City of Marquette, MI

Meeting Agenda
City Commission

Monday, September 8, 2025
6:00 PM
Commission Chambers

300 West Baraga Ave
Marquette, Michigan 49855

Call to Order, Pledge of Allegiance and Roll Call

Approval of the Agenda

Announcements

Boards and Committees

1. Appointment(s)

   Abigail LaForest to the Public Art Commission for an unexpired term ending 02-26-2028.

2. Reappointment(s)

   Amy Maus to the Parks and Recreation Advisory Board for a term ending 09-01-2028.

Public Comments - Comments may not exceed three minutes per person. Please state your name and physical address when making public comments.

Presentation(s)

3. Planning Commission, by Kevin Clegg

4. **Consent Agenda - Roll Call Vote**

   - **4.a.** Approve the minutes of the August 25, 2025 regular Commission meeting
   - **4.b.** Approve the total bills payable in the amount of $2,563.340.51
   - **4.c.** EGLE GLRI - Grant Application
   - **4.d.** KBIC Funding for the City of Marquette Department of Community Services
   - **4.e.** KBIC Funding for the City of Marquette Police Department
   - **4.f.** Sault Ste. Marie Tribe of Chippewa Indians Funding for the City of Marquette Police Department
   - **4.g.** Noquemanon Trails Network - Trail Maintenace Permit
   - **4.h.** Peg Hirvonen Bandshell - Construction Contract Change Order
   - **4.i.** Proclamation - Marquette Alzheimer’s Awareness Day
   - **4.j.** Schedule Public Hearing- Former Marquette General Hospital Brownfield Plan Amendment - Roll Call Vote

4.k. Schedule Public Hearing - Rezoning of 480 River Park Circle

4.l. Travel Lift Agreement

New Business

5. Schedule Public Hearing- FY 2026 Budget

6. Contract Approval - In-situ Remediation Services - Former Cliffs-Dow Site

Public Comments - Comments may not exceed three minutes per person. Please state your name and physical address when making public comments.

Comments from the Commission

Comments from the City Manager

Adjournment

Kyle Whitney, City Clerk

If you require assistance to participate in any meeting, program or activity offered by the City of Marquette, please provide advanced notice to City of Marquette ADA Coordinator Eric Stemen at 906-225-8978 or via email at estemen@marquettemi.gov.

Agenda Date: 9/8/2025

Consent Agenda - Roll Call Vote

Approve the minutes of the August 25, 2025 regular Commission meeting

ALTERNATIVES:

As determined by the Commission.

ATTACHMENTS:

Description

- 08-25-25 Minutes

City of Marquette, MI

300 West Baraga Ave
Marquette, Michigan 49855

Meeting Minutes
City Commission

Monday, August 25, 2025
6:00 PM
Commission Chambers

Call to Order, Pledge of Allegiance and Roll Call

Present: Davis, Gottlieb, Hanley, Larson, Mayer, Ottaway, Schloegel

Approval of the Agenda

Commissioner Sally Davis moved to Approve the agenda as presented, seconded by Commissioner Michael Larson and Carried Unanimously.

Announcements

Mayor Hanley had no announcements.

Boards and Committees

1. Reappointment(s)

Lori Hauswirth to the Parks and Recreation Advisory Board for a term ending 9-1-28.
Jon Nebel to the Parks and Recreation Advisory Board for a term ending 9-1-28.
Amanda Gobert to the Parks and Recreation Advisory Board for a term ending 9-1-28.

Mayor Pro Tem Paul Schloegel moved to Approve the reappointments as listed, seconded by Commissioner Cary Gottlieb and Carried Unanimously.

Public Comments - Comments may not exceed three minutes per person. Please state your name and physical address when making public comments.

Geraldine Nault spoke about flowers outside City Hall, as well as the Staff and Citizens Academies.

Presentation(s)

2. Marquette Housing Commission, by Jackie Stark

Marquette Housing Commission chair Jackie Stark provided the annual report from the MHC. She highlighted the MHC's mission, noted strong staff retention, and discussed various MHC offerings, including the Housing Choice Voucher program and the Youth and Family Center at Lake Superior Village.
Stark reviewed the list of MHC properties and discussed housing demand, emphasizing efforts to expand affordable/workforce housing and voucher utilization,

and talking about the property-management services being provided by the organization.

3. Marquette Brownfield Redevelopment Authority, by Callie New

Marquette Brownfield Redevelopment board member Bob Kulisheck discussed the MBRA board and staff, and then introduced Deputy City Manager Sean Hobbins, who acts as a city staff liaison to the board, to provide an overview presentation.
Hobbins offered a brief overview of tax-increment financing mechanisms and explained how TIF districts have been historically utilized by the city to make redevelopment feasible on contaminated, blighted, or obsolete properties. With recent changes to state law, he said, brownfield TIFs can now also support housing projects. He emphasized that when increased tax revenue is generated from development projects in TIF districts, the developers are still paying full taxes, but the newly generated funds are captured and used to reimburse developers for eligible costs related to the project. This mechanism allows for local and state support for rehabilitation and remediation, as well as for certain housing needs.
He said the MBRA's Revolving Loan Fund has recently supported environmental work for Habitat for Humanity and a traffic study for the old hospital site.
Hobbins reviewed key projects, including Cliffs Dow, Founders Landing, Liberty Way, the hospital, Ore Dock Brewing Company, and new housing TIF projects such as the CHIP apartments and the project being discused tonight at 401 W. Washington Street.

Public Hearing(s)

4. 401 W. Washington Street Brownfield Plan - Roll Call Vote

Stosh Wasik said he is available for questions if needed and thanked the City for all the work that has gone into this project to this point.

Commissioner Michael Larson moved to approve the 401 W. Washington Street Brownfield Plan and the attached resolution, seconded by Mayor Pro Tem Paul Schloegel. Discussion ensued.

Commissioner Sally Davis said she is happy to add additional housing at reduced rent levels and said she likes the location and look of the project. She said she has had questions about this project and has discussed it at length with staff.

She said that she believes the 20-year TIF capture is too long for this project but noted that the capture will all occur within the boundaries of the DDA and will not reflect in any way on the city general fund. Since the DDA board supported this project, she said, she plans to vote for it.

The City Commission then voted on the motion, which carried unanimously by Roll Call vote.

5. Consent Agenda - Roll Call Vote

Commissioner Sally Davis moved to Approve the Consent Agenda with an amendment to the minutes, adding the following to Geraldine Nault's public comment: "She is not in favor of another City/DDA TIF. It takes money from the City taxes.", seconded by Commissioner Cody Mayer and Carried Unanimously by Roll Call Vote.

5.a. Approve the minutes of the August 11, 2025 work session

5.b. Approve the minutes of the August 11, 2025 regular Commission meeting

5.c. Approve the total bills payable in the amount of $4,090,360.63

5.d. 01-PUD-03-25: Planned Unit Development Agreement for Brownstones at Uptown

5.e. Grove Street Booster Station Fiber Connect

5.f. KBIC Funding for the Hospitality House of the Upper Peninsula, Inc.

5.g. MERS Annual Meeting - Officer Delegate Appointment

5.h. Ordinance 25-10: General Provisions - Roll Call Vote

5.i. Ordinance 25-11: Alcoholic Liquors - Roll Call Vote

5.j. Resolution- Addition of Beecher Street Right of Way - Roll Call Vote

5.k. Resolution- Addition of Hemlock Drive and Nuthatch Lane - Roll Call Vote

5.l. Resolution- Addition of Hospital Drive - Roll Call Vote

5.m. Sale of Surplus Equipment

5.n. Wright Street Sidewalk Easement

New Business

6. Resolution- City of Marquette Staff Academy Professional Development Training - Roll Call Vote

Commissioner Cary Gottlieb moved to Approve the costs for the staff academy program and adopt the resolution in support of the staff academy, seconded by Commissioner Jermey Ottaway and Carried Unanimously.

Public Comments - Comments may not exceed three minutes per person. Please state your name and physical address when making public comments.

Matt Luttenberger spoke about planning related to transportation and internal commuting in the city.

Comments from the Commission

Commissioner Larson thanked staff for the detailed and repeated explanations of brownfield financing. He said a key takeaway for him was the importance of the state tax

capture, which often makes these projects viable.
Mayor Pro Tem Schloegel wished Commissioner Mayer a happy birthday, and talked about how increased school and university activity is going to lead to additional traffic.
Commissioner Ottaway said today's news that Biolife Plasma is shutting down immediately is unfortunate. He said this is bad for employees, but also noted that the property is part of a brownfield project, and he asked staff to look into the specifics of that parcel.
There were no comments from **Mayor Hanley**, or from **Commissioners Gottlieb, Mayer** and **Davis**.

Comments from the City Manager

City Manager Karen Kovacs welcomed NMU students back and wished good luck to everyone returning to school next week.

Adjournment

Mayor Hanley adjourned the meeting at 6:59 p.m.

_____ _____

Jessica Hanley, Mayor **Kyle Whitney, City Clerk**

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Agenda Date: 9/8/2025

Consent Agenda - Roll Call Vote
EGLE GLRI - Grant Application

BACKGROUND:

Staff members from the Water Resources Division of the Michigan Department of Environment, Great Lakes and Energy (EGLE) reached out to the City about a stormwater treatment grant opportunity. The grant requires no City match and the requested amount would be approximately $385,000. The grant funds would be utilized to construct a stormwater infiltration basin on Marquette Board of Light and Power (MBLP) property near south beach to treat runoff before it enters the City beach and Lake Superior. In order to move forward with this application, City and MBLP approval is required.

FISCAL EFFECT:

None. The proposed project is fully grant funded and future maintenance associated with the construction of the infiltration pond is equivalent to what is currently needed to maintain the culvert end.

RECOMMENDATION:

Authorize City staff to apply for the GLRI grant for stormwater improvements near South Beach Park.

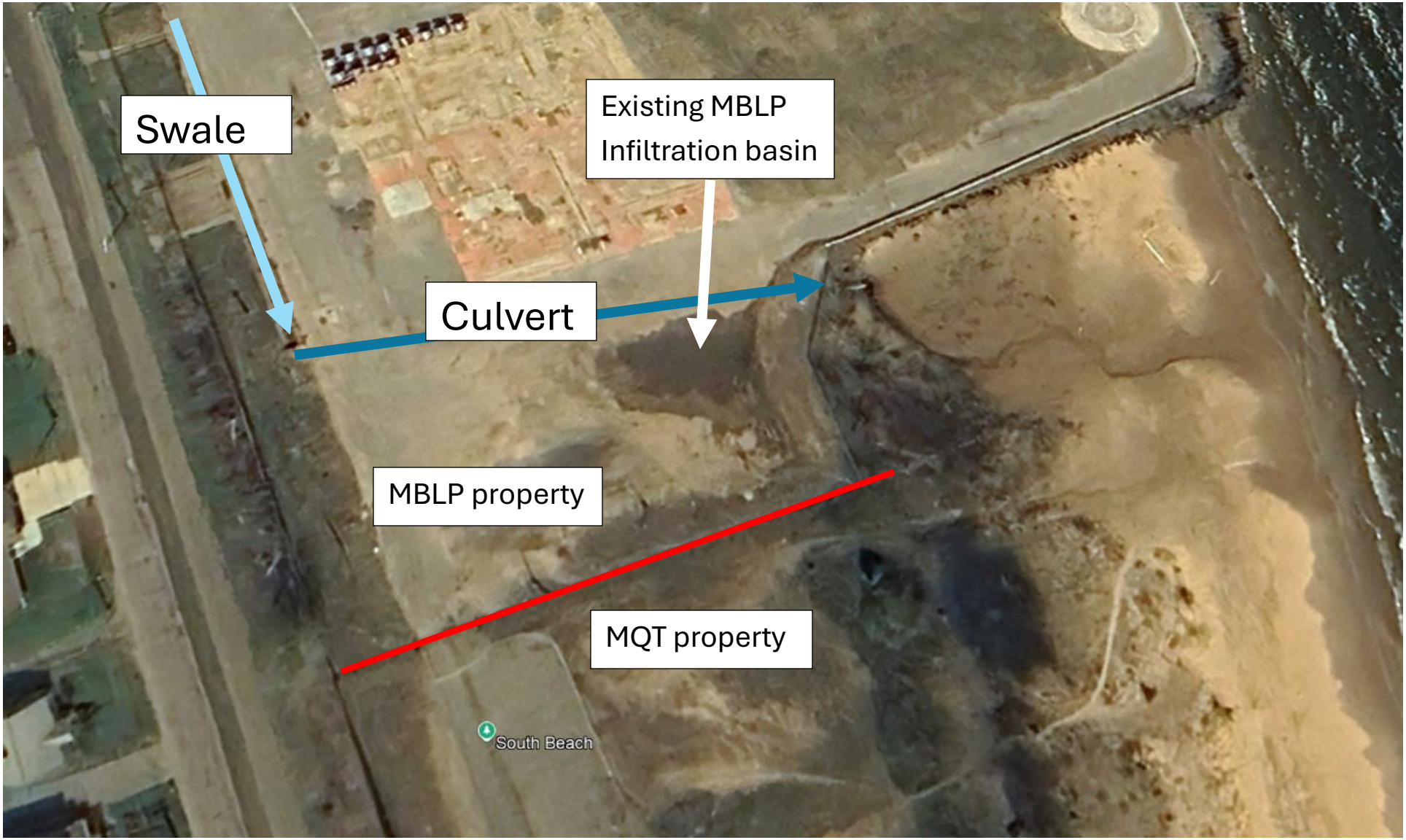
ALTERNATIVES:

As determined by the Commission.

ATTACHMENTS:

Description

- Project Location Map
- GLRI Grant Information


Swale
Existing MBLP
Infiltration basin
Culvert
MBLP property
MQT property
South Beach

An official website of the United States government Here's how you know

Action Plan IV

Long-Term Goals

Operating Principles

Environmental Justice

Adaptation Planning

Tribal Program

Federal-State Partnerships

Focus Areas Summary

1: Toxic Substances and Areas of Concern

2: Invasive Species

3: Nonpoint Source Pollution

Objective 3.1

Objective 3.2

Objective 3.3

4: Habitats and Species

5: Foundations for Future Restoration Actions

Public Engagement

Focus Area 3: Nonpoint Source Pollution – Objective 3.2

On this page:

- Objective, Commitments & Measures
- Background
- Under GLRI Action Plan IV

Objective, Commitments & Measures

Objective:

3.2. Reduce or prevent stormwater runoff to improve and sustain water quality under a changing climate.

Commitments:

3.2.a. Increase implementation of green infrastructure practices, with a focus on disadvantaged and other communities with environmental justice concerns impacted by polluted runoff.

3.2.b. Implement projects in urban and rural communities designed to reduce or prevent runoff, flooding and erosion.

Measures:

Measures of Progress With Annual Targets	Baseline/ Universe	FY2025 Target	FY2026 Target	FY2027 Target	FY2028 Target	FY2029 Target
3.2.1. Estimated gallons (in millions) of stormwater runoff reduced.	550/N/A	625	700	775	850	925
3.2.2. Miles of Great Lakes streams and shoreline	61/N/A	74	87	100	113	126

Measures of Progress With Annual Targets	Baseline/ Universe	FY2025 Target	FY2026 Target	FY2027 Target	FY2028 Target	FY2029 Target
restored or protected.						
3.2.3 Acres of riparian buffers, wetlands and floodplains restored or reconnected.	0/N/A	50	100	150	200	250

"Targets" are cumulative. "Baseline" for Measures 3.2.1 and 3.2.2 are the target values for 2024 set in Action Plan III. "Baseline" for Measure 3.2.3 is 0 because this is a new measure for Action Plan IV.

Background

GLRI-funded projects have prevented more than 500 million gallons of untreated urban stormwater runoff from entering the Great Lakes. In addition, more than 300 local watershed projects have been implemented in Great Lakes communities and more than 60 miles of streams and shoreline protected through nature-based methods.



In Gary, IN, GLRI supported a project to remove impervious cover, repair a failed subsurface drainage system and redirect stormwater from drains to a newly constructed rain garden. Post project monitoring demonstrated that the rain garden captures 98% of precipitation.

Since GLRI began, GLRI federal agencies and their partners have reduced the loading of sediment, nutrients, toxic contaminants and pathogens to Great Lakes tributaries and nearshore waters from stormwater runoff. GLRI funding

supported green infrastructure projects in Great Lakes communities to reduce untreated stormwater runoff and to improve nearshore water quality. These green infrastructure projects have the added benefit of increasing greenspace in urban areas, offering flood mitigation and providing habitat for pollinators.

Under GLRI Action Plan IV, GLRI federal agencies and their partners will continue to encourage and accelerate implementation of projects to reduce or prevent stormwater runoff to protect nearshore water quality. GLRI federal agencies and partners will continue to support green infrastructure practices to capture or slow the flow of untreated runoff and filter out sediment, nutrients, toxic contaminants, pathogens and other pollutants from runoff before it reaches the Great Lakes, with a focus on disadvantaged and other communities with environmental justice concerns, impacted by polluted runoff.

These projects may also provide flood mitigation benefits by reducing peak flows. Projects may require maintenance to handle increasingly intense rain events. GLRI agencies and partners will consider projected future stormwater volumes in the design of projects.



Milwaukee, WI, elementary students learning in newly built bioswale in the schoolyard. Photo credit: Reflo Inc.

GLRI federal agencies will continue to work with public-private partnerships such as the Southeast Michigan Resilience Fund and the Chi-Cal Rivers Fund to leverage GLRI investments in communities, especially disadvantaged and other communities with environmental justice concerns, for delivering on-the-ground projects where they make a difference. GLRI federal agencies and partners will also continue to support watershed-based, collaborative approaches that bring urban and rural communities together to address water quality concerns.

Actions such as reconnecting a floodplain to a stabilized vegetated streambank can help increase a stream's resilience to stressors such as large storms. Restoration projects along coastlines can incorporate nature-based features to mitigate effects of more extreme storms, high wave action, interrupted sediment transport and presence of man-made physical structures. Activities to reduce stormwater runoff and streambank erosion also complement these restoration efforts and increase coastal resiliency. These efforts will protect over a hundred miles of Great Lakes streams and shoreline, restore and reconnect riparian buffers along streams and filter hundreds of millions of gallons of stormwater runoff.



Solutions that manage stormwater are a natural way to reduce pollution, bring value to our community, and make it a better place to live.

Continue reading about the Action Plan IV:

[Focus Area 3: Objective 3.3. Improve effectiveness of nonpoint source control efforts to prevent harmful and nuisance algal blooms]

Agenda Date: 9/8/2025

Consent Agenda - Roll Call Vote
KBIC Funding for the City of Marquette Department of Community Services

BACKGROUND:

The City of Marquette Department of Community Services, through the City of Marquette (City), is requesting 2% gaming revenue funding from the Keweenaw Bay Indian Community. The request is for $25,000 to provide services to older persons in the City and surrounding communities. In consideration of the specific granting nature of the 2% allocation, the Marquette Community Services Department agrees to dedicate any funds from the KBIC to the purposes set forth in the attached agreement prepared by the City Attorney.

Proceeds from the Tribe's 2% gaming revenue would be used to fund the request; gaming regulations require that a local municipality serve as the fiscal agent for such awards.

FISCAL EFFECT:

No direct cost to the City.

RECOMMENDATION:

Authorize the City to act as the fiscal agent for KBIC funding of $25,000 for the City of Marquette Department of Community Services to provide services to older persons in the City and surrounding communities, and authorize the City Manager to sign the attached agreement.

ALTERNATIVES:

As determined by the Commission.

ATTACHMENTS:

Description

- Marquette Senior Center Letter of Request
- Agreement

August 17, 2025

Marquette City Commission
300 West Baraga Avenue
Marquette, MI 49855

Dear Honorable Commissioners,

On behalf of the Marquette Senior Center, I am writing to respectfully request the City of Marquette's formal support of our agency as an approved applicant for the Keweenaw Bay Indian Community (KBIC) 2% funding.

Since 1965, the Marquette Senior Center has provided essential services at no cost to older adults in Powell, Chocolay, and Marquette Townships as well as within the City of Marquette. These services include Financial Management, Outreach, In-Home Services, Information and Assistance, and comprehensive Health and Wellness programming. At the heart of our work is social work support, which accounts for approximately 70% of our programming and ensures that older adults can live with dignity in an environment of their choosing.

Our responsibility has grown significantly in recent years. The older adult population we serve has increased by 16%, while our primary source of revenue has not grown proportionally to meet these expanding needs. To continue providing free programming and social work services for some of our community's most vulnerable residents, we are requesting $25,000 through the KBIC 2% funding. These funds will directly support older adults in maintaining their independence, safety, financial independence and well-being to offset negative impacts on residents from the local casino.

We would be deeply grateful for the City's formal support for our application, which would strengthen our ability to meet the rising needs of Marquette's aging population.

Thank you for your consideration and for your continued commitment to the health and quality of life of our older adults.

Respectfully,

Maureen McFadden

Maureen McFadden
Senior Services Manager for the City of Marquette
Marquette Senior Center

AGREEMENT

This Agreement is entered into this _____ day of _____, 2025, between the CITY OF MARQUETTE, a municipal corporation, with offices located at 300 W. Baraga Avenue, Marquette, MI 49855 (hereinafter referred to as the "City"), and the CITY OF MARQUETTE DEPARTMENT OF COMMUNITY SERVICES, a department of the CITY OF MARQUETTE, located at 300 W. Baraga Avenue, Marquette, MI 49855 (hereinafter referred to as "Community Services");

WHEREAS, Community Services provides services to older persons in the City and surrounding communities pursuant to MCL 400.571, et seq.; and

WHEREAS, the Marquette City Commission has determined that the request of Community Services supports Community Service's ability to provide services to older persons in the City and surround communities.

NOW, THEREFORE, the parties agree:

1. That for and in consideration of the payment by the City to Community Services in the sum of $25,000 from the Keweenaw Bay Indian Community, Community Services will accept said money from the City to assist the City in carrying out its obligation to services to older persons.

2. That the parties further understand and agree that the payment of the sum of $25,000 by the City to Community Services as above-described is contingent upon the prior receipt by the City of the amount from the Keweenaw Bay Indian Community, and that if said payment is not received by the City, the City shall have no obligation to make the payment herein described to Community Services.

The signatories hereto certify that they are authorized to execute this document on behalf of the respective parties.

Dated: _____

By: Karen M. Kovacs
Marquette City Manager

Dated: 8-26-25

By: Jon Swenson
City of Marquette Director of Community Services

Agenda Date: 9/8/2025

Consent Agenda - Roll Call Vote
KBIC Funding for the City of Marquette Police Department

BACKGROUND:

The City of Marquette Police Department, through the City of Marquette (City), is requesting 2% gaming revenue funding from the Keweenaw Bay Indian Community. The request is for $10,000 for the purchase of fitness equipment. In consideration of the specific granting nature of the 2% allocation, the Marquette Police Department agrees to dedicate any funds from the KBIC to the purposes set forth in the attached agreement prepared by the City Attorney.

Proceeds from the Tribe's 2% gaming revenue would be used to fund the request; gaming regulations require that a local municipality serve as the fiscal agent for such awards.

FISCAL EFFECT:

No direct cost to the City.

RECOMMENDATION:

Authorize the City to act as the fiscal agent for KBIC funding of $10,000 for the Marquette Police Department for fitness equipment, and authorize the City Manager to sign the attached agreement.

ALTERNATIVES:

As determined by the Commission.

ATTACHMENTS:

Description

- Marquette Police Dept. Letter of Request
- Marquette Police Department Agreement

RYAN GRIM
Chief of Police

300 W BARAGA AVENUE
MARQUETTE MI49855
(906)228-0400

CHRISTOPHER ALDRICH
Captain of Detectives

JAMES FINKBEINER
Captain of Patrol Operations

September 8th, 2025

Mr. Robert Curtis
Tribal Council President
Keweenaw Bay Indian Community
107 Beartown Road
Baraga, MI 49908

Dear Mr. Curtis,

The Marquette Police Department humbly requests funding in the amount of $10,000 to procure gym and fitness equipment for our facility to support the health and wellness of our officers.

Given the physically demanding nature of law enforcement, it is essential that our personnel have access to proper fitness resources to maintain their physical readiness, reduce injury risks, and enhance overall well-being. Our department recently acquired additional space within our facility after a long-term tenant has moved out. The intended use for this new space would be an area for our officers to practice defensive tactics to mitigate risk and injury both to our officers and the public, and to provide a space for officers to maintain and improve their physical fitness.

Physical readiness is of paramount concern in our profession. Law enforcement duties often require strength, endurance and agility. Access to appropriate fitness equipment ensures our officers are prepared for job-related physical challenges that arise on a daily basis. Fitness equipment also aids in injury prevention and rehabilitation for those recovering from job-related physical strain.

The attached budget proposal lists everything that is required for the startup of this fitness facility. All items address strength training, cardiovascular endurance, and functional fitness that provides direct benefits to the challenges our officers face on a daily basis. The requested funding for this equipment requires little to no maintenance and will be sustainable for decades, allowing our officers to train and perform at the highest level in order to protect and serve the citizens and guests of the City of Marquette and the surrounding area.

We have actively pursued local and federal grant opportunities to fund this endeavor. Despite our best efforts, we have only received two donations totaling $2400. This is a meaningful start, but we are far from meeting our goal of creating a well-equipped, functional gym space for our officers. To fully achieve this goal, our current projected budget for this facility is $38,307.

RYAN GRIM
Chief of Police

CHRISTOPHER ALDRICH
Captain of Detectives

JAMES FINKBEINER
Captain of Patrol Operations

300 W BARAGA AVENUE
MARQUETTE MI49855
(906)228-0400

The Marquette Police Department is dedicated to officer wellness and considers it a top priority. We are currently in partnership under a pilot program with Suunta Integrative Health that provides social and mental health services to our officers. It is without question that regular exercise has been proven to reduce stress, anxiety, and depression which can be a hidden enemy of law enforcement. The daily stressors of our job and the potential trauma we face every day can offer a significant burden that officers carry with them even when they're not on duty. In addition to these social and mental health services, access to fitness equipment would provide a healthy outlet for our officers to improve and sustain their well-being.

The Marquette Police Department is overly grateful for prior funding for police equipment in the past by your organization. Although the department has made significant efforts to maintain a well-funded budget, continual transitions of personnel due to regular retirements and unforeseen departures have resulted in unusual financial strain. With these departures, come the need for more specialized trainings to be sought out to replace the outgoing staff members, new equipment for incoming staff, and manpower constraints. This in turn has created more budgetary pressure which makes a purchase like this burdensome. Furthermore, our city is currently facing some financial challenges due to the loss of major taxpayers, tax tribunal filings, and other long-term commitments.

That being said, this request for funding would help in kickstarting this project while remaining funds would be covered by the department's operating budget or other Federal, State, and Local grants to fully equip this new facility.

The goal of this proposal is to provide our officers with modern gym and fitness equipment to combat the physical and mental pressures of our profession. In partnership with your organization, we respectfully ask for your consideration in funding.

Respectfully,

Sgt. Seth Bjorne
Marquette Police Department
906-228-0400
sbjorne@marquettemi.gov

RYAN GRIM
Chief of Police

300 W BARAGA AVENUE
MARQUETTE MI49855
(906)228-0400

CHRISTOPHER ALDRICH
Captain of Detectives

JAMES FINKBEINER
Captain of Patrol Operations

DEPARTMENT BACKGROUND INFORMATION

The Marquette Police Department (MPD) is made up of 34 sworn officers. In addition, nine (9) civilian personnel assist in daily functions such as parking enforcement, civilian park patrol, and clerical dispatching. Other operational assets include a dive team, bike patrol, and snowmobile patrol.

Our department is committed to safe, responsible, and effective community policing of a population of roughly 21,000 residents. We are also currently one of two police agencies in the Upper Peninsula to have earned accreditation from the Michigan Association of Chiefs of Police (MACP). As of February 2025, we attained re-accreditation for three more years through MACP.

Since 2016 our department has averaged approximately 15,500 calls for service per year. Calls for service involve a myriad of issues, some of which can be physically or mentally demanding on our officers.

MPD's primary role is to serve the citizens of the City of Marquette, however, mutual aid for all surrounding agencies is a priority. Since the creation of the Michigan State Police Upper Peninsula Substance Enforcement Team (MSP UPSET), MPD has provided a full-time detective to its ranks that works collaboratively across Michigan's Upper Peninsula. MPD has a School Resource Officer and a Detective Sergeant, both who are assigned to the Marquette Area Public Schools. All MPD personnel are enrolled in an active alert system to respond to any active shooter threat in Marquette County. MPD also has a Detective Sergeant assigned to the Internet Crimes Against Children Task Force (ICAC). MPD will provide mutual aid to any agency in Marquette County that requests it.

In addition to responding to and investigating criminal complaints, MPD strives in its public outreach programs and to have positive interactions with the community. Officers regularly patrol community events, provide traffic control for large scale endurance races, provide presentations to students in the schools, and teach hunters safety and bicycle safety programs. Our officers and command staff are also members or leaders of various boards related to law enforcement as well as off-duty work for boards and committees established in the community.

GYM EQUIPMENT BUDGET

ITEM		COST PER UNIT	QUANTITY		TOTAL
Rhino Rack	$	8,695.00	1	$	8,695.00
45 lb Plate Pair Echo V2 (Bumper)	$	174.00	6	$	1,044.00
25 lb Plate Pair Echo V2 (Bumper)	$	100.00	2	$	200.00
10 lb Plate Pair (Steel)	$	35.52	2	$	71.04
5 lb Plate Pair (Steel)	$	22.80	2	$	45.60
2.5 lb Plat Pair (Steel)	$	16.00	1	$	16.00
Dipping Bar (Matador)	$	185.00	1	$	185.00
Olympic Curl Bar	$	216.56	1	$	216.56
TB-2 Hex Bar	$	415.00	1	$	415.00
Ohio Bar	$	264.69	1	$	264.69
Deadlift Bar	$	410.00	1	$	410.00
Manta Ray Adj. Bench	$	1,095.00	2	$	2,190.00
Reverse Hyper (Donkey)	$	2,165.00	1	$	2,165.00
Deadlift Platform	$	595.00	1	$	595.00
Monolift Arm (AM-2)	$	395.00	1	$	395.00
Slam Ball 10 lb	$	43.00	1	$	43.00
Slam Ball 15 lb	$	49.00	1	$	49.00
Slam Ball 20 lb	$	54.00	1	$	54.00
Slam Ball 25 lb	$	59.00	1	$	59.00
Kettlebell 62 lb Pair	$	200.00	1	$	200.00
Kettlebell 53 lb Pair	$	180.00	1	$	180.00
Kettlebell 44 lb Pair	$	158.00	1	$	158.00
Kettlebell 35 lb Pair	$	138.00	1	$	138.00
Kettlebell 26 lb Pair	$	116.00	1	$	116.00
Kettlebell 18 lb Pair	$	84.00	1	$	84.00
Rogue Monster Bands (All)	$	257.00	1	$	257.00
SR-1F Speed Rope 2.0	$	25.00	1	$	25.00
Dumbells/Rack 5-120 (10 LB Inc.)	$	3,661.94	1	$	3,661.94
Flooring 640 Sq Feet	$	1,177.60	1	$	1,177.60
Matrix Treadmill T50 8.5" LCD	$	4,299.00	1	$	4,299.00
Stepr Pro Classic	$	5,999.00	1	$	5,999.00
Matrix Elliptical A50 8.5" LCD	$	4,899.00	1	$	4,899.00
TOTAL:				$	38,307.43

VENDORS

Johnson Fitness and Wellness - Cardio

Treadmills, Ellipticals, Cardio & Strength Equipment for the Home. Johnson Fitness & Wellness.

Rogue - Weights/Racks/Bars

Rogue Fitness - Strength & Conditioning Equipment

RYAN GRIM
Chief of Police

300 W BARAGA AVENUE
MARQUETTE MI49855
(906)228-0400

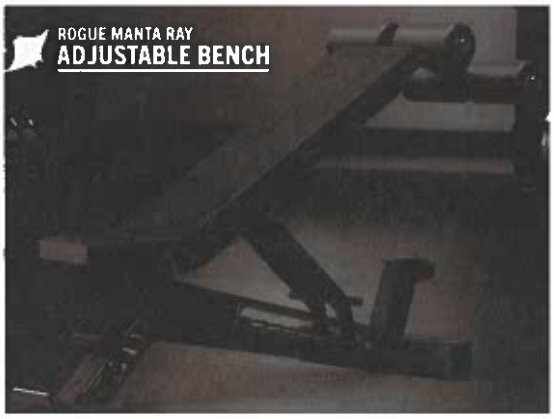
CHRISTOPHER ALDRICH
Captain of Detectives

JAMES FINKBEINER
Captain of Patrol Operations

The following photos are for general reference regarding some of the equipment items listed in the attached budget such as the Rhino Rack, Reverse Hyper, and Manta Ray Bench.







AGREEMENT

This Agreement is entered into this _____ day of _____, 2025, between the CITY OF MARQUETTE, a municipal corporation, with offices located at 300 W. Baraga Avenue, Marquette, MI 49855 (hereinafter referred to as the "City"), and the CITY OF MARQUETTE POLICE DEPARMENT, a department of the CITY OF MARQUETTE, located at 300 W. Baraga Avenue, Marquette, MI 49855 (hereinafter referred to as "Police Department");

WHEREAS, the Police Department provides public health and safety services to City residents,

WHEREAS, Marquette City Charter Section 2-12 states: "The city commission see that provision is made for the public peace and health, and for the safety of persons and property." and

WHEREAS, the Marquette City Commission has determined that the request of the Police Department supports the Police Department's ability to provide for the public peace and health, and for the safety of persons and property, and is willing to enter into this Agreement with the Police Department upon certain terms and conditions.

NOW, THEREFORE, the parties agree:

1. That for and in consideration of the payment by the City to the Police Department of the sum of $10,000.00 from the Keweenaw Bay Indian Community, the Police Department will accept said money from the City to carry out its obligation to provide for the public peace and health, and for the safety of persons and property.

2. That the parties further understand and agree that the payment of the sum of $10,000.00 by the City to the Police Department as above-described is contingent upon the prior receipt by the City of the amount from the Keweenaw Bay Indian Community, and that if said payment is not received by the City, the City shall have no obligation to make the payment herein described to the Police Department.

The signatories hereto certify that they are authorized to execute this document on behalf of the respective parties.

Dated: _____

_____
By: Karen M. Kovacs
Marquette City Manager

Dated: 8/27/25

_____
By: Ryan Grim
City of Marquette Police Chief

Agenda Date: 9/8/2025

Consent Agenda - Roll Call Vote
Sault Ste. Marie Tribe of Chippewa Indians Funding for the City of Marquette Police Department

BACKGROUND:

The City of Marquette Police Department, through the City of Marquette (City), is requesting 2% gaming revenue funding from the Sault Ste. Marie Tribe of Chippewa Indians. The request is for $10,000 for the purchase of fitness equipment. In consideration of the specific granting nature of the 2% allocation, the Marquette Police Department agrees to dedicate any funds from the Sault Ste. Marie Tribe of Chippewa Indians to the purposes set forth in the attached agreement prepared by the City Attorney.

Proceeds from the Tribe's 2% gaming revenue would be used to fund the request; gaming regulations require that a local municipality serve as the fiscal agent for such awards.

FISCAL EFFECT:

No direct cost to the City.

RECOMMENDATION:

Authorize the City to act as the fiscal agent for Sault Ste. Marie Tribe of Chippewa Indians funding of $10,000 for the Marquette Police Department for fitness equipment, and authorize the City Manager to sign the attached agreement.

ALTERNATIVES:

As determined by the Commission.

ATTACHMENTS:

Description

- Marquette Police Dept. Letter of Request
- Marquette Police Department Agreement

RYAN GRIM
Chief of Police

300 W BARAGA AVENUE
MARQUETTE MI49855
(906)228-0400

CHRISTOPHER ALDRICH
Captain of Detectives

JAMES FINKBEINER
Captain of Patrol Operations

September 8th, 2025

Ms. Latisha Willette
Sault Ste. Marie Tribe of Chippewa Indians
523 Ashmun Street
Sault Ste. Marie, MI 49783

2% Funding Request: Exercise and Fitness Equipment

Dear Ms. Willette,

Thank you for taking the time to review our request for funding for exercise and fitness equipment for our new gym facility. As you will see in our proposal, officer wellness plays a critical role in policing given the physical and mental demands of our job.

The Marquette Police Department is made up of 34 sworn officers tasked with providing law enforcement services to a population of 21,000 residents. Northern Michigan University students, as well as a booming tourism industry, add to the population significantly. Our department is committed to safe, responsible, and effective community policing. We are also currently one of two police agencies in the Upper Peninsula to have earned accreditation from the Michigan Association of Chiefs of Police (MACP). As of February 2025, we attained re-accreditation for three more years through MACP.

The Marquette Police Department has an established Memorandum of Understanding with the Sault Ste. Marie Tribe of Chippewa Indians to provide law enforcement services to a five (5) acre parcel of land consisting of multi-unit apartment buildings and its residents. We strive to maintain positive relationships with all of our law enforcement partners and community stakeholders. This officer wellness grant will greatly assist our department in providing the best law enforcement service possible.

Thank you for your consideration,

Sgt. Seth Bjorne
Marquette Police Department
906-228-0400
sbjorne@marquettemi.gov

RYAN GRIM
Chief of Police

300 W BARAGA AVENUE
MARQUETTE MI49855
(906)228-0400

CHRISTOPHER ALDRICH
Captain of Detectives

JAMES FINKBEINER
Captain of Patrol Operations

Sault Ste. Marie Tribe of Chippewa Indians
2% Funding Request
Grant Narrative

Please give a description of the project, providing as much detail as possible. ***Attach the full project budget, outline, and any other additional pages, including pictures, brochures or pamphlets*****:**

The Marquette Police Department (MPD) has recently acquired a new space within our current facility after a long-term tenant has moved out. This new space is being designed for a gym and fitness facility to maintain our officer's physical readiness through strength training, cardiovascular exercise, and defensive tactic maneuvers.

Given the physically demanding nature of law enforcement, it is essential that our personnel have access to proper fitness resources to maintain their physical readiness, reduce injury risks, and enhance overall well-being. Physical readiness is of paramount concern in our profession. Law enforcement duties often require strength, endurance, and agility, particularly when an officer needs to use force to effect an arrest or protect another. MPD adheres to strict guidelines established at a state and department level regarding the use of force and that force is only used as a last resort. It is without question that law enforcement is under the public microscope regarding use of force and use of lethal force. When an officer has the physical ability, fundamentals, and tactics in a use of force situation it will often prevent the use of lethal force. Physical training is the inherent key to success in limiting use of force in an incident and having a facility for our officers to harness this achievement is an ultimate priority of MPD.

Throughout the country, police departments have been struggling to fill vacancies created by retirement and early departures of personnel. There is also a lack of interested candidates in joining our profession as in years past. This void creates an additional burden for existing personnel who are required to work more shifts and longer hours. Unfortunately, on the job injuries do occur given the nature of our profession, creating an even larger gap in available personnel. Providing a space for our officers to train has a two-pronged effect by allowing officers to maintain their physical fitness to remain healthy and fit for duty but also for injured officers to rehabilitate from job related strains and injuries so that they can return to work.

It is unavoidable that Law Enforcement is exposed to certain psychological traumas such as deaths of adults or children, dismemberment or serious injury/gore, and other mental health anguishes such as prolonged shifts on weekends or holidays that keep us away from our families.

RYAN GRIM
Chief of Police

CHRISTOPHER ALDRICH
Captain of Detectives

JAMES FINKBEINER
Captain of Patrol Operations

300 W BARAGA AVENUE
MARQUETTE MI49855
(906)228-0400

We signed up for this profession knowing these issues are just part of the job but it still carries a heavy burden. The Marquette Police Department is dedicated to officer wellness and considers it a top priority.

We are currently in partnership under a pilot program with Suunta Integrative Health that provides social and mental health services to our officers. It is without question that regular exercise has been proven to reduce stress, anxiety, and depression which can be a hidden enemy of law enforcement. The daily stressors of our job and the potential trauma we face on a daily basis can offer a significant burden that officers carry with them even when they're not on duty.

Coupled with these social and mental health services, access to fitness equipment would provide a healthy outlet for our officers to improve and sustain their overall well-being.

Please describe how the existence of a casino has impacted the project or service of which this application represents.

The Marquette Police Department is made up of 34 sworn officers. In addition, nine (9) civilian personnel assist in daily functions such as parking enforcement, civilian park patrol, and clerical dispatching. MPD is tasked with providing law enforcement services for approximately 19 square miles with a population size of 21,000 residents. Northern Michigan University also adds approximately 8,000 students to the population during the school year.

The city of Marquette hosts between 100,000 and 200,000 tourists annually. It's not uncommon for tourists that visit Kewadin Casino locations throughout the Upper Peninsula to continue their travels into the city of Marquette. Even if tourists are just passing through the area, MPD is tasked with patrolling the roadways that they travel on. The growing tourism industry leaves local resources strained at times by this surge of tourists, particularly in the post Covid-19 pandemic era.

MPD strives to offer the best police service for every complaint or call for service for one of the largest populations in the Upper Peninsula. A well trained and physically conditioned officer is one of the core assets of providing exceptional police services to a large population.

RYAN GRIM
Chief of Police

300 W BARAGA AVENUE
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CHRISTOPHER ALDRICH
Captain of Detectives

JAMES FINKBEINER
Captain of Patrol Operations

Please give a description of how 2% funding will assist in alleviating the impact generated by the local casino.

On average, MPD responds to approximately 15,500 calls for service each year. Within MPD's jurisdiction, there is a five (5) acre parcel of land belonging to the Sault Ste. Marie Tribe of Chippewa Indians with ten (10) multi-bedroom apartments. MPD has an established Memorandum of Understanding with the Sault Tribe to respond to any call for service on this tribal land including emergencies, criminal complaints, and general calls for service. MPD works collaboratively in the event of an arrest with the Sault Tribe Police Department throughout the judicial process.

The Marquette Police Department's request for $10,000 to purchase exercise and fitness equipment will provide our officers with resources to maintain a constant state of physical readiness, reduce risk of injuries, and promote overall officer well-being. With these facets established, our officers will continue to perform at a high level given the inherent risk and danger of our profession and provide exceptional police services to the citizens and guests of the City of Marquette.

Explain the plans for this project's sustainability if funded:

Our department's current budget is feeling significant and unusual strain due to being in a transition period. We are currently transitioning to a younger department in a rapid manner due to regular retirements and unforeseen departures. With these departures, come the need for more specialized trainings to be sought out to replace the outgoing staff members, new equipment for incoming staff, and manpower constraints. This in turn has created more budgetary pressure which makes a purchase like this burdensome. Furthermore, our city is currently facing some financial challenges due to the loss of major taxpayers, tax tribunal filings, and other long-term commitments.

The initial start-up phase of this project by purchasing all of this equipment at once is a significant hurdle for MPD's operating budget. We have actively pursued local and federal grant opportunities to fund this endeavor. Despite our best efforts, we have only received donations of up to $2400. This is a meaningful start, but we are far from meeting our goal of creating a well-equipped, functional gym space for our officers. To fully achieve this goal, our current projected budget for this facility is $38,307 which is outlined in the attached budget.

RYAN GRIM
Chief of Police

CHRISTOPHER ALDRICH
Captain of Detectives

JAMES FINKBEINER
Captain of Patrol Operations

300 W BARAGA AVENUE
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MPD is committed to providing funding from within the department's operational budget to achieve this goal of a fully operational facility, but the initial startup costs are monumental given other critical financial needs for vital police equipment and training. Our request for $10,000 would give the kickstart this project needs to then acquire additional items over the next couple of years.

The requested funding for this equipment requires little to no maintenance and will be sustainable for decades, allowing our officers to train and perform at the highest level in order to protect and serve the citizens and guests of the City of Marquette and the surrounding area.

GYM EQUIPMENT BUDGET

ITEM		COST PER UNIT	QUANTITY		TOTAL
Rhino Rack	$	8,695.00	1	$	8,695.00
45 lb Plate Pair Echo V2 (Bumper)	$	174.00	6	$	1,044.00
25 lb Plate Pair Echo V2 (Bumper)	$	100.00	2	$	200.00
10 lb Plate Pair (Steel)	$	35.52	2	$	71.04
5 lb Plate Pair (Steel)	$	22.80	2	$	45.60
2.5 lb Plat Pair (Steel)	$	16.00	1	$	16.00
Dipping Bar (Matador)	$	185.00	1	$	185.00
Olympic Curl Bar	$	216.56	1	$	216.56
TB-2 Hex Bar	$	415.00	1	$	415.00
Ohio Bar	$	264.69	1	$	264.69
Deadlift Bar	$	410.00	1	$	410.00
Manta Ray Adj. Bench	$	1,095.00	2	$	2,190.00
Reverse Hyper (Donkey)	$	2,165.00	1	$	2,165.00
Deadlift Platform	$	595.00	1	$	595.00
Monolift Arm (AM-2)	$	395.00	1	$	395.00
Slam Ball 10 lb	$	43.00	1	$	43.00
Slam Ball 15 lb	$	49.00	1	$	49.00
Slam Ball 20 lb	$	54.00	1	$	54.00
Slam Ball 25 lb	$	59.00	1	$	59.00
Kettlebell 62 lb Pair	$	200.00	1	$	200.00
Kettlebell 53 lb Pair	$	180.00	1	$	180.00
Kettlebell 44 lb Pair	$	158.00	1	$	158.00
Kettlebell 35 lb Pair	$	138.00	1	$	138.00
Kettlebell 26 lb Pair	$	116.00	1	$	116.00
Kettlebell 18 lb Pair	$	84.00	1	$	84.00
Rogue Monster Bands (All)	$	257.00	1	$	257.00
SR-1F Speed Rope 2.0	$	25.00	1	$	25.00
Dumbells/Rack 5-120 (10 LB Inc.)	$	3,661.94	1	$	3,661.94
Flooring 640 Sq Feet	$	1,177.60	1	$	1,177.60
Matrix Treadmill T50 8.5" LCD	$	4,299.00	1	$	4,299.00
Stepr Pro Classic	$	5,999.00	1	$	5,999.00
Matrix Elliptical A50 8.5" LCD	$	4,899.00	1	$	4,899.00
TOTAL:				$	38,307.43

VENDORS

Johnson Fitness and Wellness - Cardio

Treadmills, Ellipticals, Cardio & Strength Equipment for the Home. Johnson Fitness & Wellness.

Rogue - Weights/Racks/Bars

Rogue Fitness - Strength & Conditioning Equipment

RYAN GRIM
Chief of Police

300 W BARAGA AVENUE
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(906)228-0400

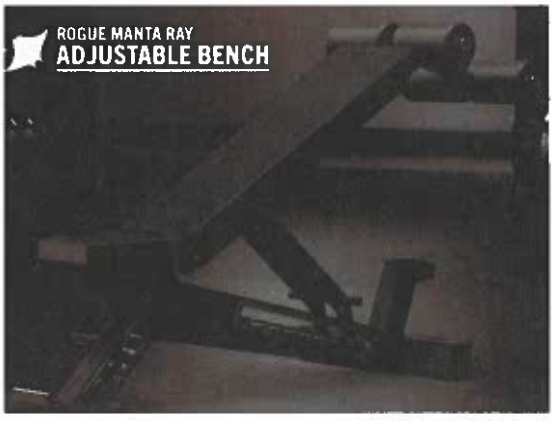
CHRISTOPHER ALDRICH
Captain of Detectives

JAMES FINKBEINER
Captain of Patrol Operations

The following photos are for general reference regarding some of the equipment items listed in the attached budget such as the Rhino Rack, Reverse Hyper, and Manta Ray Bench.







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WHEREAS, the Police Department provides public health and safety services to City residents,

WHEREAS, Marquette City Charter Section 2-12 states: "The city commission see that provision is made for the public peace and health, and for the safety of persons and property." and

WHEREAS, the Marquette City Commission has determined that the request of the Police Department supports the Police Department's ability to provide for the public peace and health, and for the safety of persons and property, and is willing to enter into this Agreement with the Police Department upon certain terms and conditions.

NOW, THEREFORE, the parties agree:

1. That for and in consideration of the payment by the City to the Police Department of the sum of $10,000.00 from the Sault Ste. Marie Tribe of Chippewa Indians, the Police Department will accept said money from the City to carry out its obligation to provide for the public peace and health, and for the safety of persons and property.

2. That the parties further understand and agree that the payment of the sum of $10,000.00 by the City to the Police Department as above-described is contingent upon the prior receipt by the City of the amount from the Sault Ste. Marie Tribe of Chippewa Indians, and that if said payment is not received by the City, the City shall have no obligation to make the payment herein described to the Police Department.

The signatories hereto certify that they are authorized to execute this document on behalf of the respective parties.

Dated: _____

_____
By: Karen M. Kovacs
Marquette City Manager

Dated: 8/27/25

_____
By: Ryan Grim
City of Marquette Police Chief

Agenda Date: 9/8/2025

Consent Agenda - Roll Call Vote
Noquemanon Trails Network - Trail Maintenace Permit

BACKGROUND:

The Noquemanon Trails Network Council (NTN) requested the City Commission renew a permit to prepare, maintain and groom trails in the Fit Strip. The permit allows the NTN to conduct snow grooming and trail maintenance activities and to place a temporary storage shed to store grooming equipment. Trails will be maintained for bikes, snow bikes and cross-country ski activities.

The term of this permit is ten years from the date of execution and both the City and the NTN have the right to terminate the agreement at any time for any reason by providing written notice to the other.

FISCAL EFFECT:

All costs would be covered by the NTN.

RECOMMENDATION:

Approve the ten-year permit with the Noquemanon Trails Network Council to allow trail preparation, maintenance and grooming activities in the Fit Strip, and authorize the Mayor and Clerk to sign the permit.

ALTERNATIVES:

As determined by the Commission.

ATTACHMENTS:

Description

- Permit, Exhibit A, and Insurance

NOQUEMANON TRAILS NETWORK COUNCIL (NTN) PERMIT

The City of Marquette (City), a Michigan municipal corporation, of 300 W. Baraga Avenue, Marquette, MI 49855, grants Noquemanon Trails Network Council (NTN), a Michigan non-profit corporation, of 401 E. Fair Street, Marquette, MI 49855, permission to perform trail preparation and maintenance of a non-motorized recreational trail located in the City and commonly known as the Fit Strip Trail System, subject to the following terms and conditions:

1. Permission is granted to access the property for trail preparation and maintenance of the Fit Strip Trail System including cross country ski, single-track mountain bike and snow bike trails.

2. The City makes no warranty as to the condition of the real property (Premises) upon which the Fit Strip Trail System is located.

3. NTN agrees to indemnify and hold harmless the City, its officials, officers, employees, agents and assigns from any and all liens, claims, charges, liabilities, and/or damages for acts of commission, omission, or negligence on the part of NTN, NTN's subcontractors, or NTN's agents and employees, arising or growing out of the performance of NTN's trail preparation and maintenance of the Fit Strip Trail System.

4. NTN specifically agrees to assume all risks associated with trail preparation and maintenance of the Fit Strip Trail System.

5. This trail is for non-motorized recreation only, as permitted by City of Marquette ordinance. Per current City of Marquette ordinance, Class 1 e-bikes are not considered motorized vehicles and are therefore permitted, while class 2 and 3 e-bikes are prohibited. In the event City ordinance is modified to expand or prohibit e-bike usage, such modification will apply to this trail. NTN will use signage and other aids as appropriate to help prevent unauthorized use. NTN may use motorized equipment to perform trail grooming, trail maintenance and trail building as needed.

6. Access is granted only to the Premises noted on the attached map.

7. Permission is granted to maintain a trail sixteen feet (16') in width as shown on the highlighted section of the attached map. Any materials removed for the maintenance of the trail, including timber, is to be removed in accordance with local ordinances and permission of the City by NTN at NTN's cost. Any merchantable timber removed, as determined by the City representative, will remain the possession of The City.

8. NTN is to leave the condition of the Premises in the same or better condition as it was before entering the Premises for trail preparation and maintenance.

9. There will be no interference by NTN and/or NTN's contractors or agents with any of the City's operations on the Premises. It is further agreed that access by the City to it's the Premises shall be maintained at all times.

10. NTN agrees that there shall be no impairment of natural or of installed drainage facilities occasioned by the aforementioned use of the Premises. NTN may repair drainage aids and bridges or restore areas to their historic condition.

11. NTN is granted permission for a temporary 20 foot x 10 foot storage shed for trail maintenance equipment.

11. The permission herein granted shall expire on_____. The City and the NTN each have the right to cancel and terminate this agreement at any time and for any reason by providing written notice to the other; and upon notice of such cancellation or termination NTN will immediately cease to use the Premises.

12. NTN shall, in the use and occupancy of the Premises, comply with all laws, ordinances, rules and regulations of the City.

13. NTN shall submit for review any publication referencing the City and the Premises. NTN shall make all reasonable efforts to give favorable publicity to the City and its role in the listed trail as approved by the City.

14. It is understood by the parties that this agreement falls under the provisions of The State of Michigan Recreational Use Act MCL §324.73301. Under this statute, so long as the landowner does not receive valuable consideration for the use of its property, the landowner is not liable for injuries to a person using the land for recreational or trail use. The City, as the landowner, will receive no valuable consideration in exchange for any terms under this agreement.

15. NTN shall provide the City with certificates of insurance showing insurance coverage as noted below, stating that coverage afforded on their policies will not be cancelled, limited or allowed to expire until after thirty (30) days written notice has been given to the City. NTN shall maintain this coverage at all times during the performance of this agreement.

*Workers Compensation coverage according to any applicable statute, including employers liability coverage with $1,000,000 limit per accident.

*Comprehensive General Liability including contractual coverage with limits of at least $1,000,000 per occurrence, $1,000,000 aggregate bodily injury and $1,000,000 aggregate property damage or $1,000,000 Combined Single Limit.

*Comprehensive Automobile Liability coverage, including owned, hired and non-owned vehicles with limits of $1,000,000 per person, $1,000,000 per accident bodily injury and $1,000,000 property damage or $1,000,000 Combined Single Limit.

16. NTN shall be responsible for emptying the pay pipe at the Fit Strip Trail System trailhead on a regular basis, and shall be entitled to keep all funds removed from the pay pipe to be applied to expenses incurred in grooming the Fit Strip Trail System.

Each sub-contractor shall be a named insured in NTN's policies. The City shall be named as additional insured and loss payees on all NTN's insurance policies (except workmen's compensation insurance, in which the City will not be listed as additional insured or loss payees) and NTN's policies will be on an "occurrence" and not on a "claims made" form. NTN will file with the City, on or before the commencement of this agreement and at least ten (10) days before the expiration date of expiring policies, such copies of either current policies or certificates or other proofs, as may reasonably be required to establish NTN's insurance coverage in effect from time to time.

THE CITY OF MARQUETTE

Dated: _____

_____
By: Jessica Hanley
Its: Mayor

Dated: _____

_____
By: Kyle Whtiney
Its: City Clerk

APPROVED AS TO CONTENT:

_____
Karen M. Kovacs, City Manager

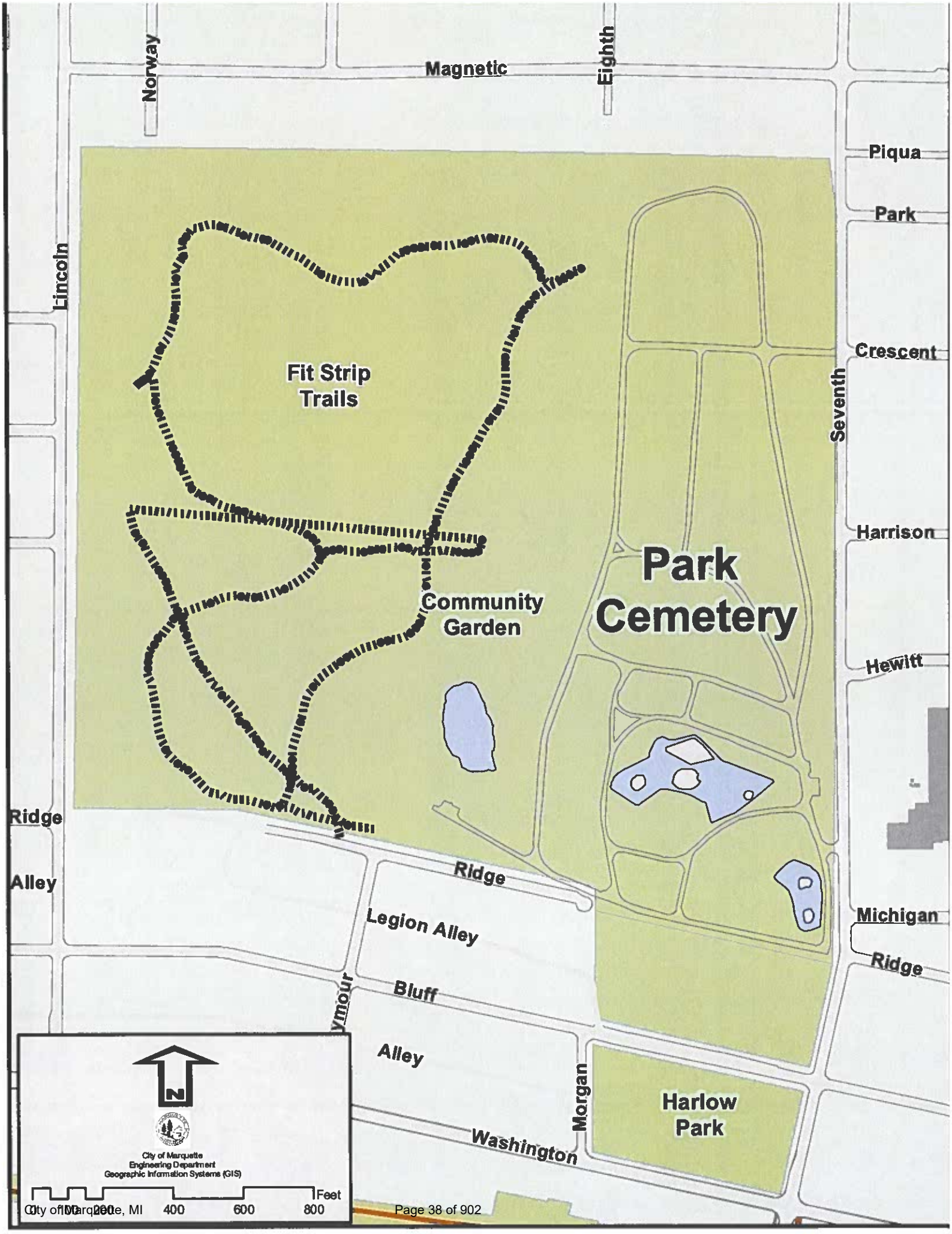
APPROVED AS TO FORM:

_____
Suzanne C. Larsen, City Attorney

NOQUEMANON TRAILS NETWORK COUNCIL

Dated: August 22, 2025

Lori L. Hauswirth
By: Lori Hauswirth
Executive Director


Norway
Magnetic
Eighth
Piqua
Park
Lincoln
Crescent
Seventh
Fit Strip
Trails
Harrison
Park
Cemetery
Community
Garden
Hewitt
Ridge
Alley
Ridge
Legion Alley
Michigan
Ridge
Bluff
Alley
Morgan
Harlow
Park
Washington
City of Marquette
Engineering Department
Geographic Information Systems (GIS)
Feet
0
200
400
600
800

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 11/15/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Marsh & McLennan Agency LLC 6160 Golden Hills Drive Golden Valley MN 55416	**CONTACT NAME:** Select Certificates (Mpls) **PHONE (A/C, No, Ext):** 763-746-8000 **FAX (A/C, No):** **E-MAIL ADDRESS:** SelectProcessing@marshmma.com
INSURED NOQUETRAIL Noquemanon Trails Network Council PO Box 746 Marquette MI 49855	**INSURER(S) AFFORDING COVERAGE** — **NAIC #** **INSURER A :** Everest National Insurance Company — 10120 **INSURER B :** Acuity Insurance — 14184 **INSURER C :** **INSURER D :** **INSURER E :** **INSURER F :**

COVERAGES **CERTIFICATE NUMBER:** 2067565467 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: POLICY [ ] PRO-JECT [X] LOC OTHER:	Y		SI8GL01714241	11/1/2024	11/1/2025	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG $	$ 1,000,000 $ 100,000 $ 0 $ 1,000,000 $ 2,000,000 $ 1,000,000 $
B	AUTOMOBILE LIABILITY ANY AUTO OWNED AUTOS ONLY [X] SCHEDULED AUTOS X HIRED AUTOS ONLY [X] NON-OWNED AUTOS ONLY			ZB5307	1/1/2024	1/1/2025	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) $	$ 1,000,000 $ $ $ $
A	[ ] UMBRELLA LIAB [ ] OCCUR X EXCESS LIAB [ ] CLAIMS-MADE [ ] DED [ ] RETENTION $			SI8EX01455241	11/1/2024	11/1/2025	EACH OCCURRENCE AGGREGATE $	$ 1,000,000 $ 1,000,000 $
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y / N [ ] (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		ZB5307	1/1/2024	1/1/2025	X PER STATUTE [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ 1,000,000 $ 1,000,000 $ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

The City of Marquette, its officers and employees are Additional Insured on a primary and non-contributory basis as required by written contract or agreement limited to the General Liability coverage.

CERTIFICATE HOLDER

City of Marquette
300 W. Baraga Ave.
Marquette MI 49855

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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Agenda Date: 9/8/2025

Consent Agenda - Roll Call Vote
Peg Hirvonen Bandshell - Construction Contract Change Order

BACKGROUND:

At the April 14, 2025 meeting, the City Commission awarded the construction bid for the Peg Hirvonen Bandshell to Miron Construction Co., Inc., in the amount of $2,084,175.

There are several scope items that have changed as a result of site conditions and the permitting process. Miron had one prior change order, approved by City staff, that was a credit to the project in the amount of $6,746.29.

Change Order 2 includes:

- Sump and additional drainage - $13,759.70
- Back of house stairs and landing (to comply with permit) - $5,714.00
- Electrical underground, service additional floor boxes and sound system credit - $768.86

Change Order 2, in the amount of $20,242.56, when combined with Change Order 1 credit of $6,746.29, equals a total increase to the original contract of $13,496.27 with a new contract total sum of $2,097,671.27.

City Band has committed to raising all of the funds for this project and has recommended the City approve this change order.

FISCAL EFFECT:

Marquette City Band has committed to raising all additional funds resulting in no general fund contributions by the City.

RECOMMENDATION:

Approve Change Order 2 in the amount of $20,242.56 and authorize the City Manager or her designee to sign it.

ALTERNATIVES:

As determined by the Commission.

ATTACHMENTS:

Description

- Contract

- Changer Order 1
- Change Order 2

CITY OF MARQUETTE
CHAPTER 3
CONSTRUCTION CONTRACT

PROJECT NAME: Peg Hirvonen Bandshell

PROJECT NUMBERS: MQ50-315

THIS AGREEMENT, made this _____, between the City of Marquette, a Michigan Municipal Corporation, hereinafter called the "City" of 300 W. Baraga Avenue, Marquette, MI 49855, and Miron Construction Co., INC of Neenah WI, hereinafter called "Contractor".

WITNESSETH: That for and in consideration of the payments and Agreements hereinafter mentioned, the parties hereby agree as follows:

ARTICLE 1

CONTRACT DOCUMENTS

The "Contract Documents" consist of, but are not necessarily limited to, this Agreement, the invitation to Bid, Information for Bidders, Bidders Proposal, Addenda, Specifications, Supplemental Specifications, Special Provisions, Construction Drawings, Notice to Proceed, Allowances, Finish Schedules and any additional documentation issued prior to execution of this Agreement and all Change Orders as approved by the City. These Contract Documents represent the entire Agreement and understanding between the parties hereto.

ARTICLE 2

SCOPE OF WORK

Contractor will furnish all the materials, supplies, tools, equipment, labor and other services necessary for the construction and completion of the project described in the Contract Documents.

ARTICLE 3

MATERIALS, APPLIANCES, and EMPLOYEES

Except as otherwise noted, the Contractor shall provide and pay for all materials, labor, tools and other items necessary to complete the work. Unless otherwise specified, all materials shall be new, and both workmanship and materials shall be of good quality. All workmen shall be skilled in their trades.

ARTICLE 4

TIME OF COMPLETION

The commencement date of this project is April 15, 2025, and the completion date of this project is June 15, 2026.

ARTICLE 5

CONTRACT SUM

The Contractor agrees to perform all of the work described in the Contract Documents and comply with the terms therein for the sum of $2,084,175, subject to additions and deductions pursuant to authorized change orders and allowances.

ARTICLE 6

PAYMENTS

The City will pay to the Contractor in the manner and at such times as set forth in the Specifications such amounts as required by the Contract documents.

ARTICLE 7

CONTRACTOR'S OBLIGATIONS

1. All work shall be in accordance to the provisions of the Contract Documents. All systems shall be in good working order.
2. All work shall be completed in a workmanlike manner and shall comply with all applicable laws.
3. Contractor shall obtain all necessary permits for the work to be completed.
4. Contractor shall remove all construction debris and leave the project in a "broom clean" condition.
5. Upon satisfactory payment being made for the work performed by Contractor, Contractor shall furnish a full and unconditional Release of Lien for the work of which payment has been made.
6. Safety and Fire Protection:
   The Contractor shall be responsible for safety at the construction site. The Contractor will further comply with all applicable laws, rules and regulations of the Michigan Department of State Police, Fire Marshall Division, the State Fire Safety Board, Michigan Occupational Safety and Health Administration, and Local Agencies. Precaution shall be exercised at all times for the protection of persons and of property. The safety provisions of applicable laws, rules, regulations, building and construction codes shall be followed. Safety Hazards shall be guarded in accordance with safety provisions of the Manual of Accident Prevention in Construction published by The Associated General Contractors of America to the extent that such provisions are not in conflict with applicable laws.

ARTICLE 8

CONTRACTOR'S STATUS AS INDEPENDENT ENTITY

The City shall not assume any liability for the Contractor in the performance of the construction project, methods, techniques, sequences or programs in connection with the project since these are solely the Contractor's responsibility.

ARTICLE 9

CHANGE ORDERS AND PAYMENT

A change order is any change to the original plans and/or specifications. All change orders need to be agreed upon between the parties hereto, and address additional costs, time, consideration and dates when the work will begin and be completed. Change orders are not effective unless signed by both parties who shall not unreasonably withhold approval of the same. However, should the Contractor unreasonably refuse to approve a change order reasonably and in good faith submitted by the City, the City Engineer shall be empowered to make a final and fair determination as to the necessity for the change order and the fair and equitable cost to the Contractor and shall further be empowered to issue a final payment to the Contractor. Should the Contractor refuse to accept said final payment, the funds may be deposited in an Escrow Account by the City for the benefit of the Contractor.

ARTICLE 10

INSURANCE

The Contractor shall purchase and maintain Workman's Compensation and Liability Insurance coverage as required by law and deemed necessary for its own protection. Said insurance shall be written by an insurance carrier having at least an "A, VII" rating. The Contractor shall further name the City as an additional insured on all applicable insurance policies covering the project. Said insurance shall be in minimum limits of at least $5,000,000.00 for both general liability and automobile liability. The Contractor shall further maintain such insurance as will protect it from claims under worker's compensation acts and other employee benefits acts, from claims for damages because of bodily injury, including death, and from claims for damages to property which may arise both out of and from claims for damages to property which may arise both out of and during operations under this contract, whether such operations are by Contractor or by anyone directly or indirectly employed by the Contractor. This insurance shall be written for not less than any limits of liability specified as part of the Contract Documents. Certificates of such insurance shall be filed with the City.

ARTICLE 11

INDEMNIFICATION

To the extent allowed by MCL 691.991, the Contractor shall indemnify and hold harmless the City, the City's officers, directors, members, partners, agents, and employees against all liability claims and judgments or demands for damages arising from accidents to persons or property occasioned by the Contractor, its agents or employees, and against all claims or demands for damages arising from accidents to the Contractor, its agents or employees, whether occasioned by said Contractor or its employees or by City or its employees or any other person or persons, and the said Contractor will defend any and all suits that may be brought against the City on account of any such accidents and will make good to, and reimburse, the City for any expenditures that said City may make by reason of such accidents; provided, however, that the Contractor shall not be responsible

to the City on indemnity for damages caused by or resulting from the City's sole negligence.

ARTICLE 12

CITY'S RIGHT TO TERMINATE THE CONTRACT

Should the Contractor neglect to perform the work properly or fail to perform any provision of the Contract, the City, after seven (7) days' written notice to the Contractor, and its surety, if any, may, without prejudice to any other remedy the City may have, make good the deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor or, at its option, may terminate the Contract and take possession of all materials, tools and appliances and finish the work by such means as it sees fit, and if the unpaid balance of the contract price exceeds the expense of finishing the work, such excess shall be paid to the Contractor, but if such expense exceeds such unpaid balance, the Contractor shall pay the difference to the City.

ARTICLE 13

CONTRACTOR'S RIGHT TO TERMINATE CONTRACT

Should the work be stopped by any public authority for a period of ninety (90) days or more, through no fault of the Contractor, or should the work be stopped through act or neglect of the City for a period of ninety (90) days, then the Contractor, upon seven (7) days' written notice to the City, may stop work or terminate the Contract and recover from the City payment for all work executed and any loss sustained and reasonable profit and damages.

ARTICLE 14

ACCESS TO WORK

The Contractor shall permit and facilitate observation of the work by the City and its agents and public authorities at all times.

ARTICLE 15

ARBITRATION OF DISPUTES

Any disagreement arising out of this contract or from the breach thereof shall be submitted to arbitration, and judgment upon the award rendered may be entered in the court of the forum, state or federal, having jurisdiction. It is mutually agreed that the decision of the arbitrators shall be a condition precedent to any right of legal action that either party may have against the other. The arbitration shall be held under the Rules of the American Arbitration Association.

ARTICLE 16

WARRANTY

At the completion of this project, Contractor shall execute an instrument to City warranting the project for two (2) years against defects in workmanship or materials utilized. In addition the warranty shall specifically include the replacement of concrete that spalls more than 30% per 10 foot section of curb and gutter, the replacement of

concrete that spalls more than 30% per driveway apron square or sidewalk square, and the replacement of stamped concrete that spalls more than 30% of the area between each sidewalk square and the curb. The manufacturer's warranty shall prevail.

At the time of completion, the Contractor shall furnish to the City material containing complete operation and maintenance instructions for all equipment in the project. The Contractor shall also furnish to the City at the time of completion all documents, warranties and guarantees on all equipment and services provided.

The Contractor shall re-execute any work that fails to conform to the requirements of the Contract and that appears during the progress of the work and shall remedy any defects due to faulty workmanship, which appear within a period of two (2) years from the date of completion of the Contract or such longer period of time as may be prescribed by laws or regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents. All equipment and materials will be warranted and guaranteed under the original equipment manufacturer's warranties and guarantees.

The Contractor shall restore any work damaged in fulfilling the terms and conditions of this Article. After such repair or replacement has been satisfactorily completed, the Contractor's warranty with respect to such work repaired or replaced will be extended for an additional period of one (1) year beyond the warranty period described above. Contractor's obligations under this paragraph are in addition to any other obligation or warranty.

The terms of the Local Pavement Warranty Program adopted by the City of Marquette are hereby incorporated by reference into this contract and made a part hereof.

ARTICLE 17

FEDERAL-AID CONTRACTS

During the performance of every contract subject to Title VI of the Civil Rights Act of 1964 and Title 49, Code of Federal Regulations, Department of Federally-assisted programs of the Department of Transportation issued pursuant to the Act, the Contractor, for itself, its assignees and successors in interest agrees as follows:

1. **Compliance with Regulations**: The Contractor shall comply with Regulations relative to nondiscrimination in Federally-assisted programs of the Department of Transportation, Title 49, Code of Federal Regulations, part 21, as they may be amended from time to time (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.
2. **Nondiscrimination:** The Contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, sex or national origin in the selection, retention and treatment of Subcontractors, including procurements of materials in the discrimination prohibited by Section 21.5 of the Regulation, including employment practices when the Contractor covers a program set forth in Appendix B of the Regulations.
3. **Solicitation for Subcontracts, including Procurements of Materials and Equipment**: In all solicitations either by competitive bidding or negotiation made by the Contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential Subcontractor or supplier shall be notified by the Contractor of the Contractor's obligations under the contract and the Regulations relative to nondiscrimination on the grounds of race, color or national origin.
4. **Information and Reports**:

The Contractor shall provide all information and reports required by the Regulations, or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the State Highway Department of the Federal Highway Administration to be pertinent to ascertain compliance with such Regulations or directives. Where any information required of a Contractor is in the exclusive possession of another who fails or refuses to furnish this information, the Contractor shall so certify to the State Highway Department or the Federal Highway Administration, as appropriate, and shall set forth what efforts it has made to obtain the information.

5. **Sanctions for Noncompliance**:
   In the event the Contractor's noncompliance with the nondiscrimination provisions of this contract, the State Highway Department shall impose such contract sanctions as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to:
   a) Withholding payments to the Contractor under the contract until the Contractor complies; and/or
   b) Cancellations, termination or suspension of the contract, in whole or in part.
6. **Incorporation of Provisions**:
   The Contractor shall include provisions of paragraphs (1) through (6) in every subcontract, including procurement of material and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The Contractor shall take such action with respect to any subcontract or procurement as the State Highway Department or the Federal Highway Administration may direct as a means of enforcing such provisions including sanctions for noncompliance; provided, however, that, in the event a Contractor becomes involved in, or is threatened with, litigation with a Subcontractor or supplier as a result of such direction, the Contractor may request the State Highway Department to enter into such litigation to protect the interests of the State, and, in addition, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

ARTICLE 18

INTEGRATION

This Agreement represents the entire understanding between the parties hereto and may not be amended, except in writing that is signed by both parties hereto.

ARTICLE 19

BINDING AGREEMENT

This Agreement will bind and inure to the benefit of the heirs, executors, administrators, successors and assigns of the parties.

ARTICLE 20

PURCHASING AGENT DESIGNATION AND AUTHORITY

Jon Swenson is designated as Purchasing Agent of City and is authorized to order minor changes in the work not involving adjustment in the Contract Sum or Time of Completion and not inconsistent with the intent of the Contract Documents. Such changes will be affected by written order signed by the Purchasing Agent and shall be binding on the City and Contractor.

IN WITNESS WHEREOF, the parties have made and executed this Agreement, the day and year first above written.

Signed this 9th day of April, 2025.

THE CITY OF MARQUETTE

Witness

Jessica Hanley, Mayor
City of Marquette

Witness

Kyle L. Whitney, City Clerk
City of Marquette

******CONTRACTOR ******

Witness

Witness

By: Tim Kippenhan

Its: **President**

Address: 1471 McMahon Rd, Neenah WI,

54956-6305

Telephone#: (920)969-7000

APPROVED AS TO FORM:

Suzanne C. Larsen
City Attorney

APPROVED AS TO SUBSTANCE:

Karen M. Kovacs
City Manager

CHANGE ORDER NO 001

PROJECT:
Peg Hirvonen Bandshell
Peter White Dr Marquette, MI 49855

CHANGE ORDER NUMBER: *001*
DATE: 07/23/2025
PROJECT NUMBER: 250490

OWNER: ☐
ARCHITECT: ☐
CONTRACTOR: ☐
FIELD: ☐
OTHER: ☐

OWNER:
City of Marquette
300 W Baraga Ave
Marquette MI 498554763

ARCHITECT:
AWH Architects LLC
5325 Colfax Ave S
Minneapolis MN 55419

CONTRACTOR:
Miron Construction Co., Inc.
1471 McMahon Dr
PO Box 509
Neenah WI 54957-0509

THE CONTRACT IS CHANGED AS FOLLOWS:

(Include, where applicable, any undisputed amount attributable to previously executed Construction Change Directives)

PCI0001	Bedrock Conditions.	$28,674.54
PCI0002	Loading Dock Landing.	$6,817.41
PCI0003	Fixed Riser Face / Temp Risers.	-42,238.24

The original Contract Sum was	**$2,084,175.00**
The net change by previously authorized Change Orders	**$0.00**
The Contract Sum prior to this Change Order was	**$2,084,175.00**
The Contract Sum will be increased by this Change Order in the amount of	**-6,746.29**
The New Contract Sum Including This Change Order	**$2,077,428.71**
The Contract Time Will Not Be Changed	
The date of Substantial Completion as of the date of this Change Order therefore is	**06/12/2026**

NOTE:

This Change Order does not include changes in the Contract Sum, Contract Time or Guaranteed Maximum Price which have been authorized by Construction Change Directive until the cost and time have been agreed upon by both the Owner and Contractor, in which case a Change Order is executed to supersede the Construction Change Directive.

NOT VALID UNTIL SIGNED BY THE ARCHITECT, CONTRACTOR AND OWNER

AWH Architects LLC	Miron Construction Co., Inc.	City of Marquette
ARCHITECT *(Firm name)*	**CONTRACTOR** *(Firm name)*	**OWNER** *(Firm name)*
Namdi Alexander	Tim Kippenhan	Jon Swenson
(Typed Name)	*(Typed Name)*	*(Typed Name)*
Signed by: 21319AD916C642A...	Signed by: Tim Kippenhan 346FCB25828E429...	DocuSigned by: 2D079087B986495...
BY *(Signature)*	**BY** *(Signature)*	**BY** *(Signature)*
7/25/2025	7/23/2025	7/30/2025
DATE	**DATE**	**DATE**

Docusign Envelope ID: F0EFF987-0304-4E66-B192-AADE092EC895

Miron
Building Excellence

Change Order Request

Date: 07/15/2025

To: Jon Swenson
City of Marquette
300 W Baraga Ave
Marquette, MI 49855

Re: Peg Hirvonen Bandshell
Marquette, MI 49855
Project: 250490

E-MAILED
07/15/2025

Reference Document: PCI0001

Change Description: Added scope for bedrock/water drainage.

Contractor	Description	Amount
MJ VanDamme Trucking Inc	EARTHWORK	$47,205.00
Miron Construction Co., Inc.	GENERAL TRADES	-$21,386.36
*** SUB-TOTAL ***		**25,818.64**
Management Fee - Subcontractor - 5%		$2,360.25
*** SUB-TOTAL ***		**28,178.89**
Bond - 1%		$495.65
**** TOTAL ****		**28,674.54**

Impacted Calendar Days: 0

All terms of our agreement apply and preclude Miron Construction Co., Inc. from performing any extra work without approval. Please provide your approval by signing this request.

Trevor Richards — 07/15/2025

Trevor Richards — **Date:**
Miron Construction Co., Inc.

7-22-25

Owner Representative — **Date:**
City of Marquette

This quote expires on: 07/29/2025

1471 McMahon Drive, Neenah, WI 54956-6305 • P.O. Box 509, Neenah, WI 54957-0509 • PH 920.969.7000 FX 920.969.7396

MIRON-CONSTRUCTION.COM

Trevor Richards

From: Pete Ryynanen <Pete.Ryynanen@mjvandamme.onmicrosoft.com>
Sent: Friday, June 20, 2025 8:13 AM
To: Trevor Richards
Subject: [E] Band Shell 3" minus

CAUTION: External Email

Our price for installing 3” minus in the bedrock veins, as discussed, is $17,688.00. I’ll work up a separate price for sand backfill. Let me know if you need anything more that this email.

Thanks,

Pete Ryynanen
Project Manager
MJ VanDamme, Inc.
P.O. Box 1172 Gwinn, MI 49841
Office: (906)346-2641
Fax: (906)346-2643
www.mjvandammeinc.com



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Trevor Richards

From: Pete Ryynanen <Pete.Ryynanen@mjvandamme.onmicrosoft.com>
Sent: Friday, June 27, 2025 8:09 AM
To: Trevor Richards
Subject: [E] Band Shell foundation backfill

CAUTION: External Email

Trevor,

Our price for backfilling the interior of the foundation with imported class II sand is $29,517.00. This price assumes that a portion of the foundation wall will be left open to allow for equipment access to the interior of the foundation.

Please let me know if you have any questions.

Thank you,

Pete Ryynanen
Project Manager
MJ VanDamme, Inc.
P.O. Box 1172 Gwinn, MI 49841
Office: (906)346-2641
Fax: (906)346-2643
www.mjvandammeinc.com



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Miron Self-Perform General Trades
Quote Detail

Date: 07/15/2025

To: Miron Construction Co., Inc.
PO Box 509
Neenah, WI 54956

Re: Peg Hirvonen Bandshell - General Trades
Marquette, MI 49855
Project: 250496

Reference Document: PCI0001

Change Description: Added scope for bedrock/water drainage.

Contractor	Description	Amount
Miron Construction Co., Inc	LABOR	15,959.98
Miron Construction Co., Inc	MATERIAL	-41,361.34
Miron Construction Co., Inc	EQUIPMENT	4,015.00
**** TOTAL ****		**-21,386.36**

Impacted Calendar Days: 0

All terms of our agreement apply and preclude Miron Construction Co., Inc. from performing any extra work without approval. Please provide your approval by signing this request.

Trevor Richards
Miron Construction Co., Inc.

Date:

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MIRON-CONSTRUCTION.COM

Docusign Envelope ID: F0EFF987-0304-4E66-B192-AADE092EC895

Miron Building Excellence

POTENTIAL CHANGE ITEM (PCI) PROPOSAL REQUEST

PROJECT NAME:	Peg Hirvonen Bandshell-Marquette, MI
ADDRESS:	
PROJECT NUMBER:	250490
DATE:	06.24.2025
PCI #	

CHANGE DESCRIPTION: Filling voids in bedrock with 3" minus crushed stone, then bringing footprint elevation to bottm of slab with Level 2 sand. Pouring mud slabs on uneven bedrock, tying dowels straight into bedrock, and pouring foundation walls on mudslab/bedrock.

SELF-PERFORMED WORK:

TOTAL LABOR:		$ 4,054.98
TOTAL MATERIAL:		$ (27,789.00)
SALES TAX @ 6%:		$ (1,667.34)
TOTAL EQUIPMENT:		$ 4,015.00
	SUBTOTAL:	$ (21,386.36)
OVERHEAD, PROFIT, & MARKUP	0.00%	$ -
TOTAL CONTRACTOR COST WITH MARKUP		**$ (21,386.36)**

SUB-TIER SUBCONTRACTORS:

	SUBTOTAL:	$ -
SUBCONTRACTOR MARKUP		$ -
TOTAL SUBCONTRACTOR COST WITH MARKUP		**$ -**

Schedule Impact: 0 Calendar Days

TOTAL **$ (21,386.36)**

Additional Comments:

Project Manager / Project Accountant

Docusign Envelope ID: F0EFF987-0304-4E66-B192-AADE092EC895

Miron
Building Excellence

Change Order Request

Date: 07/14/2025

To: Jon Swenson
City of Marquette
300 W Baraga Ave
Marquette, MI 49855

Re: Peg Hirvonen Bandshell
Marquette, MI 49855
Project: 250490

E-MAILED
07/15/2025

Reference Document: PCI0002

Change Description: Added Mudslabs, SOG, and doweling for Loading Dock Landing.

Contractor	Description	Amount
Miron Construction Co., Inc.	GENERAL TRADES	$6,749.91
*** SUB-TOTAL ***		**6,749.91**
Bond - 1%		$67.50
**** TOTAL ****		**6,817.41**

Impacted Calendar Days: 0

All terms of our agreement apply and preclude Miron Construction Co., Inc. from performing any extra work without approval. Please provide your approval by signing this request.

Trevor Richards
Trevor Richards
Miron Construction Co., Inc.

07/15/2025
Date:

Owner Representative
City of Marquette

7-22-25
Date:

This quote expires on: 08/04/2025

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MIRON-CONSTRUCTION.COM

Miron Self-Perform General Trades
Quote Detail

Date: 07/14/2025

To: Miron Construction Co., Inc.
PO Box 509
Neenah, WI 54956

Re: Peg Hirvonen Bandshell - General Trades
Marquette, MI 49855
Project: 250496

Reference Document: PCI0002

Change Description: Loading Dock Landing.

Contractor	Description	Amount
Miron Construction Co., Inc	LABOR	3,212.14
Miron Construction Co., Inc	MATERIAL	1,057.35
Miron Construction Co., Inc	EQUIPMENT	1,600.00
*** SUB-TOTAL ***		**5,869.49**
Management Fee - Self Perform - 15%		880.42
**** TOTAL ****		**6,749.91**

Impacted Calendar Days: 0

All terms of our agreement apply and preclude Miron Construction Co., Inc. from performing any extra work without approval. Please provide your approval by signing this request.

Trevor Richards
Miron Construction Co., Inc.

Date:

Docusign Envelope ID: F0EFF987-0304-4E66-B192-AADE092EC895

Miron Building Excellence

POTENTIAL CHANGE ITEM (PCI) PROPOSAL REQUEST

PROJECT NAME:	Peg Hirvonen Bandshell-Marquette, MI
ADDRESS:	
PROJECT NUMBER:	250490
DATE:	7.8.2025
PCI #	

CHANGE DESCRIPTION: Added footings,foundation wall, and concrete for loading dock landing.

SELF-PERFORMED WORK:

TOTAL LABOR:		$ 3,212.14
TOTAL MATERIAL:		$ 997.50
SALES TAX @ 6%:		$ 59.85
TOTAL EQUIPMENT:		$ 1,600.00
	SUBTOTAL:	$ 5,869.49
OVERHEAD, PROFIT, & MARKUP	15.00%	$ 880.42
TOTAL CONTRACTOR COST WITH MARKUP		**$ 6,749.91**

SUB-TIER SUBCONTRACTORS:

	SUBTOTAL:	$ -
SUBCONTRACTOR MARKUP		$ -
TOTAL SUBCONTRACTOR COST WITH MARKUP		**$ -**

Schedule Impact: 2 Calendar Days

TOTAL $ 6,749.91

Additional Comments:

Project Manager / Project Accountant

Docusign Envelope ID: F0EFF987-0304-4E66-B192-AADE092EC895

Miron
Building Excellence

Change Order Request

Date: 07/16/2025

To: Jon Swenson
City of Marquette
300 W Baraga Ave
Marquette, MI 49855

Re: Peg Hirvonen Bandshell
Marquette, MI 49855
Project: 250490

E-MAILED
07/16/2025

Reference Document: PCI0003

Change Description: Cost for added fixed riser facing and deduct for change to CoreLite Risers.

Contractor	Description	Amount
Miron Construction Co., Inc.	GENERAL TRADES	$29,569.12
Miron Construction Co., Inc	TELESCOPING STANDS & FIXED BLEACHERS	-$71,807.36
** TOTAL **		-42,238.24

Impacted Calendar Days: 0

All terms of our agreement apply and preclude Miron Construction Co., Inc. from performing any extra work without approval. Please provide your approval by signing this request.

Trevor Richards
Trevor Richards
Miron Construction Co., Inc.

07/16/2025
Date:

Owner Representative
City of Marquette

7-22-25
Date:

This quote expires on: 08/05/2025

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MIRON-CONSTRUCTION.COM

Docusign Envelope ID: F0EFF987-0304-4E66-B192-AADE092EC895

Core-Lite Design .com

DATE: 05/19/25

EFFECTIVE DATE: 05/19/25

SUPERSEDES: All Others

Quote 33996-1

TO: AWH Architect's
12 East 25th Street
Minneapolis, MN 55404

PHONE: 612-910-9999
FAX:
EMAIL: namdi@awharchitects.com

ATTN: Namdi Alexander

Sales Associate:

F.O.B.: Grand Haven, MI

PAYMENT TERMS-
60% with order balance when shipped

PRICES EFFECTIVE: 4/23/2025

PRICES VALID THROUGH: next price change

Presque Isle Bandshell- 10" and 20" high 30 degree tapered risers

PART #	QTY	DIMENSIONS (in.)			Unit Weight (lbs.)	Total Weight Est. (lbs.)	DESCRIPTION	UNIT PRICE	Sub-Total
		HEIGHT	WIDTH	LENGTH					
ST-367710W	6	10"	36"	77"	70	**420**	**30 Degree Wedge Risers x 10" high**	$1,108.00	$6,648.00
ST-369610W	6	10"	36"	96"	105	**630**	**30 Degree Wedge Risers x 10" high**	$1,322.00	$7,934.00
ST-365820WL	6	16"	36"	58"	80	480	**15 Degree half wedge left x 16" high**	$1,120.00	$6,720.00
ST-365820WR	6	16"	36"	58"	80	**480**	**15 Degree half wedge right x 16" high**	$1,120.00	$6,720.00
ST-366820WL	6	16"	36"	82"	**100**	**600**	**15 Degree half wedge left x 16" high**	$1,288.00	$7,728.00
ST-366820WR	6	16"	36"	82"	**100**	**600**	**15 Degree half wedge right x 16" high**	$1,288.00	$7,728.00
Rolling Cart- LH	6				70	**420**	**Rolling Rack with casters- LH**	$690.00	$4,140.00
Rolling Cart- RH	6				70	**420**	**Rolling Rack with casters- RH**	$690.00	$4,140.00
Packaging	8	85	40	84	**250**	**2000**	Shippng Skid and Protective for 4 risers	$300.00	$2,400.00
Shipping	1					**6050**	**Estes Freight**	$1,436.00	$1,436.00
Estimate									
							Total		$55,594.00

TERMS AND CONDITIONS:

- UNLESS OTHERWISE SPECIFIED, THE ABOVE PRICES ARE FOR ONE RELEASE OF CONTINUOUS PRODUCTION OF EACH PART.
- PRICES FOR RELEASES OTHER THAN QUOTED QUANTITIES ARE SUBJECT TO AN INCREASE IN PRICE AND/OR 'ADDITIONAL SETUP CHARGES.

Core Lite Industries, LLC
13354 Greenleaf Lane
Grand Haven, MI 49417
Phone: (616) 843-5993

Caution: Combustible. materials will ignite if exposed to fire of sufficient heat and intensity. **Notice:** Core Lite Industries, LLC shall not be liable for incidental

Core Lite Industries, LLC liability is expressly limited to replacement of defective goods. See FeatherBlock/Core Lite Return Policy and 12-Month Limited Warranty for Details.

Docusign Envelope ID: F0EFF987-0304-4E66-B192-AADE092EC895

Miron Self-Perform General Trades
Quote Detail

Date: 07/15/2025

To: Miron Construction Co., Inc.
PO Box 509
Neenah, WI 54956

Re: Peg Hirvonen Bandshell - General Trades
Marquette, MI 49855
Project: 250496

Reference Document: PCI0003

Change Description: Cost for added fixed riser facing and deduct for change to CoreLite Risers.

Contractor	Description	Amount
Miron Construction Co., Inc	LABOR	8,185.16
Miron Construction Co., Inc	EQUIPMENT	1,659.77
Miron Construction Co., Inc	MATERIAL	15,867.35
*** SUB-TOTAL ***		**25,712.28**
Management Fee - Self Perform - 15%		3,856.84
**** TOTAL ****		**29,569.12**

Impacted Calendar Days: 0

All terms of our agreement apply and preclude Miron Construction Co., Inc. from performing any extra work without approval. Please provide your approval by signing this request.

Trevor Richards
Miron Construction Co., Inc.

Date:

1471 McMahon Drive, Neenah, WI 54956-6305 • P.O. Box 509, Neenah, WI 54957-0509 • PH 920.969.7000 FX 920.969.7396

MIRON-CONSTRUCTION.COM

Docusign Envelope ID: F0EFF987-0304-4E66-B192-AADE092EC895

Miron Building Excellence

POTENTIAL CHANGE ITEM (PCI) PROPOSAL REQUEST

PROJECT NAME:	Peg Hirvonen Bandshell-Marquette, MI
ADDRESS:	Peter White Drive, Marquete MI 49855
PROJECT NUMBER:	250490
DATE:	7.8.2025
PCI #	2

CHANGE DESCRIPTION: Cost to construct and install the fixed rise face, locks, handles, etc.

SELF-PERFORMED WORK:

TOTAL LABOR:		$ 8,185.16
TOTAL MATERIAL:		$ 14,969.20
SALES TAX @ 6%:		$ 898.15
TOTAL EQUIPMENT:		$ 1,659.77
	SUBTOTAL:	$ 25,712.29
OVERHEAD, PROFIT, & MARKUP	15.00%	$ 3,856.84
TOTAL CONTRACTOR COST WITH MARKUP		**$ 29,569.13**

SUB-TIER SUBCONTRACTORS:

CoreLite	$58,929.64
Wenger	-$130,737.00

	SUBTOTAL:	$ (71,807.36)
SUBCONTRACTOR MARKUP		$ -
TOTAL SUBCONTRACTOR COST WITH MARKUP		**$ (71,807.36)**

Schedule Impact: _____ Calendar Days

TOTAL $ (42,238.23)

Additional Comments:

Project Manager / Project Accountant

CHANGE ORDER NO 002

PROJECT:
Peg Hirvonen Bandshell
Peter White Dr Marquette, MI 49855

CHANGE ORDER NUMBER: *002*
DATE: 09/03/2025
PROJECT NUMBER: 250490

OWNER: ☐
ARCHITECT: ☐
CONTRACTOR: ☐
FIELD: ☐
OTHER: ☐

OWNER:
City of Marquette
300 W Baraga Ave
Marquette MI 498554763

ARCHITECT:
AWH Architects LLC
5325 Colfax Ave S
Minneapolis MN 55419

CONTRACTOR:
Miron Construction Co., Inc.
1471 McMahon Dr
PO Box 509
Neenah WI 54957-0509

THE CONTRACT IS CHANGED AS FOLLOWS:

(Include, where applicable, any undisputed amount attributable to previously executed Construction Change Directives)

PCI0004	Site Drainage / Sumps.	$13,759.70
PCI0005	BOH Stairs and Landing - ASI#1.	$5,714.00
PCI0006	ASI #3 - Electrical.	$768.86

The original Contract Sum was	**$2,084,175.00**
The net change by previously authorized Change Orders	**-6,746.29**
The Contract Sum prior to this Change Order was	**$2,077,428.71**
The Contract Sum will be increased by this Change Order in the amount of	**$20,242.56**
The New Contract Sum Including This Change Order	**$2,097,671.27**
The Contract Time Will Not Be Changed	
The date of Substantial Completion as of the date of this Change Order therefore is	**06/12/2026**

NOTE:

This Change Order does not include changes in the Contract Sum, Contract Time or Guaranteed Maximum Price which have been authorized by Construction Change Directive until the cost and time have been agreed upon by both the Owner and Contractor, in which case a Change Order is executed to supersede the Construction Change Directive.

