ft from MP)	81.95				ft			03/07/25 10:00	1
Field Conductivity	570				umhos/cm			03/07/25 10:00	1
Field pH	7.62				SU			03/07/25 10:00	1
Field Temperature	11.8				Degrees C			03/07/25 10:00	1

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Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon County LF

Job ID: 500-264951-1

Client Sample ID: MW-18

Lab Sample ID: 500-264951-2

Date Collected: 03/07/25 10:30

Matrix: Water

Date Received: 03/08/25 10:05

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		03/11/25 08:32	03/12/25 15:06	1
Barium	32		2.5	0.73	ug/L		03/11/25 08:32	03/12/25 15:06	1
Boron	<13		50	13	ug/L		03/11/25 08:32	03/12/25 15:06	1
Cadmium	<0.17		0.50	0.17	ug/L		03/11/25 08:32	03/12/25 15:06	1
Chromium	<1.1		5.0	1.1	ug/L		03/11/25 08:32	03/12/25 15:06	1
Copper	<0.50		2.0	0.50	ug/L		03/11/25 08:32	03/12/25 15:06	1
Lead	<0.19		0.50	0.19	ug/L		03/11/25 08:32	03/12/25 15:06	1
Manganese	1.0 J		2.5	0.79	ug/L		03/11/25 08:32	03/12/25 15:06	1
Selenium	<0.98		2.5	0.98	ug/L		03/11/25 08:32	03/12/25 15:06	1
Silver	<0.12		0.50	0.12	ug/L		03/11/25 08:32	03/12/25 15:06	1
Zinc	<6.9		20	6.9	ug/L		03/11/25 08:32	03/12/25 15:06	1

Method: SW846 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.076		0.20	0.076	ug/L		03/18/25 10:25	03/19/25 11:15	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	320		0.91	0.46	mg/L		03/11/25 08:32	03/13/25 09:33	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	3.8		1.0	0.42	mg/L			03/13/25 04:50	1
Fluoride (EPA 300.0)	<0.43		1.0	0.43	mg/L			03/13/25 04:50	1
Sulfate (EPA 300.0)	27		1.0	0.47	mg/L			03/13/25 04:50	1
Nitrate Nitrite as N (EPA N07-0003)	<0.041	^1+	0.10	0.041	mg/L			03/19/25 12:44	1
Alkalinity (SM 2320B)	250		5.0	3.7	mg/L			03/17/25 11:22	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Depth to Water (ft from MP)	108.57				ft			03/07/25 10:30	1
Field Conductivity	560				umhos/cm			03/07/25 10:30	1
Field pH	7.89				SU			03/07/25 10:30	1
Field Temperature	9.5				Degrees C			03/07/25 10:30	1

Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon County LF

Job ID: 500-264951-1

Client Sample ID: MW-19

Lab Sample ID: 500-264951-3

Date Collected: 03/07/25 08:50

Matrix: Water

Date Received: 03/08/25 10:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<4.3		10	4.3	ug/L			03/12/25 15:16	1
Benzene	<0.18		0.50	0.18	ug/L			03/12/25 15:16	1
Bromobenzene	<0.60		1.0	0.60	ug/L			03/12/25 15:16	1
Bromochloromethane	<0.50		1.0	0.50	ug/L			03/12/25 15:16	1
Bromodichloromethane	<0.57		1.0	0.57	ug/L			03/12/25 15:16	1
Bromoform	<0.96		1.0	0.96	ug/L			03/12/25 15:16	1
Bromomethane	<1.8		3.0	1.8	ug/L			03/12/25 15:16	1
2-Butanone (MEK)	<2.3		5.0	2.3	ug/L			03/12/25 15:16	1
Carbon disulfide	<1.1		2.0	1.1	ug/L			03/12/25 15:16	1
Carbon tetrachloride	<0.42		1.0	0.42	ug/L			03/12/25 15:16	1
Chlorobenzene	<0.41		1.0	0.41	ug/L			03/12/25 15:16	1
Chloroethane	<0.47		5.0	0.47	ug/L			03/12/25 15:16	1
Chloroform	<0.92		2.0	0.92	ug/L			03/12/25 15:16	1
Chloromethane	<0.79		5.0	0.79	ug/L			03/12/25 15:16	1
2-Chlorotoluene	<0.36		1.0	0.36	ug/L			03/12/25 15:16	1
4-Chlorotoluene	<0.34		1.0	0.34	ug/L			03/12/25 15:16	1
cis-1,2-Dichloroethene	<0.42		1.0	0.42	ug/L			03/12/25 15:16	1
cis-1,3-Dichloropropene	<0.52		1.0	0.52	ug/L			03/12/25 15:16	1
Chlorodibromomethane	<0.83		1.0	0.83	ug/L			03/12/25 15:16	1
1,2-Dibromo-3-Chloropropane	<3.9		5.0	3.9	ug/L			03/12/25 15:16	1
1,2-Dibromoethane (EDB)	<0.56		1.0	0.56	ug/L			03/12/25 15:16	1
Dibromomethane	<0.58		1.0	0.58	ug/L			03/12/25 15:16	1
1,2-Dichlorobenzene	<0.48		1.0	0.48	ug/L			03/12/25 15:16	1
1,3-Dichlorobenzene	<0.41		1.0	0.41	ug/L			03/12/25 15:16	1
1,4-Dichlorobenzene	<0.46		1.0	0.46	ug/L			03/12/25 15:16	1
Dichlorodifluoromethane	<1.8		3.0	1.8	ug/L			03/12/25 15:16	1
1,1-Dichloroethane	<0.36		1.0	0.36	ug/L			03/12/25 15:16	1
1,2-Dichloroethane	<0.58		1.0	0.58	ug/L			03/12/25 15:16	1
1,1-Dichloroethene	<0.48		1.0	0.48	ug/L			03/12/25 15:16	1
1,2-Dichloropropane	<0.37		1.0	0.37	ug/L			03/12/25 15:16	1
1,3-Dichloropropane	<0.56		1.0	0.56	ug/L			03/12/25 15:16	1
2,2-Dichloropropane	<0.48		5.0	0.48	ug/L			03/12/25 15:16	1
1,1-Dichloropropene	<0.33		1.0	0.33	ug/L			03/12/25 15:16	1
Ethylbenzene	<0.20		0.50	0.20	ug/L			03/12/25 15:16	1
Hexachlorobutadiene	<0.54		1.0	0.54	ug/L			03/12/25 15:16	1
Isopropylbenzene	<0.29		1.0	0.29	ug/L			03/12/25 15:16	1
Isopropyl ether	<0.39		1.0	0.39	ug/L			03/12/25 15:16	1
Methylene Chloride	<3.6		5.0	3.6	ug/L			03/12/25 15:16	1
Methyl tert-butyl ether	<0.43		1.0	0.43	ug/L			03/12/25 15:16	1
Naphthalene	<0.44		1.0	0.44	ug/L			03/12/25 15:16	1
n-Butylbenzene	<0.33		1.0	0.33	ug/L			03/12/25 15:16	1
N-Propylbenzene	<0.32		1.0	0.32	ug/L			03/12/25 15:16	1
p-Isopropyltoluene	<0.29		1.0	0.29	ug/L			03/12/25 15:16	1
sec-Butylbenzene	<0.27		1.0	0.27	ug/L			03/12/25 15:16	1
Styrene	<0.31		1.0	0.31	ug/L			03/12/25 15:16	1
tert-Butylbenzene	<0.27		1.0	0.27	ug/L			03/12/25 15:16	1
1,1,1,2-Tetrachloroethane	<0.67		1.0	0.67	ug/L			03/12/25 15:16	1
1,1,2,2-Tetrachloroethane	<0.65		1.0	0.65	ug/L			03/12/25 15:16	1
Tetrachloroethene	<0.39		1.0	0.39	ug/L			03/12/25 15:16	1

Eurofins Chicago

Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon County LF

Job ID: 500-264951-1

Client Sample ID: MW-19

Lab Sample ID: 500-264951-3

Date Collected: 03/07/25 08:50

Matrix: Water

Date Received: 03/08/25 10:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrahydrofuran	<3.9		10	3.9	ug/L			03/12/25 15:16	1
Toluene	<0.21		0.50	0.21	ug/L			03/12/25 15:16	1
trans-1,2-Dichloroethene	<0.44		1.0	0.44	ug/L			03/12/25 15:16	1
trans-1,3-Dichloropropene	<0.63		1.0	0.63	ug/L			03/12/25 15:16	1
1,2,3-Trichlorobenzene	<0.35		1.0	0.35	ug/L			03/12/25 15:16	1
1,2,4-Trichlorobenzene	<0.31		1.0	0.31	ug/L			03/12/25 15:16	1
1,1,1-Trichloroethane	<0.45		1.0	0.45	ug/L			03/12/25 15:16	1
1,1,2-Trichloroethane	<0.73		1.0	0.73	ug/L			03/12/25 15:16	1
Trichloroethene	<0.15		0.50	0.15	ug/L			03/12/25 15:16	1
Trichlorofluoromethane	<0.44		1.0	0.44	ug/L			03/12/25 15:16	1
1,2,3-Trichloropropane	<1.5		2.0	1.5	ug/L			03/12/25 15:16	1
1,2,4-Trimethylbenzene	<0.30		1.0	0.30	ug/L			03/12/25 15:16	1
1,3,5-Trimethylbenzene	<0.29		1.0	0.29	ug/L			03/12/25 15:16	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			03/12/25 15:16	1
Xylenes, Total	<0.30		1.0	0.30	ug/L			03/12/25 15:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		72 - 124		03/12/25 15:16	1
Dibromofluoromethane (Surr)	98		75 - 120		03/12/25 15:16	1
1,2-Dichloroethane-d4 (Surr)	104		75 - 126		03/12/25 15:16	1
Toluene-d8 (Surr)	102		75 - 120		03/12/25 15:16	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.28	J	1.0	0.23	ug/L		03/11/25 08:32	03/12/25 15:09	1
Barium	17		2.5	0.73	ug/L		03/11/25 08:32	03/12/25 15:09	1
Boron	<13		50	13	ug/L		03/11/25 08:32	03/12/25 15:09	1
Cadmium	<0.17		0.50	0.17	ug/L		03/11/25 08:32	03/12/25 15:09	1
Chromium	<1.1		5.0	1.1	ug/L		03/11/25 08:32	03/12/25 15:09	1
Copper	0.81	J	2.0	0.50	ug/L		03/11/25 08:32	03/12/25 15:09	1
Lead	<0.19		0.50	0.19	ug/L		03/11/25 08:32	03/12/25 15:09	1
Manganese	380		2.5	0.79	ug/L		03/11/25 08:32	03/12/25 15:09	1
Selenium	<0.98		2.5	0.98	ug/L		03/11/25 08:32	03/12/25 15:09	1
Silver	<0.12		0.50	0.12	ug/L		03/11/25 08:32	03/12/25 15:09	1
Zinc	<6.9		20	6.9	ug/L		03/11/25 08:32	03/12/25 15:09	1

Method: SW846 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.076		0.20	0.076	ug/L		03/18/25 10:25	03/19/25 11:17	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	39		0.91	0.46	mg/L		03/11/25 08:32	03/13/25 09:33	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	3.0		1.0	0.42	mg/L			03/13/25 05:06	1
Fluoride (EPA 300.0)	<0.43		1.0	0.43	mg/L			03/13/25 05:06	1
Sulfate (EPA 300.0)	3.8		1.0	0.47	mg/L			03/13/25 05:06	1
Nitrate Nitrite as N (EPA N07-0003)	0.42	^1+	0.10	0.041	mg/L			03/19/25 12:44	1
Alkalinity (SM 2320B)	41		5.0	3.7	mg/L			03/17/25 11:32	1

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Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon County LF

Job ID: 500-264951-1

Client Sample ID: MW-19

Lab Sample ID: 500-264951-3

Date Collected: 03/07/25 08:50

Matrix: Water

Date Received: 03/08/25 10:05

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Depth to Water (ft from MP)	102.85				ft			03/07/25 08:50	1
Field Conductivity	161				umhos/cm			03/07/25 08:50	1
Field pH	7.05				SU			03/07/25 08:50	1
Field Temperature	9.2				Degrees C			03/07/25 08:50	1

Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon County LF

Job ID: 500-264951-1

Client Sample ID: MW-19Z

Lab Sample ID: 500-264951-4

Date Collected: 03/07/25 08:00

Matrix: Water

Date Received: 03/08/25 10:05

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		03/11/25 08:32	03/12/25 15:16	1
Barium	39		2.5	0.73	ug/L		03/11/25 08:32	03/12/25 15:16	1
Boron	<13		50	13	ug/L		03/11/25 08:32	03/12/25 15:16	1
Cadmium	<0.17		0.50	0.17	ug/L		03/11/25 08:32	03/12/25 15:16	1
Chromium	<1.1		5.0	1.1	ug/L		03/11/25 08:32	03/12/25 15:16	1
Copper	1.2 J		2.0	0.50	ug/L		03/11/25 08:32	03/12/25 15:16	1
Lead	<0.19		0.50	0.19	ug/L		03/11/25 08:32	03/12/25 15:16	1
Manganese	42		2.5	0.79	ug/L		03/11/25 08:32	03/12/25 15:16	1
Selenium	<0.98		2.5	0.98	ug/L		03/11/25 08:32	03/12/25 15:16	1
Silver	<0.12		0.50	0.12	ug/L		03/11/25 08:32	03/12/25 15:16	1
Zinc	7.2 J		20	6.9	ug/L		03/11/25 08:32	03/12/25 15:16	1

Method: SW846 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.076		0.20	0.076	ug/L		03/18/25 10:25	03/19/25 11:20	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	86		0.91	0.46	mg/L		03/11/25 08:32	03/13/25 09:33	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	3.4		1.0	0.42	mg/L			03/13/25 05:21	1
Fluoride (EPA 300.0)	<0.43		1.0	0.43	mg/L			03/13/25 05:21	1
Sulfate (EPA 300.0)	2.8		1.0	0.47	mg/L			03/13/25 05:21	1
Nitrate Nitrite as N (EPA N07-0003)	<0.041	^1+	0.10	0.041	mg/L			03/19/25 12:45	1
Alkalinity (SM 2320B)	77		5.0	3.7	mg/L			03/17/25 11:40	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Depth to Water (ft from MP)	100.59				ft			03/07/25 08:00	1
Field Conductivity	238				umhos/cm			03/07/25 08:00	1
Field pH	6.9				SU			03/07/25 08:00	1
Field Temperature	8.7				Degrees C			03/07/25 08:00	1

Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon County LF

Job ID: 500-264951-1

Client Sample ID: Trip Blank-VOC

Lab Sample ID: 500-264951-5

Date Collected: 03/07/25 00:00

Matrix: Water

Date Received: 03/08/25 10:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<4.3		10	4.3	ug/L			03/12/25 12:48	1
Benzene	<0.18		0.50	0.18	ug/L			03/12/25 12:48	1
Bromobenzene	<0.60		1.0	0.60	ug/L			03/12/25 12:48	1
Bromochloromethane	<0.50		1.0	0.50	ug/L			03/12/25 12:48	1
Bromodichloromethane	<0.57		1.0	0.57	ug/L			03/12/25 12:48	1
Bromoform	<0.96		1.0	0.96	ug/L			03/12/25 12:48	1
Bromomethane	<1.8		3.0	1.8	ug/L			03/12/25 12:48	1
2-Butanone (MEK)	<2.3		5.0	2.3	ug/L			03/12/25 12:48	1
Carbon disulfide	<1.1		2.0	1.1	ug/L			03/12/25 12:48	1
Carbon tetrachloride	<0.42		1.0	0.42	ug/L			03/12/25 12:48	1
Chlorobenzene	<0.41		1.0	0.41	ug/L			03/12/25 12:48	1
Chloroethane	<0.47		5.0	0.47	ug/L			03/12/25 12:48	1
Chloroform	<0.92		2.0	0.92	ug/L			03/12/25 12:48	1
Chloromethane	<0.79		5.0	0.79	ug/L			03/12/25 12:48	1
2-Chlorotoluene	<0.36		1.0	0.36	ug/L			03/12/25 12:48	1
4-Chlorotoluene	<0.34		1.0	0.34	ug/L			03/12/25 12:48	1
cis-1,2-Dichloroethene	<0.42		1.0	0.42	ug/L			03/12/25 12:48	1
cis-1,3-Dichloropropene	<0.52		1.0	0.52	ug/L			03/12/25 12:48	1
Chlorodibromomethane	<0.83		1.0	0.83	ug/L			03/12/25 12:48	1
1,2-Dibromo-3-Chloropropane	<3.9		5.0	3.9	ug/L			03/12/25 12:48	1
1,2-Dibromoethane (EDB)	<0.56		1.0	0.56	ug/L			03/12/25 12:48	1
Dibromomethane	<0.58		1.0	0.58	ug/L			03/12/25 12:48	1
1,2-Dichlorobenzene	<0.48		1.0	0.48	ug/L			03/12/25 12:48	1
1,3-Dichlorobenzene	<0.41		1.0	0.41	ug/L			03/12/25 12:48	1
1,4-Dichlorobenzene	<0.46		1.0	0.46	ug/L			03/12/25 12:48	1
Dichlorodifluoromethane	<1.8		3.0	1.8	ug/L			03/12/25 12:48	1
1,1-Dichloroethane	<0.36		1.0	0.36	ug/L			03/12/25 12:48	1
1,2-Dichloroethane	<0.58		1.0	0.58	ug/L			03/12/25 12:48	1
1,1-Dichloroethene	<0.48		1.0	0.48	ug/L			03/12/25 12:48	1
1,2-Dichloropropane	<0.37		1.0	0.37	ug/L			03/12/25 12:48	1
1,3-Dichloropropane	<0.56		1.0	0.56	ug/L			03/12/25 12:48	1
2,2-Dichloropropane	<0.48		5.0	0.48	ug/L			03/12/25 12:48	1
1,1-Dichloropropene	<0.33		1.0	0.33	ug/L			03/12/25 12:48	1
Ethylbenzene	<0.20		0.50	0.20	ug/L			03/12/25 12:48	1
Hexachlorobutadiene	<0.54		1.0	0.54	ug/L			03/12/25 12:48	1
Isopropylbenzene	<0.29		1.0	0.29	ug/L			03/12/25 12:48	1
Isopropyl ether	<0.39		1.0	0.39	ug/L			03/12/25 12:48	1
Methylene Chloride	<3.6		5.0	3.6	ug/L			03/12/25 12:48	1
Methyl tert-butyl ether	<0.43		1.0	0.43	ug/L			03/12/25 12:48	1
Naphthalene	<0.44		1.0	0.44	ug/L			03/12/25 12:48	1
n-Butylbenzene	<0.33		1.0	0.33	ug/L			03/12/25 12:48	1
N-Propylbenzene	<0.32		1.0	0.32	ug/L			03/12/25 12:48	1
p-Isopropyltoluene	<0.29		1.0	0.29	ug/L			03/12/25 12:48	1
sec-Butylbenzene	<0.27		1.0	0.27	ug/L			03/12/25 12:48	1
Styrene	<0.31		1.0	0.31	ug/L			03/12/25 12:48	1
tert-Butylbenzene	<0.27		1.0	0.27	ug/L			03/12/25 12:48	1
1,1,1,2-Tetrachloroethane	<0.67		1.0	0.67	ug/L			03/12/25 12:48	1
1,1,1,2,2-Tetrachloroethane	<0.65		1.0	0.65	ug/L			03/12/25 12:48	1
Tetrachloroethene	<0.39		1.0	0.39	ug/L			03/12/25 12:48	1

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Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon County LF

Job ID: 500-264951-1

Client Sample ID: Trip Blank-VOC

Lab Sample ID: 500-264951-5

Date Collected: 03/07/25 00:00

Matrix: Water

Date Received: 03/08/25 10:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrahydrofuran	<3.9		10	3.9	ug/L			03/12/25 12:48	1
Toluene	<0.21		0.50	0.21	ug/L			03/12/25 12:48	1
trans-1,2-Dichloroethene	<0.44		1.0	0.44	ug/L			03/12/25 12:48	1
trans-1,3-Dichloropropene	<0.63		1.0	0.63	ug/L			03/12/25 12:48	1
1,2,3-Trichlorobenzene	<0.35		1.0	0.35	ug/L			03/12/25 12:48	1
1,2,4-Trichlorobenzene	<0.31		1.0	0.31	ug/L			03/12/25 12:48	1
1,1,1-Trichloroethane	<0.45		1.0	0.45	ug/L			03/12/25 12:48	1
1,1,2-Trichloroethane	<0.73		1.0	0.73	ug/L			03/12/25 12:48	1
Trichloroethene	<0.15		0.50	0.15	ug/L			03/12/25 12:48	1
Trichlorofluoromethane	<0.44		1.0	0.44	ug/L			03/12/25 12:48	1
1,2,3-Trichloropropane	<1.5		2.0	1.5	ug/L			03/12/25 12:48	1
1,2,4-Trimethylbenzene	<0.30		1.0	0.30	ug/L			03/12/25 12:48	1
1,3,5-Trimethylbenzene	<0.29		1.0	0.29	ug/L			03/12/25 12:48	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			03/12/25 12:48	1
Xylenes, Total	<0.30		1.0	0.30	ug/L			03/12/25 12:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		72 - 124		03/12/25 12:48	1
Dibromofluoromethane (Surr)	98		75 - 120		03/12/25 12:48	1
1,2-Dichloroethane-d4 (Surr)	102		75 - 126		03/12/25 12:48	1
Toluene-d8 (Surr)	101		75 - 120		03/12/25 12:48	1

Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon County LF

Job ID: 500-264951-1

Client Sample ID: MW-16Z

Lab Sample ID: 500-264951-6

Date Collected: 03/07/25 12:00

Matrix: Water

Date Received: 03/11/25 09:55

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<1.2		5.0	1.2	ug/L		03/11/25 17:43	03/18/25 13:10	1
Barium	350		13	3.7	ug/L		03/11/25 17:43	03/18/25 13:10	1
Cadmium	1.4	J	2.5	0.84	ug/L		03/11/25 17:43	03/18/25 13:10	1
Chromium	<5.7		25	5.7	ug/L		03/11/25 17:43	03/18/25 13:10	1
Copper	7.0	J	10	2.5	ug/L		03/11/25 17:43	03/18/25 13:10	1
Lead	<0.93		2.5	0.93	ug/L		03/11/25 17:43	03/18/25 13:10	1
Manganese	52		13	4.0	ug/L		03/11/25 17:43	03/18/25 13:10	1
Selenium	5.3	J	13	4.9	ug/L		03/11/25 17:43	03/18/25 13:10	1
Silver	<0.58		2.5	0.58	ug/L		03/11/25 17:43	03/18/25 13:10	1
Sodium	56000	B	1000	390	ug/L		03/11/25 17:43	03/18/25 13:10	1
Zinc	340		100	35	ug/L		03/11/25 17:43	03/18/25 13:10	1

Method: SW846 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.076		0.20	0.076	ug/L		03/18/25 10:25	03/19/25 11:22	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	1700		4.6	2.3	mg/L		03/11/25 17:43	03/19/25 11:04	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	11		1.0	0.42	mg/L			03/13/25 05:37	1
Sulfate (EPA 300.0)	11		1.0	0.47	mg/L			03/13/25 05:37	1
Nitrate Nitrite as N (EPA N07-0003)	1.5	^1+	0.10	0.041	mg/L			03/19/25 12:45	1
Alkalinity (SM 2320B)	310		5.0	3.7	mg/L			03/17/25 11:49	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Depth to Water (ft from MP)	92.65				ft			03/07/25 12:00	1
Field Conductivity	633				umhos/cm			03/07/25 12:00	1
Field pH	7.67				SU			03/07/25 12:00	1
Field Temperature	9.9				Degrees C			03/07/25 12:00	1

Definitions/Glossary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon County LF

Job ID: 500-264951-1

Qualifiers

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
^1+	Initial Calibration Verification (ICV) is outside acceptance limits, high biased.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Association Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon County LF

Job ID: 500-264951-1

GC/MS VOA

Analysis Batch: 809592

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-264951-3	MW-19	Total/NA	Water	8260D	
500-264951-5	Trip Blank-VOC	Total/NA	Water	8260D	
MB 500-809592/7	Method Blank	Total/NA	Water	8260D	
LCS 500-809592/4	Lab Control Sample	Total/NA	Water	8260D	
LCSD 500-809592/5	Lab Control Sample Dup	Total/NA	Water	8260D	

Metals

Prep Batch: 809411

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-264951-1	MW-18WT	Dissolved	Water	3005A	
500-264951-2	MW-18	Dissolved	Water	3005A	
500-264951-3	MW-19	Dissolved	Water	3005A	
500-264951-4	MW-19Z	Dissolved	Water	3005A	
MB 500-809411/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-809411/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 809538

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-264951-6	MW-16Z	Dissolved	Water	3005A	
MB 500-809538/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-809538/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 809763

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-264951-1	MW-18WT	Dissolved	Water	6020B	809411
500-264951-2	MW-18	Dissolved	Water	6020B	809411
500-264951-3	MW-19	Dissolved	Water	6020B	809411
500-264951-4	MW-19Z	Dissolved	Water	6020B	809411
MB 500-809411/1-A	Method Blank	Total Recoverable	Water	6020B	809411
LCS 500-809411/2-A	Lab Control Sample	Total Recoverable	Water	6020B	809411

Analysis Batch: 809786

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-264951-1	MW-18WT	Dissolved	Water	SM 2340B	809411
500-264951-2	MW-18	Dissolved	Water	SM 2340B	809411
500-264951-3	MW-19	Dissolved	Water	SM 2340B	809411
500-264951-4	MW-19Z	Dissolved	Water	SM 2340B	809411

Analysis Batch: 810217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-264951-1	MW-18WT	Dissolved	Water	6020B	809411
MB 500-809411/1-A	Method Blank	Total Recoverable	Water	6020B	809411
LCS 500-809411/2-A	Lab Control Sample	Total Recoverable	Water	6020B	809411

Prep Batch: 810269

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-264951-1	MW-18WT	Dissolved	Water	7470A	
500-264951-2	MW-18	Dissolved	Water	7470A	
500-264951-3	MW-19	Dissolved	Water	7470A	
500-264951-4	MW-19Z	Dissolved	Water	7470A	

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QC Association Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon County LF

Job ID: 500-264951-1

Metals (Continued)

Prep Batch: 810269 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-264951-6	MW-16Z	Dissolved	Water	7470A	
MB 500-810269/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-810269/13-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 810390

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-264951-6	MW-16Z	Dissolved	Water	6020B	809538
MB 500-809538/1-A	Method Blank	Total Recoverable	Water	6020B	809538
LCS 500-809538/2-A	Lab Control Sample	Total Recoverable	Water	6020B	809538

Analysis Batch: 810437

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-264951-6	MW-16Z	Dissolved	Water	SM 2340B	809538

Analysis Batch: 810488

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-264951-1	MW-18WT	Dissolved	Water	7470A	810269
500-264951-2	MW-18	Dissolved	Water	7470A	810269
500-264951-3	MW-19	Dissolved	Water	7470A	810269
500-264951-4	MW-19Z	Dissolved	Water	7470A	810269
500-264951-6	MW-16Z	Dissolved	Water	7470A	810269
MB 500-810269/12-A	Method Blank	Total/NA	Water	7470A	810269
LCS 500-810269/13-A	Lab Control Sample	Total/NA	Water	7470A	810269

General Chemistry

Analysis Batch: 809662

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-264951-1	MW-18WT	Dissolved	Water	300.0	
500-264951-2	MW-18	Dissolved	Water	300.0	
500-264951-3	MW-19	Dissolved	Water	300.0	
500-264951-4	MW-19Z	Dissolved	Water	300.0	
500-264951-6	MW-16Z	Dissolved	Water	300.0	
MB 500-809662/3	Method Blank	Total/NA	Water	300.0	
LCS 500-809662/4	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 810034

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-264951-1	MW-18WT	Dissolved	Water	SM 2320B	
MB 500-810034/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-810034/4	Lab Control Sample	Total/NA	Water	SM 2320B	
500-264951-1 DU	MW-18WT	Dissolved	Water	SM 2320B	

Analysis Batch: 810189

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-264951-2	MW-18	Dissolved	Water	SM 2320B	
500-264951-3	MW-19	Dissolved	Water	SM 2320B	
500-264951-4	MW-19Z	Dissolved	Water	SM 2320B	
500-264951-6	MW-16Z	Dissolved	Water	SM 2320B	
MB 500-810189/25	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-810189/4	Lab Control Sample	Total/NA	Water	SM 2320B	

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QC Association Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon County LF

Job ID: 500-264951-1

General Chemistry

Analysis Batch: 810510

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-264951-1	MW-18WT	Dissolved	Water	N07-0003	
500-264951-2	MW-18	Dissolved	Water	N07-0003	
500-264951-3	MW-19	Dissolved	Water	N07-0003	
500-264951-4	MW-19Z	Dissolved	Water	N07-0003	
500-264951-6	MW-16Z	Dissolved	Water	N07-0003	
MB 500-810510/57	Method Blank	Total/NA	Water	N07-0003	
MB 500-810510/61	Method Blank	Total/NA	Water	N07-0003	
LCS 500-810510/58	Lab Control Sample	Total/NA	Water	N07-0003	
LCS 500-810510/88	Lab Control Sample	Total/NA	Water	N07-0003	

Field Service / Mobile Lab

Analysis Batch: 809524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-264951-1	MW-18WT	Total/NA	Water	Field Sampling	
500-264951-2	MW-18	Total/NA	Water	Field Sampling	
500-264951-3	MW-19	Total/NA	Water	Field Sampling	
500-264951-4	MW-19Z	Total/NA	Water	Field Sampling	
500-264951-6	MW-16Z	Total/NA	Water	Field Sampling	

Surrogate Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon County LF

Job ID: 500-264951-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	BFB	DBFM	DCA	TOL
		(72-124)	(75-120)	(75-126)	(75-120)
500-264951-3	MW-19	96	98	104	102
500-264951-5	Trip Blank-VOC	96	98	102	101
LCS 500-809592/4	Lab Control Sample	97	96	99	101
LCSD 500-809592/5	Lab Control Sample Dup	97	98	103	101
MB 500-809592/7	Method Blank	94	98	103	101

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

TOL = Toluene-d8 (Surr)

QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon County LF

Job ID: 500-264951-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 500-809592/7

Matrix: Water

Analysis Batch: 809592

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<4.3		10	4.3	ug/L			03/12/25 11:58	1
Benzene	<0.18		0.50	0.18	ug/L			03/12/25 11:58	1
Bromobenzene	<0.60		1.0	0.60	ug/L			03/12/25 11:58	1
Bromochloromethane	<0.50		1.0	0.50	ug/L			03/12/25 11:58	1
Bromodichloromethane	<0.57		1.0	0.57	ug/L			03/12/25 11:58	1
Bromoform	<0.96		1.0	0.96	ug/L			03/12/25 11:58	1
Bromomethane	<1.8		3.0	1.8	ug/L			03/12/25 11:58	1
2-Butanone (MEK)	<2.3		5.0	2.3	ug/L			03/12/25 11:58	1
Carbon disulfide	<1.1		2.0	1.1	ug/L			03/12/25 11:58	1
Carbon tetrachloride	<0.42		1.0	0.42	ug/L			03/12/25 11:58	1
Chlorobenzene	<0.41		1.0	0.41	ug/L			03/12/25 11:58	1
Chloroethane	<0.47		5.0	0.47	ug/L			03/12/25 11:58	1
Chloroform	<0.92		2.0	0.92	ug/L			03/12/25 11:58	1
Chloromethane	<0.79		5.0	0.79	ug/L			03/12/25 11:58	1
2-Chlorotoluene	<0.36		1.0	0.36	ug/L			03/12/25 11:58	1
4-Chlorotoluene	<0.34		1.0	0.34	ug/L			03/12/25 11:58	1
cis-1,2-Dichloroethene	<0.42		1.0	0.42	ug/L			03/12/25 11:58	1
cis-1,3-Dichloropropene	<0.52		1.0	0.52	ug/L			03/12/25 11:58	1
Chlorodibromomethane	<0.83		1.0	0.83	ug/L			03/12/25 11:58	1
1,2-Dibromo-3-Chloropropane	<3.9		5.0	3.9	ug/L			03/12/25 11:58	1
1,2-Dibromoethane (EDB)	<0.56		1.0	0.56	ug/L			03/12/25 11:58	1
Dibromomethane	<0.58		1.0	0.58	ug/L			03/12/25 11:58	1
1,2-Dichlorobenzene	<0.48		1.0	0.48	ug/L			03/12/25 11:58	1
1,3-Dichlorobenzene	<0.41		1.0	0.41	ug/L			03/12/25 11:58	1
1,4-Dichlorobenzene	<0.46		1.0	0.46	ug/L			03/12/25 11:58	1
Dichlorodifluoromethane	<1.8		3.0	1.8	ug/L			03/12/25 11:58	1
1,1-Dichloroethane	<0.36		1.0	0.36	ug/L			03/12/25 11:58	1
1,2-Dichloroethane	<0.58		1.0	0.58	ug/L			03/12/25 11:58	1
1,1-Dichloroethene	<0.48		1.0	0.48	ug/L			03/12/25 11:58	1
1,2-Dichloropropane	<0.37		1.0	0.37	ug/L			03/12/25 11:58	1
1,3-Dichloropropane	<0.56		1.0	0.56	ug/L			03/12/25 11:58	1
2,2-Dichloropropane	<0.48		5.0	0.48	ug/L			03/12/25 11:58	1
1,1-Dichloropropene	<0.33		1.0	0.33	ug/L			03/12/25 11:58	1
Ethylbenzene	<0.20		0.50	0.20	ug/L			03/12/25 11:58	1
Hexachlorobutadiene	<0.54		1.0	0.54	ug/L			03/12/25 11:58	1
Isopropylbenzene	<0.29		1.0	0.29	ug/L			03/12/25 11:58	1
Isopropyl ether	<0.39		1.0	0.39	ug/L			03/12/25 11:58	1
Methylene Chloride	<3.6		5.0	3.6	ug/L			03/12/25 11:58	1
Methyl tert-butyl ether	<0.43		1.0	0.43	ug/L			03/12/25 11:58	1
Naphthalene	<0.44		1.0	0.44	ug/L			03/12/25 11:58	1
n-Butylbenzene	<0.33		1.0	0.33	ug/L			03/12/25 11:58	1
N-Propylbenzene	<0.32		1.0	0.32	ug/L			03/12/25 11:58	1
p-Isopropyltoluene	<0.29		1.0	0.29	ug/L			03/12/25 11:58	1
sec-Butylbenzene	<0.27		1.0	0.27	ug/L			03/12/25 11:58	1
Styrene	<0.31		1.0	0.31	ug/L			03/12/25 11:58	1
tert-Butylbenzene	<0.27		1.0	0.27	ug/L			03/12/25 11:58	1
1,1,1,2-Tetrachloroethane	<0.67		1.0	0.67	ug/L			03/12/25 11:58	1
1,1,2,2-Tetrachloroethane	<0.65		1.0	0.65	ug/L			03/12/25 11:58	1

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon County LF

Job ID: 500-264951-1

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

Lab Sample ID: MB 500-809592/7

Matrix: Water

Analysis Batch: 809592

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<0.39		1.0	0.39	ug/L			03/12/25 11:58	1
Tetrahydrofuran	<3.9		10	3.9	ug/L			03/12/25 11:58	1
Toluene	<0.21		0.50	0.21	ug/L			03/12/25 11:58	1
trans-1,2-Dichloroethene	<0.44		1.0	0.44	ug/L			03/12/25 11:58	1
trans-1,3-Dichloropropene	<0.63		1.0	0.63	ug/L			03/12/25 11:58	1
1,2,3-Trichlorobenzene	<0.35		1.0	0.35	ug/L			03/12/25 11:58	1
1,2,4-Trichlorobenzene	<0.31		1.0	0.31	ug/L			03/12/25 11:58	1
1,1,1-Trichloroethane	<0.45		1.0	0.45	ug/L			03/12/25 11:58	1
1,1,2-Trichloroethane	<0.73		1.0	0.73	ug/L			03/12/25 11:58	1
Trichloroethene	<0.15		0.50	0.15	ug/L			03/12/25 11:58	1
Trichlorofluoromethane	<0.44		1.0	0.44	ug/L			03/12/25 11:58	1
1,2,3-Trichloropropane	<1.5		2.0	1.5	ug/L			03/12/25 11:58	1
1,2,4-Trimethylbenzene	<0.30		1.0	0.30	ug/L			03/12/25 11:58	1
1,3,5-Trimethylbenzene	<0.29		1.0	0.29	ug/L			03/12/25 11:58	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			03/12/25 11:58	1
Xylenes, Total	<0.30		1.0	0.30	ug/L			03/12/25 11:58	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		72 - 124		03/12/25 11:58	1
Dibromofluoromethane (Surr)	98		75 - 120		03/12/25 11:58	1
1,2-Dichloroethane-d4 (Surr)	103		75 - 126		03/12/25 11:58	1
Toluene-d8 (Surr)	101		75 - 120		03/12/25 11:58	1

Lab Sample ID: LCS 500-809592/4

Matrix: Water

Analysis Batch: 809592

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetone	50.0	44.1		ug/L		88	40 - 143
Benzene	50.0	46.1		ug/L		92	70 - 120
Bromobenzene	50.0	46.6		ug/L		93	70 - 122
Bromochloromethane	50.0	50.6		ug/L		101	65 - 122
Bromodichloromethane	50.0	48.9		ug/L		98	69 - 120
Bromoform	50.0	44.7		ug/L		89	56 - 132
Bromomethane	50.0	37.6		ug/L		75	40 - 152
2-Butanone (MEK)	50.0	46.1		ug/L		92	46 - 144
Carbon disulfide	50.0	39.1		ug/L		78	66 - 120
Carbon tetrachloride	50.0	45.7		ug/L		91	59 - 133
Chlorobenzene	50.0	46.8		ug/L		94	70 - 120
Chloroethane	50.0	48.4		ug/L		97	48 - 136
Chloroform	50.0	50.6		ug/L		101	70 - 120
Chloromethane	50.0	48.4		ug/L		97	56 - 152
2-Chlorotoluene	50.0	46.4		ug/L		93	70 - 125
4-Chlorotoluene	50.0	53.4		ug/L		107	68 - 124
cis-1,2-Dichloroethene	50.0	45.7		ug/L		91	70 - 125
cis-1,3-Dichloropropene	50.0	48.0		ug/L		96	64 - 127
Chlorodibromomethane	50.0	49.6		ug/L		99	68 - 125
1,2-Dibromo-3-Chloropropane	50.0	54.5		ug/L		109	56 - 123

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon County LF

Job ID: 500-264951-1

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

Lab Sample ID: LCS 500-809592/4

Matrix: Water

Analysis Batch: 809592

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dibromoethane (EDB)	50.0	45.7		ug/L		91	70 - 125
Dibromomethane	50.0	45.8		ug/L		92	70 - 120
1,2-Dichlorobenzene	50.0	47.2		ug/L		94	70 - 125
1,3-Dichlorobenzene	50.0	52.8		ug/L		106	70 - 125
1,4-Dichlorobenzene	50.0	53.1		ug/L		106	70 - 120
Dichlorodifluoromethane	50.0	47.9		ug/L		96	40 - 159
1,1-Dichloroethane	50.0	47.0		ug/L		94	70 - 125
1,2-Dichloroethane	50.0	50.0		ug/L		100	68 - 127
1,1-Dichloroethene	50.0	44.8		ug/L		90	67 - 122
1,2-Dichloropropane	50.0	46.1		ug/L		92	67 - 130
1,3-Dichloropropane	50.0	47.0		ug/L		94	62 - 136
2,2-Dichloropropane	50.0	53.4		ug/L		107	58 - 139
1,1-Dichloropropene	50.0	47.4		ug/L		95	70 - 121
Ethylbenzene	50.0	47.4		ug/L		95	70 - 123
Hexachlorobutadiene	50.0	51.0		ug/L		102	51 - 150
Isopropylbenzene	50.0	47.4		ug/L		95	70 - 126
Methylene Chloride	50.0	48.2		ug/L		96	69 - 125
Methyl tert-butyl ether	50.0	45.8		ug/L		92	55 - 123
Naphthalene	50.0	56.5		ug/L		113	53 - 144
n-Butylbenzene	50.0	54.9		ug/L		110	68 - 125
N-Propylbenzene	50.0	47.7		ug/L		95	69 - 127
p-Isopropyltoluene	50.0	48.1		ug/L		96	70 - 125
sec-Butylbenzene	50.0	47.6		ug/L		95	70 - 123
Styrene	50.0	47.0		ug/L		94	70 - 120
tert-Butylbenzene	50.0	46.1		ug/L		92	70 - 121
1,1,1,2-Tetrachloroethane	50.0	47.7		ug/L		95	70 - 125
1,1,2,2-Tetrachloroethane	50.0	52.1		ug/L		104	62 - 140
Tetrachloroethene	50.0	49.1		ug/L		98	70 - 128
Tetrahydrofuran	100	98.2		ug/L		98	59 - 139
Toluene	50.0	46.3		ug/L		93	70 - 125
trans-1,2-Dichloroethene	50.0	46.3		ug/L		93	70 - 125
trans-1,3-Dichloropropene	50.0	52.3		ug/L		105	62 - 128
1,2,3-Trichlorobenzene	50.0	53.6		ug/L		107	51 - 145
1,2,4-Trichlorobenzene	50.0	53.0		ug/L		106	57 - 137
1,1,1-Trichloroethane	50.0	45.8		ug/L		92	70 - 125
1,1,2-Trichloroethane	50.0	47.0		ug/L		94	71 - 130
Trichloroethene	50.0	47.5		ug/L		95	70 - 125
Trichlorofluoromethane	50.0	47.8		ug/L		96	55 - 128
1,2,3-Trichloropropane	50.0	47.7		ug/L		95	50 - 133
1,2,4-Trimethylbenzene	50.0	54.1		ug/L		108	70 - 123
1,3,5-Trimethylbenzene	50.0	47.6		ug/L		95	70 - 123
Vinyl chloride	50.0	48.1		ug/L		96	64 - 126
Xylenes, Total	100	94.9		ug/L		95	70 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		72 - 124
Dibromofluoromethane (Surr)	96		75 - 120
1,2-Dichloroethane-d4 (Surr)	99		75 - 126

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon County LF

Job ID: 500-264951-1

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

Lab Sample ID: LCS 500-809592/4

Matrix: Water

Analysis Batch: 809592

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	101		75 - 120

Lab Sample ID: LCSD 500-809592/5

Matrix: Water

Analysis Batch: 809592

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acetone	50.0	43.4		ug/L		87	40 - 143	1	20
Benzene	50.0	43.4		ug/L		87	70 - 120	6	20
Bromobenzene	50.0	43.3		ug/L		87	70 - 122	7	20
Bromochloromethane	50.0	48.2		ug/L		96	65 - 122	5	20
Bromodichloromethane	50.0	45.5		ug/L		91	69 - 120	7	20
Bromoform	50.0	41.6		ug/L		83	56 - 132	7	20
Bromomethane	50.0	35.8		ug/L		72	40 - 152	5	20
2-Butanone (MEK)	50.0	44.2		ug/L		88	46 - 144	4	20
Carbon disulfide	50.0	36.5		ug/L		73	66 - 120	7	20
Carbon tetrachloride	50.0	42.0		ug/L		84	59 - 133	8	20
Chlorobenzene	50.0	43.5		ug/L		87	70 - 120	7	20
Chloroethane	50.0	45.9		ug/L		92	48 - 136	5	20
Chloroform	50.0	46.9		ug/L		94	70 - 120	8	20
Chloromethane	50.0	46.7		ug/L		93	56 - 152	3	20
2-Chlorotoluene	50.0	43.0		ug/L		86	70 - 125	8	20
4-Chlorotoluene	50.0	49.1		ug/L		98	68 - 124	8	20
cis-1,2-Dichloroethene	50.0	42.9		ug/L		86	70 - 125	6	20
cis-1,3-Dichloropropene	50.0	44.5		ug/L		89	64 - 127	8	20
Chlorodibromomethane	50.0	46.8		ug/L		94	68 - 125	6	20
1,2-Dibromo-3-Chloropropane	50.0	50.1		ug/L		100	56 - 123	8	20
1,2-Dibromoethane (EDB)	50.0	43.2		ug/L		86	70 - 125	6	20
Dibromomethane	50.0	42.8		ug/L		86	70 - 120	7	20
1,2-Dichlorobenzene	50.0	44.0		ug/L		88	70 - 125	7	20
1,3-Dichlorobenzene	50.0	48.8		ug/L		98	70 - 125	8	20
1,4-Dichlorobenzene	50.0	48.9		ug/L		98	70 - 120	8	20
Dichlorodifluoromethane	50.0	46.7		ug/L		93	40 - 159	3	20
1,1-Dichloroethane	50.0	43.9		ug/L		88	70 - 125	7	20
1,2-Dichloroethane	50.0	47.2		ug/L		94	68 - 127	6	20
1,1-Dichloroethene	50.0	40.9		ug/L		82	67 - 122	9	20
1,2-Dichloropropane	50.0	43.1		ug/L		86	67 - 130	7	20
1,3-Dichloropropane	50.0	44.0		ug/L		88	62 - 136	7	20
2,2-Dichloropropane	50.0	49.6		ug/L		99	58 - 139	7	20
1,1-Dichloropropene	50.0	43.8		ug/L		88	70 - 121	8	20
Ethylbenzene	50.0	43.7		ug/L		87	70 - 123	8	20
Hexachlorobutadiene	50.0	46.2		ug/L		92	51 - 150	10	20
Isopropylbenzene	50.0	43.3		ug/L		87	70 - 126	9	20
Methylene Chloride	50.0	45.7		ug/L		91	69 - 125	5	20
Methyl tert-butyl ether	50.0	43.7		ug/L		87	55 - 123	5	20
Naphthalene	50.0	52.5		ug/L		105	53 - 144	7	20
n-Butylbenzene	50.0	49.7		ug/L		99	68 - 125	10	20
N-Propylbenzene	50.0	43.5		ug/L		87	69 - 127	9	20

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon County LF

Job ID: 500-264951-1

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

Lab Sample ID: LCSD 500-809592/5

Matrix: Water

Analysis Batch: 809592

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
p-Isopropyltoluene	50.0	43.8		ug/L		88	70 - 125	9	20
sec-Butylbenzene	50.0	43.2		ug/L		86	70 - 123	10	20
Styrene	50.0	43.7		ug/L		87	70 - 120	7	20
tert-Butylbenzene	50.0	42.4		ug/L		85	70 - 121	8	20
1,1,1,2-Tetrachloroethane	50.0	44.1		ug/L		88	70 - 125	8	20
1,1,2,2-Tetrachloroethane	50.0	48.4		ug/L		97	62 - 140	7	20
Tetrachloroethene	50.0	45.1		ug/L		90	70 - 128	9	20
Tetrahydrofuran	100	94.6		ug/L		95	59 - 139	4	20
Toluene	50.0	43.1		ug/L		86	70 - 125	7	20
trans-1,2-Dichloroethene	50.0	43.2		ug/L		86	70 - 125	7	20
trans-1,3-Dichloropropene	50.0	48.8		ug/L		98	62 - 128	7	20
1,2,3-Trichlorobenzene	50.0	50.0		ug/L		100	51 - 145	7	20
1,2,4-Trichlorobenzene	50.0	49.4		ug/L		99	57 - 137	7	20
1,1,1-Trichloroethane	50.0	42.9		ug/L		86	70 - 125	6	20
1,1,2-Trichloroethane	50.0	43.6		ug/L		87	71 - 130	7	20
Trichloroethene	50.0	43.6		ug/L		87	70 - 125	9	20
Trichlorofluoromethane	50.0	45.1		ug/L		90	55 - 128	6	20
1,2,3-Trichloropropane	50.0	44.2		ug/L		88	50 - 133	7	20
1,2,4-Trimethylbenzene	50.0	49.6		ug/L		99	70 - 123	9	20
1,3,5-Trimethylbenzene	50.0	43.6		ug/L		87	70 - 123	9	20
Vinyl chloride	50.0	46.9		ug/L		94	64 - 126	2	20
Xylenes, Total	100	88.0		ug/L		88	70 - 125	8	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		72 - 124
Dibromofluoromethane (Surr)	98		75 - 120
1,2-Dichloroethane-d4 (Surr)	103		75 - 126
Toluene-d8 (Surr)	101		75 - 120

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 500-809411/1-A

Matrix: Water

Analysis Batch: 809763

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 809411

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.3		3.0	1.3	ug/L		03/11/25 08:32	03/12/25 14:21	1
Arsenic	<0.23		1.0	0.23	ug/L		03/11/25 08:32	03/12/25 14:21	1
Barium	<0.73		2.5	0.73	ug/L		03/11/25 08:32	03/12/25 14:21	1
Beryllium	<0.53		1.0	0.53	ug/L		03/11/25 08:32	03/12/25 14:21	1
Boron	<13		50	13	ug/L		03/11/25 08:32	03/12/25 14:21	1
Cadmium	<0.17		0.50	0.17	ug/L		03/11/25 08:32	03/12/25 14:21	1
Chromium	<1.1		5.0	1.1	ug/L		03/11/25 08:32	03/12/25 14:21	1
Cobalt	<0.40		1.0	0.40	ug/L		03/11/25 08:32	03/12/25 14:21	1
Copper	<0.50		2.0	0.50	ug/L		03/11/25 08:32	03/12/25 14:21	1
Lead	<0.19		0.50	0.19	ug/L		03/11/25 08:32	03/12/25 14:21	1
Manganese	<0.79		2.5	0.79	ug/L		03/11/25 08:32	03/12/25 14:21	1
Selenium	<0.98		2.5	0.98	ug/L		03/11/25 08:32	03/12/25 14:21	1
Silver	<0.12		0.50	0.12	ug/L		03/11/25 08:32	03/12/25 14:21	1

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon County LF

Job ID: 500-264951-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 500-809411/1-A

Matrix: Water

Analysis Batch: 809763

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 809411

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	<0.57		2.0	0.57	ug/L		03/11/25 08:32	03/12/25 14:21	1
Vanadium	<2.2		5.0	2.2	ug/L		03/11/25 08:32	03/12/25 14:21	1
Zinc	<6.9		20	6.9	ug/L		03/11/25 08:32	03/12/25 14:21	1

Lab Sample ID: MB 500-809411/1-A

Matrix: Water

Analysis Batch: 810217

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 809411

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nickel	<0.63		2.0	0.63	ug/L		03/11/25 08:32	03/17/25 15:16	1

Lab Sample ID: LCS 500-809411/2-A

Matrix: Water

Analysis Batch: 809763

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 809411

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	500	503		ug/L		101	80 - 120
Arsenic	100	91.4		ug/L		91	80 - 120
Barium	500	485		ug/L		97	80 - 120
Beryllium	50.0	53.2		ug/L		106	80 - 120
Boron	1000	1030		ug/L		103	80 - 120
Cadmium	50.0	49.6		ug/L		99	80 - 120
Chromium	200	203		ug/L		102	80 - 120
Cobalt	500	530		ug/L		106	80 - 120
Copper	250	246		ug/L		98	80 - 120
Lead	100	102		ug/L		102	80 - 120
Manganese	500	522		ug/L		104	80 - 120
Selenium	100	97.3		ug/L		97	80 - 120
Silver	50.0	51.7		ug/L		103	80 - 120
Thallium	100	99.5		ug/L		100	80 - 120
Vanadium	500	522		ug/L		104	80 - 120
Zinc	500	481		ug/L		96	80 - 120

Lab Sample ID: LCS 500-809411/2-A

Matrix: Water

Analysis Batch: 810217

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 809411

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nickel	500	556		ug/L		111	80 - 120

Lab Sample ID: MB 500-809538/1-A

Matrix: Water

Analysis Batch: 810390

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 809538

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		03/11/25 17:43	03/18/25 13:03	1
Barium	<0.73		2.5	0.73	ug/L		03/11/25 17:43	03/18/25 13:03	1
Cadmium	<0.17		0.50	0.17	ug/L		03/11/25 17:43	03/18/25 13:03	1
Chromium	<1.1		5.0	1.1	ug/L		03/11/25 17:43	03/18/25 13:03	1
Copper	<0.50		2.0	0.50	ug/L		03/11/25 17:43	03/18/25 13:03	1

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon County LF

Job ID: 500-264951-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 500-809538/1-A

Matrix: Water

Analysis Batch: 810390

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 809538

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	<0.19		0.50	0.19	ug/L		03/11/25 17:43	03/18/25 13:03	1
Sodium	123	J	200	77	ug/L		03/11/25 17:43	03/18/25 13:03	1
Manganese	<0.79		2.5	0.79	ug/L		03/11/25 17:43	03/18/25 13:03	1
Selenium	<0.98		2.5	0.98	ug/L		03/11/25 17:43	03/18/25 13:03	1
Silver	<0.12		0.50	0.12	ug/L		03/11/25 17:43	03/18/25 13:03	1
Zinc	<6.9		20	6.9	ug/L		03/11/25 17:43	03/18/25 13:03	1

Lab Sample ID: LCS 500-809538/2-A

Matrix: Water

Analysis Batch: 810390

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 809538

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	100	97.3		ug/L		97	80 - 120
Barium	500	518		ug/L		104	80 - 120
Cadmium	50.0	50.9		ug/L		102	80 - 120
Chromium	200	191		ug/L		95	80 - 120
Copper	250	259		ug/L		103	80 - 120
Lead	100	101		ug/L		101	80 - 120
Sodium	10000	10200		ug/L		102	80 - 120
Manganese	500	513		ug/L		103	80 - 120
Selenium	100	104		ug/L		104	80 - 120
Silver	50.0	51.4		ug/L		103	80 - 120
Zinc	500	504		ug/L		101	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-810269/12-A

Matrix: Water

Analysis Batch: 810488

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 810269

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.076		0.20	0.076	ug/L		03/18/25 10:25	03/19/25 11:09	1

Lab Sample ID: LCS 500-810269/13-A

Matrix: Water

Analysis Batch: 810488

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 810269

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	2.00	1.81		ug/L		91	80 - 120

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 500-809662/3

Matrix: Water

Analysis Batch: 809662

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.42		1.0	0.42	mg/L			03/13/25 00:56	1
Fluoride	<0.43		1.0	0.43	mg/L			03/13/25 00:56	1
Sulfate	<0.47		1.0	0.47	mg/L			03/13/25 00:56	1

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon County LF

Job ID: 500-264951-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 500-809662/4

Matrix: Water

Analysis Batch: 809662

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	20.0	19.8		mg/L		99	90 - 110
Fluoride	20.0	18.9		mg/L		95	90 - 110
Sulfate	20.0	20.3		mg/L		101	90 - 110

Method: N07-0003 - Enzymatic Nitrate-Nitrite Nitrogen

Lab Sample ID: MB 500-810510/57

Matrix: Water

Analysis Batch: 810510

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	<0.041	^1+	0.10	0.041	mg/L			03/19/25 11:46	1

Lab Sample ID: MB 500-810510/61

Matrix: Water

Analysis Batch: 810510

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	<0.041	^1+	0.10	0.041	mg/L			03/19/25 12:43	1

Lab Sample ID: LCS 500-810510/58

Matrix: Water

Analysis Batch: 810510

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate Nitrite as N	1.00	0.999	^1+	mg/L		100	90 - 110

Lab Sample ID: LCS 500-810510/88

Matrix: Water

Analysis Batch: 810510

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate Nitrite as N	1.00	1.02	^1+	mg/L		102	90 - 110

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-810034/3

Matrix: Water

Analysis Batch: 810034

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	3.92	J	5.0	3.7	mg/L			03/13/25 17:09	1

Lab Sample ID: LCS 500-810034/4

Matrix: Water

Analysis Batch: 810034

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	100	102		mg/L		102	95 - 121

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon County LF

Job ID: 500-264951-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: MB 500-810189/25

Matrix: Water

Analysis Batch: 810189

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	<3.7		5.0	3.7	mg/L			03/17/25 13:07	1

Lab Sample ID: LCS 500-810189/4

Matrix: Water

Analysis Batch: 810189

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	100	106		mg/L		106	95 - 121

Lab Sample ID: 500-264951-1 DU

Matrix: Water

Analysis Batch: 810034

Client Sample ID: MW-18WT

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	280	B	277		mg/L		0.5	20

Lab Chronicle

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon County LF

Job ID: 500-264951-1

Client Sample ID: MW-18WT

Lab Sample ID: 500-264951-1

Date Collected: 03/07/25 10:00

Matrix: Water

Date Received: 03/08/25 10:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			809411	BDE	EET CHI	03/11/25 08:32 - 03/11/25 14:32 ¹
Dissolved	Analysis	6020B		1	809763	RN	EET CHI	03/12/25 15:04
Dissolved	Prep	3005A			809411	BDE	EET CHI	03/11/25 08:32 - 03/11/25 14:32 ¹
Dissolved	Analysis	6020B		1	810217	RN	EET CHI	03/17/25 15:21
Dissolved	Prep	7470A			810269	MJG	EET CHI	03/18/25 10:25 - 03/18/25 12:25 ¹
Dissolved	Analysis	7470A		1	810488	MJG	EET CHI	03/19/25 11:13
Dissolved	Prep	3005A			809411	BDE	EET CHI	03/11/25 08:32 - 03/11/25 14:32 ¹
Dissolved	Analysis	SM 2340B		1	809786	RN	EET CHI	03/13/25 09:33
Dissolved	Analysis	300.0		1	809662	MM	EET CHI	03/13/25 04:35
Dissolved	Analysis	N07-0003		1	810510	TR	EET CHI	03/19/25 12:44
Dissolved	Analysis	SM 2320B		1	810034	AC	EET CHI	03/13/25 17:39
Total/NA	Analysis	Field Sampling		1	809524	DN	EET CHI	03/07/25 10:00

Client Sample ID: MW-18

Lab Sample ID: 500-264951-2

Date Collected: 03/07/25 10:30

Matrix: Water

Date Received: 03/08/25 10:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			809411	BDE	EET CHI	03/11/25 08:32 - 03/11/25 14:32 ¹
Dissolved	Analysis	6020B		1	809763	RN	EET CHI	03/12/25 15:06
Dissolved	Prep	7470A			810269	MJG	EET CHI	03/18/25 10:25 - 03/18/25 12:25 ¹
Dissolved	Analysis	7470A		1	810488	MJG	EET CHI	03/19/25 11:15
Dissolved	Prep	3005A			809411	BDE	EET CHI	03/11/25 08:32 - 03/11/25 14:32 ¹
Dissolved	Analysis	SM 2340B		1	809786	RN	EET CHI	03/13/25 09:33
Dissolved	Analysis	300.0		1	809662	MM	EET CHI	03/13/25 04:50
Dissolved	Analysis	N07-0003		1	810510	TR	EET CHI	03/19/25 12:44
Dissolved	Analysis	SM 2320B		1	810189	AC	EET CHI	03/17/25 11:22
Total/NA	Analysis	Field Sampling		1	809524	DN	EET CHI	03/07/25 10:30

Client Sample ID: MW-19

Lab Sample ID: 500-264951-3

Date Collected: 03/07/25 08:50

Matrix: Water

Date Received: 03/08/25 10:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	809592	SW1	EET CHI	03/12/25 15:16
Dissolved	Prep	3005A			809411	BDE	EET CHI	03/11/25 08:32 - 03/11/25 14:32 ¹
Dissolved	Analysis	6020B		1	809763	RN	EET CHI	03/12/25 15:09
Dissolved	Prep	7470A			810269	MJG	EET CHI	03/18/25 10:25 - 03/18/25 12:25 ¹
Dissolved	Analysis	7470A		1	810488	MJG	EET CHI	03/19/25 11:17
Dissolved	Prep	3005A			809411	BDE	EET CHI	03/11/25 08:32 - 03/11/25 14:32 ¹
Dissolved	Analysis	SM 2340B		1	809786	RN	EET CHI	03/13/25 09:33
Dissolved	Analysis	300.0		1	809662	MM	EET CHI	03/13/25 05:06
Dissolved	Analysis	N07-0003		1	810510	TR	EET CHI	03/19/25 12:44
Dissolved	Analysis	SM 2320B		1	810189	AC	EET CHI	03/17/25 11:32

Eurofins Chicago

Lab Chronicle

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon County LF

Job ID: 500-264951-1

Client Sample ID: MW-19

Date Collected: 03/07/25 08:50

Date Received: 03/08/25 10:05

Lab Sample ID: 500-264951-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Field Sampling		1	809524	DN	EET CHI	03/07/25 08:50

Client Sample ID: MW-19Z

Date Collected: 03/07/25 08:00

Date Received: 03/08/25 10:05

Lab Sample ID: 500-264951-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			809411	BDE	EET CHI	03/11/25 08:32 - 03/11/25 14:32 ¹
Dissolved	Analysis	6020B		1	809763	RN	EET CHI	03/12/25 15:16
Dissolved	Prep	7470A			810269	MJG	EET CHI	03/18/25 10:25 - 03/18/25 12:25 ¹
Dissolved	Analysis	7470A		1	810488	MJG	EET CHI	03/19/25 11:20
Dissolved	Prep	3005A			809411	BDE	EET CHI	03/11/25 08:32 - 03/11/25 14:32 ¹
Dissolved	Analysis	SM 2340B		1	809786	RN	EET CHI	03/13/25 09:33
Dissolved	Analysis	300.0		1	809662	MM	EET CHI	03/13/25 05:21
Dissolved	Analysis	N07-0003		1	810510	TR	EET CHI	03/19/25 12:45
Dissolved	Analysis	SM 2320B		1	810189	AC	EET CHI	03/17/25 11:40
Total/NA	Analysis	Field Sampling		1	809524	DN	EET CHI	03/07/25 08:00

Client Sample ID: Trip Blank-VOC

Date Collected: 03/07/25 00:00

Date Received: 03/08/25 10:05

Lab Sample ID: 500-264951-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	809592	SW1	EET CHI	03/12/25 12:48

Client Sample ID: MW-16Z

Date Collected: 03/07/25 12:00

Date Received: 03/11/25 09:55

Lab Sample ID: 500-264951-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			809538	S1Z	EET CHI	03/11/25 17:43 - 03/11/25 23:43 ¹
Dissolved	Analysis	6020B		1	810390	RN	EET CHI	03/18/25 13:10
Dissolved	Prep	7470A			810269	MJG	EET CHI	03/18/25 10:25 - 03/18/25 12:25 ¹
Dissolved	Analysis	7470A		1	810488	MJG	EET CHI	03/19/25 11:22
Dissolved	Prep	3005A			809538	S1Z	EET CHI	03/11/25 17:43 - 03/11/25 23:43 ¹
Dissolved	Analysis	SM 2340B		1	810437	DAJ	EET CHI	03/19/25 11:04
Dissolved	Analysis	300.0		1	809662	MM	EET CHI	03/13/25 05:37
Dissolved	Analysis	N07-0003		1	810510	TR	EET CHI	03/19/25 12:45
Dissolved	Analysis	SM 2320B		1	810189	AC	EET CHI	03/17/25 11:49
Total/NA	Analysis	Field Sampling		1	809524	DN	EET CHI	03/07/25 12:00

¹ This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

Laboratory References:

EET CHI = Eurofins Chicago, 18410 Crossing Drive, Suite E, Tinley Park, IL 60487, TEL (708)534-5200

Eurofins Chicago

Accreditation/Certification Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon County LF

Job ID: 500-264951-1

Laboratory: Eurofins Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	399172840	08-31-25

1
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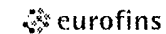
Eurofins Chicago

18410 Crossing Drive Suite E

Tinley Park, IL 60487

Phone (708) 534-5200 Phone (708) 534-5211

Chain of Custody Record



Environment Testing

Client Information		Sampler <i>Veronica Aranda</i>		Lab PM Fredrick, Sandie		Carrier Tracking No(s)		COC No. 500-134635-50570 1	
Client Contact Veronica Aranda <i>Brian Kent</i>		Phone <i>715-933-2351</i>		E-Mail Sandra.Fredrick@et.eurofinsus.com		State of Origin		Page Page 1 of 1	
Company Short Elliott Hendrickson, Inc. dba SEH		PWSID		Analysis Requested		Job # <i>500-264951</i>		Preservation Codes D HNO3 N None A HCL S H2SO4	
Address 10 North Bridge Street		Due Date Requested		Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) 6020B, 7470A, SM2340B <i>Diss. (Field Filtered)</i> 2320B, 300 <i>Diss. (Field Filtered)</i> 8260B - VOC <i>SW-846</i> N07_0003 - N+N <i>Diss. (Field Filtered)</i> Metals - Diss. (Field Filtered)		TAT Requested (days)		Other	
City Chippewa Falls		Compliance Project ☐ Yes ☐ No				all Diss. (Field Filtered) except VOCs			
State, Zip WI, 54729-3374		PO # Purchase Order not required				Special Instructions/Note:			
Phone 500-264951 COC		WO #				chloride / sulfate Fluoride / Alkalinity			
Email varanda@sehinc.com		Project # 50006595		MW-18, 16Z, 17, 19Z Metals include =					
Project Name Vernon Co LF		SSOW#		Cu, Mn, Zn, As, Ba Cd, Cr, Pb, Se, Ag, B					
Site				MW-18WT Metals = Sb, Be, Co, Ni, Ti, V					

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020B, 7470A, SM2340B	2320B, 300	8260B - VOC	N07_0003 - N+N	Metals - Diss. (Field Filtered)	Total Number of Containers
1 MW-18WT	3/7/25	1000	9	Water	X	X	X	X	X	X	X	
2 MW-18	3/7/25	1030	9	Water	X	X	X	X	X	X	X	
3 MW-16Z	3/7/25	1200	9	Water	X	X	X	X	X	X	X	
4 MW-19	3/7/25	850	9	Water	X	X	X	X	X	X	X	
5 MW-19Z	3/7/25	800	9	Water	X	X	X	X	X	X	X	
TRIP blank-VOC				Water				X				

Possible Hazard Identification				Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)			
☐ Non-Hazard	☐ Flammable	☐ Skin Irritant	☐ Poison B	☐ Unknown	☐ Radiological	☐ Return To Client	☐ Disposal By Lab
Deliverable Requested I, II, III, IV, Other (specify)				Archive For _____ Months			
Empty Kit Relinquished by				Special Instructions/QC Requirements			
Relinquished by		Date		Time		Method of Shipment	
<i>[Signature]</i>		3/7/25		SEH Inc.		3/8/25 1005	
Relinquished by		Date/Time		Company		Company	
Relinquished by		Date/Time		Company		Company	
Relinquished by		Date/Time		Company		Company	
Custody Seals Intact		Custody Seal No.		Cooler Temperature(s) °C and Other Remarks			
☒ Yes ☐ No		278 6247		58-75.7			

eurofins | Environment Testing

[illegible]

VERONICA ARANDA
SHORT ELLIOTT HENDRICKSON, INC. SEH
10 NORTH BRIDGE STREET

CHIPPENAW FALLS, WI 54729-374
UNITED STATES US

ACTWGT 25.00 LB MAH
CAD 0280307/CAPL3855

Part# 159489-434 MTN
1C33/854U/C

TO **SAMPLE RECEIPT**
EUROFINS
18410 CROSSING DRIVE
SUITE E
TINLEY PARK IL 60487



(708) 634-5200

REF

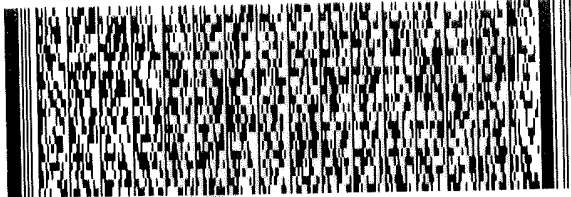
DEPT

500-264951 Waybi

INV

POI

RMA



FedEx
Express



UPN-07 0221

FedEx

TRK#

0221

4456 7473 8074

SATURDAY 12:00P
PRIORITY OVERNIGHT

XO JOTA

60487

IL-US OR

EXP 10/25



#715970 03/07 58CJ2/07B9/C6C ETP

4674 SAT 03/08 08:45
18410 CROSSING DR

PRIORITY OVERNIGHT

726-50

60487 9287 77
TINLEY PARK

30

Login Sample Receipt Checklist

Client: Short Elliott Hendrickson, Inc. dba SEH

Job Number: 500-264951-1

Login Number: 264951

List Number: 1

Creator: Scott, Sherri L

List Source: Eurofins Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	5.7,3.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	MW-16Z not received
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Sandra Fredrick

From: Veronica Aranda <varanda@sehinc.com>
Sent: Tuesday, March 11, 2025 11:45 AM
To: Sandra Fredrick; Brian Kent
Subject: RE: NEED INFO 500-264951 Vernon County LF Sample Confirmation files from Eurofins North Central

Unverified Sender: The sender of this email has not been verified. Review the content of the message carefully and verify the identity of the sender before acting on this email: replying, opening attachments or clicking links.

Hi Sandie,

16Z was sent to lab yesterday for today's arrival.

Below are field parameters for the sampled wells. No well

Well Name	Well DNR ID#	Depth to Water	pH	temp ©	Conduct.
MW-18WT	137	81.95	7.62	11.8	570
MW-18	139	108.57	7.89	9.5	560
MW-16Z	135	92.65	7.67	9.9	633
MW-19	141	102.85	7.05	9.2	161
MW-19Z	143	100.59	6.9	8.7	238

Let us know if you have any questions.

Thanks!

Veronica Aranda, PG (WI)
Scientist II
Short Elliott Hendrickson Inc. (SEH®)
715.933.2351 mobile

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100% Employee Owned

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From: Sandie Fredrick <TALS@reports.et.eurofinsus.com>
Sent: Saturday, March 8, 2025 1:21 PM
To: Brian Kent <bkent@sehinc.com>; Veronica Aranda <varanda@sehinc.com>; Bill Warner <wwarner@sehinc.com>
Subject: NEED INFO 500-264951 Vernon County LF Sample Confirmation files from Eurofins North Central

Hello Veronica,

Do these need Hg? Currently logged.

Missing sample MW-16Z.

Attached, please find the Sample Confirmation files for job 500-264951; Vernon County LF

The samples were received on 3/8/2025 10:05 AM

Please review the attachments for accuracy and notify your Project Manager of any discrepancies as quickly as possible.

Any discrepancies not communicated in a timely fashion could result in missed holding times, TAT delays and may potentially incur additional charges.

Please feel free to contact me if you have any questions.

Thank you.

Sandie Fredrick
Project Manager

Eurofins Chicago
Phone: 920-261-1660

E-mail: Sandra.Fredrick@et.eurofinsus.com
www.eurofinsus.com/env



Reference: [500-836314]
Attachments: 2

Eurofins Chicago Has Moved!

Eurofins Environment Testing America - Chicago
18410 Crossing Dr Suite E
Tinley Park, IL 60487



ANALYTICAL REPORT

PREPARED FOR

Attn: Veronica Aranda
Short Elliott Hendrickson, Inc. dba SEH
10 North Bridge Street
Chippewa Falls, Wisconsin 54729-3374

Generated 4/23/2025 2:28:26 PM

JOB DESCRIPTION

Vernon Co. LF

JOB NUMBER

500-266813-1

Eurofins Chicago

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

Results relate only to the items tested and the sample(s) as received by the laboratory. The results, detection limits (LOD) and Quantitation Limits (LOQ) have been adjusted for sample dilutions and/or solids content.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Chicago Project Manager.

Compliance Statement

The LOD and LOQ reported are adjusted by the dilution factor when a dilution factor greater than 1 is needed. Additionally, where results are indicated as being reported on a dry weight basis, the LOD and LOQ are adjusted for moisture content as well.

Definitions of Limits

- LOD = Limit of Detection = MDL as defined by 40 CFR part 136 Appendix B
- LOQ = Limit of Quantitation = $3.33 \times \text{LOD}$ as defined by Wisconsin
- RL = Report Limit = a concentration supported by a standard in the calibration curves

Authorization



Generated
4/23/2025 2:28:26 PM

Authorized for release by
Sandie Fredrick, Senior Project Manager
Sandra.Fredrick@et.eurofinsus.com
(920)261-1660

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Case Narrative

Client: Short Elliott Hendrickson, Inc. dba SEH
Project: Vernon Co. LF

Job ID: 500-266813-1

Job ID: 500-266813-1

Eurofins Chicago

Job Narrative 500-266813-1

Receipt

The samples were received on 4/15/2025 9:25 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.7° C.

GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 500-814575 was outside the method criteria for the following analyte(s): Acetone, Bromochloromethane, Bromomethane, Dibromomethane and Tetrahydrofuran. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method 8260D: The laboratory control sample (LCS) for analytical batch 500-814575 recovered outside control limits for the following analytes: Bromochloromethane and Dibromomethane. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

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

Metals

Method 6020B: The method blank for preparation batch 500-813855 and analytical batch 500-814048 contained Boron and Copper above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

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

Field Service / Mobile Lab

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

General Chemistry

Method SM 2320B: The method blank for analytical batch 500-814068 contained Alkalinity above the reporting limit (RL). Associated sample(s) were not re-analyzed because results were greater than 10X the value found in the method blank.

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

Eurofins Chicago

Detection Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co. LF

Job ID: 500-266813-1

Client Sample ID: MW-18WT

Lab Sample ID: 500-266813-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.4		1.0	0.23	ug/L	1		6020B	Dissolved
Barium	59		2.5	0.73	ug/L	1		6020B	Dissolved
Boron	22	J B	50	13	ug/L	1		6020B	Dissolved
Chromium	5.8		5.0	1.1	ug/L	1		6020B	Dissolved
Cobalt	2.3		1.0	0.40	ug/L	1		6020B	Dissolved
Copper	5.8	B	2.0	0.50	ug/L	1		6020B	Dissolved
Lead	2.0		0.50	0.19	ug/L	1		6020B	Dissolved
Manganese	220		2.5	0.79	ug/L	1		6020B	Dissolved
Nickel	5.3		2.0	0.63	ug/L	1		6020B	Dissolved
Vanadium	11		5.0	2.2	ug/L	1		6020B	Dissolved
Zinc	7.8	J	20	6.9	ug/L	1		6020B	Dissolved
Hardness as calcium carbonate	340		0.91	0.46	mg/L	1		SM 2340B	Dissolved
Chloride	2.5		1.0	0.42	mg/L	1		300.0	Dissolved
Sulfate	7.8		1.0	0.47	mg/L	1		300.0	Dissolved
Nitrate Nitrite as N	3.7		0.20	0.082	mg/L	2		N07-0003	Dissolved
Alkalinity	270	B	5.0	3.7	mg/L	1		SM 2320B	Dissolved
Field Color	Y				NONE	1		Field Sampling	Total/NA
Field Conductivity	532				umhos/cm	1		Field Sampling	Total/NA
Field Odor	N				NONE	1		Field Sampling	Total/NA
Field pH	7.48				SU	1		Field Sampling	Total/NA
Field Temperature	10.2				Degrees C	1		Field Sampling	Total/NA
Field Turbidity	Y				N	1		Field Sampling	Total/NA

Client Sample ID: MW-18

Lab Sample ID: 500-266813-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	34		2.5	0.73	ug/L	1		6020B	Dissolved
Boron	18	J B	50	13	ug/L	1		6020B	Dissolved
Copper	0.80	J B	2.0	0.50	ug/L	1		6020B	Dissolved
Manganese	1.7	J	2.5	0.79	ug/L	1		6020B	Dissolved
Hardness as calcium carbonate	310		0.91	0.46	mg/L	1		SM 2340B	Dissolved
Chloride	3.0		1.0	0.42	mg/L	1		300.0	Dissolved
Sulfate	9.3		1.0	0.47	mg/L	1		300.0	Dissolved
Nitrate Nitrite as N	5.7		1.0	0.41	mg/L	10		N07-0003	Dissolved
Alkalinity	270	B	5.0	3.7	mg/L	1		SM 2320B	Dissolved
Field Color	Y				NONE	1		Field Sampling	Total/NA
Field Conductivity	524				umhos/cm	1		Field Sampling	Total/NA
Field Odor	N				NONE	1		Field Sampling	Total/NA
Field pH	7.52				SU	1		Field Sampling	Total/NA
Field Temperature	9.6				Degrees C	1		Field Sampling	Total/NA
Field Turbidity	Y				NONE	1		Field Sampling	Total/NA

Client Sample ID: MW-16Z

Lab Sample ID: 500-266813-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	55		2.5	0.73	ug/L	1		6020B	Dissolved
Boron	18	J B	50	13	ug/L	1		6020B	Dissolved
Copper	2.0	B	2.0	0.50	ug/L	1		6020B	Dissolved
Manganese	18		2.5	0.79	ug/L	1		6020B	Dissolved
Zinc	33		20	6.9	ug/L	1		6020B	Dissolved
Hardness as calcium carbonate	340		0.91	0.46	mg/L	1		SM 2340B	Dissolved
Chloride	9.7		1.0	0.42	mg/L	1		300.0	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

Detection Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co. LF

Job ID: 500-266813-1

Client Sample ID: MW-16Z (Continued)

Lab Sample ID: 500-266813-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	10		1.0	0.47	mg/L	1		300.0	Dissolved
Nitrate Nitrite as N	0.74		0.10	0.041	mg/L	1		N07-0003	Dissolved
Alkalinity	320	B	5.0	3.7	mg/L	1		SM 2320B	Dissolved
Field Color	N				NONE	1		Field Sampling	Total/NA
Field Conductivity	6.01				umhos/cm	1		Field Sampling	Total/NA
Field Odor	N				NONE	1		Field Sampling	Total/NA
Field pH	8.00				SU	1		Field Sampling	Total/NA
Field Temperature	9.0				Degrees C	1		Field Sampling	Total/NA
Field Turbidity	N				NONE	1		Field Sampling	Total/NA

Client Sample ID: MW-19

Lab Sample ID: 500-266813-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	30		2.5	0.73	ug/L	1		6020B	Dissolved
Boron	14	J B	50	13	ug/L	1		6020B	Dissolved
Copper	1.6	J B	2.0	0.50	ug/L	1		6020B	Dissolved
Manganese	240		2.5	0.79	ug/L	1		6020B	Dissolved
Hardness as calcium carbonate	40		0.91	0.46	mg/L	1		SM 2340B	Dissolved
Chloride	3.1		1.0	0.42	mg/L	1		300.0	Dissolved
Sulfate	4.0		1.0	0.47	mg/L	1		300.0	Dissolved
Nitrate Nitrite as N	0.59		0.10	0.041	mg/L	1		N07-0003	Dissolved
Alkalinity	39		5.0	3.7	mg/L	1		SM 2320B	Dissolved
Field Color	Y				NONE	1		Field Sampling	Total/NA
Field Conductivity	111				umhos/cm	1		Field Sampling	Total/NA
Field Odor	N				NONE	1		Field Sampling	Total/NA
Field pH	6.12				SU	1		Field Sampling	Total/NA
Field Temperature	9.5				Degrees C	1		Field Sampling	Total/NA
Field Turbidity	Y				NONE	1		Field Sampling	Total/NA

Client Sample ID: MW-19Z

Lab Sample ID: 500-266813-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	38		2.5	0.73	ug/L	1		6020B	Dissolved
Boron	14	J B	50	13	ug/L	1		6020B	Dissolved
Copper	2.5	B	2.0	0.50	ug/L	1		6020B	Dissolved
Manganese	27		2.5	0.79	ug/L	1		6020B	Dissolved
Zinc	14	J	20	6.9	ug/L	1		6020B	Dissolved
Hardness as calcium carbonate	83		0.91	0.46	mg/L	1		SM 2340B	Dissolved
Chloride	3.0		1.0	0.42	mg/L	1		300.0	Dissolved
Sulfate	3.1		1.0	0.47	mg/L	1		300.0	Dissolved
Nitrate Nitrite as N	0.89		0.10	0.041	mg/L	1		N07-0003	Dissolved
Alkalinity	81	B	5.0	3.7	mg/L	1		SM 2320B	Dissolved
Field Color	N				NONE	1		Field Sampling	Total/NA
Field Conductivity	161				umhos/cm	1		Field Sampling	Total/NA
Field Odor	N				NONE	1		Field Sampling	Total/NA
Field pH	6.44				SU	1		Field Sampling	Total/NA
Field Temperature	8.9				Degrees C	1		Field Sampling	Total/NA
Field Turbidity	N				NONE	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank-VOC

Lab Sample ID: 500-266813-6

No Detections.

This Detection Summary does not include radiochemical test results.