NOT VALID UNTIL SIGNED BY THE ARCHITECT, CONTRACTOR AND OWNER

AWH Architects LLC	Miron Construction Co., Inc.	City of Marquette
ARCHITECT *(Firm name)*	**CONTRACTOR** *(Firm name)*	**OWNER** *(Firm name)*
	Tim Kippenhan	
(Typed Name)	*(Typed Name)*	*(Typed Name)*
BY *(Signature)*	**BY** *(Signature)*	**BY** *(Signature)*
DATE	**DATE**	**DATE**

Page: 1 of 1

Change Order Request

Date: 07/30/2025

To: Jon Swenson
City of Marquette
300 W Baraga Ave
Marquette, MI 49855

Re: Peg Hirvonen Bandshell
Marquette, MI 49855
Project: 250490

E-MAILED
08/04/2025

Reference Document: PCI0004

Change Description: Added site drainage under foundation. Added site drainage outside of foundation. Added (2) sump pits to aid with drainage. Removed sump pump from scope.

Contractor	Description	Amount
Prime Mechanical Contracting	PLUMBING	-$13,177.00
MJ VanDamme Trucking Inc	EARTHWORK	$25,400.00
*** SUB-TOTAL ***		**12,223.00**
Management Fee - Subcontractor - 5%		$1,270.00
*** SUB-TOTAL ***		**13,493.00**
Bond - 1%		$266.70
**** TOTAL ****		**13,759.70**

Impacted Calendar Days: 2

All terms of our agreement apply and preclude Miron Construction Co., Inc. from performing any extra work without approval. Please provide your approval by signing this request.

Trevor Richards — 08/04/2025

Trevor Richards — **Date:**
Miron Construction Co., Inc.

Owner Representative — **Date:**
City of Marquette

This quote expires on: 08/20/2025

PRIME

REQUEST FOR CHANGE

JOB #	P00396
JOB NAME	Peg Hirvonen Bandshell
RFC #	#1 Deduct
DATE SUBMITTED	07/23/25

Prime Mechanical Contracting
902 W. Baraga Ave.
Marquette, MI 49855

TO:	Miron Construction Co., Inc.
ATTN:	Trevor Richards Pat Bailey

REQUEST FOR CHANGE SCOPE / DESCRIPTION:

The sump pump has been removed from this project. We are providing a credit for removing the sump pump from our scope of work. Total credit: $13,177.

SUMMARY:

	Quantity	Cost	Cost Ext'd
Sump Pump	1.00	$ 13,177.00	$ (13,177.00)
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
		Subtotal	**$ (13,177.00)**

Carrie Duerksen

AUTHORIZED SIGNATURE

TITLE

Trevor Richards

From: Pete Ryynanen <Pete.Ryynanen@mjvandamme.onmicrosoft.com>
Sent: Friday, July 18, 2025 2:12 PM
To: Trevor Richards
Cc: Pat Bailey
Subject: [E] RE: EXTERNAL: RE: EXTERNAL: 250490 - Peg H. Bandshell - Drainage

CAUTION: External Email

The cost breakdown for the drain tile work at the band shell is as follows:

- Labor $9,136.23
- Equipment $6,679.10
- Material $9,584.67

The material includes 900 ft of 4” perf pipe, 190 ton of washed stone, and filter fabric. This work will be time consuming. The access to the back side of the band shell is going to be difficult. I've allotted 4 days for us to complete this task.

Please let me know if you have any questions.

Thank you,

Pete Ryynanen
Project Manager
MJ VanDamme, Inc.
P.O. Box 1172 Gwinn, MI 49841
Office: (906)346-2641
Fax: (906)346-2643
www.mjvandammeinc.com

Change Order Request

Date: 07/31/2025

To: Jon Swenson
City of Marquette
300 W Baraga Ave
Marquette, MI 49855

Re: Peg Hirvonen Bandshell
Marquette, MI 49855
Project: 250490

E-MAILED
07/31/2025

Reference Document: PCI0005

Change Description: Added (2) landings and stairs per ASI#1 to BOH. Wood framed stairs with railing.

Contractor	Description	Amount
Miron Construction Co., Inc.	GENERAL TRADES	$5,657.43
*** SUB-TOTAL ***		**5,657.43**
Bond - 1%		$56.57
**** TOTAL ****		**5,714.00**

Impacted Calendar Days: 5

All terms of our agreement apply and preclude Miron Construction Co., Inc. from performing any extra work without approval. Please provide your approval by signing this request.

Trevor Richards — 07/31/2025

Trevor Richards — **Date:**
Miron Construction Co., Inc.

Owner Representative — **Date:**
City of Marquette

This quote expires on: 08/20/2025

Miron Self-Perform General Trades
Quote Detail

Date: 07/30/2025

To: Miron Construction Co., Inc.
PO Box 509
Neenah, WI 54956

Re: Peg Hirvonen Bandshell - General Trades
Marquette, MI 49855
Project: 250496

Reference Document: PCI0004

Change Description: BOH Stairs and Landing - ASI#1.

Contractor	Description	Amount
Miron Construction Co., Inc	MATERIALS	1,677.34
Miron Construction Co., Inc	LABOR	3,242.16
*** SUB-TOTAL ***		**4,919.50**
Management Fee - Self Perform - 15%		737.93
**** TOTAL ****		**5,657.43**

Impacted Calendar Days: 0

All terms of our agreement apply and preclude Miron Construction Co., Inc. from performing any extra work without approval. Please provide your approval by signing this request.

Trevor Richards
Miron Construction Co., Inc.

Date:

Change Order Request

Date: 09/03/2025

To: Jon Swenson
City of Marquette
300 W Baraga Ave
Marquette, MI 49855

Re: Peg Hirvonen Bandshell
Marquette, MI 49855
Project: 250490

Reference Document: PCI0006

Change Description: Added floor boxes, modified floor box locations, added 200 amp panel. Added underground service to building. Sound System and Cabling to be provided by owner, a credit has been issued for this scope of work. In-ceiling raceways to be provided without wiring per ASI #3.

Contractor	Description	Amount
JP Electric Professionals Inc	ELECTRICAL	$725.00
*** SUB-TOTAL ***		**725.00**
Management Fee - Subcontractor - 5%		$36.25
*** SUB-TOTAL ***		**761.25**
Bond - 1%		$7.61
**** TOTAL ****		**768.86**

Impacted Calendar Days: 5

All terms of our agreement apply and preclude Miron Construction Co., Inc. from performing any extra work without approval. Please provide your approval by signing this request.

Trevor Richards

Trevor Richards
Miron Construction Co., Inc.

09/03/2025

Date:

Owner Representative
City of Marquette

Date:

This quote expires on: 09/23/2025

JP ELECTRIC Professionals, Inc.
3023 Island Beach Road
Marquette, MI 49855
(906) 228-9478

August 27, 2025

Miron Construction Co., Inc.
175 McClellan Ave.
Marquette, MI 49855

RE: Peg Hirvonen Bandshell
Main 200 Amp Electrical Service

ATTN: Trevor Richards

Dear Trevor,

As we discussed, the project documents states "200 amp service upgrade by Owner". The following are our quotes for a new 200 amp service to bandshell if the Owner desires.

1. Install 200 amp single phase overhead service on SE corner of bandshell with associated circuitry, circuit breakers, raceways, grounding and fittings.

   Quote: $4,200.00

2. ADD option to install 200 amp single phase underground service lateral from existing power pole to bandshell panel. Approximately 150'. Rebuild waterproof panel with GFCI receptacles to replace existing deteriorated equipment.

   Quote: $5,250.00

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

John Prince
President

JP ELECTRIC Professionals, Inc.
3023 Island Beach Road
Marquette, MI 49855
(906) 228-9478

August 27, 2025

Miron Construction Co., Inc.
175 McClellan Ave.
Marquette, MI 49855

RE: Peg Hirvonen Bandshell
ASI #3 Additional Floor Boxes

ATTN: Trevor Richards

Dear Trevor,

As shown on sheet A1.1 of ASI #1, to add (3) specified LEW #AP-0B-1-SH stainless steel waterproof floor boxes with underground circuitry, we offer the following quote.

Quote: $4,300.00

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

John Prince
President

Trevor Richards

From: John Prince <jpe486@sbcglobal.net>
Sent: Friday, August 29, 2025 4:24 PM
To: Trevor Richards
Subject: [E] Peg Hirvonen Bandshell: AS! #3 Delete Sound System

CAUTION: External Email

Trevor: Per ASI #3 request for owner to furnish and install complete sound system in lieu of being part of our contract for the Peg Hirvonen Bandshell project, please deduct $13,025.00.
We would still install empty raceways as shown for future mic and speaker cabling.

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

Thanks,
John

John Prince
J.P. Electric Professionals Inc
3023 Island Beach Rd
Marquette, MI 49855

Office: 906-228-9478
Warehouse: 906-228-2226
Cell: 906-361-2569

Agenda Date: 9/8/2025

Consent Agenda - Roll Call Vote
Proclamation - Marquette Alzheimer's Awareness Day

ALTERNATIVES:

As determined by the Commission.

ATTACHMENTS:

Description

- Proclamation

Proclamation
Marquette Alzheimer's Awareness Day

WHEREAS, Alzheimer's disease, a progressive neurodegenerative brain disorder, tragically robs individuals of their memories and leads to progressive mental and physical impairments; and

WHEREAS, an estimated nearly 7 million people in the United States are living with Alzheimer's, including 202,800 in Michigan, Alzheimer's disease is the seventh leading cause of death in the United States, and one in three seniors dies with Alzheimer's or dementia; and

WHEREAS, according to the Alzheimer's Association's Facts and Figures report, the direct costs of caring for those with Alzheimer's to American society is valued at $384 billion and more than 11 million caregivers provide 18.4 billion hours of unpaid care to those with Alzheimer's or other dementia; and in Michigan, 380,000 family members and friends cared for people with Alzheimer's and other dementia, providing more than 872 million hours of unpaid care, with the annual value of this caregiving totaling more than $17 billion; and

WHEREAS, there are more than 69,000 individuals 65 and older living in Michigan's Upper Peninsula and 7,100 of them have reported an Alzheimer's disease diagnosis, resulting in a more than 10% prevalence rate; and

WHEREAS, Marquette recognizes the efforts of the Alzheimer's Association Michigan Chapter to raise funds and promote awareness to fight Alzheimer's and other dementia, thereby improving the quality of human life for those living with Alzheimer's disease and their caregivers;

NOW THEREFORE, I, Jessica Hanley, Mayor, on behalf of the Marquette City Commission do hereby proclaim Saturday, September 27, 2025, as:

MARQUETTE WALK TO END ALZHEIMER'S DAY

in Marquette, and urge all residents to continue to provide and enhance care for individuals living with Alzheimer's and other dementia and to support programs to help all those affected by Alzheimer's and other dementia.

DATED this 8th day of September, 2025.

_____

Jessica Hanley, Mayor

Agenda Date: 9/8/2025

Consent Agenda - Roll Call Vote
Schedule Public Hearing- Former Marquette General Hospital Brownfield Plan Amendment - Roll Call Vote

BACKGROUND:

A Brownfield Plan for the former Marquette General Hospital (MGH) redevelopment was approved by the City of Marquette Brownfield Redevelopment Authority (MBRA) on May 19, 2022 and by the Marquette City Commission on May 31, 2022 with a primary focus on abatement and demolition, infrastructure improvements, and site preparation. Abatement and demolition costs have been covered by funding from the State and Federal governments through an $8 million Community Development Block Grant (CDBG) and $8 million legislative blight elimination allocation.

Since the approval of the original brownfield plan, Veridea Group has acquired the property from the NMU Foundation and has been working to prepare specific plans for the redevelopment that provides for multiple uses and appropriate residential density. In order to provide for the desired density and investment, there is a critical need for integrated parking rather than surface parking. However, the cost for developing integrated parking is extensive and threatens the financial viability of the development without Brownfield TIF support.

As a result, Veridea is requesting a revision to the Brownfield Plan Eligible Activity budget to shift from abatement and demolition to integrated parking. The requested costs for integrated parking are anticipated to be at least $5 million lower the original total Brownfield Plan budget. A Brownfield Plan Amendment is recommended to accommodate this shift. A Brownfield Plan Amendment must be approved by the same process as a Brownfield Plan, including MBRA approval, notice to taxing jurisdictions, a public hearing, and City Commission approval.

The Brownfield Plan Amendment will be presented to and considered by the MBRA at their September 17, 2025 meeting.

The attached resolution sets the public hearing for consideration of the Brownfield Plan Amendment at the September 29, 2025 City Commission meeting. The Brownfield Plan Amendment will be presented for City Commission consideration at that meeting.

FISCAL EFFECT:

None by this action.

RECOMMENDATION:

Approve the resolution and schedule a public hearing for the Former Marquette General Hospital

Redevelopment Brownfield Plan amendment for the September, 29, 2025 City Commission meeting.

ALTERNATIVES:

As determined by the Commission.

ATTACHMENTS:

Description

- Resolution

RESOLUTION
Public Hearing Establishment – Brownfield Plan Amendment
Former Hospital Redevelopment

At a regular meeting of the Marquette City Commission held at Marquette City Hall, 300 W. Baraga Avenue, Marquette, Michigan on September 8, 2025 at 6:00 p.m., the following resolution was offered by

Commissioner _____ and supported by

Commissioner _____.

Whereas the Michigan Brownfield Redevelopment Financing Act, Act 381, P.A. 1996 as amended, authorizes municipalities to create a brownfield redevelopment authority to promote the revitalization, redevelopment, and reuse of contaminated, blighted, functionally obsolete, historically designated or housing property through tax increment financing of Eligible Activities approved in a Brownfield Plan; and

Whereas the Marquette City Commission (the "Commission") established the City of Marquette Brownfield Redevelopment Authority (MBRA) under the procedures under Act 381 on September 8, 1997 and certified by the State of Michigan on January 28, 1998 to facilitate the redevelopment of Brownfields within the City of Marquette; and,

Whereas a Brownfield Plan Amendment that outlines the qualifications, costs, impacts, and incentives has been prepared and submitted for reimbursement from Brownfield Tax Increment Revenues to reallocate the Brownfield Eligible Activity budget from abatement and demolition to integrated parking to support the redevelopment of the former Marquette General Hospital; and

Whereas the City of Marquette Brownfield Redevelopment Authority will review and consider the Former Hospital Redevelopment Brownfield Plan Amendment at a regular meeting on September 17, 2025; and

Whereas Act 381 requires the governing body to hold a public hearing on the Brownfield Plan Amendment and provide notice of the public hearing and notice to taxing jurisdictions in compliance with the requirements of Act 381; and

Whereas the Marquette City Commission desires to establish a public hearing for the Former Hospital Redevelopment Brownfield Plan Amendment at their September 29, 2025 regular meeting;

Now, Therefore be it Resolved that the Marquette City Commission hereby establishes the public hearing for the Former Hospital Redevelopment Brownfield Plan Amendment at the September 29, 2025 regular meeting, 6:00 p.m. in the City Commission

Chambers, 300 W. Baraga Avenue, Marquette, with notice of the public hearing and notice to taxing jurisdictions in accordance with Act 381; and

Be it Further Resolved that should any section, clause or phrase of this Resolution be declared by the courts to be invalid, the same shall not affect the validity of this Resolution as a whole nor any part thereof, other than the part so declared to be invalid; and,

Be it Further Resolved that any prior resolution, or any part thereof, in conflict with any of the provisions of this Resolution are hereby repealed.

Yes:_____

No:_____

Resolution duly adopted

_____
Jessica Hanley, Mayor
City of Marquette

Certified to be a true copy, _____
Date

_____
Kyle Whitney, City Clerk

Agenda Date: 9/8/2025

Consent Agenda - Roll Call Vote
Schedule Public Hearing - Rezoning of 480 River Park Circle

BACKGROUND:

The right to develop the Shophouse Park PUD at 480 River Park Circle has expired due to the failure to submit Final Site Plans within the time period granted to begin development under Section 54.323(I)(6) of the Land Development Code (LDC). Thus, the property must be rezoned to its previous classification or another classification recommended by the Community Master Plan (CMP), per the same section of the LDC. Staff recommends that the property be rezoned to the previous zoning district, Industrial-Manufacturing (I-M), which is supported by the CMP, although there is no specific recommendation for this property in the CMP.

FISCAL EFFECT:

The City will pay for public notification requirements.

RECOMMENDATION:

Schedule a Public Hearing for the September 29, 2025 City Commission meeting to consider the proposed rezoning of the property at 480 River Park Circle and move Ordinance 25-12 to the next regular meeting.

ALTERNATIVES:

As determined by the Commission.

ATTACHMENTS:

Description

- Shophouse Park recorded PUD Agreement
- Notification of PUD Expiration to Property Owner
- Ordinance 25-12

59
City of Mqt.
Lisa- pick-up.

DocId:8112243
Tx:4072830
8/23/2023 10:33:00 AM

2023R-07160
TONYA NELSON
REGISTER OF DEEDS
MARQUETTE COUNTY, MI
RECEIVED ON
08/23/2023 10:33 AM
RECORDED ON
08/23/2023 01:43 PM
PAGES: 59

PLANNED UNIT DEVELOPMENT AGREEMENT FOR SHOPHOUSE PARK DEVELOPMENT

This Agreement is made this 7th day of August 2023, by and between HOPONASSU OZ LLC, a Michigan limited liability company, of 420 East Prospect Street, Marquette, Michigan 49855, (hereinafter "Developer") and the CITY OF MARQUETTE, a municipal corporation, of 300 W. Baraga Avenue, Marquette, Michigan 49855, (hereinafter "City");

WHEREAS,

A. Developer is the owner of a certain parcel of land described as being in the City of Marquette, County of Marquette and State of Michigan, to-wit:

Lot 12, River Park Complex ("Parcel").

B. Developer filed a petition to rezone said Parcel to Planned Unit Development (hereinafter "PUD") based on a PUD site plan dated May 9, 2023, on file with the City, for the purpose of developing a mixed use project called "Shophouse Park" (hereinafter the "Development"). A copy of the PUD Submittal is on file with the City, and relevant portions are attached as Exhibit A.

C. On June 6, 2023, the Marquette City Planning Commission recommended approval of the petition with certain conditions. The minutes are attached as Exhibit B.

D. On July 10, 2023, the Marquette City Commission, following public hearing, approved the petition with certain conditions. The minutes are attached as Exhibit C.

NOW THEREFORE, it is agreed by and between the parties as follows:

1. Execution by Developer. By executing this Agreement, Developer agrees that the Parcel shall be subject to all terms and conditions of this Agreement; however Developer does not assume any liability of any kind regarding the Development unless and until Developer undertakes any actual site construction activities, in which event Developer's liability hereunder shall be limited to the actual site construction activities undertaken.

2. Execution by City. By executing this Agreement, the City agrees that this Agreement has been approved by the City Commission in public session, as evidenced by the minutes attached as Exhibit D; as well as having approved the PUD Submittal (Exhibit A), as referenced in the minutes attached as Exhibit C.

3. Effect of Agreement.

A. After this Agreement has been executed by both parties, this Agreement and a designation of rezoning shall be enacted, published and recorded at the Marquette County Register of Deeds, according to all local ordinances, and state and federal law.

B. Upon execution of this Agreement, the terms and provisions of this Agreement shall become effective and shall run with the land and be binding upon and inure to the benefit of the parties hereto and their respective heirs, representatives, successors and assigns. Developer shall have the right to assign all rights and obligations contained within this Agreement to any other person or entity upon providing the City with notice of such assignment. If Developer makes such an assignment, any obligation or liability of Developer shall automatically and immediately terminate, however the assignee shall, immediately upon assignment, assume all of the rights and obligations contained within this Agreement.

C. To the extent any terms of this Agreement conflict with any terms or conditions contained within Exhibit B, Exhibit C or Exhibit D, the terms of this Agreement shall control. It is understood and agreed by both parties that the PUD Submittal, a portion of which is attached hereto as Exhibit A, is the approved overall preliminary Site Plan for the Development.

D. The parties acknowledge that the PUD Submittal may need to be amended, as permitted by the City's Land Development Code. Pursuant to the City's Land Development Code 54.323(N) "Proposed amendments or changes to an approved PUD plan shall be submitted to the Zoning Administrator. The Zoning Administrator shall determine whether the proposed modification is of such minor nature as not to violate the area and density requirements or to affect the overall character of the plan, as guided by Section 54.323(N)(1), and in such event may approve or deny the proposed amendment. If the Zoning Administrator determines the proposed amendment is major in nature, the Planning Commission shall review the amendment in accordance with the provisions and procedures of this Section as they relate to the final approval of the PUD and make a recommendation to the City Commission to approve or deny the changes. The Zoning Administrator may refer any proposed amendment to the Planning Commission at his/her discretion for determination of minor/major amendment status."

E. Any failure to comply with a condition contained within this Agreement shall constitute a violation of the City's Land Development Code and shall be subject to all remedies available by law.

F. In the event the Parcel, or any portion thereof, is rezoned for any reason after the execution of this Agreement, this Agreement and all terms and conditions shall terminate as to the Parcel, or rezoned portion thereof, and shall become void. Upon the request of Developer or any subsequent owner, the City Clerk shall record notice of termination of this Agreement at the Marquette County Register of Deeds.

4. Conditions: The specific conditions under which Developer shall develop the Parcel are that the terms of the PUD Submittal shall be followed, except as modified below:

A. Developer shall submit an amended site plan to meet staff comments for the final site plan review.

5. Entire Agreement. This Agreement, including the Exhibits hereto, shall constitute the entire agreement between the parties hereto with respect to the PUD zoning approval and shall supersede all prior or contemporaneous negotiations, understandings, agreements, commitments, and writings with respect to such subject matter.

Dated this 7th day of August 2023.

DEVELOPER
HOPONASSU OZ, LLC

By: David Ollila
Its:

STATE OF MICHIGAN)
COUNTY OF MARQUETTE)

Sue A. Perry
NOTARY PUBLIC
COUNTY OF MARQUETTE
My Commission Expires
7/29/2028
Acting in the County of
Marquette
STATE OF MICHIGAN

Acknowledged before me in Marquette County, Michigan, on August 8, 2023 by David Ollila, owner, Hoponassu OZ, LLC.

Sue A Perry
Sue A Perry, Notary Public
State of Michigan, County of Marquette
My Commission Expires: 7-29-2028
Acting in the County of Marquette

CITY OF MARQUETTE

By: Cody O. Mayer
Its: Mayor

By: Kyle Whitney
Its: Clerk

STATE OF MICHIGAN)
COUNTY OF MARQUETTE)

Acknowledged before me in Marquette County, Michigan, on Aug. 15, 2023, by Cody O. Mayer, Mayor of the City of Marquette, and Kyle Whitney, Clerk of the City of Marquette.

Wendy S. Larson
Wendy S. Larsen, Notary Public
State of Michigan, County of Marquette
My Commission Expires: Feb. 7, 2024
Acting in the County of Marquette

Approved as to Content:

Karen M. Kovacs, City Manager

WENDY S. LARSON
Notary public, Marquette County, Michigan
My commission expires February 7, 2024.

Prepared by:
Suzanne C. Larsen (P57017)
City Attorney, City of Marquette
300 W. Baraga Ave.
Marquette, MI 49855

Exhibit A

SHOPHOUSE PARK

480 River Park Marquette, MI
49855

May 2023



Presented to:
The City of Marquette
Community Development Department
300 West Baraga Avenue
Marquette, MI 49855

Owner:
Hoponassu OZ LLC
Marquette, MI

Team:

T+E+A+M

LEPPANEN ANKER
ARQUITECTURA

GEI

Site

SHOPHOUSE PARK
480 River Park Marquette, MI
49855



LEGEND

- Equipments / Parks
- Shop House Park

ZONING

3.44 Acre Mixed Use

- Commercial
- Residential
- Restaurant
- Office
- Retail
- Recreation

Being a strategic site, the land is located and surrounded by natural and recreational areas that allow the tourist and commercial activation of the place, providing it with services and homes that respect the natural environment and adjust to the existing landscape.

The creation of residential and mixed-use constructions is proposed: houses on the upper floor and workshops on the lower floor.

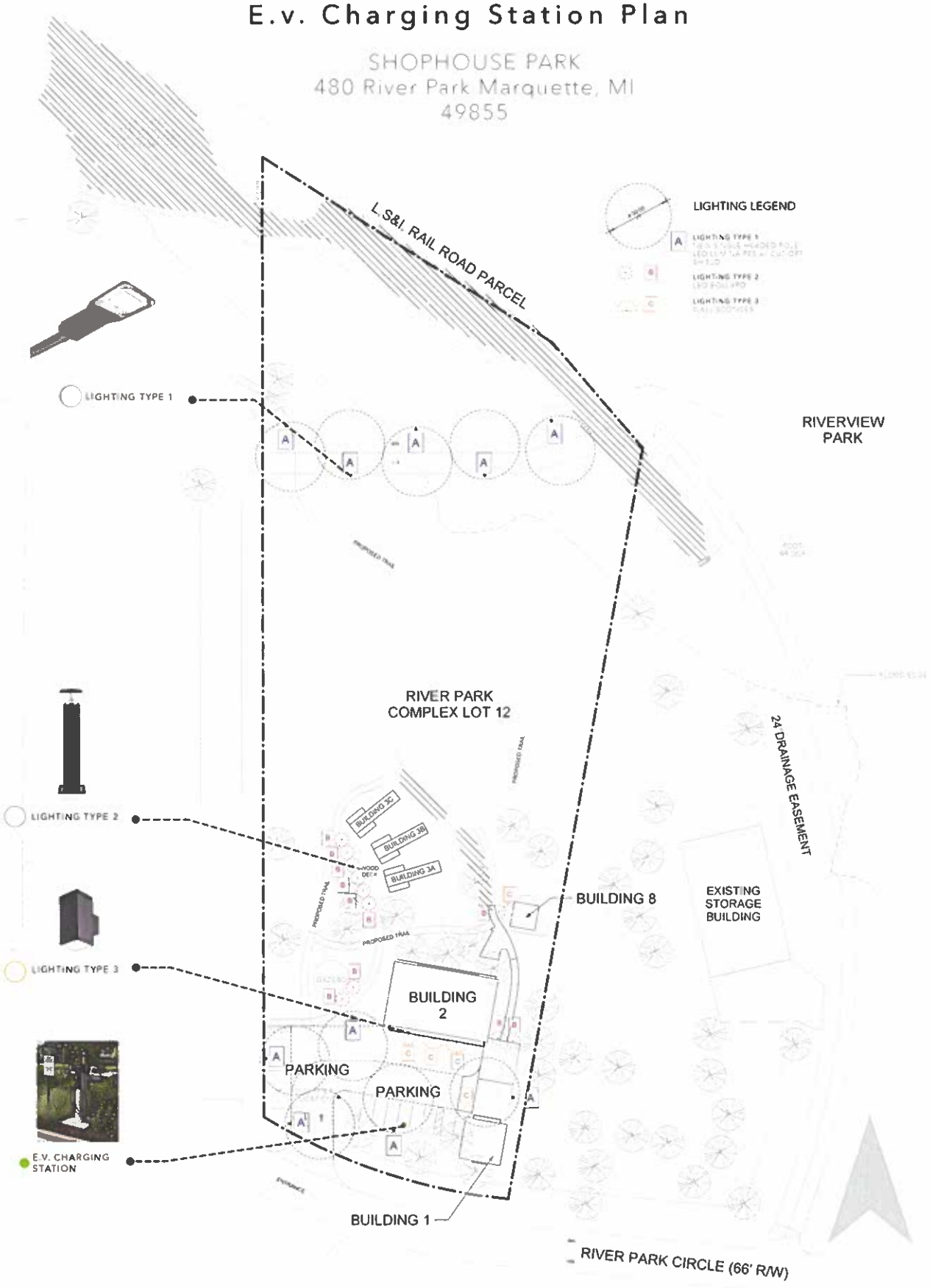
Public space and retail services that activate meeting milestones are proposed.

All built areas have vehicular accessibility and are connected by nature trails that respect the existing topography and vegetation.

The construction of the project is proposed in two phases.

Lighting + Exterior Furniture + E.v. Charging Station Plan

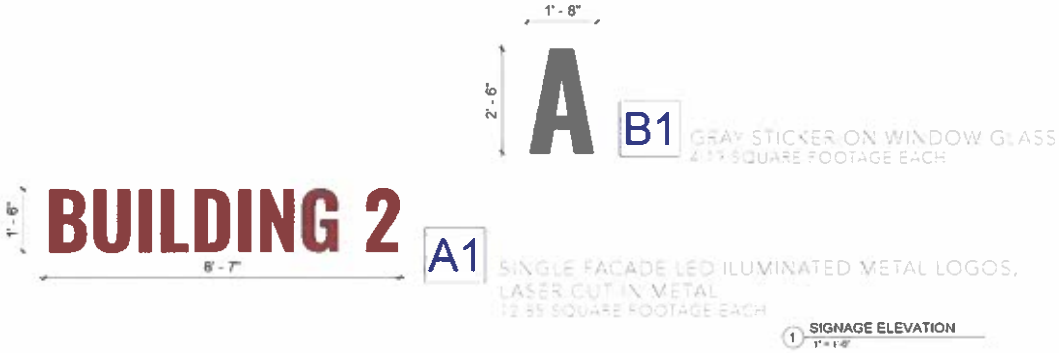
SHOPHOUSE PARK
480 River Park Marquette, MI
49855

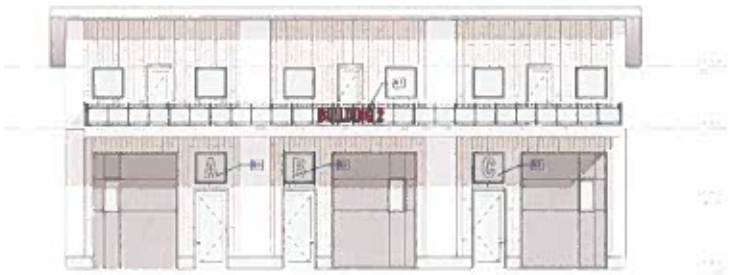


Signage

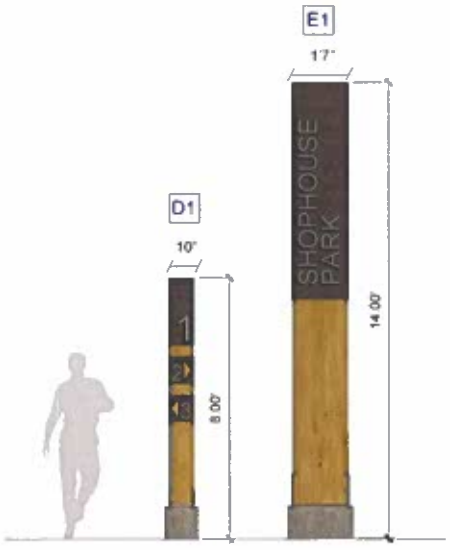
SHOPHOUSE PARK
480 River Park Marquette, MI 49855

BUILDING SIGNAGE





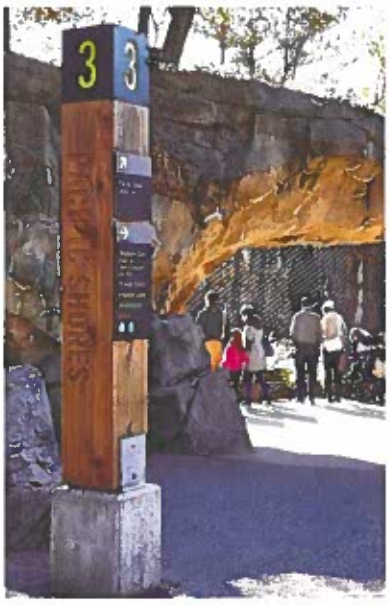
PUBLIC SPACE SIGNAGE



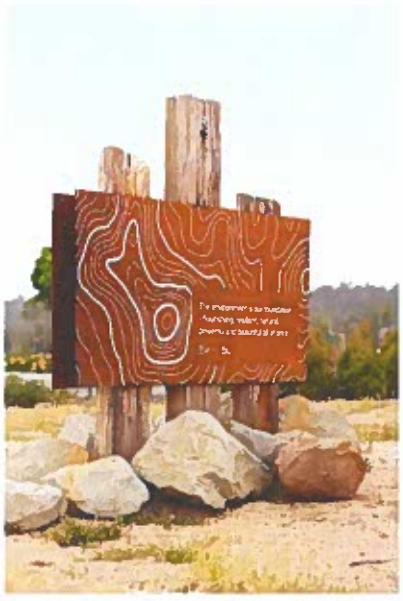
D1 TOTEM WOODEN SIGN, WITH LASER CUT METAL, LED ILUMINATED IN LOGO AND NUMBERS
6.67 SQUARE FOOTAGE EACH

E1 TOTEM WOODEN SIGN, WITH LASER CUT METAL, LED ILUMINATED IN LOGO AND NUMBERS
22.17 SQUARE FOOTAGE EACH

REFERENCE SIGNAGE MATERIALS



Metal + Wood + Stone



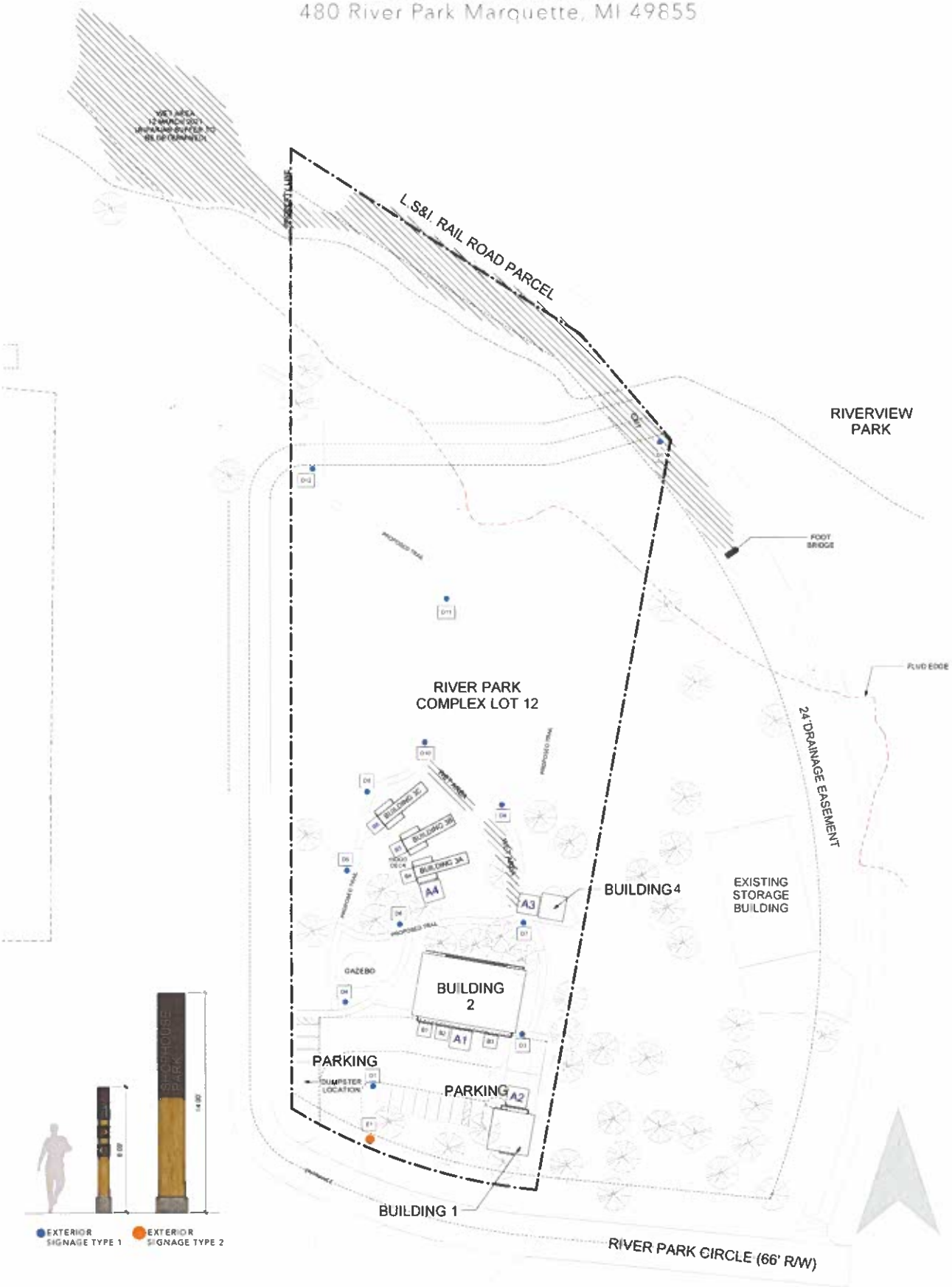
Laser Cut in Metal

T+E+A+M

LEPPANEN ANKER ARQUITECTURA

Signage + Lighting + Exterior Furniture + E.v. Charging Station Plan

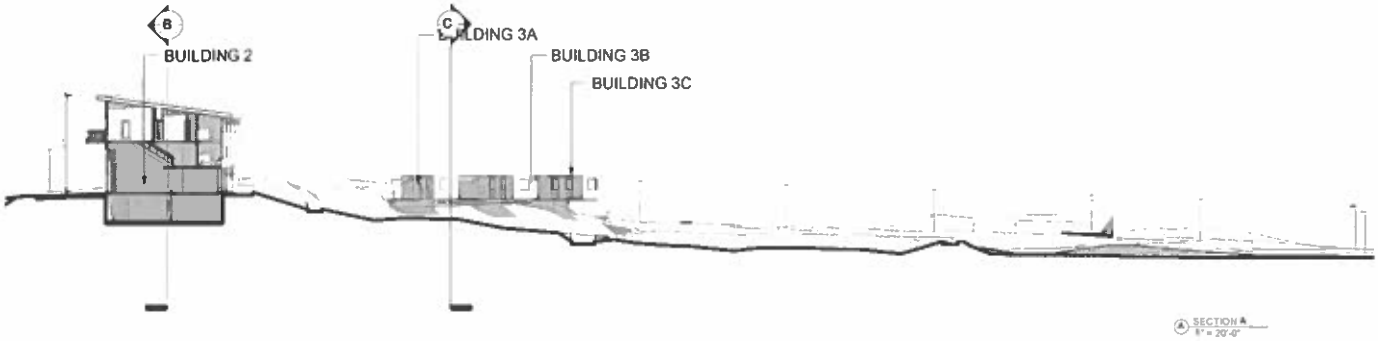
SHOPHOUSE PARK
480 River Park Marquette, MI 49855

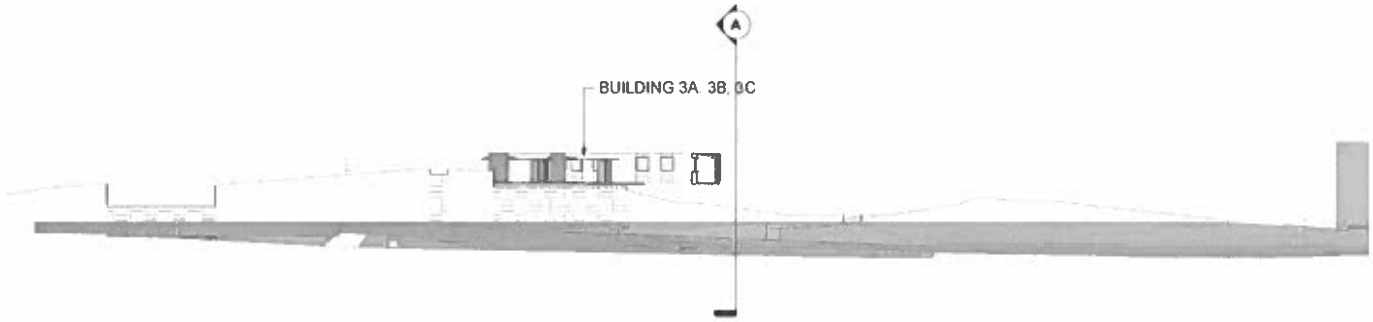


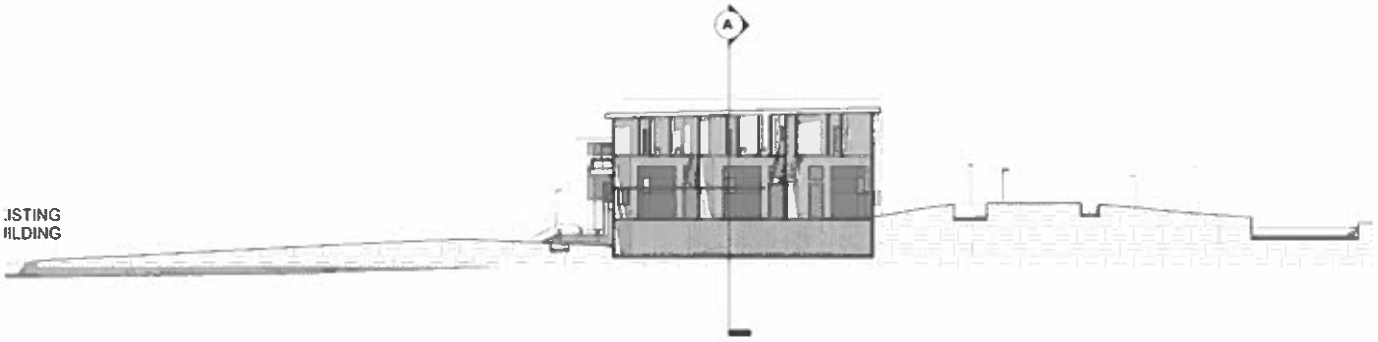
Site Drawings - Sections

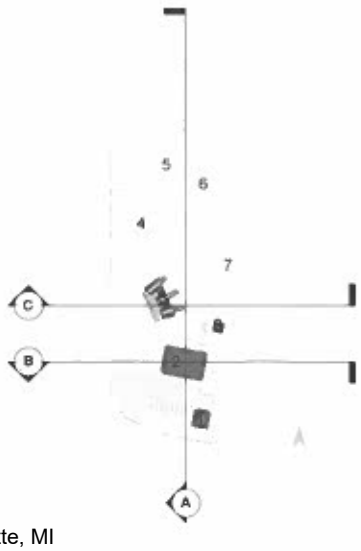
SHOPHOUSE PARK
480 River Park Marquette, MI
49855

GENERAL SECTIONS









T+E+A+M LEPPANEN ANKER ARQUITECTURA

Site Conceptual Design

SHOPHOUSE PARK
480 River Park Marquette, MI
49855

FLOORING MATERIALS



Parking zone: Gravel



Trails: Compacted surface



Buildings 3 zone: Wood deck



Buildings 3 zone: Metal grading deck

WALLS MATERIALS



Dumpster Enclosure: Metal + Wood

GENERAL AREAS

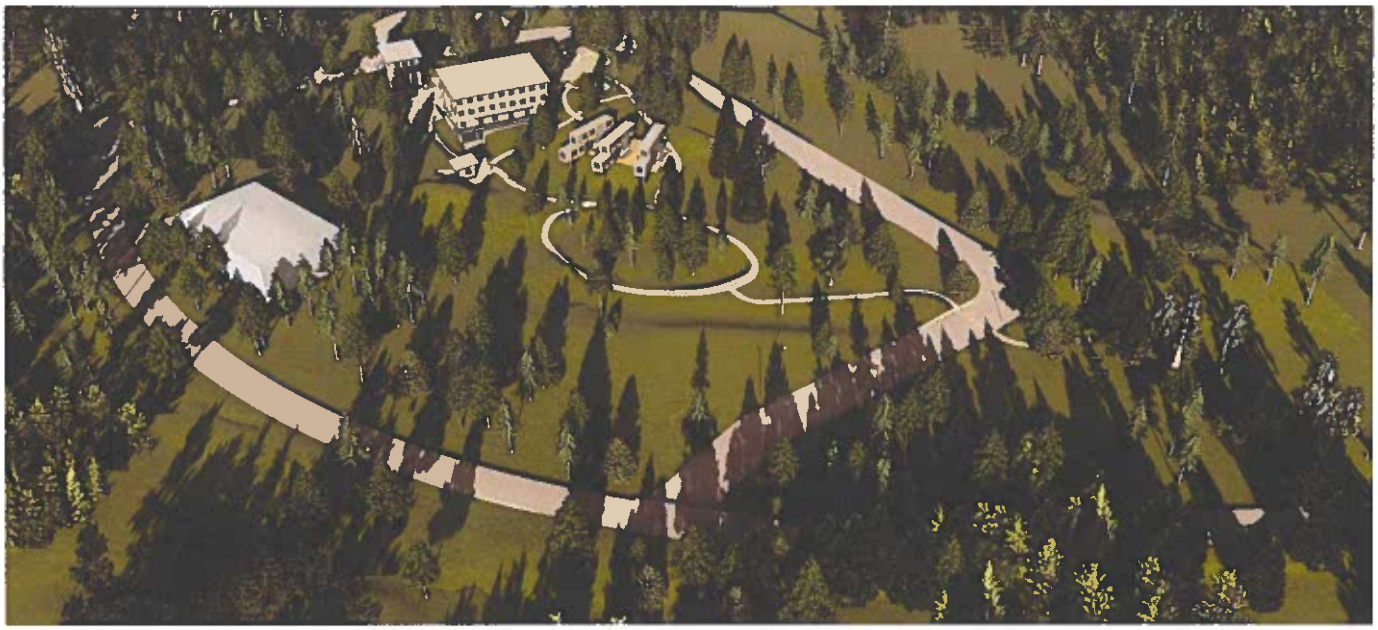
VEHICLE CIRCULATION AND PARKING	21,356 SF
NATURAL PEDESTRIAN PATHS	9,480 SF
BUILT AREA ON GROUND FLOOR	4,713 SF
GREEN AREA	114,432SF
TOTAL	**149,981 SF**

Site Renderings

SHOPHOUSE PARK
480 River Park Marquette, MI
49855









Building Conceptual Design

SHOPHOUSE PARK
480 River Park Marquette, MI
49855

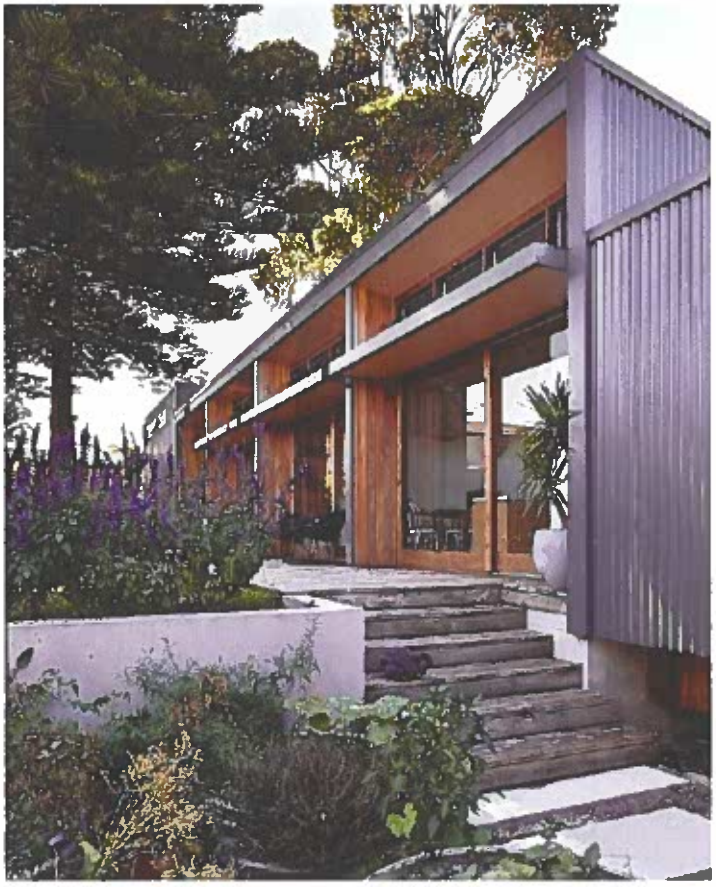
HOUSING TYPOLOGY











Following the concept of a workshop housing, mixed use spaces have been designed where a workshop is located on the ground floor and the living areas are on the upper floors.
A typology of modern houses is proposed with a simple and clean geometry that blends in with its surroundings due to its materiality and volumetry. Through the use of windows, a visual relationship is established between the interior and the forest.

T+E+A+M

LEPPANEN.ANKER
ARQUITECTURA

Conceptual Design

SHOPHOUSE PARK
480 River Park Marquette, MI
49855

HOUSING EXTERIOR MATERIALS





Precast concrete with different types of finishes, wood and standing seam metal siding is proposed. Due to the constructive efficiency of these panels, since being prefabricated panels, the construction time is reduced and the construction is cleaner. This helps to reduce the impact on the environment since, the environment is not contaminated with toxic materials which are used in other construction methods. These materials have been proposed with the aim that architecture can blend in with its natural environment.

HOUSING INTERIOR MATERIALS




For the interior proposal, the use of local materials such as pine for the structure is planned, to minimize the environmental impact and reduce the carbon footprint.

Metal structure in some areas is also projected. Warm wooden floors and microcement in commercial zones.

WORKSHOP TYPOLOGY

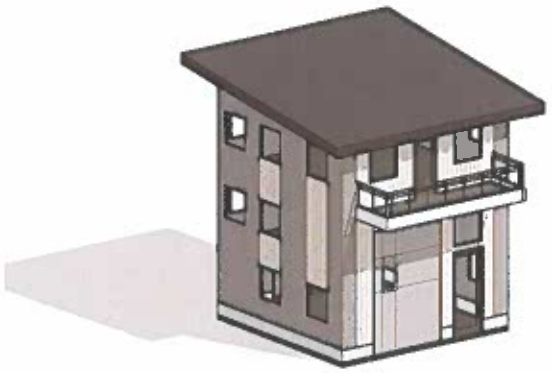



In the workshop area the use of the double height is projected to obtain a better entry of natural light, avoiding dependence on artificial light sources during the day and allowing greater ventilation, better views and a greater sensation of spaciousness, in addition to the functional advantages that provides the space. For vehicular entry, doors with metal panels are projected. The internal finishes are microcement on the floor for easy cleaning and light-colored walls.

T+E+A+M

LEPPANEN ANKER
ARQUITECTURA

Building Type 1 Drawings





1

Ceiling and walls

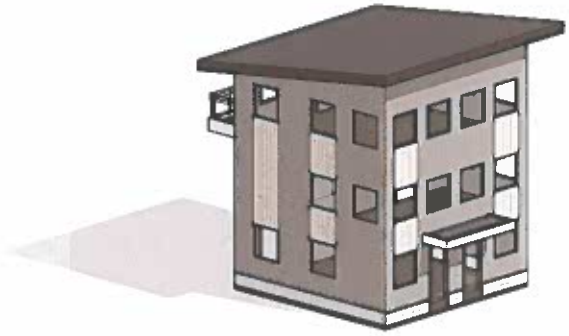
Standing seam metal siding
Dark gray color



2

Facade Wood

Longwood thermowood

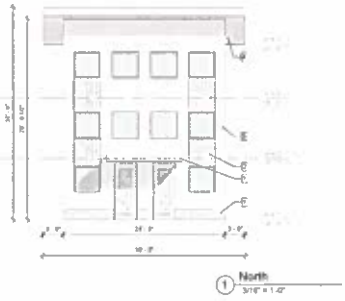




3 - 4

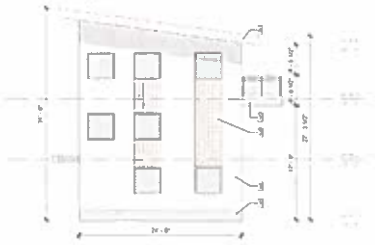
Ceiling and walls

Standing seam metal siding
Black color

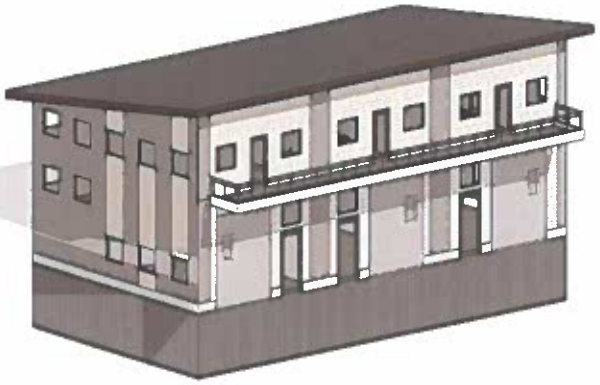








Building Type 2 Drawings



1

Ceiling and walls

Standing seam metal siding
Dark gray color

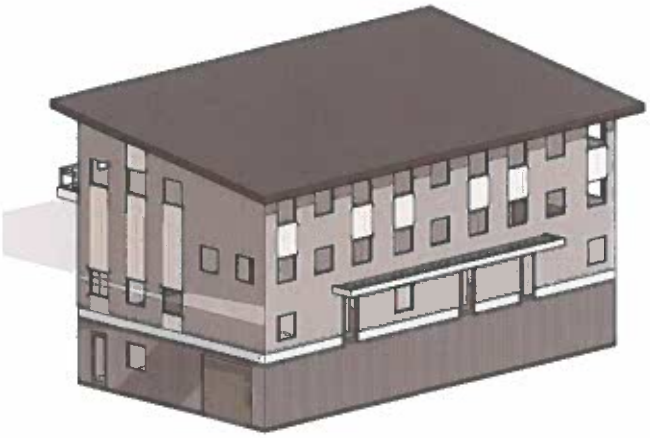




2

Facade Wood

Lunawood thermowood





3 - 4

Ceiling and walls

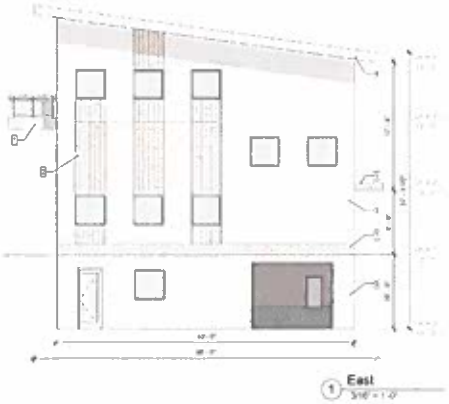
Standing seam metal siding
Black color

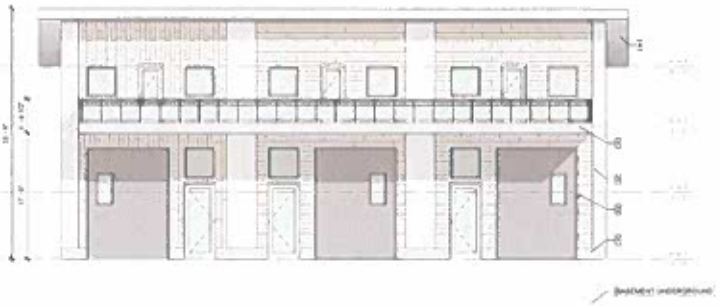


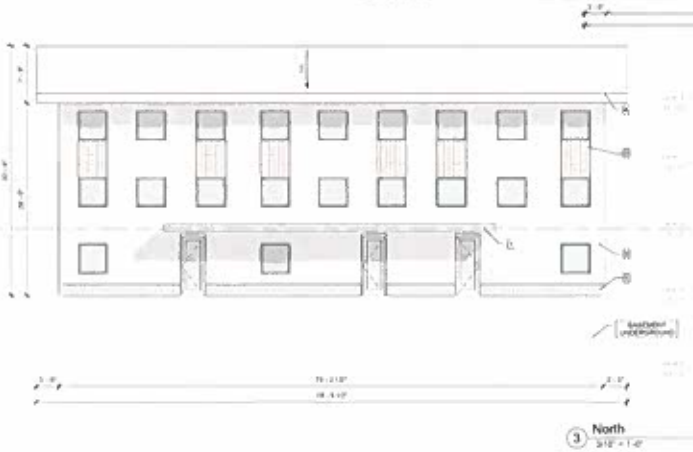
5

Retaining Wall

Structural concrete wall

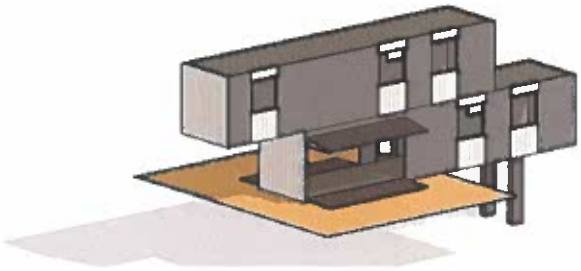








Retail Type 3 Drawings





1

Ceiling and walls

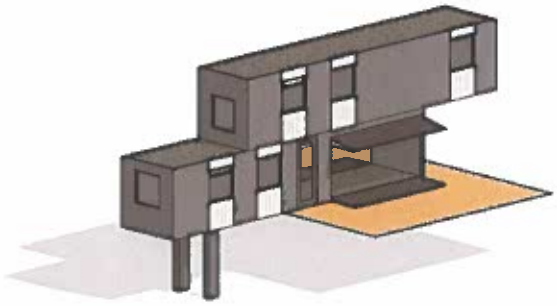
Standing seam metal siding
Dark gray color



2

Facade Wood

Lunawood thermowood

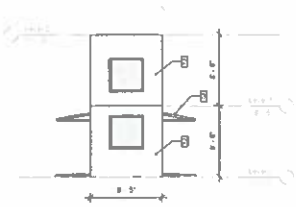




3 - 4

Ceiling and walls

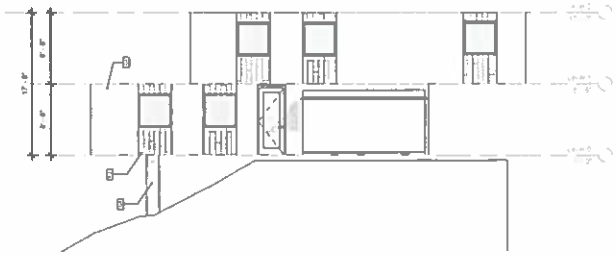
Standing seam metal siding
Black color



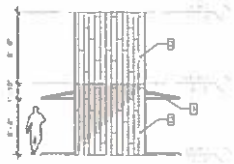
1 East 3/16" = 1'-0"



2 South 3/16" = 1'-0"



3 North 3/16" = 1'-0"



4 West 3/16" = 1'-0"

Building Type 4 Drawings





1

Ceiling and walls

Standing seam metal siding
Dark gray color





2

Facade Wood

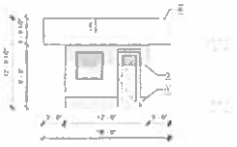
Luñawood thermowood



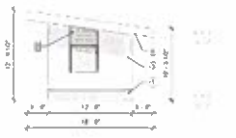
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Ceiling and walls

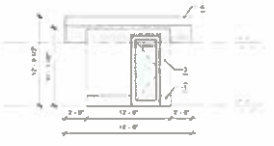
Standing seam metal siding
Black color



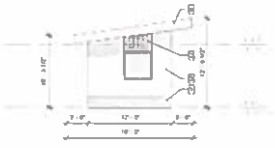
① North



② East



③ South



④ West

Conceptual Renderings

SHOPHOUSE PARK
480 River Park Marquette, MI
49855









SHOP HOUSE PARK DEVELOPMENT
INNOVATE MARQUETTE SMART ZONE

RIVER PARK CIRCLE
MARQUETTE, MI 49855



SOURCE:

MICHIGAN MAP
(NOT TO SCALE)



SOURCE:
2021 MICROSOFT AERIAL IMAGERY

SITE LOCATION MAP
(NOT TO SCALE)

SHEET INDEX

SHEET NO	DRAWING NO	TITLE
G-01	G-01	COVER SHEET
G-02	G-02	CONCEPTUAL ZONING PLAN
C-01	C-01	EXISTING CONDITIONS
C-02	C-02	CONCEPTUAL GRADING PLAN
C-03	C-03	CONCEPTUAL SITE SECTIONS
C-04	C-04	CONCEPTUAL STORMWATER MANAGEMENT
C-05	C-05	CONCEPTUAL UTILTIY PLAN
D-01	D-01	CONCEPTUAL DETAIL 1 OF 3
D-02	D-02	CONCEPTUAL DETAIL 2 OF 3
D-03	D-03	CONCEPTUAL DETAIL 3 OF 3

PREPARED FOR:

INNOVATE MARQUETTE SMARTZONE
101 W WASHINGTON ST SUITE 11
MARQUETTE, MI
(906)227-6261

PREPARED BY:

GEI CONSULTANTS OF MICHIGAN, P.C.
109 W. BARAGA AVENUE
MARQUETTE, MI 49855
(906)451-4021

GEI Consultants

GENERAL NOTES

IMPROVEMENTS COVERED IN THESE PLANS SHALL BE IN ACCORDANCE WITH THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION AS AMENDED AND SUPPLEMENTED THE LATEST MDOT STANDARD PLANS AND SECTION 3 (3P) OF THE MICHIGAN DEPARTMENTS OF TRANSPORTATION LOCAL AGENCY PROGRAM GUIDELINES FOR GEOMETRICS DATED MARCH 4 2014 AND CITY OF MARQUETTE ENGINEERING DEPARTMENT GENERAL GUIDELINES AND STANDARDS FOR STREET AND UTILITY DESIGN DATED MAY 2016

THE PLACEMENT OF PAVEMENT MARKINGS SHALL BE DONE IN ACCORDANCE WITH THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES 2011 EDITION AS AMENDED

THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN IS AN INSTRUMENT OF PROFESSIONAL SERVICE IS THE PROPERTY OF GEI CONSULTANTS AND IS NOT TO BE USED IN WHOLE OR IN PART FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF GEI CONSULTANTS

GEI PROJECT NO. 2204564
MAY, 2023

NOT FOR CONSTRUCTION

NO	DATE	ISSUE/REVISION	APP

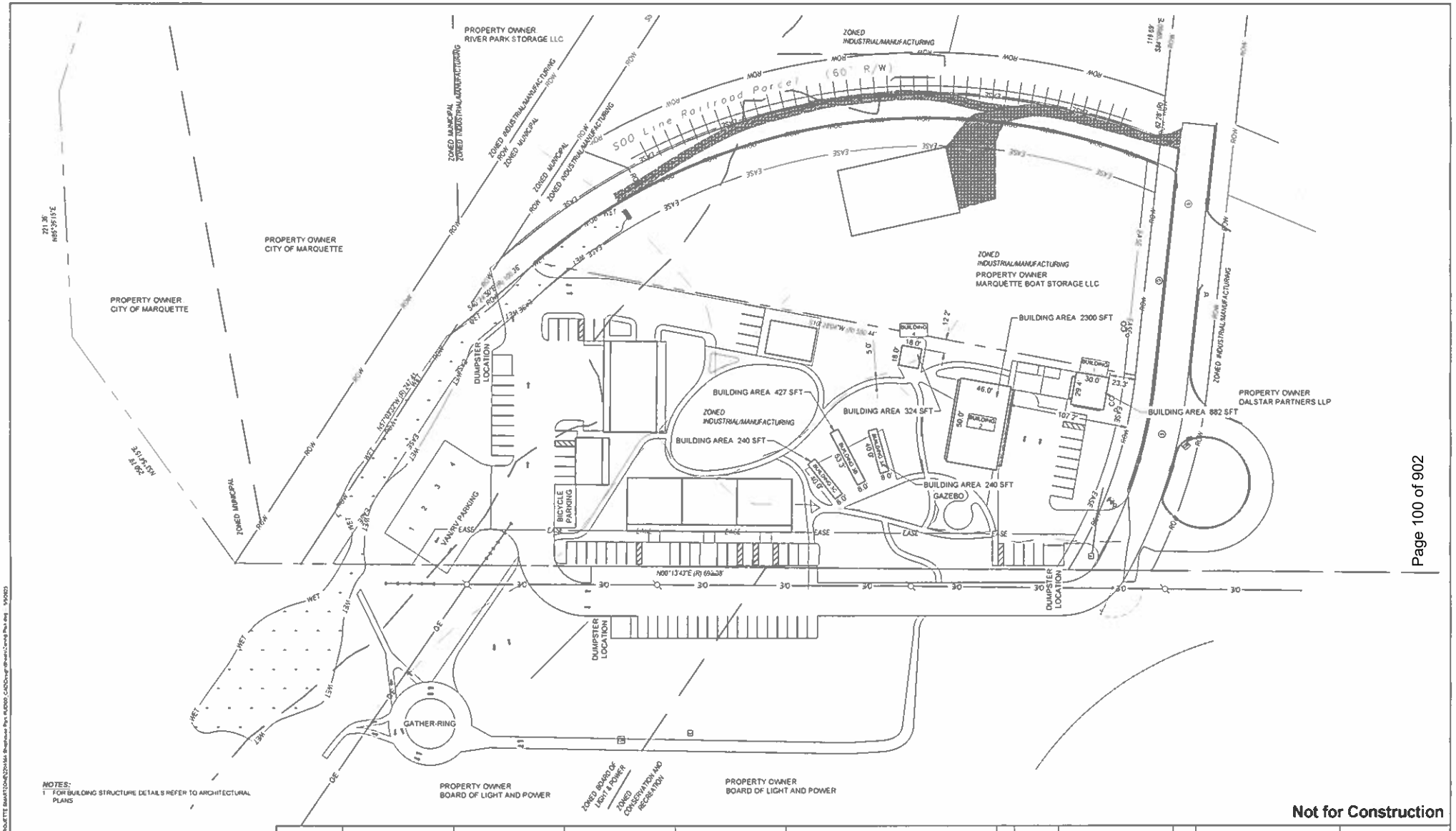
GEORGE MICHAEL MEISTER
Engineer

DWG NO
G-01

SHEET
1 OF 3

CARMODY TONY B:\Working\INNOVATE MARQUETTE SMARTZONE\204564 Shophouse Park PUD\00_CAD\Design\Sheets\Cover Sheet.dwg 5/9/2023

Page 99 of 902
City of Marquette, MI



NOTES:
1 FOR BUILDING STRUCTURE DETAILS REFER TO ARCHITECTURAL PLANS

Not for Construction

0 40 80
SCALE, FEET

Attention
If this scale bar does not measure 1" then drawing is not original scale

Designed	GMM
Drawn	ANC
Checked	
Approved:	
P.E. No	
GEI Project	2204564

GEI Consultants
GEI CONSULTANTS OF MICHIGAN, P.C.
109 W. BARAGA AVENUE
MARQUETTE, MI 49855
(906) 431-4027

INNOVATE
MARQUETTE
SMART ZONE
MARQUETTE, MI

SHOP HOUSE PARK DEVELOPMENT

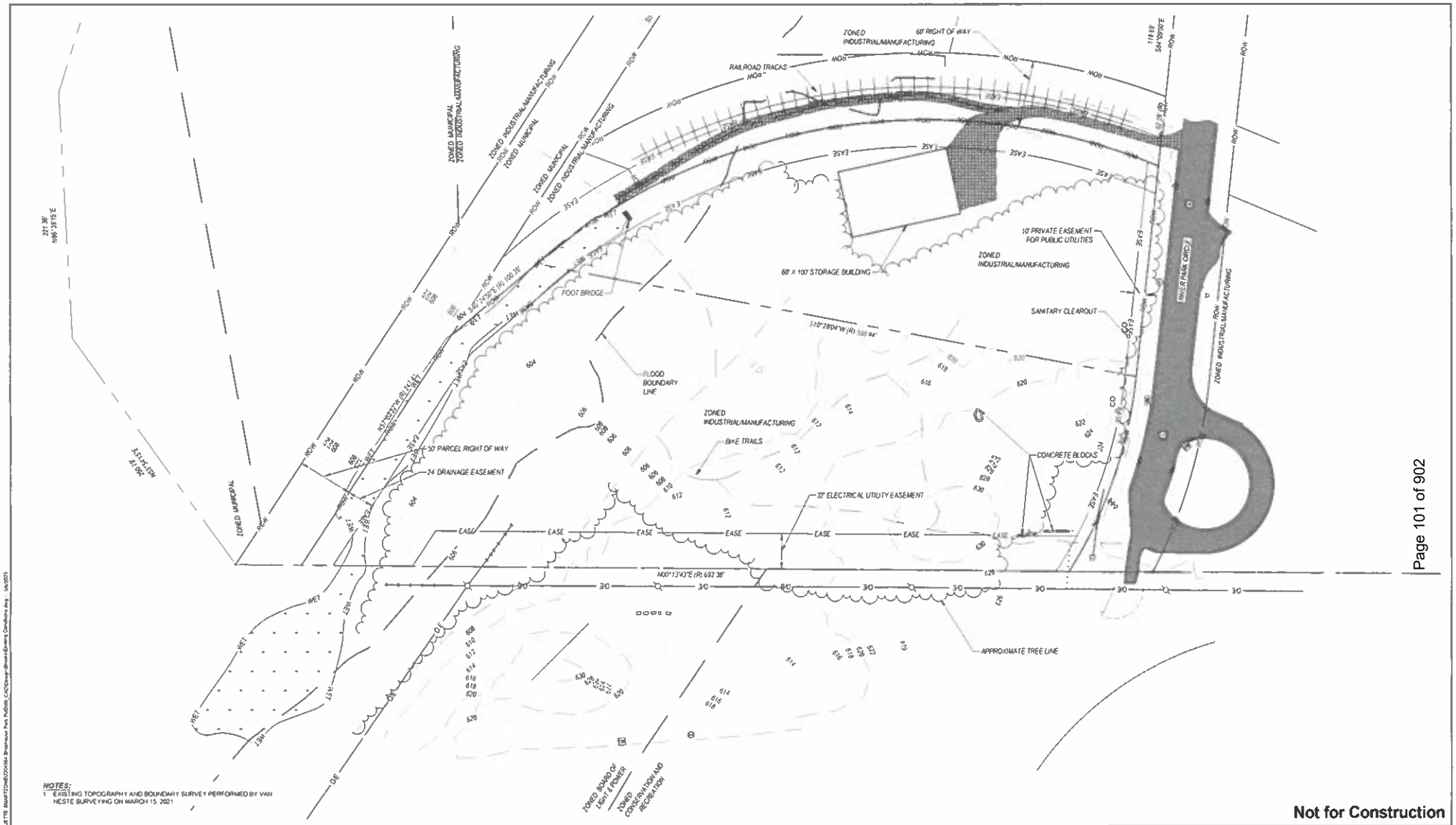
MARQUETTE, MI

NO	DATE	ISSUE/REVISION	APP
0			

SHEET NAME
CONCEPTUAL ZONING PLAN

SHEET NO
G-02

City of Marquette, MI



NOTES:
1. EXISTING TOPOGRAPHY AND BOUNDARY SURVEY PERFORMED BY VAN NESTE SURVEYING ON MARCH 15, 2021

Not for Construction

0 40 80
SCALE, FEET

Attention
If this scale bar does not measure 1" then drawing is not original scale

Designed	GMM
Drawn	ANC
Checked	
Approved:	
P.E. No	
GEI Project	2204564

GEI Consultants
GEI CONSULTANTS OF MICHIGAN P.C.
109 W. BARAGA AVENUE
MARQUETTE, MI 49855
(906) 631-4021

INNOVATE MARQUETTE SMART ZONE MARQUETTE, MI

SHOP HOUSE PARK DEVELOPMENT

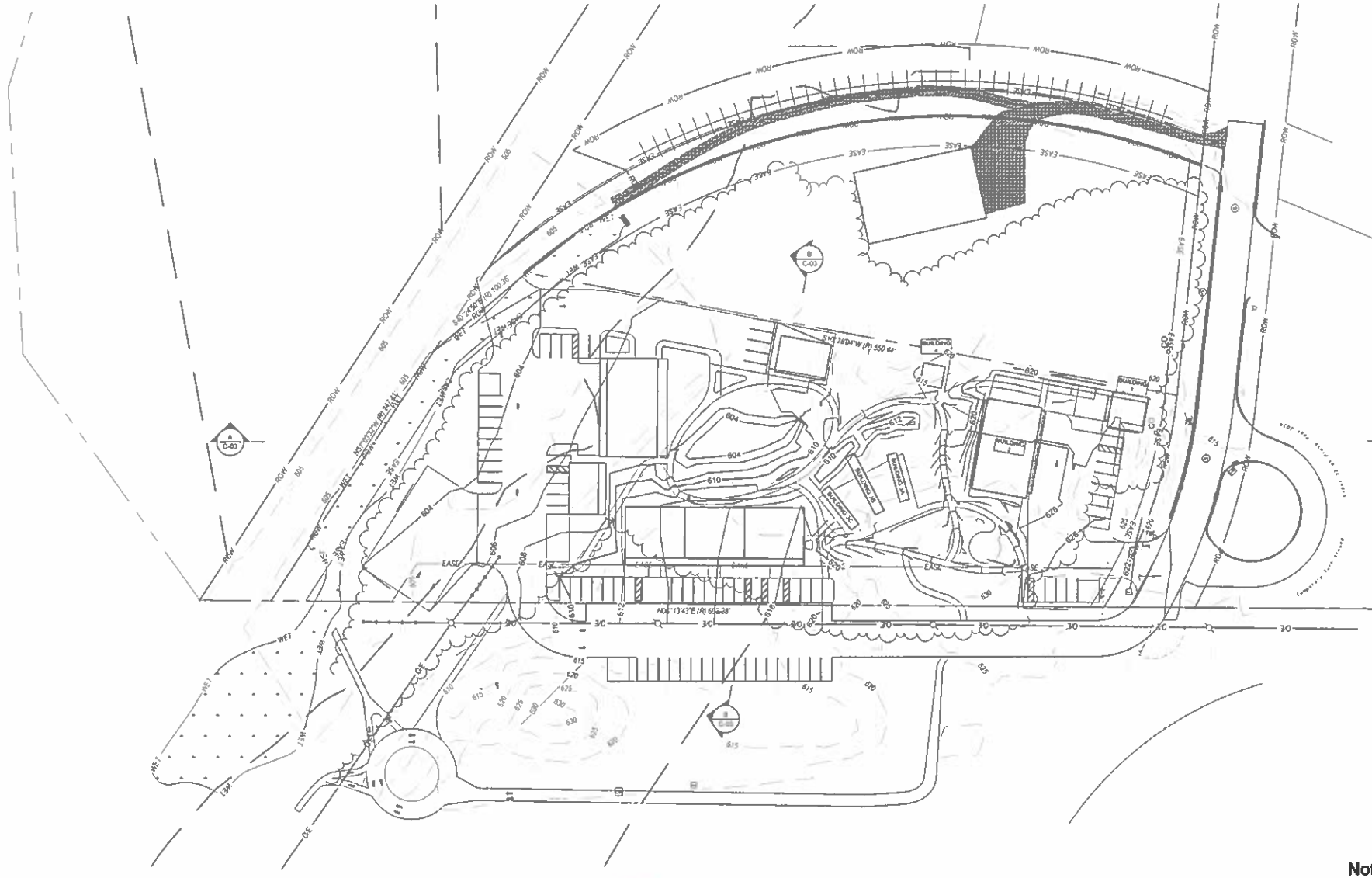
MARQUETTE, MI

NO	DATE	ISSUE/REVISION	APP
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SHEET NAME: **EXISTING CONDITIONS**

SHEET NO: **C-01**

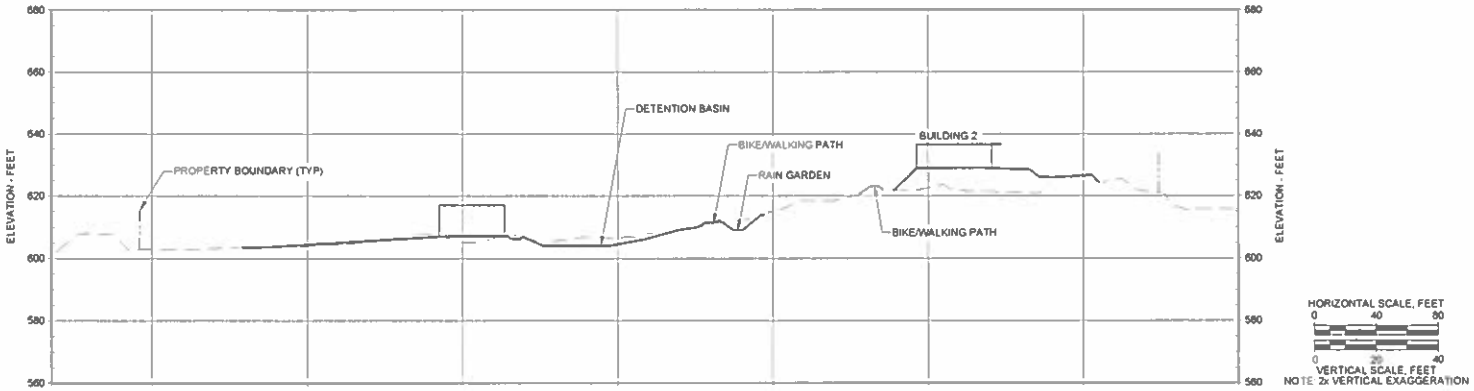
City of Marquette, MI



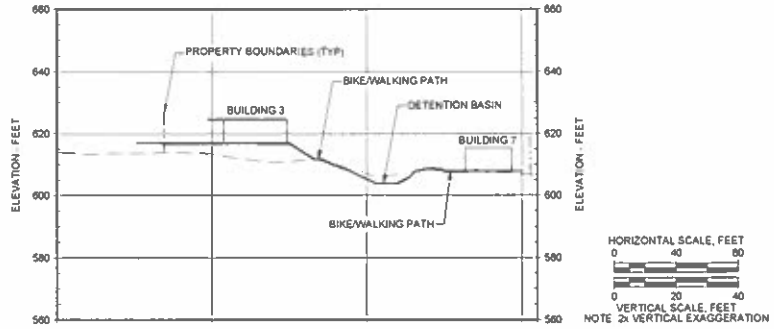
Not for Construction

Attention: If this scale bar does not measure 1" then drawing is not original scale		Designed GMM Drawn ANC Checked Approved: P.E. No GEI Project 2204564	GEI Consultants GEI CONSULTANTS OF MICHIGAN P.C. 109 W. BARAGA AVENUE	INNOVATE MARQUETTE SMART ZONE MARQUETTE, MI	**SHOP HOUSE PARK DEVELOPMENT** MARQUETTE, MI	NO.	DATE	ISSUE/REVISION	APP	SHEET NAME: **CONCEPTUAL GRADING PLAN**	SHEET NO: **C-02**

City of Marquette, MI



SECTION
A - A'
SCALE 1" = 40'

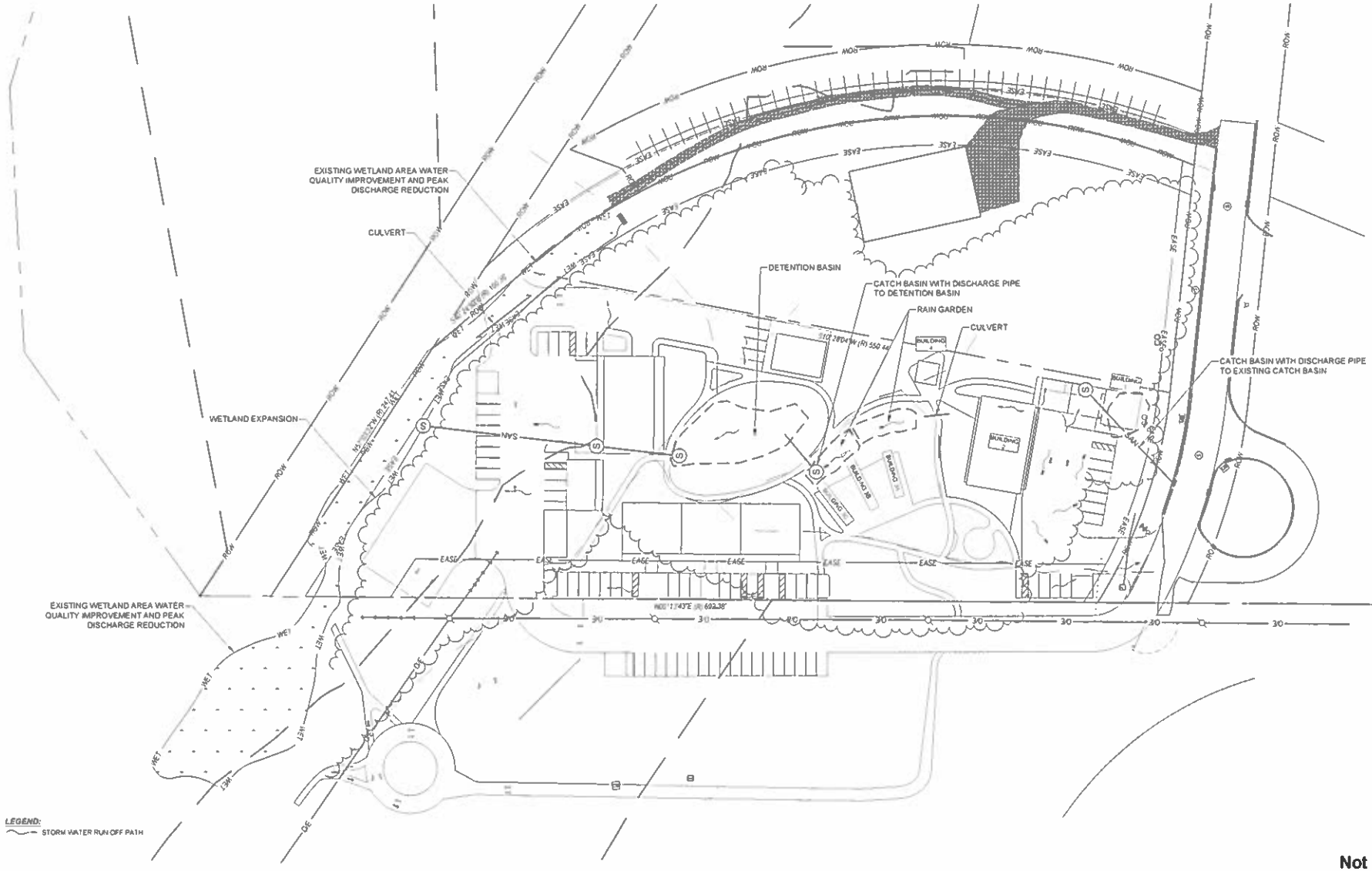


SECTION
B - B'
SCALE 1" = 40'

Not for Construction

Attention: 0 1" If this scale bar does not measure 1" then drawing is not original scale		Designed GMM Drawn ANC Checked Approved: P.E. No GEI Project 2204564	GEI Consultants GEI CONSULTANTS OF MICHIGAN, P.C. 109 W. BARAGA AVENUE MARQUETTE, MI 49855 (906) 431-4021	INNOVATE MARQUETTE SMART ZONE MARQUETTE, MI	SHOP HOUSE PARK DEVELOPMENT MARQUETTE, MI	NO	DATE	ISSUE/REVISION	APP	SHEET NAME: CONCEPTUAL SITE SECTIONS SHEET NO: C-03
						0				

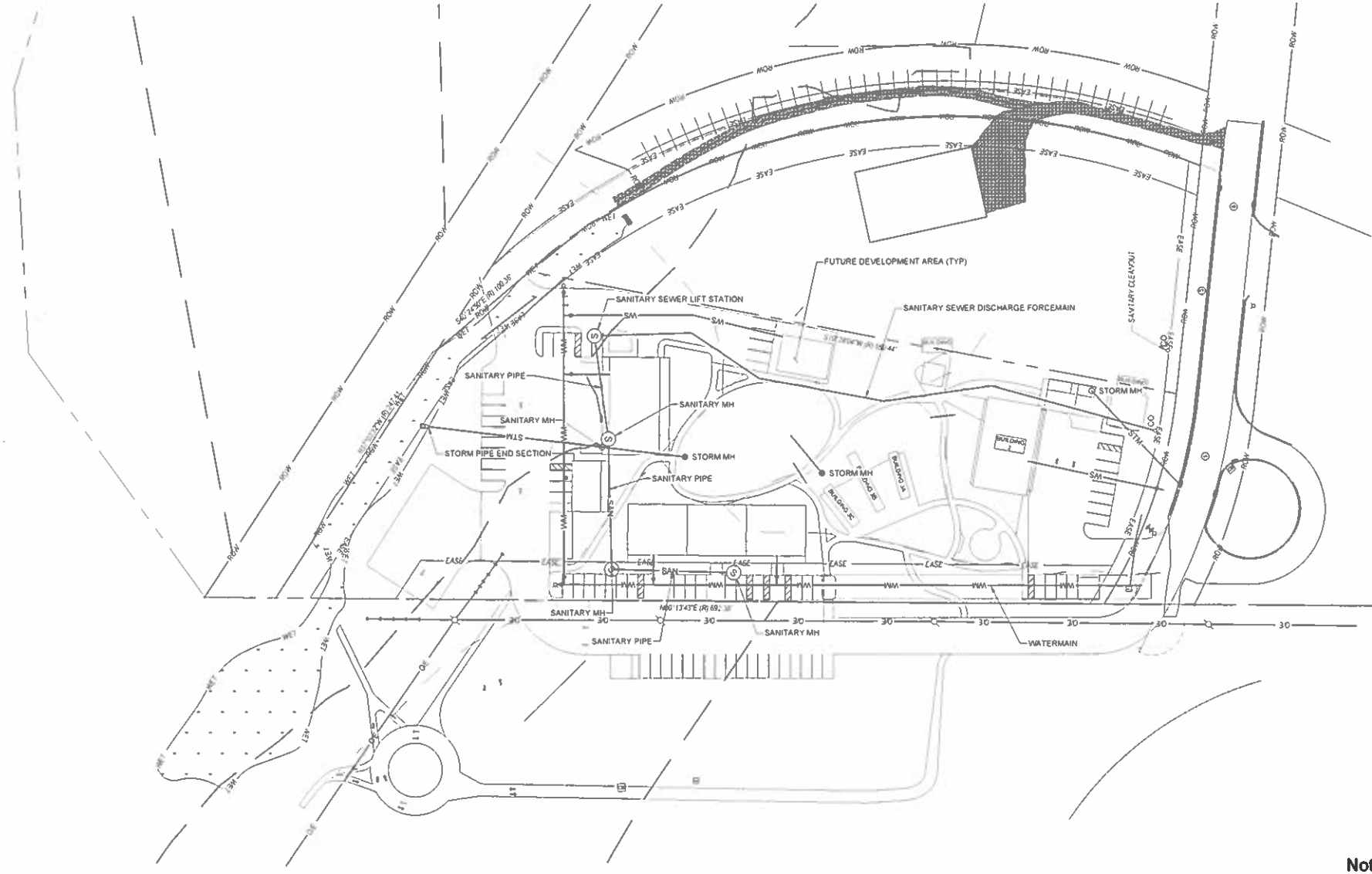
City of Marquette, MI



Not for Construction

SCALE, FEET

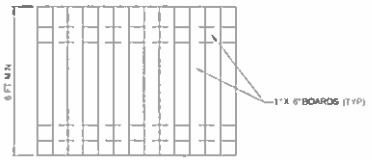
Attention: If this scale bar does not measure 1" then drawing is not original scale		Designed GMM Drawn ANC Checked Approved: P.E. No GEI Project 2204564	GEI Consultants GEI CONSULTANTS OF MICHIGAN, P.C. 109 W. BARAGA AVENUE MARQUETTE, MI 49855 (906) 631-4021	INNOVATE MARQUETTE SMART ZONE MARQUETTE, MI	SHOP HOUSE PARK DEVELOPMENT MARQUETTE, MI	NO / DATE / ISSUE/REVISION / APP 0	SHEET NAME: CONCEPTUAL STORMWATER MANAGEMENT	SHEET NO: C-04



Not for Construction

Attention: If this scale bar does not measure 1" then drawing is not original scale		Designed GMM Drawn ANC Checked Approved: P.E. No: GEI Project 2204564	GEI Consultants GEI CONSULTANTS OF MICHIGAN P.C. 109 W. BARAGA AVENUE MARQUETTE, MI 49855 (906) 451-9021	INNOVATE MARQUETTE SMART ZONE MARQUETTE, MI	**SHOP HOUSE PARK DEVELOPMENT** MARQUETTE, MI	NO / DATE / ISSUE/REVISION / APP 0	SHEET NAME **CONCEPTUAL UTILTIY PLAN**	SHEET NO **C-05**

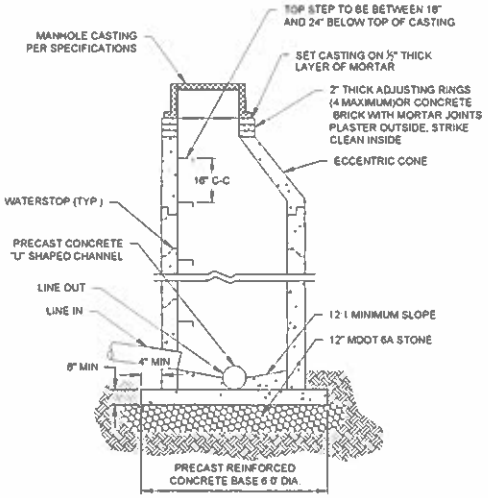
0 40 80
SCALE, FEET



NOTES

1 FENCE ENCLOSURE TO BE USED FOR SCREENING DUMPSTER LOCATION AS SPECIFIED ON THE PLANS COLOR OF PAINT TO BE DETERMINED BY THE OWNER ONCE CONTRACT IS AWARDED
2 TWO (2) 4"X4" POSTS TO BE USED AT ALL CORNERS 6 TOTAL FOR ENCLOSURE
3 CONTRACTOR MUST PROVIDE LATCH TO ENSURE SWINGING DOORS REMAIN CLOSED

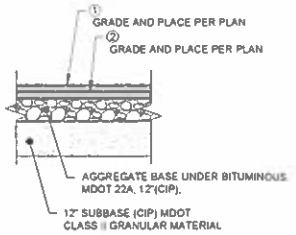
DETAIL
WOODEN FENCE ENCLOSURE NO SCALE



DETAIL
STANDARD CONCRETE MANHOLE NO SCALE

NOTES

1 SANITARY SEWER MANHOLES SHALL BE PROVIDED with PRECAST CONCRETE FLOW CHANNELS
2 PRECAST CONCRETE FLOW CHANNELS SHALL PROVIDE A SMOOTH FLOW LINE TRANSITION BETWEEN MANHOLE INLET(S) AND MANHOLE OUTLET
3 FLOW CHANNEL SHALL BE FORMED TO PROVIDE SMOOTH FLOW FROM FORCEMAIN DISCHARGE PIPE
4 F M DISHCARGE BEND FITTING SHALL BE ANGLED TO PROVIDE SMOOTH FLOW INTO FLOW CHANNEL



NOTES

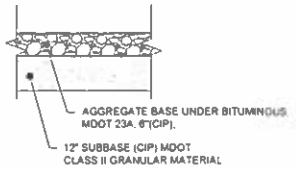
1 EXISTING MATERIAL MAY BE SUBSTITUTED FOR SUBBASE PROVIDED IT MEETS SPECIFICATIONS FOR MDOT CLASS II GRANULAR MATERIAL
2 CONTRACTOR MUST SUBMIT ASPHALT MIX DESIGN TO ENGINEER FOR APPROVAL

HMA APPLICATION

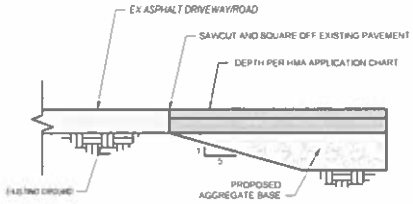
ITEM	MIX	RATE OF APPLICATION	ESTIMATED THICKNESS	PERFORMANCE GRADE	DESCRIPTIO N
1	HMA 5EML (TOP)	165 LB/SYD	1 5 INCHES	58-34	TOP COURSE
2	HMA 4EML (LEVELING)	165 LB/SYD	1 5 INCHES	58-34	LEVELING COURSE

PLACE HMA BOND COAT SS-1H @ 0 05-0 15 GALLONS/YD AS DIRECTED BY THE ENGINEER BETWEEN HMA LAYERS
(FOR INFORMATION ONLY. INCLUDED WITH PAYMENT FOR HMA MIXTURES)
MINIMUM AVA (TOP COURSE ONLY) SHALL BE 220

SECTION
STANDARD HMA NO SCALE



SECTION
GRAVEL PATH NO SCALE



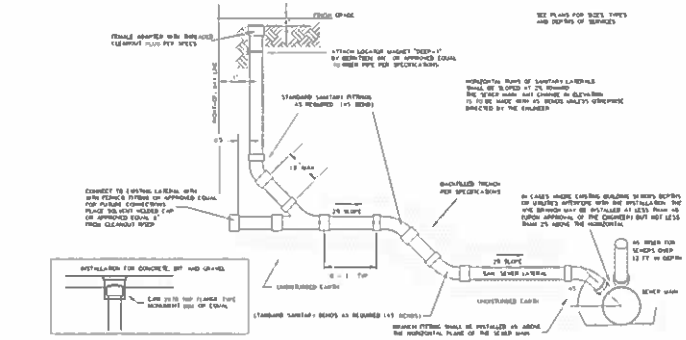
SECTION
BUTT JOINT NO SCALE

Not for Construction

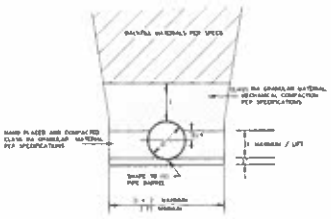
Attention: If this scale bar does not measure 1" then drawing is not original scale		Designed GMM Drawn ANC Checked Approved: P E No GEI Project 2204564	GEI Consultants GEI CONSULTANTS OF MICHIGAN P C 999 W BARAGA AVENUE MARQUETTE, MI 49855 (906) 631-4027	INNOVATE MARQUETTE SMART ZONE MARQUETTE, MI	**SHOP HOUSE PARK DEVELOPMENT** MARQUETTE, MI	NO / DATE / ISSUE/REVISION / APP 0	SHEET NAME **CONCEPTUAL DETAIL 1 OF 3**	SHEET NO **D-01**

City of Marquette, MI

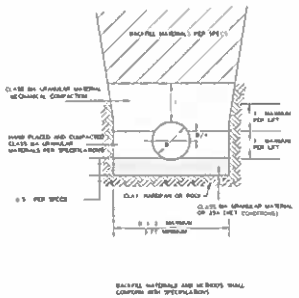
SANITARY SEWER LATERAL RISER DETAIL



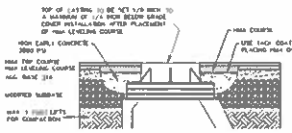
PIPE BEDDING DETAIL "G"
IN SAND AND GRAVEL



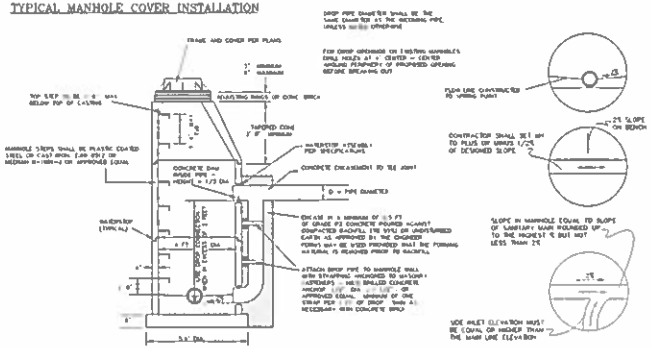
PIPE BEDDING DETAIL "G"