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Method Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co. LF

Job ID: 500-266813-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CHI
6020B	Metals (ICP/MS)	SW846	EET CHI
7470A	Mercury (CVAA)	SW846	EET CHI
SM 2340B	Total Hardness (as CaCO ₃) by calculation	SM	EET CHI
300.0	Anions, Ion Chromatography	EPA	EET CHI
N07-0003	Enzymatic Nitrate-Nitrite Nitrogen	EPA	EET CHI
SM 2320B	Alkalinity	SM	EET CHI
Field Sampling	Field Sampling	EPA	EET CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CHI
5030B	Purge and Trap	SW846	EET CHI
7470A	Preparation, Mercury	SW846	EET CHI

Protocol References:

EPA = US Environmental Protection Agency

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

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CHI = Eurofins Chicago, 18410 Crossing Drive, Suite E, Tinley Park, IL 60487, TEL (708)534-5200

Sample Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co. LF

Job ID: 500-266813-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-266813-1	MW-18WT	Water	04/14/25 10:00	04/15/25 09:25
500-266813-2	MW-18	Water	04/14/25 10:35	04/15/25 09:25
500-266813-3	MW-16Z	Water	04/14/25 12:15	04/15/25 09:25
500-266813-4	MW-19	Water	04/14/25 08:45	04/15/25 09:25
500-266813-5	MW-19Z	Water	04/14/25 08:15	04/15/25 09:25
500-266813-6	Trip Blank-VOC	Water	04/14/25 00:00	04/15/25 09:25

Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co. LF

Job ID: 500-266813-1

Client Sample ID: MW-18WT

Lab Sample ID: 500-266813-1

Date Collected: 04/14/25 10:00

Matrix: Water

Date Received: 04/15/25 09:25

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.3		3.0	1.3	ug/L		04/16/25 08:18	04/16/25 16:08	1
Arsenic	1.4		1.0	0.23	ug/L		04/16/25 08:18	04/16/25 16:08	1
Barium	59		2.5	0.73	ug/L		04/16/25 08:18	04/16/25 16:08	1
Beryllium	<0.53		1.0	0.53	ug/L		04/16/25 08:18	04/16/25 16:08	1
Boron	22 J B		50	13	ug/L		04/16/25 08:18	04/16/25 16:08	1
Cadmium	<0.17		0.50	0.17	ug/L		04/16/25 08:18	04/16/25 16:08	1
Chromium	5.8		5.0	1.1	ug/L		04/16/25 08:18	04/16/25 16:08	1
Cobalt	2.3		1.0	0.40	ug/L		04/16/25 08:18	04/16/25 16:08	1
Copper	5.8 B		2.0	0.50	ug/L		04/16/25 08:18	04/16/25 16:08	1
Lead	2.0		0.50	0.19	ug/L		04/16/25 08:18	04/16/25 16:08	1
Manganese	220		2.5	0.79	ug/L		04/16/25 08:18	04/16/25 16:08	1
Nickel	5.3		2.0	0.63	ug/L		04/16/25 08:18	04/16/25 16:08	1
Selenium	<0.98		2.5	0.98	ug/L		04/16/25 08:18	04/16/25 16:08	1
Silver	<0.12		0.50	0.12	ug/L		04/16/25 08:18	04/16/25 16:08	1
Thallium	<0.57		2.0	0.57	ug/L		04/16/25 08:18	04/16/25 16:08	1
Vanadium	11		5.0	2.2	ug/L		04/16/25 08:18	04/16/25 16:08	1
Zinc	7.8 J		20	6.9	ug/L		04/16/25 08:18	04/16/25 16:08	1

Method: SW846 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.076		0.20	0.076	ug/L		04/21/25 13:00	04/22/25 09:54	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	340		0.91	0.46	mg/L		04/16/25 08:18	04/17/25 11:15	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	2.5		1.0	0.42	mg/L			04/17/25 01:36	1
Sulfate (EPA 300.0)	7.8		1.0	0.47	mg/L			04/17/25 01:36	1
Fluoride (EPA 300.0)	<0.43		1.0	0.43	mg/L			04/17/25 01:36	1
Nitrate Nitrite as N (EPA N07-0003)	3.7		0.20	0.082	mg/L			04/21/25 13:11	2
Alkalinity (SM 2320B)	270 B		5.0	3.7	mg/L			04/16/25 16:05	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Color	Y				NONE			04/14/25 10:00	1
Field Conductivity	532				umhos/cm			04/14/25 10:00	1
Field Odor	N				NONE			04/14/25 10:00	1
Field pH	7.48				SU			04/14/25 10:00	1
Field Temperature	10.2				Degrees C			04/14/25 10:00	1
Field Turbidity	Y				N			04/14/25 10:00	1

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Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co. LF

Job ID: 500-266813-1

Client Sample ID: MW-18

Lab Sample ID: 500-266813-2

Date Collected: 04/14/25 10:35

Matrix: Water

Date Received: 04/15/25 09:25

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		04/16/25 08:18	04/16/25 16:10	1
Barium	34		2.5	0.73	ug/L		04/16/25 08:18	04/16/25 16:10	1
Boron	18	J B	50	13	ug/L		04/16/25 08:18	04/16/25 16:10	1
Cadmium	<0.17		0.50	0.17	ug/L		04/16/25 08:18	04/16/25 16:10	1
Chromium	<1.1		5.0	1.1	ug/L		04/16/25 08:18	04/16/25 16:10	1
Copper	0.80	J B	2.0	0.50	ug/L		04/16/25 08:18	04/16/25 16:10	1
Lead	<0.19		0.50	0.19	ug/L		04/16/25 08:18	04/16/25 16:10	1
Manganese	1.7	J	2.5	0.79	ug/L		04/16/25 08:18	04/16/25 16:10	1
Selenium	<0.98		2.5	0.98	ug/L		04/16/25 08:18	04/16/25 16:10	1
Silver	<0.12		0.50	0.12	ug/L		04/16/25 08:18	04/16/25 16:10	1
Zinc	<6.9		20	6.9	ug/L		04/16/25 08:18	04/16/25 16:10	1

Method: SW846 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.076		0.20	0.076	ug/L		04/21/25 13:00	04/22/25 09:56	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	310		0.91	0.46	mg/L		04/16/25 08:18	04/17/25 11:15	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	3.0		1.0	0.42	mg/L			04/17/25 01:48	1
Sulfate (EPA 300.0)	9.3		1.0	0.47	mg/L			04/17/25 01:48	1
Fluoride (EPA 300.0)	<0.43		1.0	0.43	mg/L			04/17/25 01:48	1
Nitrate Nitrite as N (EPA N07-0003)	5.7		1.0	0.41	mg/L			04/21/25 13:11	10
Alkalinity (SM 2320B)	270	B	5.0	3.7	mg/L			04/16/25 16:16	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Color	Y				NONE			04/14/25 10:35	1
Field Conductivity	524				umhos/cm			04/14/25 10:35	1
Field Odor	N				NONE			04/14/25 10:35	1
Field pH	7.52				SU			04/14/25 10:35	1
Field Temperature	9.6				Degrees C			04/14/25 10:35	1
Field Turbidity	Y				NONE			04/14/25 10:35	1

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Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co. LF

Job ID: 500-266813-1

Client Sample ID: MW-16Z

Lab Sample ID: 500-266813-3

Date Collected: 04/14/25 12:15

Matrix: Water

Date Received: 04/15/25 09:25

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		04/16/25 08:18	04/16/25 16:13	1
Barium	55		2.5	0.73	ug/L		04/16/25 08:18	04/16/25 16:13	1
Boron	18	J B	50	13	ug/L		04/16/25 08:18	04/16/25 16:13	1
Cadmium	<0.17		0.50	0.17	ug/L		04/16/25 08:18	04/16/25 16:13	1
Chromium	<1.1		5.0	1.1	ug/L		04/16/25 08:18	04/16/25 16:13	1
Copper	2.0	B	2.0	0.50	ug/L		04/16/25 08:18	04/16/25 16:13	1
Lead	<0.19		0.50	0.19	ug/L		04/16/25 08:18	04/16/25 16:13	1
Manganese	18		2.5	0.79	ug/L		04/16/25 08:18	04/16/25 16:13	1
Selenium	<0.98		2.5	0.98	ug/L		04/16/25 08:18	04/16/25 16:13	1
Silver	<0.12		0.50	0.12	ug/L		04/16/25 08:18	04/16/25 16:13	1
Zinc	33		20	6.9	ug/L		04/16/25 08:18	04/16/25 16:13	1

Method: SW846 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.076		0.20	0.076	ug/L		04/21/25 13:00	04/22/25 10:03	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	340		0.91	0.46	mg/L		04/16/25 08:18	04/17/25 11:15	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	9.7		1.0	0.42	mg/L			04/17/25 02:00	1
Sulfate (EPA 300.0)	10		1.0	0.47	mg/L			04/17/25 02:00	1
Fluoride (EPA 300.0)	<0.43		1.0	0.43	mg/L			04/17/25 02:00	1
Nitrate Nitrite as N (EPA N07-0003)	0.74		0.10	0.041	mg/L			04/21/25 12:16	1
Alkalinity (SM 2320B)	320	B	5.0	3.7	mg/L			04/16/25 16:26	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Color	N				NONE			04/14/25 12:15	1
Field Conductivity	6.01				umhos/cm			04/14/25 12:15	1
Field Odor	N				NONE			04/14/25 12:15	1
Field pH	8.00				SU			04/14/25 12:15	1
Field Temperature	9.0				Degrees C			04/14/25 12:15	1
Field Turbidity	N				NONE			04/14/25 12:15	1

Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co. LF

Job ID: 500-266813-1

Client Sample ID: MW-19

Lab Sample ID: 500-266813-4

Date Collected: 04/14/25 08:45

Matrix: Water

Date Received: 04/15/25 09:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<4.3		10	4.3	ug/L			04/22/25 14:31	1
Benzene	<0.18		0.50	0.18	ug/L			04/22/25 14:31	1
Bromobenzene	<0.60		1.0	0.60	ug/L			04/22/25 14:31	1
Bromochloromethane	<0.50	+	1.0	0.50	ug/L			04/22/25 14:31	1
Bromodichloromethane	<0.57		1.0	0.57	ug/L			04/22/25 14:31	1
Bromoform	<0.96		1.0	0.96	ug/L			04/22/25 14:31	1
Bromomethane	<1.8		3.0	1.8	ug/L			04/22/25 14:31	1
2-Butanone (MEK)	<2.3		5.0	2.3	ug/L			04/22/25 14:31	1
Carbon disulfide	<1.1		2.0	1.1	ug/L			04/22/25 14:31	1
Carbon tetrachloride	<0.41		1.0	0.41	ug/L			04/22/25 14:31	1
Chlorobenzene	<0.41		1.0	0.41	ug/L			04/22/25 14:31	1
Chloroethane	<0.47		5.0	0.47	ug/L			04/22/25 14:31	1
Chloroform	<0.92		2.0	0.92	ug/L			04/22/25 14:31	1
Chloromethane	<0.79		5.0	0.79	ug/L			04/22/25 14:31	1
2-Chlorotoluene	<0.36		1.0	0.36	ug/L			04/22/25 14:31	1
4-Chlorotoluene	<0.34		1.0	0.34	ug/L			04/22/25 14:31	1
cis-1,2-Dichloroethene	<0.42		1.0	0.42	ug/L			04/22/25 14:31	1
cis-1,3-Dichloropropene	<0.52		1.0	0.52	ug/L			04/22/25 14:31	1
Chlorodibromomethane	<0.83		1.0	0.83	ug/L			04/22/25 14:31	1
1,2-Dibromo-3-Chloropropane	<3.9		5.0	3.9	ug/L			04/22/25 14:31	1
1,2-Dibromoethane (EDB)	<0.56		1.0	0.56	ug/L			04/22/25 14:31	1
Dibromomethane	<0.58	+	1.0	0.58	ug/L			04/22/25 14:31	1
1,2-Dichlorobenzene	<0.48		1.0	0.48	ug/L			04/22/25 14:31	1
1,3-Dichlorobenzene	<0.41		1.0	0.41	ug/L			04/22/25 14:31	1
1,4-Dichlorobenzene	<0.45		1.0	0.45	ug/L			04/22/25 14:31	1
Dichlorodifluoromethane	<1.8		3.0	1.8	ug/L			04/22/25 14:31	1
1,1-Dichloroethane	<0.36		1.0	0.36	ug/L			04/22/25 14:31	1
1,2-Dichloroethane	<0.58		1.0	0.58	ug/L			04/22/25 14:31	1
1,1-Dichloroethene	<0.48		1.0	0.48	ug/L			04/22/25 14:31	1
1,2-Dichloropropane	<0.37		1.0	0.37	ug/L			04/22/25 14:31	1
1,3-Dichloropropane	<0.56		1.0	0.56	ug/L			04/22/25 14:31	1
2,2-Dichloropropane	<0.48		5.0	0.48	ug/L			04/22/25 14:31	1
1,1-Dichloropropene	<0.33		1.0	0.33	ug/L			04/22/25 14:31	1
Ethylbenzene	<0.20		0.50	0.20	ug/L			04/22/25 14:31	1
Hexachlorobutadiene	<0.54		1.0	0.54	ug/L			04/22/25 14:31	1
Isopropylbenzene	<0.29		1.0	0.29	ug/L			04/22/25 14:31	1
Isopropyl ether	<0.38		1.0	0.38	ug/L			04/22/25 14:31	1
Methylene Chloride	<3.6		5.0	3.6	ug/L			04/22/25 14:31	1
Methyl tert-butyl ether	<0.43		1.0	0.43	ug/L			04/22/25 14:31	1
Naphthalene	<0.44		1.0	0.44	ug/L			04/22/25 14:31	1
n-Butylbenzene	<0.33		1.0	0.33	ug/L			04/22/25 14:31	1
N-Propylbenzene	<0.32		1.0	0.32	ug/L			04/22/25 14:31	1
p-Isopropyltoluene	<0.29		1.0	0.29	ug/L			04/22/25 14:31	1
sec-Butylbenzene	<0.27		1.0	0.27	ug/L			04/22/25 14:31	1
Styrene	<0.31		1.0	0.31	ug/L			04/22/25 14:31	1
tert-Butylbenzene	<0.26		1.0	0.26	ug/L			04/22/25 14:31	1
1,1,1,2-Tetrachloroethane	<0.67		1.0	0.67	ug/L			04/22/25 14:31	1
1,1,2,2-Tetrachloroethane	<0.65		1.0	0.65	ug/L			04/22/25 14:31	1
Tetrachloroethene	<0.39		1.0	0.39	ug/L			04/22/25 14:31	1

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Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co. LF

Job ID: 500-266813-1

Client Sample ID: MW-19

Lab Sample ID: 500-266813-4

Date Collected: 04/14/25 08:45

Matrix: Water

Date Received: 04/15/25 09:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrahydrofuran	<3.9		10	3.9	ug/L			04/22/25 14:31	1
Toluene	<0.21		0.50	0.21	ug/L			04/22/25 14:31	1
trans-1,2-Dichloroethene	<0.44		1.0	0.44	ug/L			04/22/25 14:31	1
trans-1,3-Dichloropropene	<0.63		1.0	0.63	ug/L			04/22/25 14:31	1
1,2,3-Trichlorobenzene	<0.35		1.0	0.35	ug/L			04/22/25 14:31	1
1,2,4-Trichlorobenzene	<0.31		1.0	0.31	ug/L			04/22/25 14:31	1
1,1,1-Trichloroethane	<0.45		1.0	0.45	ug/L			04/22/25 14:31	1
1,1,2-Trichloroethane	<0.73		1.0	0.73	ug/L			04/22/25 14:31	1
Trichloroethene	<0.15		0.50	0.15	ug/L			04/22/25 14:31	1
Trichlorofluoromethane	<0.44		1.0	0.44	ug/L			04/22/25 14:31	1
1,2,3-Trichloropropane	<1.5		2.0	1.5	ug/L			04/22/25 14:31	1
1,2,4-Trimethylbenzene	<0.30		1.0	0.30	ug/L			04/22/25 14:31	1
1,3,5-Trimethylbenzene	<0.29		1.0	0.29	ug/L			04/22/25 14:31	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			04/22/25 14:31	1
Xylenes, Total	<0.30		1.0	0.30	ug/L			04/22/25 14:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		72 - 124		04/22/25 14:31	1
Dibromofluoromethane (Surr)	105		75 - 120		04/22/25 14:31	1
1,2-Dichloroethane-d4 (Surr)	106		75 - 126		04/22/25 14:31	1
Toluene-d8 (Surr)	94		75 - 120		04/22/25 14:31	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		04/16/25 08:18	04/16/25 16:15	1
Barium	30		2.5	0.73	ug/L		04/16/25 08:18	04/16/25 16:15	1
Boron	14	J B	50	13	ug/L		04/16/25 08:18	04/16/25 16:15	1
Cadmium	<0.17		0.50	0.17	ug/L		04/16/25 08:18	04/16/25 16:15	1
Chromium	<1.1		5.0	1.1	ug/L		04/16/25 08:18	04/16/25 16:15	1
Copper	1.6	J B	2.0	0.50	ug/L		04/16/25 08:18	04/16/25 16:15	1
Lead	<0.19		0.50	0.19	ug/L		04/16/25 08:18	04/16/25 16:15	1
Manganese	240		2.5	0.79	ug/L		04/16/25 08:18	04/16/25 16:15	1
Selenium	<0.98		2.5	0.98	ug/L		04/16/25 08:18	04/16/25 16:15	1
Silver	<0.12		0.50	0.12	ug/L		04/16/25 08:18	04/16/25 16:15	1
Zinc	<6.9		20	6.9	ug/L		04/16/25 08:18	04/16/25 16:15	1

Method: SW846 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.076		0.20	0.076	ug/L		04/21/25 13:00	04/22/25 10:05	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	40		0.91	0.46	mg/L		04/16/25 08:18	04/17/25 11:15	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	3.1		1.0	0.42	mg/L			04/17/25 02:11	1
Sulfate (EPA 300.0)	4.0		1.0	0.47	mg/L			04/17/25 02:11	1
Fluoride (EPA 300.0)	<0.43		1.0	0.43	mg/L			04/17/25 02:11	1
Nitrate Nitrite as N (EPA N07-0003)	0.59		0.10	0.041	mg/L			04/21/25 12:17	1
Alkalinity (SM 2320B)	39		5.0	3.7	mg/L			04/22/25 18:36	1

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Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co. LF

Job ID: 500-266813-1

Client Sample ID: MW-19

Lab Sample ID: 500-266813-4

Date Collected: 04/14/25 08:45

Matrix: Water

Date Received: 04/15/25 09:25

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Color	Y				NONE			04/14/25 08:45	1
Field Conductivity	111				umhos/cm			04/14/25 08:45	1
Field Odor	N				NONE			04/14/25 08:45	1
Field pH	6.12				SU			04/14/25 08:45	1
Field Temperature	9.5				Degrees C			04/14/25 08:45	1
Field Turbidity	Y				NONE			04/14/25 08:45	1

Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co. LF

Job ID: 500-266813-1

Client Sample ID: MW-19Z

Lab Sample ID: 500-266813-5

Date Collected: 04/14/25 08:15

Matrix: Water

Date Received: 04/15/25 09:25

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		04/16/25 08:18	04/16/25 16:18	1
Barium	38		2.5	0.73	ug/L		04/16/25 08:18	04/16/25 16:18	1
Boron	14	J B	50	13	ug/L		04/16/25 08:18	04/16/25 16:18	1
Cadmium	<0.17		0.50	0.17	ug/L		04/16/25 08:18	04/16/25 16:18	1
Chromium	<1.1		5.0	1.1	ug/L		04/16/25 08:18	04/16/25 16:18	1
Copper	2.5	B	2.0	0.50	ug/L		04/16/25 08:18	04/16/25 16:18	1
Lead	<0.19		0.50	0.19	ug/L		04/16/25 08:18	04/16/25 16:18	1
Manganese	27		2.5	0.79	ug/L		04/16/25 08:18	04/16/25 16:18	1
Selenium	<0.98		2.5	0.98	ug/L		04/16/25 08:18	04/16/25 16:18	1
Silver	<0.12		0.50	0.12	ug/L		04/16/25 08:18	04/16/25 16:18	1
Zinc	14	J	20	6.9	ug/L		04/16/25 08:18	04/16/25 16:18	1

Method: SW846 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.076		0.20	0.076	ug/L		04/21/25 13:00	04/22/25 10:07	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	83		0.91	0.46	mg/L		04/16/25 08:18	04/17/25 11:15	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	3.0		1.0	0.42	mg/L			04/17/25 02:23	1
Sulfate (EPA 300.0)	3.1		1.0	0.47	mg/L			04/17/25 02:23	1
Fluoride (EPA 300.0)	<0.43		1.0	0.43	mg/L			04/17/25 02:23	1
Nitrate Nitrite as N (EPA N07-0003)	0.89		0.10	0.041	mg/L			04/21/25 12:17	1
Alkalinity (SM 2320B)	81	B	5.0	3.7	mg/L			04/16/25 16:44	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Color	N				NONE			04/14/25 08:15	1
Field Conductivity	161				umhos/cm			04/14/25 08:15	1
Field Odor	N				NONE			04/14/25 08:15	1
Field pH	6.44				SU			04/14/25 08:15	1
Field Temperature	8.9				Degrees C			04/14/25 08:15	1
Field Turbidity	N				NONE			04/14/25 08:15	1

Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co. LF

Job ID: 500-266813-1

Client Sample ID: Trip Blank-VOC

Lab Sample ID: 500-266813-6

Date Collected: 04/14/25 00:00

Matrix: Water

Date Received: 04/15/25 09:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<4.3		10	4.3	ug/L			04/22/25 13:38	1
Benzene	<0.18		0.50	0.18	ug/L			04/22/25 13:38	1
Bromobenzene	<0.60		1.0	0.60	ug/L			04/22/25 13:38	1
Bromochloromethane	<0.50	+	1.0	0.50	ug/L			04/22/25 13:38	1
Bromodichloromethane	<0.57		1.0	0.57	ug/L			04/22/25 13:38	1
Bromoform	<0.96		1.0	0.96	ug/L			04/22/25 13:38	1
Bromomethane	<1.8		3.0	1.8	ug/L			04/22/25 13:38	1
2-Butanone (MEK)	<2.3		5.0	2.3	ug/L			04/22/25 13:38	1
Carbon disulfide	<1.1		2.0	1.1	ug/L			04/22/25 13:38	1
Carbon tetrachloride	<0.41		1.0	0.41	ug/L			04/22/25 13:38	1
Chlorobenzene	<0.41		1.0	0.41	ug/L			04/22/25 13:38	1
Chloroethane	<0.47		5.0	0.47	ug/L			04/22/25 13:38	1
Chloroform	<0.92		2.0	0.92	ug/L			04/22/25 13:38	1
Chloromethane	<0.79		5.0	0.79	ug/L			04/22/25 13:38	1
2-Chlorotoluene	<0.36		1.0	0.36	ug/L			04/22/25 13:38	1
4-Chlorotoluene	<0.34		1.0	0.34	ug/L			04/22/25 13:38	1
cis-1,2-Dichloroethene	<0.42		1.0	0.42	ug/L			04/22/25 13:38	1
cis-1,3-Dichloropropene	<0.52		1.0	0.52	ug/L			04/22/25 13:38	1
Chlorodibromomethane	<0.83		1.0	0.83	ug/L			04/22/25 13:38	1
1,2-Dibromo-3-Chloropropane	<3.9		5.0	3.9	ug/L			04/22/25 13:38	1
1,2-Dibromoethane (EDB)	<0.56		1.0	0.56	ug/L			04/22/25 13:38	1
Dibromomethane	<0.58	+	1.0	0.58	ug/L			04/22/25 13:38	1
1,2-Dichlorobenzene	<0.48		1.0	0.48	ug/L			04/22/25 13:38	1
1,3-Dichlorobenzene	<0.41		1.0	0.41	ug/L			04/22/25 13:38	1
1,4-Dichlorobenzene	<0.45		1.0	0.45	ug/L			04/22/25 13:38	1
Dichlorodifluoromethane	<1.8		3.0	1.8	ug/L			04/22/25 13:38	1
1,1-Dichloroethane	<0.36		1.0	0.36	ug/L			04/22/25 13:38	1
1,2-Dichloroethane	<0.58		1.0	0.58	ug/L			04/22/25 13:38	1
1,1-Dichloroethene	<0.48		1.0	0.48	ug/L			04/22/25 13:38	1
1,2-Dichloropropane	<0.37		1.0	0.37	ug/L			04/22/25 13:38	1
1,3-Dichloropropane	<0.56		1.0	0.56	ug/L			04/22/25 13:38	1
2,2-Dichloropropane	<0.48		5.0	0.48	ug/L			04/22/25 13:38	1
1,1-Dichloropropene	<0.33		1.0	0.33	ug/L			04/22/25 13:38	1
Ethylbenzene	<0.20		0.50	0.20	ug/L			04/22/25 13:38	1
Hexachlorobutadiene	<0.54		1.0	0.54	ug/L			04/22/25 13:38	1
Isopropylbenzene	<0.29		1.0	0.29	ug/L			04/22/25 13:38	1
Isopropyl ether	<0.38		1.0	0.38	ug/L			04/22/25 13:38	1
Methylene Chloride	<3.6		5.0	3.6	ug/L			04/22/25 13:38	1
Methyl tert-butyl ether	<0.43		1.0	0.43	ug/L			04/22/25 13:38	1
Naphthalene	<0.44		1.0	0.44	ug/L			04/22/25 13:38	1
n-Butylbenzene	<0.33		1.0	0.33	ug/L			04/22/25 13:38	1
N-Propylbenzene	<0.32		1.0	0.32	ug/L			04/22/25 13:38	1
p-Isopropyltoluene	<0.29		1.0	0.29	ug/L			04/22/25 13:38	1
sec-Butylbenzene	<0.27		1.0	0.27	ug/L			04/22/25 13:38	1
Styrene	<0.31		1.0	0.31	ug/L			04/22/25 13:38	1
tert-Butylbenzene	<0.26		1.0	0.26	ug/L			04/22/25 13:38	1
1,1,1,2-Tetrachloroethane	<0.67		1.0	0.67	ug/L			04/22/25 13:38	1
1,1,1,2,2-Tetrachloroethane	<0.65		1.0	0.65	ug/L			04/22/25 13:38	1
Tetrachloroethene	<0.39		1.0	0.39	ug/L			04/22/25 13:38	1

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Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co. LF

Job ID: 500-266813-1

Client Sample ID: Trip Blank-VOC

Lab Sample ID: 500-266813-6

Date Collected: 04/14/25 00:00

Matrix: Water

Date Received: 04/15/25 09:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrahydrofuran	<3.9		10	3.9	ug/L			04/22/25 13:38	1
Toluene	<0.21		0.50	0.21	ug/L			04/22/25 13:38	1
trans-1,2-Dichloroethene	<0.44		1.0	0.44	ug/L			04/22/25 13:38	1
trans-1,3-Dichloropropene	<0.63		1.0	0.63	ug/L			04/22/25 13:38	1
1,2,3-Trichlorobenzene	<0.35		1.0	0.35	ug/L			04/22/25 13:38	1
1,2,4-Trichlorobenzene	<0.31		1.0	0.31	ug/L			04/22/25 13:38	1
1,1,1-Trichloroethane	<0.45		1.0	0.45	ug/L			04/22/25 13:38	1
1,1,2-Trichloroethane	<0.73		1.0	0.73	ug/L			04/22/25 13:38	1
Trichloroethene	<0.15		0.50	0.15	ug/L			04/22/25 13:38	1
Trichlorofluoromethane	<0.44		1.0	0.44	ug/L			04/22/25 13:38	1
1,2,3-Trichloropropane	<1.5		2.0	1.5	ug/L			04/22/25 13:38	1
1,2,4-Trimethylbenzene	<0.30		1.0	0.30	ug/L			04/22/25 13:38	1
1,3,5-Trimethylbenzene	<0.29		1.0	0.29	ug/L			04/22/25 13:38	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			04/22/25 13:38	1
Xylenes, Total	<0.30		1.0	0.30	ug/L			04/22/25 13:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		72 - 124		04/22/25 13:38	1
Dibromofluoromethane (Surr)	105		75 - 120		04/22/25 13:38	1
1,2-Dichloroethane-d4 (Surr)	106		75 - 126		04/22/25 13:38	1
Toluene-d8 (Surr)	94		75 - 120		04/22/25 13:38	1

Definitions/Glossary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co. LF

Job ID: 500-266813-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Association Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co. LF

Job ID: 500-266813-1

GC/MS VOA

Analysis Batch: 814575

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-266813-4	MW-19	Total/NA	Water	8260D	
500-266813-6	Trip Blank-VOC	Total/NA	Water	8260D	
MB 500-814575/7	Method Blank	Total/NA	Water	8260D	
LCS 500-814575/4	Lab Control Sample	Total/NA	Water	8260D	
LCSD 500-814575/5	Lab Control Sample Dup	Total/NA	Water	8260D	

Metals

Prep Batch: 813855

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-266813-1	MW-18WT	Dissolved	Water	3005A	
500-266813-2	MW-18	Dissolved	Water	3005A	
500-266813-3	MW-16Z	Dissolved	Water	3005A	
500-266813-4	MW-19	Dissolved	Water	3005A	
500-266813-5	MW-19Z	Dissolved	Water	3005A	
MB 500-813855/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-813855/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 814048

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-266813-1	MW-18WT	Dissolved	Water	6020B	813855
500-266813-2	MW-18	Dissolved	Water	6020B	813855
500-266813-3	MW-16Z	Dissolved	Water	6020B	813855
500-266813-4	MW-19	Dissolved	Water	6020B	813855
500-266813-5	MW-19Z	Dissolved	Water	6020B	813855
MB 500-813855/1-A	Method Blank	Total Recoverable	Water	6020B	813855
LCS 500-813855/2-A	Lab Control Sample	Total Recoverable	Water	6020B	813855

Analysis Batch: 814101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-266813-1	MW-18WT	Dissolved	Water	SM 2340B	813855
500-266813-2	MW-18	Dissolved	Water	SM 2340B	813855
500-266813-3	MW-16Z	Dissolved	Water	SM 2340B	813855
500-266813-4	MW-19	Dissolved	Water	SM 2340B	813855
500-266813-5	MW-19Z	Dissolved	Water	SM 2340B	813855

Prep Batch: 814505

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-266813-1	MW-18WT	Dissolved	Water	7470A	
500-266813-2	MW-18	Dissolved	Water	7470A	
500-266813-3	MW-16Z	Dissolved	Water	7470A	
500-266813-4	MW-19	Dissolved	Water	7470A	
500-266813-5	MW-19Z	Dissolved	Water	7470A	
MB 500-814505/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-814505/13-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 814665

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-266813-1	MW-18WT	Dissolved	Water	7470A	814505
500-266813-2	MW-18	Dissolved	Water	7470A	814505
500-266813-3	MW-16Z	Dissolved	Water	7470A	814505

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QC Association Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co. LF

Job ID: 500-266813-1

Metals (Continued)

Analysis Batch: 814665 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-266813-4	MW-19	Dissolved	Water	7470A	814505
500-266813-5	MW-19Z	Dissolved	Water	7470A	814505
MB 500-814505/12-A	Method Blank	Total/NA	Water	7470A	814505
LCS 500-814505/13-A	Lab Control Sample	Total/NA	Water	7470A	814505

General Chemistry

Analysis Batch: 813898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-266813-1	MW-18WT	Dissolved	Water	300.0	
500-266813-2	MW-18	Dissolved	Water	300.0	
500-266813-3	MW-16Z	Dissolved	Water	300.0	
500-266813-4	MW-19	Dissolved	Water	300.0	
500-266813-5	MW-19Z	Dissolved	Water	300.0	
MB 500-813898/3	Method Blank	Total/NA	Water	300.0	
LCS 500-813898/4	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 814068

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-266813-1	MW-18WT	Dissolved	Water	SM 2320B	
500-266813-2	MW-18	Dissolved	Water	SM 2320B	
500-266813-3	MW-16Z	Dissolved	Water	SM 2320B	
500-266813-5	MW-19Z	Dissolved	Water	SM 2320B	
MB 500-814068/30	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-814068/31	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 814525

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-266813-1	MW-18WT	Dissolved	Water	N07-0003	
500-266813-2	MW-18	Dissolved	Water	N07-0003	
500-266813-3	MW-16Z	Dissolved	Water	N07-0003	
500-266813-4	MW-19	Dissolved	Water	N07-0003	
500-266813-5	MW-19Z	Dissolved	Water	N07-0003	
MB 500-814525/51	Method Blank	Total/NA	Water	N07-0003	
LCS 500-814525/52	Lab Control Sample	Total/NA	Water	N07-0003	

Analysis Batch: 814731

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-266813-4	MW-19	Dissolved	Water	SM 2320B	
MB 500-814731/54	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-814731/55	Lab Control Sample	Total/NA	Water	SM 2320B	

Field Service / Mobile Lab

Analysis Batch: 814636

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-266813-1	MW-18WT	Total/NA	Water	Field Sampling	
500-266813-2	MW-18	Total/NA	Water	Field Sampling	
500-266813-3	MW-16Z	Total/NA	Water	Field Sampling	
500-266813-4	MW-19	Total/NA	Water	Field Sampling	
500-266813-5	MW-19Z	Total/NA	Water	Field Sampling	

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Surrogate Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co. LF

Job ID: 500-266813-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (72-124)	DBFM (75-120)	DCA (75-126)	TOL (75-120)
500-266813-4	MW-19	96	105	106	94
500-266813-6	Trip Blank-VOC	95	105	106	94
LCS 500-814575/4	Lab Control Sample	92	104	103	94
LCSD 500-814575/5	Lab Control Sample Dup	93	104	102	96
MB 500-814575/7	Method Blank	98	104	102	94

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

TOL = Toluene-d8 (Surr)

QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co. LF

Job ID: 500-266813-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 500-814575/7

Matrix: Water

Analysis Batch: 814575

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<4.3		10	4.3	ug/L			04/22/25 12:19	1
Benzene	<0.18		0.50	0.18	ug/L			04/22/25 12:19	1
Bromobenzene	<0.60		1.0	0.60	ug/L			04/22/25 12:19	1
Bromochloromethane	<0.50		1.0	0.50	ug/L			04/22/25 12:19	1
Bromodichloromethane	<0.57		1.0	0.57	ug/L			04/22/25 12:19	1
Bromoform	<0.96		1.0	0.96	ug/L			04/22/25 12:19	1
Bromomethane	<1.8		3.0	1.8	ug/L			04/22/25 12:19	1
2-Butanone (MEK)	<2.3		5.0	2.3	ug/L			04/22/25 12:19	1
Carbon disulfide	<1.1		2.0	1.1	ug/L			04/22/25 12:19	1
Carbon tetrachloride	<0.41		1.0	0.41	ug/L			04/22/25 12:19	1
Chlorobenzene	<0.41		1.0	0.41	ug/L			04/22/25 12:19	1
Chloroethane	<0.47		5.0	0.47	ug/L			04/22/25 12:19	1
Chloroform	<0.92		2.0	0.92	ug/L			04/22/25 12:19	1
Chloromethane	<0.79		5.0	0.79	ug/L			04/22/25 12:19	1
2-Chlorotoluene	<0.36		1.0	0.36	ug/L			04/22/25 12:19	1
4-Chlorotoluene	<0.34		1.0	0.34	ug/L			04/22/25 12:19	1
cis-1,2-Dichloroethene	<0.42		1.0	0.42	ug/L			04/22/25 12:19	1
cis-1,3-Dichloropropene	<0.52		1.0	0.52	ug/L			04/22/25 12:19	1
Chlorodibromomethane	<0.83		1.0	0.83	ug/L			04/22/25 12:19	1
1,2-Dibromo-3-Chloropropane	<3.9		5.0	3.9	ug/L			04/22/25 12:19	1
1,2-Dibromoethane (EDB)	<0.56		1.0	0.56	ug/L			04/22/25 12:19	1
Dibromomethane	<0.58		1.0	0.58	ug/L			04/22/25 12:19	1
1,2-Dichlorobenzene	<0.48		1.0	0.48	ug/L			04/22/25 12:19	1
1,3-Dichlorobenzene	<0.41		1.0	0.41	ug/L			04/22/25 12:19	1
1,4-Dichlorobenzene	<0.45		1.0	0.45	ug/L			04/22/25 12:19	1
Dichlorodifluoromethane	<1.8		3.0	1.8	ug/L			04/22/25 12:19	1
1,1-Dichloroethane	<0.36		1.0	0.36	ug/L			04/22/25 12:19	1
1,2-Dichloroethane	<0.58		1.0	0.58	ug/L			04/22/25 12:19	1
1,1-Dichloroethene	<0.48		1.0	0.48	ug/L			04/22/25 12:19	1
1,2-Dichloropropane	<0.37		1.0	0.37	ug/L			04/22/25 12:19	1
1,3-Dichloropropane	<0.56		1.0	0.56	ug/L			04/22/25 12:19	1
2,2-Dichloropropane	<0.48		5.0	0.48	ug/L			04/22/25 12:19	1
1,1-Dichloropropene	<0.33		1.0	0.33	ug/L			04/22/25 12:19	1
Ethylbenzene	<0.20		0.50	0.20	ug/L			04/22/25 12:19	1
Hexachlorobutadiene	<0.54		1.0	0.54	ug/L			04/22/25 12:19	1
Isopropylbenzene	<0.29		1.0	0.29	ug/L			04/22/25 12:19	1
Isopropyl ether	<0.38		1.0	0.38	ug/L			04/22/25 12:19	1
Methylene Chloride	<3.6		5.0	3.6	ug/L			04/22/25 12:19	1
Methyl tert-butyl ether	<0.43		1.0	0.43	ug/L			04/22/25 12:19	1
Naphthalene	<0.44		1.0	0.44	ug/L			04/22/25 12:19	1
n-Butylbenzene	<0.33		1.0	0.33	ug/L			04/22/25 12:19	1
N-Propylbenzene	<0.32		1.0	0.32	ug/L			04/22/25 12:19	1
p-Isopropyltoluene	<0.29		1.0	0.29	ug/L			04/22/25 12:19	1
sec-Butylbenzene	<0.27		1.0	0.27	ug/L			04/22/25 12:19	1
Styrene	<0.31		1.0	0.31	ug/L			04/22/25 12:19	1
tert-Butylbenzene	<0.26		1.0	0.26	ug/L			04/22/25 12:19	1
1,1,1,2-Tetrachloroethane	<0.67		1.0	0.67	ug/L			04/22/25 12:19	1
1,1,2,2-Tetrachloroethane	<0.65		1.0	0.65	ug/L			04/22/25 12:19	1

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co. LF

Job ID: 500-266813-1

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

Lab Sample ID: MB 500-814575/7

Matrix: Water

Analysis Batch: 814575

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<0.39		1.0	0.39	ug/L			04/22/25 12:19	1
Tetrahydrofuran	<3.9		10	3.9	ug/L			04/22/25 12:19	1
Toluene	<0.21		0.50	0.21	ug/L			04/22/25 12:19	1
trans-1,2-Dichloroethene	<0.44		1.0	0.44	ug/L			04/22/25 12:19	1
trans-1,3-Dichloropropene	<0.63		1.0	0.63	ug/L			04/22/25 12:19	1
1,2,3-Trichlorobenzene	<0.35		1.0	0.35	ug/L			04/22/25 12:19	1
1,2,4-Trichlorobenzene	<0.31		1.0	0.31	ug/L			04/22/25 12:19	1
1,1,1-Trichloroethane	<0.45		1.0	0.45	ug/L			04/22/25 12:19	1
1,1,2-Trichloroethane	<0.73		1.0	0.73	ug/L			04/22/25 12:19	1
Trichloroethene	<0.15		0.50	0.15	ug/L			04/22/25 12:19	1
Trichlorofluoromethane	<0.44		1.0	0.44	ug/L			04/22/25 12:19	1
1,2,3-Trichloropropane	<1.5		2.0	1.5	ug/L			04/22/25 12:19	1
1,2,4-Trimethylbenzene	<0.30		1.0	0.30	ug/L			04/22/25 12:19	1
1,3,5-Trimethylbenzene	<0.29		1.0	0.29	ug/L			04/22/25 12:19	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			04/22/25 12:19	1
Xylenes, Total	<0.30		1.0	0.30	ug/L			04/22/25 12:19	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		72 - 124		04/22/25 12:19	1
Dibromofluoromethane (Surr)	104		75 - 120		04/22/25 12:19	1
1,2-Dichloroethane-d4 (Surr)	102		75 - 126		04/22/25 12:19	1
Toluene-d8 (Surr)	94		75 - 120		04/22/25 12:19	1

Lab Sample ID: LCS 500-814575/4

Matrix: Water

Analysis Batch: 814575

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetone	50.0	63.2		ug/L		126	40 - 143
Benzene	50.0	55.4		ug/L		111	70 - 120
Bromobenzene	50.0	52.7		ug/L		105	70 - 122
Bromochloromethane	50.0	61.4	*+	ug/L		123	65 - 122
Bromodichloromethane	50.0	58.5		ug/L		117	69 - 120
Bromoform	50.0	57.0		ug/L		114	56 - 132
Bromomethane	50.0	24.8		ug/L		50	40 - 152
2-Butanone (MEK)	50.0	59.3		ug/L		119	46 - 144
Carbon disulfide	50.0	44.3		ug/L		89	66 - 120
Carbon tetrachloride	50.0	59.9		ug/L		120	59 - 133
Chlorobenzene	50.0	53.1		ug/L		106	70 - 120
Chloroethane	50.0	56.3		ug/L		113	48 - 136
Chloroform	50.0	54.8		ug/L		110	70 - 120
Chloromethane	50.0	43.4		ug/L		87	56 - 152
2-Chlorotoluene	50.0	48.6		ug/L		97	70 - 125
4-Chlorotoluene	50.0	49.5		ug/L		99	68 - 124
cis-1,2-Dichloroethene	50.0	55.8		ug/L		112	70 - 125
cis-1,3-Dichloropropene	50.0	51.4		ug/L		103	64 - 127
Chlorodibromomethane	50.0	54.6		ug/L		109	68 - 125
1,2-Dibromo-3-Chloropropane	50.0	54.7		ug/L		109	56 - 123

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co. LF

Job ID: 500-266813-1

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

Lab Sample ID: LCS 500-814575/4

Matrix: Water

Analysis Batch: 814575

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dibromoethane (EDB)	50.0	53.6		ug/L		107	70 - 125
Dibromomethane	50.0	62.6	*+	ug/L		125	70 - 120
1,2-Dichlorobenzene	50.0	52.8		ug/L		106	70 - 125
1,3-Dichlorobenzene	50.0	52.3		ug/L		105	70 - 125
1,4-Dichlorobenzene	50.0	52.4		ug/L		105	70 - 120
Dichlorodifluoromethane	50.0	47.3		ug/L		95	40 - 159
1,1-Dichloroethane	50.0	57.2		ug/L		114	70 - 125
1,2-Dichloroethane	50.0	59.7		ug/L		119	68 - 127
1,1-Dichloroethene	50.0	48.2		ug/L		96	67 - 122
1,2-Dichloropropane	50.0	58.6		ug/L		117	67 - 130
1,3-Dichloropropane	50.0	54.0		ug/L		108	62 - 136
2,2-Dichloropropane	50.0	53.2		ug/L		106	58 - 139
1,1-Dichloropropene	50.0	53.8		ug/L		108	70 - 121
Ethylbenzene	50.0	53.4		ug/L		107	70 - 123
Hexachlorobutadiene	50.0	46.8		ug/L		94	51 - 150
Isopropylbenzene	50.0	47.9		ug/L		96	70 - 126
Methylene Chloride	50.0	57.5		ug/L		115	69 - 125
Methyl tert-butyl ether	50.0	56.0		ug/L		112	55 - 123
Naphthalene	50.0	53.6		ug/L		107	53 - 144
n-Butylbenzene	50.0	48.7		ug/L		97	68 - 125
N-Propylbenzene	50.0	49.0		ug/L		98	69 - 127
p-Isopropyltoluene	50.0	48.3		ug/L		97	70 - 125
sec-Butylbenzene	50.0	48.1		ug/L		96	70 - 123
Styrene	50.0	53.8		ug/L		108	70 - 120
tert-Butylbenzene	50.0	46.1		ug/L		92	70 - 121
1,1,1,2-Tetrachloroethane	50.0	53.5		ug/L		107	70 - 125
1,1,2,2-Tetrachloroethane	50.0	50.7		ug/L		101	62 - 140
Tetrachloroethene	50.0	51.0		ug/L		102	70 - 128
Tetrahydrofuran	100	126		ug/L		126	59 - 139
Toluene	50.0	48.5		ug/L		97	70 - 125
trans-1,2-Dichloroethene	50.0	54.4		ug/L		109	70 - 125
trans-1,3-Dichloropropene	50.0	53.3		ug/L		107	62 - 128
1,2,3-Trichlorobenzene	50.0	55.3		ug/L		111	51 - 145
1,2,4-Trichlorobenzene	50.0	55.8		ug/L		112	57 - 137
1,1,1-Trichloroethane	50.0	54.8		ug/L		110	70 - 125
1,1,2-Trichloroethane	50.0	53.0		ug/L		106	71 - 130
Trichloroethene	50.0	57.7		ug/L		115	70 - 125
Trichlorofluoromethane	50.0	53.4		ug/L		107	55 - 128
1,2,3-Trichloropropane	50.0	52.8		ug/L		106	50 - 133
1,2,4-Trimethylbenzene	50.0	50.0		ug/L		100	70 - 123
1,3,5-Trimethylbenzene	50.0	49.0		ug/L		98	70 - 123
Vinyl chloride	50.0	50.5		ug/L		101	64 - 126
Xylenes, Total	100	101		ug/L		101	70 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	92		72 - 124
Dibromofluoromethane (Surr)	104		75 - 120
1,2-Dichloroethane-d4 (Surr)	103		75 - 126

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co. LF

Job ID: 500-266813-1

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

Lab Sample ID: LCS 500-814575/4

Matrix: Water

Analysis Batch: 814575

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	94		75 - 120

Lab Sample ID: LCSD 500-814575/5

Matrix: Water

Analysis Batch: 814575

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acetone	50.0	55.6		ug/L		111	40 - 143	13	20
Benzene	50.0	54.3		ug/L		109	70 - 120	2	20
Bromobenzene	50.0	51.1		ug/L		102	70 - 122	3	20
Bromochloromethane	50.0	59.5		ug/L		119	65 - 122	3	20
Bromodichloromethane	50.0	55.9		ug/L		112	69 - 120	5	20
Bromoform	50.0	53.2		ug/L		106	56 - 132	7	20
Bromomethane	50.0	25.0		ug/L		50	40 - 152	1	20
2-Butanone (MEK)	50.0	53.6		ug/L		107	46 - 144	10	20
Carbon disulfide	50.0	43.5		ug/L		87	66 - 120	2	20
Carbon tetrachloride	50.0	56.7		ug/L		113	59 - 133	5	20
Chlorobenzene	50.0	51.6		ug/L		103	70 - 120	3	20
Chloroethane	50.0	54.5		ug/L		109	48 - 136	3	20
Chloroform	50.0	53.5		ug/L		107	70 - 120	2	20
Chloromethane	50.0	41.8		ug/L		84	56 - 152	4	20
2-Chlorotoluene	50.0	48.1		ug/L		96	70 - 125	1	20
4-Chlorotoluene	50.0	48.8		ug/L		98	68 - 124	1	20
cis-1,2-Dichloroethene	50.0	55.1		ug/L		110	70 - 125	1	20
cis-1,3-Dichloropropene	50.0	49.3		ug/L		99	64 - 127	4	20
Chlorodibromomethane	50.0	51.9		ug/L		104	68 - 125	5	20
1,2-Dibromo-3-Chloropropane	50.0	51.8		ug/L		104	56 - 123	5	20
1,2-Dibromoethane (EDB)	50.0	51.4		ug/L		103	70 - 125	4	20
Dibromomethane	50.0	59.3		ug/L		119	70 - 120	5	20
1,2-Dichlorobenzene	50.0	51.4		ug/L		103	70 - 125	3	20
1,3-Dichlorobenzene	50.0	51.3		ug/L		103	70 - 125	2	20
1,4-Dichlorobenzene	50.0	51.1		ug/L		102	70 - 120	3	20
Dichlorodifluoromethane	50.0	40.6		ug/L		81	40 - 159	15	20
1,1-Dichloroethane	50.0	54.6		ug/L		109	70 - 125	5	20
1,2-Dichloroethane	50.0	56.4		ug/L		113	68 - 127	6	20
1,1-Dichloroethene	50.0	46.8		ug/L		94	67 - 122	3	20
1,2-Dichloropropane	50.0	56.0		ug/L		112	67 - 130	4	20
1,3-Dichloropropane	50.0	51.5		ug/L		103	62 - 136	5	20
2,2-Dichloropropane	50.0	50.8		ug/L		102	58 - 139	5	20
1,1-Dichloropropene	50.0	52.5		ug/L		105	70 - 121	3	20
Ethylbenzene	50.0	53.4		ug/L		107	70 - 123	0	20
Hexachlorobutadiene	50.0	47.8		ug/L		96	51 - 150	2	20
Isopropylbenzene	50.0	47.5		ug/L		95	70 - 126	1	20
Methylene Chloride	50.0	54.9		ug/L		110	69 - 125	4	20
Methyl tert-butyl ether	50.0	52.1		ug/L		104	55 - 123	7	20
Naphthalene	50.0	51.2		ug/L		102	53 - 144	5	20
n-Butylbenzene	50.0	48.4		ug/L		97	68 - 125	1	20
N-Propylbenzene	50.0	49.1		ug/L		98	69 - 127	0	20

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co. LF

Job ID: 500-266813-1

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

Lab Sample ID: LCSD 500-814575/5

Matrix: Water

Analysis Batch: 814575

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
p-Isopropyltoluene	50.0	48.5		ug/L		97	70 - 125	0	20
sec-Butylbenzene	50.0	47.3		ug/L		95	70 - 123	2	20
Styrene	50.0	52.5		ug/L		105	70 - 120	2	20
tert-Butylbenzene	50.0	46.2		ug/L		92	70 - 121	0	20
1,1,1,2-Tetrachloroethane	50.0	51.9		ug/L		104	70 - 125	3	20
1,1,2,2-Tetrachloroethane	50.0	48.7		ug/L		97	62 - 140	4	20
Tetrachloroethene	50.0	50.0		ug/L		100	70 - 128	2	20
Tetrahydrofuran	100	116		ug/L		116	59 - 139	8	20
Toluene	50.0	46.9		ug/L		94	70 - 125	3	20
trans-1,2-Dichloroethene	50.0	53.4		ug/L		107	70 - 125	2	20
trans-1,3-Dichloropropene	50.0	50.8		ug/L		102	62 - 128	5	20
1,2,3-Trichlorobenzene	50.0	53.5		ug/L		107	51 - 145	3	20
1,2,4-Trichlorobenzene	50.0	54.4		ug/L		109	57 - 137	3	20
1,1,1-Trichloroethane	50.0	53.3		ug/L		107	70 - 125	3	20
1,1,2-Trichloroethane	50.0	50.6		ug/L		101	71 - 130	5	20
Trichloroethene	50.0	55.5		ug/L		111	70 - 125	4	20
Trichlorofluoromethane	50.0	48.3		ug/L		97	55 - 128	10	20
1,2,3-Trichloropropane	50.0	50.6		ug/L		101	50 - 133	4	20
1,2,4-Trimethylbenzene	50.0	49.0		ug/L		98	70 - 123	2	20
1,3,5-Trimethylbenzene	50.0	48.8		ug/L		98	70 - 123	0	20
Vinyl chloride	50.0	48.0		ug/L		96	64 - 126	5	20
Xylenes, Total	100	98.8		ug/L		99	70 - 125	2	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	93		72 - 124
Dibromofluoromethane (Surr)	104		75 - 120
1,2-Dichloroethane-d4 (Surr)	102		75 - 126
Toluene-d8 (Surr)	96		75 - 120

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 500-813855/1-A

Matrix: Water

Analysis Batch: 814048

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 813855

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.3		3.0	1.3	ug/L		04/16/25 08:18	04/16/25 15:58	1
Arsenic	<0.23		1.0	0.23	ug/L		04/16/25 08:18	04/16/25 15:58	1
Barium	<0.73		2.5	0.73	ug/L		04/16/25 08:18	04/16/25 15:58	1
Beryllium	<0.53		1.0	0.53	ug/L		04/16/25 08:18	04/16/25 15:58	1
Boron	15.8 J		50	13	ug/L		04/16/25 08:18	04/16/25 15:58	1
Cadmium	<0.17		0.50	0.17	ug/L		04/16/25 08:18	04/16/25 15:58	1
Chromium	<1.1		5.0	1.1	ug/L		04/16/25 08:18	04/16/25 15:58	1
Cobalt	<0.40		1.0	0.40	ug/L		04/16/25 08:18	04/16/25 15:58	1
Copper	0.583 J		2.0	0.50	ug/L		04/16/25 08:18	04/16/25 15:58	1
Lead	<0.19		0.50	0.19	ug/L		04/16/25 08:18	04/16/25 15:58	1
Manganese	<0.79		2.5	0.79	ug/L		04/16/25 08:18	04/16/25 15:58	1
Nickel	<0.63		2.0	0.63	ug/L		04/16/25 08:18	04/16/25 15:58	1
Selenium	<0.98		2.5	0.98	ug/L		04/16/25 08:18	04/16/25 15:58	1

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co. LF

Job ID: 500-266813-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 500-813855/1-A
Matrix: Water
Analysis Batch: 814048

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 813855

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.12		0.50	0.12	ug/L		04/16/25 08:18	04/16/25 15:58	1
Thallium	<0.57		2.0	0.57	ug/L		04/16/25 08:18	04/16/25 15:58	1
Vanadium	<2.2		5.0	2.2	ug/L		04/16/25 08:18	04/16/25 15:58	1
Zinc	<6.9		20	6.9	ug/L		04/16/25 08:18	04/16/25 15:58	1

Lab Sample ID: LCS 500-813855/2-A
Matrix: Water
Analysis Batch: 814048

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 813855

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	500	533		ug/L		107	80 - 120
Arsenic	100	94.3		ug/L		94	80 - 120
Barium	500	507		ug/L		101	80 - 120
Beryllium	50.0	49.6		ug/L		99	80 - 120
Boron	1000	996		ug/L		100	80 - 120
Cadmium	50.0	51.0		ug/L		102	80 - 120
Chromium	200	194		ug/L		97	80 - 120
Cobalt	500	545		ug/L		109	80 - 120
Copper	250	252		ug/L		101	80 - 120
Lead	100	101		ug/L		101	80 - 120
Manganese	500	529		ug/L		106	80 - 120
Nickel	500	516		ug/L		103	80 - 120
Selenium	100	102		ug/L		102	80 - 120
Silver	50.0	51.8		ug/L		104	80 - 120
Thallium	100	103		ug/L		103	80 - 120
Vanadium	500	513		ug/L		103	80 - 120
Zinc	500	480		ug/L		96	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-814505/12-A
Matrix: Water
Analysis Batch: 814665

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 814505

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.076		0.20	0.076	ug/L		04/21/25 13:00	04/22/25 09:17	1

Lab Sample ID: LCS 500-814505/13-A
Matrix: Water
Analysis Batch: 814665

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 814505

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	2.00	2.26		ug/L		113	80 - 120

QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co. LF

Job ID: 500-266813-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 500-813898/3

Matrix: Water

Analysis Batch: 813898

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.42		1.0	0.42	mg/L			04/16/25 20:34	1
Sulfate	<0.47		1.0	0.47	mg/L			04/16/25 20:34	1
Fluoride	<0.43		1.0	0.43	mg/L			04/16/25 20:34	1

Lab Sample ID: LCS 500-813898/4

Matrix: Water

Analysis Batch: 813898

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	20.0	20.9		mg/L		105	90 - 110
Sulfate	20.0	21.4		mg/L		107	90 - 110
Fluoride	20.0	20.3		mg/L		101	90 - 110

Method: N07-0003 - Enzymatic Nitrate-Nitrite Nitrogen

Lab Sample ID: MB 500-814525/51

Matrix: Water

Analysis Batch: 814525

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	<0.041		0.10	0.041	mg/L			04/21/25 12:12	1

Lab Sample ID: LCS 500-814525/52

Matrix: Water

Analysis Batch: 814525

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate Nitrite as N	1.00	1.07		mg/L		107	90 - 110

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-814068/30

Matrix: Water

Analysis Batch: 814068

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	6.01		5.0	3.7	mg/L			04/16/25 13:29	1

Lab Sample ID: LCS 500-814068/31

Matrix: Water

Analysis Batch: 814068

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	100	107		mg/L		107	95 - 121

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co. LF

Job ID: 500-266813-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: MB 500-814731/54

Matrix: Water

Analysis Batch: 814731

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	<3.7		5.0	3.7	mg/L			04/22/25 18:10	1

Lab Sample ID: LCS 500-814731/55

Matrix: Water

Analysis Batch: 814731

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	100	105		mg/L		105	95 - 121

Lab Chronicle

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co. LF

Job ID: 500-266813-1

Client Sample ID: MW-18WT

Lab Sample ID: 500-266813-1

Date Collected: 04/14/25 10:00

Matrix: Water

Date Received: 04/15/25 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			813855	BDE	EET CHI	04/16/25 08:18 - 04/16/25 14:18 ¹
Dissolved	Analysis	6020B		1	814048	RN	EET CHI	04/16/25 16:08
Dissolved	Prep	7470A			814505	MJG	EET CHI	04/21/25 13:00 - 04/21/25 15:00 ¹
Dissolved	Analysis	7470A		1	814665	MJG	EET CHI	04/22/25 09:54
Dissolved	Prep	3005A			813855	BDE	EET CHI	04/16/25 08:18 - 04/16/25 14:18 ¹
Dissolved	Analysis	SM 2340B		1	814101	DAJ	EET CHI	04/17/25 11:15
Dissolved	Analysis	300.0		1	813898	MM	EET CHI	04/17/25 01:36
Dissolved	Analysis	N07-0003		2	814525	TR	EET CHI	04/21/25 13:11
Dissolved	Analysis	SM 2320B		1	814068	SO	EET CHI	04/16/25 16:05
Total/NA	Analysis	Field Sampling		1	814636	GA	EET CHI	04/14/25 10:00

Client Sample ID: MW-18

Lab Sample ID: 500-266813-2

Date Collected: 04/14/25 10:35

Matrix: Water

Date Received: 04/15/25 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			813855	BDE	EET CHI	04/16/25 08:18 - 04/16/25 14:18 ¹
Dissolved	Analysis	6020B		1	814048	RN	EET CHI	04/16/25 16:10
Dissolved	Prep	7470A			814505	MJG	EET CHI	04/21/25 13:00 - 04/21/25 15:00 ¹
Dissolved	Analysis	7470A		1	814665	MJG	EET CHI	04/22/25 09:56
Dissolved	Prep	3005A			813855	BDE	EET CHI	04/16/25 08:18 - 04/16/25 14:18 ¹
Dissolved	Analysis	SM 2340B		1	814101	DAJ	EET CHI	04/17/25 11:15
Dissolved	Analysis	300.0		1	813898	MM	EET CHI	04/17/25 01:48
Dissolved	Analysis	N07-0003		10	814525	TR	EET CHI	04/21/25 13:11
Dissolved	Analysis	SM 2320B		1	814068	SO	EET CHI	04/16/25 16:16
Total/NA	Analysis	Field Sampling		1	814636	GA	EET CHI	04/14/25 10:35

Client Sample ID: MW-16Z

Lab Sample ID: 500-266813-3

Date Collected: 04/14/25 12:15

Matrix: Water

Date Received: 04/15/25 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			813855	BDE	EET CHI	04/16/25 08:18 - 04/16/25 14:18 ¹
Dissolved	Analysis	6020B		1	814048	RN	EET CHI	04/16/25 16:13
Dissolved	Prep	7470A			814505	MJG	EET CHI	04/21/25 13:00 - 04/21/25 15:00 ¹
Dissolved	Analysis	7470A		1	814665	MJG	EET CHI	04/22/25 10:03
Dissolved	Prep	3005A			813855	BDE	EET CHI	04/16/25 08:18 - 04/16/25 14:18 ¹
Dissolved	Analysis	SM 2340B		1	814101	DAJ	EET CHI	04/17/25 11:15
Dissolved	Analysis	300.0		1	813898	MM	EET CHI	04/17/25 02:00
Dissolved	Analysis	N07-0003		1	814525	TR	EET CHI	04/21/25 12:16
Dissolved	Analysis	SM 2320B		1	814068	SO	EET CHI	04/16/25 16:26
Total/NA	Analysis	Field Sampling		1	814636	GA	EET CHI	04/14/25 12:15

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Lab Chronicle

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co. LF

Job ID: 500-266813-1

Client Sample ID: MW-19

Date Collected: 04/14/25 08:45

Date Received: 04/15/25 09:25

Lab Sample ID: 500-266813-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	814575	MM	EET CHI	04/22/25 14:31
Dissolved	Prep	3005A			813855	BDE	EET CHI	04/16/25 08:18 - 04/16/25 14:18 ¹
Dissolved	Analysis	6020B		1	814048	RN	EET CHI	04/16/25 16:15
Dissolved	Prep	7470A			814505	MJG	EET CHI	04/21/25 13:00 - 04/21/25 15:00 ¹
Dissolved	Analysis	7470A		1	814665	MJG	EET CHI	04/22/25 10:05
Dissolved	Prep	3005A			813855	BDE	EET CHI	04/16/25 08:18 - 04/16/25 14:18 ¹
Dissolved	Analysis	SM 2340B		1	814101	DAJ	EET CHI	04/17/25 11:15
Dissolved	Analysis	300.0		1	813898	MM	EET CHI	04/17/25 02:11
Dissolved	Analysis	N07-0003		1	814525	TR	EET CHI	04/21/25 12:17
Dissolved	Analysis	SM 2320B		1	814731	AC	EET CHI	04/22/25 18:36
Total/NA	Analysis	Field Sampling		1	814636	GA	EET CHI	04/14/25 08:45

Client Sample ID: MW-19Z

Date Collected: 04/14/25 08:15

Date Received: 04/15/25 09:25

Lab Sample ID: 500-266813-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			813855	BDE	EET CHI	04/16/25 08:18 - 04/16/25 14:18 ¹
Dissolved	Analysis	6020B		1	814048	RN	EET CHI	04/16/25 16:18
Dissolved	Prep	7470A			814505	MJG	EET CHI	04/21/25 13:00 - 04/21/25 15:00 ¹
Dissolved	Analysis	7470A		1	814665	MJG	EET CHI	04/22/25 10:07
Dissolved	Prep	3005A			813855	BDE	EET CHI	04/16/25 08:18 - 04/16/25 14:18 ¹
Dissolved	Analysis	SM 2340B		1	814101	DAJ	EET CHI	04/17/25 11:15
Dissolved	Analysis	300.0		1	813898	MM	EET CHI	04/17/25 02:23
Dissolved	Analysis	N07-0003		1	814525	TR	EET CHI	04/21/25 12:17
Dissolved	Analysis	SM 2320B		1	814068	SO	EET CHI	04/16/25 16:44
Total/NA	Analysis	Field Sampling		1	814636	GA	EET CHI	04/14/25 08:15

Client Sample ID: Trip Blank-VOC

Date Collected: 04/14/25 00:00

Date Received: 04/15/25 09:25

Lab Sample ID: 500-266813-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	814575	MM	EET CHI	04/22/25 13:38

¹ This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

Laboratory References:

EET CHI = Eurofins Chicago, 18410 Crossing Drive, Suite E, Tinley Park, IL 60487, TEL (708)534-5200

Eurofins Chicago

Accreditation/Certification Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co. LF

Job ID: 500-266813-1

Laboratory: Eurofins Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	399172840	08-31-25

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

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1
2
3
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6

Login Sample Receipt Checklist

Client: Short Elliott Hendrickson, Inc. dba SEH

Job Number: 500-266813-1

Login Number: 266813

List Number: 1

Creator: Hernandez, Stephanie

List Source: Eurofins Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Brian L. Kent
Short Elliott Hendrickson, Inc. dba SEH
10 North Bridge Street
Chippewa Falls, Wisconsin 54729-3374

Generated 5/30/2025 4:11:46 PM

JOB DESCRIPTION

Vernon Co LF

JOB NUMBER

500-268388-1

Eurofins Chicago

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

Results relate only to the items tested and the sample(s) as received by the laboratory. The results, detection limits (LOD) and Quantitation Limits (LOQ) have been adjusted for sample dilutions and/or solids content.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Chicago Project Manager.

Compliance Statement

The LOD and LOQ reported are adjusted by the dilution factor when a dilution factor greater than 1 is needed. Additionally, where results are indicated as being reported on a dry weight basis, the LOD and LOQ are adjusted for moisture content as well.

Definitions of Limits

- LOD = Limit of Detection = MDL as defined by 40 CFR part 136 Appendix B
- LOQ = Limit of Quantitation = $3.33 \times \text{LOD}$ as defined by Wisconsin
- RL = Report Limit = a concentration supported by a standard in the calibration curves

Authorization



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Authorized for release by
Sandie Fredrick, Senior Project Manager
Sandra.Fredrick@et.eurofinsus.com
(920)261-1660

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Case Narrative

Client: Short Elliott Hendrickson, Inc. dba SEH
Project: Vernon Co LF

Job ID: 500-268388-1

Job ID: 500-268388-1

Eurofins Chicago

Job Narrative 500-268388-1

Receipt

The samples were received on 5/15/2025 9:40 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 7.8° C.

GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 500-818996 was outside the method criteria for the following analyte(s): Carbon tetrachloride, Dichlorodifluoromethane, 2,2-Dichloropropane, Hexachlorobutadiene, Naphthalene and 1,1,1-Trichloroethane. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

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

Metals

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

Field Service / Mobile Lab

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

General Chemistry

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

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Detection Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF

Job ID: 500-268388-1

Client Sample ID: MW-20

Lab Sample ID: 500-268388-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Naphthalene	0.54	J	1.0	0.44	ug/L	1			8260D	Total/NA
Barium	33		2.5	0.73	ug/L	1			6020B	Dissolved
Boron	39	J	50	13	ug/L	1			6020B	Dissolved
Copper	4.1		2.0	0.50	ug/L	1			6020B	Dissolved
Manganese	280		2.5	0.79	ug/L	1			6020B	Dissolved
Hardness as calcium carbonate	46		0.91	0.46	mg/L	1			SM 2340B	Dissolved
Total Suspended Solids	4300		170	64	mg/L	1			SM 2540D	Total/NA
Chloride	1.7		1.0	0.42	mg/L	1			300.0	Dissolved
Sulfate	14		1.0	0.47	mg/L	1			300.0	Dissolved
Nitrate Nitrite as N	0.49		0.10	0.041	mg/L	1			N07-0003	Dissolved
Alkalinity	43		5.0	3.7	mg/L	1			SM 2320B	Dissolved
Chemical Oxygen Demand	7.2	J	10	6.0	mg/L	1			SM 5220C	Dissolved
Field Color	Y				NONE	1			Field Sampling	Total/NA
Field Conductivity	119				umhos/cm	1			Field Sampling	Total/NA
Field Odor	N				NONE	1			Field Sampling	Total/NA
Field pH	7.71				SU	1			Field Sampling	Total/NA
Field Temperature	13.3				Degrees C	1			Field Sampling	Total/NA
Field Turbidity	Y				NONE	1			Field Sampling	Total/NA

Client Sample ID: VOC-Trip Blank

Lab Sample ID: 500-268388-2

No Detections.

This Detection Summary does not include radiochemical test results.

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Method Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF

Job ID: 500-268388-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CHI
6020B	Metals (ICP/MS)	SW846	EET CHI
7470A	Mercury (CVAA)	SW846	EET CHI
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	EET CHI
300.0	Anions, Ion Chromatography	EPA	EET CHI
N07-0003	Enzymatic Nitrate-Nitrite Nitrogen	EPA	EET CHI
SM 2320B	Alkalinity	SM	EET CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CHI
SM 5220C	COD	SM	EET CHI
Field Sampling	Field Sampling	EPA	EET CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CHI
5030B	Purge and Trap	SW846	EET CHI
7470A	Preparation, Mercury	SW846	EET CHI
SM 5220	COD	SM	EET CHI

Protocol References:

EPA = US Environmental Protection Agency

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

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CHI = Eurofins Chicago, 18410 Crossing Drive, Suite E, Tinley Park, IL 60487, TEL (708)534-5200

Sample Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF

Job ID: 500-268388-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-268388-1	MW-20	Water	05/14/25 08:30	05/15/25 09:40
500-268388-2	VOC-Trip Blank	Water	05/14/25 00:00	05/15/25 09:40

Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF

Job ID: 500-268388-1

Client Sample ID: MW-20

Lab Sample ID: 500-268388-1

Date Collected: 05/14/25 08:30

Matrix: Water

Date Received: 05/15/25 09:40

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<4.3		10	4.3	ug/L			05/27/25 14:46	1
Benzene	<0.18		0.50	0.18	ug/L			05/27/25 14:46	1
Bromobenzene	<0.60		1.0	0.60	ug/L			05/27/25 14:46	1
Bromochloromethane	<0.50		1.0	0.50	ug/L			05/27/25 14:46	1
Bromodichloromethane	<0.57		1.0	0.57	ug/L			05/27/25 14:46	1
Bromoform	<0.96		1.0	0.96	ug/L			05/27/25 14:46	1
Bromomethane	<1.8		3.0	1.8	ug/L			05/27/25 14:46	1
2-Butanone (MEK)	<2.3		5.0	2.3	ug/L			05/27/25 14:46	1
Carbon disulfide	<1.1		2.0	1.1	ug/L			05/27/25 14:46	1
Carbon tetrachloride	<0.41		1.0	0.41	ug/L			05/27/25 14:46	1
Chlorobenzene	<0.41		1.0	0.41	ug/L			05/27/25 14:46	1
Chloroethane	<0.47		5.0	0.47	ug/L			05/27/25 14:46	1
Chloroform	<0.92		2.0	0.92	ug/L			05/27/25 14:46	1
Chloromethane	<0.79		5.0	0.79	ug/L			05/27/25 14:46	1
2-Chlorotoluene	<0.36		1.0	0.36	ug/L			05/27/25 14:46	1
4-Chlorotoluene	<0.34		1.0	0.34	ug/L			05/27/25 14:46	1
cis-1,2-Dichloroethene	<0.42		1.0	0.42	ug/L			05/27/25 14:46	1
cis-1,3-Dichloropropene	<0.52		1.0	0.52	ug/L			05/27/25 14:46	1
Chlorodibromomethane	<0.83		1.0	0.83	ug/L			05/27/25 14:46	1
1,2-Dibromo-3-Chloropropane	<3.9		5.0	3.9	ug/L			05/27/25 14:46	1
1,2-Dibromoethane (EDB)	<0.56		1.0	0.56	ug/L			05/27/25 14:46	1
Dibromomethane	<0.58		1.0	0.58	ug/L			05/27/25 14:46	1
1,2-Dichlorobenzene	<0.48		1.0	0.48	ug/L			05/27/25 14:46	1
1,3-Dichlorobenzene	<0.41		1.0	0.41	ug/L			05/27/25 14:46	1
1,4-Dichlorobenzene	<0.45		1.0	0.45	ug/L			05/27/25 14:46	1
Dichlorodifluoromethane	<1.8		3.0	1.8	ug/L			05/27/25 14:46	1
1,1-Dichloroethane	<0.36		1.0	0.36	ug/L			05/27/25 14:46	1
1,2-Dichloroethane	<0.58		1.0	0.58	ug/L			05/27/25 14:46	1
1,1-Dichloroethene	<0.48		1.0	0.48	ug/L			05/27/25 14:46	1
1,2-Dichloropropane	<0.37		1.0	0.37	ug/L			05/27/25 14:46	1
1,3-Dichloropropane	<0.56		1.0	0.56	ug/L			05/27/25 14:46	1
2,2-Dichloropropane	<0.48		5.0	0.48	ug/L			05/27/25 14:46	1
1,1-Dichloropropene	<0.33		1.0	0.33	ug/L			05/27/25 14:46	1
Ethylbenzene	<0.20		0.50	0.20	ug/L			05/27/25 14:46	1
Hexachlorobutadiene	<0.54		1.0	0.54	ug/L			05/27/25 14:46	1
Isopropylbenzene	<0.29		1.0	0.29	ug/L			05/27/25 14:46	1
Isopropyl ether	<0.38		1.0	0.38	ug/L			05/27/25 14:46	1
Methylene Chloride	<3.6		5.0	3.6	ug/L			05/27/25 14:46	1
Methyl tert-butyl ether	<0.43		1.0	0.43	ug/L			05/27/25 14:46	1
Naphthalene	0.54	J	1.0	0.44	ug/L			05/27/25 14:46	1
n-Butylbenzene	<0.33		1.0	0.33	ug/L			05/27/25 14:46	1
N-Propylbenzene	<0.32		1.0	0.32	ug/L			05/27/25 14:46	1
p-Isopropyltoluene	<0.29		1.0	0.29	ug/L			05/27/25 14:46	1
sec-Butylbenzene	<0.27		1.0	0.27	ug/L			05/27/25 14:46	1
Styrene	<0.31		1.0	0.31	ug/L			05/27/25 14:46	1
tert-Butylbenzene	<0.26		1.0	0.26	ug/L			05/27/25 14:46	1
1,1,1,2-Tetrachloroethane	<0.67		1.0	0.67	ug/L			05/27/25 14:46	1
1,1,2,2-Tetrachloroethane	<0.65		1.0	0.65	ug/L			05/27/25 14:46	1
Tetrachloroethene	<0.39		1.0	0.39	ug/L			05/27/25 14:46	1

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Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF

Job ID: 500-268388-1

Client Sample ID: MW-20

Lab Sample ID: 500-268388-1

Date Collected: 05/14/25 08:30

Matrix: Water

Date Received: 05/15/25 09:40

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrahydrofuran	<3.9		10	3.9	ug/L			05/27/25 14:46	1
Toluene	<0.21		0.50	0.21	ug/L			05/27/25 14:46	1
trans-1,2-Dichloroethene	<0.44		1.0	0.44	ug/L			05/27/25 14:46	1
trans-1,3-Dichloropropene	<0.63		1.0	0.63	ug/L			05/27/25 14:46	1
1,2,3-Trichlorobenzene	<0.35		1.0	0.35	ug/L			05/27/25 14:46	1
1,2,4-Trichlorobenzene	<0.31		1.0	0.31	ug/L			05/27/25 14:46	1
1,1,1-Trichloroethane	<0.45		1.0	0.45	ug/L			05/27/25 14:46	1
1,1,2-Trichloroethane	<0.73		1.0	0.73	ug/L			05/27/25 14:46	1
Trichloroethene	<0.15		0.50	0.15	ug/L			05/27/25 14:46	1
Trichlorofluoromethane	<0.44		1.0	0.44	ug/L			05/27/25 14:46	1
1,2,3-Trichloropropane	<1.5		2.0	1.5	ug/L			05/27/25 14:46	1
1,2,4-Trimethylbenzene	<0.30		1.0	0.30	ug/L			05/27/25 14:46	1
1,3,5-Trimethylbenzene	<0.29		1.0	0.29	ug/L			05/27/25 14:46	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			05/27/25 14:46	1
Xylenes, Total	<0.30		1.0	0.30	ug/L			05/27/25 14:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		72 - 124		05/27/25 14:46	1
Dibromofluoromethane (Surr)	99		75 - 120		05/27/25 14:46	1
1,2-Dichloroethane-d4 (Surr)	98		75 - 126		05/27/25 14:46	1
Toluene-d8 (Surr)	99		75 - 120		05/27/25 14:46	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		05/16/25 08:25	05/19/25 13:33	1
Barium	33		2.5	0.73	ug/L		05/16/25 08:25	05/19/25 13:33	1
Boron	39 J		50	13	ug/L		05/16/25 08:25	05/19/25 13:33	1
Cadmium	<0.17		0.50	0.17	ug/L		05/16/25 08:25	05/19/25 13:33	1
Chromium	<1.1		5.0	1.1	ug/L		05/16/25 08:25	05/19/25 13:33	1
Copper	4.1		2.0	0.50	ug/L		05/16/25 08:25	05/19/25 13:33	1
Lead	<0.19		0.50	0.19	ug/L		05/16/25 08:25	05/19/25 13:33	1
Manganese	280		2.5	0.79	ug/L		05/16/25 08:25	05/19/25 13:33	1
Selenium	<0.98		2.5	0.98	ug/L		05/16/25 08:25	05/19/25 13:33	1
Silver	<0.12		0.50	0.12	ug/L		05/16/25 08:25	05/19/25 13:33	1
Zinc	<6.9		20	6.9	ug/L		05/16/25 08:25	05/19/25 13:33	1

Method: SW846 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.076		0.20	0.076	ug/L		05/21/25 10:20	05/22/25 10:27	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	46		0.91	0.46	mg/L		05/16/25 15:29	05/20/25 09:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	4300		170	64	mg/L			05/20/25 11:13	1

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Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF

Job ID: 500-268388-1

Client Sample ID: MW-20

Lab Sample ID: 500-268388-1

Date Collected: 05/14/25 08:30

Matrix: Water

Date Received: 05/15/25 09:40

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	1.7		1.0	0.42	mg/L			05/30/25 02:05	1
Fluoride (EPA 300.0)	<0.43		1.0	0.43	mg/L			05/30/25 02:05	1
Sulfate (EPA 300.0)	14		1.0	0.47	mg/L			05/30/25 02:05	1
Nitrate Nitrite as N (EPA N07-0003)	0.49		0.10	0.041	mg/L			05/27/25 17:14	1
Alkalinity (SM 2320B)	43		5.0	3.7	mg/L			05/20/25 20:06	1
Chemical Oxygen Demand (SM 5220C)	7.2	J	10	6.0	mg/L		05/30/25 11:11	05/30/25 14:40	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Color	Y				NONE			05/14/25 08:30	1
Field Conductivity	119				umhos/cm			05/14/25 08:30	1
Field Odor	N				NONE			05/14/25 08:30	1
Field pH	7.71				SU			05/14/25 08:30	1
Field Temperature	13.3				Degrees C			05/14/25 08:30	1
Field Turbidity	Y				NONE			05/14/25 08:30	1

Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF

Job ID: 500-268388-1

Client Sample ID: VOC-Trip Blank

Lab Sample ID: 500-268388-2

Date Collected: 05/14/25 00:00

Matrix: Water

Date Received: 05/15/25 09:40

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<4.3		10	4.3	ug/L			05/27/25 15:12	1
Benzene	<0.18		0.50	0.18	ug/L			05/27/25 15:12	1
Bromobenzene	<0.60		1.0	0.60	ug/L			05/27/25 15:12	1
Bromochloromethane	<0.50		1.0	0.50	ug/L			05/27/25 15:12	1
Bromodichloromethane	<0.57		1.0	0.57	ug/L			05/27/25 15:12	1
Bromoform	<0.96		1.0	0.96	ug/L			05/27/25 15:12	1
Bromomethane	<1.8		3.0	1.8	ug/L			05/27/25 15:12	1
2-Butanone (MEK)	<2.3		5.0	2.3	ug/L			05/27/25 15:12	1
Carbon disulfide	<1.1		2.0	1.1	ug/L			05/27/25 15:12	1
Carbon tetrachloride	<0.41		1.0	0.41	ug/L			05/27/25 15:12	1
Chlorobenzene	<0.41		1.0	0.41	ug/L			05/27/25 15:12	1
Chloroethane	<0.47		5.0	0.47	ug/L			05/27/25 15:12	1
Chloroform	<0.92		2.0	0.92	ug/L			05/27/25 15:12	1
Chloromethane	<0.79		5.0	0.79	ug/L			05/27/25 15:12	1
2-Chlorotoluene	<0.36		1.0	0.36	ug/L			05/27/25 15:12	1
4-Chlorotoluene	<0.34		1.0	0.34	ug/L			05/27/25 15:12	1
cis-1,2-Dichloroethene	<0.42		1.0	0.42	ug/L			05/27/25 15:12	1
cis-1,3-Dichloropropene	<0.52		1.0	0.52	ug/L			05/27/25 15:12	1
Chlorodibromomethane	<0.83		1.0	0.83	ug/L			05/27/25 15:12	1
1,2-Dibromo-3-Chloropropane	<3.9		5.0	3.9	ug/L			05/27/25 15:12	1
1,2-Dibromoethane (EDB)	<0.56		1.0	0.56	ug/L			05/27/25 15:12	1
Dibromomethane	<0.58		1.0	0.58	ug/L			05/27/25 15:12	1
1,2-Dichlorobenzene	<0.48		1.0	0.48	ug/L			05/27/25 15:12	1
1,3-Dichlorobenzene	<0.41		1.0	0.41	ug/L			05/27/25 15:12	1
1,4-Dichlorobenzene	<0.45		1.0	0.45	ug/L			05/27/25 15:12	1
Dichlorodifluoromethane	<1.8		3.0	1.8	ug/L			05/27/25 15:12	1
1,1-Dichloroethane	<0.36		1.0	0.36	ug/L			05/27/25 15:12	1
1,2-Dichloroethane	<0.58		1.0	0.58	ug/L			05/27/25 15:12	1
1,1-Dichloroethene	<0.48		1.0	0.48	ug/L			05/27/25 15:12	1
1,2-Dichloropropane	<0.37		1.0	0.37	ug/L			05/27/25 15:12	1
1,3-Dichloropropane	<0.56		1.0	0.56	ug/L			05/27/25 15:12	1
2,2-Dichloropropane	<0.48		5.0	0.48	ug/L			05/27/25 15:12	1
1,1-Dichloropropene	<0.33		1.0	0.33	ug/L			05/27/25 15:12	1
Ethylbenzene	<0.20		0.50	0.20	ug/L			05/27/25 15:12	1
Hexachlorobutadiene	<0.54		1.0	0.54	ug/L			05/27/25 15:12	1
Isopropylbenzene	<0.29		1.0	0.29	ug/L			05/27/25 15:12	1
Isopropyl ether	<0.38		1.0	0.38	ug/L			05/27/25 15:12	1
Methylene Chloride	<3.6		5.0	3.6	ug/L			05/27/25 15:12	1
Methyl tert-butyl ether	<0.43		1.0	0.43	ug/L			05/27/25 15:12	1
Naphthalene	<0.44		1.0	0.44	ug/L			05/27/25 15:12	1
n-Butylbenzene	<0.33		1.0	0.33	ug/L			05/27/25 15:12	1
N-Propylbenzene	<0.32		1.0	0.32	ug/L			05/27/25 15:12	1
p-Isopropyltoluene	<0.29		1.0	0.29	ug/L			05/27/25 15:12	1
sec-Butylbenzene	<0.27		1.0	0.27	ug/L			05/27/25 15:12	1
Styrene	<0.31		1.0	0.31	ug/L			05/27/25 15:12	1
tert-Butylbenzene	<0.26		1.0	0.26	ug/L			05/27/25 15:12	1
1,1,1,2-Tetrachloroethane	<0.67		1.0	0.67	ug/L			05/27/25 15:12	1
1,1,2,2-Tetrachloroethane	<0.65		1.0	0.65	ug/L			05/27/25 15:12	1
Tetrachloroethene	<0.39		1.0	0.39	ug/L			05/27/25 15:12	1

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Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF

Job ID: 500-268388-1

Client Sample ID: VOC-Trip Blank

Lab Sample ID: 500-268388-2

Date Collected: 05/14/25 00:00

Matrix: Water

Date Received: 05/15/25 09:40

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrahydrofuran	<3.9		10	3.9	ug/L			05/27/25 15:12	1
Toluene	<0.21		0.50	0.21	ug/L			05/27/25 15:12	1
trans-1,2-Dichloroethene	<0.44		1.0	0.44	ug/L			05/27/25 15:12	1
trans-1,3-Dichloropropene	<0.63		1.0	0.63	ug/L			05/27/25 15:12	1
1,2,3-Trichlorobenzene	<0.35		1.0	0.35	ug/L			05/27/25 15:12	1
1,2,4-Trichlorobenzene	<0.31		1.0	0.31	ug/L			05/27/25 15:12	1
1,1,1-Trichloroethane	<0.45		1.0	0.45	ug/L			05/27/25 15:12	1
1,1,2-Trichloroethane	<0.73		1.0	0.73	ug/L			05/27/25 15:12	1
Trichloroethene	<0.15		0.50	0.15	ug/L			05/27/25 15:12	1
Trichlorofluoromethane	<0.44		1.0	0.44	ug/L			05/27/25 15:12	1
1,2,3-Trichloropropane	<1.5		2.0	1.5	ug/L			05/27/25 15:12	1
1,2,4-Trimethylbenzene	<0.30		1.0	0.30	ug/L			05/27/25 15:12	1
1,3,5-Trimethylbenzene	<0.29		1.0	0.29	ug/L			05/27/25 15:12	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			05/27/25 15:12	1
Xylenes, Total	<0.30		1.0	0.30	ug/L			05/27/25 15:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		72 - 124		05/27/25 15:12	1
Dibromofluoromethane (Surr)	97		75 - 120		05/27/25 15:12	1
1,2-Dichloroethane-d4 (Surr)	94		75 - 126		05/27/25 15:12	1
Toluene-d8 (Surr)	101		75 - 120		05/27/25 15:12	1

Definitions/Glossary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF

Job ID: 500-268388-1

Qualifiers

GC/MS VOA

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

Metals

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

General Chemistry

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Association Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF

Job ID: 500-268388-1

GC/MS VOA

Analysis Batch: 818996

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-268388-1	MW-20	Total/NA	Water	8260D	
500-268388-2	VOC-Trip Blank	Total/NA	Water	8260D	
MB 500-818996/8	Method Blank	Total/NA	Water	8260D	
LCS 500-818996/5	Lab Control Sample	Total/NA	Water	8260D	

Metals

Prep Batch: 817948

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-268388-1	MW-20	Dissolved	Water	3005A	
MB 500-817948/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-817948/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 818068

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-268388-1	MW-20	Dissolved	Water	3005A	

Analysis Batch: 818344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-268388-1	MW-20	Dissolved	Water	6020B	817948
MB 500-817948/1-A	Method Blank	Total Recoverable	Water	6020B	817948
LCS 500-817948/2-A	Lab Control Sample	Total Recoverable	Water	6020B	817948

Analysis Batch: 818372

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-268388-1	MW-20	Dissolved	Water	SM 2340B	818068

Prep Batch: 818548

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-268388-1	MW-20	Dissolved	Water	7470A	
MB 500-818548/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-818548/13-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 818745

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-268388-1	MW-20	Dissolved	Water	7470A	818548
MB 500-818548/12-A	Method Blank	Total/NA	Water	7470A	818548
LCS 500-818548/13-A	Lab Control Sample	Total/NA	Water	7470A	818548

General Chemistry

Analysis Batch: 818346

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-268388-1	MW-20	Total/NA	Water	SM 2540D	
MB 500-818346/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 500-818346/2	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 818472

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-268388-1	MW-20	Dissolved	Water	SM 2320B	
MB 500-818472/53	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-818472/54	Lab Control Sample	Total/NA	Water	SM 2320B	

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QC Association Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF

Job ID: 500-268388-1

General Chemistry

Analysis Batch: 819194

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-268388-1	MW-20	Dissolved	Water	N07-0003	
MB 500-819194/89	Method Blank	Total/NA	Water	N07-0003	
LCS 500-819194/90	Lab Control Sample	Total/NA	Water	N07-0003	

Analysis Batch: 819472

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-268388-1	MW-20	Dissolved	Water	300.0	
MB 500-819472/3	Method Blank	Total/NA	Water	300.0	
LCS 500-819472/4	Lab Control Sample	Total/NA	Water	300.0	

Prep Batch: 819681

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-268388-1	MW-20	Dissolved	Water	SM 5220	
MB 500-819681/1-A	Method Blank	Total/NA	Water	SM 5220	
LCS 500-819681/2-A	Lab Control Sample	Total/NA	Water	SM 5220	
500-268388-1 MS	MW-20	Dissolved	Water	SM 5220	
500-268388-1 MSD	MW-20	Dissolved	Water	SM 5220	

Analysis Batch: 819728

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-268388-1	MW-20	Dissolved	Water	SM 5220C	819681
MB 500-819681/1-A	Method Blank	Total/NA	Water	SM 5220C	819681
LCS 500-819681/2-A	Lab Control Sample	Total/NA	Water	SM 5220C	819681
500-268388-1 MS	MW-20	Dissolved	Water	SM 5220C	819681
500-268388-1 MSD	MW-20	Dissolved	Water	SM 5220C	819681

Field Service / Mobile Lab

Analysis Batch: 819266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-268388-1	MW-20	Total/NA	Water	Field Sampling	