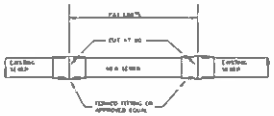
STANDARD CONCRETE DROP MANHOLE



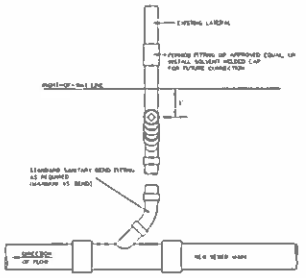
TYPICAL MANHOLE COVER INSTALLATION



SANITARY SEWER LATERAL REPAIR DETAIL
AND SANITARY SEWER POINT REPAIR



PLAN VIEW OF SANITARY SEWER LATERAL

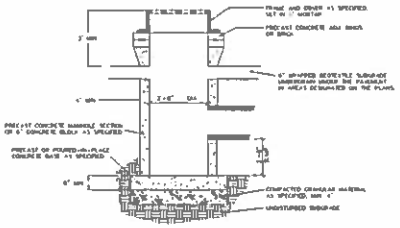


Page 107 of 902

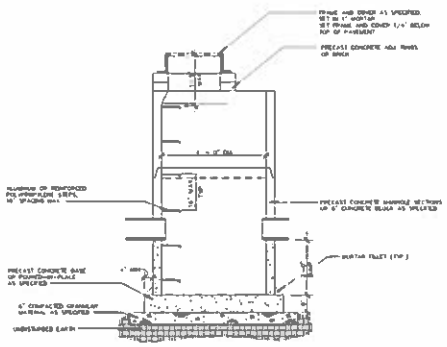
City of Marquette, MI

Not for Construction

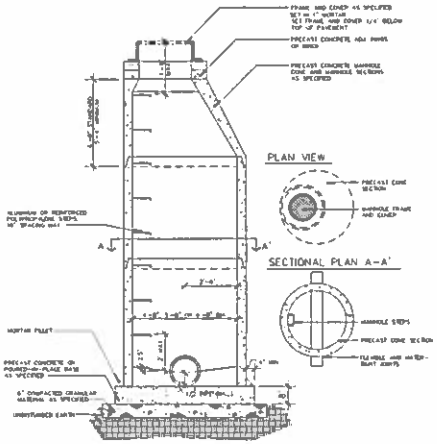
Attention 0 1" If this scale bar does not measure 1" then drawing is not original scale		Designed GMM Drawn ANC Checked Approved: P.E. No GEI Project 2204564	GEI Consultants GEI CONSULTANTS OF MICHIGAN P.C. 109 W. BARAGA AVENUE MARQUETTE, MI 49855 (906) 451-4021	INNOVATE MARQUETTE SMART ZONE MARQUETTE, MI	**SHOP HOUSE PARK DEVELOPMENT** MARQUETTE, MI	NO | DATE | ISSUE/REVISION | APP 0	SHEET NAME **CONCEPTUAL DETAIL 2 OF 3**	SHEET NO **D-02**



2' DIAMETER CATCH BASIN
NO SCALE

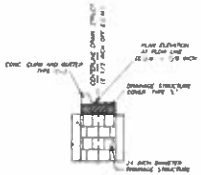


4' DIAMETER CATCH BASIN MANHOLE
NO SCALE

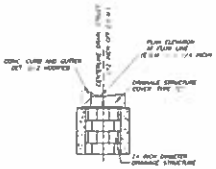


4', 5' OR 6' DIAMETER MANHOLE
NO SCALE

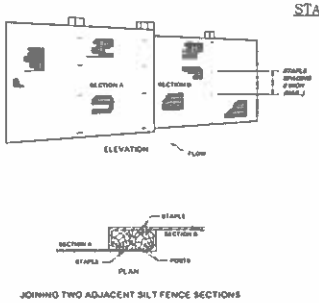
CATCH BASIN DETAIL
FOR C-2 CURBING



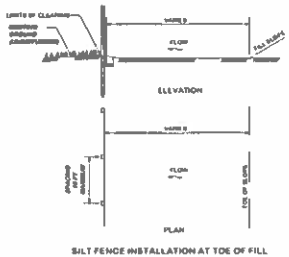
CATCH BASIN DETAIL
FOR CONC. CURB DETAIL D-2 MODIFIED



STANDARD DETAIL FOR SILT FENCE INSTALLATION

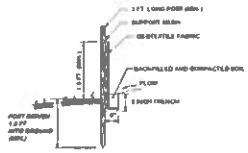


JOINING TWO ADJACENT SILT FENCE SECTIONS



SILT FENCE INSTALLATION AT TOE OF FILL

NOTE

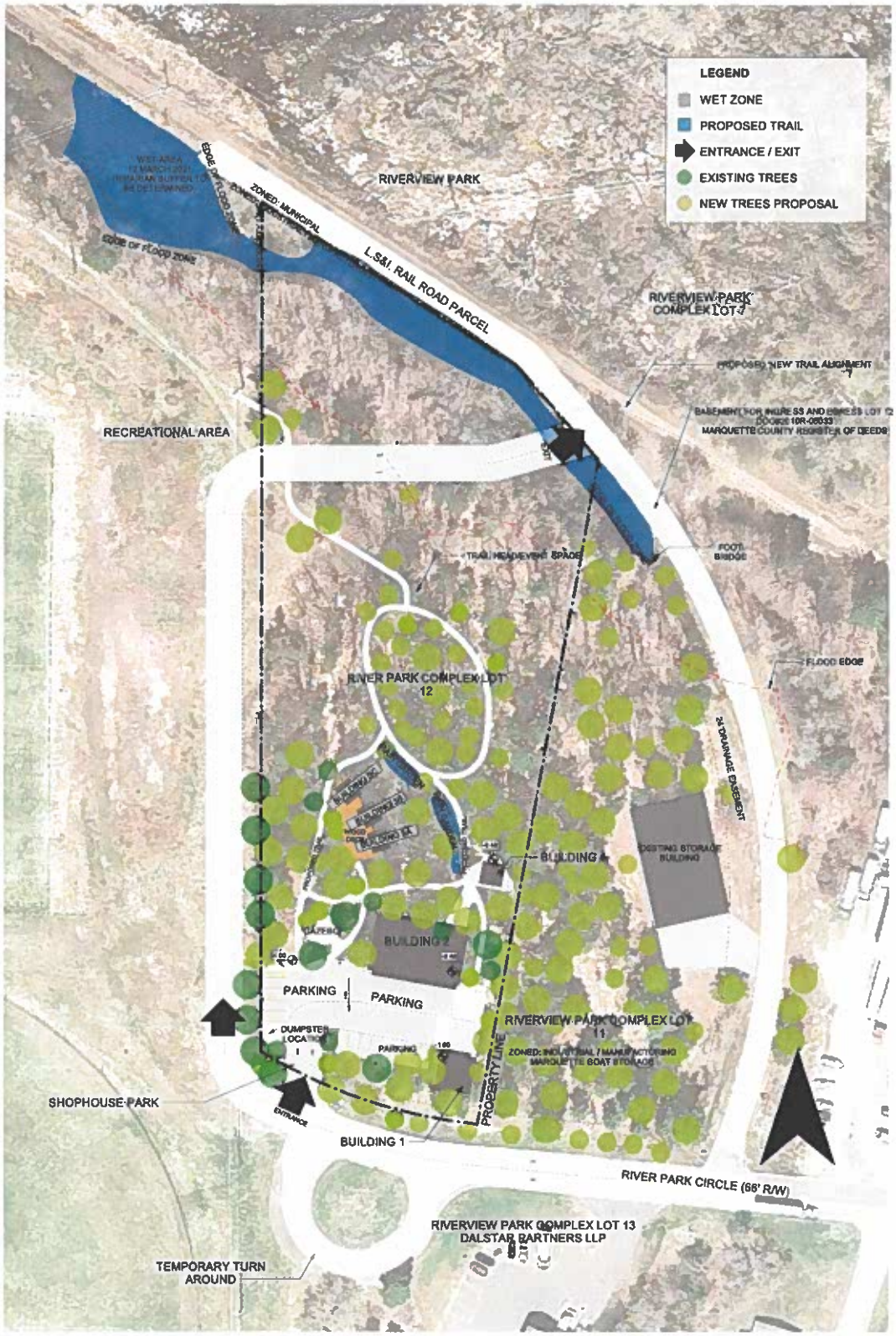


POST AND FABRIC INSTALLATION DETAIL

Not for Construction

Attention: If this scale bar does not measure 1" then drawing is not original scale		Designed GMM Drawn ANC Checked Approved: P.E. No GEI Project 2204564	GEI Consultants GEI CONSULTANTS OF MICHIGAN P.C. 100 W. BARAGA AVENUE MARQUETTE, MI 49855 (906) 631-4627	INNOVATE MARQUETTE SMART ZONE MARQUETTE, MI	SHOP HOUSE PARK DEVELOPMENT MARQUETTE, MI	NO	DATE	ISSUE/REVISION	APP	SHEET NAME: CONCEPTUAL DETAIL 3 OF 3	SHEET NO: D-03

City of Marquette, MI



CLIENT
Hoponassu OZ LLC

PROJECT
SHOPHOUSE PARK

PROJECT ADDRESS
480 River Park Marquette, MI 49855

SHEET NAME
MASTER PLAN

STAMP
STATE OF MICHIGAN
ELEANOR ABRONS
ARCHITECT
No. 1301065421
LICENSED ARCHITECT

DATE 09 - may - 2023
NOT FOR CONSTRUCTION

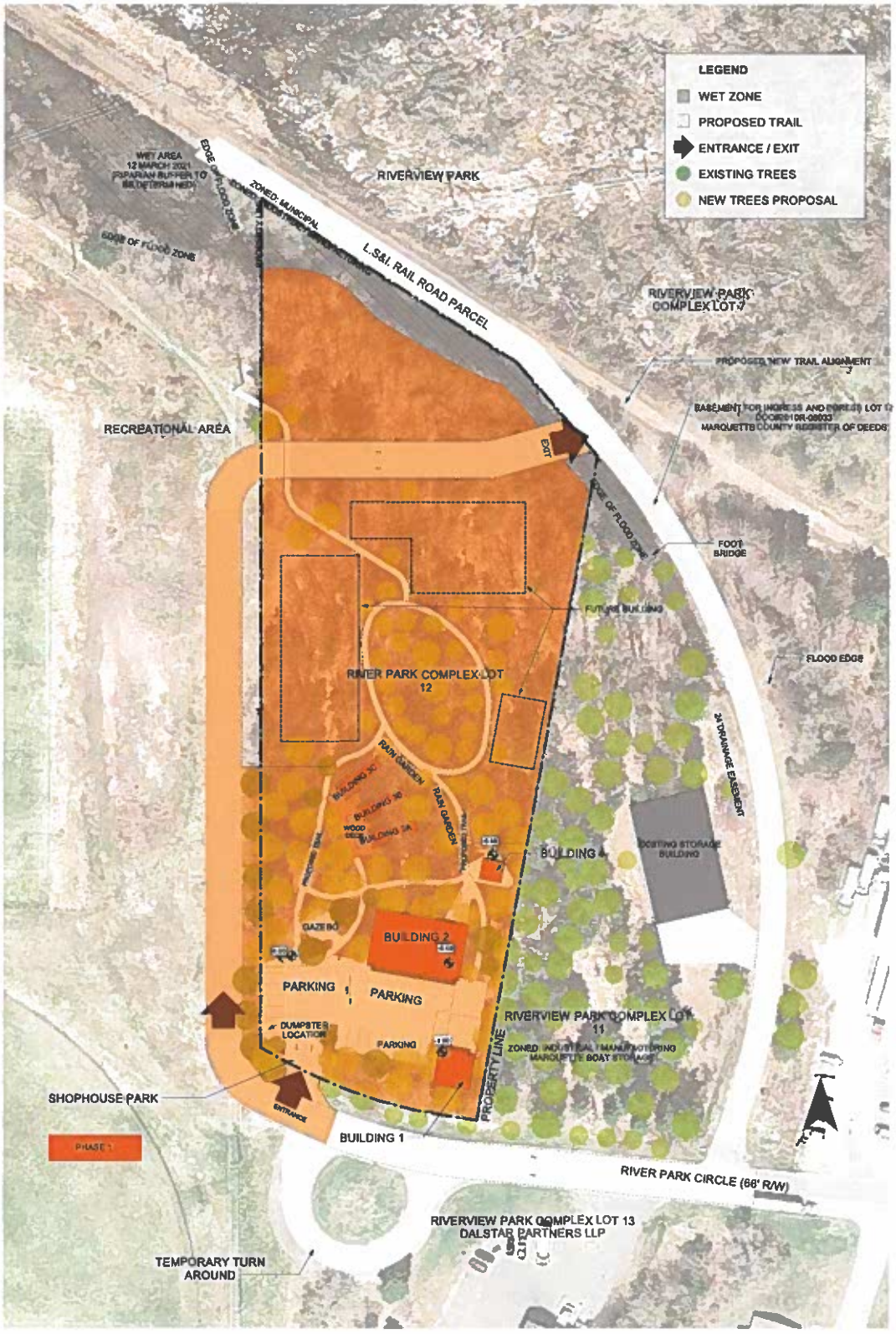
REVISION #

SHEET # A101

SCALE 1" = 40'-0"

PAGE 1/5

5/9/2023 8:17:20 PM



CLIENT
Hoponassu OZ LLC

PROJECT
SHOPHOUSE PARK

PROJECT ADDRESS
480 River Park Marquette, MI 49855

SHEET NAME
PHASE PLAN

STAMP
STATE OF MICHIGAN
ELEANOR ABRONS
ARCHITECT
No. 1301065421
LICENSED ARCHITECT

DATE 09 - may - 2023
NOT FOR CONSTRUCTION

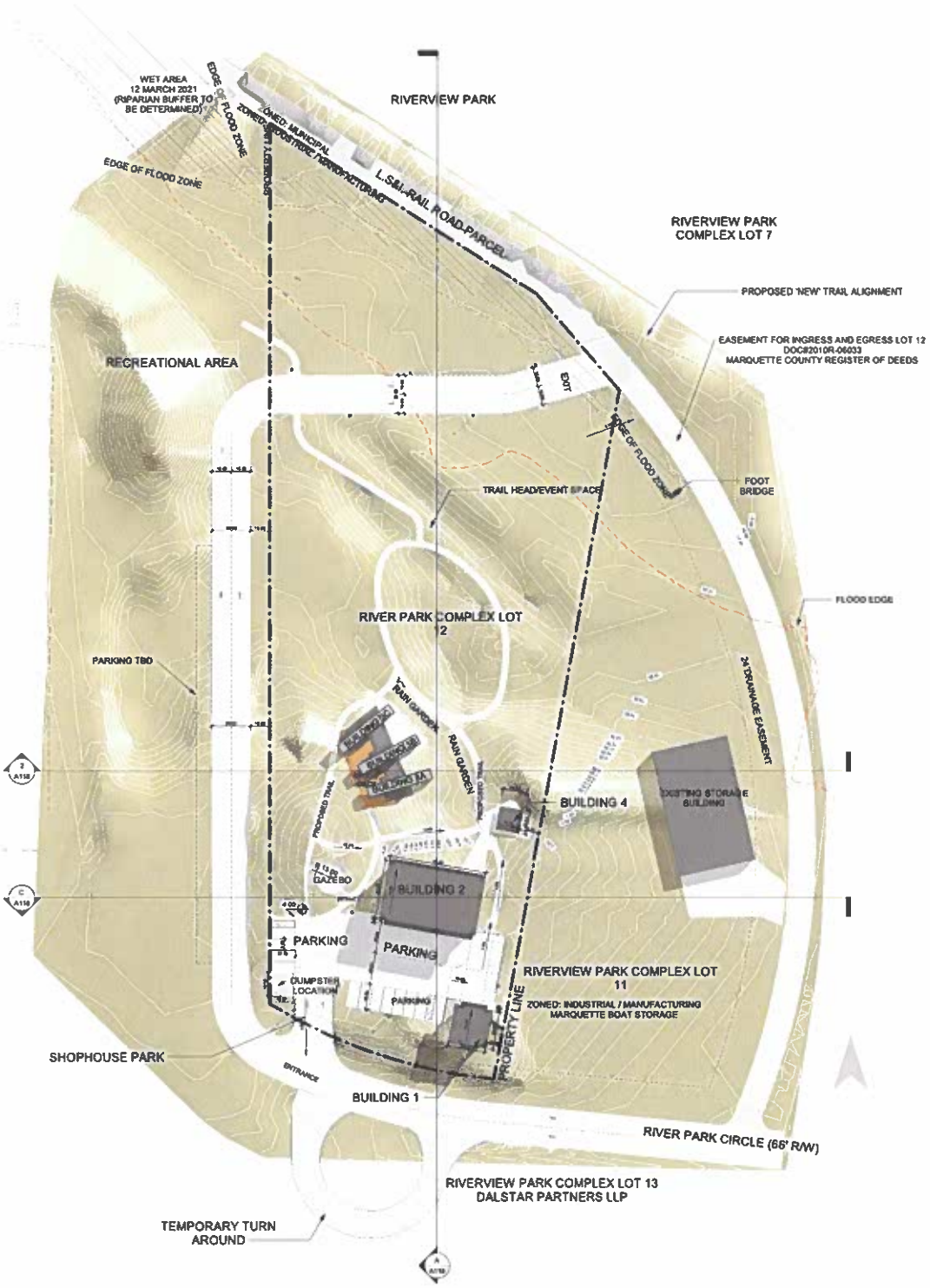
REVISION #

SHEET # A102

SCALE 1" = 40'-0"

PAGE 2/5

5/9/2023 8:17:28 PM



CLIENT
Hoponassu OZ LLC

PROJECT
SHOPHOUSE PARK

PROJECT ADDRESS
480 River Park Marquette, MI 49855

SHEET NAME
SITE PLAN DRAWINGS

STAMP
STATE OF MICHIGAN
ELEANOR ABRONS
ARCHITECT
No. 1301065421
LICENSED ARCHITECT

DATE 09 - may - 2023
NOT FOR CONSTRUCTION

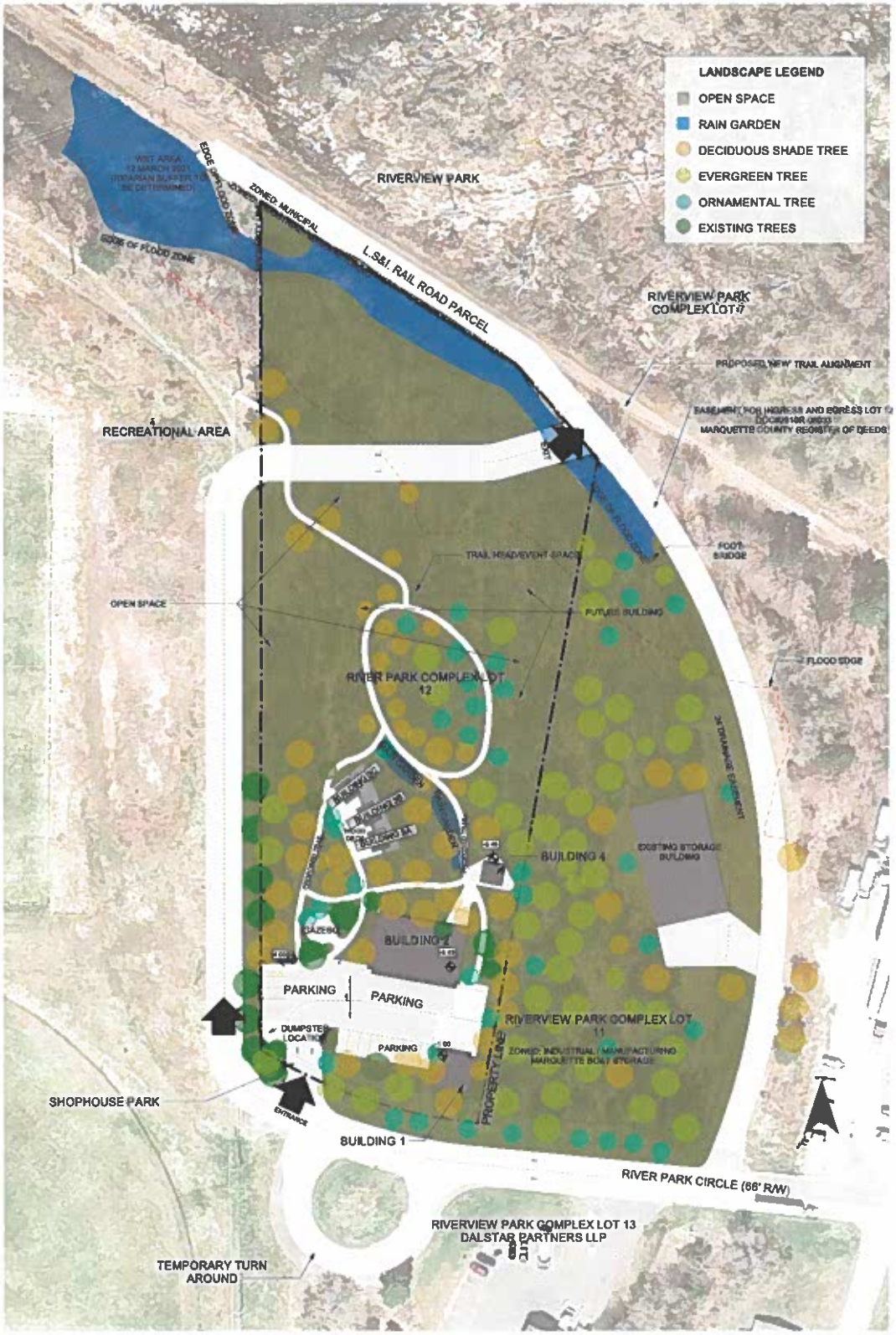
REVISION #

SHEET # A103

SCALE 1" = 40'-0"

PAGE 3/5

5/9/2023 6:17:30 PM



CLIENT
Hoponassu OZ LLC

PROJECT
SHOPHOUSE PARK

PROJECT ADDRESS
480 River Park Marquette, MI 49855

SHEET NAME
LANDSCAPE

STAMP
STATE OF MICHIGAN
ELEANOR ABRONS
ARCHITECT
No. 1301065421
LICENSED ARCHITECT

DATE 08 - may - 2023
NOT FOR CONSTRUCTION

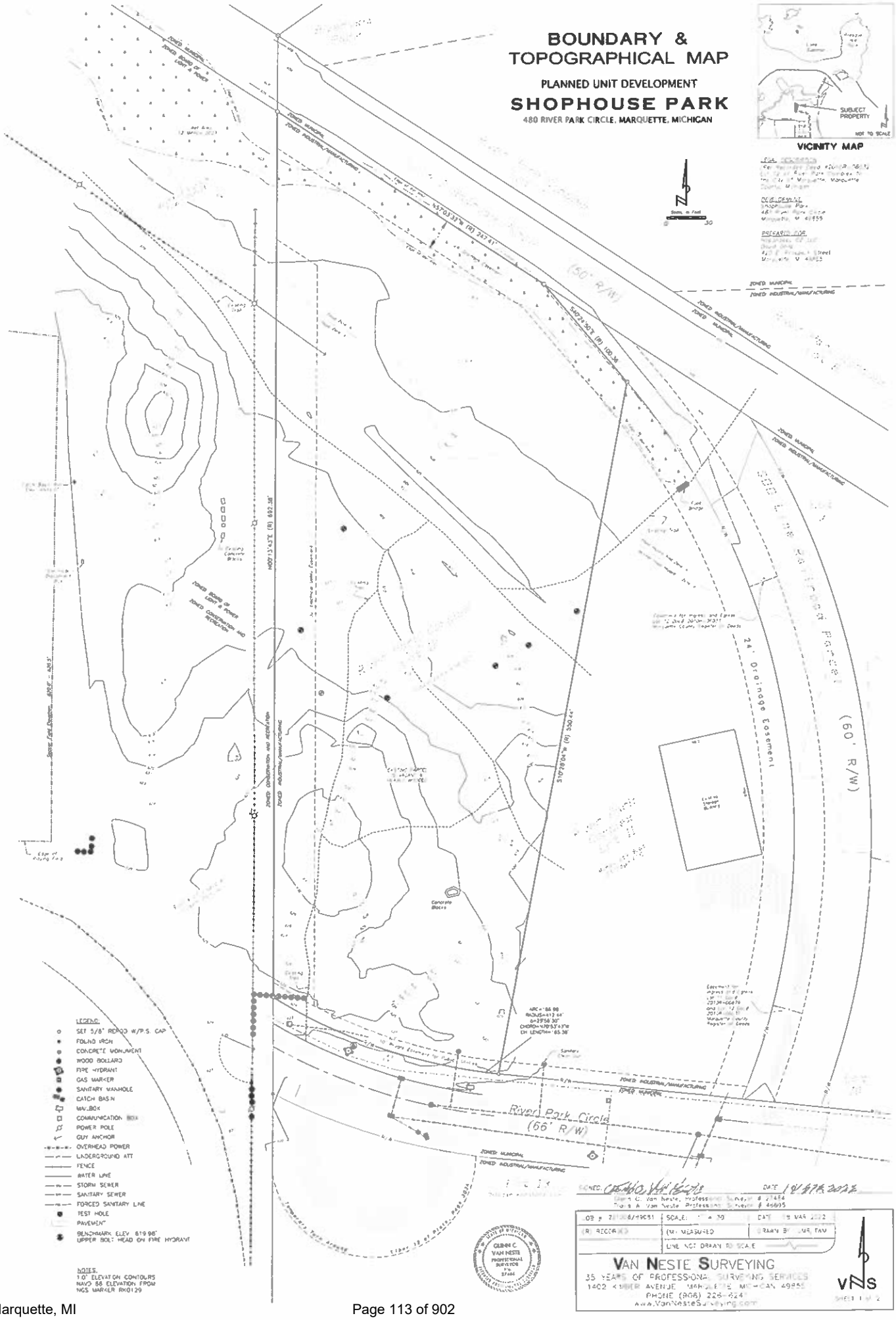
REVISION #

SHEET # A104

SCALE 1" = 40'-0"

PAGE 4/5

5/8/2023 6:17:44 PM


BOUNDARY &
TOPOGRAPHICAL MAP
PLANNED UNIT DEVELOPMENT
SHOPHOUSE PARK
480 RIVER PARK CIRCLE, MARQUETTE, MICHIGAN
VICINITY MAP
SUBJECT PROPERTY
NOT TO SCALE
24' Drainage Easement
(60' R/W)
River Park Circle
(66' R/W)
(50' R/W)
ZONED MUNICIPAL
ZONED INDUSTRIAL/MANUFACTURING
ZONED BOARD OF LIGHT & POWER
ZONED CONSERVATION AND RECREATION
LEGEND:
SET 5/8" REBAR W/P.S. CAP
FOUND IRON
CONCRETE MONUMENT
WOOD BOLLARD
FIRE HYDRANT
GAS MARKER
SANITARY MANHOLE
CATCH BASIN
MAILBOX
COMMUNICATION BOX
POWER POLE
GUY ANCHOR
OVERHEAD POWER
UNDERGROUND ATT
FENCE
WATER LINE
STORM SEWER
SANITARY SEWER
FORCED SANITARY LINE
TEST HOLE
PAVEMENT
BENCHMARK ELEV. 619.98'
UPPER BOLT HEAD ON FIRE HYDRANT
NOTES:
1.0' ELEVATION CONTOURS
NAVD 88 ELEVATION FROM
NGS MARKER RK0129
GLENN C. VAN NESTE
PROFESSIONAL SURVEYOR
No. 27484
VAN NESTE SURVEYING
35 YEARS OF PROFESSIONAL SURVEYING SERVICES
1402 KAWBAWGAM AVENUE MARQUETTE MICHIGAN 49855
PHONE (906) 226-9524
www.VanNesteSurveying.com
VNS



CLIENT

Hoponassu OZ LLC

PROJECT

SHOPHOUSE PARK

PROJECT ADDRESS

480 River Park Marquette, MI 49855

SHEET NAME

TOPOGRAPHY

STAMP

VNS

VAN NESTE SURVEYING
34 YEARS OF PROFESSIONAL SURVEYING SERVICES
1402 HARLO AVENUE MARQUETTE, MICHIGAN 49855
PHONE (906) 226-8241 www.vanneteurveying.com

DATE 09 - may - 2023

NOT FOR CONSTRUCTION

REVISION #

SHEET # A105

SCALE 1" = 40'-0"

PAGE 5/5

5/8/2023 6:17:50 PM

Exhibit B

OFFICIAL PROCEEDINGS OF THE
MARQUETTE CITY PLANNING COMMISSION
June 6, 2023

A regular meeting of the Marquette City Planning Commission was duly called and held at 6:00 p.m. on Tuesday, June 6, 2023, in the Commission Chambers at City Hall.

ROLL CALL

Planning Commission (PC) members present: W. Premeau, M. Rayner, S. Lawry, Vice-Chair N. Williams, Chair S. Mittlefehldt, K. Clegg, D. Fetter, A. Andres
PC members absent: C. Gottlieb (excused)
Staff present: Zoning Official A. Landers, City Planner & Zoning Administrator D. Stensaas

AGENDA

It was moved by K. Clegg, seconded by S. Lawry, and carried 8-0 to approve the agenda as presented.

MINUTES

The minutes of 05-16-23 were deferred for review until the June 20, 2023 meeting, due to not being in complete draft form until a few hours before the meeting.

CONFLICT of INTEREST

No conflicts of interest were confirmed.

PUBLIC HEARINGS

A. 01-PUD-05-22 Preliminary PUD Site Plan for 480 River Park Circle

Zoning Official A. Landers stated: The Planning Commission is being asked to review an application for a Preliminary Planned Unit Development (PUD) approval. The Planning Commission qualified the project for a PUD on May 17, 2022. The Planning Commission will need to conduct a public hearing for a Preliminary Site Plan Review and draft recommendations to the City Commission, who will issue final approval or denial of the PUD. She described and showed on the monitors in the room the Staff File Report and attachments. Attachments are the PUD application, the Site Plan Review application, the Planning Commission letter from the applicant, the Variance letter from the applicant, the staff and applicants comments, a proof of the granting of an easement, the area map, the block map, the zoning map, photos of the site, the applicant's Pattern Book, the Site Plan set. She also stated that at the time of the agenda [when distributed] there was no correspondence submitted, however today, prior to the deadline, she did receive an item of correspondence from Matthew Songer, MD, in opposition to approval of the PUD project. She read Mr. Songer's letter aloud.

S. Mittlefehldt stated: Andrea, do you mind, just because we have a different composition of Planning Commissioners here today, can you give us a quick history? Because the Planning Commission already approved that it met the PUD requirements. Can you maybe just explain a little bit of the history of that piece of it?

A. Landers stated: When you apply for a PUD there are stages. The first stage was that an applicant has to come to the Planning Commission and ask for concept approval. The Planning Commission has to review the objectives in the Land Development Code, and determine whether it has to meet at least 3 out of 10 objectives and it was determined I believe that it met 4 out of 10, so then that qualified the applicant

to then submit for a Preliminary PUD, which is the stage that we're at now. So during this stage, the applicant goes in front of the Planning Commission. There's a public hearing. You guys would make the recommendation to the City Commission. Next step is that this would go to the City Commission and they would need to review and approve it and ask our attorney to draw up a contract with the applicant or deny it. If they approve it in the contract, then the next step after that is the applicant would have to then come back to the Planning Commission with their final site plan set .

D. Stensaas stated: And to add to that just a bit, this didn't have to be an extra step. A lot of time an applicant will come forward with a Preliminary Site Plan and a Concept Plan, and they can do that at the same meeting. This one just unfolded this way.

S. Mittlefehldt stated: Okay, thank you. At this point the applicant can now come up and provide a little context and overview.

Mr. David Ollila, of 420 E. Prospect St., stated: Thanks for the opportunity to present to the Planning Commission. What I would like to do is to read a little bit of the background that was provided by the Michigan Economic Development Corporation staff to the Michigan Strategic Fund Board, which granted the initial funding for the project. He read a letter that has been added to the agenda packet.

He also stated: We have letters of support from Invest UP, Innovate Marquette SmartZone, who's been a fantastic partner in this process, the Michigan Office of Future Mobility, the Department of Agricultural and Rural Development. We have letters of support from leaders in the power sports industry, Tech Town Detroit, Centropolis Manufacturing Technology Accelerator, Michigan Tech University Advanced Power System, Michigan State University's Mass Timber Program, a global leader in the automobile industry, and the Detroit Regional Partnership. Thank you very much.

S. Mittlefehldt stated: Does anyone on the Planning Commission have questions for the applicant? So, maybe you don't know this, but what is being produced here? What is being created in terms of the industry?

Mr. Ollila stated: Right now actually Michigan is going through an exercise to identify where the state has the best opportunity to increase our economy, whether it be in Detroit or whether it be in the Upper Peninsula. This is more about being a point of discovery for companies developing products and experiences within this ecosystem. It's a way for us to be relevant through automobile and transportation sectors with Detroit so it's less about what would be made specifically and more about being a point of discovery and innovation to support innovation and entrepreneurship throughout the state. So I'll give you an example - the main building, I think we have it listed as Building #2, is essentially a triplex with shop houses. These are garages on the bottom. They have mezzanines on the midlevel and apartments above. The concept is those are places for corporations to visit the area, do research and development, that might be anything from secret development to customer experiences. It's also an opportunity to have those companies come in and then codevelop products with other companies, so I'll give you an example. Polaris Industries is spending about $1 billion over the next 3 to 5 years to create an electric product in every one of their categories, so soon we will have electric snowmobiles. There's a company right now called Taiga out of Quebec that is producing electric snowmobiles and electric watercraft. There's a big movement in this space to look at new ways to develop products and experiences in the outdoor industry, and what's interesting about this point of time and it's akin to when Henry Ford had manufacturing plans and points of innovation in the United States to connect with Detroit's economy and create relevancy between the peninsulas. So what we are is a place to gather innovators, entrepreneurs, start-ups and corporations. They come to Marquette. They come to the UP, they have access to trail networks. They have access to potential venture capital. They are pulled together in networking opportunities and that is how I believe we can facilitate new economic opportunities for not only Marquette, not only the UP, but the state of Michigan.

K. Clegg stated: Could you speak about the communication you've had with these companies? How are you planning on attracting these companies that you're hoping to come and I'm assuming they're going to rent from you these places on a short-term basis, long-term, how is that going to go and how are you attracting that interest?

Mr. Ollila stated: I think the attraction is a really great question and the number one way that we're attracting these companies is by working with the state of Michigan, organizations like Mich Auto, organizations like the Detroit Regional Partnership or some of the incubators and accelerators that we've talked to. There is an increase of spending and investment in this outdoor recreation space and this is an opportunity for us to participate in that. I'll give you an example. Tomorrow I'm driving down to Detroit to meet with a number of potential ecosystem partners and on Friday there's a statewide summit regarding innovation and entrepreneurship. By creating relationships and being connected to those policymakers and economic developers in other areas of the state creates a relevant connection to our state's economy and so we are going to be part of those conversations that are happening in Detroit, Lansing and Grand Rapids. Also, I have a network from working in the outdoor industry for over 25 years across the United States where we are able to contact, we're able to attract, we're able to engage in conversation from anything from a blanket manufacturing company in Bend, Oregon to climbing companies in Salt Lake City, to bicycle companies in Madison, Wisconsin. We've had experience bring those folks up before, but it's not just start-ups and it's not just small companies. We've had very favorable conversations and visits from some of the top automobile suppliers in the United States who've expressed interest and said that they would be back and they're excited about the construction, the development of Shophouse Park, and therefore they would utilize the upper peninsula more often in research development, customer experiences, and marketing opportunities.

S. Lawry stated: I have quite a few questions. One, I started out with the same concern that Dr. Songer expressed in his letter regarding a new title to the property, having been familiar with the fact that because of the federal funds that the City used to construct that industrial park, there were purchase agreements, contracts for the sale of each lot and I know you're involved in development of your ski design and at the time you purchased it and manufacturing out there, and so there was a contract between you and the city to accomplish something that's kind of set the price on the lot to begin with, but that maybe wasn't met and I understand the City Attorney has reviewed that and determined that there isn't an issue or a problem with that at this point. I visited the planning department this morning to find that out. It's interesting that Dr. Songer is expressing the same issue, because I was concerned that it might be challenged by someone else. It leads into - do you intend to personally use any of the space for manufacturing, whether it's your ski design or anything?

Mr. Ollila stated: I would expect that to address Dr. Songer's comments, I think they are unfounded. There was a set of deed restrictions so first of all the history of the River Park complex, the city founders did not determine the current industrial layout in River Park complex. I believe Mike Coyne was the mayor that signed those documents and there was deed restrictions that ran for 25 years with the property and those are sunsetted. There was absolutely no legal standing on clear title to the property or any obligations that were implied or not met with the purchase of that property and I can go back to the emails between Dennis Stachewicz and myself when we did purchase that property, so I'm very confident there's no issues there. So Building #1 is going to be my studio. There won't be any manufacturing per se at high volume in that studio. I would expect that would be a place for prototyping, experimenting, maybe some light building but the idea is that property is not suited for largescale manufacturing and I don't believe that within this sector that we would attract large scale manufacturing but I'm confident we can attract innovation, research and development and in the very best of circumstances, the products, the experiences, what comes out of Shophouse Park could certainly lead to larger manufacturing opportunities, say at K.I. Sawyer, and that would be intended.

S. Lawry stated: I do agree with the need for incubator space or research and development space. These are lacking in this area because there may be a lot of vacant buildings but none of them are managed for that purpose.

Mr. Ollila stated: And purposely built for that purpose – to purposely attract this industry, and again to connect with the economic drivers throughout the rest of the state.

S. Lawry stated: So, do you see it as primarily research rather than manufacturing?

Mr. Ollila stated: I think if I had to say what I believe will be happening there, it will be mostly product development, research development, testing, and facilitating those services for our start-up and worker clients.

Mr. Lawry stated: Okay, there was nothing included in the submittal that covers the access across the Board of Light and Power property, whether if you have any legal progress on that, whether you have design for it that's complete. I went back to your submittal from last year and you had a statement from Mr. Benstrom at the BLP that indicated that they would allow access but not overlapping the 100 ft. easement for the 69 KV tie line and yet this drawing that you have today shows the access directly underneath that power line.

Mr. Ollila stated: So we have a very good relationship with the Board of Light and Power and they've been terrific, collaborative partners on exploring this opportunity in the coordination or the conversation, so that easement split, this was our best guess at what we thought would fit best for the BLP property but it's BLP property and we can only make the suggestion so the way that we plan on working with the Board of Light and Power is to get through this planning process and we get to the site development and the site review that the BLP would take the lead on what's happening on their property and we would work collaboratively to make sure that it serves both owners and both properties and all indications are the BLP is more than happy to work with us through that process and they would be willing to draft an easement. Of course, that easement would have stipulations to make sure that they could continue to do what their core scope is and that is to use those lines to provide power to the city of Marquette and we would honor that and work with them.

Mr. Lawry asked: Is that easement that's on your lot actually to the Board of Light and Power or is it to American Transmission Company?

Mr. Ollila stated: I believe it's Board of Light and Power. I could check the documents. I believe it's 32 ft. that comes on our property and 32 ft. in the other direction towards the soccer fields. It's 100 ft. wide altogether, so 32 ft. from our property and then that would be 68 in the other direction.

S. Lawry stated: It may actually be American Transmission Company at this point.

Mr. Ollila stated: I believe it's Board of Light and Power, but certainly something that we could find out.

S. Lawry stated: And you talked about collaboratively working with the City and the BLP on that, but it's rather ambiguous who would design, build and pay for it. Is that still a matter of just being up in the air? Do you want to negotiate agreements on that?

Mr. Ollila stated: No, the comment that I received on the Board of Light and Power is that it didn't make sense for them to put a large effort of work until it passes through these processes in which case they would be happy to participate. We've also, through the City of Marquette and also the BLP, we're seeking other grant monies that might be available to support that and again, that's a collaborative public/private partnership that we think would serve the community very well.

S. Lawry stated: Your comments about not paving the parking areas, I realize there are a part of the sports complex that is not paved. On this steep hill, this road where the parking lot would be built on - I guess I would have concerns about maintaining a gravel surface there, especially with the wetlands in the bottom of it, and the fact that whole area has to be undercut to remove all of the many cubic yards of sawdust that's in there.

Mr. Ollila stated: Right, we can thank the Sawyer Sawmill for the 100-year old piles of sawdust that we've left sitting around the city of Marquette. The surface of BLP land, I think that would be up to the Board of Light and Power and the City of Marquette for what they thought was the best for the BLP land. As far as for the Shophouse Park property, we think that there's a number of good arguments for semi-permeable surfaces to reduce rainwater runoff, to not create large amounts of water running off. I don't believe any of the roadways except for maybe our driveway have any serious slopes, but again we would work with the Board of Light and Power to establish their standard for the access of that road. We do think that there are a number of good alternatives to pavement that might be a good fit, for both the Board of Light and Power and for the Shophouse Park property.

Mr. Lawry stated: Okay, also on page 12 of our packet, paragraph E1, it states there it would be 14 live/work dwellings, but on the application form itself, on page 17 it says there are 12 proposed, so I was just wondering about that conflict of numbers.

Mr. Ollila stated: So, with building #1, there is the studio with two apartments above it. Building #3 has three complete live/work units, Building #4 has three retail and three apartments, and one of the challenges that we had is that there's nothing in the current code that talks about live/work units and so as we talk about apartments or live spaces, I think there's some inconsistencies perhaps, but the number of structures and there primary uses would be the same.

Mr. Lawry asked: Okay, so there would be 14 dwelling unit, maybe 12 of them would fall under…

Mr. Ollila stated: Right, it's like almost trying to count the number of units that are in the [505] Lakeshore [Blvd.] building where Lakeshore Bike and Fred's Rubber Stamp is.

Mr. Lawry asked: And have you explored whether your RV parking and tent camping would require State of Michigan and Marquette County Health Department licenses for a campground?

Mr. Ollila stated: Great question, haven't had those conversations. If they do, they will, but again this isn't a campground. This is more of a business-to-business type environment, so for instance we may have some overlanding vehicles that are working their way through the UP for testing and research. They would be able to hole up at that property. We're also talking about special events. There's an event that you could reference called Overland Expo, which is a large rolling trade show of these types of industry experiences and vehicles is what I would consider it more event space than I would a traditional campground but any regulations would be met. I just want to add to that one of the companies is a start-up that we're working with downstate that is developing structures for camping of the future. If you're camping in an electric vehicle, that camping experience might be different than the way you camp today with propane, so that's a state-sponsored project. We have the opportunity of deploying products like that for first customers, first-use experiences and so unfortunately or fortunately, I'm in the entrepreneurial business and sometimes there's ambiguity on the way to progress and impacting the community in a positive way, so we're going to work through all of those.

Mr. Lawry stated: There is a wetland delineated on your drawings but I think the actual wetlands at this point have grown quite a bit beyond that. I foresee having problems accessing through that Soo Line railroad right-of-way or easement with the extent to which the wetlands have grown through there, and I think you have been in contact with the state on that but do you know have they actually been on site at all yet?

Mr. Ollila stated: Yes, in November 2021, I walked the property with the former director of EGLE, Lisle Clark, and some of her staff members, and she was not concerned about executing on the vision within that property and working with the DEQ or EGLE to support that project.

Mr. Lawry stated: I guess I would say it depends on who you talk to at the DEQ or EGLE or whatever, but you're obviously going to be filling some wetland area, according to your plan, and that will require you placing space somewhere else and it looks like the area that's wetland is growing on a regular basis.

Mr. Ollila stated: Right. Unfortunately sometimes you inherit poor design on your properties. I will also point out and there are materials that you can look at, what it looked like when it was the sawmill, and I can tell you there's huge improvements now from the dredging and the repositioning the dead river to move logs through that area. We're in the outdoor recreation space. We're in the innovation and entrepreneurship space. We want to protect our environment. We're not cutting any corners and we're going to build the very best project that we can build as it aligns with all permits and requirements.

Mr. Lawry asked: Okay, thank you for your responses.

Mr. Ollila stated: Thank you.

S. Mittlefehldt stated: I also have several more questions, just you've really helped to paint a picture of the primary uses of this property but there are nine listed I think and in addition to the research and development, there was hospitality, so bar and restaurant and a childcare facility, maybe you could kind of explain some of these ancillary functions that will be going on here and are those going to be for the public? Are those for the visiting people staying here for short-term research purposes and work purposes? Tell us a little bit more about some of those other uses.

Mr. Ollila stated: Sure. I think that's one of the most exciting things about the project, because it's truly a mixed-use project that serves both the community and also business to business aspect that again that we're trying to connect with the rest of the state. So, as I was building out the concept and I was talking to potential companies that would want to utilize our space, one of the questions was can I bring my family there? We like to think that we're providing space, from the innovator to the end user, and we want to provide something that's for the community - so for instance, there is no place to walk and get ice cream from the Kaufman sports complex, and there's no place for concessions at the sports complex. The north side of Marquette is an underdeveloped portion of the city compared to other portions of the city and so we already have public use, as Commissioner Clegg had mentioned, the Ore to Shore has been using my property since I've owned it for the last 12 or so years, as has the Noquemanon ski marathon, as does the North Country Trail. We've met with a number of those organizations. The North Country Trail is very excited that there would a location for a thru hiker for instance to be able to stop in Marquette on their way through town. This is innovator to end user, it's to serve the community, it's to bring economic relevancy to Marquette as it relates to the rest of the state. I want my family to be able to ride their bicycle out on the bike path that leads directly through this property to the north trails, through the rest of Marquette. I think it also pulls a little bit from what you'd be seeing in Bentonville, Arkansas. In Bentonville, if you have not researched that, they are at the very top of their game in creating innovation and entrepreneurial opportunities that are attracted to healthy lifestyles. They have a coffee shop that is one mile away from the closest parking area that people have to ride their bikes to or walk to get there, and it's incredibly successful. Those are the types of things that we can look at, benchmark and improve upon, so we expect that the community will enjoy this property just as much as Fortune 500 companies.

S. Mittlefehldt stated: For specifically, the childcare, would that be a service that will be open to the community?

Mr. Ollila stated: So, why is childcare in there? Do I have plans for a childcare facility? No, but we've got a problem with childcare in the city of Marquette. If you're going to go through a planned unit development process which is a lengthy process and you know that there are gaps in housing and in childcare and amenities, then you should probably write into your PUD that you should have childcare that would be available. I have no current plans for them, but if all of a sudden a group of people wanted to come up to conduct business in Marquette and they wanted to bring their children and if someone said it looks like a childcare facility, we would say we have that covered and if it meant that there was an opportunity for someone to open up a childcare facility, maybe for the community to drop kids off in a turn key type way, we would have a blue sky mentality to make sure that any entrepreneur or any business person or anyone in the social care circle would be able to utilize that property for that. We would hate to sell it short within the process.

S. Mittlefehldt stated: And similarly the function with the outdoor food and beverage, would that be for the public? You mentioned ice cream, are you thinking a restaurant, a bar?

Mr. Ollila stated: So we're thinking about a café. It's a dream that if you roast beans in Marquette or you brew beer there would be an opportunity to have those on the property. How that plays out I'm not entirely sure but we want to make sure that we had the provisions to be able to do that. I also know from my experience in creating the Nations Center, the Ferris Wheel Innovation Center and Co-working Space and 100K Ideas in downtown Flint, Michigan that when you provide those type of amenities for both the community and also new visitors, it creates a more vibrant, more usable space that people return to.

A. Andres stated: I think you have a lot of grand ideas and I like where it's going. However, it seems like it's a very complicated process and I just wonder if perhaps you've possibly had these grandiose ideas and maybe you have bit off more than you can chew and I look forward to seeing the formative plans that are more developed so we actually know what's going in the process and how things are going to be developed visually.

Mr. Ollila stated: I appreciate your concerns of my grandiose vision, but I also have experience of pulling off grandiose visions. This has been my way of life since I was probably 7 years old and I want to inform everyone that the biggest resistance sometimes comes from those who lack the vision and so as we talked to large corporations I can tell you they don't see this as grandiose. They see it as practical and the alternative is this property is available for development as a storage facility, and I think far too often we bias towards building a storage facility in Marquette where people can store their stuff. That does not lead to economic prosperity and opportunity for the community, so this is the time. We've not had this time for maybe 100 years to execute grandiose ideas.

A. Andres stated: And one other thing, just make sure in your plans that you cover all manner of people, wheelchairs included, physically disabled, mentally disabled, the whole gamut, make sure you include all people, not just the able-bodied person.

Mr. Ollila stated: It would be a mistake if we didn't and we will not make mistakes like that.

M. Rayner stated: Lots of great ideas but there's some real time delays in getting licensure for like food services and liquor licenses and daycare so you might want to put that into your plan so that you can touch some of those bases and see the process cause it's quite lengthy and quite time-consuming.

Mr. Ollila stated: It's a ridiculous process.

M. Rayner stated: I like your ideas. I'm not saying that. I'm just saying you need to do some research along those lines.

Mr. Ollila stated: Absolutely.

S. Mittlefehldt stated: I also want to say that I do think it's interesting because this project is a new challenge to us in many ways, because you're using categories that exist in the world but not in our Code. For example, the live/work dwellings, I mean, the spirit of that is what mixed-use is and I think your project gives us an example of what that could look like in a really interesting way. And you used some other terms like micro-mobility. We talk a lot about non-motorized transit. Some of us are working on, have been on the city's bike committee for a while, and we're trying to figure out a way to improve cycling in the city and we have been very focused on motorized and non-motorized transit, but this idea of micro mobility, it seems like is this an intentional move to get away from what is pretty established in the transportation literature as non-motorized transportation, because presumably e-bikes are here to stay and we've all seen them in town already, so maybe you could tell us a little bit about that, micro-mobility specifically and are you intentionally not talking about non-motorized transit when you're talking about the type of innovation that we've been focused on here, because so much of it will be electric?

Mr. Ollila stated: All modes are preferred. We are striving to be a walkable city. Again, there's a bike path on an abandoned railroad that leads right to the property and through the property. There is more innovation and entrepreneurship happening in the e-bike category. The number one selling electric vehicle in the world is a bicycle. It's not a car. We also believe that outdoor recreation is going to spur more research and development in those spaces because there's less regulation for that. That's why Porsche has bought an electric bicycle company. That's why KKR bought Rally Europe. That's why RCA, the record player company, just launched bicycles. I think what's really key here is we are at a new age in a point of discovery for all possibilities, whether they be "analog bikes" as they're calling them now, non-motorized to the motorized versions. We may have someone come in to develop a water bottle or we might have someone come and develop a hoverboard, and that's the gambit that we expect to attract and we want to make sure that there's something available for everybody.

K. Clegg stated: Per your future ownership intention statement, it's something you intend to hold for 12 years, so you have any idea what your plan is beyond that? Do you intend to sell? What type of person or company would you look to attract to do that?

Mr. Ollila stated: So the long-term plan, and speaking very candidly, is to provide an anchor for me to keep on doing this type of work in the community and for something for my daughters, one who just graduated Marquette Senior High School and will be leaving to come back to and to operate, to have a legacy project that provides positive community experience for a long, long time. If we can do that with this project, I would like to be old man Ollila in Building #1 that people are coming to visit.

S. Mittlefehldt stated: I did notice again going to the EV thing, there was only one charging station in the parking lot. And I know that this will probably change but given the nature of the project, I think they might want to have more.

Mr. Ollila stated: So we laid one down there but I can tell you we're talking to potential suppliers and potential collaborators from companies that are making vehicles that are electric to companies that are making charging stations. I would expect that you'll see many charging stations there but we don't know how many and we don't know how they're going to be used. I think each garage will also have charging stations inside of those as many of our customers would probably be charging inside the garages rather than just outside the garages, but our plan is fully-executed electric charging available on the property again for the community and also for our customers.

S. Mittlefehldt stated: Cool, okay, the last question, on page 36 of our packet, a hotel is listed. That was the first time that came up and I didn't know if hotel was being used synonymously as the live/work dwelling or if there is a hotel function specifically that's being planned?

Mr. Ollila stated: No, so again, you mentioned that a lot of this stuff was pushing the code, right, and so when we were asked to calculate parking spots, this project isn't in the basis of calculations and so we looked at hotel as being the worst possible scenario of having parking spots that are required for a particular business. It's neither a hotel nor is it just an office space, and so it was difficult to calculate the parking spots based on the current categories for counting those.

S. Mittlefehldt stated: Question for staff, on something like this where there's so much uncertainty about what will happen, how much do we need to have more concrete information about things like parking spaces? Is this okay if we're just going to allow the "trust me, we'll figure that out later" kind of thing?

D. Stensaas stated: You need to settle on a baseline to start with. Just to back the hotel comment, we suggested that's the use because it's not actually the worst case scenario for parking spaces. That would be single family housing. Hotels only require one space per unit. So, what I see happening here is as this project moves forward and it gets more legs and more form, as the contours of it become clearer to the applicant and it proceeds, they can come back with amendments to the PUD. So, those major amendments, like new buildings creating more spaces for either car parking or for different types of facilities and they have shown now on the plans, those are going to go through the same kind of process with public hearings at the Planning Commission and City Commission level. The only things, minor

amendments, that we approve as staff or things that don't have any impact off-site, they are relatively minor in nature, like fences, signs, things like that - so there's a lot of flexibility there if you're willing to keep going through the amendment process - not that that's easy or inexpensive. So, that puts some burden on the applicant, when they want to amend the PUD, they know what they want and they know this is going to be what they want for hopefully the next few years at least, the next phase of it, so they can develop phases of this through an amendment process, but I think what's being asked here, too, is to have flexibility for phasing in this plan. And this is a unique process so granting flexibility up front, it seems like a necessary part of the process to make it work for them.

Mr. Ollila stated: Can I address that part? I think in the 28 spots - I have to double check to see what we're proposing there. Yes, 28 parking spots, right? So I think you can do the math and you could find out where the 28 parking spots work on the property. There's also the practical perspective. We're not putting a parking lot on top of the granite outcroppings. That's actually a preferred natural feature. We're not going to put parking where there's buildings, and so as you develop the property there are areas where parking makes sense. We believe that with that amount of spaces on the property itself, it serves the primary uses of Phase 1. I think there's less ambiguity from our side of what we're doing and it's more about reconciling past projects, the zoning codes and the process codes which is exactly why we're going through the PUD process and I think it's in everyone's best interest to create a project that serves the community in a collaborative fashion so if someone says you know what, you need two more parking spots, we'll figure out where two more parking spots need to go. But I'm 100% confident that what we're proposing and what we're developing and the opportunity that we're going to bring to the community, we'll be able to serve our customers in the best possible way as well as locals using the property.

S. Lawry stated: I understand that Mr. Ollila is trying to be proactive, services that aren't currently available but he also has to be very reactive to the people he's trying to attract and meet their needs, so he is asking us to be pretty flexible with regulations in our community designed to be flexible. You typically would have to have a lot more detailed engineering done at this point to approve this because as I understand it, when we do get a final PUD for review, for the most part we just have to look at that and decide whether it is in agreement with the preliminary PUD that we've already approved. We can't really make a lot of alterations or changes or conditions at that point. It either matches or it doesn't match and we don't have a lot of detail to match it too at this point on things like access and drainage and a number of other areas [inaudible]. I know that the PUD ordinance has been rewritten a little bit since I was last on the Commission. I don't know if that allows us more flexibility here and when we get the final PUD, or if everything has to come back to us as an amended PUD or how we can address that. I guess Dave could speak to that.

D. Stensaas stated: Well we can pull up the ordinance and look at what it says about the final and the preliminary but the preliminary PUD is definitely different than any other type of preliminary site plan. This does offer a lot of flexibility and it's been that way for a while, with the standards for preliminary site plans. Actually, we just changed the code in the last couple of years to create a real preliminary site plan for other types of development that aren't PUDs, that kind of match what the PUD has had in it for years - which is a more vague set of standards so that there was flexibility. If you want to develop a PUD, there's more flexibility on this front end, but certainly with development of the civil infrastructure - even though they're not providing all the elevations and everything like that - those are going to have to work out to meet the City's Street and Utility standards. There's no way around that, and just because it's vague at this point doesn't mean they're not going to be held to the standard everybody else is when those things are developed.

S. Lawry stated: I guess I'd be most concerned with the fact that access to much of the property, as well as the utility to serve much of the property, at least the water main, is not in the PUD, it's not part of the plan. It might be part of the submittal here, but it's not under Mr. Ollila' s control and if we were to attach a condition to approval of the PUD that said you had to have all of that submitted to you before the City signs off on it that would seem to kind of remove an awful lot of the flexibility right there and require a lot of up-front investment that he's not going to build some of those other buildings for 10 years or more. That infrastructure would actually be deteriorating before it ever has to get used.

Mr. Ollila stated: To put in a point of clarification here, so there's actually multiple ways that exist right now to legally access the property - from the south at the curb cut on the cul-de-sac - that is where you would access the south part of the property. Also, in that documentation is the easement of the abandoned railroad grade that goes to the east of Lot 11, and so that is documented at the register of deeds easement. I would say the BLP access is designed to provide a more well-rounded project that also increases access to the Kaufman Sports Complex on an under-utilized piece of property could provide parking and makes for a nice loop through the property, but it's not necessary to activate the property by utilizing the BLP. That just is something that makes practical sense, so there is no ambiguity around entering the property, you can gain access to the property.

S. Lawry stated: But, I think based on the fire department [inaudible] update, they're basing it on the fact that they need BLP access to provide protection to buildings that are built down at the north end of the property.

Mr. Ollila stated: They would be able to use that easement to the east. There would be a 25 ft. turning radius that would be required in the site plan. We would never build a property that doesn't meet the city's requirement for access for fire.

S. Lawry stated: And just one other correction that's going on page 68 of the packet. It's Plan Sheet G.2 regarding the work buildings 3A and 3C. You're showing us 8 x 40 and then a note attached to it says a building area of 240 sq. ft. to be 320 square feet.

Mr. Ollila stated: It's nice to know you read the plan.

S. Lawry stated: When we're approving things, I don't know what calculations were used exactly where. It becomes a legal document at some point.

D. Stensaas stated: Back to Mr. Lawry's questions about utilities, what were your main concerns about the utility runs or possible extensions?

S. Lawry stated: I believe the water main was shown as - there's a water line to service all of the north buildings was I think running on the BLP property to get down to the lower level and then terminating in a hydrant down there.

Mr. Meister, the applicant's civil engineer from GEI, stated: Yes, but it could be shifted.

Mr. Ollila stated: So, we looked at two versions. So, a couple of things, and Mr. Lawry you probably have a better in-depth understanding of that. Most of the utilities terminate in River Park at the cul-de-sac and it's my understanding that loops are generally desired for water and sewer. While we certainly could go through the center of the property and we have a plan and we have received quotes for doing that, for the City and for the property it would be better to loop them. If we needed to for the site plan say run it through the center of the property on the site plan, then that's what we'll do but we think that everyone would benefit better from looping it. The sanitary discharge is directly going through, storm is on that property - you see those in those black lines there - and then the wastewater is coming back just outside of the BLP's electric easement there.

Mr. Meister stated: The water main there is shown inside the property line.

N. Williams stated: I just have one question. Leppanen and Anker - it looks like there's lots of discrepancies between their conceptual designs or renderings, and the GEI site plans, at least in the packet that I've got. I imagine that is just like where you're at in the process, but this packet is all we have to go off of.

Aaron Leppanen, the applicant's architect, stated: Yeah, I think from looking at the building standpoint, everything should be coordinated. I know those first four buildings are really the priority of the process and then that access road to the west of that. The buildings we're calling 5, 6, 7, and 8, those are

basically marked out on ours as future building sites. I think all the trails I'd have to look at the overlays, but I think George with GEI is here as well, so we would have to look at the overlays, but we know this is a preliminary site plan review. That's where we are in the process, but as far as all the trials, all the square footages, the parking for those first four buildings which are on the southern portion of the site, those calculations as far - I'm just looking at the screen so that's why I'm staring up there.

Mr. Meister stated: The line work for the buildings and infrastructure in there, aside from the utilities, came from them to us in CAD, so they should match pretty much right on. The elevations and renderings might look a little different because of the nature of them.

N. Williams stated: Sure. I guess what I'm looking at is - so we're looking at this drawing. I don't know what page it's on, but then if we switch to page number 54. That shows maybe 10 parking spots, right?

Mr. Ollila stated: Twenty-eight. So I think what you're seeing here in the differences is that when we went through the engineering process, we wanted to, for the entire property, figure out what we could put there to maximize the development of the property. And so rather than doing a Phase 1 and not looking at the rest of the property, we did drawings for the entire property and then we identified what Phase 1 is going to be. So, in some of those images you see what the projections would be for Phase 2 ,but this is for Phase 1.

S. Mittlefehldt stated: The public hearing is now open, if anyone would like to comment on this proposal please come to the podium.

Vince Nystrom, of Invest UP at 101 S. Front St., stated: I'm really excited to be here tonight and show a little support for a project we've been tracking for a while and we're really excited to partner with so I think all of us are pretty familiar with the whole travel tourism activity that happens across the peninsula and strength that we have here. If you break that down when you start thinking about all the different innovation activities and the opportunities that present themselves around that, that's really where this opportunity comes as well, so you're thinking about everything from electrification of mobility to smart clothing, advanced clothing, advanced trail technologies, just about anything you can think of that we enjoy currently in the outdoor recreation technology space, there's innovation that could go into that and be approved and it's an area right now that we as Invest UP has now gone with a development organization across the upper peninsula in partnership with the MEDC think that the UP, and specifically this region as well, can really accelerate and grow from. So, MEDC, just as an example, to give a little bit of background on it, actually took an office within the Department of Natural Resources and moved that office into MEDC and created outdoor innovation as a sector of focus across the entire state. That office was principally heavily involved in enabling a grant that David is working with to actually build this location, and something that kind of shows the level of interest they had.

And MEDC does not do this very often. As I think back, they have not- maybe once every two or three years do they really look at the technology sector that they say hey, the state of Michigan or a region of the state, in this case the upper peninsula, can really take advantage and grow an innovation sector and an economic sector for both job growth, investment - all of the above - so much so that from an Invest UP perspective we're looking actually at developing a small venture capital fund that I would be the managing director of, that we would be the first one of its type up here in the upper peninsula. That fund would focus exclusively on outdoor innovation, and focus exclusively on investments across the state of Michigan and David has already been identified by us as our innovation chairperson for that, so any time we have any technology across the entire state of Michigan that we were looking to make an investment in, we would bring it to David and David would help round out a team of experts to look at that innovation and technology to give us the thumbs up before we start to doing further due diligence on whether or not it was a good investment. So, again, just kind of recapping everything - as you look at the upper peninsula as a whole, we are so uniquely positioned to use this as a sector of excellence and economic driver. We have the ability to test in water, in sand, in woods and pretty much in mountains. You heard Bentonville, Arkansas mentioned and other things, like in Utah and Colorado. One thing that we also have a unique perspective on is cold weather, fresh water as well, so across the board we have four seasons that we can both test innovation, prototypes, all the above, and the activities in the Shophouse Park is looking to

build is a really perfect match and a great accelerator for the entire sector and we're really excited about the project, so thank you.

S. Mittlefehldt stated: If anyone else would like to comment now is the time. Seeing none, the public hearing is now closed.

It was moved by K. Clegg, seconded by D. Fetter, and carried 8-0 to suspend the rules for discussion.

K. Clegg stated: I'm excited about the opportunity that Mr. Ollila is presenting to us, but I do want to see a lot more detail. I'm with Commissioner Lawry in that I'm unsure how that plays out in the future when we come to see a final site plan review, but anybody else can comment on that.

S. Lawry stated: I'll just say that my experience in the past is we required an awful lot more for all of our applicants and they haven't been used in the last few years and I don't know how much it has changed but I was on the board 8 years previously and they basically had to have stuff where it never would have even gotten to a public hearing and it would have been kicked back as an incomplete application. So I guess this is kind of new ground as far as I'm concerned and how the other commissioners think.

S. Mittlefehldt stated: Yeah, I've been on the commission for 7 years and I've never seen as much...I call it, the trust me factor, trust me this will work. But we haven't seen a lot of PUD's either, and that is what PUD is designed to do - to provide flexibility and support an applicant who is trying to do something a little bit different that doesn't fit in the Code, so I kind of get it, but it definitely is not something I've seen in 7 years either.

S. Lawry stated: I looked at the packet from the last meeting, and read through the minutes, and there was more detail with that submittal than there is with the current one, and I realize some of that all may not all be valid at this point because things have evolved in that time. But, it was a lot more detailed.

K. Clegg stated: The proposal does meet five of the ten requirements and that's why the Planning Commission qualified it a year ago, so it does fit within that.

S. Mittlefehldt stated: One concern I do have, not about this project specifically, but more generally about the future of our land use in the city of Marquette, and I was also not at the last meeting or first meeting where this was approved, and I think Commissioner Premeau has mentioned this before, and I know former Chair Cardillo and I have advocated for having more industrial land in the city of Marquette, and it really is the one type of land use that we don't have much of and I think that ship has sailed and I'm excited about what they're planning for this site and I think it is an appropriate site for this type of work, but in general I would hate for this to be precedent for when we're looking ahead, to north of the river, we're looking at what to do with that WE Energies site. That's really our last big chunk of industrial land, and I would advocate strongly that I want to continue to have industrial, working, manufacturing in the city of Marquette. I think that having that economic diversity is part of a vibrant community, so I just want to put that on the record to say that we do value and want to continue to have industrial land, but hopefully we will see some actual manufacturing and more industrial activity on that north side of the river. Other thoughts? It was also brought up by Dr. Songer, so the letter mentioned that, too. I don't know if others have thoughts on that. Commissioner Premeau, I think we've agreed on this in the past.

W. Premeau stated: I could say, do you know the topography on that land up there? They can't just all of a sudden say well we're going to put a road through the center, because this is designed to run on what's there. You can't just run a line somewhere with the topography that's there, you just wouldn't be able to do it. This is a very small piece of land and even for industry, if you wanted to get an industry up here where there actually would pay large taxes to employ people, you would need a lot of land. And you've got on Lakeshore Boulevard, the WE Energies property, they've got all that land they filled in with fly ash back there and stuff back there. You need a larger site because if you hire 400 guys, you need an apartment building, and one or two charging stations, because that's about all will be used by the 400.

S. Mittlefehldt stated: I did get a chance to visit this site this afternoon and walked around and I can see the vision. I think it will be a beautiful space for the type of work that's being proposed and I agree that it's too small to do a lot of large manufacturing so I'm going to sacrifice the industrial section here but I just want, thinking ahead, I hope that we do see some real manufacturing.

K. Clegg stated: Given that this is, as you said, not necessarily well suited to heavy industrial manufacturing in the first place, there's a good chance they have an opportunity to spur a thing like an incubator so it's developed at all, so that we can attract businesses to fill out that WE Energies property. So, rather than this being the final solution for a manufacturing place with 400 individuals, it's a way for us to attract other people to fill out those properties.

W. Premeau stated: I have one question. Dave, in that packet it talks about a pond for a project, that's never happened before that I know of.

D. Stensaas stated: It's been quite a while but that's always an option for the Planning Commission or City Commission.

W. Premeau stated: So you just put it in there [the staff report] because its on the books, right?

D. Stensaas stated: Right. It's an option, but we're not recommending it as staff, but its always an option for this kind of project.

N. Williams stated: At the original meeting in May it was established that it met five of the ten objectives, correct? So, my question is are we able to talk about that at all or is that already established?

D. Stensaas stated: Those were established. That decision, that bridge has been crossed, but you can talk about it.

N. Williams stated: I would like to talk about it. One of my thoughts is, I guess since we haven't had a PUD come through since I've been on. There are the ten objectives, but those objectives are listed as 5 of five more criteria for qualification. Are you familiar with what I'm talking about?

A. Lsanders stated: So, I stated the five that the Planning Commission felt that that they met, in the staff report so they felt out of the ten, they met five, and I stated which ones they were.

N. Williams stated: I guess what I'm saying is that those ten are #5 on that separate list, so there's criteria and then one of the criteria is that it must meet three of these 10, and so #1 - are you able to pull up the Land Development Code?

A. Landers said that she would just pull up the staff report.

N. Williams stated: So, that's #5, and then when you scroll up a little bit. So, in section F is that it must meet all of these criteria as well, so one through five must also be met, and five is these also must be met.

S. Mittlefehldt stated: Yes, they determined they met that, and then they met five out of the 10 required objectives.

N. Williams stated: Okay so they also went through one through four. I know they went through five, but they went through one through four - okay.

W. Premeau asked what the term f-l-u-d above the red line meant on site plan sheet he showed the applicant?

Mr. Lappanen said that it was a misspelling of "flood" and the red line is the flood zone line.

S. Mittlefehldt stated: Is anybody prepared to make a motion?

It was moved by K. Clegg, seconded by A. Andres, and carried 7-1 that after review of the PUD site plan and pattern book dated May 2023, and the STAFF FILE REVIEW/ANALYSIS for 01-PUD-05-22, the Planning Commission, who previously established that the PUD met 5 out of 10 required objectives and the criteria to be eligible for a PUD of Section 54.323(F) of the Marquette City Land Development Code, and the preliminary PUD Plan meets Section 54.323(H) of the Marquette City Land Development Code, recommends that the PUD be approved by the Marquette City Commission with the following condition:

- *an amended plan is submitted to meet staff comments for the final site plan review.*

Yes: M. Rayner, S. Lawry, D. Fetter, N. Williams, K. Clegg, A. Andres, S. Mittlefehldt
No: W. Premeau

Correspondence
A. Sands Township Planning Commission Minutes of May 11, 2023

The Planning Commission and staff briefly discussed the subject, a campground development on the City's southern border.

COMMISSION AND STAFF COMMENTS

W. Premeau stated: The reason I voted no is several reasons, but the main one is they're not talking about putting literally peanuts of their own money in this project and a lot of those projects have failed and then the citizens eat it afterwards so somebody's got to cover the clean-up or whatever. I can't see that going because they're trying to do the same thing at the Air Base. They've already got a track out there. They've got all kinds of stuff up there, and they've got money, lots of dollars from Covid out there.

M. Rayner said that I've seen incubator ideas work, I just would like to see more a little more cohesiveness was my concern.

S. Lawry stated: I do have another question for staff. If there is not substantial progress, is it still within one year that a PUD expires.

D. Stensaas stated that it is two years before expiration.

S. Lawry stated: And if they partially build a PUD and it dies a slow death after that, what happens at that point? Because of some of what is being proposed here, as living space, if it isn't related to the research and development, it would seem to be out of place if its not used...

A. Landers stated: That is why it has to be live-work [housing] where they work there and live there.

S. Lawry stated: Could it eventually become an artist colony?

D. Stensaas said that there will be a formal Agreement for the PUD and that should be dialed into this as an innovation center. And this brings up the fact that we need to add a definition for live-work housing in the LDC the next time we update it.

S. Lawry stated: Okay, just so this doesn't become a white elephant down the line if nobody finds a good use for it that is compatible.

D. Fetter stated: I had a quick thought about the definition of live-work, especially in the world where a lot of people work from anywhere and especially from home, is that going to reflect single-family housing?

A. Landers said that we have home office and home occupation, and home occupation allows for that.

D. Stensaas said that one of the recent amendments to the LDC was that we tightened up the home occupation section of the Code to clarify what is and what is not a home occupation to be clear what isn't a home occupation but to offer flexibility to some home occupations recognizing that times have changed and a lot of people do work from home.

S. Mittlefehldt asked why the Planning Commission does not do the pledge of allegiance. There was a discussion about the issue that may continue at a future meeting.

ADJOURNMENT
The meeting was adjourned by Chair S. Mittlefehldt at 7:45 p.m.

David Stensaas

Prepared by: kw/iMedat
Edited by D.Stensaas, City Planner and Zoning Administrator, Planning Commission Staff Liaison

Exhibit C

City of Marquette, MI

300 West Baraga Ave
Marquette, Michigan 49855

Meeting Minutes
City Commission

Monday, July 10, 2023
6:00 PM
Commission Chambers

Call to Order, Pledge of Allegiance and Roll Call

Present: Davis, Hanley, Larson, Mayer, Ottaway, Smith, Stonehouse

Approval of the Agenda

Mayor Pro Tem Sally Davis moved to Approve the agenda as written, seconded by Commissioner Jermey Ottaway and Carried Unanimously.

Announcements

Mayor Mayer had no announcements.

Boards and Committees

1. Appointment(s)

   John Stewart, Parks and Recreation Advisory Board, for an unexpired term ending 01-29-24

   Commissioner Jessica Hanley moved to Approve the appointment as listed, seconded by Commissioner Fred Stonehouse and Carried Unanimously.

Public Comments - Comments may not exceed three minutes per person. Please state your name and physical address when making public comments.

Margaret Brumm spoke about the off-leash dog training sessions being offered at NMU by the Upper Peninsula Animal Welfare Shelter. She also spoke about her concerns with recent changes to the walking hours at Presque Isle.

Presentation(s)

2. Police-Fire Pension Board, by Chair Mike Archocosky

   Mike Archocosky offered an update on the City's Police-Fire Pension Board, which is composed of police and fire representatives, as well as the City Treasurer and two at-large appointees. He talked about the successes of the system, which is in a comfortable position at present. He said the board has struggled to maintain public membership, with the sole public member recently leaving the board due to term limits.

Commissioner Ottaway said the pension offered to City officers and firefighters is a key recruiting tool at a time when it's becoming more and more difficult to recruit.

Public Hearing(s)

3. Public Hearing - Preliminary Planned Unit Development Plan for 480 River Park Circle

Mayor Mayer opened the public hearing.

Margaret Brumm said she has reviewed all of the materials related to this request and can't say whether this should be approved or not. She said it has several beneficial aspects, but that the plan is difficult to understand and it isn't clear to her what the future of the site will definitively look like.

Developer David Ollila introduced himself to the Commission and presented a brief overview of the plan. He said the goal is to establish Shophouse Park as the local nucleus of an innovative, creative and growing outdoor technology and mobility sectors.

With no one else looking to comment, the Mayor closed the public hearing.

Commissioner Fred Stonehouse moved to approve the Planned Unit Development at 480 River Park Circle. The motion was seconded by Mayor Pro Tem Sally Davis and discussion ensued.

Commissioner Stonehouse said this project has been discussed for a long time, and that it has passed muster with staff and the City Planning Commission, in addition to receiving state-level support. He said this is a chance to focus on new technologies locally and to perhaps provide employment opportunities in new and emerging fields.

Mayor Pro Tem Davis said she is grateful that the Planning Commission has a strong and experienced membership that ask the important questions, and a staff that does such thorough work. She said this is innovative and visionary, and that any remaining questions can be worked through.

Commissioner Hanley said the City talks a lot about needing tax base, and this will certainly increase tax base, while building up a part of the city not currently built up. She said she is excited. Commissioner Larson also voiced his support for the project.

The Commission then voted on the motion to approve the PUD, which carried unanimously.

4. Consent Agenda

Commissioner Jessica Hanley moved to Approve the Consent Agenda as presented, seconded by Commissioner Jermey Ottaway and Carried Unanimously.

4.a. Approve the minutes of the June 26, 2023 regular Commission meeting

4.b. Approve the total bills payable in the amount of $1,039,895.97

4.c. Corrective Public Utility Easement Agreement - Windstone Condominium

4.d. MERS Annual Meeting - Officer Delegate Appointment

4.e. Outback Art Fair - Special Event Permit

4.f. SpinwayMQT Lease Agreement Addendum

4.g. Upper Echelon 2023 - Special Event Permit

Public Comments - Comments may not exceed three minutes per person. Please state your name and physical address when making public comments.

David Ollila thanked the City Commission and praised the work put in by the Community Develpoment Department. He said he is looking forward to the future of the Shophouse Park project.

Margaret Brumm spoke about the change to walking hours on the island. She said she missed the announcement for the meeting at which the Presque Isle Park Advisory Committee discussed the hours, and she spoke about the importance of the island.

Comments from the Commission

Commissioner Hanley said she was out of town but has heard great things about the fireworks and the parade and she thanked everyone who helped to organize the events.
Commissioner Larson said there was a ribbon cutting for the piers, and thanked staff for the work on the project.
Commissioner Ottaway praised the community efforts of the police department over the 4th of July.
Mayor Pro Tem Davis said it was nice to see the City Band at the pier ribbon cutting ceremony. She also highlighted recent street improvements in the City.
Commissioner Smith had no comments.
Commissioner Stonehouse said the change in walking hours on the island has caused quite the stir, and he said that is indicative of how much the community loves the island. He said the piers are a long, long time in the making and he's happy to see staff finding a way to finally accomplish the project.
Mayor Mayer asked for some staff clarification regarding the island hours.

Comments from the City Manager

City Manager Karen Kovacs said there are staffing challenges related to having people available to always open and close the driving loop at Presque Isle. She said the change that was made extended the walking hours from 6-8 p.m. on Mondays and Wednesdays to 6 p.m. to close on those same days.
She also thanked the City staff that ensured all of the 4th of July festivities went off smoothly.

Adjournment

Mayor Mayer adjourned the meeting at 6:44 p.m.

Cody O. Mayer, Mayor **Kyle Whitney, City Clerk**

If you require assistance to participate in any meeting, program or activity offered by the City of Marquette, please provide advanced notice to City of Marquette ADA Coordinator Eric Stemen at 906-225-8978 or via email at estemen@marquettemi.gov.

Exhibit D

City of Marquette, MI

300 West Baraga Ave
Marquette, Michigan 49855

Meeting Minutes
City Commission

Monday, August 14, 2023
6:00 PM
Commission Chambers

Call to Order, Pledge of Allegiance and Roll Call

Present: Davis, Hanley, Mayer, Ottaway, Smith, Stonehouse
Absent: Larson

Commissioner Jenna Smith moved to excuse the absence of Commissioner Michael Larson for personal reasons, seconded by Commissioner Fred Stonehouse and Carried Unanimously.

Approval of the Agenda

Mayor Pro Tem Sally Davis moved to Approve the agenda as written, seconded by Commissioner Jermey Ottaway and Carried Unanimously.

Announcements

The Mayor had no announcements.

Boards and Committees

1. Appointment(s)
   Allison Clark, Downtown Development Authority, for an unexpired term ending 1-1-24

   Commissioner Fred Stonehouse moved to Approve the appointment as listed, seconded by Mayor Pro Tem Sally Davis and Carried Unanimously.

Public Comments - Comments may not exceed three minutes per person. Please state your name and physical address when making public comments.

Colleen Roberts spoke about the dedicated walking hours on Presque Isle and shared concerns with municipal resources and the local tax base. She said it's important to closely evaluate the budget in order to maintain services while keeping costs low for residents.
Margaret Brumm spoke about a recent trip to the Social Security office, about Board of Light and Power practices, and about accessibility in public parks. She said the City should put effort into educating the public about the rules and regulations regarding traffic on Presque Isle.

Presentation(s)

2. Marquette Housing Commission, by Chair Jackie Stark

Marquette Housing Commission Director Sharon Maki and MHC board chair Jackie Stark offered an update on the MHC. Stark discussed the board, the structure and various programs of the MHC and spoke about how the MHC properties and tenants interact with the community in various ways.
Maki spoke about the MHC's recent RAD conversion, which included changes to subsidy, as well as a MSHDA loan to update the buildings and facilities. She shared what that has meant for the unique opportunities available to the MHC.
Stark then spoke about updates that have come out of the RAD conversion, including renovations of the units, which are now all air conditioned. She spoke about the MHC's activities and accomplishments from the last year, and explained challenges faced by the organization.

3. Waste Management Update, by Mark Harrick and Tom Cascio

Tom Cascio from Waste Management said the city's collection contract is coming up and he wanted to share some ideas that the company has had about how to make collection safer, more efficient and more cost-effective.

First, he said that if the city were to limit or eliminate street parking in a neighborhood during the night that garbage collection is scheduled, it would speed up collection, keep the neighborhood cleaner, and be a safer environment for workers.

Additionally, he said that a move to citywide utilization of carts would improve all the same metrics.

Following the presentation, Commissioner Smith said the move to recycling bins was a big shift for people, and she said the city may want to consider some outreach and education prior to making any other big shifts. She also said she struggles with the idea of implementing a parking ban tied to garbage collection.

Commissioner Hanley said she wanted to clarify that the Commission has not created or previously discussed these ideas and said these are Waste Management's proposals.

Commissioner Stonehouse said he also doesn't like the idea of banning parking. He said he can see how this will help Waste Management but isn't sure it will be beneficial for residents or visitors.

4. Consent Agenda

Commissioner Jermey Ottaway moved to Approve the Consent Agenda as presented, seconded by Commissioner Jessica Hanley and Carried Unanimously.

4.a. Approve the minutes of the July 31, 2023 regular Commission meeting

4.b. Approve the total bills payable in the amount of $ 4,934,639.31

4.c. Fire Department Radios

4.d. Michigan Homeowner Assistance Fund (MIHAF) Participation Provider

4.e. Planned Unit Development Agreement - 480 River Park Circle - Lot 12

4.f. Presque Isle Dredging Project - NEPA Technical Services Change Order

4.g. Rotary Club of Marquette West - Special Event Permit

4.h. Summer Craftacular - Special Event Permit

New Business

5. City Manager and City Attorney Performance Evaluation Process

Mayor Pro Tem Sally Davis moved to Authorize the appointment of three Commissioners to serve on a committee to review and compile the City Manager's and City Attorney's performance evaluations and to make a recommendation regarding future terms of employment and compensation, seconded by Commissioner Jessica Hanley and Carried Unanimously.

Following the vote, Mayor Mayer stated that he would be appointing Commissioners Smith, Ottaway and Hanley to this committee.

6. Kids Cove Playground Contract Award and Budget Amendment

Commissioner Jessica Hanley moved to Approve the budget amendment for Kids Cove Inclusive Playground to reflect $1,750,000 in revenues and $1,750,000 in expenditures; approve the contract with Associated Constructors LLC in the amount of $1,601,528 and authorize the Mayor and Clerk to sign the contract following attorney review, seconded by Commissioner Jennifer Smith and Carried Unanimously.

Public Comments - Comments may not exceed three minutes per person. Please state your name and physical address when making public comments.

Margaret Brumm said Waste Management presented a common-sense recommendation on how to address an issue. She said it is surprising that the Commission is comfortable providing support for the inclusive playground plan for children, while remaining silent on the concerns she has voiced regarding the driving/walking hours on Presque Isle.

Colleen Roberts said she would support trading the Cliffs-Dow property for use as a future veterans' home. She said it's a win-win and she thinks citizens would support the move.

Geraldine Nault spoke on garbage pickup. She said she likes the cart system, and it is picked up reliably and on-time.

Martha Rice said she is upset about the discussions about Presque Isle, and is especially concerned about a rumor she has heard that that the City plans to eliminate all vehicle traffic on the island.

Comments from the Commission

Commissioner Ottaway said there is no intention from staff or the City Commission to ban cars on Presque Isle.
Mayor Pro Tem Davis thanked the volunteers and staff that took part in the recent Lower Harbor cleanup. She also recognized the life and myriad local contributions of former Marquette Mayor Dan Mazzucchi, who died recently.
Commissioner Smith said the Commission has not spoken much about this summer's Presque Isle Park driving hours because it was not a Commission decision to begin with. She said the Commission has been supporting that staff decision. She provided an overview of the driving hours on the island and said there is no plan that she is aware of that would permanently limit driving on the island.
Commissioner Stonehouse talked about the historical importance of Presque Isle and about the difficulty in making a public space like that available equitably to people with various interests. He said the way this discussion is currently being handled is not productive. He then complimented Dan Mazzuchi, who he said led a life of achievement, got things done and made the city better than it was when he arrived.
Commissioner Hanley reiterated that the Presque Isle Park decision was made at the staff level. She said the staff is charged with making day-to-day decisions in the City, while the Commission's role is to make large decisions, support staff and question when necessary. She said the City and the Commission are constantly working to keep costs low and service high, and noted that rising costs have made it difficult for the City, as well as residents.
Mayor Mayer said he is confident that every member of the Commission has sought information on the changes to driving hours at the island, and that it became clear that the decision was made for good reasons. He said the idea that someone would question the capabilities of the City leadership over that decision is laughable. He praised City staff.

Comments from the City Manager

City Manager Karen Kovacs said the shift in driving hours on Presque Isle was solely an operational decision, and she said it would be evaluated moving forward, as all such decisions are.

Adjournment

Mayor Mayer adjourned the meeting at 7:05 p.m.

Cody O. Mayer, Mayor

Rachel Dugas, Deputy City Clerk
for Kyle Whitney, City Clerk

If you require assistance to participate in any meeting, program or activity offered by the City of Marquette, please provide advanced notice to City of Marquette ADA Coordinator Eric Stemen at 906-225-8978 or via email at estemen@marquettemi.gov.

CITY OF MARQUETTE
PLANNING AND ZONING
1100 Wright Street
MARQUETTE, MI 49855
(906) 228-0425
www.marquettemi.gov

MEMORANDUM

TO: Dave Ollila, property owner
FROM: Dave Stensaas, City Planner and Zoning Administrator
DATE: August 25, 2025
SUBJECT: **Rezoning of 480 River Park Circle**

City staff will be initiating a rezoning process for your property at 480 River Park Circle and bring the request to the Planning Commission in a public hearing on September 16, 2025. The right to develop this property via the site plans for the Shophouse Park Planned Unit Development (PUD) has been terminated due to non-completion, per Article 54.323(I)(6) of the City's Land Development Code:

> **Expiration.** Within a period of two (2) years following approval of the PUD Agreement by the City Commission, preliminary plats (*Section 54.501*) or final site plans (*Section 54.1402*) for an area embraced within the PUD must be submitted as hereinafter provided. If such plats or plans have not been submitted within the two-year period, the right to develop under the approved plan shall be terminated by the City. Upon the developer's showing of good cause, the Planning Commission can recommend and the City Commission grant an extension of up to two (2) years for submission of the preliminary plat and/or final site plan. If the right to develop under the approved plan is terminated by the City, the City shall commence rezoning the site to its previous zoning classification or a different zoning classification supported by the Master Plan, in accordance with *Section 54.1405*.

Prior to the Shophouse Park PUD approval, the subject property was designated as Industrial-Manufacturing (I-M) on the City's published Zoning Map, and that is the zoning classification that our Staff believes is most compatible with the current adjacent land uses. Our Staff will thus propose the I-M zoning district classification to the Planning Commission in our Staff Report for the rezoning hearing.

Cc: City Attorney, Zoning Official, Director of Community Development

ORDINANCE #25-12
AN ORDINANCE TO AMEND MARQUETTE CITY CODE CHAPTER 54 – ZONING, BY CHANGING THE ZONING DESIGNATION OF THE PROPERTY AT 480 RIVER PARK CIRCLE

The City of Marquette Ordains:

SECTION 1. Zoning Designation
The zoning of the property located at 480 River Park Circle is hereby changed from Planned Unit Development (PUD) to Industrial-Manufacturing (I-M).

SECTION 2. Map Revision.
This change shall be shown on the Marquette City Zoning Map.

SECTION 3. Effective Date.
This ordinance shall take effect ten days after adoption but not before publication.

_____ _____
Jessica Hanley, Mayor Kyle Whitney, City Clerk

Date Adopted: _____ Date Published: _____

Agenda Date: 9/8/2025

Consent Agenda - Roll Call Vote
Travel Lift Agreement

BACKGROUND:

Peter Frazier Sr. requested the City Commission renew his agreement for storing and operating the 35 BFM Travel Lift at Cinder Pond Marina. The agreement has a term of five years, and the rent is proportionate to the number of vessels assisted.

FISCAL EFFECT:

The Cinder Pond Marina fund will receive $20.00 per vessel that is 25 feet or longer and $10 per vessel that is less than 25 feet in length.

RECOMMENDATION:

Approve the use agreement with Pete Frazier Sr. to store and operate the 35 BFN Travel Lift at Cinder Pond Marina, and authorize the Mayor and Clerk to sign the agreement.

ALTERNATIVES:

As determined by the Commission.

ATTACHMENTS:

Description

- Agreement, Insurance and Exhibit A

AGREEMENT FOR USE OF MATTSON PARKING LOT AND LAUNCH FACILITY

This Agreement, made and entered into this _____ day of _____, 2025, by and between the City of Marquette, a municipal corporation, of 300 W. Baraga Avenue, Marquette, MI 49855 (hereinafter referred to as the "City"), and Pete Frazier, (hereinafter referred to as "Frazier") of 460 E. Ridge Street, Marquette, MI 49855.

WHEREAS, the City is the owner and operator of Mattson Park parking lot and Cinder Pond Marina boat launch located at 260 N. Lakeshore Blvd., Marquette, Michigan (hereinafter "Mattson Parking Lot"); and

WHEREAS, the City is willing to allow Frazier use of Mattson Parking Lot in accordance with the terms and conditions contained herein from May 1, 2025 through April 30, 2030.

NOW, THEREFORE, in consideration of the mutual promises of the parties and other good and valuable consideration, it is agreed as follows:

1. Frazier shall pay a per operation fee in the amount of $20.00 per lift for each vessel 25 feet in length or longer and $10.00 per lift for each vessel less than 25 feet in length that Frazier either launches or extracts from the Cinder Pond Marina Travelift well. Frazier shall provide City accurate records reflecting the dates and number of vessels launched and extracted from the Cinder Pond Marina Travelift well no later than the 10th day of each month. The fee will be billed by City on an annual basis and shall be due no later than 15 days after billed. Frazier shall also pay the cost of all operational expenses including fuel and maintenance.

2. City grants non-exclusive access and use of the Mattson Parking Lot, as defined above, to Frazier during the term of this agreement.

3. Frazier's access shall be for launching and extracting boats from the Cinder Pond Marina Travelift well only, and for no other purpose and such activities shall only be conducted

during normal City park hours.

4. Maintenance of the Travelift in a safe and working manner shall be the responsibility of Frazier. Frazier shall be responsible for notifying City of needed maintenance regarding Mattson Parking Lot within seven (7) days of discovery. City shall provide a minimum of twenty-four (24) hours notice of performance of maintenance and all maintenance will be performed in a reasonable time frame.

5. The City shall be notified in writing of any damage to the Mattson Parking Lot or adjacent grounds resulting from Frazier's use within twenty-four (24) hours after the damage occurs. The City is responsible for all repairs resulting from Frazier's use, at Frazier's expense. Frazier shall reimburse City for such repairs no later than seven (7) days after repairs are made.

6. Frazier agrees to indemnify and hold harmless the City, its officials, employees, volunteers and others working on behalf of the City against any and all claims, demands, suits or loss, including all costs connected therewith and for any damages which may be asserted, claimed or recovered against or from the City, its officials, employees, volunteers and others working on behalf of the City by reason of personal injury, including bodily injury or death and/or property damage, including loss of use thereof, which arises out of or is in any way connected or associated with this Agreement.

7. Frazier shall procure and maintain insurance for the duration of this Agreement against liability claims for injuries to persons or damages to property which may arise from or in connection with Frazier's use of the Mattson Parking Lot. All required insurance policies shall name the City as an additional insured. The insurance required by this Agreement shall be in amounts acceptable to the City and shall be endorsed to state that coverage shall not be reduced or canceled except after thirty (30) days notice to the City by certified mail, return receipt requested.

Frazier shall have a continuing obligation to provide City with a copy of its valid insurance policies, and shall promptly provide City an updated copy upon renewal.

8. The City has the right to inspect Mattson Parking Lot at any time. Any violation noted in any inspection, which does not result from US Coast Guard or City use of Mattson Parking Lot, shall be corrected by Frazier within twenty-four (24) hours. The City may, following notice, immediately deny Frazier the right to use the Travelift at any point and for any period of time if violations are not corrected as required or if such violation provides imminent health and safety concerns.

9. Upon written consent of the City's Community Services Department, Frazier may construct temporary structures in Mattson Parking Lot.

10. The occurrence of any of the following shall constitute a default by Frazier:

a. Failure to perform any provision of this Agreement, if the failure to perform is not cured within a reasonable time frame as designated by the City, after the City provides written notice to Frazier.

b. Failure to maintain insurance as required by this Agreement, which shall be cause for immediate termination of this Agreement by the City.

c. Frazier files a petition in bankruptcy or insolvency or for reorganization, or involuntary proceedings are filed against Frazier under applicable bankruptcy laws.

d. Frazier fails to uphold any obligation set forth herein.

11. In the event of default, the City shall provide Frazier written notice of default. Frazier shall have a reasonable time frame as designated by the City, after notice is provided to cure said default. Frazier may request a meeting to discuss the default notice with the City Manager and City staff, within the designated time period. No notice shall be deemed a forfeiture or

termination of this Agreement unless the City specifies such in the notice. In the event Frazier does not cure the default within the designated time period, the City shall have the following remedies, which shall not be exclusive and shall be in addition to any other remedies now or later allowed by law:

a. The City may elect to continue this Agreement.

b. The City may terminate this Agreement, by providing specific written notice to this effect.

c. The City shall be entitled to recover all amounts, including any attorney fees incurred by the City in pursuit of the default.

12. Any notice required under this Agreement shall be in writing and served by prepaid, first class mail to the address listed on the first page of this Agreement, or any other address as either party may provide to the other in writing.

13. No delay or omission in the exercise of any right or remedy of the City on any default by Frazier shall impair such right or remedy or be construed as a waiver of the right to pursue such remedy.

14. Nothing in this agreement shall render the City in any way a partner, in joint ventureship with Frazier.

15. Upon expiration or termination of this agreement, and without any extensions or renewals of this Agreement, Frazier shall either renew this Agreement, enter into a new agreement, or at its sole expense shall remove all of its goods, effects, and equipment. Any goods, effects or equipment owned by Frazier that are not removed shall be deemed to have been abandoned and shall become the property of the City.

16. This Agreement contains the entire agreement of the parties with respect to its subject

matter. This Agreement may not be modified except by a written document signed by the parties.

17. This Agreement shall bind and benefit the parties and their successors and permitted assigns.

18. This contract is executed in the City of Marquette, State of Michigan, and shall be construed under the laws of the State of Michigan, and the parties agree that any action relating to this contract shall be instituted and prosecuted in the courts of the County of Marquette, State of Michigan, and each party waives the right to change of venue.

19. Frazier's primary contact with the City shall be through the City of Marquette Community Services Director, or any person designated by him/her.

20. Frazier may terminate the agreement with at least 30 days notice, in writing, to the City Manager.

CITY OF MARQUETTE

Jessica Hanley, Mayor

Pete Frazier

Kyle Whitney, City Clerk

APPROVED AS TO SUBSTANCE:

Karen M. Kovacs, City Manager

APPROVED AS TO FORM:

Suzanne C. Larsen, City Attorney

LAKESUP-06 JWANBERG

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 8/15/2025

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: Jane Wanberg	
Acrisure Great Lakes Partners Insurance Services, LLC 223 West Grand River Ave #1 Howell, MI 48843	PHONE (A/C, No, Ext): (906) 315-7253	FAX (A/C, No):
	E-MAIL ADDRESS: jwanberg@acrisure.com	
	INSURER(S) AFFORDING COVERAGE	NAIC #
	INSURER A : The Hanover Insurance Company	22292
INSURED	INSURER B :	
Lake Superior Yacht Yard 460 E. Ridge Marquette, MI 49855	INSURER C :	
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY						EACH OCCURRENCE	$ 1,000,000
	CLAIMS-MADE X OCCUR	X		IHZ D370273	9/12/2024	9/12/2025	DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 100,000
							MED EXP (Any one person)	$ 10,000
							PERSONAL & ADV INJURY	$ 1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$ 2,000,000
	POLICY PRO-JECT LOC						PRODUCTS - COMP/OP AGG	$ 2,000,000
	OTHER:							$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$
	ANY AUTO						BODILY INJURY (Per person)	$
	OWNED AUTOS ONLY / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	HIRED AUTOS ONLY / NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
	UMBRELLA LIAB OCCUR						EACH OCCURRENCE	$
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$
	DED RETENTION $							$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y/N						PER STATUTE / OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)	N/A					E.L. EACH ACCIDENT	$
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$
							E.L. DISEASE - POLICY LIMIT	$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
Additional Insured per Policy Form CG2013. All coverages are subject to insurance policy terms and conditions.

CERTIFICATE HOLDER

City Of Marquette
300 W. Baraga
Marquette, MI 49855

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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EXHIBIT A


ADDITIONAL
STORAGE AREA
Cinder Pond Marina
STORAGE &
USE AREA

Agenda Date: 9/8/2025

New Business
Schedule Public Hearing- FY 2026 Budget

RECOMMENDATION:

Schedule a Public Hearing for September 29, 2025, at 6:00 p.m. to review and adopt the FY 2026 Budget.

ALTERNATIVES:

As determined by the Commission.

ATTACHMENTS:

Description

- Budget 2026 PH Notice

NOTICE OF PUBLIC HEARING

NOTICE IS HEREBY GIVEN that the Marquette City Commission has made the following estimates of all expenditures which will be required to be made from the several funds of the City, and for payment of interest and indebtedness to fall due, during the fiscal year beginning October 1, 2025.

PROPOSED REVENUES AND EXPENDITURES
Fiscal Year 2026

General Fund	**$**	**26,562,330**
Major Street Fund	**$**	**3,544,150**
Local Street Fund	**$**	**3,169,480**
Public Art Fund	**$**	**185,930**
Sanitation Fund	**$**	**3,354,900**
Brownfield Funds	**$**	**7,469,660**
Local Development Finance Authority Fund	**$**	**2,646,200**
Public Education Government Fund	**$**	**18,000**
Drug Forfeiture Fund	**$**	**97,990**
Road Maintenance Fund	**$**	**212,930**
Road Safety Fund	**$**	**23,660**
Criminal Justice Training Fund	**$**	**34,000**
Opioid Settlement Fund	**$**	**39,930**
Senior Services Fund	**$**	**1,040,850**
Debt Service Funds	**$**	**2,534,020**
Capital Improvement Fund	**$**	**26,000**
Tourist Park Fund	**$**	**730,930**
Lighthouse Park Fund	**$**	**162,860**
Fuel System Fund	**$**	**573,970**
Stormwater Utility Fund	**$**	**3,201,850**
Marquette Area Wastewater Treatment Fund	**$**	**6,009,880**
Water Utility Fund	**$**	**7,249,480**
Sewage Disposal Fund	**$**	**10,195,850**
Presque Isle Marina Fund	**$**	**314,090**
Cinder Pond Marina Fund	**$**	**336,470**
Lakeview Arena Fund	**$**	**1,123,970**
Technology Services Fund	**$**	**1,654,560**
Municipal Service Center Fund	**$**	**1,566,590**
Motor Vehicle Equipment Fund	**$**	**3,682,430**
Energy Enhancements Fund	**$**	**2,258,910**
Peter White Public Library	**$**	**2,403,790**
Downtown Development Authority	**$**	**2,205,360**
TOTAL ALL FUNDS	**$**	**94,631,020**

NOTICE IS FURTHER GIVEN that a public hearing will be conducted in the City Commission Chambers at City Hall, 300 West Baraga Ave., at 6:00 p.m. on Monday, September 29, 2025. At that hearing, interested people shall have the opportunity to provide oral or written comments or ask questions concerning said proposal and the passage of the fiscal year 2026 City General Appropriations Act. A copy of the fiscal year 2026 budget, which contains detailed information on these proposed revenues and expenditures, is available in the office of the City Clerk during regular business hours, at Peter White Public Library, and on the City's website at www.marquettemi.gov. These estimates and this notice of hearing are given in accordance with the requirements of the City Charter.

The property tax millage rate proposed to be levied to support the proposed budget will be subject of this hearing. The proposed millage rates are as follows:

· The total number of ad valorem operational mills to be levied by the City of Marquette in July of 2025 is **17.4076** mills.

· The total number of ad valorem operational mills to be levied by the Peter White Public Library in July of 2025 is **1.4586** mills.

· The total number of ad valorem debt mills to be levied by the Peter White Public Library in July of 2025 is **0.3577** mills.

· The total number of ad valorem operational mills to be levied by the Downtown Development Authority in July of 2025 is **1.7996** mills.

· The total number of ad valorem operational mills to be levied by the City of Marquette Senior Services in July of 2025 is **0.3470** mills.

If you require assistance to participate in this hearing, please provide advance notice to the office of the City Clerk.

Kyle Whitney
City Clerk

Agenda Date: 9/8/2025

New Business

Contract Approval - In-situ Remediation Services - Former Cliffs-Dow Site

BACKGROUND:

The U.S. Environmental Protection Agency (EPA) awarded the City a $964,250 grant on September 11, 2023 for evaluation and cleanup services at the Cliffs-Dow site. The City hired TriMedia Environmental & Engineering Services, LLC through an RFP process to act on the City's behalf as a qualified environmental professional consultant.

TriMedia assisted the City in putting together an RFP for a cleanup contractor to conduct in-situ remediation at the site. The RFP was advertised for bids on July 17, 2025 with a bid opening on August 20, 2025. Three cleanup contractors responded with proposals and the results are summarized below.

Regenesis Bioremediation $519,976.00
ORIN Technologies $802,148.00
Taplin Group, LLC $5,077,659.40

The proposals were reviewed by the City, TriMedia and the City's environmental legal counsel (Foley, Baron, Metzger & Juip, PLLC). The consensus among the group is to recommend awarding the cleanup contract to ORIN technologies based on their complete RFP response which includes a bench study, remaining under budget, and providing the most value at the cost provided.

FISCAL EFFECT:

None. The cost associated with this work is fully covered by an EPA cleanup grant.

RECOMMENDATION:

Award the Cliffs-Dow Brownfield Site - In-situ Remediation Services Contract to ORIN Technologies of Verona, Wisconsin at cost not-to-exceed $802,148, and authorize the Mayor and Clerk to sign the contract.

ALTERNATIVES:

As determined by the Commission.

ATTACHMENTS:

Description

- Regenesis Bioremediation Services
- ORIN Technogies Proposal
- Taplin Group, LLC - Proposal
- Cleanup RFP
- EPA Grant Agreement
- Professional Services Contract Award Recommendations
- ORIN Technologies Professional Services Contract
- ORIN Technologies Insurance

REGENESIS®

PROJECT NAME

Cliffs-Dow Site

Final Design and Application Proposal



PREPARED FOR

City of Marquette, MI

TriMedia Environmental and Engineering
Ryan Whaley
rwhaley@trimediaee.com

PREPARED BY

REGENESIS
Christian Parke
cparke@regenesis.com

Will Mohan
wmohan@regenesis.com

August 19th, 2025

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PROJECT SUMMARY

REGENESIS is pleased to present the City of Marquette, MI and TriMedia Environmental and Engineering with this detailed remedial design and precise cost estimate for the Cliffs-Dow Site project. This summary section provides an overview of the project goals and the proposed solution. Subsequent sections detail the assumptions, figures, costs, technical overviews, and supporting materials pertinent to your project.

Project Goals

The subject site, located in Marquette, MI, is impacted by petroleum hydrocarbons and phenols with contamination extending off site. Regulatory agencies require remediation to prevent further migration above groundwater surface water interface levels and reductions in source area concentrations.

Key drivers and challenges for this remediation effort include:

- **Regulatory Compliance**—To achieve site goals, the site must comply with State of Michigan GSI standards at the property line and reduce overall source area concentrations upgradient. The PetroFix remediation approach is designed to reduce known contaminants of concern to below GSI standards at the property line.
- **Plume Migration Risk**—Groundwater flow transports contaminants toward Lake Superior beyond the property line, increasing liability and requiring immediate mitigation.
- **Funding Requirements** – This project is funded through a federal Brownfields Cleanup Grant, necessitating cost-effective, field-proven solutions.

Proposed Solution

To achieve your project goals, REGENESIS proposes an integrated treatment strategy using PetroFix® remedial fluid—an innovative solution designed specifically for petroleum-contaminated sites. This strategy combines rapid stabilization of petroleum hydrocarbon plumes with enhanced biodegradation and cradle-to-grave remediation support:

- **Rapid Petroleum Stabilization:** PetroFix rapidly interacts with petroleum compounds, stabilizing them to limit migration and create favorable conditions for biodegradation.
- **Enhanced Biodegradation:** The unique formulation of PetroFix stimulates native microbial activity, accelerating the breakdown of petroleum constituents into benign end products.
- **Enhanced Distribution Efficiency:** Utilizing low-pressure injection, PetroFix achieves superior subsurface distribution, ensuring uniform treatment across the contaminated zone and maximizing overall remediation effectiveness.
- **Sustained Remediation Performance:** Engineered for longevity, PetroFix delivers continuous treatment over multiple years, ensuring that both initial and residual petroleum contaminants are effectively managed for long-term site recovery.

Technical Approach

The following sections discuss site-specific recommendations identified as part of your design.

Application Method and Considerations

Primary Recommended Application Method

- Multi-Port Retractable Screen (for bottom-up; commonly used at most sites)

Multi-port tools



Secondary Application Method - Regenesis will bring additional tooling to address site variability:

- Expendable Tips
- Pressure activated injection tips

Radius of Influence Testing (ROT)

- Conduct ROT at every monitoring well (MW) or piezometer (PZ) within the treatment area.
- Collect visual groundwater samples from monitoring locations onsite.
- Adjust injection point spacing and volumes as needed based on ROT results.

Estimated Flow Rates and Pressures - PetroFix is designed for application at low to moderate pressures:

- **Typical Range**: 20–80 PSI and 2–10 GPM per point.
- **Precautions**: Higher pressures may be required for some sites but should be managed to avoid fracture emplacement or surfacing near the ground surface.

Recommended PetroFix Monitoring Parameters

Regenesis recommends collecting baseline samples for all recommended monitoring parameters before injection. Be sure to review state-specific Underground Injection Control (UIC) guidelines for any additional required parameters not listed in this table.

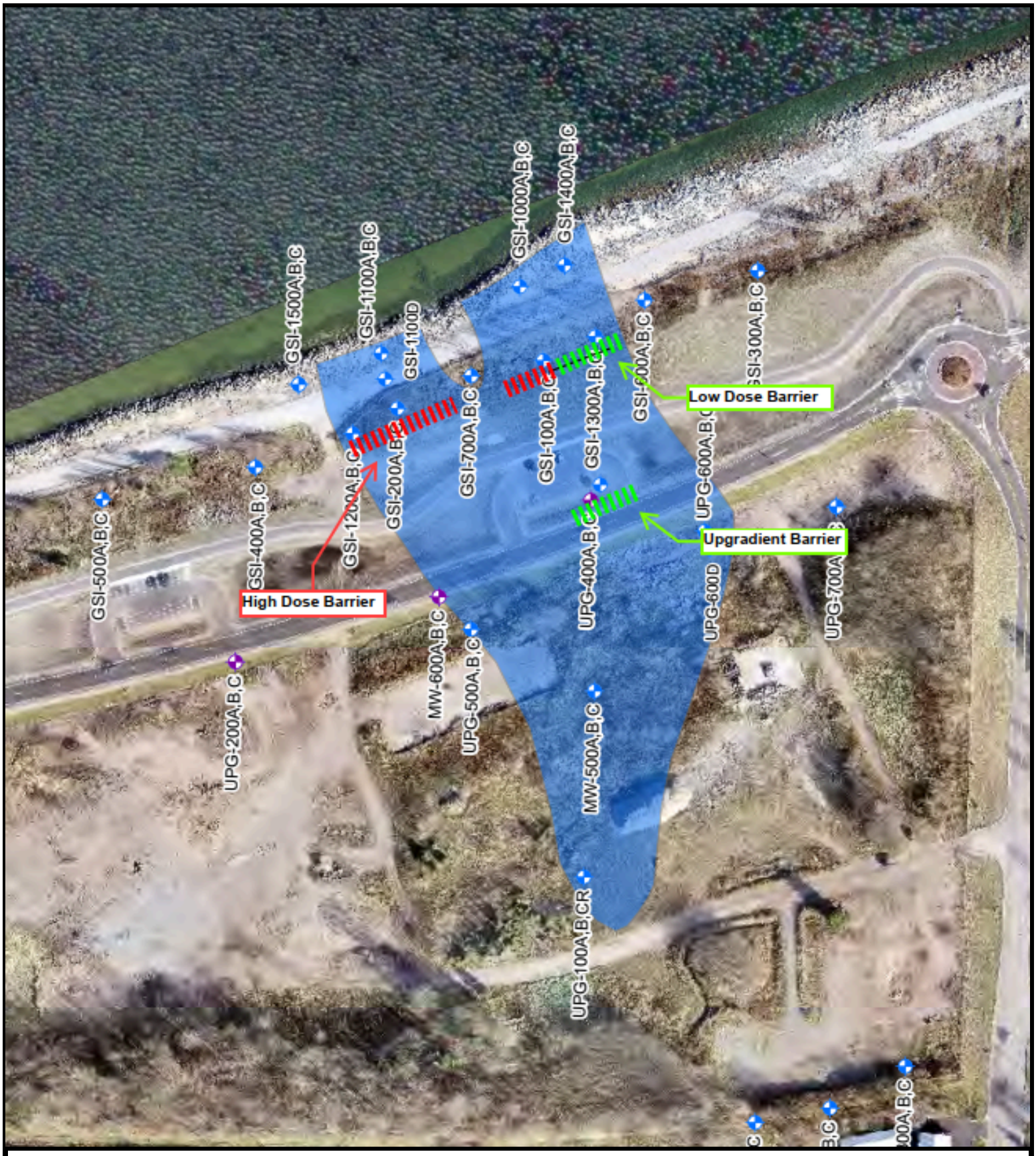
Recommended Monitoring Parameters

Analytical Parameter	Method
Contaminants of Concern (COC's)	Varies by site. Recommend a minimum of BTEX analysis plus Total Petroleum Hydrocarbon (TPH) measurements for gasoline (TPH-G) and/or diesel range contamination (TPH-D) based on contaminant source.
pH	Meter reading taken in flow-through cell
Oxidation Reduction Potential (ORP)	Meter reading taken in flow-through cell

Optional - Baseline and at least 1 year post application (To document microbial response) | Evaluation of biodegradation response through measurement of functional genes | QuantArray Petroleum

**Cations are only recommended for baseline analysis in applications using dedicated injection wells or open borehole injections.*

PetroFix Distribution and Monitoring: The appearance of PetroFix in monitoring wells is normal and desirable and confirms product distribution. An optional clearwater flush may be used to clear it from wells post-injection. Please review the **REGENESIS Groundwater sampling guidance document for PetroFix** for extensive sampling guidance.



Cliffs-Dow Site
TriMedia Environmental and Engineering
Not yet submitted

Figure 1-Treatment Area Map

REGENESIS®

REMEDIAL DESIGN SUMMARY

Area Name	Barrier Length (feet)	Rows Per Barrier	Injection Points Per Barrier	Vertical Injection Interval (ft bgs)	PetroFix Amount (pounds)	Injection Volume Per Area (gallons)
PetroFix Barrier Estimates						
Low Dose	**70**	1	14	5 to 48	8,000	24,924
High Dose	**175**	1	35	5 to 48	44,000	63,269
Upgradient Barrier	**85**	1	17	17 to 27	2,000	7,190

A review of the Cliffs-Dow site ("the site") reveals the presence of petroleum hydrocarbons (PHCs) and phenolic compounds in the shallow aquifer system. These compounds are currently present in a mixed contaminant plume that is migrating off-site towards Lake Superior. Consequently, remedial action is required by the local regulatory body, Michigan Department of Environment, Great Lakes and Energy (EGLE). The goals of the treatment are to: 1) Reduce source area mass and 2) EGLE is requiring downgradient, compliance wells meet Generic Cleanup GSI criteria (Part 201) and Mixing Zone-Based GSI criteria.

Therefore, to address these impacts, we are proposing a comprehensive remedial program using a passive, In-Situ treatment system. The proposed In-Situ treatment system will use a combination of In-Situ Sorption and Anaerobic bioremediation using PetroFix®. The PetroFix treatment system will be installed using series of Permeable Reactive Barriers (PRBs) to concurrently capture and treat the contaminant plume passing through the PRBs and reduce source mass discharge. PetroFix is a form of colloidal activated carbon that will deposit a thin layer onto the aquifer surfaces and subsequently act as a filter, removing dissolved phase contaminants. The small size of the CAC technology allows for low pressure injections, thereby circumventing the need for high pressure injections and hydraulic fracturing like other in-situ adsorbent technologies. Nitrate and sulfate will be co-applied with PetroFix to simulate anaerobic biodegradation of PHCs and phenolic compounds. Nitrate and sulfate have been well documented to enhance anaerobic biodegradation of PHCs. In addition, phenolic compounds are amenable to anaerobic biodegradation under nitrate reducing conditions. Therefore, the electron acceptor blend will promote biodegradation of both the PHC and phenolic compounds.

The PRB system will be installed using a direct push application approach (DPT) using a geoprobe drill rig. The injections will be completed bottom up using low pressure injections to optimize subsurface distribution and provide uniform emplacement of the injectate. To enhance remedial efficacy, the proposed PRB system uses a progressive dosing scheme to match the segments of high and lower contaminant mass along the plume body (i.e., high and low dose). Further details on this layout of this remedial program can be seen in the treatment map and design summary within this proposal (page 5-9).

REMEDIAL DESIGN OUTPUT

REGENESIS

PetroFix Application Summary
Barrier Estimate

Former Cliffs Dow Site

Low Dose

PetroFIX Remediation Fluid

PetroFix Amount	8,000 lb
Electron Acceptor Amount	400 lb
Barrier Length	70 ft
Delivery Points	14
Point Spacing Within Rows	5.0 ft
Point Spacing Between Rows	N/A ft
Number Of Barrier Rows	1
Top of Treatment Interval	5.0 ft bgs
Bottom of Treatment Interval	48.0 ft bgs
Treatment Area	700 ft^2
PetroFix Dose Within Barrier	7.2 lb/yd^3

Total Volume	24,924 gal
Product Volume	819 gal
Water Volume	24,105 gal
Injection Volume Per Point	1,780 gal
Injection Volume Per Vertical Foot	41 gal
Product/Point	58.5 gal
Water/Point	1,721.8 gal
Soil Type	Mix of Coarse and Fine
Effective Pore Volume Fill %	55%

Mix Tank Volume*	275 gal
Dilution Factor	26.0 x
PetroFix per Mix Tank	9.0 gal
Water per Mix Tank	266.0 gal
Electron Acceptor per Mix Tank	4.4 lb
Number of Batches Required	90.6

**Adjust tank volume to that used in field.*

AREA NOTES

REGENESIS

PetroFix Application Summary
Barrier Estimate

Former Cliffs Dow Site

High Dose

PetroFIX Remediation Fluid

PetroFix Amount	44,000 lb
Electron Acceptor Amount	2,200 lb
Barrier Length	175 ft
Delivery Points	35
Point Spacing Within Rows	5.0 ft
Point Spacing Between Rows	N/A ft
Number Of Barrier Rows	1
Top of Treatment Interval	5.0 ft bgs
Bottom of Treatment Interval	48.0 ft bgs
Treatment Area	1,750 ft^2
PetroFix Dose Within Barrier	15.8 lb/yd^3

Total Volume	63,269 gal
Product Volume	4,503 gal
Water Volume	58,766 gal
Injection Volume Per Point	1,808 gal
Injection Volume Per Vertical Foot	42 gal
Product/Point	128.7 gal
Water/Point	1,679.0 gal
Soil Type	Mix of Coarse and Fine
Effective Pore Volume Fill %	56%

Mix Tank Volume*	275 gal
Dilution Factor	12.0 x
PetroFix per Mix Tank	19.6 gal
Water per Mix Tank	255.4 gal
Electron Acceptor per Mix Tank	9.5 lb
Number of Batches Required	230.1

**Adjust tank volume to that used in field.*

AREA NOTES

REGENESIS

PetroFix Application Summary
Barrier Estimate

Former Cliffs Dow Site

Upgradient Barrier

PetroFIX Remediation Fluid

PetroFix Amount	2,000 lb
Electron Acceptor Amount	100 lb
Barrier Length	85 ft
Delivery Points	17
Point Spacing Within Rows	5.0 ft
Point Spacing Between Rows	N/A ft
Number Of Barrier Rows	1
Top of Treatment Interval	17.0 ft bgs
Bottom of Treatment Interval	27.0 ft bgs
Treatment Area	850 ft^2
PetroFix Dose Within Barrier	6.4 lb/yd^3

Total Volume	7,190 gal
Product Volume	205 gal
Water Volume	6,985 gal
Injection Volume Per Point	423 gal
Injection Volume Per Vertical Foot	42 gal
Product/Point	12.0 gal
Water/Point	410.9 gal
Soil Type	Mix of Coarse and Fine
Effective Pore Volume Fill %	57%

Mix Tank Volume*	275 gal
Dilution Factor	30.0 x
PetroFix per Mix Tank	7.8 gal
Water per Mix Tank	267.2 gal
Electron Acceptor per Mix Tank	3.8 lb
Number of Batches Required	26.1

**Adjust tank volume to that used in field.*

AREA NOTES

RRS Statement of Qualifications

RRS provides turn-key remediation planning, design, and application services. RRS field scientists are college degreed professionals who understand the details of each remediation design, the conceptual site model, the remediation chemistry being applied, the significance of the designed amendment dosing and achieving subsurface distribution, and how a breakdown of any one of these and other factors can result in poor remediation performance. They have the unique background and experience to understand the significance of modifications made in the field.

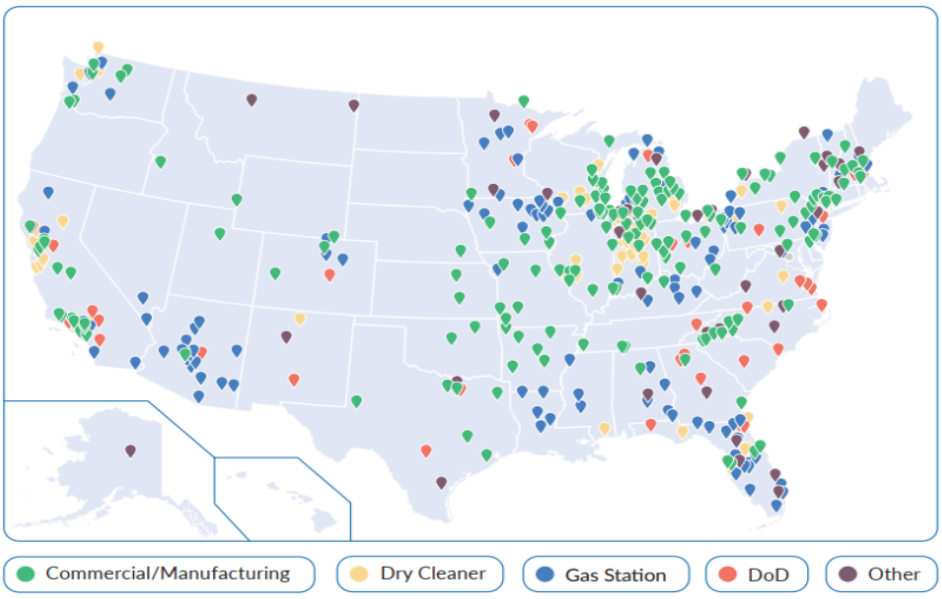
RRS' direct management of the injection program optimizes the design and ultimately, the overall remedy performance. No one has more professional experience handling and applying *in situ* remediation products than RRS personnel.

RRS has been offering industry-leading application services combined with excellence in field activity management for over a decade. We succeed by meeting the cleanup objectives established by the environmental engineering firms who contract our services. To produce this outcome, we employ field-experienced, disciplined, and dedicated project teams who work with our clients to address the unique requirements of each project site. Astute technical insight and timely, direct, and honest communication are hallmarks of RRS. Our reputation for meeting or exceeding clients' objectives has been proven in project successes throughout North America.

EGLE Experience

Regenesis has extensive experience within the state of Michigan on both publicly and privately funded projects, all overseen by EGLE. Regenesis has participated in many EGLE InSIRT TAPS meetings discussing in-situ remediation utilizing fluid injections, including very large-scale projects in line with the scope of this proposed application. EGLE is familiar with the proposed reagent, PetroFix, and has funded many projects through the state's remediation program utilizing the product. PetroFix has also been named in several State of Michigan issued RFPs.

RRS consistently completes over 100 Projects annually across the US. For a current map of projects completed please click this link.



RRS Summary Work Plan

RRS, as part of its role, will operate under the guidance of TriMedia Environmental and Engineering to execute the remedial actions in the field, employing the chosen remediation methodologies. The collaboration between RRS and TriMedia Environmental and Engineering will entail joint responsibilities in carrying out this scope of services. The distribution of responsibilities is elaborated upon in this section as well as under the Assumptions/Qualification segment.

Site Preparation and Setup

RRS will commence work with an initial health and safety site orientation with all personnel present for the site work. A site reconnaissance will be conducted to familiarize the project site and treatment area as part of the site orientation. Notable observations will include vehicle and pedestrian traffic, proximity to sensitive receptors, visual confirmation of private and public utilities located within the treatment area, location of the water source, and product staging area. Once complete, the injection and support equipment will be staged and secured at the most optimal location to conduct the work. Additional site preparation and setup activities may be required based on the final scope of work that are not included here.

At the outset of each day, RRS will convene a safety tailgate meeting to discuss the day's objectives, procedures, and assigned roles and review health and safety concerns. All personnel on-site will be required to participate and acknowledge the information discussed prior to commencing that day's work activities. This proposal's health and safety section provides additional information regarding our health and safety mindset. All on-site personnel will comply with the Occupational Safety and Health Administration (OSHA) 1910.120 HAZWOPER training requirements.

General Means and Methods

A custom-built injection system (see below) will be utilized to handle and deliver the remediation technologies into the contaminated soil and groundwater. The system is designed to mix and provide the remediation solution at the specified solution concentration while allowing our experienced personnel to make on-site modifications to the design if needed.

RRS will be outfitted with various injection tool alternatives compatible with the selected diameter Direct Push Technology (DPT) rods. The injection tool configuration will be advanced to the upper or lower extent of the target treatment zone, and injections will be conducted utilizing either a bottom-up or top-down technique based on the subsurface lithology. The remediation solution will be injected at discrete intervals to cover the entire treatment zone. Injection volumes will be applied at intervals designated by the final remedial design as the injection rods are pushed/pulled through the vertical treatment interval. This process will be repeated until the prescribed injection volumes are completed per injection location. To the extent practical, active injection locations will be spread out over the work area to limit overfilling of the aquifer's pore volume, resulting in unnecessary surfacing of the remediation solution. These procedures may be modified in the field based on observations of the injected remediation technologies.

Pressure, flow rate, and overall volume will be closely monitored and digitally recorded for each injection interval. Simultaneous injections at multiple locations may be performed to enhance efficiencies on-site. RRS will vigilantly monitor the injection locations and surroundings for any surfacing indications, and a spill response kit will remain on standby.

Reagent Distribution Monitoring

Throughout the application, RRS will implement a site-specific Placement Validation (PV) plan utilizing a series of test to monitoring distribution and influence of the remediation technologies. The field tests may include installation of temporary piezometers to monitor water level, groundwater parameters, and groundwater color; and any other field test deemed viable for distribution and influence monitoring. Ultimately, real-time data will be collected and analyzed to corroborate design assumptions and the dispersion of the reagents in the subsurface.

Additionally, groundwater parameters will be monitored in any nearby monitoring wells and temporary piezometers in the immediate area of the injection activities. Monitoring will be conducted utilizing a downhole water quality meter, well bailers, and water level indicator before, during, and after the application. The following parameters will be monitored: depth to water, color (carbon concentration kits), temperature, conductivity, dissolved oxygen (DO), and oxidation-reduction potential (ORP).

Guided by the collected information, the project team may introduce adjustments to the remediation design to enhance the injection application's efficacy. These adjustments might involve alterations in injection concentrations and volume per location.

Application Summary Report Deliverable

Upon the conclusion of the injection operation, RRS will demobilize all equipment and personnel from the site. A comprehensive injection summary report, encompassing details of injection points (interval depths, injection pressure/flow rates, reagent volume, time elapsed, and surfacing occurrences), on-site observations, and any notable information, will be prepared and submitted to TriMedia Environmental and Engineering.

RFP Work Plan Responses

- REGENESIS' overall technical approach is stated above on page 2.
- REGENESIS suggests collecting a baseline groundwater monitoring event approximately one month prior to injection activities.
- RRS estimates an electricity usage of approximately 2,000 kWh per week. RRS will provide their own generator as a dedicated power source.
- RRS does not anticipate any waste generation with the proposed remediation approach.
- RRS estimates a noise level of 80 dB at 100 feet.
- RRS estimates four (4) people will be on site each day. This does not include City of Marquette or TriMedia personnel.
- RRS diligently performs routine and preventative maintenance on all our equipment. We hold our subcontractors to the same equipment maintenance standards. In the circumstance that equipment breaks down, RRS will use best practices to remain efficient in replacing or fixing any equipment in a timely manner. Where possible, RRS will have back up equipment to limit any down time. In the event of an emergency RRS will defer to the site specific health and safety plan. We do not expect any after-hour upset conditions due to all equipment being shut down when RRS is not present. Further, there are no autonomous systems that will be running after working hours. Monday through Friday, RRS staff will be within 20 minutes of the site.

Inline Blending and Injection System

The remediation technologies will be mixed and delivered to the target treatment zone using our Inline Blending and Injection System (IBIS).



IBIS is a self-contained and compact unit configured on a small skid-based frame allowing for easy handling and injection of liquid amendments. The injection system mixes water with up to four liquid remediation amendments in formulated ratios and mechanically blends them through an inline static mixer to produce a final solution for direct application into a treatment zone.

IBIS is equipped with several positive displacement pumps that connect directly to bulk reagent storage containers and a water supply. These pumps are used in combination with mass flow meters in programmable ratios for proper remediation solution ratio control with onboard electronic automation protecting against out-of-ratio mixing. Using mass flow measurements in formulated ratios, IBIS ensures near perfect amendment dosing and blending while eliminating the need for batch tank mixing.

The accurate dosing and blending process is based on the final remedial design dose ratios, which, as part of the initial setup, is programmed into the system by the RRS field scientist through an interactive and fully viewable touch screen.

IBIS can process up to four remediation amendments to deliver a final blended mixture for injection at up to six separate delivery discharge lines simultaneously. IBIS's electronic control features auto-adjust to regulate and maintain safe operating injection flow rates and pressures throughout the delivery system.



Injection flow rates, pressures and volume totals at each line are logged by IBIS continuously during operation. These and other pertinent injection data can be accessed in real-time to keep project stakeholders informed and guide remedial decision-making in the field without communication delays.

IBIS requires an approximate footprint of 15 feet by 15 feet, which includes a designated area for the connection to bulk reagent containers and a dedicated power supply provided by RRS. The system can easily be moved through conventional skid means using a forklift or similar equipment. Discharge lines can reach well beyond the system footprint through the addition of 100 linear-foot injection hose sections.

Benefits of IBIS

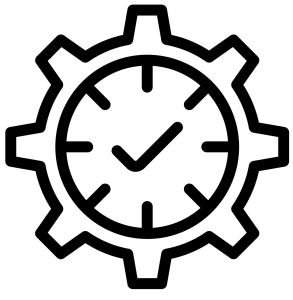
The automated features of IBIS simplify labor-intensive and repetitive tasks, such as mixing reagents and collecting data. This efficiency saves valuable time and allows our field scientists to focus on strategic thinking and problem-solving. By streamlining these processes, our field scientists can leverage their strengths to enhance monitoring of reagent distribution, confirm influences, and improve remediation outcomes. Some specific advantages of using IBIS include:

- Electronic programming of pressure and flow transducers within the system captures relevant injection data at a higher frequency (every 30 seconds) with no manual entry or potential for accidental errors.
- The automated data acquisition is easily downloadable for improved backend analysis and can be provided to clients daily, enhancing communication with stakeholders.
- Programming and shutdown alarms prevented out-of-ratio reagent mixing to guarantee reliability and repeatability, ensuring reagent application consistency throughout the project implementation schedule.
- The automated process eliminates the need to manually weigh, measure, and transfer raw reagents, reducing labor, errors, and waste.
- Mix water and raw reagents are metered and mixed directly from the source, streamlining the process and reducing space requirements.
- Improve Health and Safety through reduced material handling, noise reduction, and reduced spill risks.

IBIS was specifically designed and built to increase onsite efficiencies, reduce labor requirements, and improve reagent dose delivery ratios to the remediation sites through advanced mechanical instrumentation and automated controls. For additional information on IBIS please click the link: **Download IBIS Brochure & IBIS Webpage.**

IBIS Key Benefits

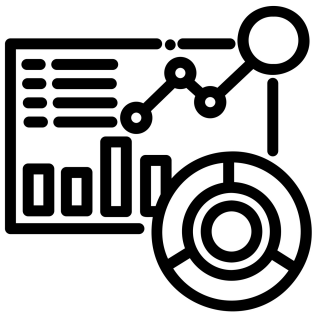
Efficient & Streamlined



Accuracy



Reat-Time Data Collection



Project Responsibilities

RRS will work with TriMedia Environmental and Engineering to implement the scope of work associated with the application of the selected remediation technologies. Responsibilities for the implementation of this project will be shared between RRS and TriMedia Environmental and Engineering. Responsibilities for each are listed below and further under the Assumptions/ Qualifications section.

RRS Responsibilities:

- RRS will provide and ship the specified quantities of the remediation technologies to the site address provided by TriMedia Environmental and Engineering. RRS will coordinate with TriMedia Environmental and Engineering prior to any shipment of product.
- RRS will provide qualified and experienced 40-hour HAZWOPER-certified personnel to implement and manage the remediation application scope of work.
- RRS will take delivery of the remediation technology and stage inside a secure location where the material will not be affected by inclement weather and is accessible by forklift or other equivalent means.
- RRS will provide the means to maneuver the product around the site (forklift or equivalent) as needed during the application activities.
- RRS will provide the water required for the application and the necessary means to convey it to the work area.
- RRS will provide a custom-built injection system and other miscellaneous support equipment to handle, prepare, and apply the remediation technologies during the application process.
- RRS will subcontract a Direct Push Technology contractor with a qualified operator and crew of sufficient size to advance the appropriate tooling to the targeted treatment depth. The Direct Push Technology contractor will be equipped with enough downhole tooling for multiple simultaneous injections, hole abandonment supplies to close boring locations to the ground surface, and other required items to complete the scope of work.
- RRS will coordinate with the Direct Push Technology contractor and request a public utility locate through the nationwide "811 call before you dig" resource to approximate the location of buried public utilities at the site.
- RRS will perform site reconnaissance and pre-application activities that include H&S orientation, sensitive receptor identification and protection, treatment area identification, and equipment staging.
- RRS will prepare a site-specific health and safety plan.
- RRS will provide site safety equipment, including cones and caution tape, to delineate the immediate work area while making efforts to limit the impact on business operations at the site.
- RRS will perform real-time reagent distribution diagnostics during injection activities to allow for field modifications, as needed, to ensure optimal results.
- RRS will monitor the injection flow rates and pressures and observe signs of reagent surfacing around active injection areas. If surfacing is detected, RRS will stop or slow down injection activities at that location to stop additional surfacing and remove/vacuum up recoverable surfaced fluid.
- RRS will work directly with our design team to fill any data gaps identified during the injection application, thereby more effectively maintaining the project objectives and goals.
- RRS will collect project-related refuse and empty treatment chemistry containers daily to keep the site clean. RRS will be responsible for the proper disposal/recycling of all empty product containers.
- RRS will generate a detailed injection summary report upon completion of the injection event. Items to be incorporated will include injection depths, material quantities, injection flow rates and pressures, an injection location map, implementation pictures, and other noteworthy field observations.

TriMedia Environmental and Engineering Responsibilities:

- TriMedia Environmental and Engineering will coordinate project schedule and remediation technology order with REGENESIS to ensure adequate shipping and mobilization time.
- TriMedia Environmental and Engineering will coordinate site access with property owner to coincide with project schedule and identify a secure product staging area.
- TriMedia Environmental and Engineering will procure any necessary permits needed to complete the project including right of way, UIC and municipal.
- TriMedia Environmental and Engineering will provide a depth to water meter and multiprobe with low-flow pump and a flow-through cell capable of reaching the water table and well screen interval while on-site for injection activities.
- Any traffic control requirement beyond providing cones and caution tape is the responsibility of TriMedia Environmental and Engineering.

RRS Assumptions and Qualifications

In generating this proposal, RRS relied upon professional judgment and site-specific information provided by others. Using this information as input, we performed calculations based upon known chemical and geologic relationships to estimate product quantities and subsurface placement required to achieve the remedial goals. The attached design summary tables specify the assumptions used to complete the remedial design. We request that these modeling input assumptions be verified by your firm before injection. Other assumptions and qualifications are as follows:

- The product and services cost outlined will be valid through 2026. If beyond 2026, RRS reserves the right to update the cost.
- The freight charges included for product delivery above are estimated at the time of proposal generation. Actual freight charges are neither set nor guaranteed by RRS and are calculated when the product order is placed. This price may vary from what is estimated above. Actual freight charges for product delivery will be invoiced.
- Freight delivery time frames cannot be guaranteed and RRS will not be responsible for any delays or increased costs associated with those delays.
- If applicable, sales tax charges for product, freight, and services are considered estimated at the time of proposal submittal. The appropriate sales tax category (i.e., product, freight, and services) and actual sales tax rate are finalized at the time of invoice and may change from date of proposal submittal.
- RRS will have access to the site for equipment operation and secure storage of materials and equipment throughout the project duration. Access to each work area location will be clear and free of obstructions. RRS also assumes the injection system can be staged within 80 feet of the furthest injection point location.
- For safety reasons, access to the treatment area will be limited to RRS and TriMedia Environmental and Engineering personnel.
- RRS is not responsible for treatment chemistry infiltration into undesired locations beyond our visible control. The remediation design and injection procedures contain the necessary precautions to minimize the likelihood of surfacing of the treatment chemistry.
- RRS personnel will have access to the site for work up to 12 hours per day, Monday through Friday (daylight hours). However, the standard workday does not exceed 10 hours, with travel time Monday through Friday. A 10-hour workday does not mean 10 hours on-site and/or injection pumping. Additional charges may apply for work completed on Saturday and Sunday.
- RRS is not responsible for damage to unmarked utilities and subsurface structures. TriMedia Environmental and Engineering will review as-built drawings with RRS and confirm clearance prior to injection activities and the remedial fluids being distributed throughout the subsurface.
- Pricing and work schedule assumes union labor and prevailing wages (Davis-Bacon) are required.
- This proposal assumes probing and drilling will begin at the ground surface. If hand auger, concrete/asphalt coring, or air knife services are required, additional charges, including surface restoration will apply.
- RRS assumes that a direct-push style drill rig (7800 series or smaller) can access all injection point locations and drive a minimum of 1.5" diameter injection tooling to the required depth. If site conditions limit the use of the provided direct-push rig or tooling for any injection point and other drilling methods are required to complete the task, additional charges will apply.
- Site conditions can change over time and should be monitored post-injection. RRS is not responsible for changing site conditions after completing the scope of work and demobilizing. Such changes include but are not limited to changes related to applicable borehole abandonment (i.e., swelling of backfill material), surface restoration, well conditions, and on-site utilities.

Health and Safety Plan

RRS is committed to providing a safe and healthy working environment for all on-site employees, including TriMedia Environmental and Engineerings and contractors on-site. Before mobilization, RRS will develop a site-specific Health and Safety Plan (HASP) and designate an on-site safety officer. All personnel on-site are required to participate in daily safety tailgate meetings to proactively identify potential hazards and mitigate risks to the full extent possible.

In addition to the hours of rigorous safety training courses all personnel are required to complete, RRS also incorporates a behavior-based safety program by utilizing our DoneSafe mobile application (app) interface on every site. This app encourages our personnel to actively search for potential on-site risks and document mitigation actions. The effectiveness of our safety program can be seen in our industry-leading Experience Modification Rating (EMR) listed in table below.

Year	Total Hours	EMR
2024	193,337	0.72
2023	193,433	0.67
2022	189,458	0.73
2021	125,592	0.71

RRS safety tailgate meetings and HASP will include the following:

- Site map .
- List of personnel and contact information for employees on-site and supporting the project.
- Route to the nearest occupational treatment facility and hospital along with contact information.
- Job Hazard Analysis (JHA) detailing each job task on-site with its potential hazards and best practices to avoid those hazards.
- Description and hazards of the contaminants of concern (COC) with appropriate Personal Protection Equipment (PPE) requirements.
- List and description of REGENESIS chemicals on-site including a Safety Data Sheet (SDS) for each chemical.
- Checklist of site safety equipment including fire extinguishers, eyewash station, first aid kit, spill prevention kit and any site-specific equipment needed.
- Daily tailgate safety meeting sheet with identified hazards and risks associated with the site and job tasks for that day, along with shared learning observations from the previous day.



Project References

Camp Grayling Army Airfield: This CERCLA site is an active National Guard training facility in Grayling, MI. Working in conjunction with EGLE and USEPA, Regenesis has developed and installed two comprehensive in-situ remedial applications for the treatment of PFAS compounds. The first application took place in 2018 and aimed to serve as a beta test for injectable activated carbon technology. The second application was a large-scale pilot test on another portion of site in which Regenesis applied PlumeStop, another formulation of liquid activated carbon similar to PetroFix, across a very similar application interval of 15 to 55 feet below ground surface on the site. During the larger application, 49,000 gallons of mixed injectate was applied across 40 injection locations aligned to create a permeable reactive barrier to prevent further PFAS migration offsite. The design was reviewed and approved by the InSIRT TAPS team and the USEPA. The application of activated carbon from the first application has held PFAS concentrations at two orders of magnitude reductions for more than six years, reducing concentrations from 200 parts per trillion down to 2 parts per trillion. The second, larger application was completed in August 2025 and we are currently waiting for the first sampling results.

Contact: Rebecca Mora
Email: rebecca.mora@aecom.com
Phone: 714-689-7254

Shaw Air Force Base: This is a collection of operating unit sites on an active Air Force installation in Sumter, South Carolina. The applications were managed by Bay West consultants out of St. Paul, MN and are CERCLA project sites. During the applications, BTEX and TPH concentrations were targeted, ranging from 100 to 50 parts per billion, with a goal of single digit parts per billion concentrations post application. Across the two operating units, 69,000 gallons of mixed PetroFix reagent was applied to 140 injection locations. Both sites received closure letters associated with the contaminant concentration goals being met in performance wells onsite.

Contact: Emily Widstrand
Email: ewidstrand@baywest.com
Phone: (651) 291-3434

Former Manteo Auxiliary Air Station: This CERCLA site is a former Air Force property contaminated with petroleum hydrocarbon contaminant concentrations in the mid parts per billion levels (~500 ppb TPH) migrating offsite toward a water body. The impacted vertical interval onsite consisted of 10 feet of a compacted silty sand overlayed by a finer grained unit. Regenesis applied 4,800 lbs. of PetroFix across 88 injection locations, totaling 24,000 total gallons of mixed reagent. The project was very successful with an NFA granted following the reductions seen onsite. TPH concentrations were reduced from 500 ppb to below 50 ppb immediately following the application.

Contact: Tracey Tapley
Email: tracey.tapley@usace.army.mil
Phone: 912-652-6007

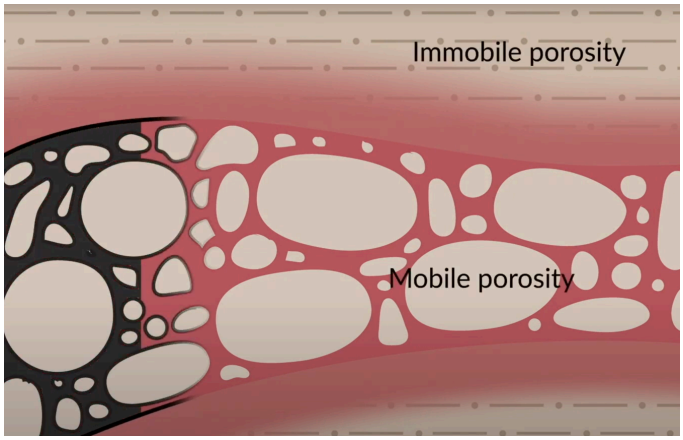
PetroFix® Technology Overview

PetroFix uses colloidal activated carbon (CAC) particles (1-2 micrometers) to quickly adsorb and immobilize dissolved hydrocarbons. This small particle size differentiates PetroFix and increases surface area and adsorption speed compared to larger carbon particles. Integrated anaerobic electron acceptors also promote microbial biodegradation of hydrocarbons, providing long-term contaminant reduction and regeneration of the CAC. PetroFix is versatile for various applications, including source and plume treatment, excavation polishing, and barrier applications.

Features and Benefits:

- **Rapid and Sustained Treatment**: Quickly captures hydrocarbons and supports ongoing biodegradation to prevent rebound.
- **Low-Pressure Application**: PetroFix is injected at low pressures, avoiding the need for fracturing and ensuring even distribution in aquifer flux zones.
- **Ease of Use and Safety**: Shipped as a ready-to-use liquid, avoiding handling risks of powders, and simplifying application.
- **Mitigation of Back-Diffusion and Rebound**: Immobilizes hydrocarbons and supports biodegradation to address back-diffusion.
- **Comprehensive Support**: Offers extensive resources and customer support from design to post-application evaluation.

Hyperlinked YouTube Overview of PetroFix



PetroFix Resources

Media:

- PetroFix Case Studies: Over 25 case studies in varied conditions. Use search or pull-downs on this weblink to identify case studies of interest.
- **PetroFix Webinars:** Webinars highlighting performance and best practices at PetroFix sites.
- **PetroFix - An Animated Overview:** An animated explanation of how PetroFix works in groundwater.

Product Literature:

- **PetroFix Spec Sheet:** Summary of specifications and properties of PetroFix.
- **PetroFix 'Mini-Brochure':** A concise brochure highlighting the features and benefits of PetroFix.

Application Instructions:

- Direct Push Application Instructions: Instructions for using direct push injection equipment, verifying distribution.
- **Excavation Application Guidance:** Instructions for applying PetroFix within excavation sites.
- **Well Application Guidance:** Procedures for administering PetroFix via wells.

Safety Data Sheets:

- **PetroFix SDS:** Safety data sheet detailing handling and safety information for PetroFix.
- **Electron Acceptor Blend SDS:** Safety data sheet for the electron acceptor blend used with PetroFix.
- **Electron Acceptor Blend Nitrate-Free SDS:** Safety data sheet for the nitrate-free electron acceptor blend.

Technical Bulletins:

- **PetroFix Performance Monitoring Parameters:** Key parameters for monitoring the performance of PetroFix applications.
- **PetroFix Freezing and Hot Weather Handling Technical Memo:** Guidance on managing PetroFix under hot and cold weather conditions.
- **CAC Groundwater Sampling Guidance:** Best practices for sampling groundwater containing colloidal activated carbon.
- **Well Flushing Technical Bulletin:** Procedures for flushing wells post-PetroFix application to ensure optimal performance.
- **Nitrate/Sulfate Addition and Syntrophic Biodegradation:** This paper provides insights into the role of nitrate and sulfate in enhancing biodegradation processes.
- Laboratory and Field Results Documenting The Biodegradation of Contaminants From CAC: Summary of work documenting biodegradation of contaminants with colloidal carbon.

PetroFix Optimal Handling Tips

Storage

While PetroFix has a 6-month shelf-life while stored in proper conditions, it is recommended to deliver PetroFix as soon to the planned application as possible.

How to store for immediate use:

- Out of direct or prolonged sunlight
- Prevent freezing conditions
- Do not store in temperatures exceeding 90 degrees for greater than three weeks



PetroFix totes covered by tarps to prevent temperature increases on hot days from direct sunlight.

Additional information on long-term storage can be found in the **PetroFix Technical Memo: Freezing and Hot Weather Handling** document. Proper prolonged storage conditions include:

- **Shade - no direct sunlight**
- **In original CLOSED containers**
- **Between 40 - 90^{o}F**
- **Well ventilated**

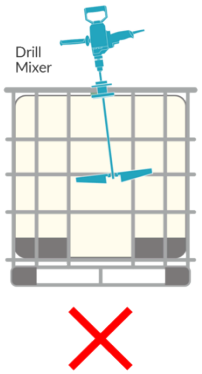
Mixing & Transfering

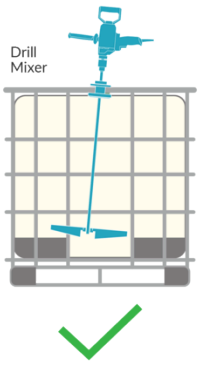
Below is a brief overview of product mixing recommendations for injection. For detailed guidance, please refer to the resources section later in this document.

1. **Homogenization**:
    - PetroFix is checked for quality control before shipment and has a viscosity similar to motor oil.
    - Homogenize the product before dilution to ensure consistency. Settling or lump formation can be mixed back in during this process.
    - We recommend using a high-amp, double-handed mixer with a blade reach that can reach within at least 3 inches of the bottom. Avoid dedicated tote mixers. **See illustration on next page.**
2. **Transferring PetroFix to Mix Tank**:
    - Add the specified dilution water to the mix tank before transferring PetroFix.
    - Measure the amount of PetroFix using methods like graduated buckets, volumetric flow meters, staging sticks, or external marks.
    - Specific pump recommendations will be discussed later under equipment recommendations.
3. **Add Electron Acceptor**

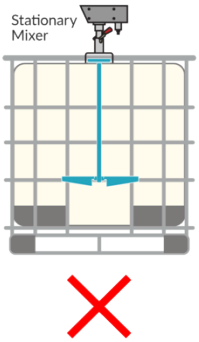
Homogenizing PetroFix In Totes and Drums

All mixers should access the bottom of the mixing vessel or PetroFix concentrate containers. Minimum rod length: 48 inches.



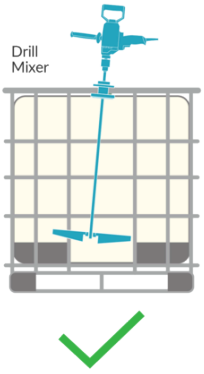


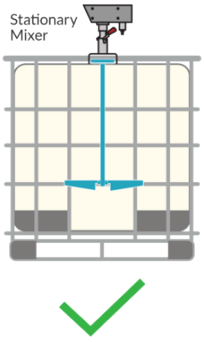
Stationary mixers inadequately access corners of the PetroFix concentrate containers.



Mixing Diluted PetroFix in Mix Tanks

Stationary mixers and handheld paddle mixers are recommended for PetroFix solution mixing





Recirculation inadequately mixes the PetroFix solution



Appendix A - RFP Attachments

Bid Sheet

Item No.	Item Description	Price (Bidder to write price in words)	Unit Price	Units	Bid Price
1.0	Treatment Design	One-thousand	$ 1,000.00	1	$ 1,000.00
2.0	Mobilization	Six-thousand nine-hundred ninety	$ 6,990.00	1	$ 6,990.00
3.0	Site Controls	Seven-thousand three-hundred seventy-four	$ 7,374.00	1	$ 7,374.00
4.0	Remediation Activities	Four-hundred seventy-seven thousand three-hundred and sixty	$ 8.84	54,000	$ 477,360.00
5.0	Restoration - Surface	One-thousand five-hundred sixty-seven	$ 1,567.00	1	$ 1,567.00
5.1	Restoration - Subsurface	Five-thousand	$ 5,000.00	1	$ 5,000.00
6.0	Demobilization	Six-thousand nine-hundred ninety	$ 6,990.00	1	$ 6,990.00
7.0	Reporting	Thirteen-thousand six-hundred ninety-five	$ 13,695.00	1	$ 13,695.00

Total	$ 519,976.00

Project Name	Trimedia - Cliffs Dow
Project Location	Marquette, MI
Project Duration (On-Site Days)	21
Project Start Date	10/5/2025
Project End Date	11/4/2025
Today's Date	8/19/2025

Task ID	Task Description	Start Date	End Date	Task Duration (Days)
1	Mobilization	10/5/2025	10/5/2025	1
2	Setup	10/6/2025	10/6/2025	1
3	Injections	10/7/2025	10/31/2025	19
4	Teardown	11/3/2025	11/3/2025	1
5	Demob	11/4/2025	11/4/2025	1

Cal/OSHA Form 300 (Rev. 7/2007) Appendix A

Log of Work-Related Injuries and Illnesses

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.
See CCR Title 8 14300.29(b)(6)-(10)

2024

Department of Industrial Relations
Division of Occupational Safety and Health

You must record information about every work-related death and about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illnesses that meet any of the specific recording criteria listed in CCR Title 8 Section 14300.8 through 14300.12. Feel free to use two lines for a single case if you need to. You must complete an Injury and Illness Incident Report (Cal/OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local Cal/OSHA office for help.

Establishment name REGENESIS
City San Clemente State CA

Identify the person		Describe the case			Classify the case															
(A) Case no.	(B) Employee's name	(C) Job title (e.g., *Welder*)	(D) Date of injury or onset of illness	(E) Where the event occurred (e.g., *Loading dock north end*)	(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill (e.g., *Second degree burns on right forearm from acetylene torch*)	Using these four categories, check ONLY the most serious result for each case:				Enter the number of days the injured or ill worker was:		Check the "Injury" column or choose one type of illness:							
						Death (G)	Days away from work (H)	Remained at work: Job transfer or restriction (I)	Remained at work: Other recordable cases (J)	Away from work (K)	On job transfer or restriction (L)	(M) Injury (1)	Skin disorder (2)	Respiratory condition (3)	Poisoning (4)	Hearing loss (5)	All other illnesses (6)
1	yalsdfj al;fsa	RRS Super	1/9/24 month/day	Client Site	Personnel slipped in mud disconnecting a h				☑	0 days	0 days	☑					
			month/day							days	days						
			month/day							days	days						
			month/day							days	days

Annual Summary of Work-Related Injuries and Illnesses

2024

Department of Industrial Relations
Division of Occupational Safety & Health

All establishments covered by CCR Title 8 Section 14300 must complete this Annual Summary, even if no work-related injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete and accurate before completing this summary.

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the Log. If you had no cases, write "0."

Employees, former employees, and their representatives have the right to review the Cal/OSHA Form 300 in its entirety. They also have limited access to the Cal/OSHA Form 301 or its equivalent. See CCR Title 8 Section 14300.35, in Cal/OSHA's recordkeeping rule, for further details on the access provisions for these forms.

Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
0	0	0	1
(G)	(H)	(I)	(J)

Number of Days

Total number of days away from work	Total number of days of job transfer or restriction
0	0
(K)	(L)

Injury and Illness Types

Total number of . . .	(M)		
(1) Injuries	1	(4) Poisonings	0
(2) Skin disorders	0	(5) Hearing loss	0
(3) Respiratory conditions	0	(6) All other Illnesses	0

Post this Annual Summary from February 1 to April 30 of the year following the year covered by the form.

Establishment information

Your establishment name: Regenesis

Street: 1011 Calle Sombra

City: San Clemente State: CA ZIP:

Industry description (*e.g., Manufacture of motor truck trailers*)
Chemical Manufacture

Standard Industrial Classification (SIC), if known (*e.g., SIC 3715*)
2819

Employment information

(If you don't have these figures, use the optional Worksheet to estimate.)

Annual average number of employees: 105

Total hours worked by all employees last year: 193,337

Sign here: James Cobb

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

James Cobb — Company executive
CDHS — Title
(949) 363-8000 — Phone
01/10/25 — Date

Cal/OSHA Form 301 **Appendix C**
Injury and Illness Incident Report

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.
See CCR Title 8 14300.29(b)(6)-(10)

Department of Industrial Relations
Division of Occupational Safety & Health

This *Injury and Illness Incident Report* is one of the first forms you must fill out when a recordable work-related injury or illness has occurred. Together with *Log of Work-Related Injuries and Illnesses* and the accompanying *Annual Summary*, these forms help the employer and Cal/OSHA develop a picture of the extent and severity of work-related incidents.

Within 7 calendar days after you receive information that a recordable work-related injury or illness has occurred, you must fill out this form or an equivalent. Some state workers' compensation, insurance, or other reports may be acceptable substitutes. To be considered an equivalent form, any substitute must contain all the instructions and information asked for on this form.

According to CCR Title 8 Section 14300.33 Cal/OSHA's recordkeeping rule, you must keep this form on file for 5 years following the year to which it pertains.

If you need additional copies of this form, you may photocopy and use as many as you need.

Completed by James Cobb

Title CDH&S

Phone (949) 366 - 8000 **Date** 01 / 10 / 24

Information about the employee

1) **Full name** ilasdasdfji sdo;fjsd;j

2) **Street** 5122 Marten Avenue

City Upper Chichester **State** PA **ZIP** 19014

3) **Date of birth** ____ / ____ / ____

4) **Date hired** 4 / 11 / 22

5) ☑ Male
☐ Female

Information about the physician or other health care professional

6) **Name of physician or other health care professional** CHR

7) **If treatment was given away from the worksite, where was it given?**

Facility ____

Street ____

City ____ **State** ____ **ZIP** ____

8) **Was employee treated in an emergency room?**
☐ Yes
☑ No

9) **Was employee hospitalized overnight as an in-patient?**
☐ Yes
☑ No

Information about the case

10) **Case number from the *Log*** 1 *(Transfer the case number from the Log after you record the case.)*

11) **Date of injury or illness** 1 / 9 / 24

12) **Time employee began work** 0700 AM / PM

13) **Time of event** 1625 AM / PM 0 **Check if time cannot be determined**

14) *What was the employee doing just before the incident occurred?* **Describe the activity, as well as the tools, equipment, or material the employee was using. Be specific. *Examples:* "climbing a ladder while carrying roofing materials"; "spraying chlorine from hand sprayer"; "daily computer key-entry."**
Employee was walking toward the hose disconnect area.

15) *What happened?* **Tell us how the injury occurred. *Examples:* "When ladder slipped on wet floor, worker fell 20 feet"; "Worker was sprayed with chlorine when gasket broke during replacement"; "Worker developed soreness in wrist over time."**
Employee was removing a hose from a backflow preventer. When doing this he stepped in mud and slipped. When he reached to catch himself his finger slipped into a ring on the cam lock for the hose fracturing a finger.

16) *What was the injury or illness?* **Tell us the part of the body that was affected and how it was affected; be more specific than "hurt," "pain," or sore." *Examples:* "strained back"; "chemical burn, hand"; "carpal tunnel syndrome."**
right index finger fracture

17) *What object or substance directly harmed the employee?* ***Examples:* "concrete floor"; "chlorine"; "radial arm saw." *If this question does not apply to the incident, leave it blank.***
the ring on the cam locks

18) *If the employee died, when did death occur?* **Date of death** ____ / ____ / ____

OSHA's Form 300A (Rev. 01/2004)

Summary of Work-Related Injuries and Illnesses

Year 2023

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

All establishments covered by Part 1904 must complete this Summary page, even if no injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the log. If you had no cases write "0."

Employees former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR 1904.35, in OSHA's Recordkeeping rule, for further details on the access provisions for these forms.

Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
0	0	0	0
(G)	(H)	(I)	(J)

Number of Days

Total number of days away from work	Total number of days of job transfer or restriction
0	0
(K)	(L)

Injury and Illness Types

Total number of...	(M)		(M)
(1) Injury	0	(4) Poisoning	0
(2) Skin Disorder	0	(5) Hearing Loss	0
(3) Respiratory Condition	0	(6) All Other Illnesses	0

Establishment information

Your establishment name Regenesis

Street 1011 Call Sombra

City San Clemente State CA Zip 92673

Industry description (e.g., Manufacture of motor truck trailers)
Chemical Manufacturer

Standard Industrial Classification (SIC), if known (e.g., SIC 3715)

OR North American Industrial Classification (NAICS), if known (e.g., 336212)
3 2 5 1 9 9

Employment information

Annual average number of employees 110

Total hours worked by all employees last year 193433

Sign here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

James Cobb
Company executive

CDHS
Title

949-366-8000
Phone

1/5/2024
Date

OSHA's Form 300 (Rev. 04/2004)

Log of Work-Related Injuries and Illnesses

Note: You can type input into this form and save it. Because the forms in this recordkeeping package are "fillable/writable" PDF documents, you can type into the input form fields and then save your inputs using the free Adobe PDF Reader. In addition, the forms are programmed to auto-calculate as appropriate.

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

Year 20 22

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

Please Record:
- *Information about every work-related death and about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid.*
- *Significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional.*
- *Work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR Part 1904.8 through 1904.12.*

Reminders:
- *Complete an Injury and Illness Incident Report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.*
- *Feel free to use two lines for a single case if you need to.*
- *Complete the 5 steps for each case.*

Establishment name: Regenesis

City: San Clemente State: CA

Step 1. Identify the person			Step 2. Describe the case			Step 3. Classify the case				Step 4.		Step 5.						
						SELECT ONLY ONE circle based on the most serious outcome:				Enter the number of days the injured or ill worker was:		Select one column:						
							Remained at Work						Illness					
(A) Case no.	(B) Employee's name	(C) Job title (e.g., Welder)	(D) Date of injury or onset of illness (e.g., 2/10)	(E) Where the event occurred (e.g., Loading dock north end)	(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill (e.g., Second degree burns on right forearm from acetylene torch)	Death (G)	Days away from work (H)	Job transfer or restriction (I)	Other recordable cases (J)	Away from work (K)	On job transfer or restriction (L)	(M) Injury (1)	Skin disorder (2)	Respiratory condition (3)	Poisoning (4)	Hearing loss (5)	All other illnesses (6)
Reset	1 ##### ######	Warehouse Staff	10/28 month / day	Gallatin TN. Warehouse	Personnel in area turned a system on when personnel were working on the equipment resulting in a injury to finger.	○	○	○	◉	____ days	____ days	◉	○	○	○	○	○
Reset			___/___ month / day			○	○	○	○	____ days	____ days	○	○	○	○	○	○
Reset			___/___ month / day			○	○	○	○	____ days	____ days	○	○	○	○	○	○
Reset			___/___ month / day			○	○	○	○	____ days	____ days	○	○	○	○	○	○
Reset			___/___ month / day			○	○	○	○	____ days	____ days	○	○	○	○	○	○
Reset			___/___ month / day			○	○	○	○	____ days	____ days	○	○	○	○	○	○
Reset			___/___ month / day			○	○	○	○	____ days	____ days	○	○	○	○	○	○
Reset			___/___ month / day			○	○	○	○	____ days	____ days	○	○	○	○	○	○
Reset			___/___ month / day			○	○	○	○	____ days	____ days	○	○	○	○	○	○
Reset			___/___ month / day			○	○	○	○	____ days	____ days	○	○	○	○	○	○
						▶ Page totals	0	0	0	1	0	0	1	0	0	0	0	0
													Injury (1)	Skin disorder (2)	Respiratory condition (3)	Poisoning (4)	Hearing loss (5)	All other illnesses (6)

Be sure to transfer these totals to the Summary page (Form 300A) before you post it.

Public reporting burden for this collection of information is estimated to average 14 minutes per response, including time to review the instructions, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any other aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistical Analysis, Room N-3644, 200 Constitution Avenue, NW, Washington, DC 20210. Do not send the completed forms to this office.

Add a Form Page

OSHA's Form 300A (Rev. 04/2004)

Summary of Work-Related Injuries and Illnesses

Note: You can type input into this form and save it.
Because the forms in this recordkeeping package are "fillable/writable" PDF documents, you can type into the input form fields and then save your inputs using the free Adobe PDF Reader.

Year 20 22

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

All establishments covered by Part 1904 must complete this Summary page, even if no work-related injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete and accurate before completing this summary.

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the Log. If you had no cases, write "0."

Employees, former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR Part 1904.35, in OSHA's recordkeeping rule, for further details on the access provisions for these forms.

Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
0	0	0	1
(G)	(H)	(I)	(J)

Number of Days

Total number of days away from work	Total number of days of job transfer or restriction
0	0
(K)	(L)

Injury and Illness Types

Total number of . . . (M)			
(1) Injuries	1	(4) Poisonings	0
(2) Skin disorders	0	(5) Hearing loss	0
(3) Respiratory conditions	0	(6) All other illnesses	0

Post this Summary page from February 1 to April 30 of the year following the year covered by the form.

Public reporting burden for this collection of information is estimated to average 58 minutes per response, including time to review the instructions, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any other aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistical Analysis, Room N-3644, 200 Constitution Avenue, NW, Washington, DC 20210. Do not send the completed forms to this office.

Establishment information

Your establishment name: Regenesis

Street: 1011 Calle Sombra

City: San Clemente State: CA Zip: 92673

Industry description (*e.g., Manufacture of motor truck trailers*)

Chemical Manufacturer

North American Industrial Classification (NAICS), if known (e.g., 336212)

3 2 5 1 9 9

Employment information (*If you don't have these figures, see the Worksheet on the next page to estimate.*)

Annual average number of employees: 95

Total hours worked by all employees last year: 189,458.00

Sign here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

James Cobb — Company executive

CDH&S — Title

Phone 949-363-3264 Date 1/23/23

Reset

October 7, 2024

Regenesis Bioremediation Products
1011 Calle Sombra, Suite 100
San Clemente, California 92673-4204

RE: Experience Modifier Rate

You have requested us to provide you with the Experience Modifier Rate for your company, a client company of a Professional Employer Organization.

The effective date and the Experience Modifier Rate are as follows:

10/01/24 to 10/01/25 is .72

If you have any further questions, please contact the Workers' Compensation Insurance Rating Bureau of California toll free number at 888-229-2472 to confirm this information; Bureau # 9951649.

Thank you.

Sincerely,

Michelle Trowbridge

Michelle Trowbridge
Supervisor, Workers' Compensation Compliance

November 13, 2023

Regenesis Bioremediation Products
1011 Calle Sombra Ste 100
San Clemente, CA 92673-4204

RE: Experience Modifier Rate

You have requested us to provide you with the Experience Modifier Rate for your company, a client company of a Professional Employer Organization.

The effective date and the Experience Modifier Rate are as follows:

10/01/23 to 10/01/24 is .67

If you have any further questions, please contact the NCCI toll free number at 800-622-4123 to confirm this information.

Thank you.

Sincerely,

Teri Buchanan
Workers' Compensation Compliance Specialist

insperity.com

November 15, 2022

Regenesis Bioremediation Products
1011 Calle Sombra, Suite 100
San Clemente, California 92673-4204

RE: Experience Modifier Rate

You have requested us to provide you with the Experience Modifier Rate for your company, a client company of a Professional Employer Organization.

The effective date and the Experience Modifier Rate are as follows:

10/01/22 to 10/01/23 is .73

If you have any further questions, please contact the Workers' Compensation Insurance Rating Bureau of California toll free number at 888-229-2472 to confirm this information; Bureau #9951649.

Thank you.

Sincerely,

Michelle Trowbridge

Michelle Trowbridge
Sr. Workers' Compensation Compliance Specialist

REGENESIS

HEALTH & SAFETY POLICY AND PROCEDURE

Doc No. H&S-0A	Document Title: Health and Safety Manual Table of Contents	Revision 6

Authorizations	Name	Signature	Date

REVISION RECORD

Revision	Date	Initiator	Reason for Change
--	9-29-15		Initial Release
1	2/16/18	J Cobb	Title Changes and Edits
2	1/21/19	J Cobb	Additional Programs
3	10/30/19	J Cobb	Additional Programs
4	12/30/19	J Cobb	Additional Programs
5	2/18/21	J Cobb	Update
6	2/1/23	J Cobb	Updates and Edits
7	7/29/24	J Cobb	Updates and Edits

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H&S-1 Injury and Illness Prevention Program
H&S-2 Hazard Communication Program
H&S-3 Emergency Response Program
H&S-4 Chemical Hygiene Program
H&S-5 Recordkeeping Program
H&S-6 Medical Surveillance Program
H&S-7 Medical Services and First Aid
H&S-8 Industrial Hygiene Program
H&S-9 Industrial Truck Program
H&S-10 Personal Protective Equipment Program
H&S-11 Respiratory Protection Program
H&S-12 Fire Prevention Program
H&S-13 Fire Protection Program
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H&S-15 Energy Control Program
H&S-16 Excavation Operations Program
H&S-17 Ergonomics Program
H&S-18 Hot Work Program
H&S-19 Hearing Conservations Program
H&S-20 Field Operations Program
H&S-21 Contractor Safety Program
H&S-22 Bloodborne Pathogen Program
H&S-23 Confined Space Program
H&S-24 Work at Heights
H&S-25 Fleet Safety Program
H&S-26 Benzene Awareness Program
H&S-27 Drug and Alcohol Program
H&S-28 Radiation Protection Program
H&S-29 Crystalline Silica Protection Program
H&S-30 Fatigue Management Program
H&S-31 Heat and Cold Stress Program
H&S-32 Manual Handling Program
H&S-33 Stop Work Program
H&S-34 Pandemic Preparedness Program
H&S-35 Job Site Security Program
H&S-36 Management of Change Program
H&S-37 Aerial-Scissor Lift Safety Program
H&S-38 Workplace Violence Prevention Program

ADDENDUM NO. 1

PROJECT: **MQ23-444 - Cliffs-Dow Brownfield Site - In-Situ Remediation Services**

FROM: **City of Marquette**

DATE: **July 21, 2025**

The bidder shall acknowledge receipt of all addenda by listing the addendum number where indicated on the Bid Express solicitation.

Drawings, specifications, and/or proposal are herein clarified, amended, expanded, and/or modified, as hereinafter described, and become a part of the Contract Documents with the same effect as if incorporated, therein, on the original documents. Any contrary provisions contained, or referred to, in Drawings and/or Specifications, shall remain applicable unless overridden by this addendum. Revisions herein shall include all labor, materials, methods, modifications, etc., required for completion of the Work.

---

1) **The attached list of subcontractors must be fully completed and included with the project proposal.**

In-Situ Remediation Services
Cliffs-Dow Brownfield Site
City of Marquette, Michigan

LIST OF SUBCONTRACTORS

No subcontract, whether listed herein or later proposed, may be entered into without the written consent of the OWNER and CONSULTANT.

To OWNER/CONSULTANT:

The Bidder, REGENESIS Remediation Services, proposes to subcontract the following work items to the following parties (if no subcontracted work is proposed check NO SUBCONTRACT WORK below):

☐ NO SUBCONTRACT WORK

1) PORTION OF WORK: 18.5%
Amount of Subcontract: $ $96,347
SUBCONTRACTOR Name: AKT Peerless

SUBCONTRACTOR Representative: Louis Stultz stultzl@aktpeerless.com

Full Address: 22725 Orchard Lake Rd, Farmington, MI 48336

2) PORTION OF WORK: 0.7 %
Amount of Subcontract: $ $3,691.50
SUBCONTRACTOR Name: Bloodhound Underground - Utility Locate

SUBCONTRACTOR Representative: James Capps jamescapps@bhug.com

Full Address: 6500 Technology Center Drive, Indianapolis, IN 46278

3) PORTION OF WORK: %
Amount of Subcontract: $
SUBCONTRACTOR Name:

SUBCONTRACTOR Representative:

Full Address:

Agreement and Technical Exceptions

Regenesis has "AN ITEMIZED LIST OF ANY AND ALL EXCEPTIONS, ASSUMPTIONS, OR CORRECTIONS NECESSARY TO ALLOW SUBMISSION OF THIS PROPOSAL." The submission of this list is our acknowledgment that we fully understand all phases of the specified work and accept the completeness of all documents transmitted with and made part of the final Professional Services Contract.

Agreement Exceptions:

Regenesis has no exceptions with the provisions of the Professional Service Contract, the RPF scope of work, nor any other items in the RFP.

Regenesis employees will abide by the confidentiality agreement in the Professional Service Contract.

Regenesis does not know of any Conflicts of Interest related to us performing remediation services on this site.

Technical Exceptions:

Regenesis does not have any technical exceptions to the RFP documents.

Representations and Certifications:

Regenesis Bioremediation Products

1011 Calle Sombra

San Clemente, CA 92673-4204

Regenesis is a small business based on our primary NAICS code 325199. Our secondary NAICS is 562910 with the Environmental Remediation Services exception, Regenesis qualifies as a small business having less than 750 employees.

Federal Tax ID# 33-0624935

DUNS # 884578204

CAGE Code: 086Z3

UEI # NF37QMURPXE9

Document A310™ – 2010

Conforms with The American Institute of Architects AIA Document 310

Bond Number: NW1824423-25-01

Bid Bond

CONTRACTOR:
(Name, legal status and address)
Regenesis Bioremediation Products, Inc.
1011 Calle Sombra
San Clemente, CA 92673

SURETY:
(Name, legal status and principal place of business)
Nationwide Mutual Insurance Company
One Nationwide Blvd.
Columbus, OH 43216
State of Inc: Ohio

OWNER:
(Name, legal status and address)
City of Marquette
1100 Wright St.
Marquette, MI 49855

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

BOND AMOUNT: Five Percent of Amount Bid (5%)

PROJECT:
(Name, location or address, and Project number, if any)
BP# 25-06 Project Number MQ23-444

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this 19th day of August , 2025

(Witness) Andra Tjoa	Regenesis Bioremediation Products, Inc. (Principal) (Seal)
	Amy Dickerson (Title)
(Witness) Dorothy Harrison	Nationwide Mutual Insurance Company (Surety) (Seal)
	(Title) Jennie Gionie, Attorney-in-Fact

SEAL

Power of Attorney

KNOW ALL MEN BY THESE PRESENTS THAT:

Nationwide Mutual Insurance Company, an Ohio corporation

hereinafter referred to severally as the "Company" and collectively as "the Companies" does hereby make, constitute and appoint:

AMANDA R TURMAN-AVINA; BARBARA NORTON; CRISTINA NINO; GICELLE PAJON; JENNIE GOONIE; JESSICA RICHMOND; KATIE CANALES; LAURA E SUDDUTH; MADISON DIAZ; MARIO ARZAMENDI; MARY ANN GARCIA; MISTY WITT; STEPHANIE GROSS; TEUTA LURI;

each in their individual capacity, its true and lawful attorney-in-fact, with full power and authority to sign, seal, and execute on its behalf any and all bonds and undertakings, and other obligatory instruments of similar nature, in penalties not exceeding the sum of

UNLIMITED

and to bind the Company thereby, as fully and to the same extent as if such instruments were signed by the duly authorized officers of the Company; and all acts of said Attorney pursuant to the authority given are hereby ratified and confirmed.

This power of attorney is made and executed pursuant to and by authority of the following resolution duly adopted by the board of directors of the Company:

"RESOLVED, that the president, or any vice president be, and each hereby is, authorized and empowered to appoint attorneys-in-fact of the Company, and to authorize them to execute and deliver on behalf of the Company any and all bonds, forms, applications, memorandums, undertakings, recognizances, transfers, contracts of indemnity, policies, contracts guaranteeing the fidelity of persons holding positions of public or private trust, and other writings obligatory in nature that the business of the Company may require; and to modify or revoke, with or without cause, any such appointment or authority; provided, however, that the authority granted hereby shall in no way limit the authority of other duly authorized agents to sign and countersign any of said documents on behalf of the Company."

"RESOLVED FURTHER, that such attorneys-in-fact shall have full power and authority to execute and deliver any and all such documents and to bind the Company subject to the terms and limitations of the power of attorney issued to them, and to affix the seal of the Company thereto; provided, however, that said seal shall not be necessary for the validity of any such documents."

This power of attorney is signed and sealed under and by the following bylaws duly adopted by the board of directors of the Company.

Execution of Instruments. Any vice president, any assistant secretary or any assistant treasurer shall have the power and authority to sign or attest all approved documents, instruments, contracts, or other papers in connection with the operation of the business of the company in addition to the chairman of the board, the chief executive officer, president, treasurer or secretary; provided, however, the signature of any of them may be printed, engraved, or stamped on any approved document, contract, instrument, or other papers of the Company.

IN WITNESS WHEREOF, the Company has caused this instrument to be sealed and duly attested by the signature of its officer the 1st day of April, 2024.

Antonio C. Albanese, **Vice President** of Nationwide Mutual Insurance Company

ACKNOWLEDGMENT

STATE OF NEW YORK COUNTY OF KINGS: ss

On this 1st day of April, 2024, before me came the above-named officer for the Company aforesaid, to me personally known to be the officer described in and who executed the preceding Instrument, and he acknowledged the execution of the same, and being by me duly sworn, deposes and says, that he is the officer of the Company aforesaid, that the seal affixed hereto is the corporate seal of said Company, and the said corporate seal and his signature were duly affixed and subscribed to said Instrument by the authority and direction of said Company.

Sharon Laburda
Notary Public, State of New York
No. 01_A6427697
Qualified in Kings County
Commission Expires January 3, 2026

Notary Public
My Commission Expires
January 3, 2026

CERTIFICATE

I, Lezlie F. Chimienti, Assistant Secretary of the Company, do hereby certify that the foregoing is a full, true and correct copy of the original power of attorney issued by the Company; that the resolution included therein is a true and correct transcript from the minutes of the meetings of the boards of directors and the same has not been revoked or amended in any manner; that said Antonio C. Albanese was on the date of the execution of the foregoing power of attorney the duly elected officer of the Company, and the corporate seal and his signature as officer were duly affixed and subscribed to the said instrument by the authority of said board of directors; and the foregoing power of attorney is still in full force and effect.

IN WITNESS WHEREOF, I have hereunto subscribed my name as Assistant Secretary, and affixed the corporate seal of said Company this 19th day of August, 2025.

Assistant Secretary

BDJ 1(04-24)00

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 11/05/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
Marsh Risk & Insurance Services
17901 Von Karman Avenue, Suite 1100
(949) 399-5800; License #0437153
Irvine, CA 92614

CN101824423--GAUXP-24-25

CONTACT NAME:
PHONE (A/C, No, Ext): **FAX (A/C, No):**
E-MAIL ADDRESS:

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Hamilton Insurance Company	
INSURER B : National Liability & Fire Insurance Company	20052
INSURER C : Aspen Specialty Insurance Company	10717
INSURER D : Axis Surplus Insurance Company	26620
INSURER E : Ironshore Specialty Insurance Company	25445
INSURER F :	

INSURED
Regenesis Bioremediation Products
1011 Calle Sombra
San Clemente, CA 92673

COVERAGES **CERTIFICATE NUMBER:** LOS-002790332-01 **REVISION NUMBER:** 2

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS		
A	X **COMMERCIAL GENERAL LIABILITY** CLAIMS-MADE X OCCUR X Pollution Liability GEN'L AGGREGATE LIMIT APPLIES PER: X POLICY PRO-JECT LOC OTHER:	X	X	ENVPKGHI494957	11/01/2024	10/01/2025	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ $ $ $ $ $	1,000,000 500,000 25,000 1,000,000 2,000,000 2,000,000
B	**AUTOMOBILE LIABILITY** X ANY AUTO OWNED AUTOS ONLY HIRED AUTOS ONLY SCHEDULED AUTOS NON-OWNED AUTOS ONLY	X	X	73APB009873	10/20/2024	10/01/2025	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ $ $ $	1,000,000
C D E	UMBRELLA LIAB X OCCUR X **EXCESS LIAB** CLAIMS-MADE DED RETENTION $	X	X	EX009EC24 ELZ670129/01/2024 ($5M xs $5M) XSCUW0031195200 ($10M xs $10M)	11/01/2024 11/01/2024 11/01/2024	10/01/2025 10/01/2025 10/01/2025	EACH OCCURRENCE AGGREGATE	$ $	20,000,000 20,000,000
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y/N ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? N **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below	N / A	X				PER STATUTE OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ $ $	
A	Professional Liability "Claims Made"			ENVPKGHI494957	11/01/2024	10/01/2025	Each Claim Aggregate		1,000,000 2,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
Subject to policy terms and conditions.

is included as additional insured where required by written contract with respects to General Liability and Auto Liability. This insurance is primary and non-contributory over any existing insurance and limited to liability arising out of the operations of the named insured. Waiver of subrogation is applicable where required by written contract. Excess Liability is follow form of General Liability and Auto Liability.

CERTIFICATE HOLDER

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Marsh Risk & Insurance Services

CERTIFICATE OF LIABILITY INSURANCE

Acct#: 2777177

DATE (MM/DD/YYYY): 11/06/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:	
LOCKTON COMPANIES, LLC 3657 Briarpark Dr., Suite 700 Houston, TX 77042	PHONE (A/C, No, Ext): 888-828-8365	FAX (A/C, No):
	E-MAIL ADDRESS: insperitycerts@locktonaffinity.com	
	INSURER(S) AFFORDING COVERAGE	NAIC #
	INSURER A : Indemnity Insurance Company of North America	43575
INSURED REGENESIS BIOREMEDIATION PRODUCTS 1011 CALLE SOMBRA STE 100 SAN CLEMENTE, CA 92673-4204	INSURER B :	
	INSURER C :	
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	COMMERCIAL GENERAL LIABILITY						EACH OCCURRENCE	$
	☐ CLAIMS-MADE ☐ OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$
							MED EXP (Any one person)	$
							PERSONAL & ADV INJURY	$
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$
	☐ POLICY ☐ PRO-JECT ☐ LOC						PRODUCTS COMP/OP AGG	$
	☐ OTHER:							$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$
	☐ ANY AUTO						BODILY INJURY (Per person)	$
	☐ ALL OWNED AUTOS ☐ SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	☐ HIRED AUTOS ☐ NON-OWNED AUTOS						PROPERTY DAMAGE (Per accident)	$
								$
	☐ UMBRELLA LIAB ☐ OCCUR						EACH OCCURRENCE	$
	☐ EXCESS LIAB ☐ CLAIMS-MADE						AGGREGATE	$
	☐ DED ☐ RETENTION $							$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? ☐ **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below	N / A	X	C72346245	10/01/2024	10/01/2025	X PER STATUTE ☐ OTH-ER	
							E.L. EACH ACCIDENT	$ 1,000,000
							E.L. DISEASE - EA EMPLOYEE	$ 1,000,000
							E.L. DISEASE - POLICY LIMIT	$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

WAIVER OF SUBROGATION IN FAVOR OF CERTIFICATE HOLDER WHERE REQUIRED BY WRITTEN CONTRACT.

CERTIFICATE HOLDER

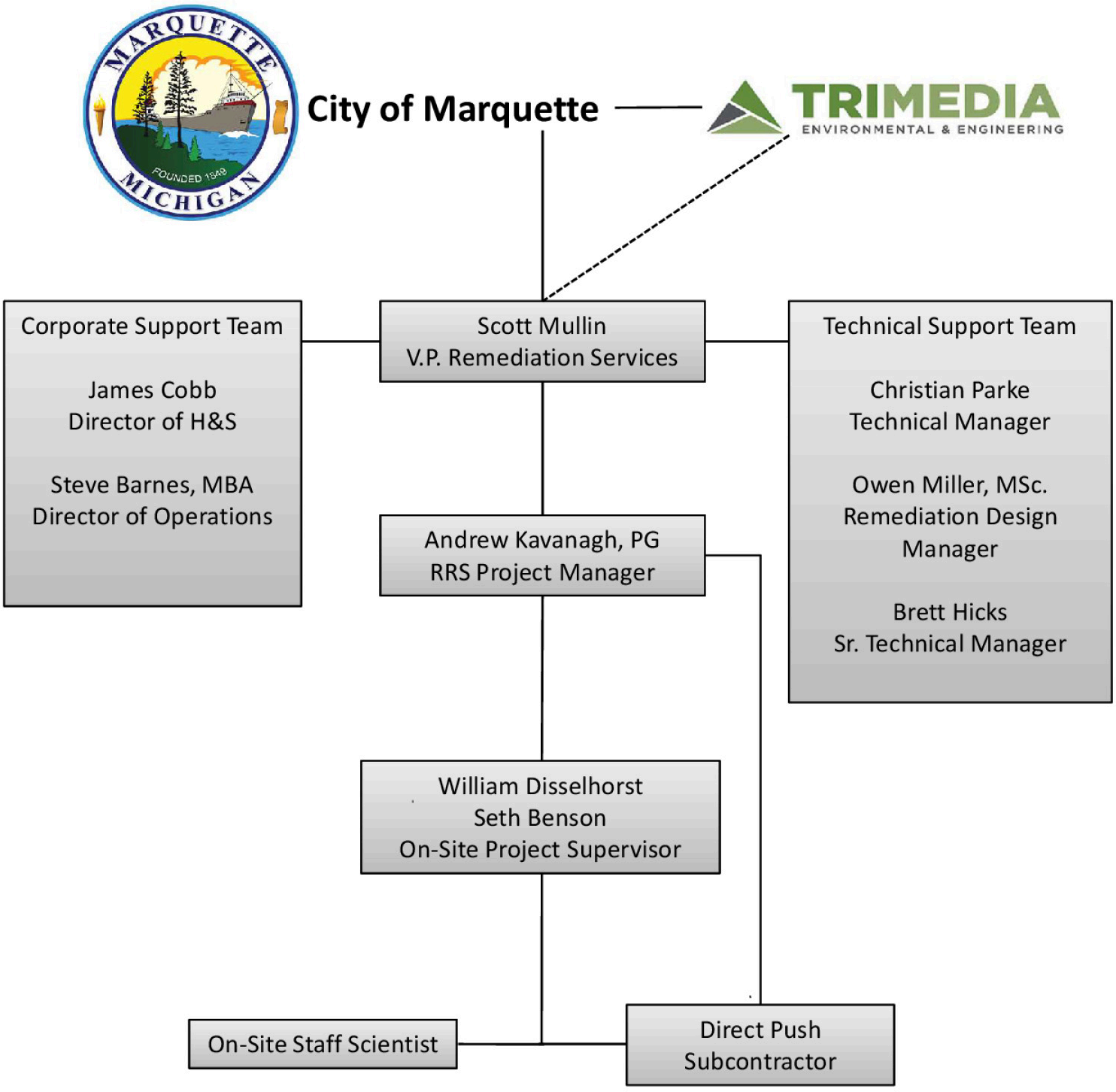
CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE



Cliffs-Dow Site Groundwater Remediation, Marquette, MI



SCOTT MULLIN

TITLE
Vice President, Remediation Services Division

EDUCATION
B.A. Biology,
Ripon College, Ripon, WI

TRAINING AND CERTIFICATIONS
OSHA 29 CFR 1910.120 HAZWOPER 40-Hour Training
OSHA 29 CFR 1910.120 HAZWOPER 8-Hour Annual Refresher
First Aid/CPR/AED

EXPERIENCE SUMMARY
Mr. Mullin's career at REGENESIS started in December 1999 and served various positions within the Company including District Technical Manager and Central US Regional Manager prior to starting the Remediation Services Division in 2011. His first decade focused on generating groundwater and soil remediation opportunities, development of remediation designs, and client technical support.

In his current role at Regenesis, Mr. Mullin manages turn-key remediation services for the design and application of wide-range of in-situ and ex-situ bioremediation, sorption, chemical oxidation, and chemical reduction applications. He is primarily responsible for project operations, generating and meeting budgets, staffing, personnel development, and equipment utilization necessary to execute highly successful remediation projects. In past roles at Regenesis, Mr. Mullin was involved in expanding a regional client base by developing teaming relationships with environmental consultants, evaluating efficacy of multiple remediation technologies to achieve clean-up objectives, generating technical designs and cost proposals, presenting solutions to clients and providing technical support through technology selection, site implementation and post application. Throughout his career, Scott has worked closely with environmental consulting firms, state regulators, large manufacturing clients, and petro-chemical corporations. He has designed and overseen the implementation and evaluation of over a thousand soil/groundwater remediation projects. Some contaminants include petroleum hydrocarbons, MTBE, MGP waste, chlorinated solvents, PFAS, pentachlorophenol, pesticides, as well as immobilization of heavy metals.

Representative Projects:

Kenosha Engine Plant, Kenosha, WI – Serving as internal Project Owner over this $3,000,000 pay for performance contract to remediate chlorinated ethene soil and groundwater contamination on a 100-acre site divided into four treatment areas. Achieving and maintaining a minimum of 90% molar mass reduction in groundwater in each treatment area is tied to payment milestones. Lead contract negotiations and contract management, project financial analysis, responsible for achieving project performance milestones, and overall team coordination. Remediation technologies employed include ISCO, ERD, ISCR, bioaugmentations, and sorption.

Magic Touch Dry Cleaners Site, Norridge, IL – Functioned as Remediation Project Manager to design and implement an *in-situ* soil mixing chemical oxidation application to remediate PCE contamination in soil to below the 240 mg/kg soil saturation limit established by the Illinois EPA. RegenOx was the chemical oxidant used to successfully remediate these sand and clay soils with baseline PCE concentrations over 1,100 mg/kg. The 242 cubic yards of PCE impacted soil above the remediation objected was successfully treated to reduce PCE levels below 240 mg/kg in one soil mixing application event. Project cost was $36,000.

Belknap Crossing Site, Louisville, KY – Functioned as Remediation Project Manager to design and implement an *in-situ* enhanced reductive dechlorination and bioaugmentation design through the injection of 26,000 pounds (lbs) of 3D Microemulsion and 200 liters of a bioaugmentation culture. The area of the chlorinated solvent plume was approximately 58,000 square feet. Project cost was $170,000.

Railyard Lagoon, East St. Louis, IL – Served as Remediation Project Manager to evaluate appropriate remediation technologies for a cis-DCE and vinyl chloride soil and groundwater plume next to the Mississippi River. Lead remediation design team and managed the implementation of an *in-situ* enhanced reductive dechlorination and bioaugmentation remedial strategy in 8,400 ft^2 of the groundwater plume. The injection of 66,000 pounds (lbs) of 3D Microemulsion and 30 liters of a bioaugmentation culture was applied in 5 days. Project cost was $69,000.

Family Pride Cleaners, Chicago, IL - Act as Project Manager for a remediation contractor performing design and *in-situ* application of sodium permanganate through injection wells, infiltration gallery and direct push injection to remediate the source area and dissolved phase plume from a PCE release exceeding Illinois' soil saturation limit. Project cost was $90,000.

Former Petrochemical Manufacturing Plant, Hawkesbury, Ontario, Canada - Act as Project Scientist for the implementation of a chemical oxidation (Klozur) remediation approach to destroy chlorinated ethenes and petroleum hydrocarbons in unsaturated soils and groundwater. Over 40,000 lbs of persulfate activated using sodium hydroxide and calcium peroxide were applied. Direct push injection point and in-situ soil mixing was use to apply the remediation chemistry. Project cost was $190,000.

Remline Site, Yorkville, IL – Performed remediation design and implementation of TCE plume soil hotspot remediation via *in-situ* soil mixing with chemical oxidation (RegenOx) followed by enhanced reductive dechlorination through the injection of 200,000 lbs of a slow release electron donor, 3D Microemulsion. The TCE plume was over 1300 feet long with source area dissolved phase TCE at 520 mg/L. Project cost was $220,000.

Grissom ARB, Kokomo, IN - Served as Project Scientist on remediation design team in assessment of MNA parameters and enhanced reductive dechlorination bioremediation design using HRC for a TCE plume in surficial aquifer with interbedded sands and sandy silty clay. Project cost $84,000

Manufacturing facility, Elyria, OH - Served as Project Scientist on the remediation design team to develop and implement a $1.3 million enhanced reductive dechlorination bioremediation

system in a permeable sandstone bedrock aquifer. Provided performance data review and evaluation of aquifer geochemistry and bacteria genetic analysis using PCR techniques. A few years after biostimulation with the electron donor and PCR BioTrap analysis in the treatment area, bioaugmentation was performed.

Federal Mogul, St. Johns, MI - Served as Remediation Manager on the soil mixing chemical oxidation design team for pilot study to evaluate RegenOx and sodium permanganate and subsequent full scale design on a TCE source area in low permeability, unsaturated clayey soil. A pugmill was used to apply the oxidants due to the tight soils and site constraints. Full scale included application of approximately 55,000 lbs RegenOx to about 2,000 cubic yards of soil with TCE concentrations averaging around 800mg/kg. The total project cost was about $275,000

Publications and Presentations:

"HEXAVALENT CHROMIUM REDUCTION AND IMMOBILIZATION USING HYDROGEN RELEASE COMPOUND", Battelle Press, 2003. *David Wierzbicki* (Michigan DEQ, Grand Rapids, MI); David Bohan (Envirologic Technologies, Inc., Kalamazoo, MI); Scott Mullin (Regenesis, Lisle, IL); Jason Peery and Anna Willett (Regenesis, San Clemente, CA).

"THE USE OF HYDROGEN RELEASE COMPOUND (HRC®) FOR PENTACHLOROPHENOL (PCP) DEGRADATION", Battelle Press, 2003. Neil J. Brown *(Ecology and Environment Inc., Chicago, IL); Fred Nika, P.E. (Illinois EPA, Springfield, IL); Scott Mullin, Kevin Lapus (Regenesis, San Clemente,CA).*

"ORC® - ADVANCED IN-SITU GROUNDWATER REMEDIATION - VILLAGE OF MEARS SITE", Battelle Press, 2007. David Wierzbicki (Michigan DEQ, Grand Rapids, MI); Scott Mullin (Regenesis, Lisle, IL).

"Bio-Trap™ samplers to evaluate ORC®-enhanced remediation of BTEX contaminated aquifers", Battelle Press, 2004. (poster) Greg A Davis (Microbial Insights, Rockford, TN); Scott Mullin (Regenesis, Lisle, IL); Steve Sittler (Arcadis, South Bend, IN); Dora Ogles, Josh Streufert, Deb McElroy (Microbial Insights, Rockford, TN); Kerry Sublette (University of Tulsa, Tusla, OK); Erin Rasch and Stephen Koenigsberg (Regenesis, San Clemente, CA).

"ELECTRON ACCEPTORS, MICROBES, AND SENSORS: A TRIPARTITE FIELD INVESTIGATION IN ATRAZINE BIOREMEDIATION", Battelle Press, 2004. Stephen Koenigsberg (Regenesis, San Clemente, CA); Scott Mullin (Regenesis, Lisle, IL); Kim Sakata (Regenesis, San Clemente, CA); Lawrence Wackett, Lisa Strong, K. Reardon, V. Acha (University of Minnesota, St. Paul, MN); and Blaine Schroyer (Terracon, Franklin, WI).