Surrogate Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF

Job ID: 500-268388-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	BFB (72-124)	DBFM (75-120)	DCA (75-126)	TOL (75-120)
500-268388-1	MW-20	96	99	98	99
500-268388-2	VOC-Trip Blank	96	97	94	101
LCS 500-818996/5	Lab Control Sample	96	100	94	100
MB 500-818996/8	Method Blank	95	97	93	101

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

TOL = Toluene-d8 (Surr)

QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF

Job ID: 500-268388-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 500-818996/8

Matrix: Water

Analysis Batch: 818996

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<4.3		10	4.3	ug/L			05/27/25 10:45	1
Benzene	<0.18		0.50	0.18	ug/L			05/27/25 10:45	1
Bromobenzene	<0.60		1.0	0.60	ug/L			05/27/25 10:45	1
Bromochloromethane	<0.50		1.0	0.50	ug/L			05/27/25 10:45	1
Bromodichloromethane	<0.57		1.0	0.57	ug/L			05/27/25 10:45	1
Bromoform	<0.96		1.0	0.96	ug/L			05/27/25 10:45	1
Bromomethane	<1.8		3.0	1.8	ug/L			05/27/25 10:45	1
2-Butanone (MEK)	<2.3		5.0	2.3	ug/L			05/27/25 10:45	1
Carbon disulfide	<1.1		2.0	1.1	ug/L			05/27/25 10:45	1
Carbon tetrachloride	<0.41		1.0	0.41	ug/L			05/27/25 10:45	1
Chlorobenzene	<0.41		1.0	0.41	ug/L			05/27/25 10:45	1
Chloroethane	<0.47		5.0	0.47	ug/L			05/27/25 10:45	1
Chloroform	<0.92		2.0	0.92	ug/L			05/27/25 10:45	1
Chloromethane	<0.79		5.0	0.79	ug/L			05/27/25 10:45	1
2-Chlorotoluene	<0.36		1.0	0.36	ug/L			05/27/25 10:45	1
4-Chlorotoluene	<0.34		1.0	0.34	ug/L			05/27/25 10:45	1
cis-1,2-Dichloroethene	<0.42		1.0	0.42	ug/L			05/27/25 10:45	1
cis-1,3-Dichloropropene	<0.52		1.0	0.52	ug/L			05/27/25 10:45	1
Chlorodibromomethane	<0.83		1.0	0.83	ug/L			05/27/25 10:45	1
1,2-Dibromo-3-Chloropropane	<3.9		5.0	3.9	ug/L			05/27/25 10:45	1
1,2-Dibromoethane (EDB)	<0.56		1.0	0.56	ug/L			05/27/25 10:45	1
Dibromomethane	<0.58		1.0	0.58	ug/L			05/27/25 10:45	1
1,2-Dichlorobenzene	<0.48		1.0	0.48	ug/L			05/27/25 10:45	1
1,3-Dichlorobenzene	<0.41		1.0	0.41	ug/L			05/27/25 10:45	1
1,4-Dichlorobenzene	<0.45		1.0	0.45	ug/L			05/27/25 10:45	1
Dichlorodifluoromethane	<1.8		3.0	1.8	ug/L			05/27/25 10:45	1
1,1-Dichloroethane	<0.36		1.0	0.36	ug/L			05/27/25 10:45	1
1,2-Dichloroethane	<0.58		1.0	0.58	ug/L			05/27/25 10:45	1
1,1-Dichloroethene	<0.48		1.0	0.48	ug/L			05/27/25 10:45	1
1,2-Dichloropropane	<0.37		1.0	0.37	ug/L			05/27/25 10:45	1
1,3-Dichloropropane	<0.56		1.0	0.56	ug/L			05/27/25 10:45	1
2,2-Dichloropropane	<0.48		5.0	0.48	ug/L			05/27/25 10:45	1
1,1-Dichloropropene	<0.33		1.0	0.33	ug/L			05/27/25 10:45	1
Ethylbenzene	<0.20		0.50	0.20	ug/L			05/27/25 10:45	1
Hexachlorobutadiene	<0.54		1.0	0.54	ug/L			05/27/25 10:45	1
Isopropylbenzene	<0.29		1.0	0.29	ug/L			05/27/25 10:45	1
Isopropyl ether	<0.38		1.0	0.38	ug/L			05/27/25 10:45	1
Methylene Chloride	<3.6		5.0	3.6	ug/L			05/27/25 10:45	1
Methyl tert-butyl ether	<0.43		1.0	0.43	ug/L			05/27/25 10:45	1
Naphthalene	<0.44		1.0	0.44	ug/L			05/27/25 10:45	1
n-Butylbenzene	<0.33		1.0	0.33	ug/L			05/27/25 10:45	1
N-Propylbenzene	<0.32		1.0	0.32	ug/L			05/27/25 10:45	1
p-Isopropyltoluene	<0.29		1.0	0.29	ug/L			05/27/25 10:45	1
sec-Butylbenzene	<0.27		1.0	0.27	ug/L			05/27/25 10:45	1
Styrene	<0.31		1.0	0.31	ug/L			05/27/25 10:45	1
tert-Butylbenzene	<0.26		1.0	0.26	ug/L			05/27/25 10:45	1
1,1,1,2-Tetrachloroethane	<0.67		1.0	0.67	ug/L			05/27/25 10:45	1
1,1,2,2-Tetrachloroethane	<0.65		1.0	0.65	ug/L			05/27/25 10:45	1

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF

Job ID: 500-268388-1

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

Lab Sample ID: MB 500-818996/8

Matrix: Water

Analysis Batch: 818996

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<0.39		1.0	0.39	ug/L			05/27/25 10:45	1
Tetrahydrofuran	<3.9		10	3.9	ug/L			05/27/25 10:45	1
Toluene	<0.21		0.50	0.21	ug/L			05/27/25 10:45	1
trans-1,2-Dichloroethene	<0.44		1.0	0.44	ug/L			05/27/25 10:45	1
trans-1,3-Dichloropropene	<0.63		1.0	0.63	ug/L			05/27/25 10:45	1
1,2,3-Trichlorobenzene	<0.35		1.0	0.35	ug/L			05/27/25 10:45	1
1,2,4-Trichlorobenzene	<0.31		1.0	0.31	ug/L			05/27/25 10:45	1
1,1,1-Trichloroethane	<0.45		1.0	0.45	ug/L			05/27/25 10:45	1
1,1,2-Trichloroethane	<0.73		1.0	0.73	ug/L			05/27/25 10:45	1
Trichloroethene	<0.15		0.50	0.15	ug/L			05/27/25 10:45	1
Trichlorofluoromethane	<0.44		1.0	0.44	ug/L			05/27/25 10:45	1
1,2,3-Trichloropropane	<1.5		2.0	1.5	ug/L			05/27/25 10:45	1
1,2,4-Trimethylbenzene	<0.30		1.0	0.30	ug/L			05/27/25 10:45	1
1,3,5-Trimethylbenzene	<0.29		1.0	0.29	ug/L			05/27/25 10:45	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			05/27/25 10:45	1
Xylenes, Total	<0.30		1.0	0.30	ug/L			05/27/25 10:45	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		72 - 124		05/27/25 10:45	1
Dibromofluoromethane (Surr)	97		75 - 120		05/27/25 10:45	1
1,2-Dichloroethane-d4 (Surr)	93		75 - 126		05/27/25 10:45	1
Toluene-d8 (Surr)	101		75 - 120		05/27/25 10:45	1

Lab Sample ID: LCS 500-818996/5

Matrix: Water

Analysis Batch: 818996

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetone	50.0	50.2		ug/L		100	40 - 143
Benzene	50.0	41.7		ug/L		83	70 - 120
Bromobenzene	50.0	46.3		ug/L		93	70 - 122
Bromochloromethane	50.0	46.0		ug/L		92	65 - 122
Bromodichloromethane	50.0	41.1		ug/L		82	69 - 120
Bromoform	50.0	45.5		ug/L		91	56 - 132
Bromomethane	50.0	54.0		ug/L		108	40 - 152
2-Butanone (MEK)	50.0	48.1		ug/L		96	46 - 144
Carbon disulfide	50.0	42.0		ug/L		84	66 - 120
Carbon tetrachloride	50.0	39.4		ug/L		79	59 - 133
Chlorobenzene	50.0	46.7		ug/L		93	70 - 120
Chloroethane	50.0	57.2		ug/L		114	48 - 136
Chloroform	50.0	40.3		ug/L		81	70 - 120
Chloromethane	50.0	47.7		ug/L		95	56 - 152
2-Chlorotoluene	50.0	42.6		ug/L		85	70 - 125
4-Chlorotoluene	50.0	44.0		ug/L		88	68 - 124
cis-1,2-Dichloroethene	50.0	44.7		ug/L		89	70 - 125
cis-1,3-Dichloropropene	50.0	46.4		ug/L		93	64 - 127
Chlorodibromomethane	50.0	45.6		ug/L		91	68 - 125
1,2-Dibromo-3-Chloropropane	50.0	45.7		ug/L		91	56 - 123

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF

Job ID: 500-268388-1

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

Lab Sample ID: LCS 500-818996/5

Matrix: Water

Analysis Batch: 818996

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dibromoethane (EDB)	50.0	51.4		ug/L		103	70 - 125
Dibromomethane	50.0	46.4		ug/L		93	70 - 120
1,2-Dichlorobenzene	50.0	48.6		ug/L		97	70 - 125
1,3-Dichlorobenzene	50.0	48.0		ug/L		96	70 - 125
1,4-Dichlorobenzene	50.0	49.1		ug/L		98	70 - 120
Dichlorodifluoromethane	50.0	40.8		ug/L		82	40 - 159
1,1-Dichloroethane	50.0	46.1		ug/L		92	70 - 125
1,2-Dichloroethane	50.0	41.9		ug/L		84	68 - 127
1,1-Dichloroethene	50.0	45.2		ug/L		90	67 - 122
1,2-Dichloropropane	50.0	49.6		ug/L		99	67 - 130
1,3-Dichloropropane	50.0	47.7		ug/L		95	62 - 136
2,2-Dichloropropane	50.0	39.3		ug/L		79	58 - 139
1,1-Dichloropropene	50.0	41.9		ug/L		84	70 - 121
Ethylbenzene	50.0	44.1		ug/L		88	70 - 123
Hexachlorobutadiene	50.0	36.7		ug/L		73	51 - 150
Isopropylbenzene	50.0	43.2		ug/L		86	70 - 126
Methylene Chloride	50.0	44.7		ug/L		89	69 - 125
Methyl tert-butyl ether	50.0	46.7		ug/L		93	55 - 123
Naphthalene	50.0	69.8		ug/L		140	53 - 144
n-Butylbenzene	50.0	48.4		ug/L		97	68 - 125
N-Propylbenzene	50.0	43.8		ug/L		88	69 - 127
p-Isopropyltoluene	50.0	46.6		ug/L		93	70 - 125
sec-Butylbenzene	50.0	44.5		ug/L		89	70 - 123
Styrene	50.0	46.2		ug/L		92	70 - 120
tert-Butylbenzene	50.0	44.2		ug/L		88	70 - 121
1,1,1,2-Tetrachloroethane	50.0	44.0		ug/L		88	70 - 125
1,1,2,2-Tetrachloroethane	50.0	50.8		ug/L		102	62 - 140
Tetrachloroethene	50.0	42.0		ug/L		84	70 - 128
Tetrahydrofuran	100	100		ug/L		100	59 - 139
Toluene	50.0	42.0		ug/L		84	70 - 125
trans-1,2-Dichloroethene	50.0	45.0		ug/L		90	70 - 125
trans-1,3-Dichloropropene	50.0	46.7		ug/L		93	62 - 128
1,2,3-Trichlorobenzene	50.0	57.1		ug/L		114	51 - 145
1,2,4-Trichlorobenzene	50.0	56.6		ug/L		113	57 - 137
1,1,1-Trichloroethane	50.0	38.8		ug/L		78	70 - 125
1,1,2-Trichloroethane	50.0	48.0		ug/L		96	71 - 130
Trichloroethene	50.0	44.9		ug/L		90	70 - 125
Trichlorofluoromethane	50.0	44.9		ug/L		90	55 - 128
1,2,3-Trichloropropane	50.0	48.6		ug/L		97	50 - 133
1,2,4-Trimethylbenzene	50.0	45.1		ug/L		90	70 - 123
1,3,5-Trimethylbenzene	50.0	43.5		ug/L		87	70 - 123
Vinyl chloride	50.0	53.7		ug/L		107	64 - 126
Xylenes, Total	100	84.8		ug/L		85	70 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		72 - 124
Dibromofluoromethane (Surr)	100		75 - 120
1,2-Dichloroethane-d4 (Surr)	94		75 - 126

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF

Job ID: 500-268388-1

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

Lab Sample ID: LCS 500-818996/5

Matrix: Water

Analysis Batch: 818996

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	100		75 - 120

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 500-817948/1-A

Matrix: Water

Analysis Batch: 818344

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 817948

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	<0.23		1.0	0.23	ug/L		05/16/25 08:25	05/19/25 12:25	1
Barium	<0.73		2.5	0.73	ug/L		05/16/25 08:25	05/19/25 12:25	1
Boron	<13		50	13	ug/L		05/16/25 08:25	05/19/25 12:25	1
Cadmium	<0.17		0.50	0.17	ug/L		05/16/25 08:25	05/19/25 12:25	1
Chromium	<1.1		5.0	1.1	ug/L		05/16/25 08:25	05/19/25 12:25	1
Copper	<0.50		2.0	0.50	ug/L		05/16/25 08:25	05/19/25 12:25	1
Lead	<0.19		0.50	0.19	ug/L		05/16/25 08:25	05/19/25 12:25	1
Manganese	<0.79		2.5	0.79	ug/L		05/16/25 08:25	05/19/25 12:25	1
Selenium	<0.98		2.5	0.98	ug/L		05/16/25 08:25	05/19/25 12:25	1
Silver	<0.12		0.50	0.12	ug/L		05/16/25 08:25	05/19/25 12:25	1
Zinc	<6.9		20	6.9	ug/L		05/16/25 08:25	05/19/25 12:25	1

Lab Sample ID: LCS 500-817948/2-A

Matrix: Water

Analysis Batch: 818344

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 817948

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Arsenic	100	97.2		ug/L		97	80 - 120
Barium	500	511		ug/L		102	80 - 120
Boron	1000	1000		ug/L		100	80 - 120
Cadmium	50.0	50.3		ug/L		101	80 - 120
Chromium	200	200		ug/L		100	80 - 120
Copper	250	250		ug/L		100	80 - 120
Lead	100	100		ug/L		100	80 - 120
Manganese	500	516		ug/L		103	80 - 120
Selenium	100	103		ug/L		103	80 - 120
Silver	50.0	50.9		ug/L		102	80 - 120
Zinc	500	497		ug/L		99	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-818548/12-A

Matrix: Water

Analysis Batch: 818745

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 818548

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	<0.076		0.20	0.076	ug/L		05/21/25 10:20	05/22/25 08:58	1

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF

Job ID: 500-268388-1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 500-818548/13-A
Matrix: Water
Analysis Batch: 818745

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 818548

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	2.00	1.97		ug/L		99	80 - 120

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 500-819472/3
Matrix: Water
Analysis Batch: 819472

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.42		1.0	0.42	mg/L			05/29/25 21:30	1
Fluoride	<0.43		1.0	0.43	mg/L			05/29/25 21:30	1
Sulfate	<0.47		1.0	0.47	mg/L			05/29/25 21:30	1

Lab Sample ID: LCS 500-819472/4
Matrix: Water
Analysis Batch: 819472

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	100	105		mg/L		105	90 - 110
Fluoride	20.0	19.9		mg/L		100	90 - 110
Sulfate	100	107		mg/L		107	90 - 110

Method: N07-0003 - Enzymatic Nitrate-Nitrite Nitrogen

Lab Sample ID: MB 500-819194/89
Matrix: Water
Analysis Batch: 819194

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	<0.041		0.10	0.041	mg/L			05/27/25 17:13	1

Lab Sample ID: LCS 500-819194/90
Matrix: Water
Analysis Batch: 819194

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate Nitrite as N	1.00	1.02		mg/L		102	90 - 110

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-818472/53
Matrix: Water
Analysis Batch: 818472

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	<3.7		5.0	3.7	mg/L			05/20/25 17:31	1

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF

Job ID: 500-268388-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCS 500-818472/54

Matrix: Water

Analysis Batch: 818472

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	100	105		mg/L		105	95 - 121

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

Lab Sample ID: MB 500-818346/1

Matrix: Water

Analysis Batch: 818346

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<1.9		5.0	1.9	mg/L			05/20/25 08:30	1

Lab Sample ID: LCS 500-818346/2

Matrix: Water

Analysis Batch: 818346

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	200	169		mg/L		84	80 - 120

Method: SM 5220C - COD

Lab Sample ID: MB 500-819681/1-A

Matrix: Water

Analysis Batch: 819728

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 819681

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<6.0		10	6.0	mg/L		05/30/25 11:11	05/30/25 14:36	1

Lab Sample ID: LCS 500-819681/2-A

Matrix: Water

Analysis Batch: 819728

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 819681

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	50.0	44.0		mg/L		88	85 - 115

Lab Sample ID: 500-268388-1 MS

Matrix: Water

Analysis Batch: 819728

Client Sample ID: MW-20

Prep Type: Dissolved

Prep Batch: 819681

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	7.2	J	50.0	45.9		mg/L		77	75 - 125

Lab Sample ID: 500-268388-1 MSD

Matrix: Water

Analysis Batch: 819728

Client Sample ID: MW-20

Prep Type: Dissolved

Prep Batch: 819681

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chemical Oxygen Demand	7.2	J	50.0	45.9		mg/L		77	75 - 125	0	20

Eurofins Chicago

Lab Chronicle

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF

Job ID: 500-268388-1

Client Sample ID: MW-20

Date Collected: 05/14/25 08:30

Date Received: 05/15/25 09:40

Lab Sample ID: 500-268388-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	818996	PMF	EET CHI	05/27/25 14:46
Dissolved	Prep	3005A			817948	BDE	EET CHI	05/16/25 08:25 - 05/16/25 14:25 ¹
Dissolved	Analysis	6020B		1	818344	RN	EET CHI	05/19/25 13:33
Dissolved	Prep	7470A			818548	MJG	EET CHI	05/21/25 10:20 - 05/21/25 12:20 ¹
Dissolved	Analysis	7470A		1	818745	MJG	EET CHI	05/22/25 10:27
Dissolved	Prep	3005A			818068	MS	EET CHI	05/16/25 15:29 - 05/16/25 21:29 ¹
Dissolved	Analysis	SM 2340B		1	818372	DAJ	EET CHI	05/20/25 09:11
Dissolved	Analysis	300.0		1	819472	MB	EET CHI	05/30/25 02:05
Dissolved	Analysis	N07-0003		1	819194	TR	EET CHI	05/27/25 17:14
Dissolved	Analysis	SM 2320B		1	818472	AC	EET CHI	05/20/25 20:06
Total/NA	Analysis	SM 2540D		1	818346	NM	EET CHI	05/20/25 11:13 - 05/20/25 11:23 ¹
Dissolved	Prep	SM 5220			819681	LB	EET CHI	05/30/25 11:11 - 05/30/25 13:11 ¹
Dissolved	Analysis	SM 5220C		1	819728	LB	EET CHI	05/30/25 14:40
Total/NA	Analysis	Field Sampling		1	819266	SJF	EET CHI	05/14/25 08:30

Client Sample ID: VOC-Trip Blank

Date Collected: 05/14/25 00:00

Date Received: 05/15/25 09:40

Lab Sample ID: 500-268388-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	818996	PMF	EET CHI	05/27/25 15:12

¹ This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

Laboratory References:

EET CHI = Eurofins Chicago, 18410 Crossing Drive, Suite E, Tinley Park, IL 60487, TEL (708)534-5200

Accreditation/Certification Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF

Job ID: 500-268388-1

Laboratory: Eurofins Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	399172840	08-31-25

1
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eurofins | Environment Testing

Ver: 10/10/2024
5/30/2025

Login Sample Receipt Checklist

Client: Short Elliott Hendrickson, Inc. dba SEH

Job Number: 500-268388-1

Login Number: 268388

List Number: 1

Creator: Scott, Sherri L

List Source: Eurofins Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	ON ICE
Cooler Temperature is recorded.	True	7.8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Sandra Fredrick

From: Veronica Aranda <varanda@sehinc.com>
Sent: Wednesday, May 28, 2025 9:19 AM
To: Sandra Fredrick
Subject: Re: Field data? 500-268388-1 Vernon Co LF

Unverified Sender: The sender of this email has not been verified. Review the content of the message carefully and verify the identity of the sender before acting on this email: replying, opening attachments or clicking links.

Hi Sandie,

See below. Thanks!!

7.71 pH
13.3 C temp
119 conductivity

Yes color
Yes Turbidity
No odor

From: Sandie Fredrick <TALS@reports.et.eurofinsus.com>
Sent: Wednesday, May 28, 2025 9:15:26 AM
To: Veronica Aranda <varanda@sehinc.com>
Subject: Field data? 500-268388-1 Vernon Co LF

Do you have field data V?

Thanks
S

Sandie Fredrick
Project Manager

Eurofins Chicago
Phone: 920-261-1660

E-mail: Sandra.Fredrick@et.eurofinsus.com
www.eurofinsus.com/env





ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Brian L. Kent
Short Elliott Hendrickson, Inc. dba SEH
10 North Bridge Street
Chippewa Falls, Wisconsin 54729-3374

Generated 7/7/2025 8:36:12 AM

JOB DESCRIPTION

Vernon Co LF - 03628

JOB NUMBER

500-270390-1

Eurofins Chicago

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

Results relate only to the items tested and the sample(s) as received by the laboratory. The results, detection limits (LOD) and Quantitation Limits (LOQ) have been adjusted for sample dilutions and/or solids content.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Chicago Project Manager.

Compliance Statement

The LOD and LOQ reported are adjusted by the dilution factor when a dilution factor greater than 1 is needed. Additionally, where results are indicated as being reported on a dry weight basis, the LOD and LOQ are adjusted for moisture content as well.

Definitions of Limits

- LOD = Limit of Detection = MDL as defined by 40 CFR part 136 Appendix B
- LOQ = Limit of Quantitation = $3.33 \times \text{LOD}$ as defined by Wisconsin
- RL = Report Limit = a concentration supported by a standard in the calibration curves

Authorization



Generated
7/7/2025 8:36:12 AM

Authorized for release by
Sandie Fredrick, Senior Project Manager
Sandra.Fredrick@et.eurofinsus.com
(920)261-1660

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Case Narrative

Client: Short Elliott Hendrickson, Inc. dba SEH
Project: Vernon Co LF - 03628

Job ID: 500-270390-1

Job ID: 500-270390-1

Eurofins Chicago

Job Narrative 500-270390-1

Receipt

The samples were received on 6/20/2025 9:10 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 5.7° C.

GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 500-824270 was outside the method criteria for the following analyte(s): Acetone, Bromodichloromethane, Bromoform, Bromomethane, 2-Butanone (MEK), Dichlorodifluoromethane, Isopropyl ether and 1,2,3-Trichlorobenzene. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

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

Metals

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

Field Service / Mobile Lab

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

General Chemistry

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

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Detection Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-270390-1

Client Sample ID: MW-20

Lab Sample ID: 500-270390-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	33		2.5	0.73	ug/L	1		6020B	Dissolved
Boron	16	J	50	13	ug/L	1		6020B	Dissolved
Copper	3.8		2.0	0.50	ug/L	1		6020B	Dissolved
Manganese	220		2.5	0.79	ug/L	1		6020B	Dissolved
Hardness as calcium carbonate	30		0.91	0.46	mg/L	1		SM 2340B	Dissolved
Chloride	3.1		1.0	0.42	mg/L	1		300.0	Dissolved
Sulfate	12		1.0	0.47	mg/L	1		300.0	Dissolved
Nitrate Nitrite as N	0.85		0.10	0.041	mg/L	1		N07-0003	Dissolved
Alkalinity	21		5.0	3.7	mg/L	1		SM 2320B	Dissolved
Depth to Water (ft from MP)	67.95				ft	1		Field Sampling	Total/NA
Field Color	Y				No Unit	1		Field Sampling	Total/NA
Field Conductivity	195				umhos/cm	1		Field Sampling	Total/NA
Field Odor	N				No Unit	1		Field Sampling	Total/NA
Field pH	6.73				SU	1		Field Sampling	Total/NA
Field Temperature	18.1				Degrees C	1		Field Sampling	Total/NA
Field Turbidity	Y				No Unit	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank-VOC

Lab Sample ID: 500-270390-2

No Detections.

This Detection Summary does not include radiochemical test results.

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Method Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-270390-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CHI
6020B	Metals (ICP/MS)	SW846	EET CHI
7470A	Mercury (CVAA)	SW846	EET CHI
SM 2340B	Total Hardness (as CaCO ₃) by calculation	SM	EET CHI
300.0	Anions, Ion Chromatography	EPA	EET CHI
N07-0003	Enzymatic Nitrate-Nitrite Nitrogen	EPA	EET CHI
SM 2320B	Alkalinity	SM	EET CHI
Field Sampling	Field Sampling	EPA	EET CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CHI
5030B	Purge and Trap	SW846	EET CHI
7470A	Preparation, Mercury	SW846	EET CHI

Protocol References:

EPA = US Environmental Protection Agency

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

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CHI = Eurofins Chicago, 18410 Crossing Drive, Suite E, Tinley Park, IL 60487, TEL (708)534-5200

Sample Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-270390-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-270390-1	MW-20	Water	06/19/25 11:00	06/20/25 09:10
500-270390-2	Trip Blank-VOC	Water	06/19/25 00:00	06/20/25 09:10

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-270390-1

Client Sample ID: MW-20

Lab Sample ID: 500-270390-1

Date Collected: 06/19/25 11:00

Matrix: Water

Date Received: 06/20/25 09:10

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<4.3		10	4.3	ug/L			07/03/25 06:44	1
Benzene	<0.18		0.50	0.18	ug/L			07/03/25 06:44	1
Bromobenzene	<0.60		1.0	0.60	ug/L			07/03/25 06:44	1
Bromochloromethane	<0.50		1.0	0.50	ug/L			07/03/25 06:44	1
Bromodichloromethane	<0.57		1.0	0.57	ug/L			07/03/25 06:44	1
Bromoform	<0.96		1.0	0.96	ug/L			07/03/25 06:44	1
Bromomethane	<1.8		3.0	1.8	ug/L			07/03/25 06:44	1
2-Butanone (MEK)	<2.3		5.0	2.3	ug/L			07/03/25 06:44	1
Carbon disulfide	<1.1		2.0	1.1	ug/L			07/03/25 06:44	1
Carbon tetrachloride	<0.41		1.0	0.41	ug/L			07/03/25 06:44	1
Chlorobenzene	<0.41		1.0	0.41	ug/L			07/03/25 06:44	1
Chloroethane	<0.47		5.0	0.47	ug/L			07/03/25 06:44	1
Chloroform	<0.92		2.0	0.92	ug/L			07/03/25 06:44	1
Chloromethane	<0.79		5.0	0.79	ug/L			07/03/25 06:44	1
2-Chlorotoluene	<0.36		1.0	0.36	ug/L			07/03/25 06:44	1
4-Chlorotoluene	<0.34		1.0	0.34	ug/L			07/03/25 06:44	1
cis-1,2-Dichloroethene	<0.42		1.0	0.42	ug/L			07/03/25 06:44	1
cis-1,3-Dichloropropene	<0.52		1.0	0.52	ug/L			07/03/25 06:44	1
Chlorodibromomethane	<0.83		1.0	0.83	ug/L			07/03/25 06:44	1
1,2-Dibromo-3-Chloropropane	<3.9		5.0	3.9	ug/L			07/03/25 06:44	1
1,2-Dibromoethane (EDB)	<0.56		1.0	0.56	ug/L			07/03/25 06:44	1
Dibromomethane	<0.58		1.0	0.58	ug/L			07/03/25 06:44	1
1,2-Dichlorobenzene	<0.48		1.0	0.48	ug/L			07/03/25 06:44	1
1,3-Dichlorobenzene	<0.41		1.0	0.41	ug/L			07/03/25 06:44	1
1,4-Dichlorobenzene	<0.45		1.0	0.45	ug/L			07/03/25 06:44	1
Dichlorodifluoromethane	<1.8		3.0	1.8	ug/L			07/03/25 06:44	1
1,1-Dichloroethane	<0.36		1.0	0.36	ug/L			07/03/25 06:44	1
1,2-Dichloroethane	<0.58		1.0	0.58	ug/L			07/03/25 06:44	1
1,1-Dichloroethene	<0.48		1.0	0.48	ug/L			07/03/25 06:44	1
1,2-Dichloropropane	<0.37		1.0	0.37	ug/L			07/03/25 06:44	1
1,3-Dichloropropane	<0.56		1.0	0.56	ug/L			07/03/25 06:44	1
2,2-Dichloropropane	<0.48		5.0	0.48	ug/L			07/03/25 06:44	1
1,1-Dichloropropene	<0.33		1.0	0.33	ug/L			07/03/25 06:44	1
Ethylbenzene	<0.20		0.50	0.20	ug/L			07/03/25 06:44	1
Hexachlorobutadiene	<0.54		1.0	0.54	ug/L			07/03/25 06:44	1
Isopropylbenzene	<0.29		1.0	0.29	ug/L			07/03/25 06:44	1
Isopropyl ether	<0.38		1.0	0.38	ug/L			07/03/25 06:44	1
Methylene Chloride	<3.6		5.0	3.6	ug/L			07/03/25 06:44	1
Methyl tert-butyl ether	<0.43		1.0	0.43	ug/L			07/03/25 06:44	1
Naphthalene	<0.44		1.0	0.44	ug/L			07/03/25 06:44	1
n-Butylbenzene	<0.33		1.0	0.33	ug/L			07/03/25 06:44	1
N-Propylbenzene	<0.32		1.0	0.32	ug/L			07/03/25 06:44	1
p-Isopropyltoluene	<0.29		1.0	0.29	ug/L			07/03/25 06:44	1
sec-Butylbenzene	<0.27		1.0	0.27	ug/L			07/03/25 06:44	1
Styrene	<0.31		1.0	0.31	ug/L			07/03/25 06:44	1
tert-Butylbenzene	<0.26		1.0	0.26	ug/L			07/03/25 06:44	1
1,1,1,2-Tetrachloroethane	<0.67		1.0	0.67	ug/L			07/03/25 06:44	1
1,1,2,2-Tetrachloroethane	<0.65		1.0	0.65	ug/L			07/03/25 06:44	1
Tetrachloroethene	<0.39		1.0	0.39	ug/L			07/03/25 06:44	1

Eurofins Chicago

Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-270390-1

Client Sample ID: MW-20

Lab Sample ID: 500-270390-1

Date Collected: 06/19/25 11:00

Matrix: Water

Date Received: 06/20/25 09:10

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrahydrofuran	<3.9		10	3.9	ug/L			07/03/25 06:44	1
Toluene	<0.21		0.50	0.21	ug/L			07/03/25 06:44	1
trans-1,2-Dichloroethene	<0.44		1.0	0.44	ug/L			07/03/25 06:44	1
trans-1,3-Dichloropropene	<0.63		1.0	0.63	ug/L			07/03/25 06:44	1
1,2,3-Trichlorobenzene	<0.35		1.0	0.35	ug/L			07/03/25 06:44	1
1,2,4-Trichlorobenzene	<0.31		1.0	0.31	ug/L			07/03/25 06:44	1
1,1,1-Trichloroethane	<0.45		1.0	0.45	ug/L			07/03/25 06:44	1
1,1,2-Trichloroethane	<0.73		1.0	0.73	ug/L			07/03/25 06:44	1
Trichloroethene	<0.15		0.50	0.15	ug/L			07/03/25 06:44	1
Trichlorofluoromethane	<0.44		1.0	0.44	ug/L			07/03/25 06:44	1
1,2,3-Trichloropropane	<1.5		2.0	1.5	ug/L			07/03/25 06:44	1
1,2,4-Trimethylbenzene	<0.30		1.0	0.30	ug/L			07/03/25 06:44	1
1,3,5-Trimethylbenzene	<0.29		1.0	0.29	ug/L			07/03/25 06:44	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			07/03/25 06:44	1
Xylenes, Total	<0.30		1.0	0.30	ug/L			07/03/25 06:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	112		72 - 124		07/03/25 06:44	1
Dibromofluoromethane (Surr)	95		75 - 120		07/03/25 06:44	1
1,2-Dichloroethane-d4 (Surr)	110		75 - 126		07/03/25 06:44	1
Toluene-d8 (Surr)	103		75 - 120		07/03/25 06:44	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		06/25/25 13:42	06/27/25 14:47	1
Barium	33		2.5	0.73	ug/L		06/25/25 13:42	06/27/25 14:47	1
Boron	16 J		50	13	ug/L		06/25/25 13:42	06/27/25 14:47	1
Cadmium	<0.17		0.50	0.17	ug/L		06/25/25 13:42	06/27/25 14:47	1
Chromium	<1.1		5.0	1.1	ug/L		06/25/25 13:42	06/27/25 14:47	1
Copper	3.8		2.0	0.50	ug/L		06/25/25 13:42	06/27/25 14:47	1
Lead	<0.19		0.50	0.19	ug/L		06/25/25 13:42	06/27/25 14:47	1
Manganese	220		2.5	0.79	ug/L		06/25/25 13:42	06/27/25 14:47	1
Selenium	<0.98		2.5	0.98	ug/L		06/25/25 13:42	06/27/25 14:47	1
Silver	<0.12		0.50	0.12	ug/L		06/25/25 13:42	06/27/25 14:47	1
Zinc	<6.9		20	6.9	ug/L		06/25/25 13:42	06/27/25 14:47	1

Method: SW846 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.076		0.20	0.076	ug/L		06/26/25 11:10	06/27/25 09:14	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	30		0.91	0.46	mg/L		06/25/25 13:42	06/30/25 09:04	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	3.1		1.0	0.42	mg/L			07/03/25 15:06	1
Sulfate (EPA 300.0)	12		1.0	0.47	mg/L			07/03/25 15:06	1
Fluoride (EPA 300.0)	<0.43		1.0	0.43	mg/L			07/03/25 15:06	1
Nitrate Nitrite as N (EPA N07-0003)	0.85		0.10	0.041	mg/L			06/23/25 15:02	1
Alkalinity (SM 2320B)	21		5.0	3.7	mg/L			06/24/25 12:52	1

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Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-270390-1

Client Sample ID: MW-20

Lab Sample ID: 500-270390-1

Date Collected: 06/19/25 11:00

Matrix: Water

Date Received: 06/20/25 09:10

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Depth to Water (ft from MP)	67.95				ft			06/19/25 11:00	1
Field Color	Y				No Unit			06/19/25 11:00	1
Field Conductivity	195				umhos/cm			06/19/25 11:00	1
Field Odor	N				No Unit			06/19/25 11:00	1
Field pH	6.73				SU			06/19/25 11:00	1
Field Temperature	18.1				Degrees C			06/19/25 11:00	1
Field Turbidity	Y				No Unit			06/19/25 11:00	1

Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-270390-1

Client Sample ID: Trip Blank-VOC

Lab Sample ID: 500-270390-2

Date Collected: 06/19/25 00:00

Matrix: Water

Date Received: 06/20/25 09:10

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<4.3		10	4.3	ug/L			07/03/25 07:09	1
Benzene	<0.18		0.50	0.18	ug/L			07/03/25 07:09	1
Bromobenzene	<0.60		1.0	0.60	ug/L			07/03/25 07:09	1
Bromochloromethane	<0.50		1.0	0.50	ug/L			07/03/25 07:09	1
Bromodichloromethane	<0.57		1.0	0.57	ug/L			07/03/25 07:09	1
Bromoform	<0.96		1.0	0.96	ug/L			07/03/25 07:09	1
Bromomethane	<1.8		3.0	1.8	ug/L			07/03/25 07:09	1
2-Butanone (MEK)	<2.3		5.0	2.3	ug/L			07/03/25 07:09	1
Carbon disulfide	<1.1		2.0	1.1	ug/L			07/03/25 07:09	1
Carbon tetrachloride	<0.41		1.0	0.41	ug/L			07/03/25 07:09	1
Chlorobenzene	<0.41		1.0	0.41	ug/L			07/03/25 07:09	1
Chloroethane	<0.47		5.0	0.47	ug/L			07/03/25 07:09	1
Chloroform	<0.92		2.0	0.92	ug/L			07/03/25 07:09	1
Chloromethane	<0.79		5.0	0.79	ug/L			07/03/25 07:09	1
2-Chlorotoluene	<0.36		1.0	0.36	ug/L			07/03/25 07:09	1
4-Chlorotoluene	<0.34		1.0	0.34	ug/L			07/03/25 07:09	1
cis-1,2-Dichloroethene	<0.42		1.0	0.42	ug/L			07/03/25 07:09	1
cis-1,3-Dichloropropene	<0.52		1.0	0.52	ug/L			07/03/25 07:09	1
Chlorodibromomethane	<0.83		1.0	0.83	ug/L			07/03/25 07:09	1
1,2-Dibromo-3-Chloropropane	<3.9		5.0	3.9	ug/L			07/03/25 07:09	1
1,2-Dibromoethane (EDB)	<0.56		1.0	0.56	ug/L			07/03/25 07:09	1
Dibromomethane	<0.58		1.0	0.58	ug/L			07/03/25 07:09	1
1,2-Dichlorobenzene	<0.48		1.0	0.48	ug/L			07/03/25 07:09	1
1,3-Dichlorobenzene	<0.41		1.0	0.41	ug/L			07/03/25 07:09	1
1,4-Dichlorobenzene	<0.45		1.0	0.45	ug/L			07/03/25 07:09	1
Dichlorodifluoromethane	<1.8		3.0	1.8	ug/L			07/03/25 07:09	1
1,1-Dichloroethane	<0.36		1.0	0.36	ug/L			07/03/25 07:09	1
1,2-Dichloroethane	<0.58		1.0	0.58	ug/L			07/03/25 07:09	1
1,1-Dichloroethene	<0.48		1.0	0.48	ug/L			07/03/25 07:09	1
1,2-Dichloropropane	<0.37		1.0	0.37	ug/L			07/03/25 07:09	1
1,3-Dichloropropane	<0.56		1.0	0.56	ug/L			07/03/25 07:09	1
2,2-Dichloropropane	<0.48		5.0	0.48	ug/L			07/03/25 07:09	1
1,1-Dichloropropene	<0.33		1.0	0.33	ug/L			07/03/25 07:09	1
Ethylbenzene	<0.20		0.50	0.20	ug/L			07/03/25 07:09	1
Hexachlorobutadiene	<0.54		1.0	0.54	ug/L			07/03/25 07:09	1
Isopropylbenzene	<0.29		1.0	0.29	ug/L			07/03/25 07:09	1
Isopropyl ether	<0.38		1.0	0.38	ug/L			07/03/25 07:09	1
Methylene Chloride	<3.6		5.0	3.6	ug/L			07/03/25 07:09	1
Methyl tert-butyl ether	<0.43		1.0	0.43	ug/L			07/03/25 07:09	1
Naphthalene	<0.44		1.0	0.44	ug/L			07/03/25 07:09	1
n-Butylbenzene	<0.33		1.0	0.33	ug/L			07/03/25 07:09	1
N-Propylbenzene	<0.32		1.0	0.32	ug/L			07/03/25 07:09	1
p-Isopropyltoluene	<0.29		1.0	0.29	ug/L			07/03/25 07:09	1
sec-Butylbenzene	<0.27		1.0	0.27	ug/L			07/03/25 07:09	1
Styrene	<0.31		1.0	0.31	ug/L			07/03/25 07:09	1
tert-Butylbenzene	<0.26		1.0	0.26	ug/L			07/03/25 07:09	1
1,1,1,2-Tetrachloroethane	<0.67		1.0	0.67	ug/L			07/03/25 07:09	1
1,1,2,2-Tetrachloroethane	<0.65		1.0	0.65	ug/L			07/03/25 07:09	1
Tetrachloroethene	<0.39		1.0	0.39	ug/L			07/03/25 07:09	1

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Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-270390-1

Client Sample ID: Trip Blank-VOC

Lab Sample ID: 500-270390-2

Date Collected: 06/19/25 00:00

Matrix: Water

Date Received: 06/20/25 09:10

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrahydrofuran	<3.9		10	3.9	ug/L			07/03/25 07:09	1
Toluene	<0.21		0.50	0.21	ug/L			07/03/25 07:09	1
trans-1,2-Dichloroethene	<0.44		1.0	0.44	ug/L			07/03/25 07:09	1
trans-1,3-Dichloropropene	<0.63		1.0	0.63	ug/L			07/03/25 07:09	1
1,2,3-Trichlorobenzene	<0.35		1.0	0.35	ug/L			07/03/25 07:09	1
1,2,4-Trichlorobenzene	<0.31		1.0	0.31	ug/L			07/03/25 07:09	1
1,1,1-Trichloroethane	<0.45		1.0	0.45	ug/L			07/03/25 07:09	1
1,1,2-Trichloroethane	<0.73		1.0	0.73	ug/L			07/03/25 07:09	1
Trichloroethene	<0.15		0.50	0.15	ug/L			07/03/25 07:09	1
Trichlorofluoromethane	<0.44		1.0	0.44	ug/L			07/03/25 07:09	1
1,2,3-Trichloropropane	<1.5		2.0	1.5	ug/L			07/03/25 07:09	1
1,2,4-Trimethylbenzene	<0.30		1.0	0.30	ug/L			07/03/25 07:09	1
1,3,5-Trimethylbenzene	<0.29		1.0	0.29	ug/L			07/03/25 07:09	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			07/03/25 07:09	1
Xylenes, Total	<0.30		1.0	0.30	ug/L			07/03/25 07:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	111		72 - 124		07/03/25 07:09	1
Dibromofluoromethane (Surr)	95		75 - 120		07/03/25 07:09	1
1,2-Dichloroethane-d4 (Surr)	110		75 - 126		07/03/25 07:09	1
Toluene-d8 (Surr)	102		75 - 120		07/03/25 07:09	1

Definitions/Glossary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-270390-1

Qualifiers

GC/MS VOA

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

Metals

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Association Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-270390-1

GC/MS VOA

Analysis Batch: 824270

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-270390-1	MW-20	Total/NA	Water	8260D	
500-270390-2	Trip Blank-VOC	Total/NA	Water	8260D	
MB 500-824270/8	Method Blank	Total/NA	Water	8260D	
LCS 500-824270/4	Lab Control Sample	Total/NA	Water	8260D	
LCSD 500-824270/5	Lab Control Sample Dup	Total/NA	Water	8260D	