STEVE BARNES

TITLE
Remediation Services Director of Operations, Geologist

EDUCATION
Master of Business Administration, University of Notre Dame, South Bend, IN, 2022

Geology, Southern Methodist University, Dallas, TX, 1997 - 2001

TRAINING AND CERTIFICATIONS
OSHA 29 CFR 1910.120 HAZWOPER 40-Hour Training

OSHA 29 CFR 1910.120 HAZWOPER 8-Hour Refresher Training

4 Hour Spill Prevention Control and Countermeasures Training

Loss Prevention System (LPS) Behavior Based Safety Training

OSHA 29 CFR 1926 8-Hour HAZWOPER Supervisor Safety Training

DOT-Basic HazMat Training under 49 CFR 172.704: HM-232

Defensive Driving

Niton XRF Spectrum Analyzer

EXPERIENCE SUMMARY
Mr. Barnes has over 20 years of experience as an environmental geologist/project manager relating to soil, sediment, and groundwater contamination throughout U.S. while working under various regulatory agencies. His experience includes the development of work plans to investigate soil and groundwater contamination for commercial and industrial properties, evaluation, selection, and implementation of remedial design methods, the design, operation, and maintenance of dual phase extraction systems, several large-scale dig and haul remedial projects, soil and sediment stabilization, and *in situ* groundwater and soil treatment utilizing chemical oxidation, chemical reduction, and enhanced bioremediation. For the last few years, Mr. Barnes has been responsible for managing regional project managers while overseeing operations of the REGENESIS North America Remediation Service Division. Mr. Barnes has a bachelor's degree in Geology from Southern Methodist University and a Master of Business Administration from the University of Notre Dame.

REPRESENTATIVE PROJECTS
Chart Industries, Arkansas – Acted as Project Manager/Director of Operations overseeing the implementation of a multi barrier sorption and biodegradation approach application. Barrier installation was performed at several locations spanning a total distance of 4,000 feet from upgradient locations to downgradient locations. Application activities took place over multiple phases. A total of 95,000 gallons of PlumeStop® Liquid Activated Carbon® was applied. Project cost was $650,000.

FXI, North Carolina – Acted as Project Manager/Director of Operations overseeing the implementation of an application using a sorption and biodegradation approach. The application was performed utilizing injection wells located within saprolite and partially weather rock aquifer zones. Design included variable doses across barrier locations both vertically and horizontally based on geophysical surveys and mass-flux modeling. Application activities took place over a month and half period and included the application of 60,000 gallons of PlumeStop® Liquid Activated Carbon®. Project cost was $450,000.

Office Furniture Mart, IN – Acted as Project Manager/Director of Operations overseeing the implementation of an application using a sorption and biodegradation approach. Application activities took place over several weeks and included the application of 64,000 gallons of PlumeStop® Liquid Activated Carbon®. The chlorinated solvent plume at this site covered an area of 22,000 square feet, which was situated directly underneath office furniture warehouse build. Project cost was $850,000.

Air National Guard Base, Ohio – Acted as Project Manager implementing an application for the remediation of chlorinated solvents in soil and groundwater. The chlorinated solvent plume at this site covered an area of 26,000 square feet. A total of 110,000 pounds of PersulfOx® was injected at a 23% solution through multiple injection events. Project cost was $900,000.

Superfund Site, Benton Harbor, Michigan – Acted as Field Project Manager implementing an application for a remediation of chlorinated solvents in soil and groundwater. The chlorinated solvent plume at this site covered an area of 42,000 square feet. A total of 437,000 pounds of PersulfOx® was injected at a 25% solution through 129 injection points. Project cost was $1M+.

Grant Avenue, Cleveland, OH– Acted as Field Project Manager for a remediation contractor performing design modification and managing the application of RegenOx® and hydrogen peroxide through in-situ soil mixing of nearly 600 in-place cubic yards (yd3) of soil to chemically oxidize trichloroethene (TCE) impacted soil bound contaminant mass to below the maximum concentration for Toxicity Characteristic Leaching Procedure (TCLP) 0.5 milligrams per liter (mg/l) for TCE in soils. Project cost was $50,000.

Belknap Crossing Site, Louisville, KY – Served as Field Project Manager to implement an enhanced reductive dechlorination and bioaugmentation design through the injection of 26,000 pounds (lbs) of 3D Microemulsion and 200 liters of a bioaugmentation culture. The chlorinated plume was approximately 60,000 square feet (ft2). Project cost was $170,000.

Site Embayment Area Remediation, Staten Island, NY – Project Manager for the sediment removal activities and restoration of affected wetland areas from a tidally influence embayment area adjacent to a major shipping channel. Over 20,000 tons of metals impacted sediment was excavated, dewatered, and solidified with calcium oxide prior to transportation and disposal to meet mandated U.S. Fish and Wildlife deadlines. Responsibilities included daily personnel management, vendor procurement/negotiation, overall scheduling, budget, and profitability. Project cost was $3M+.

PCB Impacted Sediment and Floodplain Soil Removal Action, Bedford, IN– Field Project Manager for this high profile, multi-phased Polychlorinated Biphenyl (PCB) soil contaminated project. Over 1.2M tons of hazardous and non-hazardous impacted sediment and floodplain soil was removed and transported to an onsite landfill. Responsibilities included daily management of personnel, overseeing the construction of large scale diversion channels, operation of an onsite water treatment system, construction of a 49-acre onsite landfill, and 55 acre onsite clean fill borrow source. Organized and implemented daily transportation/disposal activities for 100+ trucks per day. Project cost was $72M+.

Halliburton Energy Services Portfolio, Various Sites in the U.S. – Served in multiple roles to support various projects under a 7-year contract for the remediation of soil and groundwater at 53 sites worldwide. Assisted with the review of geochemical, hydrological and geological data, and regulatory requirements. Developed Remedial Design Action Work Plans and Corrective Action Work Plans. Assisted and performed in-situ groundwater treatment utilizing chemical oxidation reagents and aerobic bioremediation. Project cost was 12M+.

ANDREW KAVANAGH, LPG

TITLE
Remediation Services Project Manager

EDUCATION
Bachelor of Arts Geology,
Colgate University,
Hamilton, New York

TRAINING AND CERTIFICATIONS
OSHA 29 CFR 1910.120 HAZWOPER
40-Hour Training

OSHA 29 19.10.120 HAZWOPER 8-Hour
Refresher Training

Indiana LPG #2652

EXPERIENCE SUMMARY

Mr. Kavanagh has 2 years of oil and gas experience, and over 9 years of experience as an environmental geologist and project manager relating to soil, sediment, and groundwater contamination throughout U.S. while working under various regulatory agencies. His experience includes the development and implementation of Health and Safety programs and practices, the development of work plans to investigate soil and groundwater contamination for commercial and industrial properties, evaluation, selection, and implementation of remedial design methods, the design, operation, and maintenance of high volume remedial application systems, and *in situ* groundwater and soil treatment utilizing chemical oxidation, chemical reduction, sorption, and enhanced bioremediation. In January 2018, Mr. Kavanagh was brought on to REGENESIS as a Senior Project Supervisor and later then promoted to Project Manager for the Central Region. He currently manages application field crews and projects throughout much of the Central Region while working closely with REGENESIS' sales and technical design personnel.

REPRESENTATIVE PROJECTS:

Manufacturing Facility, Cedar Rapids, IA 2023 - Acted as Project Manager as well as performed onsite work. This application consisted of an on-site ERD and ISCR treatment utilizing 3DME, S-MZVI, and BDI plus to target CVOC's and an additional 900' of downgradient PlumeStop/S-MZVI PRB to eliminate off-site migration. A total of ~55,000 gallons of PlumeStop/S-MZVI solution were applied in the downgradient PRB. The project took place over 21 on-site working days.

Amphenol, Franklin Indiana, 2017 - Acted as Project Manager as well as performed the onsite work. This was a small pilot study utilizing PlumeStop and S-MZVI to treat chlorinated solvents. The chlorinated solvent plume had made contact with a sewer line and resulted in significant impacts to nearby residential properties. The pilot application yielded significant reductions in GW concentrations.

Flexdar Site, Indianapolis Indiana, 2022 – Acted as Project Manager for the field application of 62,000 pounds of PlumeStop and 24,000 pounds of S-MZVI via DPT injection in a multiple barrier approach, all taking place in ROW. Additionally, 3DME, S-MZVI, and BDI grids were installed utilizing DPT injection to eliminate the source area. All downgradient monitoring wells are currently non-detect as of 2 post application quarterly sampling events. This project took place over 70 on-site working days

Grayling Airfield, Grayling Michigan, 2018 - Acted as Project Manager as well as performed the onsite work. In 2016, the Michigan Department of Military and Veteran Affairs (DMVA) became aware of the potential contamination from PFAS from historical operations such as onsite firefighting training activities and began testing. PFAS was found commingled with a chlorinated solvent plume. REGENESIS applied colloidal activated carbon (PlumeStop) in a pilot study to address PFAS and chlorinated impacts in groundwater utilizing a single row upgradient barrier approach consisting of 8 injection locations. Soil cores, carbon concentration analyses, and ROI testing were taken throughout the project to adjust the design in order to yield the best results.

Sandy Beach Road, Azle Texas, 2018 – Acted as Project Supervisor and managed the injection of 30 dual-nested wells utilizing 4 different injection pumps. Designed and built several pump and manifold systems to accommodate the site needs and meet budgetary goals. Many adjustments to the remediation design were made in the field due to widely varying injection porosities observed throughout the site. Bulk mixed colloidal activated carbon (PlumeStop) 6,900 gallons at a time. Co-applied Bio Dechlor INOCULUM Plus (BDI Plus) with PlumeStop using a slip-streaming method which prevents the bio cultures from being exposed to the atmosphere. Injected up to 29,000 gallons in a single day. A total of 150,000 lbs of Plumestop, 324 Liters of BDI Plus, and 11,120 lbs of Hydrogen Release Compound Primer (HRC-Primer) were applied at this site.

Former GE Facility, Fort Wayne Indiana, 2018 – Acted as Project Manager for the field application of 72,000 lbs of Plumestop, 194 Liter of BDI, and 9,080 lbs of HRC into 262 direct push borings. Total volume applied was 114,000 gallons. Consisting of 9 PlumeStop barriers, the application's goal was to halt chlorinated solvent migration into the nearby St. Mary's River. This application took place inside of an abandoned building with no power/lighting. Extensive health and safety planning and coordination with multiple parties was done in order to provide a safe work environment.

Former Diamond Tool, Duluth Minnesota, 2018 – Acted as Project Manager for the field application of 16,000 lbs of PlumeStop, 3,000 lbs of AquaZVI, 26 Liters of BDI Plus, and 1,640 lbs of HRC. The goal of this application was to emplace a permeable reactive barrier to halt the migration of chlorinated solvents. During design verification testing, a discrete sand seam was identified as the primary mass transport mechanism for contamination with a significant amount of stored mass in an underlying clay unit. Extensive permeability calculations were done in the field to provide a degree of certainty that the injectate was being applied both in the porous sand seam, and the tighter clay unit.

McConnel Air Force Base, Wichita Kansas, 2017 – Acted as Project Supervisor for 3 crews working throughout the base. All crews were using pneumatic fracturing methods to inject catalyzed persulfate and ferrous iron (separately). Drilled 8 ¼ auger holes to deploy straddle packers during injection, used surveying methods to observe and record heave from pneumatic fracturing, wrote daily project summary and safety reports.

Chico Station, Decatur Texas, 2017 – Acted as Project Supervisor for the application of 120,000 lbs of activated carbon and 700 DPT points at this crude oil holding facility where nearly 250,000 gallons was accidentally released. Designed and built a dual pump delivery system to achieve 70 gpm and 1,000 psi to meet the client's needs. The project duration was over 4 months of field time.

Christian Parke

TITLE
Great Lakes District Manager

EDUCATION
Bachelor of Science, Geology, Auburn University, Auburn, AL

TRAINING AND CERTIFICATIONS
OSHA 29 CFR 1910.120 HAZWOPER 40-Hour Training
OSHA 29 CFR 1910.120 HAZWOPER 8-Hour Supervisors Training
OSHA 29 CFR 1910.120 HAZWOPER 8-Hour Refresher Training
State of Georgia Geologist in Training (GIT)

EXPERIENCE SUMMARY

Mr. Parke graduated from Auburn University in May of 2019, majoring in Geology. While in school, he completed an apprenticeship based in floodplain remedial techniques. Mr. Parke was hired by REGENESIS in July of 2019. Originally from Alabama, he is now based in Chicago. While working for REGENESIS, Mr. Parke has held multiple positions. He began implementing *in situ* soil and groundwater remediation applications throughout the United States as a member of REGENESIS Remediation Servies group. He then transitioned into a Technical Services role, creating site specific remedial designs to meet clients' and regulators' cleanup standards. Finally, he moved into his current role, managing the Great Lakes district, developing new business while ensuring that our current clients' remedial needs are attended to with the upmost care and efficiency.

REPRESENTATIVE PROJECTS:

Ypsilanti Project, Ypsilanti, MI, 2025 — Acted as District Manager for the technical evaluation and field application of 3DME, S-MicroZVI, and BDI Plus. The project took place over two months of onsite work utilizing two concurrent injection crews in a former auto manufacturing facility in southeastern Michigan. The contamination onsite ranged from measurable DNAPL onsite to low parts per million type concentrations of chlorinated VOCs. Results to this point have shown 90%+ reductions of VOC concentrations in performance wells onsite.

Kenosha Engine Plant, Kenosha Wisconsin, 2021 – Acted as Project Supervisor for the field application of PlumeStop, 3DME, PersulfOx and S-MicroZVI. This project consisted of the application of 56,000 lbs. of 3DME, 11,000 lbs. of PersulfOx, 34,200 lbs. of S-MicroZVI, and 39,000 lbs. of Plumestop. This multi-area project took place over three months at a former engine production facility and consisted of more than 400 injection locations. The entire cost of the scope of work was over $3.1 million.

Former Appliance Production Facility, Salem Virginia, 2021 – Acted as Project Supervisor for the field application of 3DME, Plumestop, S-MicroZVI, and HRC. The project involved the application of 15,200 lbs. of 3DME, 19,600 lbs. of Plumestop, 23,700 lbs. of S-MicroZVI, and 1520 lbs. of HRC. The application was completed in two parts, with a permeable reactive barrier installed to prevent offsite migration of contaminants and an application tackling the source area of the contamination. The total cost of the scope of work was $750,000.

AJAX Rolled Ring Facility, York South Carolina, 2020 - Acted as Project Supervisor for the field application of PlumeStop and S-MicroZVI. This project involved injecting 27,200 lbs. of PlumeStop and 4,500 lbs. S-MicroZVI that was mixed with over 65,000 gallons of water into 107 direct push injection points. This took place at an active steel processing plant and required RRS to structure and plan operations around the necessary daily activities that took place at the facility. The total cost of the entire scope of work was over $325,000.

Pugh's Cleaners, Eustis Florida, 2020 - Acted as Project Supervisor for the field application of PersulfOx into 22 injection well locations. The project consisted of two injection events at an active dry cleaner totaling 13,334 lb. of product. For the second injection event, Mr. Parke was the only REGENESIS field staff onsite to complete the application. The total cost of the entire scope of work was $83,000.

of work was over $476,000.

ICA Site, Jacksonville Florida, 2020 - Acted as Project Supervisor to assist with the application of 6,800 pounds of PlumeStop, 5,240 pounds of HRC, and 18L of BDI PLUS over a deep and shallow barrier containing both injection wells and direct push technologies. This project demanded flexibility as the direct push portion of the injections were added as the application was occurring. Despite the added scope of work, the project was still finished within the original schedule. The total cost of the entire scope of work was $176,000.

Girl Scout Camp, Azle Texas, 2020- Acted as Staff Scientist to assist with the application of PlumeStop in three different injection well barriers across the site. The project consisted of 66,000 lb. of PlumeStop injected over four weeks of application. Mr. Parke was a part of the team specifically requested by the client to appear on this site due to previous successful applications with the client. The total cost of the entire scope of work was $511,000.

Beverage Air Facility, Spartanburg South Carolina, 2020- Acted as Staff Scientist to assist with the application of 3-D Microemulsion and BDI Plus during an active demolition of the facility. RRS field staff were tasked with managing application timelines between the client and the construction company that would work in conjunction with the demolition occurring on site. A total of 8,800 pounds of 3DME and 51 L of BDI Plus were applied over two weeks onsite. The total cost of the entire scope of work was over $128,000.

Owen Miller

TITLE

Senior Design Specialist

EDUCATION

Hydrogeology and Geochemistry, University of Wisconsin-Milwaukee, Milwaukee, WI (2025)

Geophysics, University of Wisconsin-Milwaukee Milwaukee, WI (2014)

TRAINING AND CERTIFICATIONS

OSHA 29 CFR 1910.120 HAZWOPER 40-Hour Training

OSHA 29 CFR 1910.120 HAZWOPER 8-Hour Refresher Training

Scanning Electron Microscope and Energy Dispersive Spectroscopy (SEM/EDS)

X-Ray Diffraction and X-Ray Fluorescence (XRD/XRF)

Liquid Chromatography-Mass Spectrometry (LC-MS)

PHREEQC Geochemical Modeling

EXPERIENCE SUMMARY

Mr. Miller is a Hydrogeologist and Geochemist with over a decade of experience within the field. His professional career has specialized in contaminant hydrogeology with a focus on In-Situ Remediation. He currently serves as a Senior Design Specialist for REGENESIS Remediation Solutions. In his current role and capacity, he is responsible for the evaluation and selection of In-Situ technologies and application designs for treatment of contaminated media; development and execution of design verification programs to enhance site conceptual models; development of placement validation programs to ensure and measure placement of injectates; post-application performance evaluations; maintaining and optimizing design software; publishing and presenting technical content and conducting applied research on the use of in-situ technologies and application methods.

Mr. Miller has extensive in-situ design experience and has successfully treated hundreds of sites with various types of contamination ranging from petroleum hydrocarbons, chlorinated volatile organic compounds, pesticides, metals and PFAS. His research and practice areas are primarily focused on Enhanced Reductive Dechlorination and In-Situ Chemical Reduction treatments, sequencing in-situ treatment technologies for design optimization, innovative applications of reagents and the fate and transport of colloids in porous media.

REPRESENTATIVE PROJECTS

- **Kenosha Engine Plant, Wisconsin –** Lead designer for large and high-profile industrial site in Wisconsin. Developed extensive design verification program to enhance site conceptual model prior to remediation. Remedial program used a combination of In-Situ Chemical Oxidation (ISCO), Enhanced Reductive Dechlorination (ERD) In-Situ Chemical Reduction (ISCR) and In-Situ Sorption (ISS) to treat cVOCs present in groundwater at concentrations ranging from DNAPL to low parts per billion in groundwater. Worked directly with Wisconsin DNR, the city of Kenosha and their consultant in developing and performing the work. Application was performed in October of 2021 to January of 2022. To date, most of the site has attained or is nearing the remedial goal of 90% molar mass reduction in groundwater. Project cost was $3,127,000.
- **Radio Materials Corp, Indiana –** Served as lead designer for large superfund site. The remedial program used a series of permeable reactive barriers (PRBs) consisting of colloidal activated carbon with zero valent iron and bioaugmentation culture to promote In-Situ Sorption (ISS) and ISCR/ERD for treatment of a large cVOC plume. Project completed in December of 2022. A significant decrease in contaminants (e.g., 90%+) has been observed following the application across the site. Project cost was $1,800,000.
- **Flexdar Cleaners, Indiana –** Designed and directed the application of a large cVOC migrating towards prominent Indiana river in a high flow aquifer. The remedial program employed a series of PRBs comprised of ISS and ERD/ISCR technologies to capture and degrade migrating cVOCs. Developed source treatment program with consultant to pair In-Situ thermal treatment with ERD/ISCR for synergistic treatment. Project was completed in December of 2022 with results demonstrating near elimination of the contaminant plume. Project cost was $1,260,000.
- **Field's Cleaners, Indiana –** Lead designer for the installation of five PRBs using ERD/ISCR treatment for a 1,200-foot long cVOC plume in a residential setting. Project was completed in July of 2019. Three and a half years following the application, much of the plume has been fully treated with declining trends firmly established. Project is nearing closure and No-Further Action (NFA). Project cost was $612,000.

- **Former Robertshaw Facility, Indiana –** Lead designer for treatment of cVOCs at former commercial manufacturing site. Developed and directed pilot test in March of 2016 to treat source zone of cVOCs with residual DNAPL. The pilot test demonstrated a 2 to 3 order of magnitude reduction in dissolved phase cVOCs, leading to full-scale application program in October 2018 using a grid application approach. DNAPL has been fully treated with a 99% reduction in concentration. Total project cost was $247,000.
- **Galco Project, Indiana –** Lead designer for the installation of two PRBs in March of 2017 consisting of colloidal activated carbon with electron donor and bioaugmentation culture for ISS and ERD of large cVOC plume. Over a 95% reduction was achieved and sustained for several years, leading to an NFA. Project cost was $50,000.
- **Derby Coastal Mart, Iowa –** On-site lead and co-design lead for Derby Coastal Mart project. Low-permeability aquifer that was not conductive to in-situ injections. To enhance aquifer accommodation for in-situ injections, hydraulic fracturing was performed. Logged site soils and directed installation of fractured enhanced injection wells. Co-planned injection testing and remedial design. Performed full-scale ISCO and In-Situ Sorption applications for PHC contamination in soil and groundwater. Project awarded NFA. Project cost was $295,000.

PUBLICATIONS AND PRESENTATIONS

Miller, O. AIPG Michigan 12th Annual Environmental Risk Management Workshop, *"Utilizing a Multi-phase Finite Difference species Computer Model that accommodates Dynamic Sorption and Competitive Interactions to Interpret and Predict PFAS Fate and Transport" (*June 2023*).*

Miller, O. Battelle Sixth International Conference on Bioremediation and Sustainable Environment Technologies, *"In-Situ Treatment for Hexavalent Chromium using ISCR Enhanced Bioremediation in Saturated Clay Soils Results in No Further Action" (*May 2023*).*

Miller, O., Moore, R. Battelle Sixth International Conference on Bioremediation and Sustainable Environment Technologies, *"A Combined Remedy of In-Situ Chemical Oxidation and Aerobic Bioremediation to Treat the Emerging Contaminant Tetrahydrofuran" (*May 2023*).*

Davis, D., Miller, O. (2018). Addition of Divalent Iron to Electron Donor Mixtures for Remediation of Chlorinated Ethenes: A Study of 100 Wells. *Remediation Journal* 29 (1): 37-44.

Davis, D., Miller, O. Battelle Eleventh International Conference on the Remediation of Chlorinated and Recalcitrant Compounds, *"Addition of Dual-Valent Iron to Electron Donor Mixtures for Remediation of Chlorinated Ethenes – A Study of Over 100 Wells"* (April 2018).

Kasper, K., Miller, O., Moore, A., Moore, R. Battelle Eleventh International Conference on the Remediation of Chlorinated and Recalcitrant Compounds, *"Chlorinated Solvents in Tight Clay/Weathered Rock Reduced 98% in 17 Months at a Superfund Site"* (April 2018).

Wilhelm, K., Moore, A., Miller, O. Battelle Eleventh International Conference on the Remediation of Chlorinated and Recalcitrant Compounds, *"In-Situ Sensors and Injection Measurements Evaluate Electron Donor Distribution in Low-Permeability Heterogeneous Aquifer Achieving Closure through ERD"* (April 2018).

Davis, D., Miller, O. Battelle Fourth International Symposium on Bioremediation and Sustainable Environmental Technologies, "Performance Benchmarks Using Timelines: A Simple Way of Assessing Performance of In Situ Bioremediation Applications" (May 2017).

Miller, O., Graham, J., Han, W.S., et al. Managing Wisconsin's Urban Water Resources, 37th Annual Meeting**,** *"Analyses of Hydraulic Properties at the Cedarburg Bog with Emphasis on Subsurface Characterization and Groundwater Flow" (*March 2013*).*

William Disselhorst

TITLE
Remediation Services Senior Project Supervisor

EDUCATION
Bachelor of Science Environmental Sciences,
University of Illinois,
Urbana-Champaign, Illinois

TRAINING AND CERTIFICATIONS
Certified Hazardous Materials Manager (CHMM)

OSHA 29 CFR 1910.120 HAZWOPER 40-Hour Training

OSHA 29 19.10.120 HAZWOPER 8-Hour Refresher Training

EXPERIENCE SUMMARY

Mr. Disselhorst graduated from the University of Illinois in 2017 majoring in Earth, Society and Environmental Sciences. After graduation, he went to work with the Illinois State Water Survey, a research institute working out of the University of Illinois. As a research assistant, his work was focused on several projects starting with the dissolved oxygen monitoring program for the IEPA. Upon completion of the project he took over responsibilities in several other monitoring programs with the goal of measuring the effects of agricultural run off on small stream ecosystems and hydrology.

Since being hired by REGNESIS in June 2018, he has acted as staff scientist tasked with helping manage on-site injections. He has worked with a wide array of products and has assisted in the completion of many projects ranging in time from a few days to a few months.

In June of 2019 he was promoted to Senior Project Supervisor and has since been running his own job sites as well as handling more of the administrative tasks on both the front and back end of projects.

REPRESENTATIVE PROJECTS:

AECOM, GAAF 2025 – Acted as project supervisor for the field application of over 55,000 lbs of PlumeStop at a pilot at a DOD site. A large PFAS plume was found at an army air force base in the Midwest. A pilot was designed and implemented with the hope of going full scale in the summer of 2027. Over 25 field days, I was responsible with handling the client, army Corp of engineers and local residential boards while completing the project.

IWM, Former Amphenol 2024 – Acted as project supervisor for the field spanning multiple barriers across a mile radius. Juggled multiple clients, end users, and city officials on a site with a lot of media attention. Ran two injection crews to ensure the project was completed on time and on budget. The total cost was over $1 million.

Wilcox, Flexdar 2023 – Acted as project supervisor for the field application of multi-barrier remediation taking place in downtown Indianapolis. The chlorinated plume was over a quarter mile in length and required following restrictions from the city in regards to onsite hours, noise ordinances and right of ways. The total cost of the project was $1.3 million.

Patriot, Houghland Canning 2022 – Acted as the project supervisor for the field application for the remediation of a chlorinated solvent plume in central Indiana. The plume was located near a well field for the city and required constant communication between RRS, Patriot, the landowner, and the city. Overall, the application took several months and the total cost was over $2.1 million.

Hamp Mattews, Americhem 2023 – Acted as the project supervisor for the field application in Mt. Pleasant, MI. A "double" barrier approach was utilized on this site with the objective of preventing the migration of a PFAS/PFOA plume from reaching a nearby river. Calcium chloride was used in conjunction with PlumeStop to bind to the contaminant and prevent further migration.

Seth Benson

TITLE
Remediation Services Senior Project Supervisor

EDUCATION
Bachelor of Science,
Central Michigan University,
Mount Pleasant, MI

TRAINING AND CERTIFICATIONS

OSHA 29 CFR 1910.120 HAZWOPER
40-Hour Training

OSHA 29 19.10.120 HAZWOPER 8-Hour
Refresher Training

GIS Specialization – Coursera

PADI Certified Open Water Diver
ISO 24801-2 Diver Level 2

EXPERIENCE SUMMARY

Mr. Benson attended Central Michigan University and majored in Biology and Psychology and minored in Chemistry. After graduating, he taught in a microbiology lab. Soon after, Mr. Benson worked for the United States Geological Survey where he assisted in a wide range of projects spanning Great Lakes *Cladophora* research to endangered mussel identification to surface water runoff impacts on groundwater.

Since being hired by REGNESIS in June 2021, he has acted as staff scientist tasked with helping manage on-site injections. He has worked with a wide array of products and has assisted in the completion of many projects ranging in time from a few days to a few months.

In October of 2022 he was promoted to Senior Project Supervisor and has since been running his own job sites as well as handling more of the administrative tasks on both the front and back end of projects.

REPRESENTATIVE PROJECTS:

Terracon, Addison IL 2021 – Acted as the sole representative of Regenesis in an oxidizer soil mixing job. 47,000 lbs of PersulfOx, 18,000 lbs of lime, and nearly 10,000 gallons of water were mixed with approximately 350 cubic yards of soil over the course of 4 days. Oversaw soil mixing ratios, maintained logbook, and accepted product delivery among other responsibilities. The goal of the project was to remediate chlorinated solvents. The total cost of the onsite work was $98,000.

Ramboll, Calumet Oil Refinery 2021 – Acted as the sole representative of Regenesis in a PetroFix soil mixing job. 14,000 lbs of PetroFix, 700 lbs of Regenesis electron acceptor blend, and over 5000 gallons of water were mixed with approximately 315 cubic yards of soil. The goal of the application was to stop the migration of a hydrocarbon plume near the Missouri river in Montana. The total cost of the project was $90,976.

Patriot, Houghland Canning 2021 – Acted as project supervisor on the application of an 850' permeable reactive barrier in a wooded area with variable depths to bedrock. 38,000 lbs of PlumeStop, 7000 lbs of SmZVI, and 58 L of BDI were injected with water for a total of 93,577 gallons. 13 soil cores were logged and used for infield adjustments. A total of 130 injection points were completed. The goal of the project was to stop the migration of a chlorinated solvent plume off the property boundary. The total cost of the project was $726,368.

Arcadis, Join Mility Base 2021 – Acted as project supervisor on the application of a permeable reactive barrier in a Controlled Movement Area (CMA) on an active military base. The goal was to remediate chlorinated solvents. The total cost of the project was $26,634.

Stantec, Rockwell Collins 2023 – Acted as senior projects supervisor on the application of several permeable reactive barriers to stop the migration and passively treat a comingled CVOC and PFAS plume. Total cost of the project was $381,933.

[Confidential], [Confidential] 2023 – Coapplied a proprietary chemistry blend to the subsurface to dissolute heavy metals from the water column. The application required an exclusion zone, Level C PPE, and Job Hazard Analyses for each step. The total cost of this project was $56,180.

James Cobb CSP, CHMM, Grad IOSH, RSO

TITLE
Corporate Director of Health & Safety

EDUCATION
Sam Houston State University - *Huntsville, Texas:* BS in Environmental Science minor in Chemistry, August 2007

TRAINING AND CERTIFICATIONS

- CHMM
- CSP-33512
- ASP-27680
- Radiation Safety Officer (1362985203)
- HAZWOPER Trainer
- DOT Trainer
- Incident Commander trainer
- Emergency Response Technician (29CFR1910.120) trainer
- OSHA 511
- OSHA 521
- STS Safety Trained Supervisor Certification through BCSP
- OSHA 30 Hour Construction Certification
- Certified Competent Person Certification in Excavations, Trenching and Shoring
- Certified Air Quality Permitting through SCAQMD
- Radiation Safety – University of Texas
- Chemical Safety – University of Texas
- Biological Safety- University of Texas
- OSHA 29 CFR 1910.120 HAZWOPER 40
- Grad IOSH
  Institution of Occupational Safety and Health EU

EXPERIENCE SUMMARY

Mr. Cobb is a result driven, hands-on Environmental Health and Safety professional, with proven ability to lead, implement and maintain quality environmental health and safety systems for the manufacturing, construction, and the petroleum industry. He has over 15 years of experience in the environmental field, he provides excellent leadership, strong interpersonal and communication skills, which have given him the opportunity to successfully reduce the risk of injury, illness, and loss time to production from accidents and near miss situations for Regenesis. Mr. Cobb has a Bachelor of Science degree in Environmental Science with a minor in Chemistry from Sam Houston State University.

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REPRESENTATIVE PROJECTS:

Geosyntec – ROHM & HASS, Redwood City, CA- Acted as Corporate Director of H&S for the injection of 86,000 lbs. of PlumeStop and 26,000 lbs. of S-MicroZVI using DPT drilling techniques. A total of 166,000 gallons of solution was injected into 190 DPT injection points over a 20-day period.

Sandy Beach Road, Azle Texas, 2018 – Acted as Corporate Director of H&S for the injection of 30 dual-nested wells utilizing 4 different injection pumps. Designed and built several pump and manifold systems to accommodate the site needs and meet budgetary goals. Many adjustments to the remediation design were made in the field due to widely varying injection porosities observed throughout the site. Bulk mixed colloidal activated carbon (PlumeStop) 6,900 gallons at a time. Co-applied Bio Dechlor INOCULUM Plus (BDI Plus) with PlumeStop using a slip-streaming method which prevents the bio cultures from being exposed to the atmosphere. Injected up to 29,000 gallons in a single day. A total of 150,000 lbs of Plumestop, 324 Liters of BDI Plus, and 11,120 lbs of Hydrogen Release Compound Primer (HRC-Primer) were applied at this site.

Former GE Facility, Fort Wayne Indiana, 2018 – Acted as Corporate Director of H&S for the field application of 72,000 lbs of Plumestop, 194 Liter of BDI, and 9,080 lbs of HRC into 262 direct push borings. Total volume applied was 114,000 gallons. Consisting of 9 PlumeStop barriers, the application's goal was to halt chlorinated solvent migration into the nearby St. Mary's River. This application took place inside of an abandoned building with no power/lighting. Extensive health and safety planning and coordination with multiple parties was done in order to provide a safe work environment.

Labor and Equipment Rate Breakdown

REGENESIS Personnel	Hourly Rate
Project Supervisor	$ 150.00
Staff Scientist	$ 110.00
Project Manager	$ 172.00
Director of H&S	$ 163.00

REGENESIS Equipment	Daily Rate
Truck	$ 175.00
IBIS	$ 1,500.00

Rental Equipment	Daily Rate*
Generator	$ 161.00
Frac Tank	$ 289.80
Forklift	$ 189.75
Conex Box	$ 253.69
Portable Toilet	$ 69.00

Material/Other Supplies/Costs	Unit Description	Unit Rate*
Temporary Fencing**	per 15 ft roll	$ 34.50
Injection Screens (3-foot)**	each	$ 977.50
Roll off-dumpster	each	$ 971.75
Private Locate	each	$ 3,691.50
Per Diem Per Person	day	$ 312.80
Weekend Furlough Per Person	weekend	$ 625.60
Additional Mobilization	week	$ 2,500.00
Hole Abondonement	injection point	$ 100.00

Subcontracted Driller Rates	Unit Description	Unit Rate*
Track Monted Rig (7822) and 2-Person Crew	day	$ 4,255.00
Additional Driller Mobilization	week	$ 1,437.50

***Includes 15% Markup**
****Includes delivery**

Response to Invitation to Bid BP# 25-06 Project Number MW23-444

Proposal for design and implementation for In-situ Remediation Services at the Former Cliffs-Dow Site in Marquette, Michigan

Prepared for:

City of Marquette
1100 Wright St.
Marquette, MI 49855

ORIN Technologies, LLC. (ORIN)



Larry Kinsman, Geologist
Principal
ORIN Technologies, LLC

August 19th, 2025

City of Marquette
1100 Wright St.
Marquette, MI 49855

Subject: Proposal for In-situ Remediation Services at the Former Cliffs-Dow Site Located in Marquette, Michigan.

Attn: City of Marquette,

ORIN Technologies, LLC. (ORIN) is pleased to submit this proposal to the City of Marquette (City) for in-situ remediation services at the former Cliffs-Dow site located along North Lakeshore Blvd. in Marquette, MI 49855 (site).

Summary of Site Conditions

ORIN is responding to the invitation to bid for treatability, pilot scale, and full-scale remediation targeting contaminants of concern (COCs) in groundwater. COCs include ethylbenzene, trimethylbenzene, xylene, methylphenol(s), and other heavy hydrocarbons derived from wood tar. Historical activities at the site include pyrolysis, charcoal production for pig iron smelting, and methyl distillation. There is no DNAPL in the target wells, but residual free product material may remain in the source area at unknown depths west of the road. The source of contamination is believed to be from a tar like substance at former settling pits and former processing locations. The lithology within the targeted vertical interval is fine to medium sands. The average depth of groundwater is approximately 6 feet below ground surface (ft-bgs) with groundwater flowing East toward the Lake Superior shoreline. Groundwater flux is approximately 1-2 ft/day.

The following contaminant concentrations are based on 2023 and 2024 sampling data. On the north end of the shoreline, COCs in GSI-1100 include approximately 4 mg/l (2,4 methylphenol), 1 mg/l (2 methylphenol), and 0.5 mg/l (3,4 methylphenol) with notably higher impacts at depth of 39-44 feet-below-grade surface (ft bgs). On the south end of the shoreline, COCs in GSI-1400 include approximately 1 mg/l (xylenes) and 0.4 mg/l (ethylbenzene). Low levels of naphthalene <0.2 mg/l is noted along the shoreline wells. COC concentrations of

methylphenol(s) generally increases upgradient toward GSI-100 and GSI-1200. GSI-100B concentrations increased sharply in year 2022 to approximately 3 mg/l (2,4 methylphenol) and 4 mg/l (3,4 methylphenol). GSI-1200 concentrations remain elevated around 3.5 mg/l (3,4 methylphenol) and 2.5 mg/l (2,4 methylphenol). The higher impacts of trimethylbenzene, ethylbenzene, and xylenes are located along the southern half of the mapped plume and towards the south-central area of the source area (UPG-400 and UPG-600). These volatile organic compounds (VOCs) are generally shallower to intermediate in depth approximately residing between 5 and 28 ft-bgs. Higher impacts of methylphenol(s) are predominantly found in the central to north half of the mapped plume, as well as being deeper. All COCs have been detected in the shallow (0-15 ft bgs), intermediate (15-30 ft bgs), and deep (>30 ft bgs) zones.

The goal of remediation is to target the groundwater contaminant plume migrating to Lake Superior in addition to targeting the source area COCs around UPG-400 and UPG-600. The groundwater well clusters of interest include UPG-400, UPG-600, GSI-100, GSI-200, GSI-600, GSI-1000, GSI-1200, GSI-1300, and GSI-1400, including impacted screened intervals at each cluster.

1.8.0 Technical Submittal

1.8.1 Agreement Exceptions

AN ITEMIZED LIST OF ANY AND ALL EXCEPTIONS, ASSUMPTIONS, OR CORRECTIONS NECESSARY TO ALLOW SUBMISSION OF THIS PROPOSAL.

- At this time, ORIN has no exceptions, assumptions, or corrections to the terms and conditions outlined in the proposed Professional Services Contract.

<u>Technical Assumptions:</u>

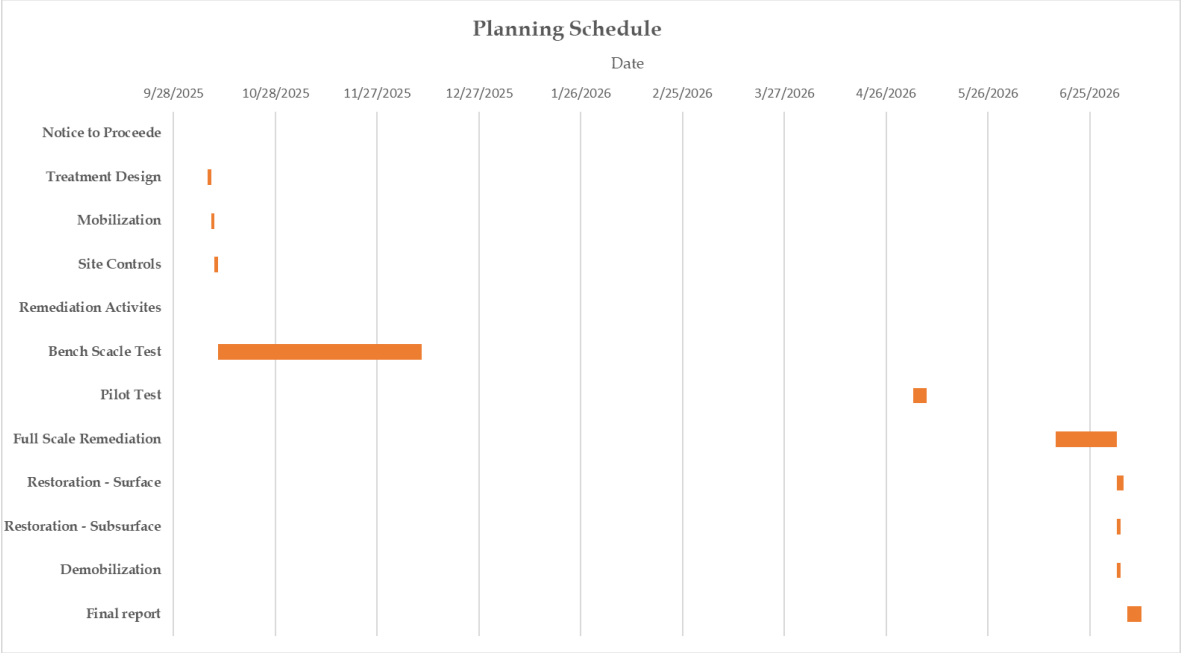
- All water used for remedial activities described within this proposal will be available from onsite fire hydrants or another source capable of providing 15 gpm designated and available through the City. ORIN will contract with city for fire hydrant use.
- ORIN will maintain site cleanliness by properly disposing refuse, including used PPE.
- Information supplied to ORIN from TriMedia and City is accurate and representative regarding the site contaminants and concentrations, area and volume of materials to treat, and the geology of the site.

- Office staff, sample collection, TOD/treatability testing, pilot scale, full scale, treatment chemical, injection equipment, (2) geoprobe rigs, telehandler and ORIN injection personnel are included in the proposed remedial approach. Includes utility locate and drilling subcontractor(s) personnel.
- ORIN will prepare and implement a site-specific health and safety plan upon award of this project, including Work Plan and SESC plan submittal/approval.
- ORIN is not responsible for signing any manifest for disposal of extracted fluids. ORIN is not responsible for disposal of any generated waste.
- ORIN is not responsible for any disposal, damage, or repair of asphalt and/or concrete necessary to complete in-situ remediation.
- TriMedia and ORIN will work cooperatively to acquire the proper permits no later than the beginning of the scheduled remediation start dates. ORIN is responsible for obtaining groundwater discharge permits from EGLE.
- ORIN is responsible for marking all public and private utility lines in or near the area of concern.
- ORIN is responsible for traffic control, if necessary. ORIN does not anticipate temporary closure or traffic detour of the public road North Lakeshore Blvd.
- No power source is required.
- ORIN will not be responsible for any treatment chemistry infiltration into nearby utility trenches, sewer systems, basements, catch basins, etc.
- The site is accessible to ORIN and ORIN's subcontractor's equipment.

1.8.2 Design Document Clarifications

ORIN has reviewed and understands the Drawings, Specifications, and all performance-related documents outlined in the Invitation to Bid, enabling us to submit a proposal without excessive contingencies.

1.8.3 Planning Schedule



All Phases – Work Task Items

1. Treatment Design: 90 labor hours
2. Mobilization: 120 labor hours
3. Site Controls: 12 labor hours
4. Remediation Activities: 928 labor hours (bench test, pilot, & full scale)
5. Restoration Surface: 15 labor hours
6. Restoration Subsurface: 0 labor hours, Not Applicable.
7. Demobilization: 120 labor hours

1.8.4 Work Plan Summary

The following is a summary of ORIN's preferred technical design, approach, and methods to implement in-situ remediation at the Site. Implementation will be divided into 4 phases of work.

BAM is assumed to be the preferred treatment chemistry within the proposed remedial design. Utilizing BAM will provide an advantage over sole oxidative treatments that will dissipate over time or exacerbate groundwater concentrations. In-situ chemical oxidation (ISCO) alone may elevate the desorption potential of wood tar derivatives and residual lignin precursors bound to soil, increasing the risk of mobilization into groundwater. Based on remediation goals, ORIN is recommending sorptive and/or biodegradation

technologies within permeable reactive barrier walls nearest the shoreline and within source area treatment zones. Treatability testing will compare treatment with hydrogen peroxide or calcium peroxide as the only ISCO technology used. Due to proximity to Lake Superior and EGLE concerns, sodium persulfate, sulfate, colloidal/surfactant products will not be considered. These products carry risks of sulfates or surfactants migrating to nearby surface water. Whereas BAM does not contain any additional ingredients. A total oxidant demand test will be conducted to inform oxidizer loading rates. Treatment results and all data, including lab analytical, will be entered into a report and made available to both the City and TriMedia.

BAM will absorb contaminants, while a low concentration of calcium peroxide generates dissolved oxygen for enhanced bioremediation. Specialized degrading microbes (Hydrocarbon Degrading Trichoderma or Site Specific) can be added to the BAM solution for tentative aerobic or anaerobic metabolic breakdown and secondary oxidation of hydrocarbon compounds. In addition, the use of BAM versus chemical oxidation may mitigate vapor release.

Phase 1: Sample Collection

A subcontracted driller or Geoprobe operator will acquire direct push soil samples. Groundwater samples will be collected from existing wells using a peristaltic pump and HDPE tubing. Tubing materials will be disposed of in one 50-gallon trash bag. HDPE or amber glass liter containers will be utilized to collect site water. Low flow sampling methods or approximately 2.5 gallons of groundwater will be purged before collecting samples. 5-10 gallons of waste groundwater is expected.

- Samples will be collected near GSI-1200 and UPG-600, or other impacted wells with representative COCs.
- Macro core soil samples will be collected from approximately 20-24 and 39-43 ft-bgs near GSI-1200 and 7-12 and 18-22 ft-bgs near UPG-600.
- Approximately 4kg of soil is required to conduct TOD and soil/groundwater treatability testing.
- Approximately 5 gallons of site groundwater is required for soil/groundwater treatability testing.
- Samples will be collected in a manner to minimize volatilization.
- Samples shall be placed in a cooler chilled with ice.

- **Samples and ice will be placed in separate heavy duty plastic bags (e.g. garbage bags) to prevent dilution and cross contamination.**
- Samples shall be shipped overnight under proper chain of custody protocol.

There are no electricity requirements for onsite activities. One 55-gallon drum of soil and groundwater waste are expected. Small quantities of material garbage (ie. PPE, plastic sheeting, plastic pipe) are expected in two 50-gallon trash bags. Less than 80 decibels of noise are anticipated within 100ft of the proposed activities. Phase 1 activities anticipate 3 personnel, between ORIN Staff and subcontractors, to be onsite for 1 day at 10 hours each day. Weekend work and overtime will not be required.

Phase 2: Total Oxidant Demand and Treatability Testing

The preferred treatment chemistry and loading rate will be validated and identified following treatability testing. The appropriate treatment chemistries selected for treatability testing, based on prior treatment performance and Site goals, include BAM and combinations thereof using calcium peroxide, site-specific anaerobic/aerobic microbes, hydrocarbon degrading Trichoderma microbe, or other. Treatability testing will include using either hydrogen peroxide or calcium peroxide as alternative ISCO technologies within the designated Hot Spot areas. Treatability testing will include site-specific microbe isolation testing. Trimedia or City may choose to forgo microbe isolation testing as a cost savings.

<u>TOD Testing</u>
Total oxidant demand (TOD) testing reveals the amount of chemical needed to fully oxidize both the contaminant and naturally occurring organic matter in the soil matrix. TOD testing involves dosing soils with a known amount of oxidant and then measuring the residual concentration of the oxidant over a period of several days. The ratio of the amount of oxidant consumed to the amount of soil it was in contact with provides the total oxidant demand, often given in units of grams/kilogram (g/kg). TOD will take approximately 5 days to complete at ORIN's lab.

- Soil samples will be homogenized to create representative composite samples for TOD testing. ORIN will perform TOD testing with sodium persulfate on composite soil samples from downgradient and upgradient areas. Persulfate TOD samples will be dosed at a rate of 5 g/L. The persulfate will be activated by using alkaline activation for the TOD test. The oxidant demand for each dosage will be tested at 24-, 48-, and 96-

hours for persulfate samples. Data obtained in the TOD tests will be used as a guide for setting the oxidant dosing rates for hydrogen peroxide or calcium peroxide for ISCO treated samples as part of ORIN's comprehensive treatability study.

Treatability Testing

Treatability testing utilizes the TOD information to set a loading rate for soil and groundwater dosing. The treatability testing will be conducted at ORIN's laboratory in conjunction with a commercial analytical laboratory. After the study ORIN will provide recommendations for the chemistry that is the most suitable for the site. ORIN will combine the site soil and groundwater to create a representative sample. The representative sample will be divided into smaller composite samples. These samples will be dosed with a variety of treatment chemistries and loading rates to determine the most cost-effective and successful treatment chemistry.

- Soil and groundwater samples will be homogenized into a composite soil and groundwater mixture. A representative groundwater control sample will be collected for comparison against treated results. Any control samples will be sent for lab analysis alongside other treated samples. ORIN will perform treatability testing on the soil and groundwater composite using a variety of treatment technologies, such as BAM, calcium peroxide, microbes, hydrogen peroxide, or combinations there of.
- Samples of combined soil and groundwater will be homogenized with each selected chemistry on a high and low dosing rate. Only groundwater from the mixture will be sampled for analysis.
- **Soil and Groundwater Mixture: 10-11 treated samples + 1 control sample**
- Samples will be allowed to react for 1-2 weeks following the treatment chemistry application. Groundwater from each mixture will be analyzed under EPA Methods 8260 for VOC totals and 8270 for SVOC totals. **(Anticipate 24 total laboratory samples)**
- If any contaminants that are important to the site are not specifically listed, Trimedia or the City should contact ORIN before the start of the treatability study to ensure they are included in the analyte list. Analytical testing will be performed on a standard turn-around time by a commercial analytical laboratory.
- Once the data is received and reviewed, ORIN will prepare a report outlining the findings of the TOD & treatability test. ORIN will complete a treatability report with all treatment results, chain of custody, lab report,

and identification of the preferred treatment chemistry based on the most effective treatment option. Requires 15-30 days to wait on lab data.

There are no onsite activities for Phase 2. There are no onsite electricity requirements. No waste will be generated on-site. No noise level onsite. Phase 2 activities will have no personnel onsite. No weekend work and no overtime will be required.

Phase 3: Pilot Scale

Pilot scale will complete approximately 18 of the total planned injection locations of the Full Scale – PRB(s). **Layout Figure 1** shows the full-scale remedial areas.

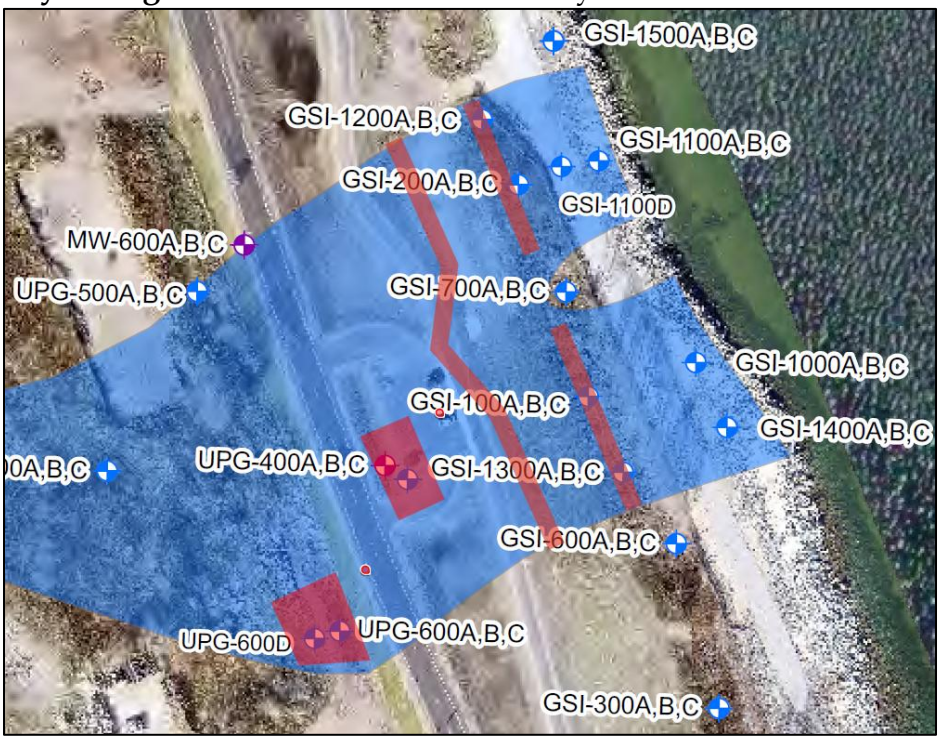
The anticipated treatment chemistry loading is 11% BAM with/without 1% calcium peroxide or microbe blend at 15.5 gallons per foot of treatment interval. Install 50 linear feet of the Northeast PRB and 50 ft of the Southeast PRB. The Northeast PRB has a treatment thickness of 20 ft with target intervals of 19-29 ft-bgs and 35-45 ft-bgs. The Southeast PRB has a treatment thickness of 21 ft with target intervals of 5-13 ft-bgs and 15-28 ft-bgs. A total of 18 DPT injection locations will be utilized between both areas assuming 10-ft centers. Pilot injections within these areas will determine feasibility using DPT as the preferred drilling method or if sonic drilling will be required for injection. A larger Geoprobe 8040 and 7822 will be onsite to more efficiently reach target intervals. Sonic will be substituted, and the scope will be adjusted accordingly if DPT cannot reach approximately 40-45 ft-bgs. If sonic is substituted, the number of injection locations and volumes will be modified at 16-ft centers. If large subsurface boulders prevent DPT injections nearest the shoreline, the Pilot event will be modified during same mobilization by relocating the barrier walls to **Layout Figure 2** locations. The City and the city's professional representative Trimedia may request preference for either **Layout Figure 1** or **Layout Figure 2** during planning. ORIN may adjust volumes and treatment intervals for any change to the preferred **Layout Figure 1** to better allocate treatment chemistry for the impacted intervals.

ORIN anticipates using 2 Geoprobe drilling rigs for simultaneous injections. There are no electricity requirements for onsite activities. One 55-gallon drum of decontamination wastewater is expected. Small quantities of material garbage (ie. PPE, plastic sheeting, plastic pipe) are expected in five 50-gallon trash bags. Less than 80 decibels of noise are anticipated within 100ft of the proposed activities. Phase 3 activities anticipate 4 personnel, between ORIN staff and subcontractors, to be onsite for 2.5 days at 10 hours each day. Weekend work and overtime will not be required. ORIN anticipates requiring 6,000 gallons of water to complete Pilot Scale activities.

Layout Figure 1. General layout for all DPT injection target areas



Layout Figure 2. Alternative remedial layout.



Phase 4: Full Scale

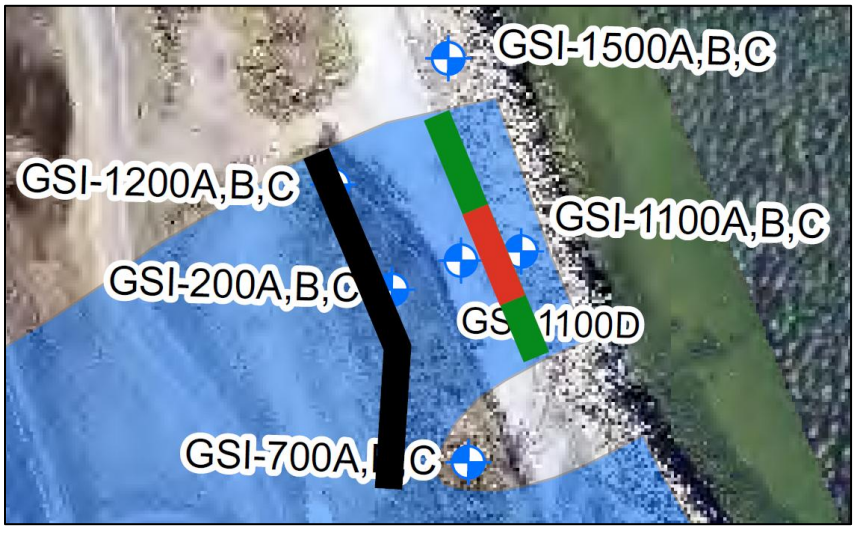
Permeable Reactive Barrier Wall – PRB(s)

ORIN is proposing DPT injection of Permeable Reactive Barrier Walls (PRBs) using BAM, or a combination thereof, as the preferred treatment chemistry. Four rows of injection points will be utilized to treat migrating groundwater with COCs impacting Lake Superior. These PRBs are identified as the "Northeast PRB", "Northwest PRB", "Southeast PRB", and "Southwest PRB". Each of these PRBs have target specific vertical treatment intervals informed by the GSI well network COCs and expected impact intervals.

Northeast PRB

- 28 total DPT injection locations via 2 offset rows using 10ft center spacing
- 11% BAM Treatment Chemistry with or without 1% calcium peroxide or microbe blend
- 50 ft of **red marked,** or 9 injection points will receive 310 gallons of treatment chemistry (treatment interval of 19-29 ft-bgs and 35-45 ft-bgs)
- 95 ft of **green marked,** or 19 injection points will receive 155 gallons of treatment chemistry (treatment interval of 35-45 ft-bgs)
- See **Injection Figure 1**

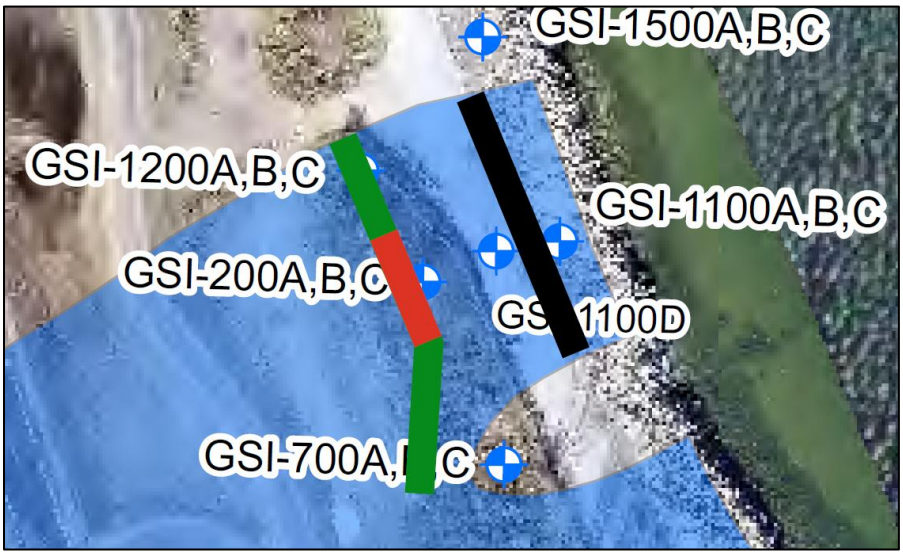
Injection Figure 1. *Northeast PRB with "green" and "red" locations for depth specific treatment intervals.*



Northwest PRB

- 39 total DPT injection locations via 2 offset rows using 10ft center spacing
- 11% BAM Treatment Chemistry with or without 1% calcium peroxide or microbe blend
- 60 ft of **red marked,** or 12 injection points will receive 310 gallons of treatment chemistry (treatment interval of 11-21 ft-bgs and 37-47 ft-bgs)
- 135 ft of **green marked,** or 27 injection points will receive 155 gallons of treatment chemistry (treatment interval of 35-45 ft-bgs)
- See **Injection Figure 2**

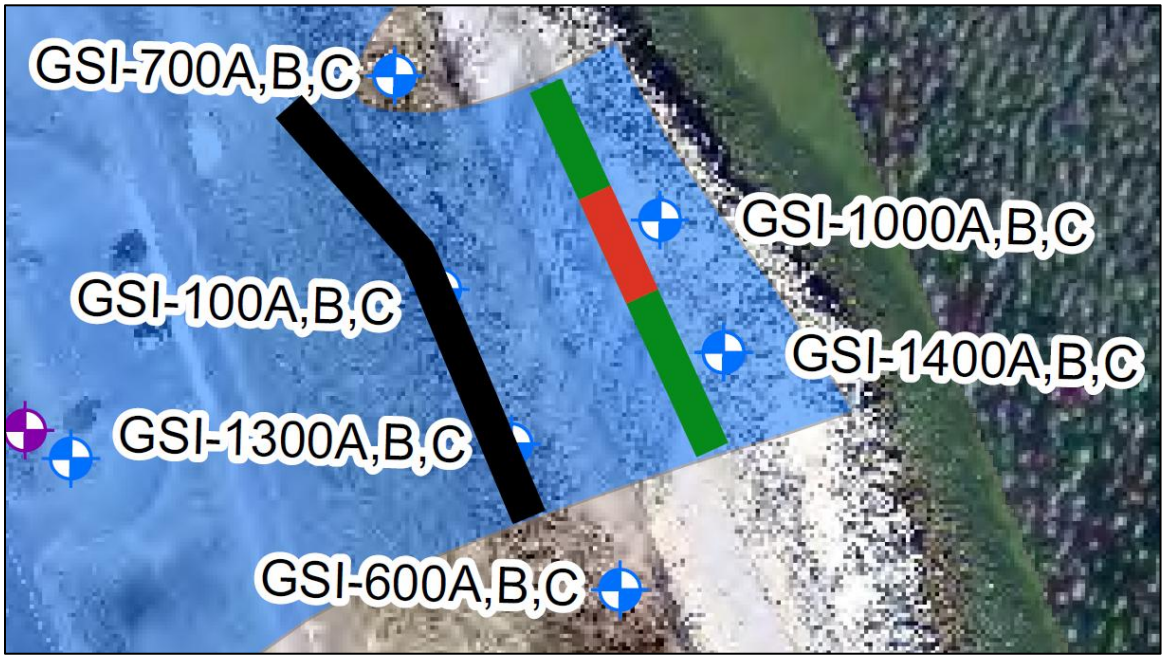
Injection Figure 2. *Northwest PRB with "green" and "red" locations for depth specific treatment intervals.*



Southeast PRB

- 34 total DPT injection locations via 2 offset rows using 10ft center spacing
- 11% BAM Treatment Chemistry with or without 1% calcium peroxide or microbe blend
- 50 ft of **red marked,** or 9 injection points will receive 325 gallons of treatment chemistry (treatment interval of 5-13 ft-bgs and 15-28 ft-bgs)
- 125 ft of **green marked,** or 25 injection points will receive 155 gallons of treatment chemistry (treatment interval of 18-28 ft-bgs)
- See **Injection Figure 3**

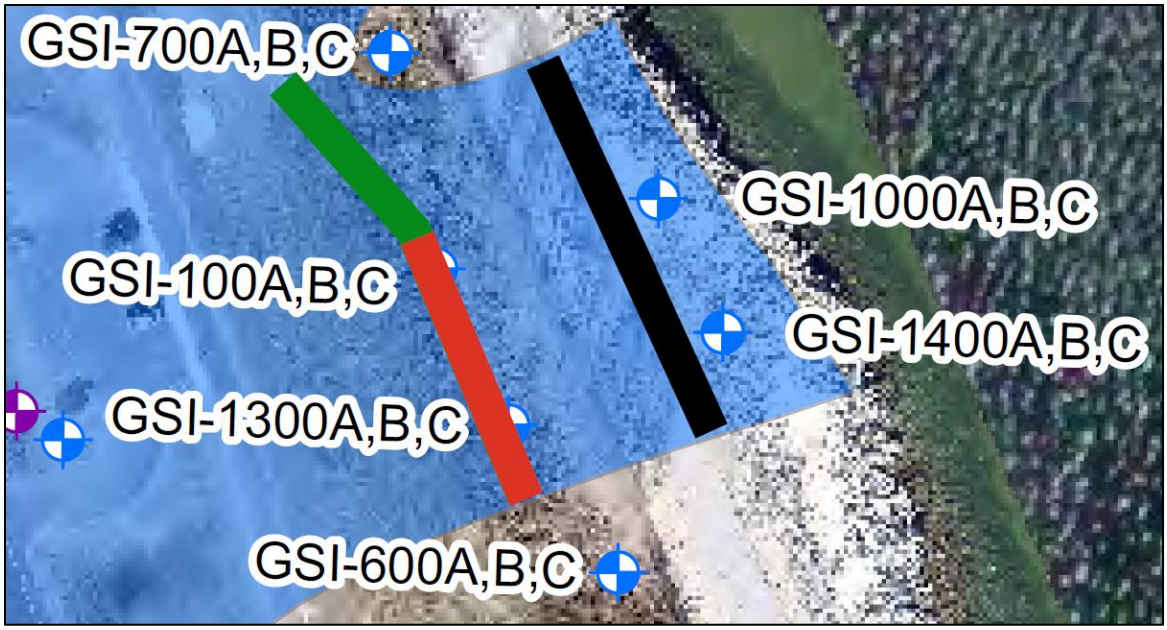
Injection Figure 3. *Southeast PRB with "green" and "red" locations for depth specific treatment intervals.*



Southwest PRB

- 42 total DPT injection locations via 2 offset rows using 10ft center spacing
- 11% BAM Treatment Chemistry with or without 1% calcium peroxide or microbe blend
- 120 ft of **red marked,** or 24 injection points will receive 325 gallons of treatment chemistry (treatment interval of 5-13 ft-bgs and 15-28 ft-bgs)
- 90 ft of **green marked,** or 18 injection points will receive 155 gallons of treatment chemistry (treatment interval of 18-28 ft-bgs)
- See **Injection Figure 4**

Injection Figure 4. *Southwest PRB with "green" and "red" locations for depth specific treatment intervals.*



Source Area Hotspot Treatment Areas

In addition to PRB(s), ORIN is proposing DPT injections within the known Hot Spot areas of UPG-400 and UPG-600. The remedial objective for these areas is to reduce known COCs of highest concentrations within the upgradient source area. ISCO or BAM will be considered for both Hot Spot areas as identified in **Hotspot Layout Figure 1.** Treatability testing will decide the most effective treatment remedy. For this design consideration, ORIN is assuming that BAM with calcium peroxide is the preferred treatment chemistry for each area. Based on the treatability findings, hydrogen peroxide may be considered as an alternative ISCO treatment for the Hot Spot area. TOD testing is required to determine the appropriate oxidizer loading rate. UPG-400 Hot Spot and UPG-600 Hot Spot Area treatments shall commence following completion of the PRB(s).

UPG-400 Hot Spot Area

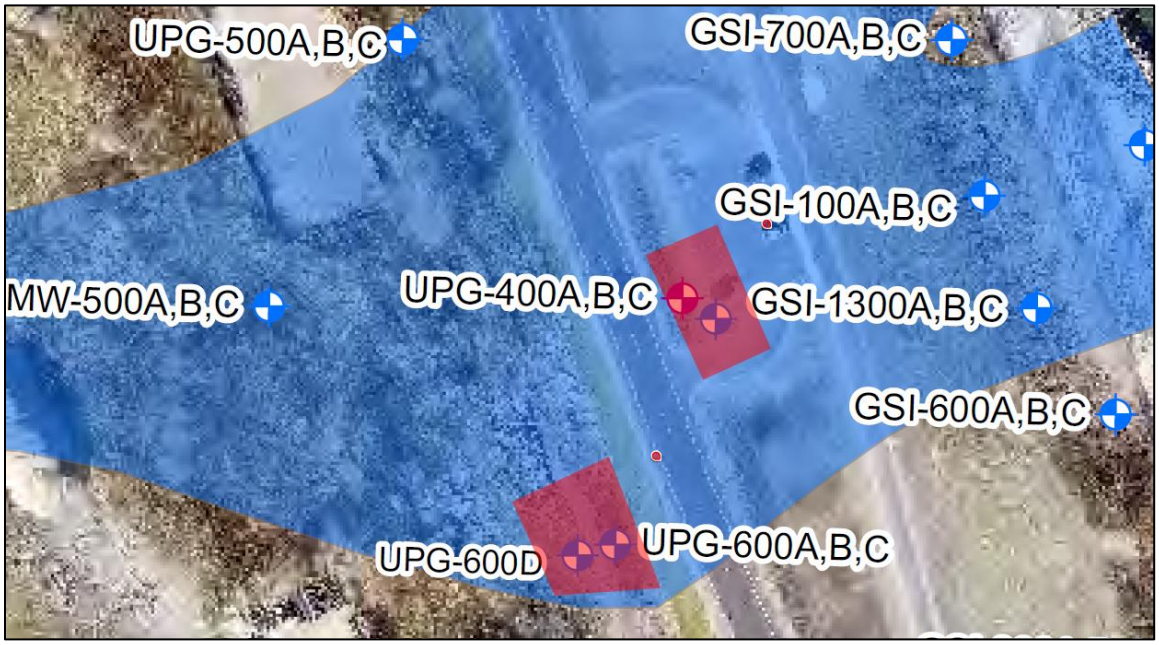
- 33 total DPT injection locations into a rectangular grid using 11ft center spacings
- 11% BAM Treatment Chemistry and 1% calcium peroxide, with or without the addition of microbes
- Target treatment area is approximately 3,100 square feet
- 33 injection points will receive 100 gallons of treatment chemistry (treatment interval of 18-28 ft-bgs)

- See **Injection Figure 5**

UPG-600 Hotspot Area

- 41 total DPT injection locations into a rectangular grid using 11ft center spacings
- 11% BAM Treatment Chemistry and 1% calcium peroxide, with or without the addition of microbes
- Target treatment area is approximately 3,900 square feet
- 41 DPT injection points will receive 210 gallons of treatment chemistry (treatment interval of 4-25 ft-bgs)
- See **Injection Figure 5**

Injection Figure 5. *UPG-400 and UPG-500 Hotspot Area(s) shown in "red".*



Phase 4 Clarifications *- ORIN anticipates using 2 Geoprobe drilling rigs for simultaneous injections. There are no electricity requirements for onsite activities. One 55-gallon drum of decontamination wastewater is expected. Small quantities of material garbage (ie. PPE, plastic sheeting, plastic pipe) are expected in twenty-five 50-gallon trash bags. Less than 80 decibels of noise are anticipated within 100ft of the proposed activities. Phase 4 activities anticipate 5 personnel, between ORIN staff and subcontractors to be onsite for 16.5 days at 10 hours each day. Weekend work and overtime will not be required. ORIN anticipates requiring 42,000 gallons of water to complete Full Scale activities.*

The implemented treatment chemistry materials will be delivered from ORIN's warehouse or supplier by third party transportation carriers. Transportation carriers will follow appropriate DOT regulations. ORIN will be transporting the injection trailer and equipment to the Site along with personnel during the same travel time. Subcontracted drilling rigs will be transported along with personnel by the subcontractor.

Response to Potential Upset Conditions

- Due to unforeseen weather conditions or equipment failures, Saturdays are contingent workdays to ensure completion within the expected time onsite.
- ORIN personnel and drilling subcontractors will remain in-town overnight during the duration of onsite work. Personnel will remain 30-45 minutes from the site for urgent responsiveness.
- One ORIN personnel has an office 45 minutes from the site for any urgent conditions that arise at any time, including weekends and holidays.
- Proposed work has no electrical requirements and will not have upset power outage conditions.
- An equipment rental facility near Marquette will transport by truck and trailer any necessary rental equipment, including air compressor, telehandler, and contingent water truck. The local rental facility can replace malfunctioning rental equipment for timeliness consideration.
- Extra pumps, injection lines, injection heads, and mixers are mobilized to accommodate any injection equipment failures to eliminate downtime.
- The preferred subcontracted driller has multiple Geoprobe rigs and technical expertise to repair or replace down drilling equipment. Alternative licensed subcontractors can be utilized. Response time to replace Geoprobe rigs is approximately 1-2 days.
- There is an alternative fire hydrant located at the southern entrance to the fenced property where a water truck may be utilized to shuttle water.
- The southern public parking lot located within the COC plume may be utilized as a contingency staging area. If used, the parking lot will remain closed for the duration of the work area. All deliveries will be received at the Site's southern gate or contingent parking lot. Note that if the contingent parking lot is used for staging equipment, the public pedestrian path will need to be closed for the affected work area duration.
- If the 8040 Geoprobe rig cannot reach target depth, a sonic 8140 rig will be utilized as the contingency drilling method during full scale activities. A 2–4-week duration between pilot scale and full scale will accommodate

required time. No downtime is expected during full-scale activities to acquire the alternative drilling equipment.

- Minimize project days by utilizing two subcontracted drilling personnel with two DPT Geoprobe rigs to work in tandem for simultaneous injections.
- The Northwest PRB and Southwest PRB may be utilized as alternative injection areas for pilot scale activities if injections nearest the shoreline experience drilling issues.
- ORIN's injection trailer has available vacuum equipment, pads, and socks to contain and clean up possible daylight of injection solution. Absorbent socks will be utilized along the shoreline to prevent spills from reaching surface waters.

Remedial Methodologies

The following includes the expected technologies and remedial implementation methodologies to describe field activities. These methods will be utilized to implement and complete the technical design as described above.

DPT Injection

The proposed remedial approach is the injection of the preferred treatment chemistry through a series of borings spaced in a grid-like or off-set pattern. The borings would be advanced to the appropriate depth using Direct Push Technology (DPT). The treatment chemistry will be injected into the rods to create minimal positive pressure before commencing injection into the surrounding formation. The rods will then be raised through the vertical treatment zone while simultaneously injecting the treatment chemistry into the formation.

ORIN will use approximately one-to-two-foot lift intervals (depending on the injection rod) throughout each vertical treatment location and inject the appropriate amount of treatment chemistry into each interval. The proper amount of treatment chemistry will be administered according to the subsurface and known contamination characteristics. The total volume, pressure, and rate of treatment chemistry injected will be monitored by ORIN and amended according to field conditions in order to ensure maximum injection effectiveness.

Two drilling rigs, a larger 8040 and 7822 Geoprobe track rigs, will be utilized for injecting at two injection locations simultaneously. Injecting at multiple locations simultaneously is intended to reduce project time. ORIN's injection equipment is designed to inject at one to four injection locations simultaneously. The larger

8040 Geoprobe rig is expected to reach the deeper treatment intervals. Screened injection tooling and bottom-out injection tooling will be utilized, whichever is more effective. Bottom-up or top-down injection methods will be utilized, whichever is more effective.

Immediately after the completion of each injection point, boreholes will be grouted to prevent subsequent treatment chemistry short circuiting.

Sonic Injection (Contingent)

The borings would be advanced to the appropriate depth using Sonic Technology. The treatment chemistry will be injected into the rods to create minimal positive pressure before commencing injection into the surrounding formation. The rods will then be raised through the vertical treatment zone while simultaneously injecting the treatment chemistry into the formation.

ORIN will use approximately four to five-foot lift intervals throughout the targeted zone and inject the appropriate amount of treatment chemistry into each interval. The proper amount of treatment chemistry will be administered according to the subsurface and known contamination characteristics in each injection area. The total volume and pressure of treatment chemistry injected will be monitored by ORIN and amended according to field conditions to ensure maximum injection effectiveness.

Immediately after the completion of each injection point, boreholes will be grouted to prevent subsequent treatment chemistry short circuiting.

Chemical Mixing and Delivery

The remedial injection treatment chemistry will be prepared using ORINs specialized injection equipment. The treatment chemistry will be mixed and temporarily staged prior to injection in 200-gallon tanks located inside ORINs enclosed injection trailer. The tank will first be filled with the proper amount of water to achieve the appropriate treatment chemistry solution concentration. Multiple tanks will be mixed and used during the injection, which enables work to proceed steadily and efficiently. The treatment chemistry will be pumped into the formation using ORINs air-driven, chemically resistant pumps. The rate, pressure, and volume will be monitored using chemically resistant inline equipment. Shut-off valves are present at numerous locations throughout the delivery system for health and safety purposes.

Spill Containment

To mitigate accidental spills and/or leaks, ORIN uses a variety of catch basins and sorbent pads/socks. ORIN's injection trailer has available vacuum equipment, pads, and socks to contain and clean up possible daylight of injection solution. Absorbent socks will be utilized along the shoreline to prevent spills from reaching surface waters.

Erosion Control and Site Restoration

The SESC plan will incorporate the use of best management practices for earth-disturbing activities associated with the work and procedures to control soil erosion and potential spills. The SESC plan will also detail erosion control inspections that will be performed during Phase 3 and Phase 4 activities. This document will be submitted for approval prior to starting work onsite. ORIN anticipates that a SESC plan will not be required for Phase 1. ORIN will implement erosion controls during DPT injections by installing wattles along the shoreline and slopes within the work areas. A silt fence may substitute for wattles in softer ground areas. A SESC plan will be completed for pilot and full scale activities.

Final site restoration is expected during completion of full-scale activities. Site restoration will commence during the same mobilization. ORIN will ensure that disturbed areas are flattened out and pose no erosion risk. ORIN will ensure that material and equipment is cleaned up from the site, including any residual treatment material. The remedial design has limited expected surface and soil disturbance. The two Geoprobe track rigs, and one telehandler pose the greatest risk of soil disturbance due to rutting. ORIN will practice site cleanliness. ORIN will lay down TSM or equivalent approved seed with mulch blankets over the work areas that observe disturbance. Topsoil may be utilized in areas with barren sands limited only to the affected work areas. Emphasis is placed on returning the site to pre-existing conditions as observed before mobilization.

Mobilization/ Demobilization

Mobilization includes equipment loading and travel times. Treatment chemistry materials will be delivered from ORIN's warehouse or supplier by third-party transportation carriers following appropriate regulations. A telehandler will be used for offloading procedures. ORIN will be transporting the injection trailer and equipment to the Site along with personnel during the same travel time. Subcontracted drilling rigs will be transported along with personnel by the subcontractor. A local equipment rental facility will transport by truck and trailer any necessary rental equipment, including air compressor, telehandler, and contingent water truck.

ORIN staff will demobilize last only when all rental equipment, materials, and subcontractors have been removed from the site. Demobilization includes expected travel and unloading equipment. Unused treatment materials will be removed from site.

Staging Areas and Controls

Stage site controls, including traffic markings, contingent water truck, and treatment chemistry materials. Each staging area will be located within or near the proposed injection work area: PRB, UPG-400, and UPG-600 Staging Area. Staging areas will be relocated sequentially after work area completion, ending at UPG-600. An additional staging area will be utilized inside the southern gate of the fenced Site property. The southern public parking lot located within the COC plume may be utilized as a contingency staging area to reach both the PRB(s) and UPG-400. If used, the parking lot will remain closed for the duration of the work area. ORIN expects to stage treatment material within the work area. All deliveries will be received at the Site's southern gate or contingent parking lot. Utilize traffic markings, orange cones, and caution tape as soft barriers to isolate the work areas, staging area entrances, fire hose crossings, and public paths.

ORIN will receive a water meter and backflow preventer from the city water department. Fire hydrants located along the west side of North Lakeshore Blvd will be utilized. To reach eastern work areas, ORIN will drag fire hose through a city identified culvert. There is an alternative fire hydrant located at the southern entrance to the fenced property where a water truck may be utilized to shuttle water. Note that if the contingent parking lot is used for staging equipment, the public pedestrian path may need to be closed for the affected work area duration. Soft barriers can be utilized to redirect pedestrian traffic to the west side of the parking lot. The UPG-400 work area will not require closing the pedestrian path but will require that the parking lot remain closed. Injection equipment will be secured inside of ORIN's injection trailer overnight. Locking enclosed trailers and soft barriers will be utilized to secure the site. Hard barrier fencing will not be required. ORIN does not anticipate closure of the nearby public road.

Decontamination and Waste Management

Prior to mobilization from the shop, all ORIN's equipment including pumps, tanks, hoses, application heads and rig will be properly decontaminated using best practice procedures. Drilling equipment will be properly decontaminated using decontamination pads prior to demobilization from Site. ORIN will decontaminate any field, testing, laboratory, or other equipment that becomes contaminated by known or suspected hazardous materials or other regulated

contaminants at the site. Decontamination water will be containerized into procured 55-gallon drums and labeled.

All waste will be properly disposed of according to standard regulatory protocol. ORIN will properly containerize for third party disposal all waste materials, empty chemical containers and spent personal protective equipment (PPE). Trash bags are expected to contain non-hazardous or inert waste materials (no groundwater or soil permitted) and containers. Trash bags can be stowed in dumpsters to maintain site cleanliness. Disposal of general trash will be minimized to the extent practicable through Contractor sorting and diversion of all materials that can be recycled or reused. Any material, soil or groundwater waste generated will be properly disposed of by the City or other designated third party.

Submittals and Permits

Includes: Project Work Plan, Contractor Quality Control Plan, Site-Specific HASP, SESC Plan, and Schedule. TriMedia will lead the effort to obtain permits. ORIN will support TriMedia in identification, preparation, and submittal of all related permits required (or permit equivalencies) to complete the work. ORIN will support TriMedia with coordinating the review of permit applications and for allocating sufficient time for such review and approval by TriMedia, EPA, City of Marquette, and other relevant stakeholders.

Reporting

ORIN will prepare a final report for each phase documenting time onsite, activities, observations, and the injection log. Digital copies of the injection logs will be reported on a weekly basis. The injection log will have start and end times, injection pressure, flow rates, injected volumes, and injected concentrations. ORIN will submit a report to the City within 60 days after demobilization. Reports will include a narrative describing the completed remediation activities and provide figures of the injection locations and collected site data.

Preferred Treatment Chemistry Descriptions

The following only includes the assumed treatment chemistry that is expected to be utilized for full scale and pilot scale activities. Additional treatment chemistries will be tested in treatability testing, and those chemistries will be further elaborated in the approved Work Plan for site implementation. EGLE has expressed concern about use of sulfate or surfactant-based materials near surface waters. The following are materials that do not have sulfates or surfactants and will not pose a risk to surface water from subsurface water intrusion. ORIN

recommends BAM for PRB injection, because it will remain stationary in the subsurface and will not migrate with groundwater flow to nearby surface water. *Colloidal activated carbon often contains surfactants or sulfates and the risks must be considered if used.*

Bioavailable Absorbent Media

BAM is a sustainable, pyrolyzed, recycled cellulosic bio-mass product (>80% fixed carbon) derived from a proprietary blend of recycled organic materials with a high cation exchange. BAM has diverse pore sizes with a minimum total surface area of up to 1,133 square meters per gram.

BAM's absorption ability or sponge-like effect comes from its honeycomb-structure. The shape creates pores or openings within the structure that allows for contaminants to be drawn in and retained. This quality allows for stabilization of soils and groundwater, preventing desorption or leaching from the structure. BAM's ample surface area also promotes microbial colonization and growth. Due to its ultra porous structure, it has the ability to support various strains of microbes. BAM's affinity for organic and inorganic compounds supports contact with microbes allowing for complete contaminant degradation.

The unique absorption capability of BAM prevents exterior surface microfilm buildup providing long term remediation capabilities. This allows BAM to absorb contaminants for more productive bio-attenuation of contaminants over a longer period of time. Granular Activated Carbon (GAC) primarily adsorbs contamination to the surface of the media, which then is subject to bio-film development, preventing further adsorption.

As a result, BAM has been proven to supply long term maintenance free remedial abilities over GAC. Laboratory tests have also shown that BAM has a significantly higher absorptive capacity than commercially available GAC products. BAM has numerous synergistic qualities and is relatively affordable in large quantities for remediation purposes.

Advantages include:

- Rapid absorption of contaminants.
- Pores provides extremely high surface area creating a high cation exchange capacity.
- Promotes microbial colonization's that biodegrade contaminants.
- Prevents leaching of contaminants.

Calcium Peroxide

Calcium peroxide releases oxygen over an extended time period to enhance the biodegradation of petroleum hydrocarbons and other biodegradable contaminants in soil and groundwater.

It is well documented that the release of oxygen in the subsurface environment enhances the biodegradation of contaminants. Based on extensive laboratory studies, the releases of oxygen can provide a useful and cost-effective mechanism for enhancing aerobic bioremediation.

Successful bioremediation of contamination via aerobic microbial respiration depends on several factors including the presence of appropriate microbes, nutrients, electron donors and terminal electron acceptors. In the aerobic metabolism of contaminants, oxygen acts as a terminal electron acceptor and contaminants act as electron donors, which are oxidized. Often, the limiting factor in aerobic bioremediation of contaminants is oxygen. Calcium peroxide provides oxygen by reacting with water. The reaction is:

$$CaO_2 + 2H_2O \rightarrow Ca(OH)_2 + H_2O_2$$
$$2H_2O_2 \rightarrow O_2 + 2H_2O$$

Microbe Blend *(Optional)*

Microbial isolates capable of degrading aromatic hydrocarbons are combined with BAM for destruction of sorbed contaminants. By using fungal and/or bacterial isolates with BAM we can achieve better contact with soil and groundwater. Fungal isolates are capable of growth through fine grained soils and are not limited by open soil pore spaces.

Prepared Microbe Blend

We maintain a large collection of aromatic hydrocarbon-degrading microbes collected from a variety of sites and are native to North America. A prepared blend of non-pathogenic, microscopic soil fungi, from the Trichoderma genus, have successfully been utilized on over 30 in-situ remediation sites across western Canada. Treatment efficacy includes both impacted vadose and saturated zones. Trichoderma is a naturally occurring and globally ubiquitous genus of fungi. Current research supports that Trichoderma has symbiotic beneficial qualities to plant rhizosphere health. Trichoderma isolates from barren waste oil sands have unique adaptations for biodegradation of hydrocarbons. These isolates were found supporting the viability of native plant species in corrosive and NAPL impacted soil. Trichoderma produces oxidase and peroxidase enzymes (reactive oxygen species), including other enzymes and

metabolites, that oxidize and consume aromatic hydrocarbons. Biodegradation occurs via both oxidation and secondary aerobic metabolism. The end-product is carbon dioxide. The microbe blend includes concentrated isolates in a dry powder with nutrients for use in aerobic and slightly aerobic poor vadose, smear, and saturated horizons.

Oxidase Catalytic Oxidation – Enzyme catalyzes oxidation by creating hydrogen peroxide

$$O2 \rightarrow H2O2$$

Hydrocarbon (ie. Benzene) + O2 → Phenols + O2 → Organic Acids + O2 → CO2 +H2O

Peroxidase Catalytic Oxidation – Enzyme catalyzes oxidation by reducing hydrogen peroxide

$$H2O2 \rightarrow H2O$$

Hydrocarbon (ie. Benzene) + H2O2 → Phenols + H2O2 → Organic Acids + H2O2 → CO2 +H2O

Site-Specific Microbes

A collection of site groundwater is used to culture site-specific microbial isolates. Fungal or bacterial isolates may undergo further treatability testing for site contaminants of concern. Any fungi isolated for site-specific use will be identified to the genus by morphology and growth habits. Any genus known for plant, human, or animal disease (I.e. Fusarium) will be not considered for field application. It will be shown in the lab that the site-specific microbes can survive on the hydrocarbons of interest as a sole carbon source and a lab study using soil spiked with the hydrocarbons of interest will be done. In this, samples will be spiked with hydrocarbons and split into an untreated control, a sample that is treated with the microbes, and a sample that is treated with BAM as well as microbes. A sample will be taken from the untreated control at the start and completion of the study to show losses by volatilization. Prior to application at sites with specific types of petroleum hydrocarbons, technicians will complete a forced evolution of each microbial isolate that is utilized to enhance their ability to degrade the contaminants of concern. Successful isolates are reinoculated to the target geology. Site specific microbes are packaged with nutrients either dry or in solution depending on the isolate's environmental affinity. *Identification of site-specific microbes capable of sufficient COC breakdown is not guaranteed as they may be absent from the native geology.*

1.8.5 Key Onsite Personnel

Team Members

Larry Kinsman is the co-owner of ORIN Technologies, a contractor specializing in ex-situ and in-situ chemical treatments. Larry has several years of experience as a geologist and hydrogeologist in project design, cost estimation, field supervision, and technical support of environmental remediation projects.

Larry has also been involved in training regulatory agencies and foreign governments on numerous subjects including remediation technologies and treatment chemistries. Larry was part of the Interstate Technology and Regulatory Work Group (ITRC) that developed the original technology/regulatory guidance documents for the *in-situ* chemical oxidation of soil and groundwater. ITRC is a state-led coalition that works together with industry and stakeholders to achieve regulatory acceptance of environmental technologies.

Scott Craig joined ORIN Technologies in September of 2002 as a field manager and has over 24 years of experience in the environmental consulting and contracting field. Now co-owner of ORIN, Scott's expertise includes site evaluation, chemical remediation design and implementation (*in-situ* and *ex-situ)*, construction oversight, system startup, operation, and maintenance. Scott has supervised and implemented many different remediation chemistries in the field including Bioavailable Absorbent Media (BAM), permanganates, hydrogen peroxide, sodium persulfate, biological reductive dechlorination, PermeOx® Plus (Oxygen release compounds), metal stabilization chemistries, ZVI, and calcium polysulfide.

Tyler Emerson's project management experience includes site evaluation and remedial treatment design. He has been involved with numerous in-situ and ex-situ remediation sites as well as working with clients, consultants, and associated personnel. In addition, Tyler has supervised the implementation of several different treatment chemistries consisting of calcium polysulfide, BAM, permanganates, peroxides, persulfates, emulsified oils, bio-augmentation, and ZVI.

Jacob Mirfield's field work experience includes involvement with in-situ and ex-situ remediation sites as well as working with clients, consultants, and associated personnel. In addition, Jacob has implemented several different treatment chemistries consisting of: BAM, peroxides, persulfates, permanganates, emulsified oils, bio-augmentation, and ZVI.

Ben Polchowski's field work experience includes involvement with in-situ and ex-situ remediation sites as well as working with clients, consultants, and associated personnel. In addition, Ben has implemented several different treatment chemistries consisting of: BAM, peroxides, persulfates, permanganates, emulsified oils, bio-augmentation, and ZVI.

Rob Clarks's field work experience includes involvement with in-situ and ex-situ remediation sites as well as working with clients, consultants, and associated personnel. In addition, Rob has implemented several different treatment chemistries consisting of: BAM, peroxides, persulfates, permanganates, emulsified oils, bio-augmentation, and ZVI.

Patrick Regan's field work experience includes involvement with in-situ and ex-situ remediation sites as well as working with clients, consultants, and associated personnel. In addition, Patrick has implemented several different treatment chemistries consisting of: BAM, peroxides, persulfates, permanganates, emulsified oils, bio-augmentation, and ZVI.

1.8.6 Labor Rate Breakdown Schedule

Item	Rate
Project Manager (hourly)	$130
Injection Supervisor (hourly)	$130
Injection Specialist (hourly)	$105

1.8.7 Equipment Rates

Item	Rate
Injection trailer/equipment (daily)	$5,070
Mobilization - Inj equip	$4,800
Air compressor (daily)	$170
Off-road forklift (daily)	$400
Mobilization - Equip	$800
Geoprobes (daily)	$9,400
Mobilization - Geoprobe	$9,100

1.8.8 Markups for Other Direct Costs

Item	Rate
BAM (lbs)	$8.10

Calcium Peroxide (lbs)	$4.55
Microbial concentrate (lbs)	$5.85
Shipping (lbs)	$0.40

1.8.9 Work to Be Performed by Others

ORIN will partner with Redox Tech, who will provide Geoprobe equipment and operators. ORIN will supply all major other major aspects required to complete the scope of service. Redox Tech will provide Geoprobe rigs and in-ground tooling (rods) needed for in-situ injections.

1.9.1 Qualifications

Past Project Experience

ORIN has provided fast, effective, and reliable environmental services at over 320 sites since 2002 where in-situ injections or soil mixing techniques have been completed. The following are just a few project examples demonstrating our depth and breadth, coupled with the fact what we have been involved in several RCRA and CERCLA sites across the United States.

RCRA Sites		
Handler Name	**Handler ID**	**Location**
FMC Corporation	FLD000645481	Jacksonville, FL
Sonoco Products CO NO Vernon	IND006068084	North Vernon, IN
Master Lock CO	WID054105218	Milwaukee, WI
City of Athens PWD	OHD987002052	Athens, OH
Ohio Department of Transportation District	OHD981782816	Newark, OH
Koppers Inc	COD007077175	Denver, CO

CERCLA Sites		
Site Name	**EPA ID #**	**Location**
Long Prairie Ground Water Contamination	MND980904072	Long Prairie, MN

Baytown Township Groundwater Plume	MND98245209	Lake Elmo, MN
Ashland/Northern States Power Lakefront	WISFN0507952	Ashland, WI

References

Reference and Project No 1.

Subject: Summary of Chemical Injection Activities Performed at the Former Hydro Aluminum Site Located in Moultrie, GA.

The site is a former industrial facility where, in 2006, tetrachloroethene (PCE) and various breakdown products were discovered in site soil and groundwater. Between December 2010 and March 2011, approximately 1,412 tons of soil containing the highest concentrations of PCE above the risk standards were removed and disposed of at an offsite disposal facility. Since then, ORIN has been tasked with treating the migrating groundwater plume as well as source area groundwater. ORIN began addressing the source area groundwater plume in 2014 by utilizing in-situ chemical reduction (ISCR). In 2014, ORIN injected approximately 46,775 gallons of ABC+ in the source area. In 2015 & 2016 ORIN utilized the ISCR approach across the site addressing the north and southward migration of the PCE plume by installing multiple permeable reactive barrier walls (PRB's). The 2015 north and south PRB's received a combined total of 68,800 gallons of ABC+. In 2016 ORIN implemented the far north and far south PRB's where the combined total of ABC+ injected was 54,863 gallons. Following the ISCR injection, when geochemical conditions were adjusted to a suitable range, bioaugmentation was implemented by injecting dehalogenating bacteria such as *dehalococcoides*. Since the completion of the northern and southern PRB's, no further remedial efforts have been necessary in those areas of the site.

Alongside the 2015 & 2016 ISCR injections, ORIN pilot tested Bioavailable Absorbent Media (BAM). In 2015 ORIN injected 710 gallons of BAM around MW-25R and contaminant concentrations were reduced by 80%. In 2016 & 2017 ORIN injected BAM around MW-3 and MW-4 at the site. Baseline concentrations at MW-3 PCE were 4,590 ppb, following the injection of BAM, concentrations were reduced to <1 ppb. Approximately 700 gallons of BAM were injected, targeting MW-3. Similarly, the concentration before injection at MW-4 was 22,500 ppb PCE and post-injection monitoring had shown detections of <1 ppb PCE. Approximately 1,200 gallons of BAM were injected targeting MW-4. Over time

back diffusion from persistent pockets of impacts from within the source area has caused rebounds in MW-4.

The PRB injections were deemed successful in eliminating the offsite migration of contaminants, however the source area treatment is still ongoing. Overall site wide impacts have been significantly reduced and the phased approach to the large-scale site has allowed for adaptations to the treatment remedy to meet long term goals.

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Reference and Project No 2.

Subject: Summary of Chemical Injection Activities Performed at the Former Bulk Oil Site Located in Central, MS.

The approach utilized Geoprobe Direct Push Technology (DPT) to inject Bioavailable Absorbent Media (BAM) with calcium peroxide. The approach incorporated Inject-and-Extract technology utilizing vacuum extraction simultaneously to DPT injections. Impacts include TPH-GRO & DRO, Benzene, and MTBE in soil and groundwater. Subsurface geology is primarily fine sands within the targeted treatment interval.

Approximately 61 DPT injection points were scheduled to receive 250 gallons of remedial chemistry consisting of BAM and calcium peroxide. The treatment interval extended from 14 to 22 ft bgs. Vacuum extraction was utilized simultaneously with injection activities to maintain control of the groundwater as well as draw the treatment chemistry to the targeted monitoring well.

A total of 10,118 gallons of the treatment solution was injected across the targeted area. Injection work was completed over a span of four days with two Geoprobe drilling rigs. Post-injection groundwater sampling displayed reduced concentrations in the targeted performance wells. Calcium peroxide is a slow-release oxygen source that works together with BAM. This allows for long-term oxygen to support enhanced bioremediation.

Keith Cole
Ramboll

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Reference and Project No 3.

Subject: Summary of Chemical Injection Activities Performed at the Ashland/Norther States Power Lakefront Superfund Site in Ashland. WI.

This property included the former Manufactured Gas Plant (MGP) facility; a portion of Kreher Park, a City owned property fronting on the bay that included the former municipal wastewater treatment plant (WWTP); an inlet of Chequamegon Bay containing contaminated sediment directly offshore from the former WWTP.

The primary contaminants at the Site are derived from manufactured gas plant wastes in the form of coal tars, including volatile organic compounds (VOCs) and polycyclic aromatic hydrocarbon (PAH) compounds. Additionally, some free-phase hydrocarbon product (free product) derived from the coal tar is present as non-aqueous phase liquid (NAPL), and has impacted soils, groundwater, and sediments. The NAPL referenced includes both light non-aqueous phase liquid (LNAPL) and dense nonaqueous phase liquid (DNAPL).



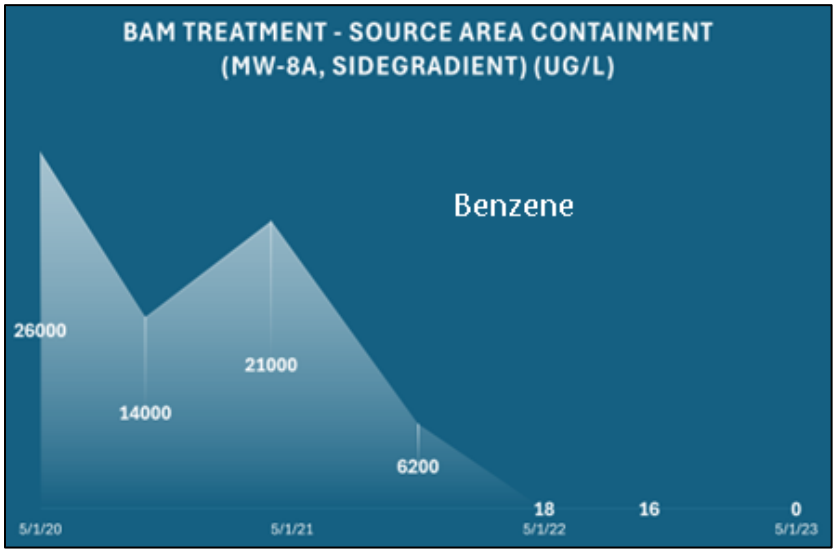
- Risk Assessment: Lake Superior
- Impacts: Saturated soil and groundwater (approximately 8 – 60 ft-bgs)
- COCs: DNAPL Coal Tar (remedial driver), Benzenes (remedial driver > 5ug/L), Methylnaphthalene, Naphthalene, and Phenols.

Previous site remediation activities included soil removal and sediment dredging. Currently an active recovery system is operating to collect DNAPL and highly impacted groundwater. ORIN has completed four injection events to deliver chemical oxidants and BAM at various locations on the site to; (i) degrade contaminants and improve NAPL recovery; (ii) use Bioavailable absorbent Media

(BAM) to reduce ground water contaminants in strategic locations within the groundwater flow path.

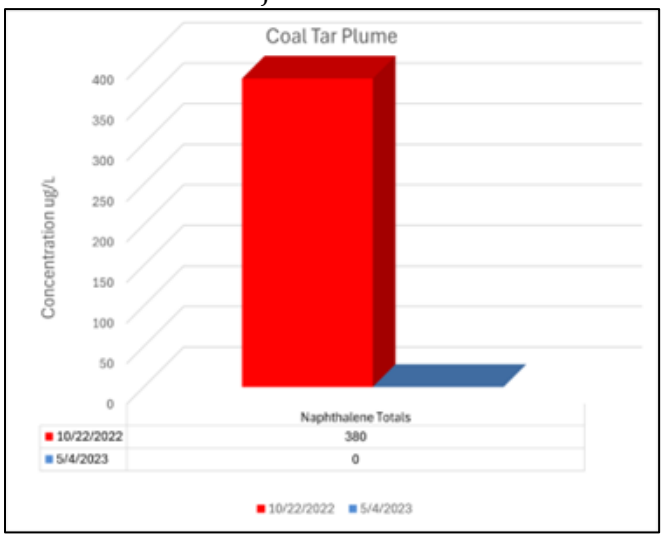
Across four implementation phases, approximately 46,100 gallons of sodium persulfate treatment chemistry was injected through both a series of injection wells and Direct Sonic borings. Also, 7,370 gallons of BAM have been administered through Direct Push Technology and Direct Sonic injections. The combination has proven to be effective at improving the NAPL recovery system while reducing dissolved phase contamination.

BAM Sonic Injection Treatment Data





BAM DPT Injection Treatment Data





BAM was injected using DPT and Sonic drilling methods. DPT was utilized in the shallower, 8-18 ft-bgs, impacted plume margins approximately 35ft from the Lake Superior lakeshore. The shallow nearshore geology is gravel and coarse sand. Heavy hydrocarbons such as Naphthalene were reduced from 380 ug/L to non-detection with criterion of <5 ug/L. Sonic injection was utilized proximally to the source in areas without recovery systems to assist in containment. While DPT could reach target depths at the site, sonic improved injectability within the deeper interbedded lean clay layers at 35-45 ft-bgs. Benzene concentrations were reduced from 26,000 ug/L to non-detection during the next sampling event with criterion of <5ug/L. BAM was used by itself in each of these areas.

The active recovery system for this site supports using sodium persulfate ISCO for reducing the surface tension of DNAPL and assisting in desorption. After multiple rounds, ISCO has improved recovery of DNAPL levels from as much as 6ft to less than 1ft in target wells. DNAPL is the remedial driver within the source area. All recharge water is being contained within the source to mitigate migration of reaction byproducts, including sulfates. Much of the plume area remains capped with impermeable groundwater barriers and continued monitoring.

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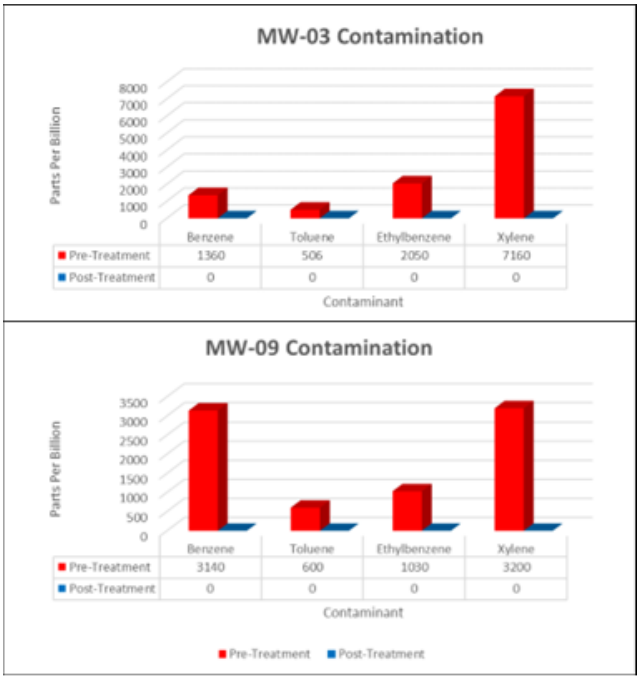
Additional Case Study Data

Former Mechanic's Garage – Chadron, Nebraska

- Risk Assessment: Residential
- Impacts: Shallow groundwater
- COCs: Benzene (remedial driver >5 ug/L), Toluene, Ethylbenzene, and Xylenes
- Remedial Method: DPT Injection
- Remedial Chemistry: BAM

ORIN successfully treated BTEX contaminated groundwater utilizing ORIN's patented Bioavailable Absorbent Media (BAM). The primary contaminants, Benzene and Xylene, were prevalent in the two monitoring wells on site. ORIN utilized DPT to pinpoint the targeted areas with higher Benzene and Xylene concentrations. A vacuum truck was utilized during injections to remove highly contaminated groundwater and to provide hydraulic control. Thirty-one injection points received a combined total of 3,300 gallons of treatment chemistry. The COCs were reduced to non-detect in target wells MW-03 and MW-09 following the injection event.

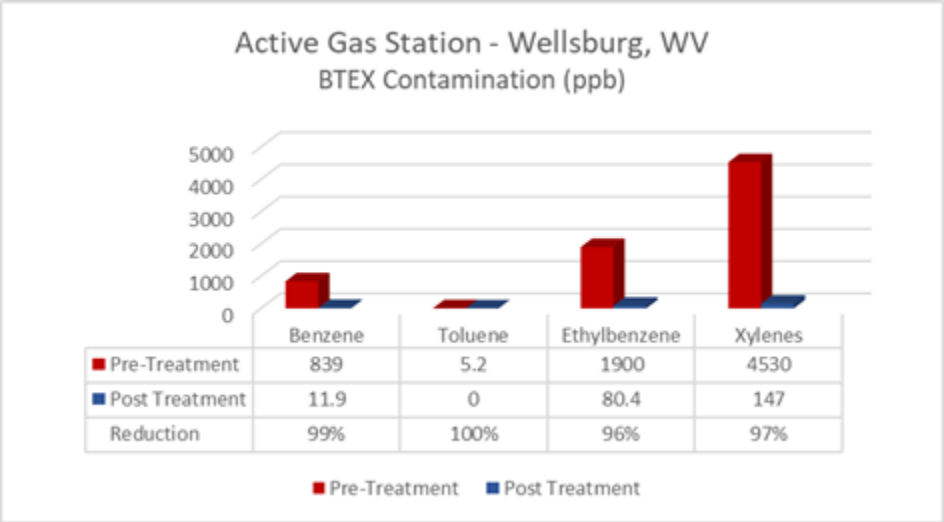
*A zero value indicates that the results were below detection limits



Active Gas Station – Wellsburg, West Virginia

- Risk Assessment: Residential
- Impacts: Shallow groundwater
- COCs: Benzene (remedial driver > 5 ug/L), Toluene, Ethylbenzene, and Xylenes
- Remedial Method: DPT Injection
- Remedial Chemistry: BAM

ORIN successfully reduced BTEX contaminated groundwater utilizing in-situ DPT injection of BAM combined with calcium peroxide. Approximately 100 gallons of treatment chemistry was injected into each of 9 injection points at depth-specific intervals. The injection points were spaced to target the remnant hot spot area of a contaminant plume.



Hydrocarbon Degrading Microbe Data

Hydrocarbon degrading microbes were successfully utilized to breakdown lignins and aromatic hydrocarbons, including heavier PAHs such as naphthalene. Microbes observe healthy symbiotic relation with plant rhizosphere.

- Risk Assessment: Forests – Oil Fields in Canada
- Impacts: Vadose soil and shallow groundwater
- COCs: VOCs and SVOC PAHs
- Remedial Method: Well Injection
- Remedial Chemistry: Microbes

Site 1. Total reduction exceeds 99% following 7 days post treatment. Impacted matrix: surface soil. No additional treatment or oxygen source during monitoring period. One-time treatment event.

Site 1. Natural Gas Condensate Spill - Forested Area - Surface			
Parameter	**Unit**	**Max Initial Conc**	**Max Post Bioremediation**
Benzene	ppm	811	6.16
Toluene	ppm	2330	18.9
Ethylbenzene	ppm	177	1.4

Xylenes	ppm	2440	22.4
C6-C10	ppm	51100	311
C10-C19	ppm	9650	20
C19-C32	ppm	2340	20
Naphthalene	ppm	1.89	0.03
2-Methylnaphthalene	ppm	4.03	0.04

Site 2. Total reduction exceeds 91% following 1 year post treatment. Impacted matrix: groundwater. No additional treatment or oxygen source during monitoring period. One-time treatment event.

Site 2. Gas Station Groundwater Treatment - 1 Year			
Parameter	**Unit**	**Max Initial Conc**	**Max Post Bioremediation**
Benzene	ppb	3410	17.3
Toluene	ppb	28	<0.3
Ethylbenzene	ppb	783	<0.5
Xylenes	ppb	1160	<0.5
C6-C10	ppb	7040	<100
C10-C19	ppb	1500	500
Naphthalene	ppb	64.2	0.12
2-Methylnaphthalene	ppb	3.68	0.02

Client Services & Communications

Prior to daily commencement of injection activities, ORIN will conduct tailgate meetings with all applicable onsite personnel. The meetings will include but will not be limited to: discussion of the work planned for the day, potential hazards, changes in work assignments, any problems encountered during past operations, and any other pertinent health and safety issues. The schedule will be addressed to assure the projected timetable for completion is achieved. If a proper schedule

is not being maintained, ORIN may bring in additional resources, such as but not limited to, additional ORIN personnel, supplementary equipment, or additional injection trailers. ORIN has a reputation for finishing projects ahead of schedule and adhering to the original budget.

The Project Manager (PM) shall be the primary point of contact for correspondence related to cost, schedule, and scope, as well as for providing all required submittals.

The Site Safety and Health Manager (SSHM) will be responsible for development and implementation of the health and safety plan. The SSHM will also lead the daily tailgate meeting in conjunction with Trimedia.

The Site Manager (SM) will be responsible for field execution and safety of all work being conducted. The SM will be responsible for ORINs quality control plan and perform field testing in accordance with industry standards to ensure compliance with project specifications, technical requirements, and manufacturer instructions.

The Injection Specialist (IS) will work with the SM to implement the injection plan. Injection specialists will be responsible for ensuring the daily injection reports submitted to Trimedia are accurate and reflect the day's work.

The team will be managed in a consultative style, allowing the manager and employees to take part in decision-making. The manager will take into consideration the majority but ultimately the decision is up to him/her. The communication is extensive in both directions (from employees to leaders and vice-versa). ORIN's office staff is capable of any support the site team requires. Additionally, ORIN's site team is strong and creative who share the same vision throughout the remediation process. During the daily tailgate meetings, these visions are shared and agreed upon by the entire team.

Health & Safety

To ORIN, health and safety is not just a priority, it's a value. By being proactive instead of reactive, ORIN has learned to identify and listen to health and safety triggers, such as fatigue, emotion and rushing. ORIN reports near misses and lessons learned to help facilitate open discussions with clients and vendors alike about health and safety on our projects.

ORIN is ISNet certified. ISN is a certification that ensures all members are up to date and compliant with safety standards and training in some of the most safety

conscious industries. We pursued ISN certification to show our commitment to health and safety, and to ensure we meet even the most stringent requirements for companies we work with.

ORIN subscribes to Occupational Safety and Health Administration (OSHA)- and United States Environmental Protection Agency (USEPA)-mandated Health and Safety standards for protection of hazardous waste workers. Because of the wide range of potential exposures for our employees, ORIN must make conservative judgments as to potential health risks. The services outlined in this proposal are offered on the basis of providing modified Level D health and safety protection ORIN personnel will abide by the applicable OSHA guidelines for personal safety outlined in 29 CFR 1910.

Prior to daily commencement of injection activities, ORIN will conduct health and safety tailgate meetings with all applicable onsite personnel. The meetings will include but will not be limited to discussion of the work planned for the day and any potential hazards, changes in work assignments, any problems encountered during past operations, and any other pertinent health and safety issues.

1.9.2 Additional Technical Questions

Describe the purpose of fluid injection.

An in-situ injection is proposed to address the contamination for both source area treatment and establishment of a Permeable Reactive Barrier (PRB) within the affected aquifer. This method is designed to reduce contaminant concentrations in the source zone while simultaneously preventing the migration of residual contaminants via the installation of a subsurface reactive barrier downgradient of the source area.

Injection for Source Area Treatment will be performed within the delineated source zones to promote in-situ degradation of contaminants around UPG-400 and UPG-600. This phase targets areas with the highest contaminant concentrations to reduce the overall mass flux from the source.

PRB's downgradient of the source area will be aligned to create a continuous subsurface PRB. The reactive zone will be strategically placed within the natural flow path of the groundwater plume to maximize contact between the contaminated groundwater and reactive media. Two PRB's will run in a transect

approximately from GSI-1200 south to GSI-600. The second will run from approximately GSI-1500 to GSI-1400.

The use of in-situ injection for treatment offers several advantages at this site because it is a minimally invasive approach. This results in limited surface disturbance to the sensitive area and limited infrastructure. Additionally, in-situ injections enhance natural attenuation processes and support long-term sustainability. The treatment can also be repeated or adjusted based on performance and observations, allowing for a flexible and adaptive remediation strategy.

Describe types of fluid that would be considered for injections.

Bioavailable Absorbent Media (BAM), a cutting-edge environmental treatment product designed for in-situ remediation of contaminated groundwater and soil. BAM, a carbon-based material derived from recycled biomass, features a unique honeycomb structure that acts as a highly effective "contaminant sponge." This structure creates pores that rapidly absorb and retain a wide range of contaminants, including per- and polyfluoroalkyl substances (PFAS), chlorinated solvents, petroleum hydrocarbons, heavy metals, and pesticides, while preventing surface microfilm buildup that could hinder performance. The high surface area and cation exchange capacity (CEC) of BAM promote microbial colonization, enabling biodegradation of contaminants, which rejuvenates the material's absorption capacity. When combined with calcium peroxide, chemical oxidants or reductants, such as ABC+ BAM enhances treatment efficiency by increasing contact time between contaminants and reactive chemistries.

Describe past experiences with fluid injections.

ORIN has 12 years of experience with BAM. It is a proprietary product that ORIN has developed in house, tested, and now offers as an environmental treatment product. BAM has been extensively tested and deployed at numerous sites worldwide, demonstrating its versatility across diverse geological settings, including sandy aquifers, clay-rich formations, and fractured bedrock. These applications highlight BAM's adaptability to various contaminants and subsurface conditions, from industrial facilities to residential and commercial

Developed in-house by ORIN, BAM is a peer-tested, sustainable solution that aligns with environmental, social, and governance (ESG) principles, utilizing recyclable materials and requiring minimal infrastructure changes. It can be applied via in-situ injections, soil blending, or direct application of dry material,

making it suitable for both PRB construction and source area treatment. BAM's low-viscosity slurry allows delivery through traditional low-pressure injection methods. The product's proven track record, combined with ORIN's expertise in oxidation, reduction, bioremediation, and advanced oxidation processes, positions BAM as a safe, cost-effective, and innovative tool for tackling complex environmental contamination challenges globally.

Describe past permitting experiences with EGLE required for fluid injection.

BAM has been widely approved and accepted by EGLE, due to its proven effectiveness and compliance with state and federal environmental standards. It has been safely and successful applied at numerous sites in Michigan. ORIN's rigorous testing, peer-reviewed validations, and collaborative approach with regulators ensure that BAM remains a safe, innovative, and regulator-endorsed solution for addressing complex environmental contamination challenges.

We look forward to working with you on this project. If you have additional questions or comments, please feel free to call our office at (608) 838-6699 or my cell phone at 715-697-8377.

Sincerely,

Benjamin Polchowski
Project Manager
ORIN Technologies, LLC.

Disclaimer
Unauthorized duplication of any section or design concept contained within this document without the express written or verbal consent of ORIN is strictly prohibited.

ADDENDUM NO. 1

PROJECT: **MQ23-444 - Cliffs-Dow Brownfield Site - In-Situ Remediation Services**

FROM: **City of Marquette**

DATE: **July 21, 2025**

The bidder shall acknowledge receipt of all addenda by listing the addendum number where indicated on the Bid Express solicitation.

Drawings, specifications, and/or proposal are herein clarified, amended, expanded, and/or modified, as hereinafter described, and become a part of the Contract Documents with the same effect as if incorporated, therein, on the original documents. Any contrary provisions contained, or referred to, in Drawings and/or Specifications, shall remain applicable unless overridden by this addendum. Revisions herein shall include all labor, materials, methods, modifications, etc., required for completion of the Work.

---

1) **The attached list of subcontractors must be fully completed and included with the project proposal.**

In-Situ Remediation Services
Cliffs-Dow Brownfield Site
City of Marquette, Michigan

LIST OF SUBCONTRACTORS

No subcontract, whether listed herein or later proposed, may be entered into without the written consent of the OWNER and CONSULTANT.

To OWNER/CONSULTANT:

The Bidder, ORIN Technologies, LLC., proposes to subcontract the following work items to the following parties (if no subcontracted work is proposed check NO SUBCONTRACT WORK below):

☐ NO SUBCONTRACT WORK

1) PORTION OF WORK: 25 %
Amount of Subcontract: $ 178,600
SUBCONTRACTOR Name: Redox Tech

SUBCONTRACTOR Representative: Kyle Clark

Full Address: 10S123 Normantown Rd Unit C
Naperville, IL 60564

2) PORTION OF WORK: <1 %
Amount of Subcontract: $ 3,890
SUBCONTRACTOR Name: BLOOD HOUND, LLC

SUBCONTRACTOR Representative: James Capps

Full Address: 6500 Technology Center Drive, Suite 200
Indianapolis, IN 46278

3) PORTION OF WORK: %
Amount of Subcontract: $
SUBCONTRACTOR Name:

SUBCONTRACTOR Representative:

Full Address:

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 8/14/2025

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Marsh & McLennan Agency LLC 1751 Pinnacle Drive Suite 1800 Mc Lean VA 22102	**CONTACT NAME:** **PHONE (A/C, No, Ext):** 703-354-1616 **FAX (A/C, No):** **E-MAIL ADDRESS:** macertificates@MarshMMA.com
INSURED POLLUREMED Orin Technologies, LLC 405 Investment Court Verona WI 53593	**INSURER(S) AFFORDING COVERAGE** / **NAIC #** **INSURER A :** Zurich American Ins Co of Illinois — 27855 **INSURER B :** At-Bay Specialty Insurance Company — 19607 **INSURER C :** **INSURER D :** **INSURER E :** **INSURER F :**

COVERAGES **CERTIFICATE NUMBER:** 225749548 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X **COMMERCIAL GENERAL LIABILITY** CLAIMS-MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: POLICY X PRO-JECT X LOC OTHER:	Y	Y	GPL3468414	6/1/2025	6/1/2026	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG 	$ 2,000,000 $ 100,000 $ 5,000 $ 1,000,000 $ 4,000,000 $ 1,000,000 $
A	**AUTOMOBILE LIABILITY** X ANY AUTO OWNED AUTOS ONLY / SCHEDULED AUTOS X HIRED AUTOS ONLY / X NON-OWNED AUTOS ONLY	Y	Y	BAP3468416	6/1/2025	6/1/2026	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) 	$ 2,000,000 $ $ $ $
A	**UMBRELLA LIAB** X OCCUR X **EXCESS LIAB** CLAIMS-MADE DED RETENTION $			SXS3468420	6/1/2025	6/1/2026	EACH OCCURRENCE AGGREGATE 	$ 9,000,000 $ 9,000,000 $
A	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y / N: N **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below	N / A	Y	WC3469967	6/1/2025	6/1/2026	X PER STATUTE / OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ 1,000,000 $ 1,000,000 $ 1,000,000
A B	Pollution and Professional Liab Cyber Liability			GPL3468414 AB675755701	6/1/2025 5/9/2025	6/1/2026 5/9/2026	4,000,000 Limit 2,000,000	50,000 Deductible Cyber Limit

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER

For Informational Purposes Only

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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Liberty Mutual Insurance

Business Service Center
PO Box 188065
Fairfield, OH 45018-8065
(800) 845-3666 Fax

December 1, 2021

Starting: 12/31/21 Ending:12/31/22
Policy: XWA60762031
Carrier: Liberty Mutual

ORIN Technologies LLC
405 Investment Ct
Verona, WI 53593

Policy Number: XWA (22) 60762031

RE: Ineligibility for Workers' Compensation Experience Modification Factor

ORIN Technologies LLC is not eligible for an experience modification factor as its Workers' Compensation Premium does not meet the minimum threshold required to qualify for experience rating.

Sincerely,

Your Service Center Team
Phone: 1-800-962-7132
Fax: 800-845-3666
Email: BusinessService@LibertyMutual.com

WISCONSIN WORKERS' COMPENSATION EXPERIENCE RATING

COMBO GROUP ID: 970081562 RATING DATE: 12/31/2022 to 12/31/2023

COVERAGE GROUP ID: 0376385 ORIN TECHNOLOGIES LLC

Experience Rating Summary Information

Pol. Year	Actual Incurred Losses	Primary Actual Losses	Expected Losses	Primary Expected Losses
18	0	0	1,815	617
19	0	0	846	288
19	0	0	3,021	970
20	0	0	3,380	1,089
EXPERIENCE TOTALS: A=	0	B= 0	C= 9,062	D= 2,964

Actual Excess	E = (A - B) =	0
Expected Excess	F = (C - D) =	6098
Weighting Value	G =	0.06
Ballast Value	H =	25,750

Experience Mod Formula	Actual Calculation							TOTAL
B + (ExG) + (1-G)xF + H	0	+	0	+	5,732	+	25,750	= 31,482
D + (FxG) + (1-G)xF + H	2,964	+	366	+	5,732	+	25,750	= 34,812

Experience Modification 0.90

Date Printed: 09/11/2022

WISCONSIN WORKERS' COMPENSATION EXPERIENCE RATING

COMBO GROUP ID: 970081562 RATING DATE: 12/31/2022 to 12/31/2023

COVERAGE GROUP ID: 0376385 ORIN TECHNOLOGIES LLC

CARRIER: 11266 AMERICAN FIRE & CASUALTY CO POLICY: XWA2260762031

Policy Period 2018 to 2019

Claim Number or # claims	Inj Typ	Open = 0 Close = 1	Actual Incurred Losses	Primary Actual Losses	Class Code	Payroll	Exp. Loss Rate	Expected Losses	D Ratio	Primary Expected Losses
					4511	533,682	0.34	1,815	0.34	617
POLICY TOTALS:			0	0		533,682		1,815		617

Policy Period 2019 to 2020

Claim Number or # claims	Inj Typ	Open = 0 Close = 1	Actual Incurred Losses	Primary Actual Losses	Class Code	Payroll	Exp. Loss Rate	Expected Losses	D Ratio	Primary Expected Losses
					4511	248,950	0.34	846	0.34	288
POLICY TOTALS:			0	0		248,950		846		288

Policy Period 2019 to 2020

Claim Number or # claims	Inj Typ	Open = 0 Close = 1	Actual Incurred Losses	Primary Actual Losses	Class Code	Payroll	Exp. Loss Rate	Expected Losses	D Ratio	Primary Expected Losses
					4511	702,725	0.34	2,389	0.34	812
					5606	103,664	0.61	632	0.25	158
POLICY TOTALS:			0	0		806,389		3,021		970

Policy Period 2020 to 2021

Claim Number or # claims	Inj Typ	Open = 0 Close = 1	Actual Incurred Losses	Primary Actual Losses	Class Code	Payroll	Exp. Loss Rate	Expected Losses	D Ratio	Primary Expected Losses
					4511	795,364	0.34	2,704	0.34	919
					5606	109,304	0.61	667	0.25	167
					9014	540	1.65	9	0.35	3

POLICY TOTALS:	0	0|	905,208	3,380	1,089

Date Printed: 09/11/2022

WCRB Experience Modification Lookup

Primary Risk Name: **ORIN TECHNOLOGIES LLC**

Address: **405 INVESTMENT CT VERONA , WI 53593**

Risk Combo ID: **970081562**

Risk Coverage ID: **0376385**

Last Inspection: **None**

Effective Year	Experience Modification	Status (1)	Revision Number	Rating Type (2)	Release Date	WCPAP Factor (3)
2022	0.90	Released	000	N	09/11/2022	None

(1) Status shown as "DNQ" means that the Risk does not meet the minimum premium eligibility requirements (Does Not Qualify) for experience rating. The DNQ status remains effective until the minimum premium eligibility requirements are met. When consecutive DNQs occur, a gap in the effective year will result.

(2) Rating Type:

N = "Normal"
This means that payroll and loss data from all applicable policies and report levels have been included in the rating, and no rate change is pending.

C = "Contingent"
This means that the Bureau is missing one unit statistical report from the experience rating calculation, however, a rating has been released in accordance with the rules of the Experience Rating Plan.

(3) WCPAP Factor:

If a WCPAP factor is available, the Factor will appear only when an experience modification factor is available for that effective year. In the event there is no experience modification listed for a year, go to WCPAP Lookup to retrieve any available WCPAP factor.

DNQ = “Does Not Qualify”
This indicates the Risk does not meet the minimum eligibility requirements for a WCPAP credit.

None
This indicates there are no WCPAP Credit/DNQ results available.

WISCONSIN WORKERS' COMPENSATION EXPERIENCE RATING

COMBO GROUP ID: 970081562 RATING DATE: 12/31/2023 to 12/31/2024

COVERAGE GROUP ID: 0376385 ORIN TECHNOLOGIES LLC

Experience Rating Summary Information

Pol. Year	Actual Incurred Losses	Primary Actual Losses	Expected Losses	Primary Expected Losses
19	0	0	772	262
19	0	0	2,717	881
20	0	0	3,042	989
21	0	0	2,456	788
EXPERIENCE TOTALS:	A= 0	B= 0	C= 8,987	D= 2,920

Actual Excess	E = (A - B) =	0
Expected Excess	F = (C - D) =	6067
Weighting Value	G =	0.05
Ballast Value	H =	26,875

Experience Mod Formula	Actual Calculation								TOTAL
B + (ExG) + (1-G)xF + H	0	+	0	+	5,764	+	26,875	=	32,639
D + (FxG) + (1-G)xF + H	2,920	+	303	+	5,764	+	26,875	=	35,862

Experience Modification 0.91

Date Printed: 07/30/2023

WISCONSIN WORKERS' COMPENSATION EXPERIENCE RATING

COMBO GROUP ID: 970081562 RATING DATE: 12/31/2023 to 12/31/2024

COVERAGE GROUP ID: 0376385 ORIN TECHNOLOGIES LLC

CARRIER: 20583 SELECTIVE INS. CO. OF THE SE POLICY: WC9135061

Policy Period 2019 to 2020

Claim Number or # claims	Inj Typ	Open = 0 Close = 1	Actual Incurred Losses	Primary Actual Losses	Class Code	Payroll	Exp. Loss Rate	Expected Losses	D Ratio	Primary Expected Losses
					4511	248,950	0.31	772	0.34	262
POLICY TOTALS:			0	0		248,950		772		262

Policy Period 2019 to 2020

Claim Number or # claims	Inj Typ	Open = 0 Close = 1	Actual Incurred Losses	Primary Actual Losses	Class Code	Payroll	Exp. Loss Rate	Expected Losses	D Ratio	Primary Expected Losses
					4511	702,725	0.31	2,178	0.34	741
					5606	103,664	0.52	539	0.26	140
POLICY TOTALS:			0	0		806,389		2,717		881

Policy Period 2020 to 2021

Claim Number or # claims	Inj Typ	Open = 0 Close = 1	Actual Incurred Losses	Primary Actual Losses	Class Code	Payroll	Exp. Loss Rate	Expected Losses	D Ratio	Primary Expected Losses
					4511	795,364	0.31	2,466	0.34	838
					5606	109,304	0.52	568	0.26	148
					9014	540	1.4	8	0.35	3
POLICY TOTALS:			0	0		905,208		3,042		989

Policy Period 2021 to 2022

Claim Number or # claims	Inj Typ	Open = 0 Close = 1	Actual Incurred Losses	Primary Actual Losses	Class Code	Payroll	Exp. Loss Rate	Expected Losses	D Ratio	Primary Expected Losses
					4511	595,859	0.31	1,847	0.34	628
					5606	113,776	0.52	592	0.26	154

			8810	21,450	0.08	17	0.35	6
POLICY TOTALS:	0	0		731,085		2,456		788

Date Printed: 07/30/2023

Site Specific Health And Safety Plan

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OSHA's Form 300A (Rev. 04/2004)

Summary of Work-Related Injuries and Illnesses

Note: You can type input into this form and save it.
Because the forms in this recordkeeping package are "fillable/writable" PDF documents, you can type into the input form fields and then save your inputs using the free Adobe PDF Reader.

Year 20 22

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

All establishments covered *by Part 1904 must complete this Summary page. even if no work-related injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete and accurate before completing this summary.*

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure *you've added the entries from every page of the Log. If you had no cases, write "O."*

Employees, former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. **See** *29 CFR Part 1904.35, in OSHA's recordkeeping rule, for further details on the access provisions for these forms.*

Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
0	0	0	0
(G)	(H)	(I)	(J)

Number of Days

Total number of days away from work	Total number of days of job transfer or restriction
0	0
(K)	(L)

Injury and Illness Types

Total number of...	(M)		
(1) Injuries	0	(4) Poisonings	0
(2) Skin disorders	0	(5) Hearing loss	0
(3) Respiratory conditions	0	(6) All other illnesses	0

Post this Summary page from February 1 to April 30 of the year following the year covered by the form.

Public reporting burden for this collection of information is estimated to average 58 minutes per response. including time to review the instructions, search and gather the data needed, and complete and review the collection of information, Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any other aspect of this data collection, contact: US Department of Labor. OSHA Office of Statistical Analysis, Room N-3644, 200 Constitution Avenue, NW, Washington, DC 20210. Do not send the completed forms to this office.

Establishment information

Your establishment name: ORIN Technologies, LLC

Street: 405 Investment Court

City: Verona State: WI Zip: 53593

Industry description (e.g., Manufacture frozen truck trailers)

Soil and Groundwater Remediation

North American Industrial Classification (NAICS), if known (e.g., 336212)

562910

Employment information (If you don't have the figures, see the *Worksheet on the next page to estimate.*)

Annual average number of employees: 9

Total hours worked by all employees last year: 18,694

Sign here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

Company executive: [signature] Title: Principal

Phone: 608-838-6699 Date: 1/9/2023

Reset

OSHA's Form 300 (Rev. 04/2004)

Log of Work-Related Injuries and Illnesses

Note: You can type input into this form and save it. Because the forms in this recordkeeping package are "fillable/writable" PDF documents, you can type into the input form fields and then save your inputs using the free Adobe PDF Reader. In addition, the forms are programmed to auto-calculate as appropriate.

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

Year 20 22

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

Please Record:
- *Information about every work-related death and about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid.*
- *Significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional.*
- *Work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR Part 1904.8 through 1904.12.*

Reminders:
- *Complete an Injury and Illness Incident Report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.*
- *Feel free to use two lines for a single case if you need to.*
- *Complete the 5 steps for each case.*

Establishment name: ORIN Technologies, LLC

City: Verona State: WI

Step 1. Identify the person			Step 2. Describe the case			Step 3. Classify the case (SELECT ONLY ONE circle based on the most serious outcome:)				Step 4. Enter the number of days the injured or ill worker was:		Step 5. Select one column:						
							Remained at Work						Illness					
(A) Case no.	(B) Employee's name	(C) Job title (e.g., Welder)	(D) Date of injury or onset of illness (e.g., 2/10)	(E) Where the event occurred (e.g., Loading dock north end)	(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill (e.g., Second degree burns on right forearm from acetylene torch)	Death (G)	Days away from work (H)	Job transfer or restriction (I)	Other record-able cases (J)	Away from work (K)	On job transfer or restriction (L)	(M) Injury (1)	Skin disorder (2)	Respiratory condition (3)	Poisoning (4)	Hearing loss (5)	All other illnesses (6)
Reset			___/___ month / day			○	○	○	○	___ days	___ days	○	○	○	○	○	○
Reset			___/___ month / day			○	○	○	○	___ days	___ days	○	○	○	○	○	○
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					Page totals ▶	0	0	0	0	0	0	0	0	0	0	0	0
												Injury (1)	Skin disorder (2)	Respiratory condition (3)	Poisoning (4)	Hearing loss (5)	All other illnesses (6)

Be sure to transfer these totals to the Summary page (Form 300A) before you post it.

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City of Marquette, MI

OSHA's Form 300A (Rev. 04/2004)

Summary of Work-Related Injuries and Illnesses

Note: You can type input into this form and save it.
Because the forms in this recordkeeping package are "fillable/writable" PDF documents, you can type into the input form fields and then save your inputs using the free Adobe PDF Reader.

Year 20 23

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

All establishments covered by Part 1904 must complete this Summary page, even if no work-related injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete and accurate before completing this summary

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the Log. If you had no cases, write "0."

Employees, former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR Part 1904.35, in OSHA's recordkeeping rule, for further details on the access provisions for these forms.

Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
0	0	0	0
(G)	(H)	(I)	(J)

Number of Days

Total number of days away from work	Total number of days of job transfer or restriction
0	0
(K)	(L)

Injury and Illness Types

Total number of . . .	(M)		
(1) Injuries	0	(4) Poisonings	0
(2) Skin disorders	0	(5) Hearing loss	0
(3) Respiratory conditions	0	(6) All other illnesses	0

Post this Summary page from February 1 to April 30 of the year following the year covered by the form.

Public reporting burden for this collection of information is estimated to average 58 minutes per response, including time to review the instructions, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any other aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistical Analysis, Room N-3644, 200 Constitution Avenue, NW, Washington, DC 20210. Do not send the completed forms to this office.

Establishment information

Your establishment name: ORIN Technologies, LLC

Street: 405 Investment Court

City: Verona State: WI Zip: 53593

Industry description (e.g., *Manufacture of motor truck trailers*)

Soil and Groundwater Remediation

North American Industrial Classification (NAICS), if known (e.g., 336212)

5 6 2 9 1 0

Employment information *(If you don't have these figures, see the Worksheet on the next page to estimate.)*

Annual average number of employees: 8

Total hours worked by all employees last year: 14,778

Sign here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

Company executive: [signature] Title: Principal

Phone: 608-838-6699 Date: 1/22/24

Reset

OSHA's Form 300 (Rev. 04/2004)

Log of Work-Related Injuries and Illnesses

Note: You can type input into this form and save it. Because the forms in this recordkeeping package are "fillable/writable" PDF documents, you can type into the input form fields and then save your inputs using the free Adobe PDF Reader. In addition, the forms are programmed to auto-calculate as appropriate.

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

Year 20 23

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

Please Record:
- *Information about every work-related death and about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid.*
- *Significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional.*
- *Work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR Part 1904.8 through 1904.12.*

Reminders:
- *Complete an Injury and Illness Incident Report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.*
- *Feel free to use two lines for a single case if you need to.*
- *Complete the 5 steps for each case.*

Establishment name: ORIN Technologies, LLC

City: Verona State: WI

Step 1. Identify the person			Step 2. Describe the case			Step 3. Classify the case (SELECT ONLY ONE circle based on the most serious outcome:)				Step 4. Enter the number of days the injured or ill worker was:		Step 5. Select one column:
							Remained at Work					(M) Illness
(A) Case no.	(B) Employee's name	(C) Job title (e.g., Welder)	(D) Date of injury or onset of illness (e.g., 2 10)	(E) Where the event occurred (e.g., Loading dock north end)	(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill (e.g., Second degree burns on right forearm from acetylene torch)	Death (G)	Days away from work (H)	Job transfer or restriction (I)	Other record-able cases (J)	Away from work (K)	On job transfer or restriction (L)	Injury (1) / Skin disorder (2) / Respiratory condition (3) / Poisoning (4) / Hearing loss (5) / All other illnesses (6)
Reset			___/___ month / day			○	○	○	○	___ days	___ days	○ ○ ○ ○ ○ ○
Reset			___/___ month / day			○	○	○	○	___ days	___ days	○ ○ ○ ○ ○ ○
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OSHA's Form 300 (Rev. 04/2004)

Log of Work-Related Injuries and Illnesses

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Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

Year 20 24

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

Please Record:
- *Information about every work-related death and about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid.*
- *Significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional.*
- *Work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR Part 1904.8 through 1904.12.*

Reminders:
- *Complete an Injury and Illness Incident Report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.*
- *Feel free to use two lines for a single case if you need to.*
- *Complete the 5 steps for each case.*

Establishment name: ORIN Technologies, LLC

City: Verona State: WI

Step 1. Identify the person			Step 2. Describe the case			Step 3. Classify the case (SELECT ONLY ONE circle based on the most serious outcome:)				Step 4. Enter the number of days the injured or ill worker was:		Step 5. Select one column:						
								Remained at Work						(M)	Illness				
(A) Case no.	(B) Employee's name	(C) Job title (e.g., Welder)	(D) Date of injury or onset of illness (e.g., 2/10)	(E) Where the event occurred (e.g., Loading dock north end)	(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill (e.g., Second degree burns on right forearm from acetylene torch)	Death (G)	Days away from work (H)	Job transfer or restriction (I)	Other record-able cases (J)	Away from work (K)	On job transfer or restriction (L)	Injury (1)	Skin disorder (2)	Respiratory condition (3)	Poisoning (4)	Hearing loss (5)	All other illnesses (6)
Reset			___/___ month / day			○	○	○	○	___ days	___ days	○	○	○	○	○	○
Reset			___/___ month / day			○	○	○	○	___ days	___ days	○	○	○	○	○	○
Reset			___/___ month / day			○	○	○	○	___ days	___ days	○	○	○	○	○	○
Reset			___/___ month / day			○	○	○	○	___ days	___ days	○	○	○	○	○	○
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OSHA's Form 300A (Rev. 04/2004)

Summary of Work-Related Injuries and Illnesses

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Year 20 24

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

All establishments covered by Part 1904 must complete this Summary page, even if no work-related injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete and accurate before completing this summary.

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the Log. If you had no cases, write "0."

Employees, former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR Part 1904.35, in OSHA's recordkeeping rule, for further details on the access provisions for these forms.

Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
0	0	0	0
(G)	(H)	(I)	(J)

Number of Days

Total number of days away from work	Total number of days of job transfer or restriction
0	0
(K)	(L)

Injury and Illness Types

Total number of . . . (M)			
(1) Injuries	0	(4) Poisonings	0
(2) Skin disorders	0	(5) Hearing loss	0
(3) Respiratory conditions	0	(6) All other illnesses	0

Post this Summary page from February 1 to April 30 of the year following the year covered by the form.

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Establishment information

Your establishment name: ORIN Technologies, LLC

Street: 405 Investment Court

City: Verona State: WI Zip: 53593

Industry description (*e.g., Manufacture of motor truck trailers*)

North American Industrial Classification (NAICS), if known (e.g., 336212)

5 6 2 9 1 0

Employment information *(If you don't have these figures, see the Worksheet on the next page to estimate.)*

Annual average number of employees: 8

Total hours worked by all employees last year: 13,909.75

Sign here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

Company executive

Title: Principal

Phone: 608-838-6699 Date: 4-25-25

Reset

TAPLIN GROUP, LLC
Environmental Services

Work Plan for:
Design and Implementation of In-Situ Remediation Services at the Cliffs-Dow Site
Marquette, Michigan



Prepared For:

TRIMEDIA ENVIRONMENTAL & ENGINEERING

MARQUETTE MICHIGAN

Prepared By:
Taplin Group, LLC

AUGUST, 2025

5140 West Michigan Avenue Kalamazoo, MI 49006

Taplingroup.com | Ph: 269-375-9595 | Fax: 888-919-3627

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EXECUTIVE SUMMARY

Taplin Group LLC, a division of Taplin Holdings (Taplin) is a full-service environmental contracting firm with experience, equipment and highly trained personnel capable of handling almost any environmental project. Taplin Group specializes in environmental remediation using personnel, equipment and procedures dedicated to providing our clients with the best possible service. In addition, other divisions of Taplin include Abatement services to address asbestos, lead and other abatement projects, Industrial services experienced in a wide range of industrial cleaning from tanks to entire facilities, underground infrastructure that provides cleaning and inspection services to municipalities and private clients, oil & gas services that provide necessary service to the upstream, midstream and downstream petroleum industry, and emergency response that provides 24-hour response to spills and other emergency environmental incidents. Together, Taplin can provide a wide client base with critical services necessary for a successful project.

AGREEMENT EXCEPTIONS

Taplin has fully reviewed the RFP and is familiar with the requirements of the project and the conditions present. We have no exceptions to the proposed agreement.

DESIGN DOCUMENT CLARIFICATIONS

Taplin has submitted all our questions and received responses necessary for us to prepare this proposal confident of a positive outcome for the goals of the project.

PLANNING SCHEDULE

Taplin proposes to work on a 10-days on, 4-days off schedule. Each working day will be 10 hours long. This will allow site personnel to return home every other week without disrupting the overall work schedule.

A proposed schedule of implementation is included as an attachment to this proposal. This is a preliminary schedule and is subject to modification based on specific conditions encountered. All schedule changes will be disclosed to Trimedia and the City of Marquette along with a justification for the modifications.

PERSONNEL AND EQUIPMENT

Taplin will assign trained and qualified personnel with the necessary experience to complete the project in a safe and timely manner. The following are the proposed key personnel to be assigned to the project:

- Project Sponsor: Steve Minella
- Project Manager: Kristopher Heckman
- Site Supervisor: Andrew Callahan

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Environmental Services

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- Off-Site Safety Officer: Keith Schillo

Resumes of key individuals are attached to this proposal. In addition to the key personnel, two (2) site laborers will be mobilized to the site. All Taplin Site Supervisors are trained to function as the onsite Safety Officer with the support of the off-site Safety Officer who will make regular visits to the site as deemed necessary.

Equipment usage will be minimal for this project. Most field operation will be accomplished by Geoprobe to minimize disturbance to the project site. However, Taplin will be supplying necessary equipment to support the operations and this will include:

- One (1) Dozer (D31, or D51 based on Site Supervisor evaluation),
- One (1) Skid Steer with bucket and forks and,
- One (1) Fecon attachment to the skid steer for site clearing.

Equipment will be mobilized to the site on and "as-needed" basis although the skid steer will be onsite throughout the project duration. The Site Supervisor may also determine whether other equipment is necessary and will mobilize it to the site as deemed necessary.

TECHNICAL APPROACH

The following is a description of all the proposed tasks and the intended approach to accomplish the goals of the project.

Design and Bench Testing

Taplin has evaluated all the available data on the project site and has prepared a preliminary design to accomplish the goals of the project. Below are details of our evaluation of the required reagent requirements and injection parameters:

Klozur® SP (Sodium Persulfate)is typically batched at a concentration of between 50 to 450 g/L (5 to 35%) and Taplin recommends injecting at a concentration between 50 and 250 g/L, based on known site design and conditions.

Effective treatment requires establishing contact between a sufficient amount of activated persulfate and the contaminant in the subsurface. A key element of establishing this contact in a source zone is the injection volume used to inject the activated persulfate reagents. Depending on the application method employed and site conditions, between 20% and 100% (with >50% typical) of the effective porosity is normally targeted during Klozur® SP injection, with a higher percent pore fill normally targeted for sites with slow groundwater velocities.

Below is an example injection scenario for the proposed mass Klozur® SP for this site. The suggested injection volumes may be altered based on the site-specific conditions.

Number of Applications: 1

Klozur SP Dosage	**Project Totals**	
Mass of Klozur® SP	423,168	Lb.

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Concentration in Pore Volume	9	g/L
	1.0	% w/w
Application Rate by Soil Mass (dry weight)	1.8	g/kg

Injection Locations

Number of Injection Locations	240	locations
Radius of Influence		
Design[1]	15	Feet
Injection[2]	8.1	Feet
Overlapping Design ROI[3]	17	%
Approximate Spacing between Locations[4]	24.6	Feet

Injection Details	**Project Totals**	
Total Injection Volume	821,083	Gallons
Percent of Effective Pore Volume	34	%
Volume per Injection Location	3,450	Gallons
Klozur® SP Injection Concentration	62	g/L
	6.0	% w/w
Mass per Injection Location		
Klozur® SP	1,778	Lb.
25% NaOH	5,382	Lbs. Solution

Design parameters should be considered approximations and suggestions. Site design engineers and contractors are ultimately responsible for the field application and design Values are based upon City provided data and other assumed values.

Notes

[1] Design radius of influence corresponds to the desired treatment radius from each injection location.

[2.] Injection radius of influence corresponds to the distance from each injection point the injection volume would distribute assuming uniform (cylindrical) distribution in the effective pore volume.

[3.] Approximate percentage of overlaps between the Design ROI from the various injection locations. Actual percentage overlap will depend upon injection location layout.

[4.] Approximate distance between injection locations. Actual distance will depend upon site layout.

The above design provides our best estimate of reagent requirements and injection details. However, prior to implementing the remedial actions, Taplin will complete a bench test to verify the preliminary calculations. Taplin will mobilize to the project site and collect water

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samples from six selected monitoring wells. Those samples will be returned and submitted for bench testing. Each sample will be analyzed for target compounds based on the analysis provided in the RFP. Each sample will then be treated with the equivalent concentrations of persulfate and NaOH and allowed to react overnight. The following day, a sample of the treated water will be collected and analyzed for the same target compounds to verify destruction of the constituents of concern. Sufficient quantity of samples will be collected to allow for multiple tests on each sample. Should complete destruction be recorded, a lower concentration may be evaluated, or conversely, if remnant concentrations are present following treatment, a higher dose may be needed to accomplish clean-up goals.

Based on the results of the bench study, the final design will be prepared and submitted to the Trimedia and the City of Marquette for review and approval.

Field Implementation

Equipment will be mobilized to the project site including the subcontracted Geoprobe™ along with stainless steel or poly tanks sufficient to mix up solutions for injection. Reagents will be delivered to the project site in super sacks. A grid will be set up across the plume based on the design specifications. Taplin will use GPS equipment to accurately locate the borings, and each location will be marked with a stake with injection point number clearly labeled.

The skid steer will be used to lift the supersacks and allow for placement of the reagents into the tanks. The prescribed quantity of water will also be placed in the tanks and pumps will be utilized to agitate the mixture until fully dissolved and uniform.

Meanwhile, the Geoprobe™ will use hollow rods with a disposable tip to advance the string to approximately 4 feet above the bottom of the dissolved constituent plume (estimated to be 26 feet below ground level (bgl)). Multiple rods will be used so that injections can occur at all proposed injection levels simultaneously. The tanks with the prepared solution will be connected to the drive string and a pump will inject the prescribed amount of solution into the subsurface.

Approximately 1/3 of the proposed solution for each boring will be injected at four different intervals, 25, 17, and 10 feet bgl to get full coverage of vertical extent of the dissolved constituent plume. Once the injection is complete, a new batch of solution will be prepared as the Geoprobe™ extracts the remaining rods and moves to the next location.

It is assumed that the fill material covering the site will not contain excessive large debris that would cause refusal for the Geoprobe™. We accept that some refusals will be likely, but should the obstructions occur in more than 5% of the borings, negotiations will be necessary to address the additional time and expense.

Record Keeping

During injection operations detailed record will be prepared. A base topographic map will be generated by a licensed land surveyor including all site features and proposed injection locations. Taplin will have onsite GPS equipment to allow for verification and adjustment of

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boring locations as necessary. As injection proceeds, the boring location identification number will be recorded including at a minimum the following:

- Boring location number,
- Time of initiation,
- Total Depth of penetration,
- Injection interval depths,
- Total volume of liquid injected at each depth,
- Injection times (start and stop at each depth) and,
- Completion time for boring.

Data will be provided to the onsite representative on a daily basis and will be compiled into a comprehensive report at the end of the project.

EXPERIENCE AND QUALIFICATIONS

Taplin is experienced in all types of environmental remediations including in-situ work. Appropriate project profiles are attached to this proposal. Taplin works closely with EGLE and has negotiated multiple permits for subsurface injections. Taplin collaborates closely with our clientele with open communications at the forefront. The Site Supervisor will have a close working relationship with the onsite professional and will discuss matters daily regarding the progress and any issues that arise. In addition, the off-site support staff are always available for discussions and will work to keep the client informed and deal with any issues regarding on-site matters and/or billing and administrative matters.

TAPLIN GROUP, LLC
Environmental Services

5140 West Michigan Avenue Kalamazoo, MI 49006

Taplingroup.com | Ph: 269-375-9595 | Fax: 888-919-3627

OSHA's Form 300 (Rev. 01/2004)

Log of Work-Related Injuries and Illnesses

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

Year 2024

U.S. Department of Labor
Occupational Safety and Health Administration

You must record information about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR 1904.8 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an injury and illness incident report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.

Form approved OMB no. 1218-0176

Establishment name: Taplin Group, LLC

City: Kalamazoo State: Michigan

Identify the person				Describe the case		Classify the case											
						CHECK ONLY ONE box for each case based on the most serious outcome for that case:				Enter the number of days the injured or ill worker was:		Check the "injury" column or choose one type of illness:					
(A) Case No.	(B) Employee's Name	(C) Job Title (e.g., Welder)	(D) Date of injury or onset of illness (mo./day)	(E) Where the event occurred (e.g. Loading dock north end)	(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill (e.g. Second degree burns on right forearm from acetylene torch)	Death	Days away from work	Remained at work		Away From Work (days)	On job transfer or restriction (days)	(M) Injury	Skin Disorder	Respiratory Condition	Poisoning	Hearing Loss	All other illnesses
								Job transfer or restriction	Other record-able cases								
						(G)	(H)	(I)	(J)	(K)	(L)	(1)	(2)	(3)	(4)	(5)	(6)
1.00		Labor	10.11.24	Michigan Paving Vessel	Skin irritation to forearms				X				X				
					4th Quarter 2024												
				Page totals		*0*	*0*	*0*	*1*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*0*

Be sure to transfer these totals to the Summary page (Form 300A) before you post it.

Public reporting burden for this collection of information is estimated to average 14 minutes per response, including time to review the instruction, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave, NW, Washington, DC 20210. Do not send the completed forms to this office.

Page 1 of 1

OSHA's Form 300A (Rev. 01/2004)

Summary of Work-Related Injuries and Illnesses

Year 2024

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

All establishments covered by Part 1904 must complete this Summary page, even if no injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the log. If you had no cases write "0."

Employees former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR 1904.35, in OSHA's Recordkeeping rule, for further details on the access provisions for these forms.

Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
0	0	0	1
(G)	(H)	(I)	(J)

Number of Days

Total number of days away from work	Total number of days of job transfer or restriction
0	0
(K)	(L)

Injury and Illness Types

Total number of...	(M)		
(1) Injury	0	(4) Poisoning	0
(2) Skin Disorder	1	(5) Hearing Loss	0
(3) Respiratory Condition	0	(6) All Other Illnesses	0

Post this Summary page from February 1 to April 30 of the year following the year covered by the form

Public reporting burden for this collection of information is estimated to average 58 minutes per response, including time to review the instruction, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave, NW, Washington, DC 20210. Do not send the completed forms to this office.

Establishment information

Your establishment name: Taplin Group, LLC

Street: 5140 West Michigan Ave

City: Kalamazoo State: Michigan Zip: 49006

Industry description (e.g., Manufacture of motor truck trailers)

Standard Industrial Classification (SIC), if known (e.g., SIC 3715)

1 7 9 9

OR North American Industrial Classification (NAICS), if known (e.g., 336212)

5 6 2 9 1 0

Employment information

Annual average number of employees: 128

Total hours worked by all employees last year: 269769

Sign here Keith Schillo

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

Keith Schillo Keith Schillo
Company executive

VP of Safety
Title

269-375-9595
Phone

1/8/2025
Date

OSHA's Form 300 (Rev. 01/2004)

Log of Work-Related Injuries and Illnesses

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

Year 2023

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

You must record information about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR 1904.8 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an injury and illness incident report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.

Establishment name: Taplin Group, LLC

City: Kalamazoo State: Michigan

Identify the person				Describe the case		Classify the case												
(A) Case No.	(B) Employee's Name	(C) Job Title (e.g., Welder)	(D) Date of injury or onset of illness (mo./day)	(E) Where the event occurred (e.g. Loading dock north end)	(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill (e.g. Second degree burns on right forearm from acetylene torch)	CHECK ONLY ONE box for each case based on the most serious outcome for that case:				Enter the number of days the injured or ill worker was:		Check the "injury" column or choose one type of illness:						(M)
						Death	Days away from work	Remained at work		Away From Work (days)	On job transfer or restriction (days)	Injury	Skin Disorder	Respiratory Condition	Poisoning	Hearing Loss	All other illnesses	
								Job transfer or restriction	Other record-able cases									
						(G)	(H)	(I)	(J)	(K)	(L)	(1)	(2)	(3)	(4)	(5)	(6)	
1.23		TV Operator	6.7.2023	In the Street	Lumbar Strain to the Back				X								X	
					Page totals	0	0	0	1	0	0	0	0	0	0	0	1	

Be sure to transfer these totals to the Summary page (Form 300A) before you post it.

Injury	Skin Disorder	Respiratory Condition	Poisoning	Hearing Loss	All other illnesses	
(1)	(2)	(3)	(4)	(5)	(6)	

Public reporting burden for this collection of information is estimated to average 14 minutes per response, including time to review the instruction, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave, NW, Washington, DC 20210. Do not send the completed forms to this office.

OSHA's Form 300A (Rev. 01/2004)

Summary of Work-Related Injuries and Illnesses

Year 2023

U.S. Department of Labor
Occupational Safety and Health Administration
Form approved OMB no. 1218-0176

All establishments covered by Part 1904 must complete this Summary page, even if no injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the log. If you had no cases write "0."

Employees former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR 1904.35, in OSHA's Recordkeeping rule, for further details on the access provisions for these forms.

Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
0	0	0	1
(G)	(H)	(I)	(J)

Number of Days

Total number of days away from work	Total number of days of job transfer or restriction
0	0
(K)	(L)

Injury and Illness Types

Total number of...	(M)		
(1) Injury	0	(4) Poisoning	0
(2) Skin Disorder	0	(5) Hearing Loss	0
(3) Respiratory Condition	0	(6) All Other Illnesses	1

Post this Summary page from February 1 to April 30 of the year following the year covered by the form

Public reporting burden for this collection of information is estimated to average 58 minutes per response, including time to review the instruction, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave. NW, Washington, DC 20210. Do not send the completed forms to this office.

Establishment Information

Your establishment name Taplin Group, LLC

Street 5140 West Michigan Ave

City Kalamazoo State Michigan Zip 49006

Industry description (e.g., Manufacture of motor truck trailers)

Standard Industrial Classification (SIC), if known (e.g., SIC 3715)

1 7 9 9

OR North American Industrial Classification (NAICS), if known (e.g., 336212)

5 6 2 9 1 0

Employment Information

Annual average number of employees 119

Total hours worked by all employees last year 269353

Sign here Keith Schillo

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

Keith Schillo
Company executive

VP of Safety
Title

269-375-9595
Phone

1.5.2024
Date

OSHA's Form 300 (Rev. 01/2004)

Log of Work-Related Injuries and Illnesses

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

Year 2022

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

You must record information about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR 1904.8 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an injury and illness incident report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.

Establishment name Taplin Group, LLC

City Kalamazoo State Michigan

Identify the person				Describe the case		Classify the case											
						CHECK ONLY ONE box for each case based on the most serious outcome for that case:				Enter the number of days the injured or ill worker was:		Check the "injury" column or choose one type of illness:					
(A) Case No.	(B) Employee's Name	(C) Job Title (e.g., Welder)	(D) Date of injury or onset of illness (mo./day)	(E) Where the event occurred (e.g. Loading dock north end)	(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill (e.g. Second degree burns on right forearm from acetylene torch)	Death	Days away from work	Remained at work		Away From Work (days)	On job transfer or restriction (days)	(M) Injury	Skin Disorder	Respiratory Condition	Poisoning	Hearing Loss	All other illnesses
								Job transfer or restriction	Other record-able cases								
						(G)	(H)	(I)	(J)	(K)	(L)	(1)	(2)	(3)	(4)	(5)	(6)
					No Injuries for 2022												
					Page totals	0	0	0	0	0	0	0	0	0	0	0	0

Be sure to transfer these totals to the Summary page (Form 300A) before you post it.

Injury | Skin Disorder | Respiratory Condition | Poisoning | Hearing Loss | All other illnesses

(1) (2) (3) (4) (5) (6)

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OSHA's Form 300A (Rev. 01/2004)

Summary of Work-Related Injuries and Illnesses

Year 2022

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

All establishments covered by Part 1904 must complete this Summary page, even if no injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete

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Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
0	0	0	0
(G)	(H)	(I)	(J)

Number of Days

Total number of days away from work	Total number of days of job transfer or restriction
0	0
(K)	(L)

Injury and Illness Types

Total number of... (M)			
(1) Injury	0	(4) Poisoning	0
(2) Skin Disorder	0	(5) Hearing Loss	0
(3) Respiratory Condition	0	(6) All Other Illnesses	0

Establishment Information

Your establishment name Taplin Group, LLC

Street 5140 West Michigan Ave

City Kalamazoo State Michigan Zip 49006

Industry description (e.g., Manufacture of motor truck trailers)

Standard Industrial Classification (SIC), if known (e.g., SIC 3715)

1 7 9 9

OR North American Industrial Classification (NAICS), if known (e.g., 336212)

5 6 2 9 1 0

Employment Information

Annual average number of employees 127

Total hours worked by all employees last year 271609

Sign here Keith Schillo

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

Keith Schillo VP of Health Safety
Company executive

VP of Safety
Title

269-375-9595
Phone

1-5-2023
Date

Post this Summary page from February 1 to April 30 of the year following the year covered by the form

Public reporting burden for this collection of information is estimated to average 58 minutes per response, including time to review the instruction, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave, NW, Washington, DC 20210. Do not send the completed forms to this office.

OSHA's Form 300 (Rev. 01/2004)

Log of Work-Related Injuries and Illnesses

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Year 2021

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

You must record information about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR 1904.8 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an injury and illness incident report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.

Establishment name: Taplin Group, LLC

City: Kalamazoo State: Michigan

Identify the person			Describe the case			Classify the case												
						CHECK ONLY ONE box for each case based on the most serious outcome for that case:				Enter the number of days the injured or ill worker was:		Check the "injury" column or choose one type of illness:						
(A) Case No.	(B) Employee's Name	(C) Job Title (e.g., Welder)	(D) Date of injury or onset of illness (mo./day)	(E) Where the event occurred (e.g. Loading dock north end)	(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill (e.g. Second degree burns on right forearm from acetylene torch)	Death	Days away from work	Remained at work		Away From Work (days)	On job transfer or restriction (days)	(M) Injury	Skin Disorder	Respiratory Condition	Poisoning	Hearing Loss	All other illnesses
								Job transfer or restriction	Other record-able cases								
						(G)	(H)	(I)	(J)	(K)	(L)	(1)	(2)	(3)	(4)	(5)	(6)
1.21		Tech	11.1.2021	Wooded area Easment way	Right knee injuried climbing over 5' fence		X			22		X					
					Page totals	*0*	*1*	*0*	*0*	*22*	*0*	*1*	*0*	*0*	*0*	*0*	*0*

Be sure to transfer these totals to the Summary page (Form 300A) before you post it.

Injury	Skin Disorder	Respiratory Condition	Poisoning	Hearing Loss	All other illnesses	
(1)	(2)	(3)	(4)	(5)	(6)	

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OSHA's Form 300A (Rev. 01/2004)

Summary of Work-Related Injuries and Illnesses

Year 2021

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

All establishments covered by Part 1904 must complete this Summary page, even if no injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the log. If you had no cases write "0."

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Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
0	1	0	0
(G)	(H)	(I)	(J)

Number of Days

Total number of days away from work	Total number of days of job transfer or restriction
22	0
(K)	(L)

Injury and Illness Types

Total number of... (M)			
(1) Injury	1	(4) Poisoning	0
(2) Skin Disorder	0	(5) Hearing Loss	0
(3) Respiratory Condition	0	(6) All Other Illnesses	0

Post this Summary page from February 1 to April 30 of the year following the year covered by the form

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Establishment information

Your establishment name: Taplin Group, LLC

Street: 5140 West Michigan Ave

City: Kalamazoo State: Michigan Zip: 49006

Industry description (e.g., Manufacture of motor truck trailers)

Standard Industrial Classification (SIC), if known (e.g., SIC 3715)

1799

OR North American Industrial Classification (NAICS), if known (e.g., 336212)

562910

Employment information

Annual average number of employees: 118

Total hours worked by all employees last year: 294489

Sign here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

Keith Schillo
Company executive

VP of Safety
Title

269-375-9595
Phone

Date

June 6, 2024

Taplin Holdings, LLC
Taplin Group, LLC
Taplin Enterprises, LLC
5140 West Michigan Ave
Kalamazoo, MI 49006

RE: Taplin Holdings, LLC et al – Experience Modification Rate (EMR) Letter

To Whom It May Concern,

NFP Property & Casualty Services, Inc. is honored to serve as the Broker of Record for Taplin Holdings, LLC et al.

As of June 6, 2024, Taplin's Experience Modification Rate (EMR) for the prior four years and upcoming year is as follows:

Period	MI	NCCI
10/31/2024-10/31/2025	1.00	0.90
10/31/2023-10/31/2024	1.21	0.92
10/31/2022-10/31/2023	0.95	Did not qualify
10/31/2021-10/31/2022	0.84	Did not qualify
10/31/2020-10/31/2021	0.64	Did not qualify

Should you have any questions regarding this matter, please do not hesitate to contact me.

Thank you,

Lexi Abbate

Lexi Abbate
Lexi.Abbate@nfp.com

Property and casualty insurance services provided through NFP Property & Casualty Insurance Services, Inc. (NFPPC). Other insurance services provided through NFP Corporate Services (NY), LLC (NFPNY) and BWD Agency, Inc. (BWD). NFPPC, NFPNY and BWD are subsidiaries of NFP Corp. (collectively, NFP). Securities may be offered through Kestra Investment Services, LLC (Kestra IS), member FINRA/SIPC. Investment advisory services may be offered through Kestra Advisory Services, LLC, (Kestra AS), an affiliate of Kestra IS. Neither Kestra IS nor Kestra AS are affiliated with NFP.

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In-Situ Remediation Services
Cliffs-Dow Brownfield Site
City of Marquette, Michigan

LIST OF SUBCONTRACTORS

No subcontract, whether listed herein or later proposed, may be entered into without the written consent of the OWNER and CONSULTANT.

To OWNER/CONSULTANT:

The Bidder, Taplin Group, LLC, proposes to subcontract the following work items to the following parties (if no subcontracted work is proposed check NO SUBCONTRACT WORK below):

☐ NO SUBCONTRACT WORK

1) PORTION OF WORK: 50 %
Amount of Subcontract: $ 2,028,600
SUBCONTRACTOR Name: Stearns Drilling

SUBCONTRACTOR Representative: Roland Clapp

Full Address:
Stearns Drilling
6974 Hammond SE
Dutton, MI 49316
(616) 698-7770

2) PORTION OF WORK: %
Amount of Subcontract: $
SUBCONTRACTOR Name:

SUBCONTRACTOR Representative:

Full Address:

3) PORTION OF WORK: %
Amount of Subcontract: $
SUBCONTRACTOR Name:

SUBCONTRACTOR Representative:

Full Address:

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Bid Bond

CONTRACTOR:
(Name, legal status and address)
Taplin Enterprises, LLC
5140 West Michigan Avenue,
Kalamazoo, MI 49006

SURETY:
(Name, legal status and principal place of business)
Fidelity and Deposit Company of Maryland
1299 Zurich Way
Schaumburg, IL 60196

OWNER:
(Name, legal status and address)
City of Marquette
1100 Wright Street
Marquette, MI 49855

BOND AMOUNT: 5% of Bid Amount

PROJECT:
(Name, location or address, and Project number, if any)

Former Cliffs-Dow Site
BP# 25-06
Project Number MQ23-444

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.
If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

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User Notes:
(1113085000)

Signed and sealed this 24th day of July, 2025.

	Taplin Enterprises, LLC
	(Contractor as Principal) (Seal)
	(Title) DAVID M. BLOCH, CHAIR, MGR. PRES.
	Fidelity and Deposit Company of Maryland
	(Surety) (Seal)
(Witness) Jennifer Goodwin Project Control Specialist	*(Title)* Maria Rufino, Attorney In Fact
See Attached CA Notary Acknowledgment	
(Witness)	

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User Notes: (1113085000)

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Sacramento)

On July 24, 2025 before me, Donna Marie Borja, Notary Public
(insert name and title of the officer)

personally appeared Maria Rufino,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Donna Marie Borja (Seal)

DONNA MARIE BORJA
COMMISSION #2430459
NOTARY PUBLIC - CALIFORNIA
SOLANO COUNTY
MY COMMISSION EXPIRES
DECEMBER 12, 2026

ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND
POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That the ZURICH AMERICAN INSURANCE COMPANY, a corporation of the State of New York, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, a corporation of the State of Illinois, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND a corporation of the State of Illinois (herein collectively called the "Companies"), by Christopher Nolan, Vice President, in pursuance of authority granted by Article V, Section 8, of the By-Laws of said Companies, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, do hereby nominate, constitute, and appoint **Audrey C, SKEEN, Lisa BETANCUR, David W. GARESE, Brooke A. SKEEN, Donna BORJA, Maria RUFINO, of Sacramento, California,** its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: **any and all bonds and undertakings,** and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Companies, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the ZURICH AMERICAN INSURANCE COMPANY at its office in New York, New York., the regularly elected officers of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at its office in Owings Mills, Maryland., and the regularly elected officers of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at its office in Owings Mills, Maryland., in their own proper persons.

The said Vice President does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article V, Section 8, of the By-Laws of said Companies, and is now in force.

IN WITNESS WHEREOF, the said Vice-President has hereunto subscribed his/her names and affixed the Corporate Seals of the said **ZURICH AMERICAN INSURANCE COMPANY, COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and FIDELITY AND DEPOSIT COMPANY OF MARYLAND**, this 10th day of March, A.D. 2025.



ATTEST:
ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND

By: Christopher Nolan
Vice President

By: Dawn E. Brown
Secretary

State of Maryland
County of Baltimore

On this 10th day of March, A.D. 2025, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, **Christopher Nolan, Vice President and Dawn E. Brown, Secretary** of the Companies, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and acknowledged the execution of same, and being by me duly sworn, deposeth and saith, that he/she is the said officer of the Company aforesaid, and that the seals affixed to the preceding instrument are the Corporate Seals of said Companies, and that the said Corporate Seals and the signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporations.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.

Genevieve M. Maison
Notary Public
My Commission Expire January 27, 2029

EXTRACT FROM BY-LAWS OF THE COMPANIES

Authenticity of this bond can be confirmed at bondvalidator.zurichna.com or 410-559-8790

"Article V, Section 8, Attorneys-in-Fact. The Chief Executive Officer, the President, or any Executive Vice President or Vice President may, by written instrument under the attested corporate seal, appoint attorneys-in-fact with authority to execute bonds, policies, recognizances, stipulations, undertakings, or other like instruments on behalf of the Company, and may authorize any officer or any such attorney-in-fact to affix the corporate seal thereto; and may with or without cause modify of revoke any such appointment or authority at any time."

CERTIFICATE

I, the undersigned, Vice President of the ZURICH AMERICAN INSURANCE COMPANY, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that Article V, Section 8, of the By-Laws of the Companies is still in force.

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the ZURICH AMERICAN INSURANCE COMPANY at a meeting duly called and held on the 15th day of December 1998.

RESOLVED: "That the signature of the President or a Vice President and the attesting signature of a Secretary or an Assistant Secretary and the Seal of the Company may be affixed by facsimile on any Power of Attorney...Any such Power or any certificate thereof bearing such facsimile signature and seal shall be valid and binding on the Company."

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at a meeting duly called and held on the 5th day of May, 1994, and the following resolution of the Board of Directors of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at a meeting duly called and held on the 10th day of May, 1990.

RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seals of the said Companies, this 24th day of July, 2025.



MJ Pethick

Mary Jean Pethick
Vice President

TO REPORT A CLAIM WITH REGARD TO A SURETY BOND, PLEASE SUBMIT A COMPLETE DESCRIPTION OF THE CLAIM INCLUDING THE PRINCIPAL ON THE BOND, THE BOND NUMBER, AND YOUR CONTACT INFORMATION TO:

Zurich Surety Claims
1299 Zurich Way
Schaumburg, IL 60196-1056
reportsfclaims@zurichna.com
800-626-4577

Authenticity of this bond can be confirmed at bondvalidator.zurichna.com or 410-559-8790

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 12/27/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER NFP Prop & Casualty Serv Inc. One California Street Suite 200 San Francisco CA 94111	**CONTACT NAME:** Edgar Mendoza **PHONE (A/C, No, Ext):** **FAX (A/C, No):** **E-MAIL ADDRESS:** edgar.mendoza@nfp.com
INSURED TAPLHOL-01 Taplin Group, LLC 5140 West Michigan Ave Kalamazoo, MI 49006	**INSURER(S) AFFORDING COVERAGE** / **NAIC #** **INSURER A :** Axis Surplus Insurance Company — 26620 **INSURER B :** Zurich American Insurance Company — 16535 **INSURER C :** **INSURER D :** **INSURER E :** **INSURER F :**

COVERAGES **CERTIFICATE NUMBER:** 1923730185 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X **COMMERCIAL GENERAL LIABILITY** CLAIMS-MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: X POLICY X PRO-JECT LOC OTHER:	Y	Y	SP002955-08-2024	10/31/2024	10/31/2025	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG 	$ 1,000,000 $ 100,000 $ 25,000 $ 1,000,000 $ 2,000,000 $ 2,000,000 $
B	**AUTOMOBILE LIABILITY** X ANY AUTO OWNED AUTOS ONLY HIRED AUTOS ONLY SCHEDULED AUTOS NON-OWNED AUTOS ONLY	Y	Y	BAP0160831-08	10/31/2024	10/31/2025	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) 	$ 1,000,000 $ $ $ $
A	UMBRELLA LIAB X OCCUR X **EXCESS LIAB** CLAIMS-MADE DED RETENTION $	Y	Y	SX002957-08-2024	10/31/2024	10/31/2025	EACH OCCURRENCE AGGREGATE 	$ 10,000,000 $ 10,000,000 $
B	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** Y / N ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below	N / A	Y	WC0160829-08	10/31/2024	10/31/2025	X PER STATUTE OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ 1,000,000 $ 1,000,000 $ 1,000,000
A B	Pollution/Professional Liab Rented Leased Equipment-			SP002955-08-2024 CPP-2485318-05	10/31/2024 10/31/2024	10/31/2025 10/31/2025	$1,000,000 per ocur $5,000 any one item $50,000 per occur	$2,000,000 agg $2,500-$5,000 ded

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Professional Liability (is claims made) $1M/$2M agg / retro date 9/15/2016

The certificate holder is an additional insured on the General, Automobile and Excess Liability policies where required by written contract or agreement subject to policy terms, conditions and exclusions. This insurance is Primary and Non-Contributory on the General, Auto, Employers Liability, Pollution and Professional Liability where required by written contract or agreement.

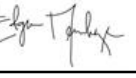
CERTIFICATE HOLDER

"Cert Holder"

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE



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Coverage Extension Endorsement - Michigan

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.	
Policy No. BAP 0160831-08	Effective Date: 10/31/2024

This endorsement modifies insurance provided under the:

Business Auto Coverage Form
Motor Carrier Coverage Form

A. Amended Who Is An Insured

1. The following is added to the **Who Is An Insured** Provision in **Section II – Covered Autos Liability Coverage**:

The following are also "insureds":

a. Any "employee" of yours is an "insured" while using a covered "auto" you don't own, hire or borrow for acts performed within the scope of employment by you. Any “employee” of yours is also an “insured” while operating an “auto” hired or rented under a contract or agreement in an “employee’s” name, with your permission, while performing duties related to the conduct of your business.

b. Anyone volunteering services to you is an "insured" while using a covered "auto" you don’t own, hire or borrow to transport your clients or other persons in activities necessary to your business.

c. Anyone else who furnishes an "auto" referenced in Paragraphs **A.1.a.** and **A.1.b.** in this endorsement.

d. Where and to the extent permitted by law, any person(s) or organization(s) where required by written contract or written agreement with you executed prior to any "accident", including those person(s) or organization(s) directing your work pursuant to such written contract or written agreement with you, provided the "accident" arises out of operations governed by such contract or agreement and only up to the limits required in the written contract or written agreement, or the Limits of Insurance shown in the Declarations, whichever is less.

2. The following is added to the **Other Insurance** Condition in the Business Auto Coverage Form and the **Other Insurance – Primary and Excess Insurance Provisions Condition** in the Motor Carrier Coverage Form**:**

Coverage for any person(s) or organization(s), where required by written contract or written agreement with you executed prior to any "accident", will apply on a primary and non-contributory basis and any insurance maintained by the additional "insured" will apply on an excess basis. However, in no event will this coverage extend beyond the terms and conditions of the Coverage Form.

B. Amendment – Supplementary Payments

Paragraphs **a.(2)** and **a.(4)** of the **Coverage Extensions** Provision in **Section II – Covered Autos Liability Coverage** are replaced by the following:

(2) Up to $5,000 for the cost of bail bonds (including bonds for related traffic law violations) required because of an "accident" we cover. We do not have to furnish these bonds.

(4) All reasonable expenses incurred by the "insured" at our request, including actual loss of earnings up to $500 a day because of time off from work.

C. Fellow Employee Coverage

The **Fellow Employee** Exclusion contained in **Section II – Covered Autos Liability Coverage** does not apply.

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D. Driver Safety Program Liability and Physical Damage Coverage

1. The following is added to the **Racing** Exclusion in **Section II – Covered Autos Liability Coverage**:

This exclusion does not apply to covered "autos" participating in a driver safety program event, such as, but not limited to, auto or truck rodeos and other auto or truck agility demonstrations.

2. The following is added to Paragraph **2.** in **B. Exclusions** of **Section III – Physical Damage Coverage** of the Business Auto Coverage Form and Paragraph **2.b.** in **B. Exclusions** of **Section IV – Physical Damage Coverage** of the Motor Carrier Coverage Form:

This exclusion does not apply to covered "autos" participating in a driver safety program event, such as, but not limited to, auto or truck rodeos and other auto or truck agility demonstrations.

E. Lease or Loan Gap Coverage

The following is added to the **Coverage** Provision of the **Physical Damage Coverage** Section:

Lease Or Loan Gap Coverage

In the event of a total "loss" to a covered "auto", we will pay any unpaid amount due on the lease or loan for a covered "auto", less:

a. Any amount paid under the **Physical Damage Coverage** Section of the Coverage Form; and

b. Any:

(1) Overdue lease or loan payments at the time of the "loss";

(2) Financial penalties imposed under a lease for excessive use, abnormal wear and tear or high mileage;

(3) Security deposits not returned by the lessor;

(4) Costs for extended warranties, credit life insurance, health, accident or disability insurance purchased with the loan or lease; and

(5) Carry-over balances from previous leases or loans.

F. Towing and Labor

Paragraph **A.2.** of the **Physical Damage Coverage** Section is replaced by the following:

We will pay up to $75 for towing and labor costs incurred each time a covered "auto" that is a "private passenger type", light truck or medium truck is disabled. However, the labor must be performed at the place of disablement.

As used in this provision, "private passenger type" means a private passenger or station wagon type "auto" and includes an "auto" of the pickup or van type if not used for business purposes.

G. Extended Glass Coverage

The following is added to Paragraph **A.3.a.** of the **Physical Damage Coverage** Section:

If glass must be replaced, the deductible shown in the Declarations will apply. However, if glass can be repaired and is actually repaired rather than replaced, the deductible will be waived. You have the option of having the glass repaired rather than replaced.

H. Hired Auto Physical Damage – Increased Loss of Use Expenses

The **Coverage Extension** for **Loss Of Use Expenses** in the **Physical Damage Coverage** Section is replaced by the following:

Loss Of Use Expenses

For Hired Auto Physical Damage, we will pay expenses for which an "insured" becomes legally responsible to pay for loss of use of a vehicle rented or hired without a driver under a written rental contract or written rental agreement. We will pay for loss of use expenses if caused by:

(1) Other than collision only if the Declarations indicate that Comprehensive Coverage is provided for any covered "auto";

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(2) Specified Causes Of Loss only if the Declarations indicate that Specified Causes Of Loss Coverage is provided for any covered "auto"; or

(3) Collision only if the Declarations indicate that Collision Coverage is provided for any covered "auto".

However, the most we will pay for any expenses for loss of use is $100 per day, to a maximum of $3000.

I. Personal Effects Coverage

The following is added to the **Coverage** Provision of the **Physical Damage Coverage** Section:

Personal Effects Coverage

a. We will pay up to $750 for "loss" to personal effects which are:

(1) Personal property owned by an "insured"; and

(2) In or on a covered "auto".

b. Subject to Paragraph **a.** above, the amount to be paid for "loss" to personal effects will be based on the lesser of:

(1) The reasonable cost to replace; or

(2) The actual cash value.

c. The coverage provided in Paragraphs **a.** and **b.** above, only applies in the event of a total theft of a covered "auto". No deductible applies to this coverage. However, we will not pay for "loss" to personal effects of any of the following:

(1) Accounts, bills, currency, deeds, evidence of debt, money, notes, securities, or commercial paper or other documents of value.

(2) Bullion, gold, silver, platinum, or other precious alloys or metals; furs or fur garments; jewelry, watches, precious or semi-precious stones.

(3) Paintings, statuary and other works of art.

(4) Contraband or property in the course of illegal transportation or trade.

(5) Tapes, records, discs or other similar devices used with audio, visual or data electronic equipment.

Any coverage provided by this Provision will share on a pro rata basis with other valid and collectible insurance coverage of the same type purchased by the policyholder to apply on a primary basis. Our share will be the proportionate amount that this insurance bears to the total amount of all applicable limits.

J. Tapes, Records and Discs Coverage

1. The Exclusion in Paragraph **B.4.a.** of **Section III – Physical Damage Coverage** in the Business Auto Coverage Form and the Exclusion in Paragraph **B.2.c.** of **Section IV – Physical Damage Coverage** in the Motor Carrier Coverage Form does not apply.

2. The following is added to Paragraph **1.a. Comprehensive Coverage** under the **Coverage** Provision of the **Physical Damage Coverage** Section:

We will pay for "loss" to tapes, records, discs or other similar devices used with audio, visual or data electronic equipment. We will pay only if the tapes, records, discs or other similar audio, visual or data electronic devices:

(a) Are the property of an "insured"; and

(b) Are in a covered "auto" at the time of "loss".

The most we will pay for such "loss" to tapes, records, discs or other similar devices is $500. The **Physical Damage Coverage Deductible** Provision does not apply to such "loss".

K. Airbag Coverage

The Exclusion in Paragraph **B.3.a.** of **Section III – Physical Damage Coverage** in the Business Auto Coverage Form and the Exclusion in Paragraph **B.4.a.** of **Section IV – Physical Damage Coverage** in the Motor Carrier Coverage Form does not apply to the accidental discharge of an airbag.

L. Two or More Deductibles

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The following is added to the **Deductible** Provision of the **Physical Damage Coverage** Section:

If an accident is covered both by this policy or Coverage Form and by another policy or Coverage Form issued to you by us, the following applies for each covered "auto" on a per vehicle basis:

1. If the deductible on this policy or Coverage Form is the smaller (or smallest) deductible, it will be waived; or

2. If the deductible on this policy or Coverage Form is not the smaller (or smallest) deductible, it will be reduced by the amount of the smaller (or smallest) deductible.

M. Temporary Substitute Autos – Physical Damage

1. The following is added to **Section I – Covered Autos**:

Temporary Substitute Autos – Physical Damage

If Physical Damage Coverage is provided by this Coverage Form on your owned covered "autos", the following types of vehicles are also covered "autos" for Physical Damage Coverage:

Any "auto" you do not own when used with the permission of its owner as a temporary substitute for a covered "auto" you do own but is out of service because of its:

1. Breakdown;

2. Repair;

3. Servicing;

4. "Loss"; or

5. Destruction.

2. The following is added to the Paragraph **A. Coverage** Provision of the **Physical Damage Coverage** Section:

Temporary Substitute Autos – Physical Damage

We will pay the owner for "loss" to the temporary substitute "auto" unless the "loss" results from fraudulent acts or omissions on your part. If we make any payment to the owner, we will obtain the owner's rights against any other party.

The deductible for the temporary substitute "auto" will be the same as the deductible for the covered "auto" it replaces.

N. Amended Duties In The Event Of Accident, Claim, Suit Or Loss

Paragraph **a.** of the **Duties In The Event Of Accident, Claim, Suit Or Loss** Condition is replaced by the following:

a. In the event of "accident", claim, "suit" or "loss", you must give us or our authorized representative prompt notice of the "accident", claim, "suit" or "loss". However, these duties only apply when the "accident", claim, "suit" or "loss" is known to you (if you are an individual), a partner (if you are a partnership), a member (if you are a limited liability company) or an executive officer or insurance manager (if you are a corporation). The failure of any agent, servant or employee of the "insured" to notify us of any "accident", claim, "suit" or "loss" shall not invalidate the insurance afforded by this policy.

Include, as soon as practicable:

(1) How, when and where the "accident" or "loss" occurred and if a claim is made or "suit" is brought, written notice of the claim or "suit" including, but not limited to, the date and details of such claim or "suit";

(2) The "insured's" name and address; and

(3) To the extent possible, the names and addresses of any injured persons and witnesses.

If you report an "accident", claim, "suit" or "loss" to another insurer when you should have reported to us, your failure to report to us will not be seen as a violation of these amended duties provided you give us notice as soon as practicable after the fact of the delay becomes known to you.

O. Waiver of Transfer Of Rights Of Recovery Against Others To Us

The following is added to the **Transfer Of Rights Of Recovery Against Others To Us** Condition:

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This Condition does not apply to the extent required of you by a written contract, executed prior to any "accident" or "loss", provided that the "accident" or "loss" arises out of operations contemplated by such contract. This waiver only applies to the person or organization designated in the contract.

P. Employee Hired Autos – Physical Damage

Paragraph **b.** of the **Other Insurance** Condition in the Business Auto Coverage Form and Paragraph **f.** of the **Other Insurance – Primary and Excess Insurance Provisions** Condition in the Motor Carrier Coverage Form are replaced by the following:

For Hired Auto Physical Damage Coverage, the following are deemed to be covered "autos" you own:

(1) Any covered "auto" you lease, hire, rent or borrow; and

(2) Any covered "auto" hired or rented under a written contract or written agreement entered into by an "employee" or elected or appointed official with your permission while being operated within the course and scope of that "employee's" employment by you or that elected or appointed official's duties as respect their obligations to you.

However, any "auto" that is leased, hired, rented or borrowed with a driver is not a covered "auto".

Q. Unintentional Failure to Disclose Hazards

The following is added to the **Concealment, Misrepresentation Or Fraud** Condition:

However, we will not deny coverage under this Coverage Form if you unintentionally:

(1) Fail to disclose any hazards existing at the inception date of this Coverage Form; or

(2) Make an error, omission, improper description of "autos" or other misstatement of information.

You must notify us as soon as possible after the discovery of any hazards or any other information that was not provided to us prior to the acceptance of this policy.

R. Hired Auto – World Wide Coverage

Paragraph **7.b.(5)** of the **Policy Period, Coverage Territory** Condition is replaced by the following:

(5) Anywhere else in the world if a covered "auto" is leased, hired, rented or borrowed for a period of 60 days or less,

S. Bodily Injury Redefined

The definition of "bodily injury" in the **Definitions** Section is replaced by the following:

"Bodily injury" means bodily injury, sickness or disease, sustained by a person including death or mental anguish, resulting from any of these at any time. Mental anguish means any type of mental or emotional illness or disease.

T. Expected Or Intended Injury

The **Expected Or Intended Injury** Exclusion in Paragraph **B. Exclusions** under **Section II – Covered Auto Liability Coverage** is replaced by the following:

Expected Or Intended Injury

"Bodily injury" or "property damage" expected or intended from the standpoint of the "insured". This exclusion does not apply to "bodily injury" or "property damage" resulting from the use of reasonable force to protect persons or property.

U. Physical Damage – Additional Temporary Transportation Expense Coverage

Paragraph **A.4.a.** of **Section III – Physical Damage Coverage** is replaced by the following:

4. Coverage Extensions

a. Transportation Expenses

We will pay up to $50 per day to a maximum of $1,000 for temporary transportation expense incurred by you because of the total theft of a covered "auto" of the private passenger type. We will pay only for those covered "autos" for which you carry either Comprehensive or Specified Causes of Loss Coverage. We will pay for temporary transportation expenses incurred during the period beginning 48 hours after the theft and ending, regardless of the policy's expiration, when the covered "auto" is returned to use or we pay for its "loss".

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V. Replacement of a Private Passenger Auto with a Hybrid or Alternative Fuel Source Auto

The following is added to Paragraph **A. Coverage** of the **Physical Damage Coverage** Section:

In the event of a total "loss" to a covered "auto" of the private passenger type that is replaced with a hybrid "auto" or "auto" powered by an alternative fuel source of the private passenger type, we will pay an additional 10% of the cost of the replacement "auto", excluding tax, title, license, other fees and any aftermarket vehicle upgrades, up to a maximum of $2500. The covered "auto" must be replaced by a hybrid "auto" or an "auto" powered by an alternative fuel source within 60 calendar days of the payment of the "loss" and evidenced by a bill of sale or new vehicle lease agreement.

To qualify as a hybrid "auto", the "auto" must be powered by a conventional gasoline engine and another source of propulsion power. The other source of propulsion power must be electric, hydrogen, propane, solar or natural gas, either compressed or liquefied. To qualify as an "auto" powered by an alternative fuel source, the "auto" must be powered by a source of propulsion power other than a conventional gasoline engine. An "auto" solely propelled by biofuel, gasoline or diesel fuel or any blend thereof is not an "auto" powered by an alternative fuel source.

W. Return of Stolen Automobile

The following is added to the **Coverage Extension** Provision of the **Physical Damage Coverage** Section:

If a covered “auto” is stolen and recovered, we will pay the cost of transport to return the “auto” to you. We will pay only for those covered “autos" for which you carry either Comprehensive or Specified Causes of Loss Coverage.

All other terms, conditions, provisions and exclusions of this policy remain the same.

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Endorsement No. 27

Effective Date: 10/31/2024@12:01 a.m. Standard Time at the address of the **Named Insured**
Policy Number: SP002955-08-2024
Insured Name: Taplin Holdings, LLC
Issuing Company: AXIS Surplus Insurance Company
Additional (Return) Premium: $0
If the Endorsement Effective Date is blank, then the effective date of this Endorsement is the Inception Date of the Policy.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – COMPLETED OPERATIONS

This endorsement modifies insurance provided under the following:

SPECIALTY PACKAGE POLICY

SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s)	**Location And Description Of Completed Operations**
As required by written contract in effect prior to any related **Claim**	As required by written contract in effect prior to any related **Claim**
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.	

A. **Section III – Who Is An Insured** is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for **Bodily Injury** or **Property Damage** caused, in whole or in part, by **Your Work** at the location designated and described in the Schedule of this endorsement performed for that additional insured and included in the **Products-Completed Operations Hazard.**

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and
2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

B. With respect to the insurance afforded to these additional insureds, the following is added to **Section IV – Limits Of Insurance:**

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or
2. Available under the applicable Limits of Insurance shown in the Declarations;

whichever is less.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

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Endorsement No. 22

Effective Date: 10/31/2024@12:01 a.m. Standard Time at the address of the **Named Insured**
Policy Number: SP002955-08-2024
Insured Name: Taplin Holdings, LLC
Issuing Company: AXIS Surplus Insurance Company
Additional (Return) Premium: $0
If the Endorsement Effective Date is blank, then the effective date of this Endorsement is the Inception Date of the Policy.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – SCHEDULED PERSON OR ORGANIZATION

This endorsement modifies insurance provided under the following:

SPECIALTY PACKAGE POLICY

SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s)	Location(s) Of Covered Operations
As required by written contract in effect prior to any related Claim	As required by written contract in effect prior to any related **Claim**
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.	

A. **Section III – Who Is An Insured** is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for **Bodily Injury, Property Damage** or **Personal And Advertising Injury** caused, in whole or in part, by:

1. Your acts or omissions; or
2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured(s) at the location(s) designated above.

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and
2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

B. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to **Bodily Injury** or **Property Damage** occurring after:

1. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or
2. That portion of **Your Work** out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

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C. With respect to the insurance afforded to these additional insureds, the following is added to **Section IV – Limits Of Insurance:**

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or

2. Available under the applicable Limits of Insurance shown in the Declarations;

whichever is less.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

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Endorsement No. 9

Effective Date: 10/31/2024 @12:01 a.m. Standard Time at the address of the **Named Insured**
Policy Number: SP002955-08-2024
Insured Name: Taplin Holdings, LLC
Issuing Company: AXIS Surplus Insurance Company
Additional (Return) Premium: $0
If the Endorsement Effective Date is blank, then the effective date of this Endorsement is the Inception Date of the Policy.

NOTICE OF CANCELLATION OR MATERIAL CHANGE

THIS ENDORSEMENT MODIFIES THE POLICY. PLEASE READ IT CAREFULLY.

This endorsement modifies the Specialty Package Policy

In consideration of the premium charged, it is agreed that the Policy is amended by the following additions:

1. The following is added to **SECTION VI, COMMON CONDITIONS**:

   We shall provide 30 days written notice (except 10 days for nonpayment of premium) prior to a **Material Change Of Policy Terms** or Cancellation of the Policy to

   As required by written contract

2. The following is added to **SECTION VIII, DEFINITIONS**:

   Material Change of Policy Terms means a change of the Declarations regarding:

   a. A change in the **Policy Period**, or

   b. A removal of a Coverage Section, or

   c. A removal of any **Named Insured** or Insured specifically identified by name in the policy, or

   d. A reduction of the amount of Limits of Insurance, where said reduction is not the result of the payment of **Claims** or **Claim Expenses,** or

   e. A reduction in the amount of the Policy Aggregate, where said reduction is not the result of the payment of **Claims** or **Claim Expenses**.

All other terms and conditions of the Policy shall apply and remain unchanged.

Endorsement No. 20

Effective Date: 10/31/2024 @12:01 a.m. Standard Time at the address of the **Named Insured**
Policy Number: SP002955-08-2024
Insured Name: Taplin Holdings, LLC
Issuing Company: AXIS Surplus Insurance Company
Additional (Return) Premium: $0
If the Endorsement Effective Date is blank, then the effective date of this Endorsement is the Inception Date of the Policy.

PRIMARY AND NONCONTRIBUTORY OTHER INSURANCE CONDITION

This endorsement modifies insurance provided under the following:

SPECIALTY PACKAGE POLICY

The following is added to **SECTION VI, COMMON CONDITIONS**, Paragraph 9, Other Insurance. It supersedes any provision to the contrary:

Primary and Noncontributory Insurance

This insurance is primary to and will not seek contribution from any other insurance available to an additional insured under your Policy provided that:

(1) The additional insured is a Named Insured under such other insurance; and

(2) You have agreed in writing in a contract or agreement that this insurance would be primary and would not seek contribution from any other insurance available to the additional insured.