Metals

Prep Batch: 823324

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-270390-1	MW-20	Dissolved	Water	3005A	
MB 500-823324/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-823324/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 823484

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-270390-1	MW-20	Dissolved	Water	7470A	
MB 500-823484/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-823484/13-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 823684

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-270390-1	MW-20	Dissolved	Water	7470A	823484
MB 500-823484/12-A	Method Blank	Total/NA	Water	7470A	823484
LCS 500-823484/13-A	Lab Control Sample	Total/NA	Water	7470A	823484

Analysis Batch: 823853

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-270390-1	MW-20	Dissolved	Water	6020B	823324
MB 500-823324/1-A	Method Blank	Total Recoverable	Water	6020B	823324
LCS 500-823324/2-A	Lab Control Sample	Total Recoverable	Water	6020B	823324

Analysis Batch: 823861

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-270390-1	MW-20	Dissolved	Water	SM 2340B	823324

General Chemistry

Analysis Batch: 822982

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-270390-1	MW-20	Dissolved	Water	N07-0003	
MB 500-822982/58	Method Blank	Total/NA	Water	N07-0003	
LCS 500-822982/59	Lab Control Sample	Total/NA	Water	N07-0003	
500-270390-1 MS	MW-20	Dissolved	Water	N07-0003	
500-270390-1 MSD	MW-20	Dissolved	Water	N07-0003	

Analysis Batch: 823147

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-270390-1	MW-20	Dissolved	Water	SM 2320B	
MB 500-823147/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-823147/4	Lab Control Sample	Total/NA	Water	SM 2320B	

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QC Association Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-270390-1

General Chemistry

Analysis Batch: 824238

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-270390-1	MW-20	Dissolved	Water	300.0	
MB 500-824238/3	Method Blank	Total/NA	Water	300.0	
LCS 500-824238/4	Lab Control Sample	Total/NA	Water	300.0	

Field Service / Mobile Lab

Analysis Batch: 823190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-270390-1	MW-20	Total/NA	Water	Field Sampling	

Surrogate Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-270390-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	BFB	DBFM	DCA	TOL
		(72-124)	(75-120)	(75-126)	(75-120)
500-270390-1	MW-20	112	95	110	103
500-270390-2	Trip Blank-VOC	111	95	110	102
LCS 500-824270/4	Lab Control Sample	109	95	102	102
LCSD 500-824270/5	Lab Control Sample Dup	110	94	103	100
MB 500-824270/8	Method Blank	111	95	109	102

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

TOL = Toluene-d8 (Surr)

QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-270390-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 500-824270/8

Matrix: Water

Analysis Batch: 824270

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<4.3		10	4.3	ug/L			07/02/25 22:44	1
Benzene	<0.18		0.50	0.18	ug/L			07/02/25 22:44	1
Bromobenzene	<0.60		1.0	0.60	ug/L			07/02/25 22:44	1
Bromochloromethane	<0.50		1.0	0.50	ug/L			07/02/25 22:44	1
Bromodichloromethane	<0.57		1.0	0.57	ug/L			07/02/25 22:44	1
Bromoform	<0.96		1.0	0.96	ug/L			07/02/25 22:44	1
Bromomethane	<1.8		3.0	1.8	ug/L			07/02/25 22:44	1
2-Butanone (MEK)	<2.3		5.0	2.3	ug/L			07/02/25 22:44	1
Carbon disulfide	<1.1		2.0	1.1	ug/L			07/02/25 22:44	1
Carbon tetrachloride	<0.41		1.0	0.41	ug/L			07/02/25 22:44	1
Chlorobenzene	<0.41		1.0	0.41	ug/L			07/02/25 22:44	1
Chloroethane	<0.47		5.0	0.47	ug/L			07/02/25 22:44	1
Chloroform	<0.92		2.0	0.92	ug/L			07/02/25 22:44	1
Chloromethane	<0.79		5.0	0.79	ug/L			07/02/25 22:44	1
2-Chlorotoluene	<0.36		1.0	0.36	ug/L			07/02/25 22:44	1
4-Chlorotoluene	<0.34		1.0	0.34	ug/L			07/02/25 22:44	1
cis-1,2-Dichloroethene	<0.42		1.0	0.42	ug/L			07/02/25 22:44	1
cis-1,3-Dichloropropene	<0.52		1.0	0.52	ug/L			07/02/25 22:44	1
Chlorodibromomethane	<0.83		1.0	0.83	ug/L			07/02/25 22:44	1
1,2-Dibromo-3-Chloropropane	<3.9		5.0	3.9	ug/L			07/02/25 22:44	1
1,2-Dibromoethane (EDB)	<0.56		1.0	0.56	ug/L			07/02/25 22:44	1
Dibromomethane	<0.58		1.0	0.58	ug/L			07/02/25 22:44	1
1,2-Dichlorobenzene	<0.48		1.0	0.48	ug/L			07/02/25 22:44	1
1,3-Dichlorobenzene	<0.41		1.0	0.41	ug/L			07/02/25 22:44	1
1,4-Dichlorobenzene	<0.45		1.0	0.45	ug/L			07/02/25 22:44	1
Dichlorodifluoromethane	<1.8		3.0	1.8	ug/L			07/02/25 22:44	1
1,1-Dichloroethane	<0.36		1.0	0.36	ug/L			07/02/25 22:44	1
1,2-Dichloroethane	<0.58		1.0	0.58	ug/L			07/02/25 22:44	1
1,1-Dichloroethene	<0.48		1.0	0.48	ug/L			07/02/25 22:44	1
1,2-Dichloropropane	<0.37		1.0	0.37	ug/L			07/02/25 22:44	1
1,3-Dichloropropane	<0.56		1.0	0.56	ug/L			07/02/25 22:44	1
2,2-Dichloropropane	<0.48		5.0	0.48	ug/L			07/02/25 22:44	1
1,1-Dichloropropene	<0.33		1.0	0.33	ug/L			07/02/25 22:44	1
Ethylbenzene	<0.20		0.50	0.20	ug/L			07/02/25 22:44	1
Hexachlorobutadiene	0.589 J		1.0	0.54	ug/L			07/02/25 22:44	1
Isopropylbenzene	<0.29		1.0	0.29	ug/L			07/02/25 22:44	1
Isopropyl ether	<0.38		1.0	0.38	ug/L			07/02/25 22:44	1
Methylene Chloride	<3.6		5.0	3.6	ug/L			07/02/25 22:44	1
Methyl tert-butyl ether	<0.43		1.0	0.43	ug/L			07/02/25 22:44	1
Naphthalene	<0.44		1.0	0.44	ug/L			07/02/25 22:44	1
n-Butylbenzene	<0.33		1.0	0.33	ug/L			07/02/25 22:44	1
N-Propylbenzene	<0.32		1.0	0.32	ug/L			07/02/25 22:44	1
p-Isopropyltoluene	<0.29		1.0	0.29	ug/L			07/02/25 22:44	1
sec-Butylbenzene	<0.27		1.0	0.27	ug/L			07/02/25 22:44	1
Styrene	<0.31		1.0	0.31	ug/L			07/02/25 22:44	1
tert-Butylbenzene	<0.26		1.0	0.26	ug/L			07/02/25 22:44	1
1,1,1,2-Tetrachloroethane	<0.67		1.0	0.67	ug/L			07/02/25 22:44	1
1,1,2,2-Tetrachloroethane	<0.65		1.0	0.65	ug/L			07/02/25 22:44	1

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-270390-1

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

Lab Sample ID: MB 500-824270/8

Matrix: Water

Analysis Batch: 824270

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<0.39		1.0	0.39	ug/L			07/02/25 22:44	1
Tetrahydrofuran	<3.9		10	3.9	ug/L			07/02/25 22:44	1
Toluene	<0.21		0.50	0.21	ug/L			07/02/25 22:44	1
trans-1,2-Dichloroethene	<0.44		1.0	0.44	ug/L			07/02/25 22:44	1
trans-1,3-Dichloropropene	<0.63		1.0	0.63	ug/L			07/02/25 22:44	1
1,2,3-Trichlorobenzene	<0.35		1.0	0.35	ug/L			07/02/25 22:44	1
1,2,4-Trichlorobenzene	<0.31		1.0	0.31	ug/L			07/02/25 22:44	1
1,1,1-Trichloroethane	<0.45		1.0	0.45	ug/L			07/02/25 22:44	1
1,1,2-Trichloroethane	<0.73		1.0	0.73	ug/L			07/02/25 22:44	1
Trichloroethene	<0.15		0.50	0.15	ug/L			07/02/25 22:44	1
Trichlorofluoromethane	<0.44		1.0	0.44	ug/L			07/02/25 22:44	1
1,2,3-Trichloropropane	<1.5		2.0	1.5	ug/L			07/02/25 22:44	1
1,2,4-Trimethylbenzene	<0.30		1.0	0.30	ug/L			07/02/25 22:44	1
1,3,5-Trimethylbenzene	<0.29		1.0	0.29	ug/L			07/02/25 22:44	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			07/02/25 22:44	1
Xylenes, Total	<0.30		1.0	0.30	ug/L			07/02/25 22:44	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	111		72 - 124		07/02/25 22:44	1
Dibromofluoromethane (Surr)	95		75 - 120		07/02/25 22:44	1
1,2-Dichloroethane-d4 (Surr)	109		75 - 126		07/02/25 22:44	1
Toluene-d8 (Surr)	102		75 - 120		07/02/25 22:44	1

Lab Sample ID: LCS 500-824270/4

Matrix: Water

Analysis Batch: 824270

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetone	50.0	30.3		ug/L		61	40 - 143
Benzene	50.0	48.8		ug/L		98	70 - 120
Bromobenzene	50.0	51.0		ug/L		102	70 - 122
Bromochloromethane	50.0	49.4		ug/L		99	65 - 122
Bromodichloromethane	50.0	46.9		ug/L		94	69 - 120
Bromoform	50.0	40.4		ug/L		81	56 - 132
Bromomethane	50.0	36.6		ug/L		73	40 - 152
2-Butanone (MEK)	50.0	31.0		ug/L		62	46 - 144
Carbon disulfide	50.0	47.0		ug/L		94	66 - 120
Carbon tetrachloride	50.0	46.7		ug/L		93	59 - 133
Chlorobenzene	50.0	49.9		ug/L		100	70 - 120
Chloroethane	50.0	47.4		ug/L		95	48 - 136
Chloroform	50.0	49.2		ug/L		98	70 - 120
Chloromethane	50.0	55.0		ug/L		110	56 - 152
2-Chlorotoluene	50.0	53.6		ug/L		107	70 - 125
4-Chlorotoluene	50.0	53.1		ug/L		106	68 - 124
cis-1,2-Dichloroethene	50.0	47.9		ug/L		96	70 - 125
cis-1,3-Dichloropropene	50.0	51.4		ug/L		103	64 - 127
Chlorodibromomethane	50.0	46.8		ug/L		94	68 - 125
1,2-Dibromo-3-Chloropropane	50.0	44.3		ug/L		89	56 - 123

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-270390-1

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

Lab Sample ID: LCS 500-824270/4

Matrix: Water

Analysis Batch: 824270

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dibromoethane (EDB)	50.0	46.8		ug/L		94	70 - 125
Dibromomethane	50.0	46.2		ug/L		92	70 - 120
1,2-Dichlorobenzene	50.0	50.4		ug/L		101	70 - 125
1,3-Dichlorobenzene	50.0	51.5		ug/L		103	70 - 125
1,4-Dichlorobenzene	50.0	50.3		ug/L		101	70 - 120
Dichlorodifluoromethane	50.0	35.1		ug/L		70	40 - 159
1,1-Dichloroethane	50.0	53.0		ug/L		106	70 - 125
1,2-Dichloroethane	50.0	50.1		ug/L		100	68 - 127
1,1-Dichloroethene	50.0	48.2		ug/L		96	67 - 122
1,2-Dichloropropane	50.0	54.0		ug/L		108	67 - 130
1,3-Dichloropropane	50.0	50.6		ug/L		101	62 - 136
2,2-Dichloropropane	50.0	43.0		ug/L		86	58 - 139
1,1-Dichloropropene	50.0	51.4		ug/L		103	70 - 121
Ethylbenzene	50.0	49.9		ug/L		100	70 - 123
Hexachlorobutadiene	50.0	58.1		ug/L		116	51 - 150
Isopropylbenzene	50.0	54.2		ug/L		108	70 - 126
Methylene Chloride	50.0	43.6		ug/L		87	69 - 125
Methyl tert-butyl ether	50.0	44.6		ug/L		89	55 - 123
Naphthalene	50.0	44.5		ug/L		89	53 - 144
n-Butylbenzene	50.0	50.5		ug/L		101	68 - 125
N-Propylbenzene	50.0	53.5		ug/L		107	69 - 127
p-Isopropyltoluene	50.0	52.1		ug/L		104	70 - 125
sec-Butylbenzene	50.0	51.5		ug/L		103	70 - 123
Styrene	50.0	49.5		ug/L		99	70 - 120
tert-Butylbenzene	50.0	51.6		ug/L		103	70 - 121
1,1,1,2-Tetrachloroethane	50.0	48.1		ug/L		96	70 - 125
1,1,2,2-Tetrachloroethane	50.0	45.7		ug/L		91	62 - 140
Tetrachloroethene	50.0	49.2		ug/L		98	70 - 128
Tetrahydrofuran	100	94.1		ug/L		94	59 - 139
Toluene	50.0	49.4		ug/L		99	70 - 125
trans-1,2-Dichloroethene	50.0	47.9		ug/L		96	70 - 125
trans-1,3-Dichloropropene	50.0	49.6		ug/L		99	62 - 128
1,2,3-Trichlorobenzene	50.0	50.2		ug/L		100	51 - 145
1,2,4-Trichlorobenzene	50.0	49.7		ug/L		99	57 - 137
1,1,1-Trichloroethane	50.0	48.4		ug/L		97	70 - 125
1,1,2-Trichloroethane	50.0	49.9		ug/L		100	71 - 130
Trichloroethene	50.0	51.0		ug/L		102	70 - 125
Trichlorofluoromethane	50.0	43.0		ug/L		86	55 - 128
1,2,3-Trichloropropane	50.0	47.7		ug/L		95	50 - 133
1,2,4-Trimethylbenzene	50.0	51.6		ug/L		103	70 - 123
1,3,5-Trimethylbenzene	50.0	52.9		ug/L		106	70 - 123
Vinyl chloride	50.0	49.1		ug/L		98	64 - 126
Xylenes, Total	100	95.5		ug/L		96	70 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		72 - 124
Dibromofluoromethane (Surr)	95		75 - 120
1,2-Dichloroethane-d4 (Surr)	102		75 - 126

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-270390-1

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

Lab Sample ID: LCS 500-824270/4

Matrix: Water

Analysis Batch: 824270

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	102		75 - 120

Lab Sample ID: LCSD 500-824270/5

Matrix: Water

Analysis Batch: 824270

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acetone	50.0	30.5		ug/L		61	40 - 143	1	20
Benzene	50.0	48.4		ug/L		97	70 - 120	1	20
Bromobenzene	50.0	51.0		ug/L		102	70 - 122	0	20
Bromochloromethane	50.0	48.0		ug/L		96	65 - 122	3	20
Bromodichloromethane	50.0	46.7		ug/L		93	69 - 120	0	20
Bromoform	50.0	41.1		ug/L		82	56 - 132	2	20
Bromomethane	50.0	40.8		ug/L		82	40 - 152	11	20
2-Butanone (MEK)	50.0	31.2		ug/L		62	46 - 144	1	20
Carbon disulfide	50.0	45.7		ug/L		91	66 - 120	3	20
Carbon tetrachloride	50.0	45.4		ug/L		91	59 - 133	3	20
Chlorobenzene	50.0	50.1		ug/L		100	70 - 120	0	20
Chloroethane	50.0	48.9		ug/L		98	48 - 136	3	20
Chloroform	50.0	48.8		ug/L		98	70 - 120	1	20
Chloromethane	50.0	57.9		ug/L		116	56 - 152	5	20
2-Chlorotoluene	50.0	53.2		ug/L		106	70 - 125	1	20
4-Chlorotoluene	50.0	53.7		ug/L		107	68 - 124	1	20
cis-1,2-Dichloroethene	50.0	47.8		ug/L		96	70 - 125	0	20
cis-1,3-Dichloropropene	50.0	50.9		ug/L		102	64 - 127	1	20
Chlorodibromomethane	50.0	46.5		ug/L		93	68 - 125	1	20
1,2-Dibromo-3-Chloropropane	50.0	43.3		ug/L		87	56 - 123	2	20
1,2-Dibromoethane (EDB)	50.0	46.6		ug/L		93	70 - 125	0	20
Dibromomethane	50.0	46.6		ug/L		93	70 - 120	1	20
1,2-Dichlorobenzene	50.0	50.6		ug/L		101	70 - 125	0	20
1,3-Dichlorobenzene	50.0	51.4		ug/L		103	70 - 125	0	20
1,4-Dichlorobenzene	50.0	49.8		ug/L		100	70 - 120	1	20
Dichlorodifluoromethane	50.0	36.6		ug/L		73	40 - 159	4	20
1,1-Dichloroethane	50.0	52.5		ug/L		105	70 - 125	1	20
1,2-Dichloroethane	50.0	50.3		ug/L		101	68 - 127	0	20
1,1-Dichloroethene	50.0	44.3		ug/L		89	67 - 122	8	20
1,2-Dichloropropane	50.0	53.7		ug/L		107	67 - 130	1	20
1,3-Dichloropropane	50.0	50.7		ug/L		101	62 - 136	0	20
2,2-Dichloropropane	50.0	42.4		ug/L		85	58 - 139	1	20
1,1-Dichloropropene	50.0	49.7		ug/L		99	70 - 121	3	20
Ethylbenzene	50.0	49.5		ug/L		99	70 - 123	1	20
Hexachlorobutadiene	50.0	58.1		ug/L		116	51 - 150	0	20
Isopropylbenzene	50.0	53.6		ug/L		107	70 - 126	1	20
Methylene Chloride	50.0	42.9		ug/L		86	69 - 125	2	20
Methyl tert-butyl ether	50.0	44.6		ug/L		89	55 - 123	0	20
Naphthalene	50.0	44.5		ug/L		89	53 - 144	0	20
n-Butylbenzene	50.0	51.0		ug/L		102	68 - 125	1	20
N-Propylbenzene	50.0	52.8		ug/L		106	69 - 127	1	20

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-270390-1

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

Lab Sample ID: LCSD 500-824270/5

Matrix: Water

Analysis Batch: 824270

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
p-Isopropyltoluene	50.0	53.0		ug/L		106	70 - 125	2	20
sec-Butylbenzene	50.0	51.2		ug/L		102	70 - 123	1	20
Styrene	50.0	49.3		ug/L		99	70 - 120	1	20
tert-Butylbenzene	50.0	52.3		ug/L		105	70 - 121	1	20
1,1,1,2-Tetrachloroethane	50.0	48.6		ug/L		97	70 - 125	1	20
1,1,2,2-Tetrachloroethane	50.0	45.5		ug/L		91	62 - 140	0	20
Tetrachloroethene	50.0	48.3		ug/L		97	70 - 128	2	20
Tetrahydrofuran	100	94.4		ug/L		94	59 - 139	0	20
Toluene	50.0	48.1		ug/L		96	70 - 125	3	20
trans-1,2-Dichloroethene	50.0	46.0		ug/L		92	70 - 125	4	20
trans-1,3-Dichloropropene	50.0	49.8		ug/L		100	62 - 128	1	20
1,2,3-Trichlorobenzene	50.0	51.8		ug/L		104	51 - 145	3	20
1,2,4-Trichlorobenzene	50.0	50.8		ug/L		102	57 - 137	2	20
1,1,1-Trichloroethane	50.0	48.1		ug/L		96	70 - 125	1	20
1,1,2-Trichloroethane	50.0	49.4		ug/L		99	71 - 130	1	20
Trichloroethene	50.0	50.1		ug/L		100	70 - 125	2	20
Trichlorofluoromethane	50.0	44.1		ug/L		88	55 - 128	2	20
1,2,3-Trichloropropane	50.0	48.0		ug/L		96	50 - 133	1	20
1,2,4-Trimethylbenzene	50.0	51.9		ug/L		104	70 - 123	1	20
1,3,5-Trimethylbenzene	50.0	52.3		ug/L		105	70 - 123	1	20
Vinyl chloride	50.0	50.6		ug/L		101	64 - 126	3	20
Xylenes, Total	100	95.8		ug/L		96	70 - 125	0	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	110		72 - 124
Dibromofluoromethane (Surr)	94		75 - 120
1,2-Dichloroethane-d4 (Surr)	103		75 - 126
Toluene-d8 (Surr)	100		75 - 120

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 500-823324/1-A

Matrix: Water

Analysis Batch: 823853

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 823324

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		06/25/25 13:42	06/27/25 14:39	1
Barium	<0.73		2.5	0.73	ug/L		06/25/25 13:42	06/27/25 14:39	1
Boron	<13		50	13	ug/L		06/25/25 13:42	06/27/25 14:39	1
Cadmium	<0.17		0.50	0.17	ug/L		06/25/25 13:42	06/27/25 14:39	1
Chromium	<1.1		5.0	1.1	ug/L		06/25/25 13:42	06/27/25 14:39	1
Copper	<0.50		2.0	0.50	ug/L		06/25/25 13:42	06/27/25 14:39	1
Lead	<0.19		0.50	0.19	ug/L		06/25/25 13:42	06/27/25 14:39	1
Manganese	<0.79		2.5	0.79	ug/L		06/25/25 13:42	06/27/25 14:39	1
Selenium	<0.98		2.5	0.98	ug/L		06/25/25 13:42	06/27/25 14:39	1
Silver	<0.12		0.50	0.12	ug/L		06/25/25 13:42	06/27/25 14:39	1
Zinc	<6.9		20	6.9	ug/L		06/25/25 13:42	06/27/25 14:39	1

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-270390-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 500-823324/2-A

Matrix: Water

Analysis Batch: 823853

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 823324

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	100	99.8		ug/L		100	80 - 120
Barium	500	513		ug/L		103	80 - 120
Boron	1000	1020		ug/L		102	80 - 120
Cadmium	50.0	51.3		ug/L		103	80 - 120
Chromium	200	206		ug/L		103	80 - 120
Copper	250	260		ug/L		104	80 - 120
Lead	100	102		ug/L		102	80 - 120
Manganese	500	525		ug/L		105	80 - 120
Selenium	100	101		ug/L		101	80 - 120
Silver	50.0	51.4		ug/L		103	80 - 120
Zinc	500	513		ug/L		103	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-823484/12-A

Matrix: Water

Analysis Batch: 823684

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 823484

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.076		0.20	0.076	ug/L		06/26/25 11:10	06/27/25 08:51	1

Lab Sample ID: LCS 500-823484/13-A

Matrix: Water

Analysis Batch: 823684

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 823484

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	2.00	1.76		ug/L		88	80 - 120

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 500-824238/3

Matrix: Water

Analysis Batch: 824238

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.42		1.0	0.42	mg/L			07/03/25 13:03	1
Sulfate	<0.47		1.0	0.47	mg/L			07/03/25 13:03	1
Fluoride	<0.43		1.0	0.43	mg/L			07/03/25 13:03	1

Lab Sample ID: LCS 500-824238/4

Matrix: Water

Analysis Batch: 824238

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	100	99.2		mg/L		99	90 - 110
Sulfate	100	102		mg/L		102	90 - 110
Fluoride	20.0	19.3		mg/L		96	90 - 110

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-270390-1

Method: N07-0003 - Enzymatic Nitrate-Nitrite Nitrogen

Lab Sample ID: MB 500-822982/58

Matrix: Water

Analysis Batch: 822982

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	<0.041		0.10	0.041	mg/L			06/23/25 14:55	1

Lab Sample ID: LCS 500-822982/59

Matrix: Water

Analysis Batch: 822982

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate Nitrite as N	1.00	1.01		mg/L		101	90 - 110

Lab Sample ID: 500-270390-1 MS

Matrix: Water

Analysis Batch: 822982

Client Sample ID: MW-20

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate Nitrite as N	0.85		1.00	1.81		mg/L		96	90 - 110

Lab Sample ID: 500-270390-1 MSD

Matrix: Water

Analysis Batch: 822982

Client Sample ID: MW-20

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate Nitrite as N	0.85		1.00	1.82		mg/L		97	90 - 110	1	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-823147/3

Matrix: Water

Analysis Batch: 823147

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	<3.7		5.0	3.7	mg/L			06/24/25 10:34	1

Lab Sample ID: LCS 500-823147/4

Matrix: Water

Analysis Batch: 823147

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	100	115		mg/L		115	95 - 121

Lab Chronicle

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-270390-1

Client Sample ID: MW-20

Date Collected: 06/19/25 11:00

Date Received: 06/20/25 09:10

Lab Sample ID: 500-270390-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	824270	W1T	EET CHI	07/03/25 06:44
Dissolved	Prep	3005A			823324	MS	EET CHI	06/25/25 13:42 - 06/25/25 19:42 ¹
Dissolved	Analysis	6020B		1	823853	RN	EET CHI	06/27/25 14:47
Dissolved	Prep	7470A			823484	MJG	EET CHI	06/26/25 11:10 - 06/26/25 13:10 ¹
Dissolved	Analysis	7470A		1	823684	MJG	EET CHI	06/27/25 09:14
Dissolved	Prep	3005A			823324	MS	EET CHI	06/25/25 13:42 - 06/25/25 19:42 ¹
Dissolved	Analysis	SM 2340B		1	823861	RN	EET CHI	06/30/25 09:04
Dissolved	Analysis	300.0		1	824238	MM	EET CHI	07/03/25 15:06
Dissolved	Analysis	N07-0003		1	822982	TR	EET CHI	06/23/25 15:02
Dissolved	Analysis	SM 2320B		1	823147	AC	EET CHI	06/24/25 12:52
Total/NA	Analysis	Field Sampling		1	823190	SJF	EET CHI	06/19/25 11:00

Client Sample ID: Trip Blank-VOC

Date Collected: 06/19/25 00:00

Date Received: 06/20/25 09:10

Lab Sample ID: 500-270390-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	824270	W1T	EET CHI	07/03/25 07:09

¹ This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

Laboratory References:

EET CHI = Eurofins Chicago, 18410 Crossing Drive, Suite E, Tinley Park, IL 60487, TEL (708)534-5200

Accreditation/Certification Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-270390-1

Laboratory: Eurofins Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	399172840	08-31-25

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 eurofins | **laboratorios & test mg**

Client Information						Carrier Tracking No(s)							
Veronica Aranda Phone: 715-933-2351						Lab PM Fredrick, Sandie E-Mail Sandra.Fredrick@et.eurofinsus.com							
Company Short Elliott Hendrickson, Inc dba SEH						State of Origin Page 1 of 1							
Address: 10 North Bridge Street City: Chippewa Falls State Zip WI, 54729-3374 Phone Email varanda@sehinc.com Project Name Vernon Co LF Site						Analysis Requested Job # 500-270390 Preservation Codes D HNO3 N None A HCL S H2SO4 Other:							
Due Date Requested TAT Requested (days) Compliance Project Δ Yes Δ No PO # Purchase Order not required WO # Project # 50006595 SSOW#						Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) 6020B, 7470A, SW2340B (DISS FF) 2320B, 300 (DISS-FF) 8260B - VOC N07_0003 - N+N (DISS FF) Total Number of Containers							
Sample Identification						Special Instructions/Note							
Sample Date Sample Time Sample Type (C=Comp, G=grab) Matrix (W=water S=solid O=waste/oil, BT=Tissue, A=Air DW=Drinking Water) Preservation Code:						D N A S X X X X X C VA VA							
MW-20 TRIP BLANK-VOL						DISS. METALS = Cu, Mn Zn As, Ba, Cd, Cr, Pb, Se, Ag, B + Hg METHOD 300 = Chloride Sulfate Fluoride							
Possible Hazard Identification ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months							
Deliverable Requested I II III, IV Other (specify)						Special Instructions/QC Requirements							
Empty Kit Relinquished by						Date							
Relinquished by						Time							
Relinquished by						Method of Shipment:							
Relinquished by						Date/Time							
Relinquished by						Company							
Relinquished by						Received by							
Relinquished by						Date/Time							
Relinquished by						Company							
Custody Seal Intact Δ Yes Δ No						Cooler Temperature(s) °C and Other Remarks							
Custody Seal No						2730367							
Page 26 of 28						7/7/2017							

Login Sample Receipt Checklist

Client: Short Elliott Hendrickson, Inc. dba SEH

Job Number: 500-270390-1

Login Number: 270390

List Source: Eurofins Chicago

List Number: 1

Creator: Hernandez, Stephanie

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	5.7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Sandra Fredrick

From: Veronica Aranda <varanda@sehinc.com>
Sent: Tuesday, June 24, 2025 3:00 PM
To: Guillan Algenio
Cc: Sandra Fredrick
Subject: RE: 500-270390 Vernon Co LF - 03628 Sample Confirmation files from Eurofins North Central

Unverified Sender: The sender of this email has not been verified. Review the content of the message carefully and verify the identity of the sender before acting on this email: replying, opening attachments or clicking links.

Good afternoon,

Below is field data for MW-20. A WDNR Point ID has not been assigned yet. Please assign as MW20 and I will manually change this field when we have more info.

pH: 6.73	Conduct: 195	Temp: 18.1	Odor None	Turbidity: Slight	Color: Slight	Depth to Water: 67.95 feet
-------------	-----------------	---------------	--------------	----------------------	------------------	--

Thanks!

Veronica Aranda, PG (WI)
Scientist III
Short Elliott Hendrickson Inc. (SEH®)
715.933.2351 mobile

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100% Employee Owned
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From: Guillan Algenio <TALS@reports.et.eurofinsus.com>
Sent: Monday, June 23, 2025 12:56 PM
To: Brian Kent <bkent@sehinc.com>; Veronica Aranda <varanda@sehinc.com>
Cc: Sandie Fredrick <Sandra.Fredrick@et.eurofinsus.com>
Subject: 500-270390 Vernon Co LF - 03628 Sample Confirmation files from Eurofins North Central

Hello,

Attached, please find the Sample Confirmation files for job 500-270390; Vernon Co LF - 03628

The samples were received on 6/20/2025 09:10 AM

Please review the attachments for accuracy and notify your Project Manager of any discrepancies as quickly as possible.



ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Brian L. Kent
Short Elliott Hendrickson, Inc. dba SEH
10 North Bridge Street
Chippewa Falls, Wisconsin 54729-3374

Generated 8/12/2025 12:37:11 PM

JOB DESCRIPTION

Vernon Co LF - 03628

JOB NUMBER

500-272324-1

Eurofins Chicago

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

Results relate only to the items tested and the sample(s) as received by the laboratory. The results, detection limits (LOD) and Quantitation Limits (LOQ) have been adjusted for sample dilutions and/or solids content.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Chicago Project Manager.

Compliance Statement

The LOD and LOQ reported are adjusted by the dilution factor when a dilution factor greater than 1 is needed. Additionally, where results are indicated as being reported on a dry weight basis, the LOD and LOQ are adjusted for moisture content as well.

Definitions of Limits

- LOD = Limit of Detection = MDL as defined by 40 CFR part 136 Appendix B
- LOQ = Limit of Quantitation = $3.33 \times \text{LOD}$ as defined by Wisconsin
- RL = Report Limit = a concentration supported by a standard in the calibration curves

Authorization



Generated
8/12/2025 12:37:11 PM

Authorized for release by
Sandie Fredrick, Senior Project Manager
Sandra.Fredrick@et.eurofinsus.com
(920)261-1660

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Case Narrative

Client: Short Elliott Hendrickson, Inc. dba SEH
Project: Vernon Co LF - 03628

Job ID: 500-272324-1

Job ID: 500-272324-1

Eurofins Chicago

Job Narrative 500-272324-1

The analytical test results presented in this report meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page, unless otherwise noted. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable. Regulated compliance samples (e.g. SDWA, NPDES) must comply with associated agency requirements/permits.

- Matrix-specific batch QC (e.g., MS, MSD, SD) may not be reported when insufficient sample volume is available or when site-specific QC samples are not submitted. In such cases, a Laboratory Control Sample Duplicate (LCSD) may be analyzed to provide precision data for the batch.
- For samples analyzed using surrogate and/or isotope dilution analytes, any recoveries falling outside of established acceptance criteria are re-prepared and/or re-analyzed to confirm results, unless the deviation is due to sample dilution or otherwise explained in the case narrative.

Receipt

The samples were received on 7/30/2025 9:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 8.6°C.

Receipt Exceptions

The following sample(s) was received at the laboratory outside the required temperature criteria.

GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 500-828099 was outside the method criteria for the following analyte(s): Bromodichloromethane, Bromomethane, Carbon disulfide and Dichlorodifluoromethane. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

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

Metals

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

General Chemistry

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

Field Service / Mobile Lab

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

Eurofins Chicago

Detection Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-272324-1

Client Sample ID: MW-20

Lab Sample ID: 500-272324-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	30		2.5	0.73	ug/L	1		6020B	Dissolved
Manganese	140		2.5	0.79	ug/L	1		6020B	Dissolved
Hardness as calcium carbonate	24		0.91	0.46	mg/L	1		SM 2340B	Dissolved
Chloride	1.8		1.0	0.42	mg/L	1		300.0	Dissolved
Sulfate	12		1.0	0.47	mg/L	1		300.0	Dissolved
Nitrate Nitrite as N	0.81		0.10	0.041	mg/L	1		N07-0003	Dissolved
Alkalinity	16		5.0	3.7	mg/L	1		SM 2320B	Dissolved
Field Color	Y				NONE	1		Field Sampling	Total/NA
Field Conductivity	202				umhos/cm	1		Field Sampling	Total/NA
Field Odor	N				NONE	1		Field Sampling	Total/NA
Field pH	6.79				SU	1		Field Sampling	Total/NA
Field Temperature	18.3				Degrees C	1		Field Sampling	Total/NA
Field Turbidity	Y				NONE	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank-VOC

Lab Sample ID: 500-272324-2

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

Method Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-272324-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CHI
6020B	Metals (ICP/MS)	SW846	EET CHI
7470A	Mercury (CVAA)	SW846	EET CHI
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	EET CHI
300.0	Anions, Ion Chromatography	EPA	EET CHI
N07-0003	Enzymatic Nitrate-Nitrite Nitrogen	EPA	EET CHI
SM 2320B	Alkalinity	SM	EET CHI
Field Sampling	Field Sampling	EPA	EET CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CHI
5030B	Purge and Trap	SW846	EET CHI
7470A	Preparation, Mercury	SW846	EET CHI

Protocol References:

EPA = US Environmental Protection Agency

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

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CHI = Eurofins Chicago, 18410 Crossing Drive, Suite E, Tinley Park, IL 60487, TEL (708)534-5200

Sample Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-272324-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
500-272324-1	MW-20	Water	07/28/25 11:00	07/30/25 09:40	Wisconsin
500-272324-2	Trip Blank-VOC	Water	07/28/25 00:00	07/30/25 09:40	Wisconsin

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- 2
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Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-272324-1

Client Sample ID: MW-20

Lab Sample ID: 500-272324-1

Date Collected: 07/28/25 11:00

Matrix: Water

Date Received: 07/30/25 09:40

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<4.3		10	4.3	ug/L			07/31/25 16:27	1
Benzene	<0.18		0.50	0.18	ug/L			07/31/25 16:27	1
Bromobenzene	<0.60		1.0	0.60	ug/L			07/31/25 16:27	1
Bromochloromethane	<0.50		1.0	0.50	ug/L			07/31/25 16:27	1
Bromodichloromethane	<0.57		1.0	0.57	ug/L			07/31/25 16:27	1
Bromoform	<0.96		1.0	0.96	ug/L			07/31/25 16:27	1
Bromomethane	<1.8		3.0	1.8	ug/L			07/31/25 16:27	1
2-Butanone (MEK)	<2.3		5.0	2.3	ug/L			07/31/25 16:27	1
Carbon disulfide	<1.1		2.0	1.1	ug/L			07/31/25 16:27	1
Carbon tetrachloride	<0.41		1.0	0.41	ug/L			07/31/25 16:27	1
Chlorobenzene	<0.41		1.0	0.41	ug/L			07/31/25 16:27	1
Chloroethane	<0.47		5.0	0.47	ug/L			07/31/25 16:27	1
Chloroform	<0.92		2.0	0.92	ug/L			07/31/25 16:27	1
Chloromethane	<0.79		5.0	0.79	ug/L			07/31/25 16:27	1
2-Chlorotoluene	<0.36		1.0	0.36	ug/L			07/31/25 16:27	1
4-Chlorotoluene	<0.34		1.0	0.34	ug/L			07/31/25 16:27	1
cis-1,2-Dichloroethene	<0.42		1.0	0.42	ug/L			07/31/25 16:27	1
cis-1,3-Dichloropropene	<0.52		1.0	0.52	ug/L			07/31/25 16:27	1
Chlorodibromomethane	<0.83		1.0	0.83	ug/L			07/31/25 16:27	1
1,2-Dibromo-3-Chloropropane	<3.9		5.0	3.9	ug/L			07/31/25 16:27	1
1,2-Dibromoethane (EDB)	<0.56		1.0	0.56	ug/L			07/31/25 16:27	1
Dibromomethane	<0.58		1.0	0.58	ug/L			07/31/25 16:27	1
1,2-Dichlorobenzene	<0.48		1.0	0.48	ug/L			07/31/25 16:27	1
1,3-Dichlorobenzene	<0.41		1.0	0.41	ug/L			07/31/25 16:27	1
1,4-Dichlorobenzene	<0.45		1.0	0.45	ug/L			07/31/25 16:27	1
Dichlorodifluoromethane	<1.8		3.0	1.8	ug/L			07/31/25 16:27	1
1,1-Dichloroethane	<0.36		1.0	0.36	ug/L			07/31/25 16:27	1
1,2-Dichloroethane	<0.58		1.0	0.58	ug/L			07/31/25 16:27	1
1,1-Dichloroethene	<0.48		1.0	0.48	ug/L			07/31/25 16:27	1
1,2-Dichloropropane	<0.37		1.0	0.37	ug/L			07/31/25 16:27	1
1,3-Dichloropropane	<0.56		1.0	0.56	ug/L			07/31/25 16:27	1
2,2-Dichloropropane	<0.48		5.0	0.48	ug/L			07/31/25 16:27	1
1,1-Dichloropropene	<0.33		1.0	0.33	ug/L			07/31/25 16:27	1
Ethylbenzene	<0.20		0.50	0.20	ug/L			07/31/25 16:27	1
Hexachlorobutadiene	<0.54		1.0	0.54	ug/L			07/31/25 16:27	1
Isopropylbenzene	<0.29		1.0	0.29	ug/L			07/31/25 16:27	1
Isopropyl ether	<0.38		1.0	0.38	ug/L			07/31/25 16:27	1
Methylene Chloride	<3.6		5.0	3.6	ug/L			07/31/25 16:27	1
Methyl tert-butyl ether	<0.43		1.0	0.43	ug/L			07/31/25 16:27	1
Naphthalene	<0.44		1.0	0.44	ug/L			07/31/25 16:27	1
n-Butylbenzene	<0.33		1.0	0.33	ug/L			07/31/25 16:27	1
N-Propylbenzene	<0.32		1.0	0.32	ug/L			07/31/25 16:27	1
p-Isopropyltoluene	<0.29		1.0	0.29	ug/L			07/31/25 16:27	1
sec-Butylbenzene	<0.27		1.0	0.27	ug/L			07/31/25 16:27	1
Styrene	<0.31		1.0	0.31	ug/L			07/31/25 16:27	1
tert-Butylbenzene	<0.26		1.0	0.26	ug/L			07/31/25 16:27	1
1,1,1,2-Tetrachloroethane	<0.67		1.0	0.67	ug/L			07/31/25 16:27	1
1,1,2,2-Tetrachloroethane	<0.65		1.0	0.65	ug/L			07/31/25 16:27	1
Tetrachloroethene	<0.39		1.0	0.39	ug/L			07/31/25 16:27	1

Eurofins Chicago

Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-272324-1

Client Sample ID: MW-20

Lab Sample ID: 500-272324-1

Date Collected: 07/28/25 11:00

Matrix: Water

Date Received: 07/30/25 09:40

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrahydrofuran	<3.9		10	3.9	ug/L			07/31/25 16:27	1
Toluene	<0.21		0.50	0.21	ug/L			07/31/25 16:27	1
trans-1,2-Dichloroethene	<0.44		1.0	0.44	ug/L			07/31/25 16:27	1
trans-1,3-Dichloropropene	<0.63		1.0	0.63	ug/L			07/31/25 16:27	1
1,2,3-Trichlorobenzene	<0.35		1.0	0.35	ug/L			07/31/25 16:27	1
1,2,4-Trichlorobenzene	<0.31		1.0	0.31	ug/L			07/31/25 16:27	1
1,1,1-Trichloroethane	<0.45		1.0	0.45	ug/L			07/31/25 16:27	1
1,1,2-Trichloroethane	<0.73		1.0	0.73	ug/L			07/31/25 16:27	1
Trichloroethene	<0.15		0.50	0.15	ug/L			07/31/25 16:27	1
Trichlorofluoromethane	<0.44		1.0	0.44	ug/L			07/31/25 16:27	1
1,2,3-Trichloropropane	<1.5		2.0	1.5	ug/L			07/31/25 16:27	1
1,2,4-Trimethylbenzene	<0.30		1.0	0.30	ug/L			07/31/25 16:27	1
1,3,5-Trimethylbenzene	<0.29		1.0	0.29	ug/L			07/31/25 16:27	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			07/31/25 16:27	1
Xylenes, Total	<0.30		1.0	0.30	ug/L			07/31/25 16:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		72 - 124		07/31/25 16:27	1
Dibromofluoromethane (Surr)	98		75 - 120		07/31/25 16:27	1
1,2-Dichloroethane-d4 (Surr)	96		75 - 126		07/31/25 16:27	1
Toluene-d8 (Surr)	105		75 - 120		07/31/25 16:27	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		08/01/25 13:51	08/04/25 15:18	1
Barium	30		2.5	0.73	ug/L		08/01/25 13:51	08/04/25 15:18	1
Boron	<13		50	13	ug/L		08/01/25 13:51	08/04/25 15:18	1
Cadmium	<0.17		0.50	0.17	ug/L		08/01/25 13:51	08/04/25 15:18	1
Chromium	<1.1		5.0	1.1	ug/L		08/01/25 13:51	08/04/25 15:18	1
Copper	<0.50		2.0	0.50	ug/L		08/01/25 13:51	08/04/25 15:18	1
Lead	<0.19		0.50	0.19	ug/L		08/01/25 13:51	08/04/25 15:18	1
Manganese	140		2.5	0.79	ug/L		08/01/25 13:51	08/04/25 15:18	1
Selenium	<0.98		2.5	0.98	ug/L		08/01/25 13:51	08/04/25 15:18	1
Silver	<0.12		0.50	0.12	ug/L		08/01/25 13:51	08/04/25 15:18	1
Zinc	<6.9		20	6.9	ug/L		08/01/25 13:51	08/04/25 15:18	1

Method: SW846 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.076		0.20	0.076	ug/L		08/11/25 10:55	08/12/25 08:58	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	24		0.91	0.46	mg/L		08/01/25 13:51	08/05/25 10:04	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	1.8		1.0	0.42	mg/L			08/06/25 10:46	1
Sulfate (EPA 300.0)	12		1.0	0.47	mg/L			08/06/25 10:46	1
Fluoride (EPA 300.0)	<0.43		1.0	0.43	mg/L			08/06/25 10:46	1
Nitrate Nitrite as N (EPA N07-0003)	0.81		0.10	0.041	mg/L			08/04/25 15:24	1
Alkalinity (SM 2320B)	16		5.0	3.7	mg/L			08/03/25 13:21	1

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Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-272324-1

Client Sample ID: MW-20

Lab Sample ID: 500-272324-1

Date Collected: 07/28/25 11:00

Matrix: Water

Date Received: 07/30/25 09:40

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Color	Y				NONE			07/28/25 11:00	1
Field Conductivity	202				umhos/cm			07/28/25 11:00	1
Field Odor	N				NONE			07/28/25 11:00	1
Field pH	6.79				SU			07/28/25 11:00	1
Field Temperature	18.3				Degrees C			07/28/25 11:00	1
Field Turbidity	Y				NONE			07/28/25 11:00	1

Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-272324-1

Client Sample ID: Trip Blank-VOC

Lab Sample ID: 500-272324-2

Date Collected: 07/28/25 00:00

Matrix: Water

Date Received: 07/30/25 09:40

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<4.3		10	4.3	ug/L			07/31/25 13:32	1
Benzene	<0.18		0.50	0.18	ug/L			07/31/25 13:32	1
Bromobenzene	<0.60		1.0	0.60	ug/L			07/31/25 13:32	1
Bromochloromethane	<0.50		1.0	0.50	ug/L			07/31/25 13:32	1
Bromodichloromethane	<0.57		1.0	0.57	ug/L			07/31/25 13:32	1
Bromoform	<0.96		1.0	0.96	ug/L			07/31/25 13:32	1
Bromomethane	<1.8		3.0	1.8	ug/L			07/31/25 13:32	1
2-Butanone (MEK)	<2.3		5.0	2.3	ug/L			07/31/25 13:32	1
Carbon disulfide	<1.1		2.0	1.1	ug/L			07/31/25 13:32	1
Carbon tetrachloride	<0.41		1.0	0.41	ug/L			07/31/25 13:32	1
Chlorobenzene	<0.41		1.0	0.41	ug/L			07/31/25 13:32	1
Chloroethane	<0.47		5.0	0.47	ug/L			07/31/25 13:32	1
Chloroform	<0.92		2.0	0.92	ug/L			07/31/25 13:32	1
Chloromethane	<0.79		5.0	0.79	ug/L			07/31/25 13:32	1
2-Chlorotoluene	<0.36		1.0	0.36	ug/L			07/31/25 13:32	1
4-Chlorotoluene	<0.34		1.0	0.34	ug/L			07/31/25 13:32	1
cis-1,2-Dichloroethene	<0.42		1.0	0.42	ug/L			07/31/25 13:32	1
cis-1,3-Dichloropropene	<0.52		1.0	0.52	ug/L			07/31/25 13:32	1
Chlorodibromomethane	<0.83		1.0	0.83	ug/L			07/31/25 13:32	1
1,2-Dibromo-3-Chloropropane	<3.9		5.0	3.9	ug/L			07/31/25 13:32	1
1,2-Dibromoethane (EDB)	<0.56		1.0	0.56	ug/L			07/31/25 13:32	1
Dibromomethane	<0.58		1.0	0.58	ug/L			07/31/25 13:32	1
1,2-Dichlorobenzene	<0.48		1.0	0.48	ug/L			07/31/25 13:32	1
1,3-Dichlorobenzene	<0.41		1.0	0.41	ug/L			07/31/25 13:32	1
1,4-Dichlorobenzene	<0.45		1.0	0.45	ug/L			07/31/25 13:32	1
Dichlorodifluoromethane	<1.8		3.0	1.8	ug/L			07/31/25 13:32	1
1,1-Dichloroethane	<0.36		1.0	0.36	ug/L			07/31/25 13:32	1
1,2-Dichloroethane	<0.58		1.0	0.58	ug/L			07/31/25 13:32	1
1,1-Dichloroethene	<0.48		1.0	0.48	ug/L			07/31/25 13:32	1
1,2-Dichloropropane	<0.37		1.0	0.37	ug/L			07/31/25 13:32	1
1,3-Dichloropropane	<0.56		1.0	0.56	ug/L			07/31/25 13:32	1
2,2-Dichloropropane	<0.48		5.0	0.48	ug/L			07/31/25 13:32	1
1,1-Dichloropropene	<0.33		1.0	0.33	ug/L			07/31/25 13:32	1
Ethylbenzene	<0.20		0.50	0.20	ug/L			07/31/25 13:32	1
Hexachlorobutadiene	<0.54		1.0	0.54	ug/L			07/31/25 13:32	1
Isopropylbenzene	<0.29		1.0	0.29	ug/L			07/31/25 13:32	1
Isopropyl ether	<0.38		1.0	0.38	ug/L			07/31/25 13:32	1
Methylene Chloride	<3.6		5.0	3.6	ug/L			07/31/25 13:32	1
Methyl tert-butyl ether	<0.43		1.0	0.43	ug/L			07/31/25 13:32	1
Naphthalene	<0.44		1.0	0.44	ug/L			07/31/25 13:32	1
n-Butylbenzene	<0.33		1.0	0.33	ug/L			07/31/25 13:32	1
N-Propylbenzene	<0.32		1.0	0.32	ug/L			07/31/25 13:32	1
p-Isopropyltoluene	<0.29		1.0	0.29	ug/L			07/31/25 13:32	1
sec-Butylbenzene	<0.27		1.0	0.27	ug/L			07/31/25 13:32	1
Styrene	<0.31		1.0	0.31	ug/L			07/31/25 13:32	1
tert-Butylbenzene	<0.26		1.0	0.26	ug/L			07/31/25 13:32	1
1,1,1,2-Tetrachloroethane	<0.67		1.0	0.67	ug/L			07/31/25 13:32	1
1,1,2,2-Tetrachloroethane	<0.65		1.0	0.65	ug/L			07/31/25 13:32	1
Tetrachloroethene	<0.39		1.0	0.39	ug/L			07/31/25 13:32	1

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Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-272324-1

Client Sample ID: Trip Blank-VOC

Lab Sample ID: 500-272324-2

Date Collected: 07/28/25 00:00

Matrix: Water

Date Received: 07/30/25 09:40

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrahydrofuran	<3.9		10	3.9	ug/L			07/31/25 13:32	1
Toluene	<0.21		0.50	0.21	ug/L			07/31/25 13:32	1
trans-1,2-Dichloroethene	<0.44		1.0	0.44	ug/L			07/31/25 13:32	1
trans-1,3-Dichloropropene	<0.63		1.0	0.63	ug/L			07/31/25 13:32	1
1,2,3-Trichlorobenzene	<0.35		1.0	0.35	ug/L			07/31/25 13:32	1
1,2,4-Trichlorobenzene	<0.31		1.0	0.31	ug/L			07/31/25 13:32	1
1,1,1-Trichloroethane	<0.45		1.0	0.45	ug/L			07/31/25 13:32	1
1,1,2-Trichloroethane	<0.73		1.0	0.73	ug/L			07/31/25 13:32	1
Trichloroethene	<0.15		0.50	0.15	ug/L			07/31/25 13:32	1
Trichlorofluoromethane	<0.44		1.0	0.44	ug/L			07/31/25 13:32	1
1,2,3-Trichloropropane	<1.5		2.0	1.5	ug/L			07/31/25 13:32	1
1,2,4-Trimethylbenzene	<0.30		1.0	0.30	ug/L			07/31/25 13:32	1
1,3,5-Trimethylbenzene	<0.29		1.0	0.29	ug/L			07/31/25 13:32	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			07/31/25 13:32	1
Xylenes, Total	<0.30		1.0	0.30	ug/L			07/31/25 13:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		72 - 124		07/31/25 13:32	1
Dibromofluoromethane (Surr)	100		75 - 120		07/31/25 13:32	1
1,2-Dichloroethane-d4 (Surr)	98		75 - 126		07/31/25 13:32	1
Toluene-d8 (Surr)	105		75 - 120		07/31/25 13:32	1

Definitions/Glossary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-272324-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Association Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-272324-1

GC/MS VOA

Analysis Batch: 828099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-272324-1	MW-20	Total/NA	Water	8260D	
500-272324-2	Trip Blank-VOC	Total/NA	Water	8260D	
MB 500-828099/7	Method Blank	Total/NA	Water	8260D	
LCS 500-828099/4	Lab Control Sample	Total/NA	Water	8260D	
LCSD 500-828099/5	Lab Control Sample Dup	Total/NA	Water	8260D	

Metals

Prep Batch: 828365

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-272324-1	MW-20	Dissolved	Water	3005A	
MB 500-828365/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-828365/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 828634

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-272324-1	MW-20	Dissolved	Water	6020B	828365
MB 500-828365/1-A	Method Blank	Total Recoverable	Water	6020B	828365
LCS 500-828365/2-A	Lab Control Sample	Total Recoverable	Water	6020B	828365

Analysis Batch: 828693

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-272324-1	MW-20	Dissolved	Water	SM 2340B	828365

Prep Batch: 829484

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-272324-1	MW-20	Dissolved	Water	7470A	
MB 500-829484/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-829484/13-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 829697

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-272324-1	MW-20	Dissolved	Water	7470A	829484
MB 500-829484/12-A	Method Blank	Total/NA	Water	7470A	829484
LCS 500-829484/13-A	Lab Control Sample	Total/NA	Water	7470A	829484

General Chemistry

Analysis Batch: 828434

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-272324-1	MW-20	Dissolved	Water	SM 2320B	
MB 500-828434/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-828434/4	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 828596

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-272324-1	MW-20	Dissolved	Water	N07-0003	
MB 500-828596/51	Method Blank	Total/NA	Water	N07-0003	
LCS 500-828596/52	Lab Control Sample	Total/NA	Water	N07-0003	

QC Association Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-272324-1

General Chemistry

Analysis Batch: 828692

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-272324-1	MW-20	Dissolved	Water	300.0	
MB 500-828692/3	Method Blank	Total/NA	Water	300.0	
LCS 500-828692/4	Lab Control Sample	Total/NA	Water	300.0	

Field Service / Mobile Lab

Analysis Batch: 828218

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-272324-1	MW-20	Total/NA	Water	Field Sampling	

Surrogate Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-272324-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	BFB	DBFM	DCA	TOL
		(72-124)	(75-120)	(75-126)	(75-120)
500-272324-1	MW-20	98	98	96	105
500-272324-2	Trip Blank-VOC	99	100	98	105
LCS 500-828099/4	Lab Control Sample	98	103	98	102
LCSD 500-828099/5	Lab Control Sample Dup	98	103	99	103
MB 500-828099/7	Method Blank	97	102	100	104

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

TOL = Toluene-d8 (Surr)

QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-272324-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 500-828099/7

Matrix: Water

Analysis Batch: 828099

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<4.3		10	4.3	ug/L			07/31/25 12:42	1
Benzene	<0.18		0.50	0.18	ug/L			07/31/25 12:42	1
Bromobenzene	<0.60		1.0	0.60	ug/L			07/31/25 12:42	1
Bromochloromethane	<0.50		1.0	0.50	ug/L			07/31/25 12:42	1
Bromodichloromethane	<0.57		1.0	0.57	ug/L			07/31/25 12:42	1
Bromoform	<0.96		1.0	0.96	ug/L			07/31/25 12:42	1
Bromomethane	<1.8		3.0	1.8	ug/L			07/31/25 12:42	1
2-Butanone (MEK)	<2.3		5.0	2.3	ug/L			07/31/25 12:42	1
Carbon disulfide	<1.1		2.0	1.1	ug/L			07/31/25 12:42	1
Carbon tetrachloride	<0.41		1.0	0.41	ug/L			07/31/25 12:42	1
Chlorobenzene	<0.41		1.0	0.41	ug/L			07/31/25 12:42	1
Chloroethane	<0.47		5.0	0.47	ug/L			07/31/25 12:42	1
Chloroform	<0.92		2.0	0.92	ug/L			07/31/25 12:42	1
Chloromethane	<0.79		5.0	0.79	ug/L			07/31/25 12:42	1
2-Chlorotoluene	<0.36		1.0	0.36	ug/L			07/31/25 12:42	1
4-Chlorotoluene	<0.34		1.0	0.34	ug/L			07/31/25 12:42	1
cis-1,2-Dichloroethene	<0.42		1.0	0.42	ug/L			07/31/25 12:42	1
cis-1,3-Dichloropropene	<0.52		1.0	0.52	ug/L			07/31/25 12:42	1
Chlorodibromomethane	<0.83		1.0	0.83	ug/L			07/31/25 12:42	1
1,2-Dibromo-3-Chloropropane	<3.9		5.0	3.9	ug/L			07/31/25 12:42	1
1,2-Dibromoethane (EDB)	<0.56		1.0	0.56	ug/L			07/31/25 12:42	1
Dibromomethane	<0.58		1.0	0.58	ug/L			07/31/25 12:42	1
1,2-Dichlorobenzene	<0.48		1.0	0.48	ug/L			07/31/25 12:42	1
1,3-Dichlorobenzene	<0.41		1.0	0.41	ug/L			07/31/25 12:42	1
1,4-Dichlorobenzene	<0.45		1.0	0.45	ug/L			07/31/25 12:42	1
Dichlorodifluoromethane	<1.8		3.0	1.8	ug/L			07/31/25 12:42	1
1,1-Dichloroethane	<0.36		1.0	0.36	ug/L			07/31/25 12:42	1
1,2-Dichloroethane	<0.58		1.0	0.58	ug/L			07/31/25 12:42	1
1,1-Dichloroethene	<0.48		1.0	0.48	ug/L			07/31/25 12:42	1
1,2-Dichloropropane	<0.37		1.0	0.37	ug/L			07/31/25 12:42	1
1,3-Dichloropropane	<0.56		1.0	0.56	ug/L			07/31/25 12:42	1
2,2-Dichloropropane	<0.48		5.0	0.48	ug/L			07/31/25 12:42	1
1,1-Dichloropropene	<0.33		1.0	0.33	ug/L			07/31/25 12:42	1
Ethylbenzene	<0.20		0.50	0.20	ug/L			07/31/25 12:42	1
Hexachlorobutadiene	<0.54		1.0	0.54	ug/L			07/31/25 12:42	1
Isopropylbenzene	<0.29		1.0	0.29	ug/L			07/31/25 12:42	1
Isopropyl ether	<0.38		1.0	0.38	ug/L			07/31/25 12:42	1
Methylene Chloride	<3.6		5.0	3.6	ug/L			07/31/25 12:42	1
Methyl tert-butyl ether	<0.43		1.0	0.43	ug/L			07/31/25 12:42	1
Naphthalene	<0.44		1.0	0.44	ug/L			07/31/25 12:42	1
n-Butylbenzene	<0.33		1.0	0.33	ug/L			07/31/25 12:42	1
N-Propylbenzene	<0.32		1.0	0.32	ug/L			07/31/25 12:42	1
p-Isopropyltoluene	<0.29		1.0	0.29	ug/L			07/31/25 12:42	1
sec-Butylbenzene	<0.27		1.0	0.27	ug/L			07/31/25 12:42	1
Styrene	<0.31		1.0	0.31	ug/L			07/31/25 12:42	1
tert-Butylbenzene	<0.26		1.0	0.26	ug/L			07/31/25 12:42	1
1,1,1,2-Tetrachloroethane	<0.67		1.0	0.67	ug/L			07/31/25 12:42	1
1,1,2,2-Tetrachloroethane	<0.65		1.0	0.65	ug/L			07/31/25 12:42	1

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-272324-1

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

Lab Sample ID: MB 500-828099/7

Matrix: Water

Analysis Batch: 828099

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<0.39		1.0	0.39	ug/L			07/31/25 12:42	1
Tetrahydrofuran	<3.9		10	3.9	ug/L			07/31/25 12:42	1
Toluene	<0.21		0.50	0.21	ug/L			07/31/25 12:42	1
trans-1,2-Dichloroethene	<0.44		1.0	0.44	ug/L			07/31/25 12:42	1
trans-1,3-Dichloropropene	<0.63		1.0	0.63	ug/L			07/31/25 12:42	1
1,2,3-Trichlorobenzene	<0.35		1.0	0.35	ug/L			07/31/25 12:42	1
1,2,4-Trichlorobenzene	<0.31		1.0	0.31	ug/L			07/31/25 12:42	1
1,1,1-Trichloroethane	<0.45		1.0	0.45	ug/L			07/31/25 12:42	1
1,1,2-Trichloroethane	<0.73		1.0	0.73	ug/L			07/31/25 12:42	1
Trichloroethene	<0.15		0.50	0.15	ug/L			07/31/25 12:42	1
Trichlorofluoromethane	<0.44		1.0	0.44	ug/L			07/31/25 12:42	1
1,2,3-Trichloropropane	<1.5		2.0	1.5	ug/L			07/31/25 12:42	1
1,2,4-Trimethylbenzene	<0.30		1.0	0.30	ug/L			07/31/25 12:42	1
1,3,5-Trimethylbenzene	<0.29		1.0	0.29	ug/L			07/31/25 12:42	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			07/31/25 12:42	1
Xylenes, Total	<0.30		1.0	0.30	ug/L			07/31/25 12:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		72 - 124		07/31/25 12:42	1
Dibromofluoromethane (Surr)	102		75 - 120		07/31/25 12:42	1
1,2-Dichloroethane-d4 (Surr)	100		75 - 126		07/31/25 12:42	1
Toluene-d8 (Surr)	104		75 - 120		07/31/25 12:42	1

Lab Sample ID: LCS 500-828099/4

Matrix: Water

Analysis Batch: 828099

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetone	50.0	40.9		ug/L		82	40 - 143
Benzene	50.0	47.0		ug/L		94	70 - 120
Bromobenzene	50.0	46.2		ug/L		92	70 - 122
Bromochloromethane	50.0	49.6		ug/L		99	65 - 122
Bromodichloromethane	50.0	49.5		ug/L		99	69 - 120
Bromoform	50.0	50.1		ug/L		100	56 - 132
Bromomethane	50.0	31.3		ug/L		63	40 - 152
2-Butanone (MEK)	50.0	45.1		ug/L		90	46 - 144
Carbon disulfide	50.0	38.2		ug/L		76	66 - 120
Carbon tetrachloride	50.0	52.2		ug/L		104	59 - 133
Chlorobenzene	50.0	48.3		ug/L		97	70 - 120
Chloroethane	50.0	50.8		ug/L		102	48 - 136
Chloroform	50.0	46.4		ug/L		93	70 - 120
Chloromethane	50.0	47.6		ug/L		95	56 - 152
2-Chlorotoluene	50.0	46.6		ug/L		93	70 - 125
4-Chlorotoluene	50.0	46.7		ug/L		93	68 - 124
cis-1,2-Dichloroethene	50.0	46.8		ug/L		94	70 - 125
cis-1,3-Dichloropropene	50.0	50.5		ug/L		101	64 - 127
Chlorodibromomethane	50.0	56.4		ug/L		113	68 - 125
1,2-Dibromo-3-Chloropropane	50.0	51.7		ug/L		103	56 - 123

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-272324-1

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

Lab Sample ID: LCS 500-828099/4

Matrix: Water

Analysis Batch: 828099

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dibromoethane (EDB)	50.0	50.5		ug/L		101	70 - 125
Dibromomethane	50.0	48.9		ug/L		98	70 - 120
1,2-Dichlorobenzene	50.0	48.1		ug/L		96	70 - 125
1,3-Dichlorobenzene	50.0	48.0		ug/L		96	70 - 125
1,4-Dichlorobenzene	50.0	47.3		ug/L		95	70 - 120
Dichlorodifluoromethane	50.0	59.1		ug/L		118	40 - 159
1,1-Dichloroethane	50.0	46.5		ug/L		93	70 - 125
1,2-Dichloroethane	50.0	46.1		ug/L		92	68 - 127
1,1-Dichloroethene	50.0	41.6		ug/L		83	67 - 122
1,2-Dichloropropane	50.0	49.1		ug/L		98	67 - 130
1,3-Dichloropropane	50.0	49.3		ug/L		99	62 - 136
2,2-Dichloropropane	50.0	45.7		ug/L		91	58 - 139
1,1-Dichloropropene	50.0	45.4		ug/L		91	70 - 121
Ethylbenzene	50.0	48.6		ug/L		97	70 - 123
Hexachlorobutadiene	50.0	57.3		ug/L		115	51 - 150
Isopropylbenzene	50.0	47.8		ug/L		96	70 - 126
Methylene Chloride	50.0	46.2		ug/L		92	69 - 125
Methyl tert-butyl ether	50.0	47.9		ug/L		96	55 - 123
Naphthalene	50.0	54.6		ug/L		109	53 - 144
n-Butylbenzene	50.0	51.9		ug/L		104	68 - 125
N-Propylbenzene	50.0	47.9		ug/L		96	69 - 127
p-Isopropyltoluene	50.0	50.9		ug/L		102	70 - 125
sec-Butylbenzene	50.0	49.8		ug/L		100	70 - 123
Styrene	50.0	48.7		ug/L		97	70 - 120
tert-Butylbenzene	50.0	49.8		ug/L		100	70 - 121
1,1,1,2-Tetrachloroethane	50.0	56.3		ug/L		113	70 - 125
1,1,2,2-Tetrachloroethane	50.0	45.1		ug/L		90	62 - 140
Tetrachloroethene	50.0	47.8		ug/L		96	70 - 128
Tetrahydrofuran	100	82.5		ug/L		82	59 - 139
Toluene	50.0	48.0		ug/L		96	70 - 125
trans-1,2-Dichloroethene	50.0	44.8		ug/L		90	70 - 125
trans-1,3-Dichloropropene	50.0	50.6		ug/L		101	62 - 128
1,2,3-Trichlorobenzene	50.0	54.8		ug/L		110	51 - 145
1,2,4-Trichlorobenzene	50.0	56.7		ug/L		113	57 - 137
1,1,1-Trichloroethane	50.0	45.3		ug/L		91	70 - 125
1,1,2-Trichloroethane	50.0	49.2		ug/L		98	71 - 130
Trichloroethene	50.0	49.7		ug/L		99	70 - 125
Trichlorofluoromethane	50.0	46.8		ug/L		94	55 - 128
1,2,3-Trichloropropane	50.0	47.4		ug/L		95	50 - 133
1,2,4-Trimethylbenzene	50.0	49.9		ug/L		100	70 - 123
1,3,5-Trimethylbenzene	50.0	49.1		ug/L		98	70 - 123
Vinyl chloride	50.0	48.8		ug/L		98	64 - 126
Xylenes, Total	100	96.9		ug/L		97	70 - 125

LCS LCS			
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	98		72 - 124
Dibromofluoromethane (Surr)	103		75 - 120
1,2-Dichloroethane-d4 (Surr)	98		75 - 126

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-272324-1

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

Lab Sample ID: LCS 500-828099/4

Matrix: Water

Analysis Batch: 828099

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	102		75 - 120

Lab Sample ID: LCSD 500-828099/5

Matrix: Water

Analysis Batch: 828099

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acetone	50.0	40.1		ug/L		80	40 - 143	2	20
Benzene	50.0	46.9		ug/L		94	70 - 120	0	20
Bromobenzene	50.0	45.8		ug/L		92	70 - 122	1	20
Bromochloromethane	50.0	49.4		ug/L		99	65 - 122	1	20
Bromodichloromethane	50.0	48.8		ug/L		98	69 - 120	1	20
Bromoform	50.0	50.1		ug/L		100	56 - 132	0	20
Bromomethane	50.0	35.0		ug/L		70	40 - 152	11	20
2-Butanone (MEK)	50.0	44.1		ug/L		88	46 - 144	2	20
Carbon disulfide	50.0	38.3		ug/L		77	66 - 120	0	20
Carbon tetrachloride	50.0	53.6		ug/L		107	59 - 133	3	20
Chlorobenzene	50.0	48.3		ug/L		97	70 - 120	0	20
Chloroethane	50.0	51.4		ug/L		103	48 - 136	1	20
Chloroform	50.0	45.6		ug/L		91	70 - 120	2	20
Chloromethane	50.0	47.9		ug/L		96	56 - 152	1	20
2-Chlorotoluene	50.0	45.8		ug/L		92	70 - 125	2	20
4-Chlorotoluene	50.0	45.8		ug/L		92	68 - 124	2	20
cis-1,2-Dichloroethene	50.0	46.1		ug/L		92	70 - 125	1	20
cis-1,3-Dichloropropene	50.0	50.9		ug/L		102	64 - 127	1	20
Chlorodibromomethane	50.0	57.2		ug/L		114	68 - 125	1	20
1,2-Dibromo-3-Chloropropane	50.0	51.4		ug/L		103	56 - 123	1	20
1,2-Dibromoethane (EDB)	50.0	51.1		ug/L		102	70 - 125	1	20
Dibromomethane	50.0	48.8		ug/L		98	70 - 120	0	20
1,2-Dichlorobenzene	50.0	48.3		ug/L		97	70 - 125	1	20
1,3-Dichlorobenzene	50.0	47.3		ug/L		95	70 - 125	1	20
1,4-Dichlorobenzene	50.0	47.2		ug/L		94	70 - 120	0	20
Dichlorodifluoromethane	50.0	61.8		ug/L		124	40 - 159	5	20
1,1-Dichloroethane	50.0	46.1		ug/L		92	70 - 125	1	20
1,2-Dichloroethane	50.0	46.3		ug/L		93	68 - 127	0	20
1,1-Dichloroethene	50.0	42.7		ug/L		85	67 - 122	3	20
1,2-Dichloropropane	50.0	48.8		ug/L		98	67 - 130	1	20
1,3-Dichloropropane	50.0	50.0		ug/L		100	62 - 136	1	20
2,2-Dichloropropane	50.0	46.2		ug/L		92	58 - 139	1	20
1,1-Dichloropropene	50.0	45.6		ug/L		91	70 - 121	0	20
Ethylbenzene	50.0	48.6		ug/L		97	70 - 123	0	20
Hexachlorobutadiene	50.0	58.2		ug/L		116	51 - 150	2	20
Isopropylbenzene	50.0	47.4		ug/L		95	70 - 126	1	20
Methylene Chloride	50.0	45.6		ug/L		91	69 - 125	1	20
Methyl tert-butyl ether	50.0	47.9		ug/L		96	55 - 123	0	20
Naphthalene	50.0	54.9		ug/L		110	53 - 144	1	20
n-Butylbenzene	50.0	51.9		ug/L		104	68 - 125	0	20
N-Propylbenzene	50.0	47.7		ug/L		95	69 - 127	1	20

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-272324-1

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

Lab Sample ID: LCSD 500-828099/5

Matrix: Water

Analysis Batch: 828099

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
p-Isopropyltoluene	50.0	50.7		ug/L		101	70 - 125	0	20
sec-Butylbenzene	50.0	49.9		ug/L		100	70 - 123	0	20
Styrene	50.0	48.3		ug/L		97	70 - 120	1	20
tert-Butylbenzene	50.0	49.6		ug/L		99	70 - 121	0	20
1,1,1,2-Tetrachloroethane	50.0	55.9		ug/L		112	70 - 125	1	20
1,1,2,2-Tetrachloroethane	50.0	44.4		ug/L		89	62 - 140	2	20
Tetrachloroethene	50.0	49.1		ug/L		98	70 - 128	3	20
Tetrahydrofuran	100	83.1		ug/L		83	59 - 139	1	20
Toluene	50.0	48.1		ug/L		96	70 - 125	0	20
trans-1,2-Dichloroethene	50.0	45.3		ug/L		91	70 - 125	1	20
trans-1,3-Dichloropropene	50.0	51.2		ug/L		102	62 - 128	1	20
1,2,3-Trichlorobenzene	50.0	56.4		ug/L		113	51 - 145	3	20
1,2,4-Trichlorobenzene	50.0	57.4		ug/L		115	57 - 137	1	20
1,1,1-Trichloroethane	50.0	46.1		ug/L		92	70 - 125	2	20
1,1,2-Trichloroethane	50.0	49.5		ug/L		99	71 - 130	1	20
Trichloroethene	50.0	50.2		ug/L		100	70 - 125	1	20
Trichlorofluoromethane	50.0	49.2		ug/L		98	55 - 128	5	20
1,2,3-Trichloropropane	50.0	46.7		ug/L		93	50 - 133	2	20
1,2,4-Trimethylbenzene	50.0	49.6		ug/L		99	70 - 123	1	20
1,3,5-Trimethylbenzene	50.0	48.5		ug/L		97	70 - 123	1	20
Vinyl chloride	50.0	50.3		ug/L		101	64 - 126	3	20
Xylenes, Total	100	96.3		ug/L		96	70 - 125	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	98		72 - 124
Dibromofluoromethane (Surr)	103		75 - 120
1,2-Dichloroethane-d4 (Surr)	99		75 - 126
Toluene-d8 (Surr)	103		75 - 120

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 500-828365/1-A

Matrix: Water

Analysis Batch: 828634

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 828365

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		08/01/25 13:51	08/04/25 14:11	1
Barium	<0.73		2.5	0.73	ug/L		08/01/25 13:51	08/04/25 14:11	1
Boron	<13		50	13	ug/L		08/01/25 13:51	08/04/25 14:11	1
Cadmium	<0.17		0.50	0.17	ug/L		08/01/25 13:51	08/04/25 14:11	1
Chromium	<1.1		5.0	1.1	ug/L		08/01/25 13:51	08/04/25 14:11	1
Copper	<0.50		2.0	0.50	ug/L		08/01/25 13:51	08/04/25 14:11	1
Lead	<0.19		0.50	0.19	ug/L		08/01/25 13:51	08/04/25 14:11	1
Manganese	<0.79		2.5	0.79	ug/L		08/01/25 13:51	08/04/25 14:11	1
Selenium	<0.98		2.5	0.98	ug/L		08/01/25 13:51	08/04/25 14:11	1
Silver	<0.12		0.50	0.12	ug/L		08/01/25 13:51	08/04/25 14:11	1
Zinc	<6.9		20	6.9	ug/L		08/01/25 13:51	08/04/25 14:11	1

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-272324-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 500-828365/2-A

Matrix: Water

Analysis Batch: 828634

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 828365

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	100	100		ug/L		100	80 - 120
Barium	500	513		ug/L		103	80 - 120
Boron	1000	1010		ug/L		101	80 - 120
Cadmium	50.0	51.3		ug/L		103	80 - 120
Chromium	200	204		ug/L		102	80 - 120
Copper	250	262		ug/L		105	80 - 120
Lead	100	104		ug/L		104	80 - 120
Manganese	500	542		ug/L		108	80 - 120
Selenium	100	100		ug/L		100	80 - 120
Silver	50.0	52.3		ug/L		105	80 - 120
Zinc	500	512		ug/L		102	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-829484/12-A

Matrix: Water

Analysis Batch: 829697

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 829484

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.076		0.20	0.076	ug/L		08/11/25 10:55	08/12/25 08:09	1

Lab Sample ID: LCS 500-829484/13-A

Matrix: Water

Analysis Batch: 829697

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 829484

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	2.00	2.12		ug/L		106	80 - 120

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 500-828692/3

Matrix: Water

Analysis Batch: 828692

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.42		1.0	0.42	mg/L			08/06/25 06:57	1
Sulfate	<0.47		1.0	0.47	mg/L			08/06/25 06:57	1
Fluoride	<0.43		1.0	0.43	mg/L			08/06/25 06:57	1

Lab Sample ID: LCS 500-828692/4

Matrix: Water

Analysis Batch: 828692

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	100	102		mg/L		102	90 - 110
Sulfate	100	104		mg/L		104	90 - 110
Fluoride	20.0	19.8		mg/L		99	90 - 110

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-272324-1

Method: N07-0003 - Enzymatic Nitrate-Nitrite Nitrogen

Lab Sample ID: MB 500-828596/51

Matrix: Water

Analysis Batch: 828596

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	<0.041		0.10	0.041	mg/L			08/04/25 15:21	1

Lab Sample ID: LCS 500-828596/52

Matrix: Water

Analysis Batch: 828596

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate Nitrite as N	1.00	1.01		mg/L		101	90 - 110

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-828434/3

Matrix: Water

Analysis Batch: 828434

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	<3.7		5.0	3.7	mg/L			08/03/25 11:50	1

Lab Sample ID: LCS 500-828434/4

Matrix: Water

Analysis Batch: 828434

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	100	111		mg/L		111	95 - 121

Lab Chronicle

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-272324-1

Client Sample ID: MW-20

Lab Sample ID: 500-272324-1

Date Collected: 07/28/25 11:00

Matrix: Water

Date Received: 07/30/25 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	828099	W1T	EET CHI	07/31/25 16:27
Dissolved	Prep	3005A			828365	MS	EET CHI	08/01/25 13:51 - 08/01/25 19:51 ¹
Dissolved	Analysis	6020B		1	828634	RN	EET CHI	08/04/25 15:18
Dissolved	Prep	7470A			829484	MJG	EET CHI	08/11/25 10:55 - 08/11/25 12:55 ¹
Dissolved	Analysis	7470A		1	829697	MJG	EET CHI	08/12/25 08:58
Dissolved	Prep	3005A			828365	MS	EET CHI	08/01/25 13:51 - 08/01/25 19:51 ¹
Dissolved	Analysis	SM 2340B		1	828693	DAJ	EET CHI	08/05/25 10:04
Dissolved	Analysis	300.0		1	828692	MB	EET CHI	08/06/25 10:46
Dissolved	Analysis	N07-0003		1	828596	TR	EET CHI	08/04/25 15:24
Dissolved	Analysis	SM 2320B		1	828434	AC	EET CHI	08/03/25 13:21
Total/NA	Analysis	Field Sampling		1	828218	GA	EET CHI	07/28/25 11:00

Client Sample ID: Trip Blank-VOC

Lab Sample ID: 500-272324-2

Date Collected: 07/28/25 00:00

Matrix: Water

Date Received: 07/30/25 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	828099	W1T	EET CHI	07/31/25 13:32

¹ This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

Laboratory References:

EET CHI = Eurofins Chicago, 18410 Crossing Drive, Suite E, Tinley Park, IL 60487, TEL (708)534-5200

Accreditation/Certification Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-272324-1

Laboratory: Eurofins Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	399172840	08-31-25

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

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Ver: 10/10/2024 8/12/2025

Login Sample Receipt Checklist

Client: Short Elliott Hendrickson, Inc. dba SEH

Job Number: 500-272324-1

Login Number: 272324

List Source: Eurofins Chicago

List Number: 1

Creator: Babayode, Daniel

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	Water present in cooler; indicates evidence of melted ice.
Cooler Temperature is acceptable.	False	Cooler temperature outside required temperature criteria.
Cooler Temperature is recorded.	True	8.6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	False	Headspace larger than 1/4" in one or more vials, one vial with accpt. headspace
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



ANALYTICAL REPORT

PREPARED FOR

Attn: Veronica Aranda
Short Elliott Hendrickson, Inc. dba SEH
10 North Bridge Street
Chippewa Falls, Wisconsin 54729-3374

Generated 9/11/2025 10:41:34 AM

JOB DESCRIPTION

Vernon Co LF - 03628

JOB NUMBER

500-273754-1

Eurofins Chicago

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

Results relate only to the items tested and the sample(s) as received by the laboratory. The results, detection limits (LOD) and Quantitation Limits (LOQ) have been adjusted for sample dilutions and/or solids content.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Chicago Project Manager.

Compliance Statement

The LOD and LOQ reported are adjusted by the dilution factor when a dilution factor greater than 1 is needed. Additionally, where results are indicated as being reported on a dry weight basis, the LOD and LOQ are adjusted for moisture content as well.

Definitions of Limits

- LOD = Limit of Detection = MDL as defined by 40 CFR part 136 Appendix B
- LOQ = Limit of Quantitation = $3.33 \times \text{LOD}$ as defined by Wisconsin
- RL = Report Limit = a concentration supported by a standard in the calibration curves

Authorization



Generated
9/11/2025 10:41:34 AM

Authorized for release by
Sandie Fredrick, Senior Project Manager
Sandra.Fredrick@et.eurofinsus.com
(920)261-1660

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Case Narrative

Client: Short Elliott Hendrickson, Inc. dba SEH
Project: Vernon Co LF - 03628

Job ID: 500-273754-1

Job ID: 500-273754-1

Eurofins Chicago

Job Narrative 500-273754-1

Receipt

The samples were received on 8/28/2025 9:15 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.6° C.