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Endorsement No. 29

Effective Date: 10/31/2024@12:01 a.m. Standard Time at the address of the **Named Insured**
Policy Number: SP002955-08-2024
Insured Name: Taplin Holdings, LLC
Issuing Company: AXIS Surplus Insurance Company
Additional (Return) Premium: $0
If the Endorsement Effective Date is blank, then the effective date of this Endorsement is the Inception Date of the Policy.

WAIVER OF TRANSFER OF RIGHTS OF RECOVERY AGAINST OTHERS TO US

This endorsement modifies insurance provided under the following:

SPECIALTY PACKAGE POLICY

SCHEDULE

Name Of Person Or Organization:
As required by written contract in effect prior to any related **Claim**
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

The following is added to Paragraph 12**. Subrogation** of **Section VI – Common Conditions:**

We waive any right of recovery we may have against the person or organization shown in the Schedule above because of payments we make for injury or damage arising out of your ongoing operations or **Your Work** done under a contract with that person or organization and included in the **Products-Completed Operations Hazard.** This waiver applies only to the person or organization shown in the Schedule above.

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WAIVER OF OUR RIGHT TO RECOVER FROM OTHERS ENDORSEMENT

We have the right to recover our payments from anyone liable for an injury covered by this policy. We will not enforce our right against the person or organization named in the Schedule. (This agreement applies only to the extent that you perform work under a written contract that requires you to obtain this agreement from us.)

This agreement shall not operate directly or indirectly to benefit anyone not named in the Schedule.

Schedule

ALL PERSONS AND/OR ORGANIZATIONS THAT ARE REQUIRED BY WRITTEN CONTRACT OR AGREEMENT WITH THE INSURED, EXECUTED PRIOR TO THE ACCIDENT OR LOSS, THAT WAIVER OF SUBROGATION BE PROVIDED UNDER THIS POLICY FOR WORK PERFORMED BY YOU FOR THAT PERSON AND/OR ORGANIZATION.

This endorsement changes the policy to which it is attached and is effective on the date issued unless otherwise stated.

(The information below is required only when this endorsement is issued subsequent to preparation of the policy.)

Endorsement Effective Policy No. Endorsement No.

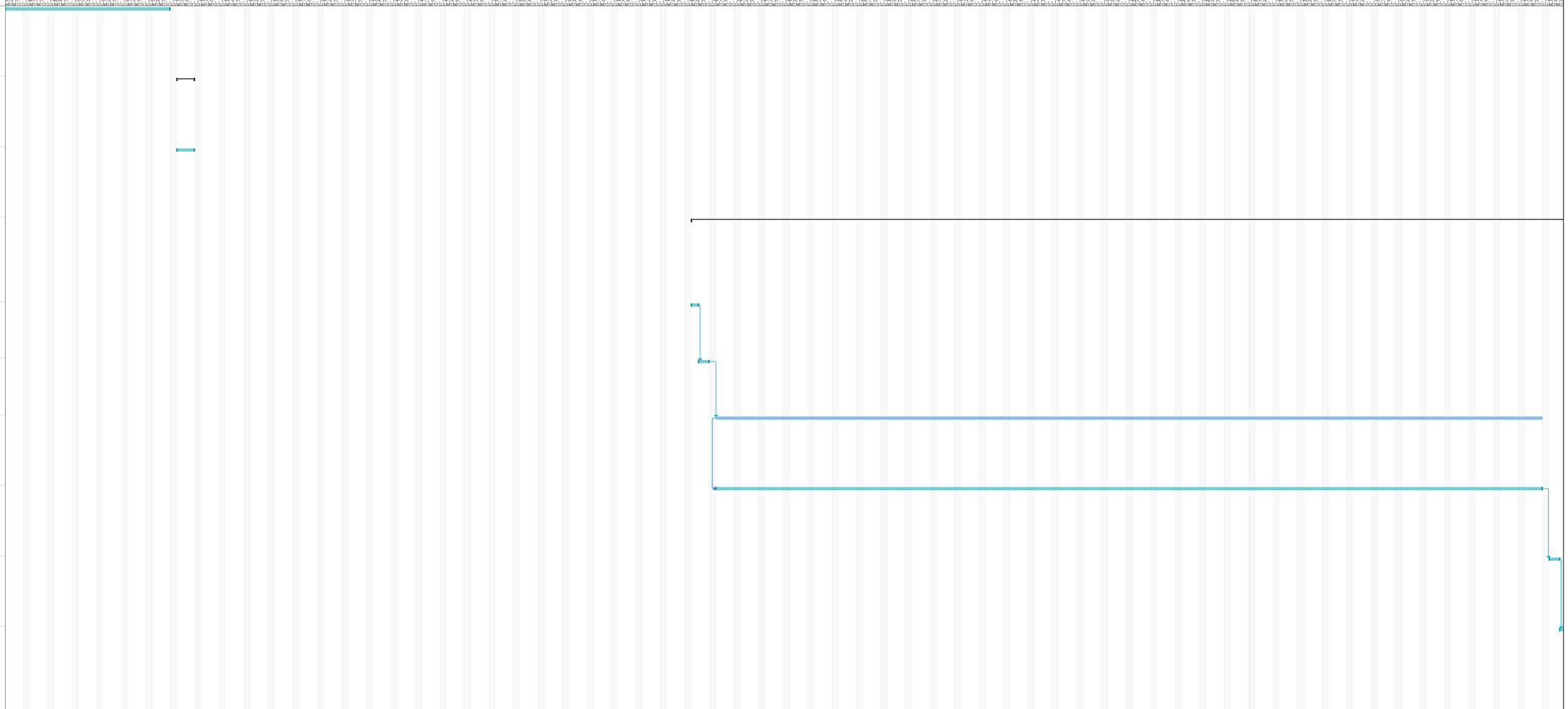
Insured Premium $

Insurance Company Countersigned By _____

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City of Marquette, Dow In-Siotu Remediation Schedule

ID	Task Mode	Task Name	Start	Finish	Duration	Predecessors
1		**Treatment Design**	Mon 9/15/25	Fri 10/31/25	35 days	
2		**Initial Mobilization**	**Mon 11/3/25**	**Fri 11/7/25**	**5 days**	
3		Clearing and Site Prep	Mon 11/3/25	Fri 11/7/25	5 days	
4		**Filed Work**	**Mon 3/30/26**	**Fri 12/4/26**	**180 days**	
5		**Mobilization**	Mon 3/30/26	Tue 3/31/26	2 days	
6		**Site Controls**	Wed 4/1/26	Fri 4/3/26	3 days	5
7		**Remediation Activities**	Mon 4/6/26	Fri 11/27/26	170 days	6
8		**Restoration – Subsurface**	Mon 4/6/26	Fri 11/27/26	170 days	7SS
9		**Restoration – Surface**	Mon 11/30/26	Wed 12/2/26	3 days	8
10		**Demobilization**	Thu 12/3/26	Fri 12/4/26	2 days	9



STEVEN M. MINELLA | CHIEF OPERATING OFFICER

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TAPLIN GROUP, LLC
Environmental Services

PROFESSIONAL EXPERIENCE:

Mr. Minella has over 13 years of experience in the construction industry and with labor relations. He served as President for Special Operations and was the Marine Division Director for Operating Engineers Local 324. His duties have included supervising Directors and Business Representatives throughout the United States. He also acted as the lead negotiator on Collective Bargaining Agreements, and served as a Trustee on all fringe benefit funds. He has experience working with attorneys, third party administrators, auditors, actuaries, and consultants. As the VP of Energy Midstream Services for Taplin, Mr. Minella's responsibilities include: project management, business development, client management, project setup, bid proposal development, and vendor contact and negotiation.

EDUCATION, TRAINING, AND CERTIFICATIONS:

- OSHA HAZWOPER 40-Hour Training
- OSHA HAZWOPER 8-Hour Refresher
- OSHA 30-Hour Construction Safety Course
- Confined Space Entrant, Attendant Training
- LPS (Loss Prevention System) Training
- US Coast Guard Leadership Training
- L. Brooks Patterson Elite 40 Under 40 Award
- Dale Carnegie Training

PAST PROJECT EXPERIENCE:

Project Manager, Pipeline Yard/Office Construction, Manteno, IL, $300K. Crews retrofitted a former lumber yard and sales office to accommodate several hundred people including construction managers, project managers and inspectors. Offices, IT systems, facilities, and the yard were built or modified to the customer's specifications.

Project Manager, Pipeline HDD Mud Hauling Operations, Various Drill Sites in Illinois, $275K. This project consisted of utilizing vacuum trucks and trailers to manage drilling mud from several horizontal directional drills. Crews handled the operations of moving the mud to and from the drill rigs and managed the several frac outs that occurred during the drilling process. The mud was taken to an approved site.

Project Manager, Pipeline Hydro-test Operations, Flat Rock, MI, $500K. This project involved supplying 1.3 million gallons of fresh water to a lake tank in two stages. Water was being used to hydro-test 55 miles of 36"natural gas pipeline. Steve and his crew assisted in the pumping of the water to the line as well as testing, manifesting, and hauling the dirty hydro-test water to an approved waste facility. Upon completion of the test, the lake tank liner was disassembled and transported to an approved facility. This project was completed ahead of schedule and under budget, while meeting the customer's safety expectations.

Project Manager, Pipeline Valve Site Fence Construction, (22) sites in MI and IN, $278K. Crews managed the installation of fencing and gates at 22 pipeline valve site locations in Michigan and Indiana. A hydro-excavation truck was used for the fence post installation to prevent line strikes on the newly installed pipeline. The crew worked with the client's inspectors and engineers to make ongoing modifications to the schematics to better support the project. Sites were completed on time without any safety issues.

KEY RESPONSIBILITIES:

- Ensures timely completion of all work activities
- Maintains schedules for all project tasks
- Works with customer representatives to ensure project success
- Ensures compliance with applicable Federal, State, and local requirements and project Site Health and Safety Plans
- Directs superintendents, craft labor, and subcontractors
- Issues stop work orders if field work being performed does not comply with approved project plans
- Initiates Purchase Orders (POs)

Project Manager, E-coli-Contaminated Mud Management, IN, $2M. HDD drill operations proceeded under a pond that was contaminated with e-coli bacteria. To prevent any of the crew or residents from getting sick, operations were set up in a soy bean field near the e-coli-contaminated pond. Crews followed strict safety protocols regarding the donning of protective clothing and respirators and decontaminating personnel and equipment. During the HDD operations, several frac outs occurred in the pond. Turbo vacuum trucks were used to safely manage, manifest, and transport thousands of gallons of contaminated mud to the appropriate waste facility to be solidified. Once drilling operations were complete, the site was cleaned of all mud.. The project was handled safely and no one got sick. The customer and owner of the pipeline were very pleased with the outcome.

Project Manager, Lake Tank Draining and Disassembly, MI, $350K. This project involved working with a pipeline contractor to set up two 700,000-gallon lake tanks on site to accommodate a hydro test of an existing and new pipeline. Once the water was supplied to the tanks and the test water came back, the crew filtered the water prior to its reintroduction into the lake tanks. Upon project completion, the owner of the pipeline secured the proper permits and dug a pond to accommodate the clean water from both lake tanks. The crew was then tasked with draining the two lake tanks into the pond using several pumps and 24-hour shifts in order to complete the project ahead of the Thanksgiving holiday. Much to the client's satisfaction, the tanks were drained ahead of schedule. Steve and his crew coordinated the disassembly of the tanks and the trucking operations for the tank components, as well as the disposal of both lake tank liners. The area where the tanks were set up was cleaned prior to departure. This project was completed on budget and without any safety incidents.

KRISTOPHER HECKMAN | VP OF REMEDIATION SERVICES

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TAPLIN GROUP, LLC
Environmental Services

PROFESSIONAL EXPERIENCE:

Mr. Heckman has over 25 years of experience in the piling and heavy foundation industries, with over 15 years experience working on pipe installations with 24" to 48" concrete reinforced pipe. His experience includes working in pharmaceutical plants in both operational and management capacities and his background also includes the demolition of bridges and building foundations, ranging from wrecking balls to the use of hydraulic splitters for controlled demolition requiring minimal vibration. He has also served as Plant Superintendent for a Wastewater Treatment Plant responsible for overseeing daily operations, water sampling, proper equipment selection and discharge permitting.

Mr. Heckman has extensive experience installing sheet piling ranging from lightweight to heavy PZ sheeting and overseeing the design of shoring systems and cofferdams. He has installed coffer dams for sewage life stations and bridge foundations and soil remediation projects. And he has completed underground utility installations including repairs or complete restorations for numerous cities.

EDUCATION, TRAINING, AND CERTIFICATIONS:

- CDL Type A License
- First Aid CPR Certified
- Hazwoper Certified
- Fall Protection Training
- Confined Space Certified
- OSHA 10-Hour Safety
- OSHA 30 Hour

PAST EXPERIENCE:

Superintendent - Terrasan Environmental Solutions, Parlin, NJ

- Project Manager on the United Nations Secretariat CMP, New York
- Philadelphia Port Authority Project Pier 122/124 Ore Offloading Crane Demolition

Superintendent - Kiewit Constructors, Woodcliff Lake, NJ

- Drilled Shafts – Waste Water Treatment Plant Supervisor
- Bridge and Foundation Demolition, Barge Off Loading, River Excavation Willis Ave. Bridge, New York

Project Manager – Grand River Construction Co., Hudsonville, MI

- MDOT Bridges
- Geotechnical Specialist – Piling, Earth Retension & Installation

Operations Manager – H&K Construction Co., Allegan, MI

- City of Allegan Pump Station Improvements
- Site Remediation – Whitehall, MI

KEY RESPONSIBILITIES:

- Assist with estimating job costs, job approach and process.
- Conduct Job Safety Analysis.
- Constructing and ordering specific equipment & materials needed for job startup.
- Maintain job specific documentation including work logs and time records.
- Review daily project reports.
- Oversee and manage crew.

PAST PROJECT EXPERIENCE:

Warner Lambert Pharmaceutical / Pfizer - $T&M project

- 40-HR hazwoper required
- Various upgrades and repairs to Plant utilities
- Plant designated 40 HR, Fire, Water, Sewer repair contractor
- Well point system, Level A,B,C,D PPE required

Pfizer Stormwater Relocation and Isolation - $400,000

- 40-HR hazwoper required
- Approximately 1600 LF of 24" Reinforced concrete pipe and 24" HDPE pipe
- 3-6' diameter manholes
- Sheet pile wall penetration and bulkhead

Willis Ave. Bridge Replacement – NYCDOT - $1.2 million

- 200 LF 10" Force main relocation – soldier pile lagging required
- Bronx off-ramp sanitary sewer install
- 350 LF 24'-36" Reinforced concrete pipe
- Manhole penetrations
- Approximately 85 LF of rock excavation 8' thick required for pipe installation

Pfizer Plant Decommissioning and Utility Relocation - $300,000

- 40-HR hazwoper required
- Install new water, sewer and electric services for R&D building for Michigan State University
- Terminate and bulkhead sewer lines, cut cap existing watermain, terminate electric line
- Install via directional drill 750 LF of electric service line

City of Allegan, MI Force Main Upgrade - $150,000

- Install 1500 LF of 10" C900 Watermain pipe
- Metering valve manhole and flow meter upgrade
- 2 bore and jacks required

City of Allegan, MI Tri-plex Pump Station - $785,000

- Installation of 30' deep pre-cast wet well structure
- Pump installation, deep sewer cross connector 27' cut
- 16" epoxy lined ductile pipe with polyethylene wrap
- Bypass pumping required, sheet pile cofferdam
- Press seal corp EZ Wrap Pro Stick

Kilgore Road Bridge Replacement – City of Portage / MDOT – value $75,000

- Bridge replacement required removal of 350 LF of 36" ball and socket river crossing pipe
- Manhole termination and bulkheading, flow fill of remaining pipe left in place
- Con span precast arch structure utilizing EZ Wrap joint sealer

Nature Preserve Habitat Restoration - Muskegon Lake, Michigan - WMSRDC - $899,900

- Established habitat structures and implement invasive species controls
- Soil removal and elevation lowering in wetland areas
- Installation of hydraulic connections to restore natural water migration

Gordie Howe International Bridge Project - Pre-construction Environmental Cleanup - Detroit -

- Removal of Universal Waste and contaminated soils at various locations within construction zone
- Zero OSHA infractions and on-time project completion
- Excavation and removal of contaminated soils along Detroit River
- Exposure of existing sea wall tie-backs

Alcott Street Dam Removal and Portage Creek Restoration - $5.5 Million

- Removal of dam and associated debris
- Restoration of 2,900 feet reach upstream in Portage Creek
- Excavation of PCB-contaminated soils and wing wall demolition
- Sheet piling and stabilzation for new wing wall construction

Sturgis Well Field Abandonment and Soil Remediation - $1,994,206
Taplin was contracted to conduct removal activities for impacted materials located within the 5 feet of the ground surface to eliminate direct contact exposure to contaminated soils. During late 2017 and early 2018, Taplin removed 6,400 tons of impacted soil from the West Parcel and 1,400 tons from the IPM Parking lot. Following removal actions, Taplin was con-tracted to install a complex remediation system onto the West Parcel. This system consisted of installing piping to 24 Soil Vapor Extraction (SVE) wells, 6 Air Injection (AI) wells and 37 Air Sparge Wells. In total, over 5,000 linear feet of piping was installed and connected to a prefabricated treatment system placed by Taplin.

Essex Brass Corp Isolated Building Demo and Remediation- $587,520
Taplin Enterprises were contracted to perform selective demolition of the 37,000 sq ft facility to remove the Hazardous impacted soils under the building interior floors and foundations. Helical piers were installed to support the buildings foundation while the Haz listed impacted soil was removed from inside the building's interior and excavations backfilled. Interior work was further complicated due to contamination being deeper than anticipated and impeding groundwater during excavation.

Plainwell Dam Spillway Removal and Channel Restoration - $6,011,332.32
Taplin was contracted to perform the removal of a former hydroelectric dam spillway and remediation of PCB contaminated sediment with shoreline restoration along the Kalamazoo River. The site previously housed a 1903 hydroelectric dam and had been declared part of the Kalamazoo River superfund site as a result of legacy contaminents from area papermills and turn-of-the-century manufacturing.

Taplin removed the remaining concrete spillway, excavated sediment down to target elevations and transported/disposed of contaminents while widening the river and reestablishing floodplain benches, constructed wood habitat structures and channel bar features and will restore the shoreline area with seeding and plants. The area spans nearly 7 acres of wetlands and the project is expected to be completed in early 2024.

Spartan Chemical - $3,855,672.24
The 5-acre site was a bulk chemical transfer and repackaging plant from 1952 to 1991. Prior to 1963, the company discharged its wastewater into the ground. Chemical spillage and leaks from underground storage tanks also contributed to soil and groundwater contamination.

The soil and groundwater are contaminated with metals and several organic compounds including polycyclic aromatic hydrocarbons (PAH), ethylbenzene, toluene, benzene, and xylene. In 1981, residential wells near the site were found to be contaminated with volatile organic compounds (VOCs). In 1983, the site was declared a superfund.

• Demolishing abandoned buildings and sheds on the project site.
• Excavation, transportation and disposal of nearly 69,000 tons of impacted soil.
• Conducted regular odor (VOC) control measures to prevent fugitive odors on adjacent residential properties.
• Provided temporary excavation support around the perimeter allowing vertical excavation walls to a depth up to 20 feet below ground level.
• Backfilled excavation with approximately 52,000 cubic yards of clean sand backfill.
• Placed and mixed 750 tons of Bio-Absorbent Media (BAM) in the bottom two feet of the excavation to absorb and remediate remnant VOC's from the underlying groundwater.
• Removed multiple unanticipated obstructions to work including purge and monitoring wells and abandoned underground storage tanks.
Of particular importance was preventing disruption to the adjacent school and residential properties near the site. Once all excavation was complete and backfilled with sand, a layer of topsoil was placed and graded to provide appropriate coverage for hydroseeding. Despite multiple delays at the beginning of the project while waiting for the local utility disconnects, the project was completed ahead of schedule and under budget.

ANDREW CALLAHAN | SITE SUPERINTENDENT

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TAPLIN GROUP, LLC
Environmental Services

PROFESSIONAL EXPERIENCE:

Mr. Callahan has over 19 years of field experience in operations management and environmental remediation. He has worked with many clients to include Air Force Civil Engineer Center (AFCEC), US Army Corps of Engineers (USACE), Naval Facilities Engineering System Command (NAVFAC), Texas Commission on Environmental Quality (TCEQ) and various state environmental agencies. Majority of Mr. Callahan's experiences have been in the field to include environmental remediation operations manager, site safety officer, and quality control manager, foreman, and equipment operator.

Mr. Callahan's experience includes Construction Manager, Site Safety and Health Officer and Quality Control Associate. Project experience as Construction Manager includes solid, hazardous, and radioactive waste management; site characterization and contaminate delineation; dismantling, demolition, and removal activities; regulatory closure compliance for industrial and hazardous mixed waste issues; transportation and disposal; earthwork and soil remediation; agricultural construction, and site restoration activities. Mr. Callahan's strengths include his ability to encourage personnel performance, create a safety culture on the site, and provide positive public relations while maintaining project production, budget, and schedule goals.

EDUCATION, TRAINING, AND CERTIFICATIONS:

- 8-hour OSHA HAZWOPER Refresher
- 24 hour Fall Protection Competent Person Training
- Crane and Rigging Training
- Supervisor Incident Prevention Program
- 30-hour OSHA Construction Safety
- 40-hour OSHA Asbestos Worker Course
- 40-hour OSHA HAZWOPER training
- Construction Quality Control Manager

PAST PROJECT EXPERIENCE:

Construction Field Manager, Urunao, 123350 - Task Order 107, AFCEE, Yigo, Guam, $13,000,000.00, 03/2007 – 11/2008t
This project includes the remediation of two 63-year-old dumpsites, located along a 500-foot high breathtaking cliff, overlooking the Philippine Sea. The dumpsites were created during World War 2, as Air Force-derived waste was dumped along the top of the slope and pushed over a 1,200 linear foot slope with grades up to 80 percent.

Construction Manager, IRP Site-15/Landfill 20, TO 0057, AFCEE, Andersen Air Force Base-Yigo, Guam, $2,520,805.00, 05/2006 - 02/2007
Project tasks included waste characterization sampling and determination, excavation of approximately 2,535 cubic yards of PAH, PCB, pesticide and metal-contaminated soil and associated debris, demolition of existing structures at the site including concrete structures, ACM debris/piping, transportation and disposal of all materials and confirmation sampling to confirm complete contaminated removal.

KEY RESPONSIBILITIES:

- Assist with estimating job costs, job approach and process.
- Conduct Job Safety Analysis.
- Constructing and ordering specific equipment & materials needed for job startup.
- Maintain job specific documentation including work logs and time records.
- Review daily project reports.
- Oversee and manage crew.

Foreman 2/ Heavy Equipment Operator, Shaw Environmental & Infrastructure, Inc., Denver, Colorado
The Shattuck Chemical Site, Operable Unit 8 (OU8) of the larger Denver Radium Superfund Site, consists of 65 properties contaminated with radionuclides that include Ra-226, Th-230, and U-nat. The original Record of Decision (ROD) required that impacted material (containing radionuclides and toxic metals) be stabilized and solidified onsite in a 5.5-acre, 18-foot thick monolith. The ROD was subsequently amended to require offsite disposal of the monolith and any soil above the new, more restrictive, action levels with the ultimate goal of unrestricted reuse of the property. In September 2002, the USACE Omaha District awarded Shaw an $18.4 million delivery order under Shaw's Total Environmental Restoration Contract to remove and dispose 205,000 tons of solidified materials containing radium, thorium, uranium, and several toxic metals including selenium, arsenic, and lead at an offsite location.

09/1999 - 11/2002 Heavy Equipment Operator/Site Foreman, Bay West Incorporated, St. Paul, Minnesota Industrial Services;
− Operated Heavy Equipment for chemical spills (emergency and non-emergency).
− Cleaned and disposed of chemicals (hazardous and non-hazardous) in various indoor and outdoor settings.
− Perform 24 hour on-call status for Emergency spill, clean-up and assistance.
− Coordinated with the Minnesota Pollution Control Agency (MPCA) for assistance on spill clean-up status.
Twin Cites Army Ammunition Plant (TCAAP);
2+ years on the TERC contract at TCAAP. Responsible for excavating contaminated soil to requested depths.
− Prepare excavated soils for shipment to landfill by blending soil with stabilization agent.
− Excavated exploratory trench to investigate the extent of contamination.
− Constructed soil covers for contaminated soils, installing drainage swales and maintaining design slopes.

− Participated as a team member to ensure quality of work and that safety measures were maintained.
Badger Army Ammunition Plant (BAAP);
− Constructed the Laydown Area at the BAAP for the placement of Geotubes for dewatering of contaminated sediments.
Marine Division;
− Three months on the Marine Division for the United States Army Corp of Engineers Baltimore District conducting navigational dredging with hydraulic dredge.
− Constructed 6,500 foot-long high density polyethylene pipe (HDPE) from the dredge to containment area.
− Operated amphibious track vehicle to position HDPE pipe.
− Operated floating booster pump controlling flow rate of sediments.

TAPLIN PROJECT EXPERIENCE:

Site Superintendent, People's Gas, Manlove Field Liner Replacement Fisher, IL - $1,623,194.77
Lagoon/Cell Liner replacement. Dewater/Sludge removal.
One large lagoon and 3 small cell's needed sludge removal/transport to landfill. Removal of existing 20mil hdpe liner in lagoon and 3 cells with transport to landfill for disposal. Rework of clay slopes and bottom of lagoon and cells in preparation for new 20mil hdpe liner. Coordinated with liner install sub and aeration sub for new installation for both items. Regrade/landscaped all disturbed soils around lagoon and cells and ensured vegetation growth for erosion control.

Site Superintendent, State of Michigan Multi Well Plugging & Multi Facility Decommissioning, St. Clair County MI - $5,520,478.04
Well abandonment and facility decommissioning for orphan wells in Casco County, MI. Drilling subcontractor to pull and plug old orphan wells that were installed in the early 1960's. Composite crane mats were installed on each of the parcels for access to well/facility. Taplin supported drilling subcontractor with hauling fresh water and concrete water removal for well abandonment needs. Taplin self-performed facility decommissioning of all the pumping equipment associated with the wellhead; to include 200bbl tanks, heater treater tanks, pump jacks, and all flow/processing lines. All facility equipment needed all oily-sludge removed utilizing vac-trucks and steam pressure washers prior to all metal being transported to recycling facility. Coordinated with landscape contractor after well and facility decommissioning completed for restoration.

KEITH W. SCHILLO | VP OF SAFETY

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TAPLIN GROUP, LLC
Environmental Services

PROFESSIONAL EXPERIENCE:

Mr. Schillo has 20 years of experience in safety management. His expertise includes overseeing the health and safety of Taplin's 145 employees. He is responsible for ensuring E.L.K.S. Safety Program is followed on all jobsites and provides extensive leadership pertaining to employee safety training. Previously, Schillo was responsible for the design, safety training, and emergency response for an organization that designed specialized truck trailers for the hauling of highly toxic and poisonous materials. Schillo also managed a Part B Treatment Storage and Incineration Hazardous Waste Facility in EPA Region 5, keeping it in compliance with all OSHA, EPA, local, state and city regulations.

EDUCATION, TRAINING, AND CERTIFICATIONS:

- OSHA HAZWOPER 40-Hour Training
- OSHA HAZWOPER 8-Hour Refresher
- OSHA 30-Hour Training
- Confined Space Rescue Training
- E.L.K.S. Safety Program Trainer
- Reasonable Suspicion Training
- AOC-Liquid Training
- OSHA HAZWOPER Supervisor
- OSHA Competent Person for Excavations
- OSHA Hazardous Materials Specialist
- CPR / First Aid Training
- Blood Borne Pathogen Training
- Confined Space Training and Rescue
- Aerial Work Platforms
- DOT Highway Emergency Response Technical Training
- WMD – Tactical Considerations
- Radiological Training – Operations Level
- Certified Rescue Firefighter / Instructor – State Of Indiana
- Underground Storage Tank Removal Experience
- Certified Construction Site Storm Water Operator
- MIOSHA MT Level One Certified
- National Foam School and Fuel Handling Course – Texas A&M University

PAST PROJECT EXPERIENCE:

Director of Safety, Kalamazoo River Dredge, $95M. This project called for the removal of 300,000cy of petroleum-contaminated sediments remaining after an oil spill in 2010. Pre-project tasks included design of turbidity control, design of bag-fields and water treatment systems, sediment sampling and bench scale treatability studies for sediment solidification purposes. Tasks included the installation and operation of turbidity control, dewatering bag-fields, managing water treatment systems, clearing and grubbing, temporary access road construction, dredging, solidification, loading, and T&D of all sediments/debris removed during the project. Mr. Schillo trained all onsite personnel and provided managers with tools and training to be stewards of the safety system. He conducted LPOs, Loss and Near Loss Reports, and ensured all operations were OSHA compliant. Mr. Schillo also oversaw the safety of equipment throughout the project and making sure JSAs were up-to-date.

KEY RESPONSIBILITIES:

- Establishing all safety procedures and standards
- Taking executive leadership of employee safety training programs based on the E.L.K.S. (Elimination of Losses through Knowledge & Stewardship)
- Ensuring Taplin meets all Federal, State, and local safety regulations
- Ensuring that Taplin field crews are working in accordance with client safety expectations
- Conducting on-site safety audits
- Conducting daily industrial hygiene and safety inspections
- Issuance of stop work orders if field work being performed does not comply with the approved SSHP

Director of Safety, Sheboygan River Superfund, Sheboygan, WI, $35M. This project included large scale dredging of 175,000cy of PCB-impacted sediment and work activities were conducted within an extremely small support zone area for pug mill stabilization, stockpiling of material, and T&D. This project included Sed-Vac® and mechanical dredging operations running simultaneously. Subaqueous capping was also conducted during this project. Site activities were completed successfully with continual EPA surveillance. The project operated 24/7 to meet an aggressive schedule; work was completed on budget, on-time, and without incident. Mr. Schillo trained all onsite personnel on LPS™ and provided managers with tools and training to be stewards of the LPS™ system. He conducted LPOs, Loss and Near Loss Reports, and ensured all operations were OSHA compliant. Mr. Schillo was also responsible for overseeing the safety of equipment throughout the project and making sure JSAs were up-to-date.

Director of Safety, Grand Calumet River Project. $20M. The first phase of this project involved providing support to the prime dredging contractor in managing and transporting dredge spoils from the West Branch of the Grand Calumet River. A 3.4-acre decant pad was constructed and set up geotubes. Spoils were pumped into the geotubes to decant for 7-14 days until they had solidified sufficiently for transporting. Bed ash was added in some cases to ensure successful solidification. Crews decanted and transported 122,800cy of river spoils over a six-month period. During the second phase of the project, 114,100 cy of peat and other types of organic soils were excavated and transported. The second phase of the project took 4 months. Both phases were completed without a safety incident. Mr. Schillo trained all onsite personnel on LPS™ and provided managers with tools and training to be stewards of the LPS™ system. He conducted LPOs, Loss and Near Loss Reports, and ensured all operations were OSHA compliant. Mr. Schillo was also responsible for overseeing the safety of equipment throughout the project and making sure JSAs were up-to-date.

Director of Safety, Kalamazoo River Superfund Project, Plainwell, MI, $20M. This project involved the removal of PCB-contaminated sediment from the Kalamazoo River. The project started in 2007; during

this phase, more than 37,000cy of material were removed from the river. In 2009, the second phase of the project commenced and more than 89,600cy of impacted sediment was removed. This project involved a variety of tasks that included site clearing, sheet piling installation, dam removal, temporary dam construction, emergency flood control, and sediment excavation using RTK-GPS systems and operators. A unique aspect to this project involved the construction and use of a flow diversion structure to completely divert the Kalamazoo River (around an old power dam) to one side while work could be conducted on the other side. The diversion structure could then be switched to allow the river to flow to the other side so the other half could also be remediated. Additional project tasks included sediment dewatering, treatment, loading, transportation, and disposal. The site was restored using clean imported backfill and topsoil. A significant portion of the site consisted of wetlands and crews planted various native species that could thrive in the floodplains.

Director of Safety, DTE Former Michcon Broadway Street MGP Remediation and Capping, Ann Arbor, MI, $2M. This project involved the excavation of impacted soils at a former MGP site along the Huron River in downtown Ann Arbor. Tasks included clearing, grubbing, dewatering, installing a trapping cap, sediment removal, and disposing of all impacted material from the site. During excavation, a 400' turbidity curtain was used along with a 50' carbon filter and sorbent oil boom to capture any contaminated material from flowing downstream. A total of 50,000cy of coal-tar contaminated material was removed. Parties involved with this project included a major utility company, a local engineering firm, the city of Ann Arbor, and the Michigan DEQ. Mr. Schillo trained all onsite personnel on LPS™ and provided managers with tools and training to be stewards of the LPS™ system. He conducted LPOs, Loss and Near Loss Reports, and ensured all operations were OSHA compliant. Mr. Schillo was also responsible for overseeing the safety of equipment throughout the project and making sure JSAs were up-to-date.

Director of Safety, Oil Spill Emergency Response, Marshall, MI, $15M. This project involved emergency response to a massive underground pipeline oil spill. Over 800,000 gallons of crude oil spilled into Talmadge Creek, which feeds into the Kalamazoo River. Crews focused on three primary areas of activity: overbank excavation, removal of subsurface oil, and water treatment/management. In total, billions of gallons of water were managed and treated during this emergency response effort. Throughout the project, crews removed thick vegetation and woody debris that prevented access to contaminated areas. Overbank remediation involved removal of patches of oil which were termed tar patties. These patches were classified into two types: points and polygons. RTK/GPS technology was used to identify all tar patties. Terra implemented its patented Sed-Vac® system to remove the oil with pinpoint accuracy. Crews built access roads and managed the massive removal of oil and contaminated water from the river. Crews also handled waste management, including handling the scheduling, documentation and logistics for all vehicles involved in transporting solid or liquid waste. Mr. Schillo trained all onsite personnel on LPSTM and provided managers with tools and training to be stewards of the LPSTM system. He conducted LPOs, Loss and Near Loss Reports, and ensured all operations were OSHA-compliant. Mr. Schillo was also responsible for overseeing the safety of equipment throughout the project and making sure JSAs were up-to-date.

Director of Safety, Abandoned Tank Farm, Lower Harbor of Marquette, MI, $2M. This project was completed in 2011 and involved work at an abandoned tank farm. Crews remediated the area, dewatered all sediment, transported material offsite, and ensured all disposal materials met landfill acceptance criteria. This project required strong safety leadership due to the type of waste being handled and the various project components that were ongoing simultaneously. Crews were handling liquid waste, non-hazardous waste, and hazardous waste onsite. Additionally, safety measures had to be taken to manage traffic control, soil erosion, and contingency plans for spill control and clean up.

Director of Safety, Bay Arbor Remediation, Resort Township in Emmet County, MI, $4.5M. This project took place from 2005 to 2006 and involved vacuuming leachate from shorelines to remediate the area. Crews installed trenches and removed all contaminated soil. The excavated areas were backfilled and site restoration activities commenced. This project required a site-specific HASP which Mr. Schillo developed. It was critical that all project phases were completed without incident. The project was finished on time, on budget, and with zero safety incidents.

Director of Safety, Semco Barr Kalamazoo River Dredge, Albion, MI, $2.5M. This project involved mechanical dredging and also utilized a patented Sed-Vac® dredging technology. Approximately 1,100' of Kalamazoo River was dredged from 2' to 10' below the existing grade. Crews removed approximately 8,000cy of tar-impacted sediment. The project concluded with shoreline restoration and the dispose of impacted soil at an appropriate landfill. Mr. Schillo ensured that all operations were conducted safely throughout the project (including the completion of JSAs and LPOs).

TAPLIN ENTERPRISES

TAPLIN ELK TRACKS

Project Reference





Former Papermill and Landfill Superfund Site

Kalamazoo, Michigan

PCB contaminated soil and landfill site remediation to construct geotechnically stable slopes for a geosynthetic soil cap to be placed over the waste.

The original papermill was constructed in the 1890's. Allied Paper was formed in 1921. The former landfill site is approximately 71 acres.

Paper residuals were deposited throughout the site. PCB's were first manufactured in 1929 and continued until they were banned in 1979. Non-carbon paper once contained PCB's. When the non-carbon paper came back to the papermills for recycling, the PCB's found their way into the effluent from the mills. Contaminated paper residuals were then placed in the landfill. The residuals were pumped from the papermill to the landfill and deposited in various lagoons. Although over time the residuals dewater somewhat, they remain high in moisture. This moisture precludes them from being able to bear load.

The primary purpose of the project is to consolidate wastes from around the site and pull the limits of said waste back from Portage Creek. The goal is to construct a landfill that possesses geotechnically stable slopes whereby a geosynthetic and soil cap can be placed over the waste.

Site restoration construction will include:

- Removal of all steel sheet piling along Portage Creek
- Restoration of a meandering stream bed for Portage Creek
- Creek bank enhancements and in stream riffles
- Restoration of a wetland alongside Portage Creek

During the early stages of the project, it became known that the moisture content of the paper residuals was very high. Even mixing the paper residuals with granular soil would not yield a product that could meet the strength requirements to construct the slopes of the landfill.

Taplin proposed the use of a pugmill in order to amend the paper residuals with a dry, cementitious powder. Paper residuals delivered to the pugmill location would be loaded into the pugmill mixing chamber, through a hydraulic grizzly screen, utilizing an excavator. Silos containing the dry, cementitious powder convey their content into the mixing chamber. Within the mixing chamber, twin mixers combine the wet paper residuals with the dry powder to manufacture a structurally competent material. Prior to the amendment process the off-road dump trucks could not traverse the paper residuals mixed with granular soils without leaving 2' deep ruts. Once the amendment process was introduced, the trucks could traverse over the paper residuals with minimal indentation.

In addition to the pugmill, Taplin purchased an Allu mixer to stabilize the paper residuals in situ. The goal was to utilize both the pugmill and the Allu to increase production and reduce project schedule. Although field testing operations produced a product that was suitable for placement, the process was not initiated.

The Allu, combined with the GPS technology on the excavator, is able to distribute a prescribed amount of amendment to a given area in order to be as precise as possible in delivery.

Project Elements

- Approximately 1.5 million cubic yards of material managed
- On-site carbon filtration water treatment of 5,000,000 gallons to date
- Utilization of 2 GPS Controlled Excavators and 3 GPS Controlled Dozers
- Over 165,000,000 pounds of residuals amended
- Over 50,700 Hours Worked: No injuries or property damage to date

Year Completed

2020-2024

5140 West Michigan Ave.
Kalamazoo, MI 49006
p: (269) 375-9595
www.taplingroup.com

Project Reference



Armen Cleaners
Site Remediation
Ann Arbor, MI

Conducted insitu- chemical soil stabilization for VOC contaminants. Taplin was identified to conduct soil stabilization at the Former Armen Dry Cleaners site in Ann Arbor, MI. The project site was broken up into grid patterns and columns; with a total of 18 grids and each grid having 9 columns each.

A Komatsu PC490 excavator was outfitted with an ALLU rotary/mixing head connected to the ALLU pressure cart via large diameter air hoses. The ALLU pressure cart has two large separate dry vessels that was filled with Sodium Persulfate and Portland cement that was controlled by high-volume high-pressure air. The excavator with ALLU head would rotary down into the columns to loosen the soil for the initial pass. The excavator with ALLU head would then rotary down in as a second pass injecting 2,500lbs of the sodium persulfate that was being transferred from the pressure vessel. The third and final pass of the ALLU rotary head was the 1,500lbs Portland Cement. Water was introduced during all three passes to keep the soil and amendments from tightening up during the process. A total of 390,000lbs of Sodium Persulfate and 380tons of Portland Cement was used to complete the project.

Project Elements

- Challenging space and residential restrictions
- Innovative process using new technology for insitu soil stabilization

Year Completed
April 2024

Project Total Cost
$2M







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LEAD AND TITANIUM-CONTAMINATED SITE

IN-SITU STABILIZATION AND SITE REMEDIATION | SAYERVILLE, NJ

The project is ongoing and involves the in-situ stabilization of approximately 97,000cy of titanium sludge from two areas at a former paint manufacturing process. The first phase (currently ongoing), will address 16,000cy of sludge. The scope of work activities include site dewatering, the relocation of 8,500cy of PCB-impacted sludge, the reconstruction of storm water management berms, and site restoration. The crew onsite consists of six operators, five laborers, four Teamsters, one safety officer, and four administrative personnel. The timeline for project completion is six months; the contract is valued at approximately $3M.



Once onsite, crews were required to dewater part of the area where work was going to occur. Approximately 50 acres of the site was covered with a white liquid that was contaminated with titanium dioxide containing PCBs. As a cost-saving measure, management decided to use an onsite reservoir to store the contaminated liquid until it could be properly treated so site activities could proceed. The reservoir contained approximately 15 million gallons of water which was drained using pumps and approximately 3,600 feet of pipeline. The pipeline transferred the clean water out of the reservoir and into a lagoon system adjacent to the Raritan River. Using the same system of pumps and pipes, the PCB-impacted liquid was then pumped into the reservoir to dewater the work zone. Due to the sludge on the ground, excavators had to maneuver on crane mats. On the eastern side of the site, an amphibious excavator has been used to prevent crews from becoming landlocked.



Crews divided the site into cells to complete in-situ stabilization in a controlled manner. Each cell is four feet deep, 20 feet wide, and 200 feet long. Approximately 22 cells were completed and over 11,000cy of material was removed. Sludge has been stabilized by adding Portland cement on a predetermined weight basis. Taplin approached the in-situ treatment process using a dual mixing approach. A rake attachment allowed for an initial mixing of cement and allowed for better distribution; then a traditional bucket was used to allow for complete mixing. In some areas, after encountering thin layers of material to be stabilized that did not react appropriately to the initial mixing approach, Taplin designed and installed a series of bridging roads to be able to get out on the sludge and perform removal. This process was followed by ex-situ stabilization.

Once the stabilization of all sludge was complete, the next step was to reconstruct the west berm of the reservoir. This project was unique in that Taplin acquired the contract after a bankruptcy forced the bonding company to take responsibility of the site when the initial contractors failed to complete the work.

2025 Environmental Services - Standard Rate Schedule

Prepared for: **City of Marquette**
Date Prepared: **August 20, 2025**
Representative: Prepared by Steve Taplin

Personnel

Field Personnel	S/T	O/T	D/T
Confined Space Rescue Technician	$57.75	$77.75	$97.75
Driver / Technicians	$64.50	$84.63	$106.11
Asbestos Technician	$67.04	$88.54	$109.39
Operator	$77.37	$103.08	$129.47
Project Manager	$90.00	$110.00	$130.00
Senior Spill Response Manager (Project Manager)	$69.30	$69.30	$69.30
Field Engineer	$68.36	$88.36	$108.36
Site Foreman (Crew Leader)	$71.61	$91.61	$111.16
Site Health and Safety Officer	$75.00	$95.00	$110.00
Site Superintendent	$71.36	$94.35	$125.02
Senior Management	$137.50	$137.50	$137.50
Technical Services	$137.50	$137.50	$137.50
GIS Technician	$137.50	$137.50	$137.50

Perdiem	
Perdiem & Overnight	$165.38 Per Person Per Day

Safety

Safety Item	Description	Rate	Unit
	PPE		
Level A	Fully Encapsulating Vapor-Protective Suit With Supplied Air	Quoted/ Occurrence	
Level B	Splash Protective Suit With Supplied Air	$51.98	Per Person Per Hour
Level C	Plus Chemical Protective/FR/Nomex Clothing and Respirator	$17.33	Per Person Per Hour
Level C Modified	Plus Chemical Protective/FR/Nomex Clothing	$9.24	Per Person Per Hour
Level D	Hard Hat, Steel Toe Shoes, Safety Glasses, Safety Vest	N/C	Per Person Per Hour
Level D Modified	Hard Hat, Steel Toe Shoes, Safety Glasses, Safety Vest, FR Clothing or Rain Gear	$5.78	Per Person Per Hour

Services Offered

Equipment	Description	Rate	Unit
	Mobilization, Pre/Post Project Preparation and Reports		
Incident Report, Documents and Photos	prices may vary based on project scope	$350.00	Per Report
Mobilization/Demobilization		Quoted/Occurrence	
Pre Project Preparation and Loading		Quoted/Occurrence	
	Heavy Equipment		
Backhoe	JCB 214	$150.75	Hour
Skidsteer	John Deere 331G	$95.94	Hour
Dozer	Komatsu D39EX	$78.49	Hour
Dozer	Komatsu D61EX	$96.60	Hour
Excavator	Komatsu PC50	$104.23	Hour
Excavator	Komatsu PC128/138	$108.68	Hour
Excavator	Komatsu PC200	$126.79	Hour
Excavator	Komatsu PC360	$211.31	Hour
Breaker	200 Class Concrete Breaker	$108.68	Hour
Loader	CAT IT28	$120.30	Hour
Loader	Komatsu WA320	$99.50	Hour
Loader	CAT IT38	$130.45	Hour
Utility Tractor (With Attachments)	John Deere 4720	$287.64	Hour

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PREPARED FOR:
CITY OF MARQUETTE
CLIFF-DOWNTE
PROJECT

Equipment	Description	Rate	Unit
Heavy Equipment - Continued			
Vibrating Plate Compactor	24"	$9.06	Hour
Vibrating Roller	Stone 54"	$44.82	Hour
Vibrating Roller	Sakai 84"	$121.36	Hour
Industrial Vacuum Equipment			
Hydro-Excavator	Wet/Dry 27/28” Vacuum @ 4,800 - 5,500 CFM	$252.26	Hour
Industrial Vacuum	Wet/Dry - 27/28” Vacuum @ 4,800-5 CFM (100’ of 6”)	$252.26	Hour
Roll Off Vacuum Tank	3,000 Gallon Self Powered 750 CFM Pump	$189.66	Hour
Vacuum System, Skid Mount	In-Plant, Skid Mounted Wet 15" Vacuum	$62.79	Hour
Vacuum Truck w/ Blower	Turbo Vac or Power Vac (50’ of 4” hose)	$138.86	Hour
Vacuum/Pumper Truck	3,000-3,500 Gallon Vacuum Trucks (50’ of 3” hose)	$86.28	Hour
Industrial Vacuum Pipe & Hose			
Aluminum Pipe	6” - 8"	$1.10	Per Foot Per Day
Damaged Vacuum Hose or Pipe		Cost + 15%	
Kanaflex Static DissipativeRubber Hose	2"- 6"	$2.21	Per Foot Per Day
Plastic Flex Hose	4” (Per 100’ Roll)	$165.38	Each
Plastic Flex Hose	6” (Per 100’ Roll)	$220.50	Each
Vacuum Hose/Chemical	2” - 4"	$1.10	Per Foot Per Day
Emergency Response			
Containment Boom	6" Float with a 12" Skirt	$1.93	Per Foot Per Day
John Boat	No Motor	$110.25	Day
Spill Response Boat	24' Pulsecraft with trailer	$1,653.75	Day
Spill Response Trailer		$551.25	Day
Transportation			
Bulk Tanker	7,200 Gallon Stainless Steel Bulk Tanker	$114.04	Hour
Double Bottom Gravel Train	40 Yard Capacity	$132.78	Hour
Drum Trailer And Tractor	80-100 Drum Capacity	$108.39	Hour
Barrell Truck with Lift Gate	20 - 40 Drum Capacity	$54.34	Hour
Drum Truck	10-15 Drum Capacity	$42.26	Hour
Quad Axle Dump Truck		$65.21	Hour
Quad Axle Dump Truck with Pup	30 Yard Capacity	$90.56	Hour
Quad Axle Dump Truck with Tag Trailer	(TK40)	$83.32	Hour
Road Tractor		$105.75	Hour
Road Tractor with Flatbed/Dropdeck		$148.63	Hour
Road Tractor, Winch Truck		$150.94	Hour
Roll-Off Trailer	1- Roll Off Box	$212.61	Hour
Roll-Off Trailer	2- Roll Off Boxes (Transports (2) Empty Boxes - or (1) Loaded Box)	$275.71	Hour
Roll-Off Truck		$212.02	Hour
Roll-Off Truck W/ Pup		$275.13	Hour
Service Truck		$174.89	Hour
Support Vehicle	3/4 To 1 Ton Pickup or Passenger Van	$41.73	Hour
Support Vehicle	1 Ton Stake Truck	$109.04	Hour
Tractor & Dump Trailer		$122.61	Hour
Tractor & Lowboy		$131.76	Hour
Vacuum Tanker	6,000 Gallon Stainless Vacuum Tanker (Includes 50’ Of 3” Vac Hose)	$114.71	Hour
Vacuum Tanker	6,000 Gallon Vacuum Tanker (Includes 50’ Of 3” Vac Hose)	$129.87	Hour
Vacuum Tanker	9,600 Gallon Stainless Vacuum Tanker (Includes 50’ Of 3” Vac Hose)	$190.67	Hour
Vacuum Tanker	9,600 Gallon Vacuum Tanker (Includes 50’ Of 3” Vac Hose)	$175.60	Hour
Water Truck	3,000 Gallon	$60.38	Hour

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CITY OF MARQUETTE
CLIFF - DOW PROJECT

Equipment	Description	Rate	Unit
Roll Off Boxes, Storage and Containment			
Cargo trailer	8'-24' Trailers	$120.75	Day
Containment	12’ X 50’	$48.30	Day
Containment	12’ X 12’	$24.15	Day
Frac Tanks	21,000 Gallons	$66.41	Day
Poly Tanks	250 - 1,500 Gallon	$18.11	Day
Roll-Off Box	20 Cubic Yard	$12.08	Day
Roll-Off Box	30 - 40 Cubic Yard	$12.08	Day
Vacuum Box	25 Cubic Yard	$60.38	Day
Hydro-Blasting Equipment			
8,000 PSI	100 HP - 12 gpm	$60.38	Hour
8,000 - 10,000 PSI	150 HP - 25 gpm	$72.45	Hour
8,000 - 10,000 PSI	225 HP - 35 gpm	$84.53	Hour
8,000 - 10,000 PSI	335 HP - 54 gpm	$108.68	Hour
10,000- 20,000 PSI	455 HP - 34 gpm	$181.13	Hour
10,000 - 20,000 PSI	600 HP	$392.44	Hour
40,000 PSI	3-6 Gallons Per Minute	$241.50	Hour
Hydro-Blasting Accessories and Tools			
10K			
10,000 PSI - 1/2” Hose	1/2" - 1"	$1.21	Per Foot Per Day
10,000 psi Tube Cleaning Nozzle	1/2” To 3/4” Tubes	$36.23	Hour
10,000 psi Tube Cleaning Nozzle	1” To 1-1/2” Tubes	$42.45	Hour
2D Roto Jet	Up to 50 GPM	$54.57	Hour
3D Gama Jet		$54.57	Hour
3D Roto Jet	Up to 50 GPM	$66.70	Hour
Badger Rotating Nozzles	4” To 12” Pipe	$48.51	Hour
Badger Rotating Nozzles	6” To 36” Pipe	$60.64	Hour
BJV with Line Mole		$66.70	Hour
BJV with Line Mole & Centralizer		$78.83	Hour
Damaged Hydro Blasting Hose		Cost + 15%	
Floor & Grate Cleaning 10,000 PSI		$345.63	Day
Hand Lance/Shotgun	Each Additional	$61.85	Day
Hand Lance/Shotgun	Dual Trigger	$84.89	Day
Hi-Pressure Blasting Turret		$151.59	Day
Multi-Gun Valve		$24.26	Hour
Nitrogen Multi-Flow/Multi-Gun Valve		$48.51	Hour
RHD - Additional Hose	Per 50’ Section	$84.89	Day
RHD - Rotating Hose Device	Includes 300’ Of 3/4” Hose	$274.08	Hour
Rotating Lance Nozzle/Spin Nozzle		$24.26	Hour
Rotating Lance Swivel/Ball & Socket		$200.10	Day
Saber Tube Cleaning Reel & Nozzles		$460.85	Day
Saber Tube Cleaning Reel & Nozzles		$460.85	Day
Saflex Hands Free Tube Lancing Machine		$60.64	Hour
Saflex Hose Reel		$293.49	Day
Saflex X-Y Manipulator		$346.85	Day
Specialty Fabrication		Cost + 15%	
Turtleskin Water Armor	Protective Body Gear	$42.45	Day

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PREPARED FOR:
CITY OF MARQUETTE
CLIFF - DOW PROJECT

Equipment	Description	Rate	Unit
Hydro-Blasting Accessories and Tools - Continued			
20K			
20,000 PSI - 1/2” Hose	1/2" - 3/4"	$2.12	Per Foot Per Day
20,000 PSI Foot Control Valve		$151.59	Day
20,000 PSI Tube Cleaning Nozzle	1/2” to 3/4” Tubes	$48.51	Hour
20,000 psi Tube Cleaning Nozzle	1” to 1-1/2” Tubes	$54.57	Hour
2D Roto Jet	Up To 50 GPM	$54.57	Hour
3D Roto Jet	Up To 50 GPM	$66.70	Hour
Abrasive Crawler tracks	Additional Tracks - Price per Each	$154.02	Day
Abrasive Crawler tracks	Additional Tracks - Price per Each	$154.02	Day
Abrasive Cutting Materials		Cost + 15%	
Abrasive Cutting System	Abrasive Track Crawler, Includes 4 Tracks	$755.54	Day
Abrasive Cutting System	Circle Hole Cutter	$755.54	Day
Abrasive Cutting System	Circle Hole Cutter	$755.54	Day
Badger Rotating Nozzles	4” to 12” Pipe	$48.51	Hour
Badger Rotating Nozzles	6” to 36” Pipe	$60.64	Hour
BJV with Line Mole		$78.83	Hour
BJV with Line Mole & Centralizer		$90.96	Hour
Damaged Hydro Blasting Hose		Cost + 15%	
Floor & Grate Cleaning 20,000 PSI		$466.91	Day
Hand Lance/Shotgun		$61.85	Day
Hand Lance/Shotgun	Dual Trigger	$84.89	Day
Multi-Gun Valve - 20,000 PSI		$36.38	Hour
Nitrogen Multi-Flow/Multi-Gun Valve		$48.51	Hour
Rotary Nozzle Horizontal Indexer		$36.38	Hour
Rotating Lance Nozzle/Spin Nozzle		$36.38	Hour
Rotating Lance Swivel/Ball & Socket		$200.10	Day
Saflex Hands Free Tube Lancing Machine		$84.89	Hour
Saflex Hose Reel		$293.49	Day
Saflex X-Y Manipulator		$346.85	Day
Specialty Fabrication		Cost + 15%	
TurtleSkin Water Armor (Protective Body Gear)		$42.45	Day
40K			
40,000 PSI - 3/16” & 5/16” Hose	Per 50’ Section	$2.43	Per Foot Per Day
40,000 PSI Foot Control Valve		$151.59	Day
40,000 PSI Tube Cleaning Nozzle	1” To 1-1/2” Tubes	$66.70	Hour
Abrasive Crawler Tracks	Additional Tracks -Price per Each	$154.02	Day
Abrasive Cutting Materials		Cost + 15%	
Abrasive Cutting System	Abrasive Track Crawler, Includes 4 Tracks	$755.54	Day
Abrasive Cutting System	Circle Hole Cutter	$755.54	Day
Damaged Hydro Blasting Hose		Cost + 15%	
Floor & Grate Cleaner		$436.59	Day
Rotating Lance		$163.72	Day
Rotating Lance With Bi-Mode		$327.44	Day
Saflex Hands Free Tube Lancing Machine		$109.15	Hour
Saflex Hose Reel		$293.49	Day
Saflex X-Y Manipulator		$346.85	Day
Specialty Fabrication		Cost + 15%	
Tube Cleaning Nozzle	1/2” To 3/4” Tubes	$60.64	Hour
Turtleskin Water Armor (Protective Body Gear)		$42.45	Day

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CLIFF-DOW PROJECT

Equipment	Description	Rate	Unit
Pressure Washers			
Hot Water Pressure Washer		$48.51	Hour
Hot Water Pressure Washer	Trailer Mounted	$60.64	Hour
Mobile Boiler		$60.64	Hour
Pressure washer		$24.26	Hour
Steam Gun		$12.13	Hour
Steam Hose	3/8"-3/4" Hose	$1.21	Per Foot Per Day
Sewer Cleaning and Inspection			
CCTV Truck		$218.30	Hour
Easement Machine		$90.96	Hour
Expandable Root Cutter		$109.15	Hour
Large Diameter Sewer Cleaner		$272.87	Hour
Lateral Camera	(In Addition To CCTV Truck)	Quoted / Occurrence	
Mini-Cam		$90.96	Hour
Sewer Plugs	4"-15"	$206.17	Day
Sewer Plugs	18"-30"	$303.19	Day
Trailer Mounted Jet		$84.89	Hour
Vactor Combo Unit		$224.36	Hour
Vactor Combo Unit with recycler		$242.55	Hour
Oil & Gas (Upstream) Services Equipment			
150 BBL Transport	6,300 Gallon	$97.02	Hour
220 BBL Transport	9,240 Gallon	$115.21	Hour
60 BBL High Pressure Pump Truck	2,520 Gallon	$103.08	Hour
60 BBL Vac Truck	2,520 Gallon	$78.83	Hour
Hot Oiler		$127.34	Hour
Hot Oiler Propane		Market + 15%	
Road Tractor		$78.83	Hour
Road Tractor with trailer - Float, Drop Deck		$90.96	Hour
Road Tractor, Winch Truck		$151.59	Hour
Support Equipment			
125KW Generator		$369.89	Day
155KW Generator		$441.44	Day
17KW Generator		$181.91	Day
3,200 lbs Skid Steer		$472.97	Day
3KW Generator		$48.51	Day
4KW Generator		$82.47	Day
500KW Generator		$944.73	Day
7KW Generator		$129.76	Day
Air Compressor 185 CFM		$30.32	Hour
Air Compressor 185 CFM	Food Grade - Air Dryer, Oil Trap &Moisture Trap	$42.45	Hour
Air Compressor 400 CFM		$48.51	Hour
ATV		$30.32	Hour
Backpack Vacuum		$151.59	Day
Carbon Treatment Unit (Up to 200 GPM)		$606.38	Day
Confined Space Entry Rescue Unit		$1,212.75	Day
Equipment Trailer 10 Ton		$181.91	Day
Filter Pot		$121.28	Day
Fork lift		$181.91	Day
Goodway Duct Cleaning System		$36.38	Hour

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Equipment	Description	Rate	Unit
Support Equipment - Continued			
Drum Vac		$242.55	Day
Mercury Vacuum		$606.38	Day
Pipe Trailer		$181.91	Day
Pneumatic Whip		$90.96	Hour
RPZ	Back Flow Preventer	$6.06	Day
Scissor Lift		$181.91	Day
Ventilation Fan 36”		$121.28	Day
Pumps and Hoses			
2" Diaphragm Pump		$41.23	Day
2” Honda Pump		$77.62	Day
3" Chemical Pump		$254.68	Day
3" Diaphragm Pump		$49.72	Day
3” Honda Pump		$162.51	Day
4” Godwin Pump		$275.29	Day
6" Dredge Pump		$606.38	Day
6” Godwin Pump		$449.93	Day
Discharge Hose	2"-6"	$0.61	Per Foot Per Day
Garden Hose		$24.26	Per Day
Suction Hose	2"-6"	$1.21	Per Foot Per Day
Sump Pump		$60.64	Day
Communications, Safety and Monitoring Equipment			
Arrow board		$151.59	Day
Baker Scaffolding		$12.13	Hour
Confined Space Entry Trailer		$363.83	Day
Explosion Proof Lights		$242.55	Day
Hand Held Radios	Motorola	$36.38	Each/Day
Intrinsically Safe Radios		$72.77	Each/Day
LOTO Kit	4-people	$48.51	Day
Mercury Vapor Analyzer		$303.19	Day
PH Meter		$36.38	Day
PID Meter		$169.79	Day
SRL & Lanyard		$90.96	Day
Stress Monitor		$36.38	Day
Traffic Cones		$1.21	Each/Day
Tri-Gas Meter		$109.15	Day
Turtle Armor		$42.45	Day
Winch & Tripod		$121.28	Day
Chemicals and Absorbent Materials			
5" Absorbent Boom	4 - 10’ Sections Per Bag	$98.23	Bag
8" Absorbent Boom	5-10’ Sections Per Bag	$121.28	Bag
Absorbent Acid Roll		$200.10	Roll
Absorbent Blanket Roll		$132.19	Each
Absorbent Clay - 50 lbs		$12.13	Bag
Absorbent Pads	100 - 15”X19” Pads Per Bag	$76.40	Bag
Bleach		$12.13	Gallon
Chembrite		$39.41	Gallon
Chemical Sprayer 3-5 Gallons		$24.26	Each
Citric Acid Vinegar		$4.24	Gallon
Crack Filler		$27.89	Gallon
Kleen Green		$50.94	Gallon
Mercon- Mercury Decontainment		$202.53	Gallon

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CLIFF - DOW PROJECT

Materials	Description	Rate	Unit
Chemicals and Absorbent Materials - Continued			
Micro Blaze	Hydrocarbon Emulsifier and Encapsulate	$54.57	Gallon
Power Foam SHC	5 gallon pail	$56.39	Gallon
S San Clear	5 gallon pail	$50.94	Gallon
Salt		$12.13	Bag
Sporicidin (Food Grade Cleaner)		$81.62	Gallon
Sch Degreaser		$65.19	Gallon
Sodium Bicarbonate		$36.38	Bag
Sodium Bicarbonate - 40 lbs		$36.38	Bag
Sweeping Compound - 50 lbs		$31.53	Bag
Vermiculite - 25 lbs		$24.26	Bag
Zep 50 RTU	General Cleaner	$12.86	Quart
Zep Big Orange	Citrus Cleaner Tar-Go	$42.45	Gallon
Zep F 4665	12.5% Sodium Hypochlorite	$10.91	Gallon
Zep Green	Degreaser	$18.19	Gallon
Miscellaneous Supplies			
275 Gallon Poly Tote	UN/31HA1/Y	$236.49	Each
330 Gallon Poly Tote	UN/31HA1/Y	$312.89	Each
5 Gallon DOT Bucket With Lid	UN/1H2/Y1.5/30	$18.80	Each
55 Gallon Metal Open Top Drums	UN/1A2/Y1.2/100	$60.64	Each
55 Gallon Poly Close Top Drums	UN/1H1/Y1.8/100	$60.64	Each
55 Gallon Poly Open Top Drums	UN/1H2/Y1.30/S	$60.64	Each
95 Gallon Poly Overpack Drum	UN/1H2/X/295/SOH	$317.74	Each
Bee Spray		$8.49	Can
Bio Hazard Bag		$18.19	Each
Biodegradable Stakes		$0.21	Each
Black Felt (Geotextile)		$610.01	Roll
Blanket Pegs		$0.12	Each
Boom or T Post Stakes		$6.06	Each
Booties		$7.28	Pair
Caution/ Danger Tape		$12.13	Each
Chainsaw		$121.28	Day
Containment Pool		$30.32	Day
Box Liner		$60.64	Each
Cubic Yard Galaxy Bag W/ Line	UN/11HH2/X	$139.47	Each
Drum Dolly		$30.32	Day
Drum Label		$2.43	Each
Drum Liner		$12.13	Each
Duct Tape		$7.28	Roll
Face Shield With Bracket		$6.06	Each
Filter Bags	Rosedale 5, 10, 25, 50, or 100 Micron	$4.85	Each
Scotch Brite Pads		$12.13	Box
Fleece Rags	50 lbs per Bag	$0.97	Pound
Floor Dry		$10.91	Bag
Kevlar Gloves		$6.93	Pair
Latex Gloves	(Only if No PPE Billed)	$1.21	Pair
Leather Gloves		$2.31	Pair
Less Than 10		$54.57	Gallon
Manila Rope 3 Strand		$0.61	Foot
Marker Paint		$8.49	Can
Mop Bucket with Wringer		$24.26	Each
Mop Head		$9.70	Each
Nitrile Gloves		$1.21	Pair
Nylon Rope 3 Strand		$1.52	Foot
Orange Plastic Fence (100')		$58.21	Each
PH Paper		$6.06	Roll
Popup Canopy 10’ by 10’		$90.96	Each

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CITY OF MARQUETTE
CLIFF-DOW PROJECT

Popup Canopy 20’ by 20’		$151.59	Each
55 Gallon/ 1/4 yard Galaxy Bag		$38.81	Each
Equipment	**Description**	**Rate**	**Unit**
Miscellaneous Supplies - Continued			
Propane Heater		$60.64	Each
Propane Tank		$60.64	Each
Propane Torch		$60.64	Day
PVC Gloves		$7.28	Pair
Rag Roll		$175.85	Each
Rain Suits		$9.47	Each
Roll Off Liner and Tarp Package		$72.77	Each
Sample Kit		$72.77	Each
Seed		$3.64	Pound
Shop Vac		$60.64	Each
Shop Vac HEPA Filter		$60.64	Each
Shop Vac Hose		$36.38	Each
Shrink Wrap		$19.40	Roll
Small Power Tools		$151.59	Each/Day
Small Tools	Rate may fluctuate based on size and Complexity of project	$60.64	Day
Snow Fence (100')		$97.51	Roll
Soda Ash	50 lb. bag	$21.62	Bag
Spray Adhesive		$6.06	Can
Straw Bale		$7.28	Each
Straw Roll Blanker		$48.51	Each
Top Soil (40 lb bag)		$2.43	Bag
Transformer Bags		$60.64	Each
Trash Can Liner 55 gallon		$1.21	Each
UN Bags		$60.64	Each
Visqueen 10 Mil		$115.21	Roll
Waders		$30.32	Day
Weed Whip		$121.28	Day
Wet/Dry Vacuum Head		$121.28	Day

CLARIFICATIONS

1. Overtime applies after 8 hours, after 5p.m., all weekday emergencies and on Saturdays (excluding holidays).
2. Charges are portal to portal from Taplin's facility.
3. Additional equipment damaged by customer, supplies, or personnel needed to complete the project but not listed, will be invoiced at cost, plus 15%.
4. All subcontracted services and equipment rentals will be billed at cost, plus 15%.
5. A four-hour minimum applies.
6. Day rate represents one, eight-hour shift. Exceptions are roll-off boxes, frac tanks, poly tanks in which 1 day is 24 hours.
7. Does not include NMA, GPPMA or prevailing wage rates
8. A fuel surcharge will apply on all fuel-related equipment line items per the D.O.E. On Highway National Index (http://www.eia.gov/petroleum/gasdiesel/) at the time services are rendered.

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CLIFF-DOW PROJECT

TAPLIN GROUP, LLC
Environmental Services
5140 West Michigan Avenue Kalamazoo, MI 49006

8/20/2025

City of Marquette
Cliffs Dow In-Situ Remediation Services RFP

Conflict of Interest Certification

Conflict of Interest Certification forms were not included with the bid package. Taplin Group, LLC is willing to provide signed certification upon receipt of forms.

Employee Confidentiality Agreement

Employe Confidentiality Agreement forms were not included with the bid package. Taplin Group, LLC is willing to provide signed agreement upon receipt of forms.

Submitted by:

TAPLIN GROUP, LLC



David Balogh

Executive Vice President

Accepted By:
Signature:
Date

INVITATION TO BID
BP# 25-06
Project Number MQ23-444

PROJECT DESCRIPTION

The City of Maquette (City) is requesting that interested bidders submit proposals for the design and implementation of in-situ remediation services at the former Cliffs-Dow site located in Marquette, Michigan (herein referred to as 'site'). The remediation services will be implemented to reduce the concentrations of volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) in groundwater at the site.

PROJECT LIMITS

In 1997 the City acquired approximately 78 acres of land located along Lakeshore Boulevard. The original 78-acre City-acquired Former Cliffs-Dow property has been separated into three parcels: (1) the southern 23 acres was transferred to Northern Michigan University in 1999; (2) the north nine acres is comprised of two commercial properties; and (3) the central 46 acres which is the former location of the majority of the plant process equipment and buildings and is currently owned by the City of Marquette. This project focuses on the central 46 acres, where recent efforts have focused on monitoring activities.

OWNER

City of Marquette
1100 Wright St.
Marquette, MI 49855

ENGINEER

City Engineer's Office, City of Marquette

BID OPENING

Bids must be submitted online through the Bid Express service at www.bidexpress.com. No paper, or emailed bids will be accepted

All bidders must follow all instructions on the Bid Express solicitation. Failure to do so will result in the rejection of the bid proposal. All questions are due using the Bid Express platform by August 1, 2025. All bids must be received by August 20, 2025 at 9:00 am, after which time bids will be opened and read aloud in Room 203 of Marquette Municipal Service Center at 300 West Baraga Avenue. Bid tabulations will also be available on Bid Express after the public opening.

DOCUMENTS ON FILE

Contract Documents may be obtained from the Bid Express solicitation at https://www.bidexpress.com/businesses/47964/home.

BASIS OF BIDS

Bids solicited on a unit price basis for the work specified.

BID GUARANTY

Each bid will be accompanied by a Bid Bond, payable to the owner, in an amount not less than 5% of the amount of the Bid as a Bid Guaranty. Bid guaranty of the three lowest bidders will be returned after approval of the contract by the Owner. All others will be returned within 48 hours after the Bid Opening.

CONTRACT SECURITY

The successful bidder will be required to furnish a satisfactory Performance Bond and Payment Bond, each in an amount of one hundred percent (100%) of the contract. The bonds shall remain in effect for a period of 1 year beyond the contractor's, subcontractor's, or supplier's last work on the project.

BID WITHDRAWAL

Withdrawal of any bid is prohibited for a period of 45 days after the actual date of opening thereof.

PRECONSTRUCTION MEETING

Before any work is commenced under this contract, a preconstruction meeting between representatives of the Contractor, the City Engineering Department, and utility companies shall be held with the Engineering Department. The preconstruction meeting for this project will be held no later than 10 days after contract acceptance by the Marquette City Commission.

CONTRACT TIME

The Contractor shall commence work on the project within ten days of receipt of the notice to proceed. The work shall be completed no later than December 31, 2026. The contractor will be required to follow a phased construction schedule as set forth in the bid documents.

CONTRACT ACCEPTANCE

It is anticipated the contractor will be selected by the Marquette City Commission on September 8, 2025.

CLARIFICATION

Questions regarding ambiguities or the propriety of these specifications shall be submitted via Bid Express not less than ten (10) days prior to formal bid opening.

Such questions will not be entertained after said date.

PREVAILING WAGES

Effective 28 February 2011, the City of Marquette adopted a Prevailing Wage resolution requiring that all mechanics and/or laborers employed on City construction projects costing in excess of $65,000 be paid minimum wages as determined by the Secretary of Labor. These prevailing wage requirements will apply to this project if the contractor's total bid price is in excess of $65,000.

OWNERS RIGHTS

The City reserves the right to reject or accept any or all Bids and Bid Alternates in the best interest of the City of Marquette.

TITLE VI REGULATIONS

The City in accordance with Title VI of the Civil Rights Act of 1964, 78 State.252, 42 USC 2000d to 2000d-4 and Title 49, Code of Federal Regulations, Department of Federally assisted programs of the Department of Transportation issued pursuant to such Act, hereby notifies all bidders that it will affirmatively ensure that in any contract entered into pursuant to this advertisement, minority business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of gender, disability, race, color or national origin in consideration for an award.

CITY OF MARQUETTE, MICHIGAN

Karen M. Kovacs
City Manager

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A Professional Services Contract
B Bid Form
C Site Data Package

INTRODUCTION

This Invitation to Bid is divided into two parts. Part 1 contains instructions for responding to the Invitation to Bid. Part 2 contains details of the Invitation to Bid that define the scope of work.

PART 1 - Instructions for Completing this Invitation to Bid

1.1 Invitation to Bid

The City of Maquette (City) is requesting that interested bidders submit proposals for the design and implementation of in-situ remediation services at the former Cliffs-Dow site located in Marquette, Michigan (herein referred to as 'site'). The remediation services will be implemented to reduce the concentrations of volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) in groundwater at the site.

Bidders are responsible for understanding the information contained in this Invitation to Bid. It is each Bidder's responsibility to obtain resolution of any questions or misunderstandings from the City and TriMedia Environmental & Engineering (TriMedia) during the bid period.

Section 1.2 of this Invitation to Bid describes proposal evaluation and basis of selection of a Successful Bidder. The Successful Bidder (Contractor) will enter into a contract agreement with the City.

The anticipated Professional Services Contract is included as Appendix A. Appendix B contains the Bid Form for informational purposes. Appendix C includes the Site Data Package

1.2 Technical Proposal Evaluation and Basis of Selection

The basis of selection for the Successful Bidder will be lowest price and technically acceptable. Technical acceptance for each proposal will be determined by the City Engineer after consulting with the project team based, in part, on Bidder responses to questions in Section 1.8.

1.3 Summary of Work

This Invitation to Bid pertains only to in-situ remediation services at the site. An Analysis of Brownfield Cleanup Alternatives (ABCA) completed by the City in 2022, recommended that in-situ remediation would be the most effective treatment to reduce groundwater contaminant concentrations at the site.

The Contractor will be responsible for the design and implementation of in-situ remediation. This will include providing all resources, including labor, equipment, materials, subcontractors, supplies, taxes, profits, and royalties (as applicable) to fulfill the performance objectives defined in this Invitation to Bid. All work will be completed in compliance with current federal, state, and local regulations and in accordance with standard industry practice and applicable technology licenses. Upon satisfactory achievement of this Invitation to Bid, the Contractor will demobilize and, if

required, properly abandon subsurface infrastructure, and perform site surface restoration.

1.4 Funding and Contracting Structure

The U.S. Environmental Protection Agency (EPA), through a Brownfield Cleanup Grant awarded to the City, is the funding source for conducting remedial action. Federal Acquisition Regulation (FAR) flow-down clauses and Davis-Bacon wage determinations apply and are included with the Professional Services Contract.

Through a competitive bidding process, the City has selected TriMedia as the Consultant for brownfield cleanup activities at the site. The activities include oversight of a qualified Contractor to perform the work as described in this document. Michigan Department of Environment, Great Lakes and Energy (EGLE) is the support agency and will review documents, designs, and plans, as necessary, in partnership with EPA.

Bidders are instructed to prepare a price proposal in response to this Invitation to Bid that reflects: (1) in-situ remediation design and (2) in-situ remediation implementation following Contractor award under the assumption that full project funding is available. To accommodate the potential that funds to complete only in-situ remediation design are available following Contractor award, a price proposal to complete design-related and remediation tasks as defined by the Invitation to Bid is necessary.

1.5 Submittals

Submittals to the City as part of Bidder response to this Invitation to Bid are indicated below. All forms will be completed and submitted by Bidders and, where indicated, also for all proposed Subcontractors. The submittals include, but are not limited to, the following:

- **Bid Form:** Use the attached Bid Form included in Appendix B to submit your firm-fixed prices for the bid items included, as described in the Invitation to Bid. All pricing is to be fully burdened with applicable field and home office costs, inclusive of general, administrative, overhead, profit, and all applicable taxes. (THIS PROJECT IS NOT TAX EXEMPT.)

- **Agreement Exceptions: I**dentify any exceptions to the proposed terms and conditions provided, which will govern any resultant award. If you have none, provide a statement within the proposal indicating there are no agreement exceptions. The City may consider any exceptions to the terms as part of the evaluation criteria. However, the City reserves the right, when evaluating a proposal, not to hold any further discussions/negotiations of exceptions to the terms.

- **Representations and Certifications: I**dentify your appropriate business status and corresponding questions related to federal acquisition regulations.

1.6 Offeror's Forms and Documents

Offeror's forms to be completed and returned as part of each Bidder's response to this Invitation to Bid include the following:

- **Bid Bond:** All offers must be accompanied by a bid guarantee of five percent (5%) of the contract price. The contract price will be the total price stated in the Bidder's proposal.

- **Certificate(s) of Insurance:** Submit your standard insurance certificate providing evidence of all coverages, including professional liability coverage. Note if you do not maintain the limits required in this Invitation to Bid, please provide a separate line item to meet these requirements.

- **Technical Proposal**

- **OSHA 300 Logs**

- **Small Business Subcontracting Plan** (not required if the Offeror is a small business)

1.7 Bonding

The Contractor will provide Payment and Performance Bonds, each in the full amount of the contract value before project activities begin.

1.8 Technical Submittal

The following information must be included in your response to the Invitation to Bid.

1. **Agreement Exceptions:** Bidder will prepare and make the following a part of its Proposal: "AN ITEMIZED LIST OF ANY AND ALL EXCEPTIONS, ASSUMPTIONS, OR CORRECTIONS NECESSARY TO ALLOW SUBMISSION OF THIS PROPOSAL." The submission of such a list will be the Bidder's acknowledgment that it fully understands all phases of the specified work and accepts the completeness of all documents transmitted with and made part of the final Professional Services Contract.

2. **Design Document Clarifications:** In any instance where the Drawings, Specifications, and other performance-related documents are not sufficiently complete to allow the Bidder to submit a complete Proposal without excessive contingencies being applied for indefinite or uncertain items, or with major assumptions being made by the Bidder, the Bidder will contact the City for clarification before submitting its proposal.

3. **Planning Schedule:** Bidder will include a Preliminary Planning Schedule with the bid and will submit its bid based on that schedule. The planning schedule will be formatted to include each work task contained in the Bid Form included in Appendix B.

The planning schedule will also include the estimated labor hours for each Bid Item. Bidder's

Proposal will be based on a 5-day, 50-hour workweek for field activities.

4. **Summary Work Plan:** Bidder will submit with its proposal a Summary Work Plan for all phases of required work. Bidder's Work Plan will be structured to correlate with the fixed-price work item structure as detailed in Section 2 of the Invitation to Bid and will provide clear and concise descriptive summaries of Bidder's plan to execute all work tasks contained in the Invitation to Bid. The Summary Work Plan must include responses to the following:

- What is your firm's overall technical approach to implementing the Invitation to Bid described herein? Please describe your firm's approach to design, procurement, drilling, electrical/mechanical interconnection, operation, maintenance, and decommissioning. Please describe responsiveness to potential upset conditions that may arise during the course of project completion, such as power outages, equipment failure or malfunction, and emergency response.

- How many analytical samples will be required? Provide the estimated number and matrix (liquid, soil, gas) of analytical samples required to perform the proposed services.

- How much electricity will be needed? Provide the estimated electricity consumption (in kilowatt-hours) and the expected average and maximum demand load (in kilowatts) during the project. Specify the expected quantities of electricity (if required), and potable water in the Bid Form.

- What type of waste products will the proposed remediation approach generate? Please specify in the Bid Form the expected quantities and types of waste streams to be generated and disposed from both underground and above-ground activities.

- What is the expected noise level of the proposed equipment within 100 feet of the proposed activities?

- How many staff will be onsite and for how many hours each day? Will weekend work, after hours, or overtime be required?

- How will your firm deal with upset or emergency conditions, such as equipment breakdowns, etc.? How will your firm handle emergency response, if required? What is the minimum projected timeframe required for operations staff to reach the site in the event of upset conditions after hours?

5. **Key Onsite Personnel:** With the Summary Work Plan, Bidder will provide an organization chart identifying its proposed Project Manager, Field Lead, and Quality Assurance/Quality Control Lead. Resumes for key onsite personnel will be included as an attachment to the Summary Work Plan. The Successful Bidder may not change the Project Manager and Superintendent proposed for work

completion without review and written permission from the City.

6. **Labor Rate Breakdown Schedule:** Bidders will furnish with their proposal a completed Labor Rate Breakdown, fully burdened with all applicable cost (i.e., labor, overhead, general admin, applicable taxes, profit, etc.) for all trades to be used on this project. Bidders will complete a table for each labor craft that will be included in the project (i.e., laborer, operator, pipe fitter, etc.). Rates included in this table, after any negotiations, will be the basis for any possible fixed-price or fixed-unit-rate change order work approved.

7. **Equipment Rates:** Bidders' proposals will include a list of applicable equipment daily, weekly, and monthly fully burdened rates. Bidders will also provide a mobilization-demobilization cost for each piece of major equipment. Mobilization-demobilization will include all decontamination work required to remove a piece of equipment from the site. Rates included in this table, after any negotiations, will be the basis for any possible fixed-price or fixed-unit-rate change order work approved.

8. **Markups for Other Direct Costs:** Bidders will identify proposed markup to any subcontracts and/or material purchases in the event additional scope is authorized on a firm-fixed price or fixed-unit- rate basis.

9. **Work to Be Performed by Others:** Bidders will identify all work services provided by others necessary to fulfill the goals and objectives stipulated by the Invitation to Bid.

1.9 Qualifications and Technical Questions

This section provides technical questions regarding the Bidder's experience and qualifications, as well as its proposed approach(es) to address site-specific issues. Bidders are required to provide responses to each question in the written proposal in addition to a summary table of responses.

1.8.1 Experience and Qualifications

- The site is contaminated with select VOCs, and SVOCs. A compendium of site documents is provided with this Invitation to Bid; these documents detail the site background and known contaminants present at the site. Please generally describe your firm's experience treating sites contaminated by DNAPL, including, but not limited to, benzene, ethylbenzene, xylenes and phenols.

- Provide references (name, phone, and email) for three in situ treatment projects that your firm has completed. For referenced projects, describe the contaminants of concern, concentrations, impacted media, treatment volume, cleanup goals, and treatment results. Please note previous experience with the Subcontractors included in your proposal. Projects completed under the Comprehensive Environmental Response, Compensation, and Liability Act and to the extent feasible under "fund lead" status should be showcased.

- Describe your approach to client service, the proposed lines of communication between the City, TriMedia and your firm, and how you would propose to resolve problems that may be encountered during project implementation.

- Describe your firm's approach and in-house program related to H&S, and steps that your firm will take to ensure that all site work is conducted in a safe manner.

1.8.2 Additional Technical Questions

- Does your firm's system remediation approach require subsurface fluid injection? If so, please provide the following additional information:

    - Describe the purpose of fluid injection.
    - Describe types of fluid that would be considered for injection.
    - Describe past experiences with fluid injection.
    - Describe past permitting experiences with EGLE required for fluid injection.

1.10 Bidder Proposal Checklist

In preparation for submitting the Proposal, the Bidder has verified that the following information has been included:

___ Bid Form completed
___ OSHA logs, Experience Modification Rate, and Table of Contents of H&S plan (including anticipated Subcontractors)
___ Subcontractor list and tasks
___ Agreement exceptions
___ Technical exceptions
___ Bid bond
___ Insurance certificate
___ Project planning schedule
___ Summary work plan
___ Key onsite personnel
___ Resumes
___ Contractor labor rate breakdown table (for each classification)
___ Contractor equipment rate list
___ Completed responses for technical questions and firm qualifications
___ Conflict of interest certification
___ Employee confidentiality agreement

PART 2 - Performance Work Statement

2.1 General

The material herein supplements that contained in applicable articles in the Professional Services Contract and specifications.

Project entities are defined as follows:

- **Grant Provider:** United States Environmental Protection Agency (EPA)
- **Owne**r: City of Marquette
- **Engineer (or Contractor):** TriMedia Environmental & Engineering, which is contracted by the City to act as its representative on this project
- **Contractor:** Successful Bidder, contracted to the City

2.2 Site Data Package

A site data package has been assembled to support the development of Bidder's proposal and is included as Appendix C.

2.3 Intent

2.3.1 Summary of Intent

The intent of this Invitation to Bid is to:

- Provide background information on the site.
- Summarize Invitation to Bid elements.
- Define the performance requirements for in-situ remediation activities.
- Solicit firm, fixed-price proposals for the design and implementation of in-situ remediation activities.
- Outline key work elements provided by others necessary for in-situ remediation activities.
- Define contract requirements.
- Provide measurement and payment terms for the work required from the Contractor.

2.3.2 Price

Bidder will provide pricing for each line item in the Bid Form to furnish all resources required to complete the Invitation to Bid. The total price must be indicative of all costs required to complete the work.

2.3.3 Basis for Claim of Omission

Work called for or implied on one document but omitted on others will not be considered a valid basis for claim of omission by the Successful Bidder in bidding or in performing work. It is the responsibility of the Bidder alone to bring any such conflicts to the attention of the City for resolution.

2.3.4 Professional Services Contract Dates

Professional Services Contract dates will be confirmed following coordination with City of Marquette and EPA, if required.

The date for Professional Services Contract award is September 8, 2025.
The date for design plan review and approval is October 15, 2025.
The date for Substantial Completion is December 31, 2026.

2.4 Project Background

2.4.1 Project Background

In 1997 the City acquired approximately 78 acres of land located along Lakeshore Boulevard. The original 78-acre City-acquired Former Cliffs-Dow property has been separated into three parcels: (1) the southern 23 acres was transferred to Northern Michigan University in 1999; (2) the north nine acres is comprised of two commercial properties; and (3) the central 46 acres which is the former location of the majority of the plant process equipment and buildings and is currently owned by the City of Marquette. This project focuses on the central 46 acres, where recent efforts have been focused on monitoring activities. Lake Superior (the receiving surface water body), and facility boundaries are shown on the attached Figure 1.

This Site was a large portion of the former property of the Cliffs-Dow Plant which operated as a charcoal pig iron plant and then as a wood chemical plant between 1902 and 1969. The Cleveland-Cliffs Iron Company originally developed the area in 1902 for the purpose of manufacturing charcoal pig iron. The production of charcoal pig iron continued until 1930. Subsequently, the Cliffs-Dow Chemical Company was created in 1935, and wood processing operations were installed in areas formerly occupied by the pig iron plant. Between 1935 and 1969, chemical production of acetic acid and methanol were the primary processes at the plant, with charcoal production taking a secondary role. In 1968, the Cliffs-Dow Chemical Company was sold to Georgia-Pacific and E.L. Bruce companies; the wood chemical refining process continued until the plant closed in 1969.

The plant produced charcoal and wood chemicals by carbonization and pyrolysis of hardwoods. This process entailed heating the wood in the absence of air and producing charcoal, condensable volatiles (pyroligneous acid) and non-condensable volatiles (wood gas). The pyroligneous acid and charcoal, the primary feedstocks for plant products, were produced in heated, airtight vessels, called retorts, causing a chemical reaction that separated the pyroligneous acid and charcoal into two different process streams. The pyroligneous acid was collected and further processed by separation and distillation to produce methanol, acetic acid, and other saleable chemicals. Charcoal was recovered from the retorts and physically processed into salable sizes. A portion of the charcoal also was further chemically altered to produce activated carbon. Wastes and by-products generated at the Site throughout its operational history were comprised of volatile organic

compounds (VOCs), including benzene, toluene, ethylbenzene, and xylenes (BTEX), and semi-volatile organic compounds (SVOCs), specifically phenolic compounds (e.g., 2-methylphenol, 4-methylphenol, 2,4-dimethylphenol), and metals.

2.4.2 Previous Site Investigations

Investigations of source areas and associated risks at the former plant were conducted between 1981 and the present. Numerous documents summarizing previous Site investigations, remedial efforts, and ongoing monitoring activities have also been prepared and are on file with the EGLE. These investigations have included studies of soil contamination, groundwater contamination, exposure evaluation, and contaminant migration. The results of these previous investigations support the following general conclusions:

1) Widespread cover of fill materials containing sand, gravel, slag, charcoal, cinders, and concrete debris exists at varying depths throughout the Site.

2) Tar has been identified in discrete, small pockets extending several feet below the water table in the retort, refinery, and tar settling areas.

3) Subsurface tar above or a few feet below the water table is the probable source of dissolved-phase groundwater plume contaminants that periodically exceed Michigan Part 201 Generic Cleanup GSI criteria (Part 201 GSI criteria) and Mixing Zone-Based GSI Criteria at the Lake Superior interface.

2.4.3 Site Geology and Hydrogeology

The Site was a low-lying area adjacent to Lake Superior before it was developed for industrial purposes during the first half of the last century. In most areas of the Site, the first layer of material is fill consisting of sand, cinders, wood, bricks, slag, scrap metal, and demolition debris. A thin layer of organic material, humus or bog mat frequently occurs under the fill material. Underlying the fill and/or organic material is native soil consisting of light brown to light gray, loose to dense, fine to medium poorly graded sand (SP-USCS).

Groundwater monitoring events have been performed at the Site on behalf of the City from October 2009 through December 2024. Since July 2011, the focus of groundwater monitoring has been on select monitoring wells downgradient of the suspected source area and GSI compliance monitoring wells. The monitoring well locations consist of nested well clusters corresponding to different depth intervals; these intervals are denoted as ‘A’, ‘B’, ‘C’, and ‘D’ to indicate shallow, intermediate, deep, and ‘sub-limiting layer’ intervals, respectively. The locations of site monitoring wells are shown

The depth to groundwater at the Site generally ranges from two to eight feet below grade (bg). Historical groundwater data as well as recent measurements from the Site have indicated flow direction toward the east, essentially perpendicular to the Lake Superior shoreline. Generally, horizontal groundwater gradients on the Site have ranged from 0.003 foot per foot (ft/ft) to 0.008

ft/ft over the past several years. Groundwater flow direction and horizontal flow gradients were calculated using groundwater elevation data collected from shallow interval wells for each sampling event as summarized below.

Site assessment work conducted in 2020 indicates the presence of confining layer of silty sand, clayey silt was encountered between approximately 48 and 60 feet below grade (bg) in four soil borings.

Static water level data has been evaluated for trends in vertical groundwater gradients, which play a significant role in the vertical migration of dissolved groundwater impacts. Based on static groundwater levels measured for recent sampling events, mixed vertical gradients have been observed at the onsite well clusters. Specifically, at the well clusters along the east portion of the Site, serving as point of compliance wells for the GSI pathway, a slight downward vertical gradient was observed in the majority of the GSI well clusters. These gradients are consistent with those observed during the past monitoring events, although some variability of upward and downward vertical gradients appears to exist at the Site.

Slug testing was performed again in 2020 at newly installed GSI compliance wells. Hydraulic conductivity (K) values estimated from slug tests performed ranged from 7.57 to 57.03 feet/day in the A series wells, 13.16 to 64.34 ft/day in the B series wells and 1.26 to 78.46 ft/day in the C series wells. The average hydraulic conductivity was calculated as 27.44 ft/day (10,015 ft/yr) in the A series well, 33.76 ft/day (12,322 ft/yr) in the B series wells and 25.39 ft/day (9,256 ft/yr) in the C series wells.

2.5 Statement of Work

2.5.1 Overview

The Contractor will design and implement in-situ groundwater remediation activities at the site. The Contractor will be solely responsible for preparing a detailed design of the remediation approach. Design drawing and supporting resources will be reviewed by the City, EPA, and TriMedia for conformance to contract documents.

The Contractor will furnish all labor, equipment, materials, subcontractors, supplies, and all else necessary to safely and efficiently remediate groundwater as means to reduce contaminant concentration below applicable Mixing Zone-Based GSI Criteria. The services furnished for this project will include, but not be limited to, the following:

- Process monitoring and recording equipment
- Power distribution and control equipment
- Aboveground piping, if applicable
- Permitting support
- Utility specification and sizing requirements
- Operation, including monitoring, computerized systems, and power requirements.

- Site security, consisting of temporary fencing, privacy screen, and silent alarm.
- Surface restoration and demobilization of all in-situ treatment components.

All work will be completed in compliance with current federal, state, and local regulations and in accordance with standard industry practice and applicable technology licenses. Construction and Operation permits (or permit equivalencies) required to deliver services defined by this Invitation to Bid will be completed by the Contractor with support from TriMedia. Upon successful demonstration of remediation to project stakeholders, the Contractor will restore the site to pretreatment conditions, including seeding all disturbed areas, as necessary, prior to demobilization.

If necessary, existing monitoring wells requiring removal as a part of this scope of work will be abandoned by others prior to the start of the work.

2.5.2 Project Submittals

The Contractor will prepare comprehensive written documentation that details the design and implementation of remediation activities for the site. TriMedia will review design documents prepared by the Contractor. The Contractor will be solely responsible for the design and implementation of remediation activities.

Design Report

The design report will contain, at a minimum, the following components:

- A summary of site conditions, cleanup objectives, selected technology, and the technical approach applied in the remediation plan.
- A comprehensive description of equipment, components, controls, and proposed safeguards to be integrated into the treatment design.

Project Work Plan

The Contractor will develop a site-specific work plan, explaining the approach for completing the project. At the discretion of the Contractor, the required content of the design report and project work plan may be combined into a single submittal. The project work plan, at a minimum, will include the following information:

- Project organization
- Lines of communication
- Resources (e.g., personnel, materials, equipment, etc.)
- List of required Subcontractors, and scope of services supplied by each
- Project schedule
- Permit schedule
- Contractor quality control plan outlining quality assurance/quality control procedures, and as described in the subsection below

- Sampling and analysis plan
- Mobilization
- Site preparation
- Abandonment approach upon completion, as applicable
- Site restoration
- Demobilization

Site-Specific Health and Safety Plan

The Contractor will submit a health and safety plan (HASP) for review and approval. At minimum, the HASP will include all requirements of OSHA 1910.120 (HAZWOPER), plus an activity hazard analysis for each task related to the proposed scope or work.

Soil Erosion and Sedimentation Control Plan

If required, a soil erosion and sedimentation control (SESC) plan will be developed by the Contractor.

The SESC plan will incorporate the use of best management practices for earth-disturbing activities associated with the work and procedures to control soil erosion and potential spills.

The SESC plan will also detail erosion control inspections that will be performed during construction activities. This document will be submitted for approval prior to starting work onsite. If the Contractor determines that an SESC plan is not necessary for the work, a written explanation of why it is not needed will be submitted for approval.

Final Report

The Contractor will furnish a draft final report to the City within 60 days of demobilization from the site. The draft final report will include a narrative describing the completed remediation activities, and will provide figures depicting injection points, treatment zones, etc. The draft final report will provide relevant site data.

Following review, the Contractor will finalize the document and supporting material and produce the final report in portable document format (PDF) format. The Contractor will also supply the final report components (i.e., text, tables, drawings, figures, photographic logs, etc.) in native file format and provided as PDFs.

2.5.3 Design Conditions

The remediation approach provided by the Contractor will be designed to reduce dissolved phase groundwater concentrations within the shallow to intermediate outwash unit. The primary objectives for implementation are to (1) prevent contaminated groundwater from migrating off site at concentrations above Mixing Zone-Based GSI Criteria and (2) reduce the mass of contamination in the source area.

Despite significant subsurface investigation, uncertainty in both the mass and distribution of contaminants within the site remains. The diminishing returns concept builds upon multiple lines of evidence to demonstrate that the practical (and technical) capacity of a treatment approach to remove subsurface contaminants has been reached. The approach is suited for sites where contamination mass is unknown or exhibits a high degree of spatial variability; both characteristics are prominent features within the site.