GC/MS VOA

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

Metals

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

Field Service / Mobile Lab

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

General Chemistry

Method N07-0003: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 500-832266 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

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

Eurofins Chicago

Detection Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-273754-1

Client Sample ID: MW-20

Lab Sample ID: 500-273754-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Barium	9.4		2.5	0.73	ug/L	1			6020B	Dissolved
Copper	3.2		2.0	0.50	ug/L	1			6020B	Dissolved
Manganese	150		2.5	0.79	ug/L	1			6020B	Dissolved
Hardness as calcium carbonate	260		0.91	0.46	mg/L	1			SM 2340B	Dissolved
Chloride	2.5		1.0	0.42	mg/L	1			300.0	Dissolved
Sulfate	13		1.0	0.47	mg/L	1			300.0	Dissolved
Nitrate Nitrite as N	0.72	F1	0.10	0.041	mg/L	1			N07-0003	Dissolved
Alkalinity	5.4		5.0	3.7	mg/L	1			SM 2320B	Dissolved
Field Color	Y				NONE	1			Field Sampling	Total/NA
Field Odor	N				NONE	1			Field Sampling	Total/NA
Field pH	8.16				SU	1			Field Sampling	Total/NA
Field Turbidity	Y				NONE	1			Field Sampling	Total/NA
Depth to Water (ft from MP)	67.42				ft	1			Field Sampling	Total/NA
Well Depth	82.21				ft	1			Field Sampling	Total/NA

Client Sample ID: Trip Blank-VOC

Lab Sample ID: 500-273754-2

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

Method Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-273754-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CHI
6020B	Metals (ICP/MS)	SW846	EET CHI
7470A	Mercury (CVAA)	SW846	EET CHI
SM 2340B	Total Hardness (as CaCO ₃) by calculation	SM	EET CHI
300.0	Anions, Ion Chromatography	EPA	EET CHI
N07-0003	Enzymatic Nitrate-Nitrite Nitrogen	EPA	EET CHI
SM 2320B	Alkalinity	SM	EET CHI
Field Sampling	Field Sampling	EPA	EET CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CHI
5030B	Purge and Trap	SW846	EET CHI
7470A	Preparation, Mercury	SW846	EET CHI

Protocol References:

EPA = US Environmental Protection Agency

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

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CHI = Eurofins Chicago, 18410 Crossing Drive, Suite E, Tinley Park, IL 60487, TEL (708)534-5200

Sample Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-273754-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
500-273754-1	MW-20	Water	08/27/25 10:30	08/28/25 09:15	Wisconsin
500-273754-2	Trip Blank-VOC	Water	08/27/25 00:00	08/28/25 09:15	Wisconsin

Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-273754-1

Client Sample ID: MW-20

Lab Sample ID: 500-273754-1

Date Collected: 08/27/25 10:30

Matrix: Water

Date Received: 08/28/25 09:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<4.3		10	4.3	ug/L			08/29/25 17:28	1
Benzene	<0.18		0.50	0.18	ug/L			08/29/25 17:28	1
Bromobenzene	<0.60		1.0	0.60	ug/L			08/29/25 17:28	1
Bromochloromethane	<0.50		1.0	0.50	ug/L			08/29/25 17:28	1
Bromodichloromethane	<0.57		1.0	0.57	ug/L			08/29/25 17:28	1
Bromoform	<0.96		1.0	0.96	ug/L			08/29/25 17:28	1
Bromomethane	<1.8		3.0	1.8	ug/L			08/29/25 17:28	1
2-Butanone (MEK)	<2.3		5.0	2.3	ug/L			08/29/25 17:28	1
Carbon disulfide	<1.1		2.0	1.1	ug/L			08/29/25 17:28	1
Carbon tetrachloride	<0.41		1.0	0.41	ug/L			08/29/25 17:28	1
Chlorobenzene	<0.41		1.0	0.41	ug/L			08/29/25 17:28	1
Chloroethane	<0.47		5.0	0.47	ug/L			08/29/25 17:28	1
Chloroform	<0.92		2.0	0.92	ug/L			08/29/25 17:28	1
Chloromethane	<0.79		5.0	0.79	ug/L			08/29/25 17:28	1
2-Chlorotoluene	<0.36		1.0	0.36	ug/L			08/29/25 17:28	1
4-Chlorotoluene	<0.34		1.0	0.34	ug/L			08/29/25 17:28	1
cis-1,2-Dichloroethene	<0.42		1.0	0.42	ug/L			08/29/25 17:28	1
cis-1,3-Dichloropropene	<0.52		1.0	0.52	ug/L			08/29/25 17:28	1
Chlorodibromomethane	<0.83		1.0	0.83	ug/L			08/29/25 17:28	1
1,2-Dibromo-3-Chloropropane	<3.9		5.0	3.9	ug/L			08/29/25 17:28	1
1,2-Dibromoethane (EDB)	<0.56		1.0	0.56	ug/L			08/29/25 17:28	1
Dibromomethane	<0.58		1.0	0.58	ug/L			08/29/25 17:28	1
1,2-Dichlorobenzene	<0.48		1.0	0.48	ug/L			08/29/25 17:28	1
1,3-Dichlorobenzene	<0.41		1.0	0.41	ug/L			08/29/25 17:28	1
1,4-Dichlorobenzene	<0.45		1.0	0.45	ug/L			08/29/25 17:28	1
Dichlorodifluoromethane	<1.8		3.0	1.8	ug/L			08/29/25 17:28	1
1,1-Dichloroethane	<0.36		1.0	0.36	ug/L			08/29/25 17:28	1
1,2-Dichloroethane	<0.58		1.0	0.58	ug/L			08/29/25 17:28	1
1,1-Dichloroethene	<0.48		1.0	0.48	ug/L			08/29/25 17:28	1
1,2-Dichloropropane	<0.37		1.0	0.37	ug/L			08/29/25 17:28	1
1,3-Dichloropropane	<0.56		1.0	0.56	ug/L			08/29/25 17:28	1
2,2-Dichloropropane	<0.48		5.0	0.48	ug/L			08/29/25 17:28	1
1,1-Dichloropropene	<0.33		1.0	0.33	ug/L			08/29/25 17:28	1
Ethylbenzene	<0.20		0.50	0.20	ug/L			08/29/25 17:28	1
Hexachlorobutadiene	<0.54		1.0	0.54	ug/L			08/29/25 17:28	1
Isopropylbenzene	<0.29		1.0	0.29	ug/L			08/29/25 17:28	1
Isopropyl ether	<0.38		1.0	0.38	ug/L			08/29/25 17:28	1
Methylene Chloride	<3.6		5.0	3.6	ug/L			08/29/25 17:28	1
Methyl tert-butyl ether	<0.43		1.0	0.43	ug/L			08/29/25 17:28	1
Naphthalene	<0.44		1.0	0.44	ug/L			08/29/25 17:28	1
n-Butylbenzene	<0.33		1.0	0.33	ug/L			08/29/25 17:28	1
N-Propylbenzene	<0.32		1.0	0.32	ug/L			08/29/25 17:28	1
p-Isopropyltoluene	<0.29		1.0	0.29	ug/L			08/29/25 17:28	1
sec-Butylbenzene	<0.27		1.0	0.27	ug/L			08/29/25 17:28	1
Styrene	<0.31		1.0	0.31	ug/L			08/29/25 17:28	1
tert-Butylbenzene	<0.26		1.0	0.26	ug/L			08/29/25 17:28	1
1,1,1,2-Tetrachloroethane	<0.67		1.0	0.67	ug/L			08/29/25 17:28	1
1,1,2,2-Tetrachloroethane	<0.65		1.0	0.65	ug/L			08/29/25 17:28	1
Tetrachloroethene	<0.39		1.0	0.39	ug/L			08/29/25 17:28	1

Eurofins Chicago

Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-273754-1

Client Sample ID: MW-20

Lab Sample ID: 500-273754-1

Date Collected: 08/27/25 10:30

Matrix: Water

Date Received: 08/28/25 09:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrahydrofuran	<3.9		10	3.9	ug/L			08/29/25 17:28	1
Toluene	<0.21		0.50	0.21	ug/L			08/29/25 17:28	1
trans-1,2-Dichloroethene	<0.44		1.0	0.44	ug/L			08/29/25 17:28	1
trans-1,3-Dichloropropene	<0.63		1.0	0.63	ug/L			08/29/25 17:28	1
1,2,3-Trichlorobenzene	<0.35		1.0	0.35	ug/L			08/29/25 17:28	1
1,2,4-Trichlorobenzene	<0.31		1.0	0.31	ug/L			08/29/25 17:28	1
1,1,1-Trichloroethane	<0.45		1.0	0.45	ug/L			08/29/25 17:28	1
1,1,2-Trichloroethane	<0.73		1.0	0.73	ug/L			08/29/25 17:28	1
Trichloroethene	<0.15		0.50	0.15	ug/L			08/29/25 17:28	1
Trichlorofluoromethane	<0.44		1.0	0.44	ug/L			08/29/25 17:28	1
1,2,3-Trichloropropane	<1.5		2.0	1.5	ug/L			08/29/25 17:28	1
1,2,4-Trimethylbenzene	<0.30		1.0	0.30	ug/L			08/29/25 17:28	1
1,3,5-Trimethylbenzene	<0.29		1.0	0.29	ug/L			08/29/25 17:28	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			08/29/25 17:28	1
Xylenes, Total	<0.30		1.0	0.30	ug/L			08/29/25 17:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		72 - 124		08/29/25 17:28	1
Dibromofluoromethane (Surr)	99		75 - 120		08/29/25 17:28	1
1,2-Dichloroethane-d4 (Surr)	100		75 - 126		08/29/25 17:28	1
Toluene-d8 (Surr)	104		75 - 120		08/29/25 17:28	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		08/28/25 13:29	08/29/25 17:33	1
Barium	9.4		2.5	0.73	ug/L		08/28/25 13:29	08/29/25 17:33	1
Boron	<13		50	13	ug/L		08/28/25 13:29	08/29/25 17:33	1
Cadmium	<0.17		0.50	0.17	ug/L		08/28/25 13:29	08/29/25 17:33	1
Chromium	<1.1		5.0	1.1	ug/L		08/28/25 13:29	08/29/25 17:33	1
Copper	3.2		2.0	0.50	ug/L		08/28/25 13:29	08/29/25 17:33	1
Lead	<0.19		0.50	0.19	ug/L		08/28/25 13:29	08/29/25 17:33	1
Manganese	150		2.5	0.79	ug/L		08/28/25 13:29	08/29/25 17:33	1
Selenium	<0.98		2.5	0.98	ug/L		08/28/25 13:29	08/29/25 17:33	1
Silver	<0.12		0.50	0.12	ug/L		08/28/25 13:29	08/29/25 17:33	1
Zinc	<6.9		20	6.9	ug/L		08/28/25 13:29	08/29/25 17:33	1

Method: SW846 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.076		0.20	0.076	ug/L		09/09/25 10:10	09/10/25 09:27	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	260		0.91	0.46	mg/L		08/28/25 13:29	09/02/25 10:03	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	2.5		1.0	0.42	mg/L			08/29/25 20:54	1
Sulfate (EPA 300.0)	13		1.0	0.47	mg/L			08/29/25 20:54	1
Fluoride (EPA 300.0)	<0.43		1.0	0.43	mg/L			08/29/25 20:54	1
Nitrate Nitrite as N (EPA N07-0003)	0.72	F1	0.10	0.041	mg/L			09/02/25 12:54	1
Alkalinity (SM 2320B)	5.4		5.0	3.7	mg/L			09/09/25 16:07	1

Eurofins Chicago

Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-273754-1

Client Sample ID: MW-20

Lab Sample ID: 500-273754-1

Date Collected: 08/27/25 10:30

Matrix: Water

Date Received: 08/28/25 09:15

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Color	Y				NONE			08/27/25 10:30	1
Field Odor	N				NONE			08/27/25 10:30	1
Field pH	8.16				SU			08/27/25 10:30	1
Field Turbidity	Y				NONE			08/27/25 10:30	1
Depth to Water (ft from MP)	67.42				ft			08/27/25 10:30	1
Well Depth	82.21				ft			08/27/25 10:30	1

Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-273754-1

Client Sample ID: Trip Blank-VOC

Lab Sample ID: 500-273754-2

Date Collected: 08/27/25 00:00

Matrix: Water

Date Received: 08/28/25 09:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<4.3		10	4.3	ug/L			08/29/25 13:45	1
Benzene	<0.18		0.50	0.18	ug/L			08/29/25 13:45	1
Bromobenzene	<0.60		1.0	0.60	ug/L			08/29/25 13:45	1
Bromochloromethane	<0.50		1.0	0.50	ug/L			08/29/25 13:45	1
Bromodichloromethane	<0.57		1.0	0.57	ug/L			08/29/25 13:45	1
Bromoform	<0.96		1.0	0.96	ug/L			08/29/25 13:45	1
Bromomethane	<1.8		3.0	1.8	ug/L			08/29/25 13:45	1
2-Butanone (MEK)	<2.3		5.0	2.3	ug/L			08/29/25 13:45	1
Carbon disulfide	<1.1		2.0	1.1	ug/L			08/29/25 13:45	1
Carbon tetrachloride	<0.41		1.0	0.41	ug/L			08/29/25 13:45	1
Chlorobenzene	<0.41		1.0	0.41	ug/L			08/29/25 13:45	1
Chloroethane	<0.47		5.0	0.47	ug/L			08/29/25 13:45	1
Chloroform	<0.92		2.0	0.92	ug/L			08/29/25 13:45	1
Chloromethane	<0.79		5.0	0.79	ug/L			08/29/25 13:45	1
2-Chlorotoluene	<0.36		1.0	0.36	ug/L			08/29/25 13:45	1
4-Chlorotoluene	<0.34		1.0	0.34	ug/L			08/29/25 13:45	1
cis-1,2-Dichloroethene	<0.42		1.0	0.42	ug/L			08/29/25 13:45	1
cis-1,3-Dichloropropene	<0.52		1.0	0.52	ug/L			08/29/25 13:45	1
Chlorodibromomethane	<0.83		1.0	0.83	ug/L			08/29/25 13:45	1
1,2-Dibromo-3-Chloropropane	<3.9		5.0	3.9	ug/L			08/29/25 13:45	1
1,2-Dibromoethane (EDB)	<0.56		1.0	0.56	ug/L			08/29/25 13:45	1
Dibromomethane	<0.58		1.0	0.58	ug/L			08/29/25 13:45	1
1,2-Dichlorobenzene	<0.48		1.0	0.48	ug/L			08/29/25 13:45	1
1,3-Dichlorobenzene	<0.41		1.0	0.41	ug/L			08/29/25 13:45	1
1,4-Dichlorobenzene	<0.45		1.0	0.45	ug/L			08/29/25 13:45	1
Dichlorodifluoromethane	<1.8		3.0	1.8	ug/L			08/29/25 13:45	1
1,1-Dichloroethane	<0.36		1.0	0.36	ug/L			08/29/25 13:45	1
1,2-Dichloroethane	<0.58		1.0	0.58	ug/L			08/29/25 13:45	1
1,1-Dichloroethene	<0.48		1.0	0.48	ug/L			08/29/25 13:45	1
1,2-Dichloropropane	<0.37		1.0	0.37	ug/L			08/29/25 13:45	1
1,3-Dichloropropane	<0.56		1.0	0.56	ug/L			08/29/25 13:45	1
2,2-Dichloropropane	<0.48		5.0	0.48	ug/L			08/29/25 13:45	1
1,1-Dichloropropene	<0.33		1.0	0.33	ug/L			08/29/25 13:45	1
Ethylbenzene	<0.20		0.50	0.20	ug/L			08/29/25 13:45	1
Hexachlorobutadiene	<0.54		1.0	0.54	ug/L			08/29/25 13:45	1
Isopropylbenzene	<0.29		1.0	0.29	ug/L			08/29/25 13:45	1
Isopropyl ether	<0.38		1.0	0.38	ug/L			08/29/25 13:45	1
Methylene Chloride	<3.6		5.0	3.6	ug/L			08/29/25 13:45	1
Methyl tert-butyl ether	<0.43		1.0	0.43	ug/L			08/29/25 13:45	1
Naphthalene	<0.44		1.0	0.44	ug/L			08/29/25 13:45	1
n-Butylbenzene	<0.33		1.0	0.33	ug/L			08/29/25 13:45	1
N-Propylbenzene	<0.32		1.0	0.32	ug/L			08/29/25 13:45	1
p-Isopropyltoluene	<0.29		1.0	0.29	ug/L			08/29/25 13:45	1
sec-Butylbenzene	<0.27		1.0	0.27	ug/L			08/29/25 13:45	1
Styrene	<0.31		1.0	0.31	ug/L			08/29/25 13:45	1
tert-Butylbenzene	<0.26		1.0	0.26	ug/L			08/29/25 13:45	1
1,1,1,2-Tetrachloroethane	<0.67		1.0	0.67	ug/L			08/29/25 13:45	1
1,1,1,2,2-Tetrachloroethane	<0.65		1.0	0.65	ug/L			08/29/25 13:45	1
Tetrachloroethene	<0.39		1.0	0.39	ug/L			08/29/25 13:45	1

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Client Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-273754-1

Client Sample ID: Trip Blank-VOC

Lab Sample ID: 500-273754-2

Date Collected: 08/27/25 00:00

Matrix: Water

Date Received: 08/28/25 09:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrahydrofuran	<3.9		10	3.9	ug/L			08/29/25 13:45	1
Toluene	<0.21		0.50	0.21	ug/L			08/29/25 13:45	1
trans-1,2-Dichloroethene	<0.44		1.0	0.44	ug/L			08/29/25 13:45	1
trans-1,3-Dichloropropene	<0.63		1.0	0.63	ug/L			08/29/25 13:45	1
1,2,3-Trichlorobenzene	<0.35		1.0	0.35	ug/L			08/29/25 13:45	1
1,2,4-Trichlorobenzene	<0.31		1.0	0.31	ug/L			08/29/25 13:45	1
1,1,1-Trichloroethane	<0.45		1.0	0.45	ug/L			08/29/25 13:45	1
1,1,2-Trichloroethane	<0.73		1.0	0.73	ug/L			08/29/25 13:45	1
Trichloroethene	<0.15		0.50	0.15	ug/L			08/29/25 13:45	1
Trichlorofluoromethane	<0.44		1.0	0.44	ug/L			08/29/25 13:45	1
1,2,3-Trichloropropane	<1.5		2.0	1.5	ug/L			08/29/25 13:45	1
1,2,4-Trimethylbenzene	<0.30		1.0	0.30	ug/L			08/29/25 13:45	1
1,3,5-Trimethylbenzene	<0.29		1.0	0.29	ug/L			08/29/25 13:45	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			08/29/25 13:45	1
Xylenes, Total	<0.30		1.0	0.30	ug/L			08/29/25 13:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		72 - 124		08/29/25 13:45	1
Dibromofluoromethane (Surr)	98		75 - 120		08/29/25 13:45	1
1,2-Dichloroethane-d4 (Surr)	97		75 - 126		08/29/25 13:45	1
Toluene-d8 (Surr)	105		75 - 120		08/29/25 13:45	1

Definitions/Glossary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-273754-1

Qualifiers

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Association Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-273754-1

GC/MS VOA

Analysis Batch: 832014

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-273754-1	MW-20	Total/NA	Water	8260D	
500-273754-2	Trip Blank-VOC	Total/NA	Water	8260D	
MB 500-832014/7	Method Blank	Total/NA	Water	8260D	
LCS 500-832014/4	Lab Control Sample	Total/NA	Water	8260D	
LCSD 500-832014/5	Lab Control Sample Dup	Total/NA	Water	8260D	

Metals

Prep Batch: 831928

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-273754-1	MW-20	Dissolved	Water	3005A	
MB 500-831928/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-831928/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 832163

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-273754-1	MW-20	Dissolved	Water	6020B	831928
MB 500-831928/1-A	Method Blank	Total Recoverable	Water	6020B	831928
LCS 500-831928/2-A	Lab Control Sample	Total Recoverable	Water	6020B	831928

Analysis Batch: 832221

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-273754-1	MW-20	Dissolved	Water	SM 2340B	831928

Prep Batch: 833131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-273754-1	MW-20	Dissolved	Water	7470A	
MB 500-833131/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-833131/13-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 833326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-273754-1	MW-20	Dissolved	Water	7470A	833131
MB 500-833131/12-A	Method Blank	Total/NA	Water	7470A	833131
LCS 500-833131/13-A	Lab Control Sample	Total/NA	Water	7470A	833131

General Chemistry

Analysis Batch: 832072

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-273754-1	MW-20	Dissolved	Water	300.0	
MB 500-832072/3	Method Blank	Total/NA	Water	300.0	
LCS 500-832072/4	Lab Control Sample	Total/NA	Water	300.0	
500-273754-1 MS	MW-20	Dissolved	Water	300.0	
500-273754-1 MSD	MW-20	Dissolved	Water	300.0	

Analysis Batch: 832266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-273754-1	MW-20	Dissolved	Water	N07-0003	
MB 500-832266/124	Method Blank	Total/NA	Water	N07-0003	
LCS 500-832266/125	Lab Control Sample	Total/NA	Water	N07-0003	
500-273754-1 MS	MW-20	Dissolved	Water	N07-0003	

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QC Association Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-273754-1

General Chemistry (Continued)

Analysis Batch: 832266 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-273754-1 MSD	MW-20	Dissolved	Water	N07-0003	

Analysis Batch: 833228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-273754-1	MW-20	Dissolved	Water	SM 2320B	
MB 500-833228/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-833228/4	Lab Control Sample	Total/NA	Water	SM 2320B	

Field Service / Mobile Lab

Analysis Batch: 833519

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-273754-1	MW-20	Total/NA	Water	Field Sampling	

Surrogate Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-273754-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB	DBFM	DCA	TOL
		(72-124)	(75-120)	(75-126)	(75-120)
500-273754-1	MW-20	100	99	100	104
500-273754-2	Trip Blank-VOC	101	98	97	105
LCS 500-832014/4	Lab Control Sample	102	102	98	103
LCSD 500-832014/5	Lab Control Sample Dup	101	102	99	103
MB 500-832014/7	Method Blank	98	100	100	103

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

TOL = Toluene-d8 (Surr)

QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-273754-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 500-832014/7

Matrix: Water

Analysis Batch: 832014

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<4.3		10	4.3	ug/L			08/29/25 12:54	1
Benzene	<0.18		0.50	0.18	ug/L			08/29/25 12:54	1
Bromobenzene	<0.60		1.0	0.60	ug/L			08/29/25 12:54	1
Bromochloromethane	<0.50		1.0	0.50	ug/L			08/29/25 12:54	1
Bromodichloromethane	<0.57		1.0	0.57	ug/L			08/29/25 12:54	1
Bromoform	<0.96		1.0	0.96	ug/L			08/29/25 12:54	1
Bromomethane	<1.8		3.0	1.8	ug/L			08/29/25 12:54	1
2-Butanone (MEK)	<2.3		5.0	2.3	ug/L			08/29/25 12:54	1
Carbon disulfide	<1.1		2.0	1.1	ug/L			08/29/25 12:54	1
Carbon tetrachloride	<0.41		1.0	0.41	ug/L			08/29/25 12:54	1
Chlorobenzene	<0.41		1.0	0.41	ug/L			08/29/25 12:54	1
Chloroethane	<0.47		5.0	0.47	ug/L			08/29/25 12:54	1
Chloroform	<0.92		2.0	0.92	ug/L			08/29/25 12:54	1
Chloromethane	<0.79		5.0	0.79	ug/L			08/29/25 12:54	1
2-Chlorotoluene	<0.36		1.0	0.36	ug/L			08/29/25 12:54	1
4-Chlorotoluene	<0.34		1.0	0.34	ug/L			08/29/25 12:54	1
cis-1,2-Dichloroethene	<0.42		1.0	0.42	ug/L			08/29/25 12:54	1
cis-1,3-Dichloropropene	<0.52		1.0	0.52	ug/L			08/29/25 12:54	1
Chlorodibromomethane	<0.83		1.0	0.83	ug/L			08/29/25 12:54	1
1,2-Dibromo-3-Chloropropane	<3.9		5.0	3.9	ug/L			08/29/25 12:54	1
1,2-Dibromoethane (EDB)	<0.56		1.0	0.56	ug/L			08/29/25 12:54	1
Dibromomethane	<0.58		1.0	0.58	ug/L			08/29/25 12:54	1
1,2-Dichlorobenzene	<0.48		1.0	0.48	ug/L			08/29/25 12:54	1
1,3-Dichlorobenzene	<0.41		1.0	0.41	ug/L			08/29/25 12:54	1
1,4-Dichlorobenzene	<0.45		1.0	0.45	ug/L			08/29/25 12:54	1
Dichlorodifluoromethane	<1.8		3.0	1.8	ug/L			08/29/25 12:54	1
1,1-Dichloroethane	<0.36		1.0	0.36	ug/L			08/29/25 12:54	1
1,2-Dichloroethane	<0.58		1.0	0.58	ug/L			08/29/25 12:54	1
1,1-Dichloroethene	<0.48		1.0	0.48	ug/L			08/29/25 12:54	1
1,2-Dichloropropane	<0.37		1.0	0.37	ug/L			08/29/25 12:54	1
1,3-Dichloropropane	<0.56		1.0	0.56	ug/L			08/29/25 12:54	1
2,2-Dichloropropane	<0.48		5.0	0.48	ug/L			08/29/25 12:54	1
1,1-Dichloropropene	<0.33		1.0	0.33	ug/L			08/29/25 12:54	1
Ethylbenzene	<0.20		0.50	0.20	ug/L			08/29/25 12:54	1
Hexachlorobutadiene	<0.54		1.0	0.54	ug/L			08/29/25 12:54	1
Isopropylbenzene	<0.29		1.0	0.29	ug/L			08/29/25 12:54	1
Isopropyl ether	<0.38		1.0	0.38	ug/L			08/29/25 12:54	1
Methylene Chloride	<3.6		5.0	3.6	ug/L			08/29/25 12:54	1
Methyl tert-butyl ether	<0.43		1.0	0.43	ug/L			08/29/25 12:54	1
Naphthalene	<0.44		1.0	0.44	ug/L			08/29/25 12:54	1
n-Butylbenzene	<0.33		1.0	0.33	ug/L			08/29/25 12:54	1
N-Propylbenzene	<0.32		1.0	0.32	ug/L			08/29/25 12:54	1
p-Isopropyltoluene	<0.29		1.0	0.29	ug/L			08/29/25 12:54	1
sec-Butylbenzene	<0.27		1.0	0.27	ug/L			08/29/25 12:54	1
Styrene	<0.31		1.0	0.31	ug/L			08/29/25 12:54	1
tert-Butylbenzene	<0.26		1.0	0.26	ug/L			08/29/25 12:54	1
1,1,1,2-Tetrachloroethane	<0.67		1.0	0.67	ug/L			08/29/25 12:54	1
1,1,2,2-Tetrachloroethane	<0.65		1.0	0.65	ug/L			08/29/25 12:54	1

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-273754-1

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

Lab Sample ID: MB 500-832014/7

Matrix: Water

Analysis Batch: 832014

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<0.39		1.0	0.39	ug/L			08/29/25 12:54	1
Tetrahydrofuran	<3.9		10	3.9	ug/L			08/29/25 12:54	1
Toluene	<0.21		0.50	0.21	ug/L			08/29/25 12:54	1
trans-1,2-Dichloroethene	<0.44		1.0	0.44	ug/L			08/29/25 12:54	1
trans-1,3-Dichloropropene	<0.63		1.0	0.63	ug/L			08/29/25 12:54	1
1,2,3-Trichlorobenzene	<0.35		1.0	0.35	ug/L			08/29/25 12:54	1
1,2,4-Trichlorobenzene	<0.31		1.0	0.31	ug/L			08/29/25 12:54	1
1,1,1-Trichloroethane	<0.45		1.0	0.45	ug/L			08/29/25 12:54	1
1,1,2-Trichloroethane	<0.73		1.0	0.73	ug/L			08/29/25 12:54	1
Trichloroethene	<0.15		0.50	0.15	ug/L			08/29/25 12:54	1
Trichlorofluoromethane	<0.44		1.0	0.44	ug/L			08/29/25 12:54	1
1,2,3-Trichloropropane	<1.5		2.0	1.5	ug/L			08/29/25 12:54	1
1,2,4-Trimethylbenzene	<0.30		1.0	0.30	ug/L			08/29/25 12:54	1
1,3,5-Trimethylbenzene	<0.29		1.0	0.29	ug/L			08/29/25 12:54	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			08/29/25 12:54	1
Xylenes, Total	<0.30		1.0	0.30	ug/L			08/29/25 12:54	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		72 - 124		08/29/25 12:54	1
Dibromofluoromethane (Surr)	100		75 - 120		08/29/25 12:54	1
1,2-Dichloroethane-d4 (Surr)	100		75 - 126		08/29/25 12:54	1
Toluene-d8 (Surr)	103		75 - 120		08/29/25 12:54	1

Lab Sample ID: LCS 500-832014/4

Matrix: Water

Analysis Batch: 832014

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetone	50.0	38.8		ug/L		78	40 - 143
Benzene	50.0	48.4		ug/L		97	70 - 120
Bromobenzene	50.0	45.9		ug/L		92	70 - 122
Bromochloromethane	50.0	49.0		ug/L		98	65 - 122
Bromodichloromethane	50.0	48.2		ug/L		96	69 - 120
Bromoform	50.0	47.3		ug/L		95	56 - 132
Bromomethane	50.0	48.6		ug/L		97	40 - 152
2-Butanone (MEK)	50.0	39.1		ug/L		78	46 - 144
Carbon disulfide	50.0	44.3		ug/L		89	66 - 120
Carbon tetrachloride	50.0	52.3		ug/L		105	59 - 133
Chlorobenzene	50.0	47.6		ug/L		95	70 - 120
Chloroethane	50.0	47.9		ug/L		96	48 - 136
Chloroform	50.0	46.1		ug/L		92	70 - 120
Chloromethane	50.0	43.8		ug/L		88	56 - 152
2-Chlorotoluene	50.0	47.0		ug/L		94	70 - 125
4-Chlorotoluene	50.0	46.4		ug/L		93	68 - 124
cis-1,2-Dichloroethene	50.0	46.6		ug/L		93	70 - 125
cis-1,3-Dichloropropene	50.0	50.0		ug/L		100	64 - 127
Chlorodibromomethane	50.0	55.0		ug/L		110	68 - 125
1,2-Dibromo-3-Chloropropane	50.0	45.1		ug/L		90	56 - 123

Eurofins Chicago

QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-273754-1

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

Lab Sample ID: LCS 500-832014/4

Matrix: Water

Analysis Batch: 832014

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dibromoethane (EDB)	50.0	48.2		ug/L		96	70 - 125
Dibromomethane	50.0	47.8		ug/L		96	70 - 120
1,2-Dichlorobenzene	50.0	46.7		ug/L		93	70 - 125
1,3-Dichlorobenzene	50.0	47.1		ug/L		94	70 - 125
1,4-Dichlorobenzene	50.0	46.6		ug/L		93	70 - 120
Dichlorodifluoromethane	50.0	47.3		ug/L		95	40 - 159
1,1-Dichloroethane	50.0	47.3		ug/L		95	70 - 125
1,2-Dichloroethane	50.0	46.2		ug/L		92	68 - 127
1,1-Dichloroethene	50.0	45.7		ug/L		91	67 - 122
1,2-Dichloropropane	50.0	49.3		ug/L		99	67 - 130
1,3-Dichloropropane	50.0	48.9		ug/L		98	62 - 136
2,2-Dichloropropane	50.0	46.8		ug/L		94	58 - 139
1,1-Dichloropropene	50.0	45.7		ug/L		91	70 - 121
Ethylbenzene	50.0	48.0		ug/L		96	70 - 123
Hexachlorobutadiene	50.0	50.8		ug/L		102	51 - 150
Isopropylbenzene	50.0	47.5		ug/L		95	70 - 126
Methylene Chloride	50.0	46.7		ug/L		93	69 - 125
Methyl tert-butyl ether	50.0	48.1		ug/L		96	55 - 123
Naphthalene	50.0	45.3		ug/L		91	53 - 144
n-Butylbenzene	50.0	51.0		ug/L		102	68 - 125
N-Propylbenzene	50.0	48.1		ug/L		96	69 - 127
p-Isopropyltoluene	50.0	49.6		ug/L		99	70 - 125
sec-Butylbenzene	50.0	49.2		ug/L		98	70 - 123
Styrene	50.0	47.1		ug/L		94	70 - 120
tert-Butylbenzene	50.0	48.6		ug/L		97	70 - 121
1,1,1,2-Tetrachloroethane	50.0	54.4		ug/L		109	70 - 125
1,1,2,2-Tetrachloroethane	50.0	46.4		ug/L		93	62 - 140
Tetrachloroethene	50.0	46.8		ug/L		94	70 - 128
Tetrahydrofuran	100	80.8		ug/L		81	59 - 139
Toluene	50.0	48.0		ug/L		96	70 - 125
trans-1,2-Dichloroethene	50.0	47.0		ug/L		94	70 - 125
trans-1,3-Dichloropropene	50.0	49.8		ug/L		100	62 - 128
1,2,3-Trichlorobenzene	50.0	43.6		ug/L		87	51 - 145
1,2,4-Trichlorobenzene	50.0	50.7		ug/L		101	57 - 137
1,1,1-Trichloroethane	50.0	46.0		ug/L		92	70 - 125
1,1,2-Trichloroethane	50.0	47.6		ug/L		95	71 - 130
Trichloroethene	50.0	48.4		ug/L		97	70 - 125
Trichlorofluoromethane	50.0	45.5		ug/L		91	55 - 128
1,2,3-Trichloropropane	50.0	46.6		ug/L		93	50 - 133
1,2,4-Trimethylbenzene	50.0	48.9		ug/L		98	70 - 123
1,3,5-Trimethylbenzene	50.0	48.0		ug/L		96	70 - 123
Vinyl chloride	50.0	45.7		ug/L		91	64 - 126
Xylenes, Total	100	95.0		ug/L		95	70 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		72 - 124
Dibromofluoromethane (Surr)	102		75 - 120
1,2-Dichloroethane-d4 (Surr)	98		75 - 126

Eurofins Chicago

QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-273754-1

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

Lab Sample ID: LCS 500-832014/4

Matrix: Water

Analysis Batch: 832014

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	103		75 - 120

Lab Sample ID: LCSD 500-832014/5

Matrix: Water

Analysis Batch: 832014

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acetone	50.0	39.5		ug/L		79	40 - 143	2	20
Benzene	50.0	48.2		ug/L		96	70 - 120	0	20
Bromobenzene	50.0	44.7		ug/L		89	70 - 122	3	20
Bromochloromethane	50.0	49.6		ug/L		99	65 - 122	1	20
Bromodichloromethane	50.0	49.0		ug/L		98	69 - 120	2	20
Bromoform	50.0	48.3		ug/L		97	56 - 132	2	20
Bromomethane	50.0	51.2		ug/L		102	40 - 152	5	20
2-Butanone (MEK)	50.0	41.1		ug/L		82	46 - 144	5	20
Carbon disulfide	50.0	44.5		ug/L		89	66 - 120	1	20
Carbon tetrachloride	50.0	53.8		ug/L		108	59 - 133	3	20
Chlorobenzene	50.0	47.7		ug/L		95	70 - 120	0	20
Chloroethane	50.0	51.2		ug/L		102	48 - 136	7	20
Chloroform	50.0	46.5		ug/L		93	70 - 120	1	20
Chloromethane	50.0	46.8		ug/L		94	56 - 152	7	20
2-Chlorotoluene	50.0	45.7		ug/L		91	70 - 125	3	20
4-Chlorotoluene	50.0	45.8		ug/L		92	68 - 124	1	20
cis-1,2-Dichloroethene	50.0	46.9		ug/L		94	70 - 125	1	20
cis-1,3-Dichloropropene	50.0	50.3		ug/L		101	64 - 127	1	20
Chlorodibromomethane	50.0	54.8		ug/L		110	68 - 125	0	20
1,2-Dibromo-3-Chloropropane	50.0	45.3		ug/L		91	56 - 123	0	20
1,2-Dibromoethane (EDB)	50.0	49.0		ug/L		98	70 - 125	2	20
Dibromomethane	50.0	49.1		ug/L		98	70 - 120	3	20
1,2-Dichlorobenzene	50.0	46.0		ug/L		92	70 - 125	1	20
1,3-Dichlorobenzene	50.0	46.5		ug/L		93	70 - 125	1	20
1,4-Dichlorobenzene	50.0	46.2		ug/L		92	70 - 120	1	20
Dichlorodifluoromethane	50.0	51.7		ug/L		103	40 - 159	9	20
1,1-Dichloroethane	50.0	48.4		ug/L		97	70 - 125	2	20
1,2-Dichloroethane	50.0	46.5		ug/L		93	68 - 127	1	20
1,1-Dichloroethene	50.0	46.9		ug/L		94	67 - 122	3	20
1,2-Dichloropropane	50.0	49.9		ug/L		100	67 - 130	1	20
1,3-Dichloropropane	50.0	49.1		ug/L		98	62 - 136	0	20
2,2-Dichloropropane	50.0	47.3		ug/L		95	58 - 139	1	20
1,1-Dichloropropene	50.0	47.2		ug/L		94	70 - 121	3	20
Ethylbenzene	50.0	47.9		ug/L		96	70 - 123	0	20
Hexachlorobutadiene	50.0	51.1		ug/L		102	51 - 150	1	20
Isopropylbenzene	50.0	46.7		ug/L		93	70 - 126	2	20
Methylene Chloride	50.0	46.8		ug/L		94	69 - 125	0	20
Methyl tert-butyl ether	50.0	48.6		ug/L		97	55 - 123	1	20
Naphthalene	50.0	46.0		ug/L		92	53 - 144	1	20
n-Butylbenzene	50.0	50.2		ug/L		100	68 - 125	2	20
N-Propylbenzene	50.0	47.2		ug/L		94	69 - 127	2	20

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-273754-1

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

Lab Sample ID: LCSD 500-832014/5

Matrix: Water

Analysis Batch: 832014

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
p-Isopropyltoluene	50.0	49.1		ug/L		98	70 - 125	1	20
sec-Butylbenzene	50.0	48.7		ug/L		97	70 - 123	1	20
Styrene	50.0	46.9		ug/L		94	70 - 120	0	20
tert-Butylbenzene	50.0	48.3		ug/L		97	70 - 121	1	20
1,1,1,2-Tetrachloroethane	50.0	54.2		ug/L		108	70 - 125	0	20
1,1,2,2-Tetrachloroethane	50.0	46.1		ug/L		92	62 - 140	1	20
Tetrachloroethene	50.0	46.9		ug/L		94	70 - 128	0	20
Tetrahydrofuran	100	83.1		ug/L		83	59 - 139	3	20
Toluene	50.0	47.9		ug/L		96	70 - 125	0	20
trans-1,2-Dichloroethene	50.0	46.9		ug/L		94	70 - 125	0	20
trans-1,3-Dichloropropene	50.0	49.7		ug/L		99	62 - 128	0	20
1,2,3-Trichlorobenzene	50.0	44.3		ug/L		89	51 - 145	2	20
1,2,4-Trichlorobenzene	50.0	50.6		ug/L		101	57 - 137	0	20
1,1,1-Trichloroethane	50.0	46.4		ug/L		93	70 - 125	1	20
1,1,2-Trichloroethane	50.0	48.1		ug/L		96	71 - 130	1	20
Trichloroethene	50.0	48.5		ug/L		97	70 - 125	0	20
Trichlorofluoromethane	50.0	50.0		ug/L		100	55 - 128	10	20
1,2,3-Trichloropropane	50.0	46.2		ug/L		92	50 - 133	1	20
1,2,4-Trimethylbenzene	50.0	48.2		ug/L		96	70 - 123	1	20
1,3,5-Trimethylbenzene	50.0	47.1		ug/L		94	70 - 123	2	20
Vinyl chloride	50.0	49.6		ug/L		99	64 - 126	8	20
Xylenes, Total	100	94.8		ug/L		95	70 - 125	0	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		72 - 124
Dibromofluoromethane (Surr)	102		75 - 120
1,2-Dichloroethane-d4 (Surr)	99		75 - 126
Toluene-d8 (Surr)	103		75 - 120

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 500-831928/1-A

Matrix: Water

Analysis Batch: 832163

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 831928

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		08/28/25 13:29	08/29/25 15:28	1
Barium	<0.73		2.5	0.73	ug/L		08/28/25 13:29	08/29/25 15:28	1
Boron	<13		50	13	ug/L		08/28/25 13:29	08/29/25 15:28	1
Cadmium	<0.17		0.50	0.17	ug/L		08/28/25 13:29	08/29/25 15:28	1
Chromium	<1.1		5.0	1.1	ug/L		08/28/25 13:29	08/29/25 15:28	1
Copper	<0.50		2.0	0.50	ug/L		08/28/25 13:29	08/29/25 15:28	1
Lead	<0.19		0.50	0.19	ug/L		08/28/25 13:29	08/29/25 15:28	1
Manganese	<0.79		2.5	0.79	ug/L		08/28/25 13:29	08/29/25 15:28	1
Selenium	<0.98		2.5	0.98	ug/L		08/28/25 13:29	08/29/25 15:28	1
Silver	<0.12		0.50	0.12	ug/L		08/28/25 13:29	08/29/25 15:28	1
Zinc	<6.9		20	6.9	ug/L		08/28/25 13:29	08/29/25 15:28	1

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-273754-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 500-831928/2-A
Matrix: Water
Analysis Batch: 832163

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 831928

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	100	97.9		ug/L		98	80 - 120
Barium	500	503		ug/L		101	80 - 120
Boron	1000	1040		ug/L		104	80 - 120
Cadmium	50.0	50.2		ug/L		100	80 - 120
Chromium	200	195		ug/L		98	80 - 120
Copper	250	244		ug/L		98	80 - 120
Lead	100	98.8		ug/L		99	80 - 120
Manganese	500	506		ug/L		101	80 - 120
Selenium	100	100		ug/L		100	80 - 120
Silver	50.0	51.2		ug/L		102	80 - 120
Zinc	500	497		ug/L		99	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-833131/12-A
Matrix: Water
Analysis Batch: 833326

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 833131

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.076		0.20	0.076	ug/L		09/09/25 10:10	09/10/25 08:37	1

Lab Sample ID: LCS 500-833131/13-A
Matrix: Water
Analysis Batch: 833326

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 833131

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	2.00	2.11		ug/L		106	80 - 120

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 500-832072/3
Matrix: Water
Analysis Batch: 832072

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.42		1.0	0.42	mg/L			08/29/25 14:01	1
Sulfate	<0.47		1.0	0.47	mg/L			08/29/25 14:01	1
Fluoride	<0.43		1.0	0.43	mg/L			08/29/25 14:01	1

Lab Sample ID: LCS 500-832072/4
Matrix: Water
Analysis Batch: 832072

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	100	100		mg/L		100	90 - 110
Sulfate	100	103		mg/L		103	90 - 110
Fluoride	20.0	20.2		mg/L		101	90 - 110

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QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-273754-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 500-273754-1 MS

Matrix: Water

Analysis Batch: 832072

Client Sample ID: MW-20

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	2.5		10.0	12.6		mg/L		102	80 - 120
Sulfate	13		10.0	23.2		mg/L		100	80 - 120
Fluoride	<0.43		10.0	10.4		mg/L		104	80 - 120

Lab Sample ID: 500-273754-1 MSD

Matrix: Water

Analysis Batch: 832072

Client Sample ID: MW-20

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	2.5		10.0	12.8		mg/L		103	80 - 120	1	20
Sulfate	13		10.0	23.7		mg/L		105	80 - 120	2	20
Fluoride	<0.43		10.0	10.7		mg/L		107	80 - 120	2	20

Method: N07-0003 - Enzymatic Nitrate-Nitrite Nitrogen

Lab Sample ID: MB 500-832266/124

Matrix: Water

Analysis Batch: 832266

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	<0.041		0.10	0.041	mg/L			09/02/25 12:51	1

Lab Sample ID: LCS 500-832266/125

Matrix: Water

Analysis Batch: 832266

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate Nitrite as N	1.00	1.02		mg/L		102	90 - 110

Lab Sample ID: 500-273754-1 MS

Matrix: Water

Analysis Batch: 832266

Client Sample ID: MW-20

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate Nitrite as N	0.72	F1	1.00	2.00	F1	mg/L		129	90 - 110

Lab Sample ID: 500-273754-1 MSD

Matrix: Water

Analysis Batch: 832266

Client Sample ID: MW-20

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate Nitrite as N	0.72	F1	1.00	2.00	F1	mg/L		128	90 - 110	0	20

QC Sample Results

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-273754-1

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-833228/3

Matrix: Water

Analysis Batch: 833228

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	<3.7		5.0	3.7	mg/L			09/09/25 15:01	1

Lab Sample ID: LCS 500-833228/4

Matrix: Water

Analysis Batch: 833228

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	100	107		mg/L		107	95 - 121

Lab Chronicle

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-273754-1

Client Sample ID: MW-20

Date Collected: 08/27/25 10:30

Date Received: 08/28/25 09:15

Lab Sample ID: 500-273754-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	832014	W1T	EET CHI	08/29/25 17:28
Dissolved	Prep	3005A			831928	MS	EET CHI	08/28/25 13:29 - 08/28/25 19:29 ¹
Dissolved	Analysis	6020B		1	832163	S1Z	EET CHI	08/29/25 17:33
Dissolved	Prep	7470A			833131	MJG	EET CHI	09/09/25 10:10 - 09/09/25 12:10 ¹
Dissolved	Analysis	7470A		1	833326	MJG	EET CHI	09/10/25 09:27
Dissolved	Prep	3005A			831928	MS	EET CHI	08/28/25 13:29 - 08/28/25 19:29 ¹
Dissolved	Analysis	SM 2340B		1	832221	DAJ	EET CHI	09/02/25 10:03
Dissolved	Analysis	300.0		1	832072	MM	EET CHI	08/29/25 20:54
Dissolved	Analysis	N07-0003		1	832266	TR	EET CHI	09/02/25 12:54
Dissolved	Analysis	SM 2320B		1	833228	AC	EET CHI	09/09/25 16:07
Total/NA	Analysis	Field Sampling		1	833519	GA	EET CHI	08/27/25 10:30

Client Sample ID: Trip Blank-VOC

Date Collected: 08/27/25 00:00

Date Received: 08/28/25 09:15

Lab Sample ID: 500-273754-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	832014	W1T	EET CHI	08/29/25 13:45

¹ This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

Laboratory References:

EET CHI = Eurofins Chicago, 18410 Crossing Drive, Suite E, Tinley Park, IL 60487, TEL (708)534-5200

Accreditation/Certification Summary

Client: Short Elliott Hendrickson, Inc. dba SEH
Project/Site: Vernon Co LF - 03628

Job ID: 500-273754-1

Laboratory: Eurofins Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	399172840	08-31-26

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

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Ver: 10/10/9/11/2025

Login Sample Receipt Checklist

Client: Short Elliott Hendrickson, Inc. dba SEH

Job Number: 500-273754-1

Login Number: 273754

List Number: 1

Creator: Babayode, Daniel

List Source: Eurofins Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	