Injection Points and/or Wells

The contractor will satisfy all substantive requirements for a Part 22 Groundwater Discharge Permit Exemption from EGLE for liquids that might be added to soil and groundwater as part of remediation activities. The Contractor design will supply the locations of each injection point and/or well along with the specifics on the fluid being injected and its origin, volume, and duration. Injection of fluids besides potable water may require complete analytical characterization and supply of Safety Data Sheets as applicable. Potential addition of any chemical agents to improve performance must be identified during planning and formalized during the design phase.

Utilities

The Contractor will be responsible for necessary utility coordination (e.g., electrical power, potable water supply, etc.) to perform remediation. The Contractor will remain responsible for design specification and supply of all downstream appurtenances for distribution and control of all utilities provided.

Utility services (power, water) costs will be directly paid by the Contractor.

2.5.4 In-Situ Remediation

The following are requirements for the in-situ remediation portion of the scope of work:

- The Contractor will furnish all equipment, materials and labor to perform in-situ remediation.

- One or more areas will be provided to the Contractor-supplied equipment for in-situ remediation implementation. The Contractor will include all required equipment and controls to capture, convey, treat, or divert stormwater or process-related liquids that accumulate within the areas provided.

- The Contractor will take all steps, readings, or measurements deemed necessary to safely perform required work. The Contractor will be solely responsible for interpreting all information to determine and implement all appropriate safety measures necessary to protect any personnel who may encounter site remediation activities, including, without limitation, its employees, agents, Subcontractors, visitors, EPA, TriMedia, other

government agencies, and emergency responders or their respective personnel.

2.5.5 Demobilization

The following are requirements for the demobilization upon completion of on-site remediation activities:

- The Contractor will remove all subsurface infrastructure furnished or installed as part of the work. The Contractor will abandon all borings and subsurface system infrastructure by cutting off subsurface structures a minimum of two feet bg and grouting the infrastructure in place. System infrastructure constructed without structural casing material will be abandoned by grouting in place. Contractor will be responsible for coordinating transport and disposal of soil cuttings. Contractor will remove the treatment components and all related equipment, materials, and waste from the site, and any portion of the site altered or damaged by the work will be restored to the original condition, to the extent practicable, at the completion of remediation.

- The Contractor will decontaminate any field, testing, laboratory, or other equipment that becomes contaminated by known or suspected hazardous materials or other regulated contaminants at the site and will properly dispose of any residual contaminants offsite.

2.5.6 General Project Considerations

Beginning with the Notice to Proceed, the Contractor will submit weekly progress reports to the City and TriMedia on the actual progress of the work and updated schedules, as well as copies of all correspondence and other materials delivered to or received from regulatory authorities, utilities, and any third parties.

- Under no circumstances will Change Orders include, and the Contractor will be solely responsible for, the cost arising from the following:

  - The Contractor will be responsible for additional costs that are a result of the Contractor's activities that are not in compliance with federal, state, and local regulation, including but not limited to the treatment, storage, disposal, and handling of contaminated media and hazardous waste that were current as of the completion date of the design. In no event will the Contractor be deemed the owner or generator of any waste generated by this project, except for spills and releases caused by the Contractor or Subcontractors.

2.6 Work Not Included

- Disposal of general garbage, trash, and solid waste generated during normal execution

of the work will be supplied by others. Disposal of general trash will be minimized to the extent practicable through Contractor sorting and diversion of all materials that can be recycled or reused.

- The transportation and disposal of solid and liquid waste generated by Contractor site activities will be supplied by others. The Contractor will estimate the quantity of all waste to be generated on the Bid Form.

- The Contractor will remain responsible for the decontamination, cleaning, or demolition of any temporary storage vessels mobilized to the site for remediation implementation or containerization of decontamination wastes.

- Waste characterization for materials excavated or collected during remediation activity operation, maintenance, or demolition, including debris, soil, sediment, and liquids, will be provided by others. The Contractor will estimate the quantity of all waste to be generated on the Bid Form.

2.7 Work Included

The Bid Items listed in this section and presented in the Bid Schedule constitute all items to be specifically paid under this Professional Services Contract.

Incidental Work Items: A general description of work to be performed under this contract is provided by the Work Summary and Bid Items listed herein. However, this Invitation to Bid is not to be misconstrued by the Bidder as being a complete description of all work necessary to implement the work at the site. The Bidder is responsible for reading all portions of this Invitation to Bid and for including all costs for incidental items required to complete construction tasks, regardless of whether an incidental item or task is specifically referenced in the general description of the Bid Item.

Under each applicable pay item, incidental items include, but are not limited to, furnishing adequate and competent labor; participation in preconstruction meeting, safety meetings, project planning and progress meetings, and a project closeout meeting; protection of utilities not otherwise directed to be replaced or abandoned; H&S and PPE; signs; all survey work, including that required for system component layout (horizontal and vertical controls) and to record “as-built” locations and elevations of all installed work; site supervision and supervision of and coordination with Subcontractors; coordination with regulators during onsite inspections (if necessary); weather delays; and site cleanup and trash removal. Submittals incidental to the work include material/product specifications, technical data, sample calculations, certifications, warranties, equipment manuals/procedures, test results, shop drawings, and record drawings. Incidental work items also include the supply, operation, and maintenance of the following:

- All equipment, tools, supplies, and materials

- Remedial work zones
- Temporary office space, if applicable
- Temporary construction fence with that is compatible with Contractor's operations
- Temporary sanitary facilities
- Temporary safety shower(s) and eyewash station(s) that adhere to placement and construction standards defined by American National Standards Institute 358.1-2009
- Decontamination pad
- Traffic control measures
- Temporary utilities
- All other temporary facilities needed to accomplish the work

The construction and removal of the bulleted items above are covered under Mobilization and Demobilization Bid Items, respectively.

2.7.1 Bid Form Item Descriptions

Bid Item 1.0 - Treatment Design

Description
Work for this Bid Item includes the preparation and submittal of design drawings, calculations, and supporting text for the basis of design document that will be prepared by TriMedia. The Contractor's performance of work on this project may require acquisition of license(s) to apply processes that may be under patents by their inventors. TriMedia does not require the use of any specific patent(s) or license(s) as a condition of satisfactory performance of the work. The Contractor will determine the applicability of any and all patents to the Contractor's proposed remedy and will obtain any licenses required.

The Contractor will provide copies of any required licenses to TriMedia prior to final design completion. The Contractor will also identify and pay applicable fees, royalties, and other costs associated with patents applicable to the proposed technologies applied and will provide certification to TriMedia that applicable patent fees, licensing fees, and royalties have been paid. At no time will the Contractor knowingly infringe on patents applicable to the work described herein.

At a minimum, the design package prepared will include, but is not limited to, a treatment approach narrative, a site plan, a process flow diagram, a process and instrumentation diagram, and construction details of subsurface system components. If supplemental pre-design sampling or testing is required to support the Contractor's technical approach to treatment design, the specific data requirements will be identified in the Contractor's proposal. The Contractor will include all costs for sample collection and testing necessary to develop and finalize the treatment design.

Measurement
This Bid Item will be measured on a firm-fixed-price basis.

Payment
Payment as per the total value listed for this Bid Item on the Bid Form will be made upon review and acceptance of the work by the City. Progress payments will be made as described in the Contract based upon estimated percent complete as determined by TriMedia.

Bid Item 2.0 - Work Plans, Schedules, and Permits or Permit Equivalents

Description
Work for this Bid Item includes the preparation and submittal of work plans, schedules, and all supporting documents identified under Project Submittals (Section 5.2). Work plans and schedules are expected to include, if relevant, but are not limited to, the following:

- Project Work Plan
- Contractor Quality Control Plan,
- Site-Specific HASP,
- SESC Plan,
- Operations and Maintenance Plan
- Schedule, including identification of critical path or long lead procurement requirements

TriMedia will lead the effort to obtain permit equivalents for air and water discharges. This Bid Item will also include Contractor support to TriMedia in identification, preparation, and submittal of all related permits required (or permit equivalencies) to complete the work. The Contractor will support TriMedia with coordinating the review of permit applications and for allocating sufficient time for such review and approval by TriMedia, EPA, City of Marquette, and other relevant stakeholders.

Measurement
This Bid Item will be measured on a firm-fixed-price basis.

Payment
Payment as per the total value listed for this Bid Item on the Bid Form will be made upon review and acceptance of the work by TriMedia Progress payments will be made as described in the Professional Services Contract based upon estimated percent complete as determined by TriMedia.

Bid Item 2.0 - Mobilization

Description
Work for this Bid Item includes mobilization of all resources necessary, including personnel,

equipment, materials and temporary facilities for work execution. The Contractor will be responsible for establishing temporary onsite sanitary and safety-related wash systems for providing the office/trailer space with electrical power and communications, as appropriate.

Measurement
This Bid Item will be measured on a firm-fixed-price basis.

Payment
Payment as per the total value listed for this Bid Item on the Bid Form will be made upon review and acceptance of the work by TriMedia Progress payments will be made as described in the Professional Services Contract based upon estimated percent complete as determined by TriMedia.

Bid Item 3.0 - Site Controls

Description
The Contractor will establish designated areas for equipment/material storage areas (i.e., laydown areas), waste staging, and remediation-derived-waste management as needed. The Contractor will connect applicable equipment to utility services and establish control zones to maintain site security, safety, and worker protection measures as stipulated by the HASP.

Measurement
This Bid Item will be measured on a firm-fixed-price basis.

Payment
P Payment as per the total value listed for this Bid Item on the Bid Form will be made upon review and acceptance of the work by TriMedia Progress payments will be made as described in the Professional Services Contract based upon estimated percent complete as determined by TriMedia.

Bid Item 4.0 - Remediation Activities

Description
This Bid Item includes the Contractor cost to perform bench-, pilot-, and full-scale remediation activities necessary to safely and efficiently remediate groundwater as means to reduce contaminant concentration below applicable Mixing Zone-Based GSI Criteria.

Measurement
This Bid Item will be measured on a firm-fixed-price basis.

Payment
Payment as per the total value listed for this Bid Item on the Bid Form will be made upon

review and acceptance of the work by TriMedia Progress payments will be made as described in the Professional Services Contract based upon estimated percent complete as determined by TriMedia.

Bid Item 5.0—Restoration: Surface

Description

Work for this Bid Item includes supply of equipment, labor, and materials required by the Subcontractor to restore the surface of the site to pre-existing conditions. The Contractor will decontaminate all non-disposable equipment with a portable pressure washer or steam cleaner prior to removal from the site.

Decontamination water will be containerized for disposal in 55-gallon drums or other appropriate containers (as approved) by the Contractor. Transport and disposal of containerized decontamination water will be provided by others; Bidders will include the projected volume of water generated by decontamination activities but not the disposal costs in the proposal.

The Contractor will remove all surface infrastructure furnished, installed, or mobilized to the site, including the equipment pad and thermal/vapor cap, if applicable. The Contractor will repair any damage caused by the Contractor to site facilities or improvements.

Measurement

This Bid Item will be measured on a firm-fixed-price basis.

Payment

Payment as per the total value listed for this Bid Item on the Bid Form will be made upon review and acceptance of the work by TriMedia Progress payments will be made as described in the Professional Services Contract based upon estimated percent complete as determined by TriMedia.

Bid Item 5.1—Restoration: Subsurface

Description

Work for this Bid Item includes supply of equipment, labor, and materials required by the Contractor to restore the subsurface to pre-existing conditions. Once treatment activities are completed, the Contractor will decommission and remove from the site all treatment equipment furnished and installed by the Contractor.

The Contractor will remove all subsurface infrastructure furnished or installed for treatment activities. The Contractor will abandon all borings and subsurface system infrastructure by cutting off subsurface structures a minimum of 2 feet bg and grouting the infrastructure in place. System infrastructure constructed without structural casing material will be

abandoned by grouting in place. The Contractor will be responsible for coordinating transport and disposal of soil cuttings and will include these costs in the proposal.

Regardless of abandonment method used, the Contractor will grout the boreholes to ground surface with neat cement grout. All abandonment work will be conducted by competent personnel and under the observation of, and to the satisfaction of, the City and TriMedia.

Measurement
This Bid Item will be measured on a firm-fixed-price basis.

Payment
Payment as per the total value listed for this Bid Item on the Bid Form will be made upon review and acceptance of the work by TriMedia Progress payments will be made as described in the Professional Services Contract based upon estimated percent complete as determined by TriMedia.

Bid Item 6.0 - Demobilization

Description
Work for this Bid Item includes the removal and transport of all equipment, tools, supplies, materials, and personnel from the site upon completion of the work. This Bid Item also includes removal of all temporary facilities and controls required for completion of the work. Temporary facilities and controls include, but are not limited to, the Contractor separate temporary onsite office/trailer space and temporary power; onsite sanitary/shower and other temporary utilities; Subcontractor equipment/material storage areas (i.e., laydown areas); and water storage facilities.

Measurement
This Bid Item will be measured on a firm-fixed-price basis.

Payment
Payment as per the total value listed for this Bid Item on the Bid Form will be made upon review and acceptance of the work by TriMedia Progress payments will be made as described in the Professional Services Contract based upon estimated percent complete as determined by TriMedia.

Bid Item 7.0 - Reporting

Description
To document completion of the defined treatment objective, the Contractor will prepare and submit a final report detailing remediation activities completed at the site. The final report will include a description of work completed, document project milestones and summarize

process and analytical data collected by the Contractor during performance of the scope of work. The final report is intended to chronicle corrective action performed from start to finish, including construction, operation, site restoration, and demobilization activities.

Measurement
This Bid Item will be measured on a firm-fixed-price basis.

Payment
Payment as per the total value listed for this Bid Item on the Bid Form will be made upon review and acceptance of the work by TriMedia Progress payments will be made as described in the Professional Services Contract based upon estimated percent complete as determined by TriMedia.

2.8 Value-Added Contributions

Bidders are encouraged to develop, prepare, and submit proposals to use materials, equipment, or methods that differ from those specified in the Bid Documents, if, in the Bidder's opinion, it would improve cost efficiencies in remediation activities, as specified herein. Strategies to carry out the work under contract conditions different from those specified in the Bid Documents, in the form of a value-added contributions to the remediation approach, are also of interest to the City.

Value-added contributions are intended to identify methods for performing contract requirements more economically. Contributions must offer considerable opportunities for savings while being consistent with the functional requirements of the Bid Documents. Bidder participation in the identification of value-added contributions is voluntary; participation if elected must include the following:

- Preparation of a Base Bid consistent with the exact requirements of this Invitation to Bid.
- Identification of value-added contributions, the basis for efficiency improvement (such as different materials, equipment, methods, or conditions), and supporting discussion, which includes the following:

  – A description of the difference between the existing Contract requirement and the proposed requirement and the advantages or disadvantages of each, including any objective test data.
  – A list of the Contract requirements that must be changed, including Specification changes.
  – A description and estimate of benefits or cost efficiencies gained if TriMedia elects to implement Bidder value-added consideration(s).
  – Any actions or scheduling that must be implemented in order to achieve maximum cost reduction related to the Value Engineering Change Proposal.

The City may accept or reject in whole or in part any value-added contribution proposed, without explanation or consideration, at the City's discretion. Additionally, value-added changes proposed that result in less than $10,000.00 savings will not be considered.

Figures

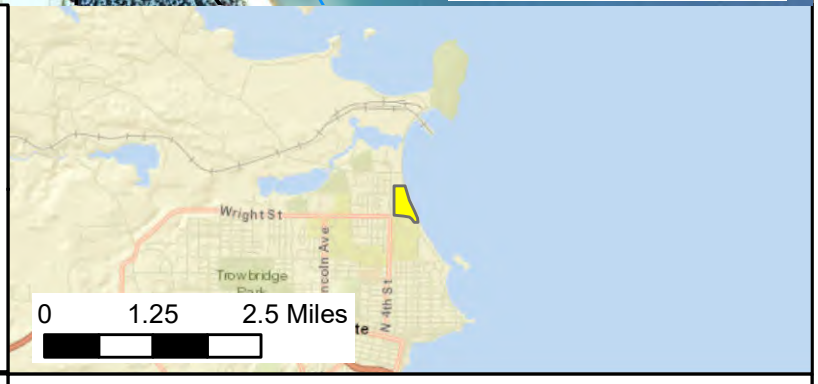


T48N, R25W
Sec 11 & 14
Marquette County
Marquette
Michigan

Legend

- Former Cliffs-Dow Plant Property
- Project Site

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TRIMEDIA ENVIRONMENTAL & ENGINEERING

Former Cliffs - Dow Site
Marquette, Michigan

PROJECT: 99-059	CHK'D: RJW
DGN: RJW	APP'D RJW
DWN: KGK	DATE: 11/9/2020

Figure 1
Site Location



FIGURE NUMBER	2
SHEET TITLE:	Monitoring Well Locations
TRIMEDIA JOB NUMBER	99-059

DESIGNED:	RJW
DRAWN:	KGK
CHECKED:	RJW
APPROVED:	RJW

DATE	DESCRIPTION:	ISSUED:

City of Marquette
Former Cliffs - Dow Site
Monitoring Well Locations
Marquette, Michigan

TRIMEDIA ENVIRONMENTAL & ENGINEERING

Document Path: P:\1999\99-059 City of Marquette\GIS\MXD\8-2-2022\Fig-2.mxd



FIGURE NUMBER	3A	
A-Series Wells Groundwater Contours (December 4, 2023)	SHEET TITLE:	
99-059	JOB NUMBER	TRIMEDIA
DESIGNED: RJW DRAWN: KGK CHECKED: HHA APPROVED: RJW	DATE	DESCRIPTION: ISSUED:

City of Marquette
Former Cliffs - Dow Site
Groundwater Contours
Marquette, Michigan

TRIMEDIA ENVIRONMENTAL & ENGINEERING

Document Path: P:\1999\99-059 City of Marquette\GIS\MXD\12192023\Fig-3A.mxd



City of Marquette, MI
Page 375 of 902

FIGURE NUMBER	3B
	B-Series Wells Groundwater Contours (December 4, 2023)
SHEET TITLE:	
TRIMEDIA JOB NUMBER	99-059

DESIGNED:	RJW		
DRAWN:	KGK		
CHECKED:	HHA		
APPROVED:	RJW		
DATE	DESCRIPTION:	ISSUED:	

City of Marquette
Former Cliffs - Dow Site
Groundwater Contours
Marquette, Michigan

TRIMEDIA ENVIRONMENTAL & ENGINEERING

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City of Marquette, MI

FIGURE NUMBER	3C
	C-Series Wells Groundwater Contours (December 4, 2023)
SHEET TITLE:	
TRIMEDIA JOB NUMBER	99-059

DESIGNED:	RJW		
DRAWN:	KGK		
CHECKED:	HHA		
APPROVED:	RJW		
DATE	DESCRIPTION:	ISSUED:	

City of Marquette
Former Cliffs - Dow Site
Groundwater Contours
Marquette, Michigan

TRIMEDIA ENVIRONMENTAL & ENGINEERING

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TRIMEDIA
ENVIRONMENTAL & ENGINEERING

City of Marquette
Former Cliffs - Dow Site
Groundwater Plume
Marquette, Michigan

DATE	1/19/2023
DESIGNED:	RJW
DRAWN:	DJF
CHECKED:	RJW
APPROVED:	RJW

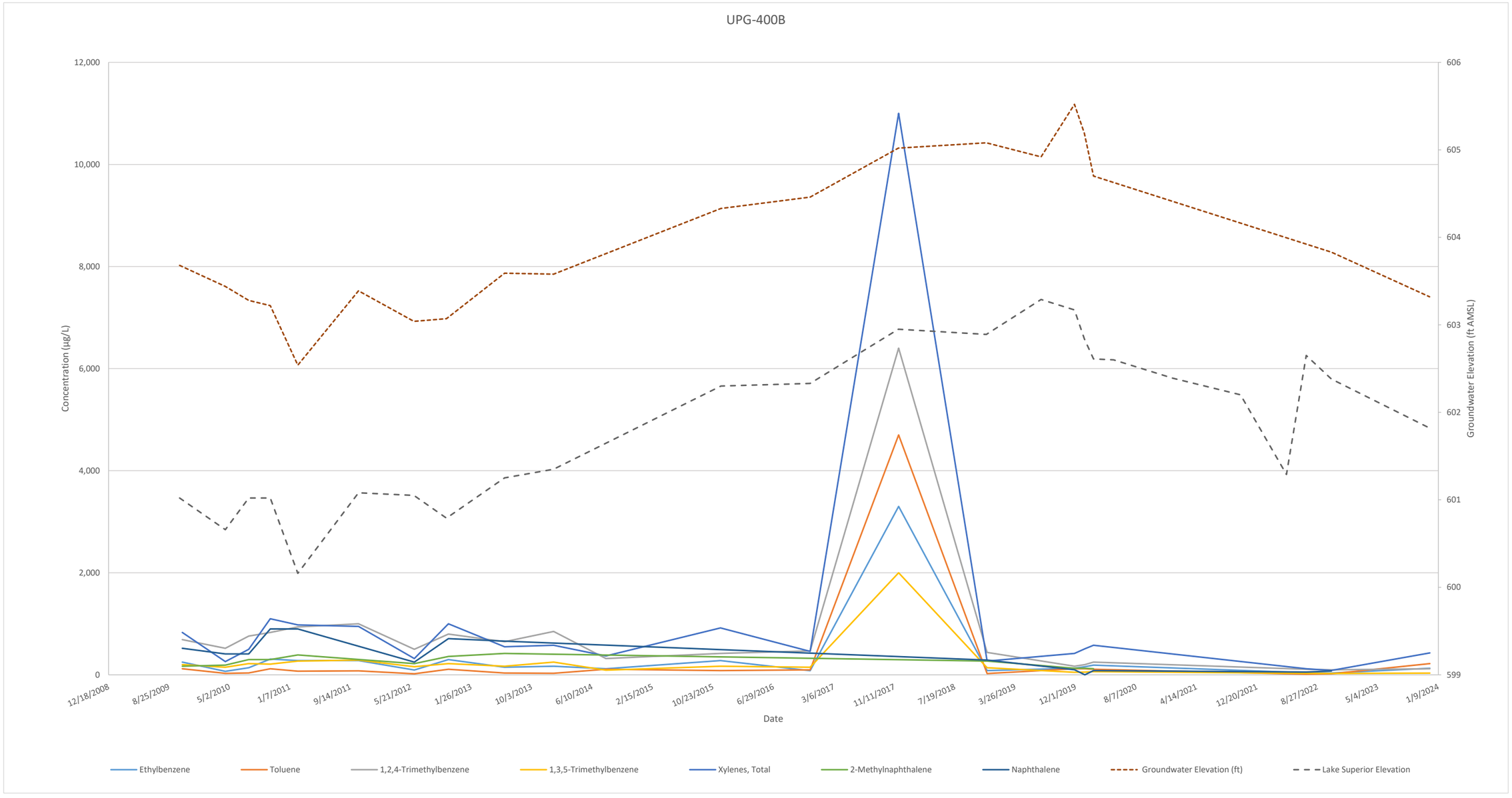
TRIMEDIA JOB NUMBER
99-059

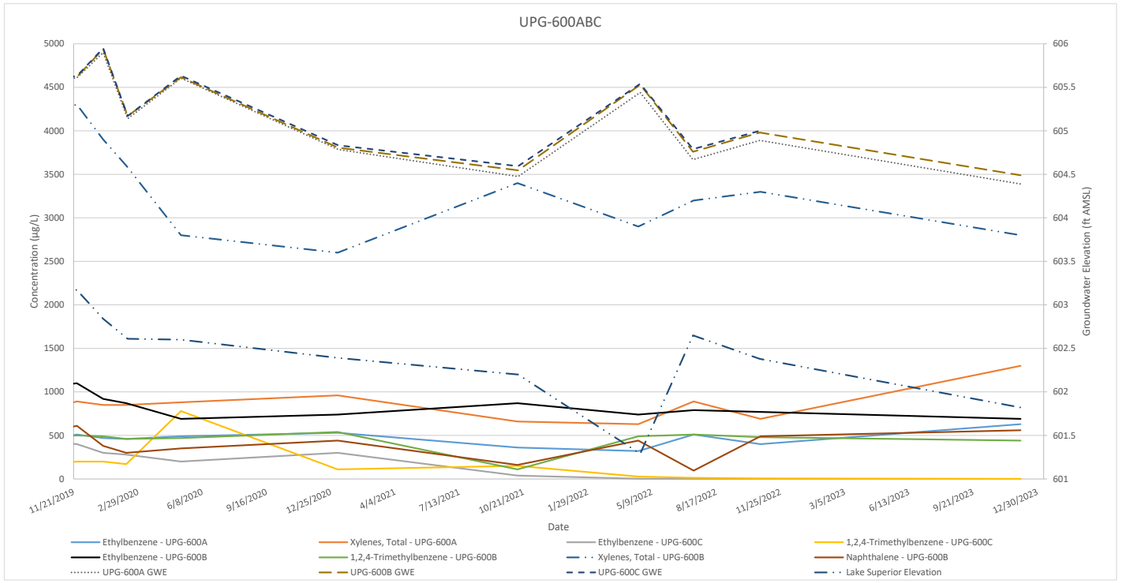
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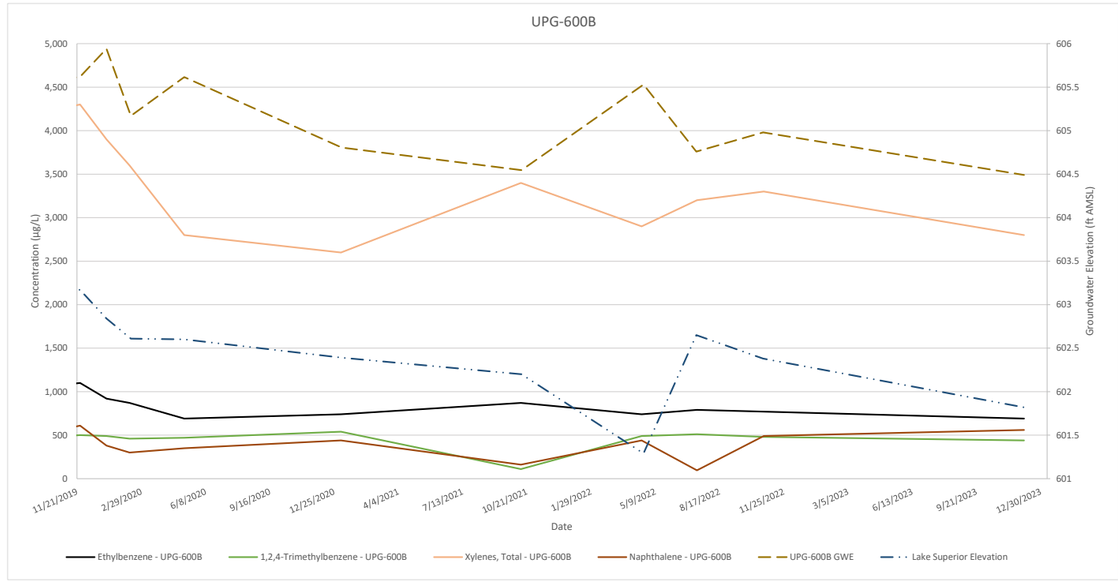
Estimated Extent of Dissolved Phase Groundwater Plume

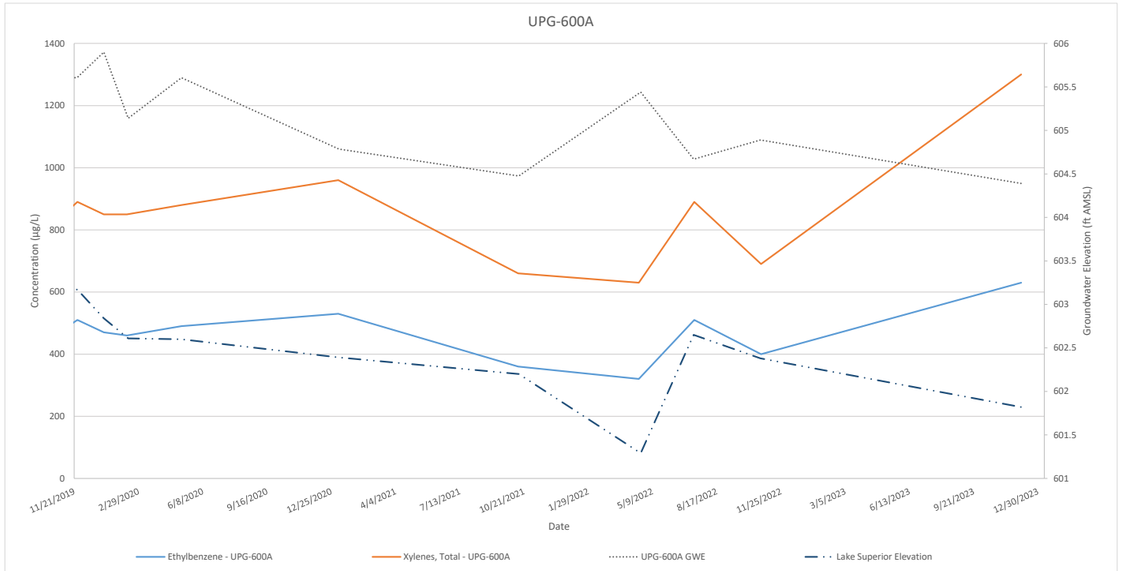
FIGURE NUMBER:
4

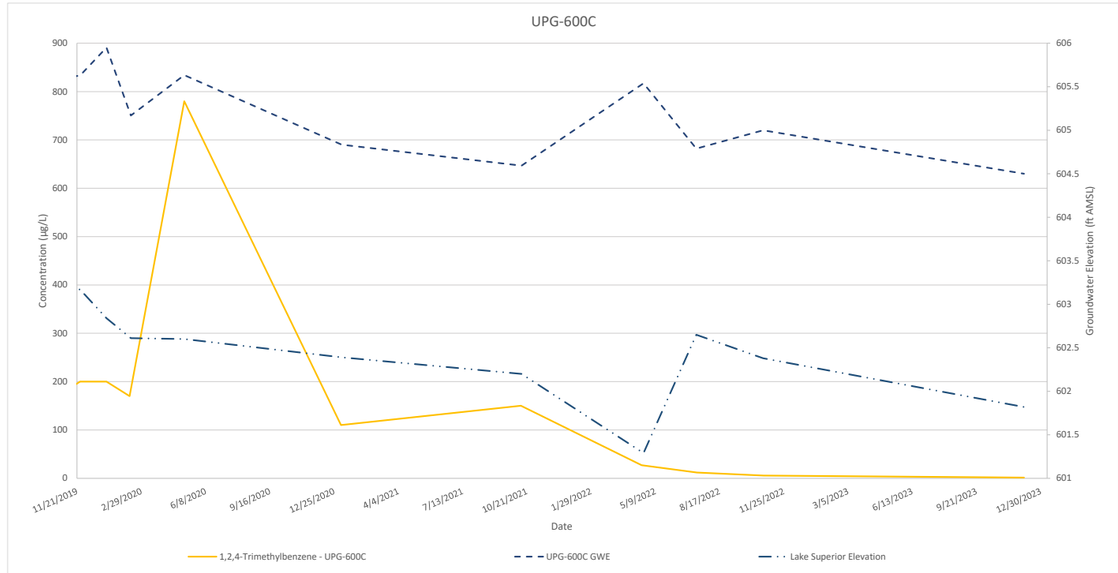
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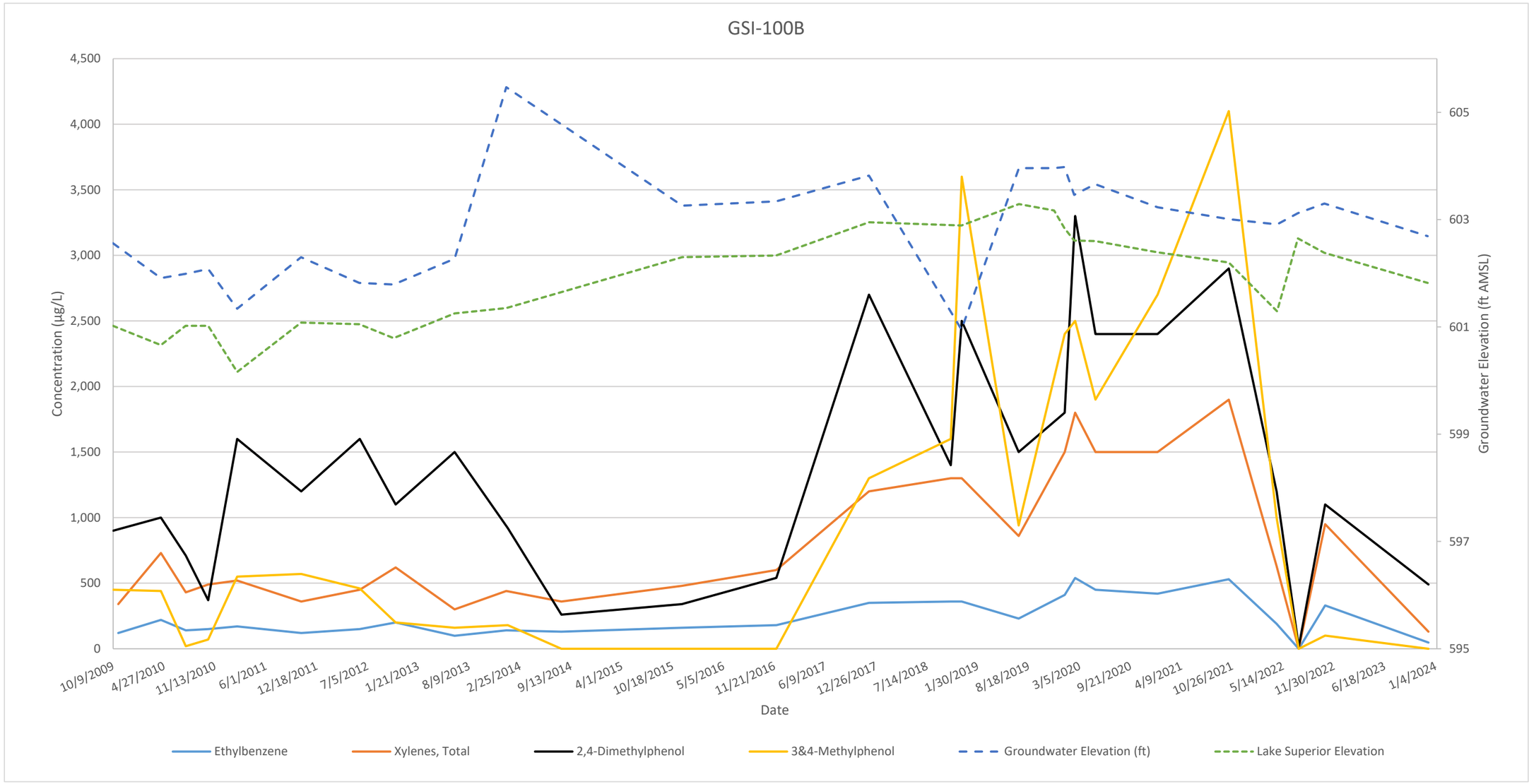

UPG-400B
12,000
10,000
8,000
6,000
4,000
2,000
0
Concentration (µg/L)
606
605
604
603
602
601
600
599
Groundwater Elevation (ft AMSL)
12/18/2008
8/25/2009
5/2/2010
1/7/2011
9/14/2011
5/21/2012
1/26/2013
10/3/2013
6/10/2014
2/15/2015
10/23/2015
6/29/2016
3/6/2017
11/11/2017
7/19/2018
3/26/2019
12/1/2019
8/7/2020
4/14/2021
12/20/2021
8/27/2022
5/4/2023
1/9/2024
Date
Ethylbenzene
Toluene
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
Xylenes, Total
2-Methylnaphthalene
Naphthalene
Groundwater Elevation (ft)
Lake Superior Elevation


UPG-600ABC
Concentration (µg/L)
Groundwater Elevation (ft AMSL)
Date
Ethylbenzene - UPG-600A
Xylenes, Total - UPG-600A
Ethylbenzene - UPG-600C
1,2,4-Trimethylbenzene - UPG-600C
Ethylbenzene - UPG-600B
1,2,4-Trimethylbenzene - UPG-600B
Xylenes, Total - UPG-600B
Naphthalene - UPG-600B
UPG-600A GWE
UPG-600B GWE
UPG-600C GWE
Lake Superior Elevation

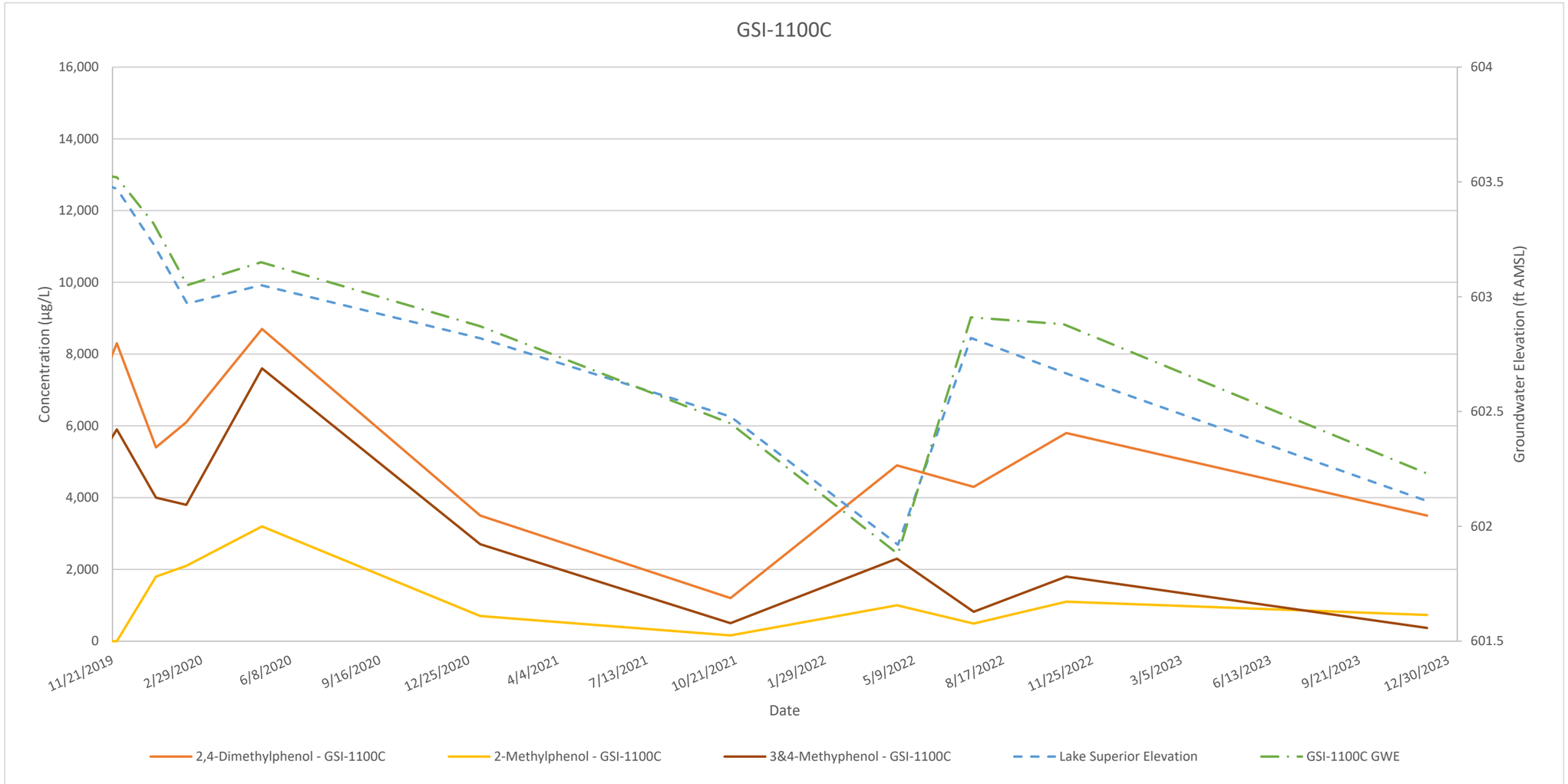

UPG-600B
Concentration (µg/L)
Groundwater Elevation (ft AMSL)
Date
Ethylbenzene - UPG-600B
1,2,4-Trimethylbenzene - UPG-600B
Xylenes, Total - UPG-600B
Naphthalene - UPG-600B
UPG-600B GWE
Lake Superior Elevation

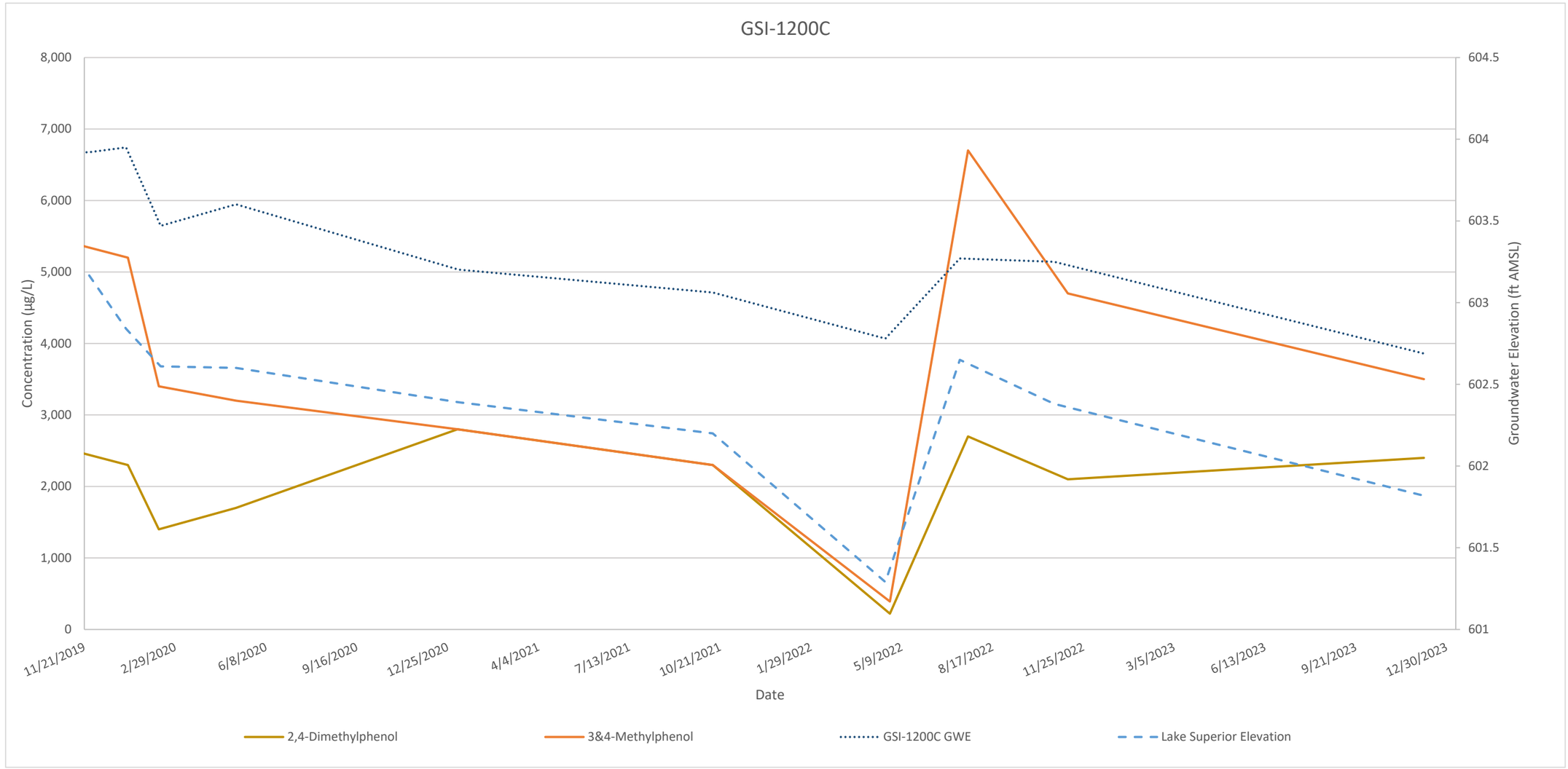

UPG-600A
Concentration (µg/L)
Groundwater Elevation (ft AMSL)
Date
Ethylbenzene - UPG-600A
Xylenes, Total - UPG-600A
UPG-600A GWE
Lake Superior Elevation

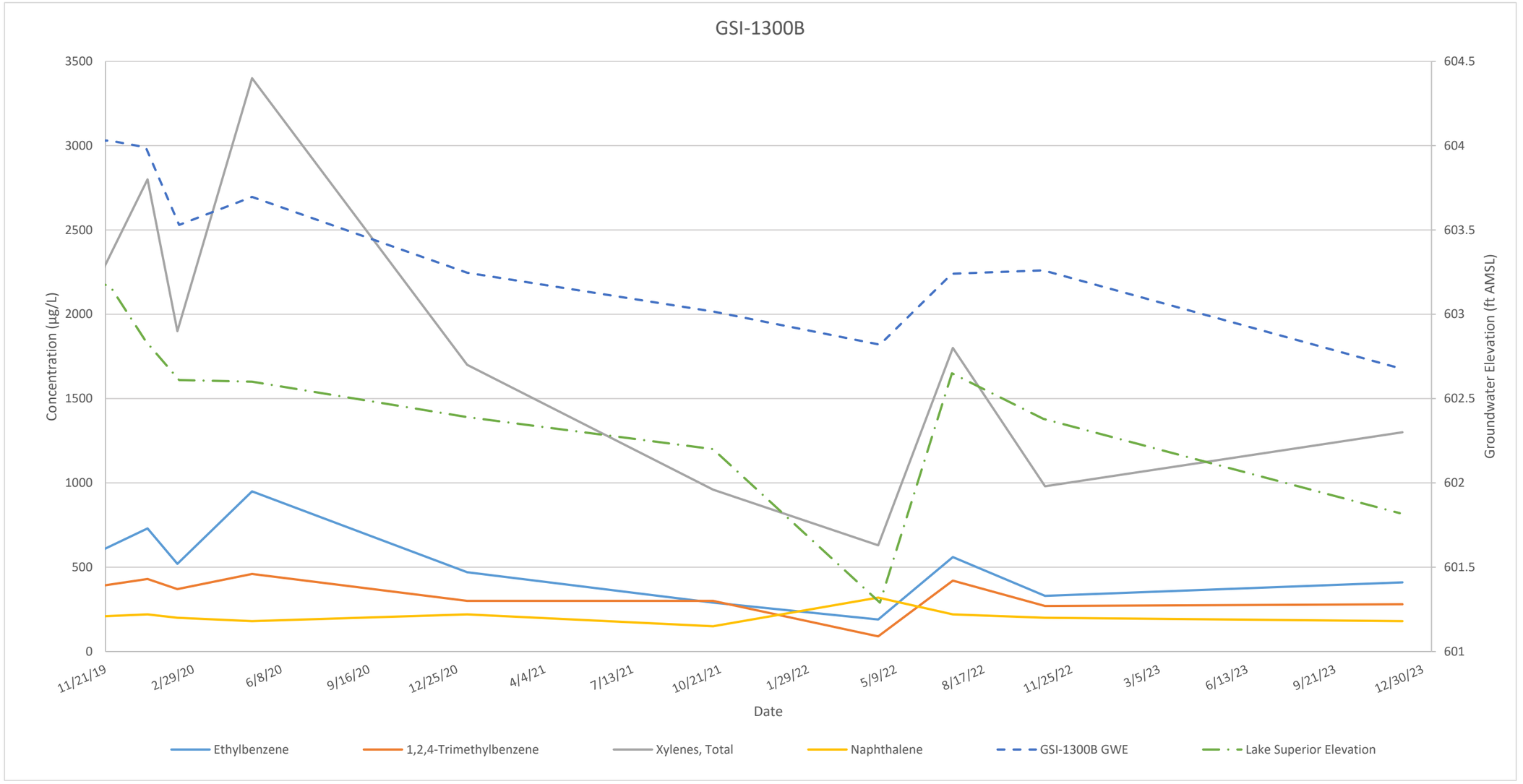

UPG-600C
Concentration (µg/L)
Groundwater Elevation (ft AMSL)
Date
1,2,4-Trimethylbenzene - UPG-600C
UPG-600C GWE
Lake Superior Elevation

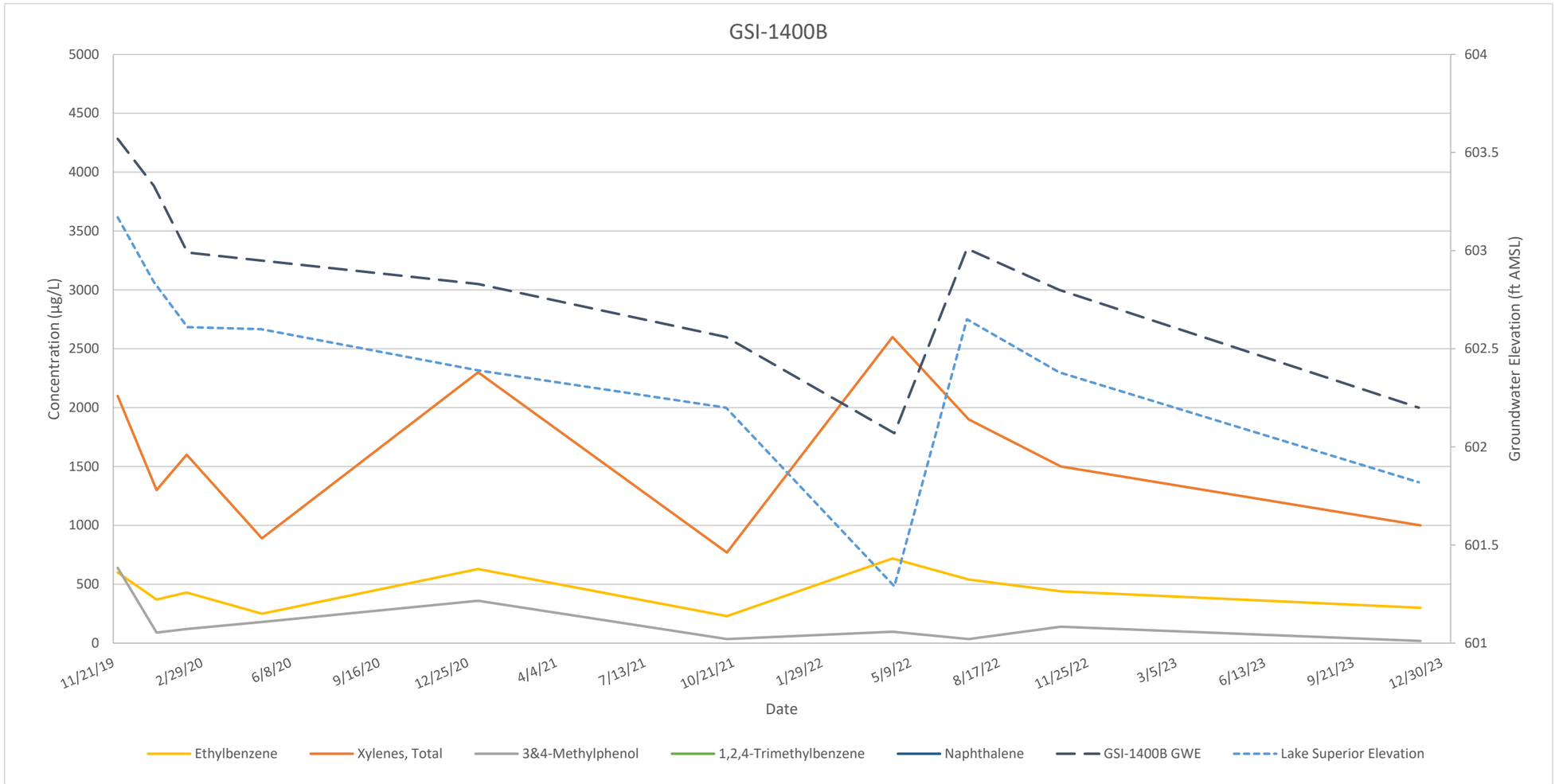

GSI-100B
Concentration (µg/L)
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
Groundwater Elevation (ft AMSL)
605
603
601
599
597
595
10/9/2009
4/27/2010
11/13/2010
6/1/2011
12/18/2011
7/5/2012
1/21/2013
8/9/2013
2/25/2014
9/13/2014
4/1/2015
10/18/2015
5/5/2016
11/21/2016
6/9/2017
12/26/2017
7/14/2018
1/30/2019
8/18/2019
3/5/2020
9/21/2020
4/9/2021
10/26/2021
5/14/2022
11/30/2022
6/18/2023
1/4/2024
Date
Ethylbenzene
Xylenes, Total
2,4-Dimethylphenol
3&4-Methylphenol
Groundwater Elevation (ft)
Lake Superior Elevation


GSI-1100B
Concentration (µg/L)
Groundwater Elevation (ft AMSL)
Date
3000
2500
2000
1500
1000
500
0
604
603.5
603
602.5
602
601.5
601
600.5
600
11/21/2019
2/29/2020
6/8/2020
9/16/2020
12/25/2020
4/4/2021
7/13/2021
10/21/2021
1/29/2022
5/9/2022
8/17/2022
11/25/2022
3/5/2023
6/13/2023
9/21/2023
12/30/2023
Naphthalene - GSI-1100B
3&4-Methylphenol - GSI-1100B
Lake Superior Elevation
GSI-1100B GWE


GSI-1100C
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
Concentration (µg/L)
604
603.5
603
602.5
602
601.5
Groundwater Elevation (ft AMSL)
11/21/2019
2/29/2020
6/8/2020
9/16/2020
12/25/2020
4/4/2021
7/13/2021
10/21/2021
1/29/2022
5/9/2022
8/17/2022
11/25/2022
3/5/2023
6/13/2023
9/21/2023
12/30/2023
Date
2,4-Dimethylphenol - GSI-1100C
2-Methylphenol - GSI-1100C
3&4-Methyphenol - GSI-1100C
Lake Superior Elevation
GSI-1100C GWE


GSI-1200C
Concentration (µg/L)
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
Groundwater Elevation (ft AMSL)
604.5
604
603.5
603
602.5
602
601.5
601
11/21/2019
2/29/2020
6/8/2020
9/16/2020
12/25/2020
4/4/2021
7/13/2021
10/21/2021
1/29/2022
5/9/2022
8/17/2022
11/25/2022
3/5/2023
6/13/2023
9/21/2023
12/30/2023
Date
2,4-Dimethylphenol
3&4-Methylphenol
GSI-1200C GWE
Lake Superior Elevation


GSI-1300B
Concentration (µg/L)
Groundwater Elevation (ft AMSL)
3500
3000
2500
2000
1500
1000
500
0
604.5
604
603.5
603
602.5
602
601.5
601
11/21/19
2/29/20
6/8/20
9/16/20
12/25/20
4/4/21
7/13/21
10/21/21
1/29/22
5/9/22
8/17/22
11/25/22
3/5/23
6/13/23
9/21/23
12/30/23
Date
Ethylbenzene
1,2,4-Trimethylbenzene
Xylenes, Total
Naphthalene
GSI-1300B GWE
Lake Superior Elevation


GSI-1400B
Concentration (µg/L)
Groundwater Elevation (ft AMSL)
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
604
603.5
603
602.5
602
601.5
601
11/21/19
2/29/20
6/8/20
9/16/20
12/25/20
4/4/21
7/13/21
10/21/21
1/29/22
5/9/22
8/17/22
11/25/22
3/5/23
6/13/23
9/21/23
12/30/23
Date
Ethylbenzene
Xylenes, Total
3&4-Methylphenol
1,2,4-Trimethylbenzene
Naphthalene
GSI-1400B GWE
Lake Superior Elevation

Appendix A

Professional Services Agreement

PROFESSIONAL SERVICES CONTRACT

THIS AGREEMENT, made this _____ between the City of Marquette, hereinafter called the "City" and a Michigan professional service corporation, hereinafter called "Consultant".

WITNESSETH: That for and in consideration of the payments and Agreements hereinafter mentioned the parties hereby agree as follows:

Article 1

Project Name

The name of the Project shall be .

Article 2

Scope of the Work

Consultant shall furnish all the material, services, supplies, tools, equipment, labor and other engineering services necessary to perform work as described in the Consultant's proposal to the City of Marquette dated (attached as Exhibit A).

Article 3

Time of Completion

The completion date of this project is _

Article 4

Terms and Conditions

Consultant shall perform the services outlined in this Agreement for the stated fee arrangement.

ACCESS TO SITE:
City will arrange and provide access to each site upon which it will be necessary for Consultant to perform its work unless otherwise stated in the proposal. In the event work is required on any site not owned by the City, City represents and warrants to Consultant that City has obtained all necessary permission and authority, in writing, for Consultant to enter upon the site and conduct its work. City shall, upon request, provide Consultant with evidence of such permission as well as acceptance of the other terms and conditions set forth herein by the owner(s) and tenant(s), if applicable, of such site(s) in a form acceptable to Consultant, which Consultant also agrees to abide by. Any work performed by Consultant with respect to obtaining permission to enter upon and do work on the lands of others, as well as any work performed by Consultant pursuant to this Agreement, shall be deemed as being done on

behalf of City. Consultant shall take reasonable measures and precautions to minimize damage to each site and any improvements located thereon as the result of its work and the use of its equipment and shall reasonably restore the site to its prior condition.

FEE:
Services and reimbursable costs will be billed on a monthly basis as per the proposal requirements, but the total amount to be paid by City for such services and costs shall not exceed $__. Changes to the cost are only valid if reduced to writing, signed by the parties.

BILLINGS/PAYMENTS:
Consultant shall invoice for services rendered and reimbursable costs incurred on a monthly basis. Each invoice shall be due and payable within sixty (60) days of the date of the invoice. Invoices over sixty (60) days past due may be charged interest on the unpaid balance at the highest lawful rate as allowed under Michigan Law. Consultant may, after ten (10) days' written notice to the City, suspend performance of services until all past due amounts are paid.

INDEMNITY:
Consultant agrees, to the fullest extent permitted by law, to indemnify and hold harmless the City and its agents, employees, office holders, directors, partners, affiliates, and successors from and against any and all damages, liabilities, claims, causes of action, lawsuits, or expenses (including reasonable attorney fees and costs of defense) arising from (a) Consultant's breach or failure to comply with this Professional Services Contract, including any default or breach of warranty, or (b) personal injury or death to any person (including employees of Consultant or its subcontractors) or property damage (including claims for loss of use), which arise out of or result from the performance of professional services under this Agreement and those of consultants, sub-consultants, contractors, sub-contractors, agents, employees or others that contract with the Consultant regarding this contract or anyone for whom Consultant is legally liable, or the operations or acts of commission or omission of Consultant, including those of its subcontractors, unless the injuries or damages are caused by the sole negligence of the party seeking to be indemnified.

FORCE MAJEURE:
No failure or delay in performance of this Contract, by either party, shall be deemed to be a breach thereof when such failure or delay is caused by a force majeure event including, but not limited to, any Act of God, strikes, lockouts, wars, acts of terrorism, riots, epidemics, explosions, sabotage, breakage or accident to equipment, the binding order of any court or governmental authority, or any other cause, whether of the kind herein enumerated or otherwise, not within the control of a party. In the event of a dispute between the parties with regard to what constitutes a force majeure event, the City's reasonable determination shall be controlling.

INSURANCE:
Without limiting any of its obligations and liabilities, Consultant, at its own expense, shall purchase and maintain the minimum insurance specified below with companies duly licensed or otherwise approved by the State of Michigan, and with forms reasonably satisfactory to the City. Each insurer shall have a current A.M. Best Company, Inc. rating of not less than A-VII. Use of alternative insurers requires prior approval from the City.

A. General Clauses

1. **Additional Insured.** The insurance coverage, except Workers' Compensation and Professional Liability, required by this Contract, shall name the City, its agents, representatives, directors, officials, and employees, as additional insured, and shall specify that insurance afforded the Consultant shall be primary insurance, and that any self insured retention and/or insurance coverage carried by the City or its employees shall be excess coverage, and not contributory coverage to that provided by the Consultant.

2. **Coverage Term.** All insurance required herein shall be maintained in full force and effect until Services required to be performed under the terms of this Contract are satisfactorily completed and formally accepted; failure to do so may constitute a material breach of this Contract, at the sole discretion of the City.

3. **Primary Coverage.** The Consultant's insurance shall be primary insurance as respects City and any insurance or self insurance maintained by City shall be excess of the Consultant's insurance and shall not contribute to it.

4. **Claim Reporting.** Consultant shall not fail to comply with the claim reporting provisions of the policies or cause any breach of a policy warranty that would affect coverage afforded under the policy to protect City.

5. **Waiver.** The policies for Workers' Compensation and General Liability, shall contain a waiver of transfer rights of recovery (subrogation) against City, its agents, representatives, directors, officers, and employees for any claims arising out of the work of the Consultant.

6. **Deductible/Retention.** The policies may provide coverage which contains deductibles or self-insured retentions. Such deductible or self-insured retentions shall not be applicable with respect to the coverage provided to City under such policies. The Consultant shall be solely responsible for deductible or self-insured retentions and the City may require the Consultant to secure the payment of such deductible or self-insured retentions by a surety bond or an irrevocable and unconditional letter of credit.

7. **Policies and Endorsements.** City reserves the right to request and to receive, within ten (10) working days, information on any or all of the above policies or endorsements.

8. **Certificates of Insurance.** Prior to commencing services under this Contract, Consultant shall furnish City with Certificates of Insurance, or formal endorsements as required by the Contract, issued by Consultant's insurer(s), as evidence that policies providing the required coverages, conditions, and limits required by this Contract are in full force and effect. Such certificate shall identify this Contract by referencing the project name and/or project number and shall provide for not less than thirty (30) days advance written notice by Certified Mail of Cancellation or Termination.

9. **Sub-Consultants/Contractors.** Consultant shall include all sub-consultants and sub-contractors as insured under its policies or shall furnish separate certificates and endorsements for each sub-consultant and sub-contractor.

B. Workers' Compensation
The Consultant shall carry Workers' Compensation and Employer's Liability insurance coverage as required by law and deemed necessary for its own protection.

In case services are subcontracted, the Consultant will require the sub-consultant to provide Workers' Compensation and Employer's Liability to at least the same extent as provided by Consultant.

C. Automobile Liability
Commercial/Business Automobile Liability insurance with a combined single limit for bodily injury and property damages of not less than $1,000,000 each occurrence regarding any owned, hired, and non-owned vehicles assigned to or used in performance of the Consultant services.

D. Commercial General Liability
Commercial General Liability insurance with a combined single limit of not less than $1,000,000. The policy shall be primary and include coverage for bodily injury, property damage, personal injury, products, completed operations, and blanket contractual covering, but not limited to, the liability assumed under the indemnification provisions of this Contract.

In the event the general liability insurance policy is written on a "claims made" basis, coverage shall extend for two (2) years past completion and acceptance of the Services as evidenced by annual Certificates of Insurance.

E. Professional Liability
The Consultant retained by the City, to provide the engineering services required by the Contract will maintain Professional Liability insurance covering errors and omissions arising out of the services performed by the Consultant or any person employed by him, with an unimpaired limit of not less than $1,000,000 each claim. In the event the insurance policy is written on a "Claims made" basis, coverage shall extend for two (2) years past completion and acceptance of Services as evidence by annual Certificates of Insurance.

F. Property Coverage - Valuable Papers
Property coverage on all-risk, replacement cost, agreed amount form with Valuable Papers insurance sufficient to assure the restoration of any documents, memoranda, reports, or other similar data relating to the services of the Consultant used in the completion of this Contract.

INDEPENDENT CONSULTANT:
The relationship between the City and Consultant created under this Agreement is that of principal and independent contractor. Neither the terms of this Agreement nor the performance thereof is intended to directly or indirectly benefit any person or entity not a party hereto and/or such person or entity is not intended to be or shall be construed as being a third-party beneficiary of this Agreement unless specified by name herein or in an Amendment hereto, executed by a Consultant authorized representative.

SEVERABILITY/SECTION HEADINGS/SURVIVAL/WAIVER:
In the event that any provision herein shall be deemed invalid or unenforceable, the other provisions shall remain in full force and effect, and binding upon the parties hereto. The heading or title of a section

is provided for convenience and information and shall not serve to alter or affect the provisions included herein. All obligations arising prior to the termination of this Agreement and all provisions of this Agreement allocating responsibility or liability between the City and Consultant shall survive the completion of services and the termination of this Agreement. No waiver, discharge, or renunciation of any claim or right of Consultant arising out of breach of this Agreement by City shall be effective unless in writing signed by Consultant and supported by separate consideration.

OWNERSHIP OF DOCUMENTS:
All documents produced by the Consultant under this Agreement shall remain the property of the City and may be used by the City for any other endeavor without the written consent of the Consultant. Consultant shall provide City with a copy of all data, including but not limited to laboratory data, field notes, contact information, reports, and all other file documents, as soon as reasonably available or upon request. Consultant's failure to provide City with timely access to data shall constitute a material breach of this Agreement. Consultant shall provide to City any and all information available about the site at any time, upon request of the client. Consultant will meet with client representative to provide information on current status of the site conditions at City's request.

APPLICABLE LAWS:
Unless otherwise specified, the Agreement shall be governed by the laws of the State of Michigan and venue for any dispute will be in Marquette County, Michigan.

CONFIDENTIALITY:
Unless required by law or already in the public domain, and only upon providing 14 day advance notice to the City, Consultant shall not disclose to third parties the substance of any report, test or recommendation that it gives to the City in connection with the Services provided for in this Agreement; and, Consultant agrees to treat all maps, data, reports, and other information provided by the City relating to the Services as proprietary and confidential.

SUBCONTRACTS:
Consultant shall not subcontract all or any part of the services provided hereunder without the prior written approval of City. Such subcontracting shall not relieve Consultant of any of its obligations under this Agreement.

WAIVER:
A. No waiver of the terms, conditions and covenants of this Agreement shall be binding and effective unless the same shall be in writing signed by the parties.

B. A waiver of any breach of terms, conditions and covenants of this Agreement shall be for that one time only and shall not apply to any subsequent breach.

PURCHASING AGENT DESIGNATION AND AUTHORITY:
Mikael H. Kilpela is designated as Purchasing Agent of City and is authorized to order minor changes in the work not involving adjustment in the Contract Sum or Time of Completion and not inconsistent with the intent of the Contract Documents. Such changes will be affected by written order signed by the Purchasing Agent and shall be binding on the City and Consultant.

IN WITNESS WHEREOF, the parties have made and executed this Agreement the day and year first above written.

Signed this _____ day of _____, 20__.

OWNER
CITY OF MARQUETTE, OWNER

_____
Witness

_____
Jessica Hanley, Mayor

_____
Witness

_____
Kyle L. Whitney, Clerk

CONSULTANT

_____

_____

_____,

_____
Witness

By: _____

Its: _____

Address: _____

Telephone #: _____

APPROVED AS TO SUBSTANCE:

_____
Karen M. Kovacs
City Manager

APPROVED AS TO FORM:

_____
Suzanne C. Larsen
City Attorney

CITY OF MARQUETTE, MICHIGAN

CITY COMMISSION POLICY

Policy Number: **1999-02**	Revision Date: February 28, 2011
Date Adopted: July 12, 1999	
Department: Administrative	

SUBJECT: **PREVAILING WAGES FOR CITY OF MARQUETTE CONSTRUCTION PROJECTS**

PURPOSE: Prevailing wages, as provided by federal standards, be paid to mechanics and laborers working on major construction contracts for the City.

POLICY:
On July 12, 1999 the Marquette City Commission adopted a resolution to establish a prevailing wage policy for contracts over $50,000 with the policy having an effective date of January 1, 2000. On February 28, 2011, at the City Commission adopted a motion amending the policy to establish a prevailing wage for contracts over $65,000, with the policy having an effective date of March 1, 2011.

Appendix B

Bid Form

FOR INFORMATIONAL PURPOSES ONLY – NOT FOR BIDDING

BID FORM
In-Situ Remediation Services
Cliffs-Dow Brownfield Site
City of Marquette, Michigan

FIRM NAME and ADDRESS	TELEPHONE NUMBER and E-MAIL ADDRESS

BID SCHEDULE

Scope of work
This project involves the design and implementation of in-situ groundwater remediation services at the Former Cliffs-Dow site in Marquette, Michigan.

The Contractor will complete the Work and accept as full payment, for the Work items listed, the following Unit Prices and/or Item Bid Prices, as applicable:

Item No.	Item Description	Price (Bidder to write price in words)	Unit Price	Units	Bid Price
1.0	Treatment Design		$		$
2.0	Mobilization		$		$
3.0	Site Controls		$		$
4.0	Remediation Activities		$		$
5.0	Restoration – Surface		$		$
5.1	Restoration – Subsurface		$		$
6.0	Demobilization		$		$
7.0	Reporting		$		$

Not for Bidding

FOR INFORMATIONAL PURPOSES ONLY – NOT FOR BIDDING

BID FORM
In-Situ Remediation Services
Cliffs-Dow Brownfield Site
City of Marquette, Michigan

Addenda: Contractor acknowledges receipt of Addenda: No. _____ Dated: _____

Bid (Sum of Item Bid Prices for all Bid Items):

_____ Dollars
(Use words)

$_____

Contractor's Signature and Title **Date**

(sign) _____ _____

Witness' Signature **Date**

(sign) _____ _____

Not for Bidding

BID FORM
In-Situ Remediation Services
Cliffs-Dow Brownfield Site
City of Marquette, Michigan

LIST OF SUBCONTRACTORS

No subcontract, whether listed herein or later proposed, may be entered into without the written consent of the OWNER and CONSULTANT.

To OWNER/CONSULTANT:

The Bidder, _____, proposes to subcontract the following work items to the following parties (if no subcontracted work is proposed check NO SUBCONTRACT WORK below):

☐ NO SUBCONTRACT WORK

1) PORTION OF WORK:_____%
Amount of Subcontract: $_____
SUBCONTRACTOR Name:

SUBCONTRACTOR Representative:

Full Address:

2) PORTION OF WORK:_____%
Amount of Subcontract: $_____
SUBCONTRACTOR Name:

SUBCONTRACTOR Representative:

Full Address:

3) PORTION OF WORK:_____%
Amount of Subcontract: $_____
SUBCONTRACTOR Name:

SUBCONTRACTOR Representative:

Full Address:

Not for Bidding

Appendix C

Site Data Package

GROUNDWATER MONITORING SUMMARY REPORT JANUARY - DECEMBER 2024

Former Cliffs Dow Site
City of Marquette
Marquette County, Michigan

Prepared for:
City of Marquette
1100 Wright Street
Marquette, Michigan 49855

Date: March 26, 2025

TriMedia Project Number 99-059

A Native American Owned Small Business ISBEE Certified
TRIMEDIA ENVIRONMENTAL & ENGINEERING

GROUNDWATER MONITORING SUMMARY REPORT
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1.0 INTRODUCTION

TriMedia Environmental and Engineering Services, LLC (TriMedia) was retained by the City of Marquette (City) to provide professional environmental consulting services to assist with environmental compliance and monitoring activities at the Former Cliffs-Dow Plant Site ("Site") in the City of Marquette, Marquette County, Michigan.

TriMedia has developed this Groundwater Monitoring Report on behalf of the City to document groundwater monitoring activities at the Site. The objectives are to monitor and assess known groundwater contamination at the former Cliffs-Dow Plant Site under Part 201, Environmental Remediation, and Part 31, Water Resources Protection, of NREPA. Specifically, continued monitoring and possible additional actions pursuant to Part 201 are the result of periodic concentrations of select groundwater contaminants above Acute Mixing Zone-Based Groundwater-Surface Water Interface (GSI) Criteria detected at a portion of the current GSI compliance monitoring points.

Following groundwater and investigation activities conducted in late 2019, TriMedia completed additional hydrogeological and groundwater analytical data collection, exploratory borings to identify a possible confining layer or bedrock, collection of discrete interval groundwater samples, and the installation of additional alternate GSI monitoring points to further delineate Site groundwater impacts. The findings from these activities were included in reporting provided to Michigan Department of Environment, Great Lakes, and Energy (EGLE) in December 2020. Groundwater monitoring and analytical data collected in December 2024 is included in this report.

2.0 SITE BACKGROUND

2.1 SITE HISTORY AND CURRENT USE

In 1997 the City acquired approximately 78 acres of land located along Lakeshore Boulevard. The original 78-acre City-acquired Former Cliffs-Dow property has been separated into three parcels: (1) the southern 23 acres was transferred to Northern Michigan University in 1999; (2) the north nine acres is comprised of two commercial properties; and (3) the central 46 acres which is the former location of the majority of the plant process equipment and buildings and is currently owned by the City of Marquette. This project focuses on the central 46 acres, where recent efforts have focused on monitoring activities. Lake Superior (the receiving surface water body), and facility boundaries are shown on Figure 1, included in Appendix A.

This Site was a large portion of the former property of the Cliffs-Dow Plant which operated as a charcoal pig iron plant and then as a wood chemical plant between 1902 and 1969. The Cleveland-Cliffs Iron Company originally developed the area in 1902 for the purpose of manufacturing charcoal pig iron. The production of charcoal pig iron continued until 1930. Subsequently, the Cliffs-Dow Chemical Company was created in 1935 and wood processing

operations were installed in areas formerly occupied by the pig iron plant. Between 1935 and 1969, chemical production of acetic acid and methanol were the primary processes at the plant, with charcoal production taking a secondary role. In 1968, the Cliffs-Dow Chemical Company was sold to Georgia-Pacific and E.L. Bruce companies; the wood chemical refining process continued until the plant closed in 1969.

The plant produced charcoal and wood chemicals by carbonization and pyrolysis of hardwoods. This process entailed heating wood in the absence of air and producing charcoal, condensable volatiles (pyroligneous acid) and non-condensable volatiles (wood gas). The pyroligneous acid and charcoal, the primary feedstocks for plant products, were produced in heated, airtight vessels, called retorts, causing a chemical reaction that separated the pyroligneous acid and charcoal into two different process streams. The pyroligneous acid was collected and further processed by separation and distillation to produce methanol, acetic acid, and other saleable chemicals. Charcoal was recovered from the retorts and physically processed into salable sizes. A portion of the charcoal also was further chemically altered to produce activated carbon. Wastes and by-products generated at the Site throughout its operational history were comprised of volatile organic compounds (VOCs), including benzene, toluene, ethylbenzene, and xylenes (BTEX), and semi-volatile organic compounds (SVOCs), specifically phenolic compounds (e.g., 2-methylphenol, 4-methylphenol, 2,4-dimethylphenol), and metals.

2.2 PREVIOUS SITE INVESTIGATIONS

Investigations of source areas and associated risks at the former plant were conducted between 1981 and the present. Numerous documents summarizing previous Site investigations, remedial efforts, and ongoing monitoring activities have also been prepared and are on file with the EGLE. These investigations have included studies of soil contamination, groundwater contamination, exposure evaluation, and contaminant migration. The results of these previous investigations support the following general conclusions:

1) Widespread cover of fill materials containing sand, gravel, slag, charcoal, cinders, and concrete debris exists at varying depths throughout the Site;
2) Tar has been identified in discrete, small pockets extending several feet below the water table in the retort, refinery, and tar settling areas;
3) Subsurface tar above or a few feet below the water table is the probable source of groundwater plume contaminants that periodically exceed Part 201 Generic Cleanup GSI criteria (Part 201 GSI criteria) at the Lake Superior interface; and
4) Several dissolved-phase plume contaminants have periodically exceeded both Generic GSI Criteria and Mixing Zone-Based GSI criteria.

2.3 GEOLOGY

The Site was a low-lying area adjacent to Lake Superior before it was developed for industrial purposes during the first half of the last century. In most areas of the Site, the first layer of material is fill consisting of sand, cinders, wood, bricks, slag, scrap metal, and demolition debris. A thin

layer of organic material, humus or bog mat frequently occurs under the fill material. Underlying the fill and/or organic material is native soil consisting of light brown to light gray, loose to dense, fine to medium poorly graded sand (SP-USCS).

Site assessment work conducted in 2020 indicates the presence of confining layer of silty sand, clayey silt was encountered between approximately 48 and 60 feet below grade (bg) in four soil borings. The Groundwater Monitoring & Site Investigation Summary Report: November 2019-September 2020, dated December 8, 2020, contains additional details on soil boring activities conducted in March 2020.

3.0 GROUNDWATER MONITORING

TriMedia has performed groundwater monitoring events at the Site on behalf of the City from October 2009 through December 2024. Since July 2011, the focus of groundwater monitoring has been on select monitoring wells downgradient of the suspected source area and GSI compliance monitoring wells. The monitoring well locations consist of nested well clusters corresponding to different depth intervals; these intervals are denoted as 'A', 'B', 'C', and 'D' to indicate shallow, intermediate, deep, and 'sub-limiting layer' intervals, respectively.

3.1 GROUNDWATER MONITORING EVENTS

TriMedia performed a groundwater monitoring event in December 2024. Specifically, field activities were completed on December 9-10, 2024. The groundwater monitoring events included the following:

- Groundwater elevation monitoring for select accessible Site wells:
  - GSI compliance monitoring well clusters GSI-1000, GSI-1100 (including D well), GSI-1200, GSI-1300, GSI-1400 and GSI-1500;
  - Historical wells GSI-100, GSI-200, and GSI-600; and
  - New lateral plume boundary monitoring well clusters UPG-500, UPG-600 (including D well), and UPG-700.
  - Replacement plume boundary monitoring well cluster UPG-400R, installed in July 2022.

3.2 SITE HYDROGEOLOGY DATA

Groundwater elevations were measured from Site monitoring wells prior to sample collection for each monitoring event using an electronic water level probe with an accuracy of 0.01 feet (ft). The groundwater level elevation data collected for each well location is summarized in the following table and provided on the Groundwater Elevation Data forms included in Appendix B. The depth to groundwater at the Site generally ranges from two to eight feet below grade (bg). Historical groundwater data as well as recent measurements from the Site have indicated flow direction toward the east, essentially perpendicular to the Lake Superior shoreline. Generally,

horizontal groundwater gradients on the Site have ranged from 0.003 foot per foot (ft/ft) to 0.008 ft/ft over the past several years. Groundwater flow direction and horizontal flow gradients were calculated using groundwater elevation data collected from shallow interval wells for each sampling event as summarized below. Groundwater surface contours from the December 2024 groundwater monitoring event for each nested well series is included as Figure 3A, 3B, and 3C in Appendix A. As shown in the figures groundwater flow direction is to the north-northeast, generally perpendicular to the Lake Superior shoreline which is consistent with historical observations.

Groundwater elevation data collected from the current GSI compliance monitoring wells during the December 2024 monitoring events is summarized in Table 1.

Table 1. Groundwater Elevation Data

Monitoring Location	Groundwater Elevation (ft AMSL)
	December 2024
GSI-1000A	602.15
GSI-1000B	601.91
GSI-1000C	601.93
GSI-1100A	601.96
GSI-1100B	601.92
GSI-1100C	602.03
GSI-1100D	604.06
GSI-1200A	602.84
GSI-1200B	602.85
GSI-1200C	602.86
GSI-1300A	602.74
GSI-1300B	602.81
GSI-1300C	602.81
GSI-1400A	602.57
GSI-1400B	602.03
GSI-1400C	602.06
GSI-1500A	601.96
GSI-1500B	601.84
GSI-1500C	601.87
Lake Superior[A]	601.40

[A] - Lake Superior Water Elevations as measured at NOAA Station 9099018, Marquette Coast Guard Station, on 12/9/2024 at 1100 EDT

Groundwater elevation data from monitoring wells UPG-500A and GSI-1100A were used to calculate horizontal gradients for each sampling event using the formula and as tabulated below. Due to well abandonment and new, alternate GSI compliance monitoring points, groundwater elevation data for different wells was used to calculate the horizontal gradient than in previous Site groundwater monitoring reports; however, the horizontal gradients are generally consistent with the gradients observed during previous monitoring events.

$$\text{Horizontal Gradient} = \frac{\text{GW Elevation (UPG-500A)} - \text{GW Elevation (GSI-1100A)}}{\text{Horizontal Distance Between (UPG-500A) \& (GSI-1100A)}}$$

The horizontal gradient data for 2024 is shown in Table 2 included below:

Table 2. Horizontal Gradient Data

Horizontal Gradient	
Monitoring Wells and Distance	**December 9, 2024**
Between UPG-500A and GSI-1100A (Distance = 526.0 ft)	0.0049 ft/ft

Static water level data also was reviewed for the presence of any clear trends in vertical groundwater gradients, which play a significant role in the vertical migration of dissolved groundwater impacts. Based on static groundwater levels measured for recent sampling events, mixed vertical gradients have been observed at the onsite well clusters. Specifically, at the well clusters along the east portion of the Site, serving as point of compliance wells for the GSI pathway, a slight downward vertical gradient was observed in the majority of the GSI well clusters. These gradients are consistent with those observed during the past monitoring events, although some variability of upward and downward vertical gradients appears to exist at the Site. TriMedia will continue to evaluate the data for significant trends in the vertical hydraulic gradient data.

Hydraulic Conductivity Testing

Slug testing allows for the determination of an average hydraulic conductivity across the area of discharge and is used to estimate groundwater velocity and plume migration. Slug testing was performed to better determine special variability of hydraulic conductivity across the Site, due to the number of new wells present, and to confirm the accuracy of differing hydraulic conductivity values from resulting from two previous slug tests at the conducted at the Site.

Historical slug testing at the Site was conducted in 1991 and 2015[1]. The 2015 slug test determined an overall average site hydraulic conductivity value of 0.88 feet per day (ft/day) or 322 feet per year (ft/yr) while the 1991 testing determined a Site hydraulic conductivity of 56.16 ft/day or 20,498 ft/yr. Both values of historical hydraulic conductivity are in the range reported for fine to medium sand of 0.057 ft/day to 138.2 ft/day[2] (20.8 ft/yr to 50,443 ft/yr).

Slug testing was performed again in 2020 using newly installed GSI compliance wells. Hydraulic conductivity (K) values estimated from slug tests performed ranged from 7.57 to 57.03 feet/day in the A series wells, 13.16 to 64.34 ft/day in the B series wells and 1.26 to 78.46 ft/day in the C series wells. The average hydraulic conductivity was calculated as 27.44 ft/day (10,015 ft/yr) in the A series well, 33.76 ft/day (12,322 ft/yr) in the B series wells and 25.39 ft/day (9,256 ft/yr) in the C series wells. TriMedia is of the opinion that the 2020 test data is most representative of hydraulic conductivity values at the site.

1 1991 O'Brien and Gere; 2015 Mixing Zone Determination Request
2 *Physical and Chemical Hydrogeology,* P.A Domenico and F.W. Schwartz, 1990

3.3 GROUNDWATER MONITORING DATA SUMMARY

Groundwater Data Evaluation

Results for the December 2024 groundwater monitoring events are summarized in the following sections. Laboratory analyses for groundwater monitoring events conducted at the Site from October 2009 through the most recent event in December 2024 are provided in Table 1, included in Appendix C. The tabular summary compares the results of sampling events to applicable Part 201 GSI criteria and Mixing Zone-Based Criteria (Chronic and Acute) as provided by MDEQ (now EGLE) in correspondence dated November 7, 2017. Copies of the laboratory analytical reports for groundwater samples collected for the December 2024 monitoring events are included in Appendix D.

Groundwater Monitoring Event – December 9-10, 2024

Site groundwater samples were collected for laboratory analysis on December 9 through 10, 2024 using low-flow sampling methodologies and in general accordance with MDEQ-RRD Operational Memorandum No. 2: Sampling and Analysis. Groundwater samples were collected from nested wells UPG-400R, UPG-500, UPG-600, UPG-700, GSI-100, GSI-200, GSI-600, GSI-1000, GSI-1100, GSI-1200, GSI-1300, GSI-1400, and GSI-1500. Duplicate groundwater samples were collected from UPG-400CR, UPG-600B, GSI-100A, GSI-1000B, and GSI-1100B. Well Purge Records from the December 2024 monitoring event are included in Appendix B.

Samples were containerized and stored on ice to cool to approximately four degrees Celsius (4°C) in laboratory-supplied and preserved sample containers of sufficient size and type to support the selected analytical methodology. Samples were delivered via overnight courier under chain-of-custody protocol to ALS Laboratory Group in Holland, Michigan for analysis select volatile organic compounds including BTEX, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene by United States Environmental Protection Agency (US EPA) Method 8260 and SVOCs by US EPA Method 8270.

GSI Monitoring Well Results

The results from the December 2024 groundwater monitoring events are summarized below and focus primarily on analytical data from GSI monitoring points compared to Mixing Zone-Based GSI Criteria. Analytical data from select upgradient wells are also discussed.

Analysis of groundwater samples collected from the GSI-100 well cluster, a former GSI compliance monitoring point, has resulted in the detection of VOC and SVOC constituents since monitoring commenced at this location in 2009. Analysis of groundwater samples collected on December 10, 2024, from GSI-100A resulted in the detection of ethylbenzene above Chronic Mixing Zone-Based GSI Criteria. Of the phenolic compounds analyzed, none exceeded Acute or Chronic Mixing Zone-Based GSI Criteria.

The observed VOC and SVOC concentrations in GSI-100B have fluctuated significantly over time. Analysis of groundwater samples collected during the July 2022 monitoring event resulted in only the detection of 2,4-dimethylphenol significantly below Acute Mixing Zone-Based GSI Criteria. In the October 2022 monitoring event, analysis of groundwater samples resulted in the detection of xylenes above Chronic Mixing Zone-Based GSI Criteria and ethylbenzene above Acute Mixing Zone-Based GSI Criteria. Of the phenolic compounds analyzed, none exceeded Acute or Chronic Mixing Zone-Based GSI Criteria. Analysis of groundwater samples collected in December 2023 and December 2024 from GSI-100B did not result in the detection of the analyzed constituents above Mixing Zone-Based GSI Criteria (Acute or Chronic).

Select VOCs and SVOCs have periodically been detected at low-level concentrations in GSI-100C. Analysis of groundwater samples collected on June 15, 2022 from GSI-100C did not result in the detection of the analyzed contaminants. Groundwater samples collected on October 27, 2022, December 7, 2023, and December 10, 2024 did not result in detections exceeding Acute or Chronic Mixing Zone-Based GSI Criteria.

Analysis of samples collected from alternate GSI monitoring point GSI-1000 wells, located downgradient of the GSI-100 well cluster, resulted in the detection of ethylbenzene and xylenes above Acute Mixing Zone-Based GSI Criteria in GSI-1000A for the January 2021 monitoring event. Additionally, naphthalene exceeded Chronic Mixing Zone-Based Criteria in GSI-1000A in the January 2021 monitoring event. None of the analyzed compounds in GSI-1000A were detected above Mixing Zone-Based Criteria during monitoring events until the monitoring event in December 2023, when ethylbenzene exceeded Acute Mixing Zone-Based Criteria. In the most recent monitoring event in December 2024, analysis of VOCs and SVOCs did not result in detections exceeding laboratory reporting limits in GSI-1000A. Analysis of samples collected from GSI-1000B has resulted in increasing instances of select VOCs since the January 2021 monitoring event, with several compounds detected in excess of Criteria. Analysis of groundwater samples obtained from GSI-1000B during recent monitoring events resulted in the detection of ethylbenzene and xylenes above Acute Mixing Zone-Based GSI Criteria and the detection of 1,2,4-trimethylbenzene above Chronic Mixing Zone-Based GSI Criteria. In the most recent monitoring event in December 2024, 1,2,4-trimethylbenzene and xylenes exceeded Chronic Mixing Zone-Based Criteria; other analytes were not detected exceeding Mixing Zone-Based Criteria. Analytical results for phenolic compounds (2,4-dimethylphenol, 2-methylphenol, 3&4-methylphenol, and phenol) exceeded Acute Mixing Zone-Based GSI Criteria in GSI-1000C in January 2020 monitoring event; however, the concentrations of these phenolic compounds have not exceeded Criteria since that time. Furthermore, analysis of samples collected from GSI-1000C during monitoring events in July and October 2022, December 2023, and December 2024 did not result in detection of VOCs or SVOCs above laboratory reporting limits.

A summary of the observed elevation and groundwater quality data in GSI-1000 wells in comparison to Lake Superior data collected during the December 2024 monitoring event is included below (Table 2).

Table 2. GSI-1000 Well Series Water Quality Data

December 10, 2024							
Monitoring Location	**Elevation (ft AMSL)**	**Temperature (°C)**	**Conductivity (µS)**	**Dissolved Oxygen (ppm)**	**pH**	**ORP (mV)**	**Turbidity (NTU)**
GSI-1000A	602.15	4.0	230.7	4.26	6.53	59.9	18.61[C]
GSI-1000B	601.91	8.9	710	0.49	6.58	-103.3	5.39[C]
GSI-1000C	601.93	7.5	676	0.49	7.53	-150.6	3.89
Lake Superior [A]	601.40[B]	3.8	67.1	12.62	7.57	-12.5	1.98

[A] - Collected directly downgradient from monitoring well cluster at shoreline
[B] - Data obtained from Marquette Coast Guard Station ID: 9099018
[C] – Effervescence observed in groundwater impacted turbidity readings

As indicated, the groundwater elevation in each monitoring well is higher than Lake Superior water surface water elevation. Furthermore, water quality data from each monitoring well differed from Lake Superior water quality data. The variations between dissolved oxygen, pH, ORP, and conductivity observed in GSI-1000 and Lake Superior demonstrate the integrity of the GSI wells and indicate surface water from Lake Superior was not interacting with groundwater in the area at the time of the monitoring event.

Analysis of samples collected from GSI-200B, a former GSI monitoring well, resulted in the detection of 3&4-methylphenol and naphthalene above Acute Mixing Zone-Based GSI Criteria for both 2021 monitoring events. In the July 2022 monitoring event, naphthalene was detected below Mixing Zone-Based GSI Criteria. The compound 1,2,4-trimethylbenzene was detected above Chronic Mixing Zone-Based GSI Criteria in GSI-200B as part of the January 2021 monitoring event, while xylenes were detected above Chronic Mixing Zone-Based GSI Criteria in the October 2021 monitoring event. However, during the five most recent monitoring events, neither xylenes nor 1,2,4-trimethylbenzene were detected above Mixing Zone-Based GSI Criteria in GSI-200B.

Analysis of samples collected from the alternate GSI monitoring point GSI-1100 cluster wells, located downgradient of the GSI-200 monitoring well cluster, resulted in the detection of 3&4-methylphenol above Acute Mixing Zone-Based GSI Criteria in GSI-1100B during January and October 2021 events. In addition, naphthalene was detected above Acute Mixing Zone-Based GSI Criteria during the January 2021, April 2022, and July 2022 events in GSI-1100B. Most recently, in the December 2024 monitoring events, analysis of samples collected from GSI-1100B did not exceed GSI Mixing Zone-Based GSI Criteria for SVOCs; 1,2,4-trimethylbeneze was detected above Chronic Mixing Zone-Based Criteria. Analysis of samples collected from GSI-1100C resulted in the detection 2,4-dimethylphenol and 3&4-methylphenol above Acute Mixing Zone-Based GSI Criteria during the January 2021 event, but only 3&4-methylphenol above Acute Mixing Zone-Based GSI Criteria during the October 2021 event. Groundwater sample analysis from GSI-1100C resulted in 2,4-dimethylphenol and 3&4-methylphenol at concentrations exceeding Acute Mixing Zone-Based GSI Criteria. During the July and October 2022 monitoring events, ethylbenzene and xylenes also exceeded Chronic Mixing Zone-Based GSI Criteria. The December 2023 monitoring event resulted in the detection of 2,4-dimethylphenol concentrations exceeding Acute Mixing Zone-Based GSI Criteria and the detection of 3&4-methylphenol

concentrations exceeding Chronic Mixing Zone-Based GSI Criteria. The December 2023 monitoring event did not result in the detection of VOCs above Mixing Zone-Based GSI Criteria in GSI-1100C. The December 2024 monitoring event did not result in the detection of VOCs or SVOCs above Mixing Zone-Based GSI Criteria in GSI-1100C. Analysis of samples collected from GSI-1100D in 2021, 2022, 2023, and 2024 did not result in the detection of VOCs or SVOCs above Mixing Zone-Based GSI Criteria.

A summary of the observed elevation and groundwater quality data in the GSI-1100 cluster during the December 2024 monitoring event in comparison to Lake Superior data is provided in Table 3 below.

Table 3. GSI-1100 Well Series Water Quality Data

December 10, 2024							
Monitoring Location	**Elevation (ft AMSL)**	**Temperature (°C)**	**Conductivity (µS)**	**Dissolved Oxygen (ppm)**	**pH**	**ORP (mV)**	**Turbidity (NTU)**
GSI-1100A	601.96	5.8	293.4	8.77	6.50	14.3	3.10[C]
GSI-1100B	601.92	8.4	748	5.12	6.62	-103.3	2.93[C]
GSI-1100C	602.03	7.8	955	5.24	7.13	-234.3	12.52[C]
GSI-1100D	604.06	7.4	801	0.48	7.35	-119.3	38.72[C]
Lake Superior [A]	601.40[B]	3.9	65.4	12.91	7.49	15.1	4.29

[A] - Collected directly downgradient from monitoring well cluster at shoreline
[B] - Data obtained from Marquette Coast Guard Station ID: 9099018
[C] - Effervescence observed in groundwater impacted turbidity readings

Groundwater analysis of samples obtained from GSI-1100 wells during the December 2024 monitoring event yielded decreased contaminant concentrations when compared with those measured in December 2023. A steady decrease in concentrations was observed in samples obtained from GSI-1100B, with no exceedances of Mixing Zone-Based Criteria observed in December 2023 or December 2024. In samples obtained from GSI-1100C, 3&4-methylphenol exceeded Chronic Mixing Zone-Based GSI Criteria and 2,4-dimethylphenol exceeded Acute Mixing Zone-Based GSI Criteria in December 2023; there were no exceedances observed for Mixing Zone-Based GSI Criteria in December 2024. Analysis of samples obtained from GSI-1100A and GSI-1100D did not result in detection of analytes exceeding Mixing-Zone Based GSI Criteria.

As indicated, the groundwater elevation in each monitoring well is higher than Lake Superior surface water elevation. Furthermore, water quality data from each monitoring well differed from that of Lake Superior water quality data. The variations between dissolved oxygen, pH, ORP, and conductivity observed in GSI-1100 and Lake Superior indicate surface water from Lake Superior was not interacting with groundwater in the area at the time of the monitoring event.

Analysis of samples collected from the upland monitoring well cluster, GSI-1200, installed at the approximate mid-point between the GSI-200 and GSI-400 well clusters, resulted in the detection of 2,4-dimethylphenol and 3&4-methylphenol in GSI-1200C above Acute Mixing Zone-Based GSI

Criteria during the January 2021 event, but only 3&4-methylphenol above Acute Mixing Zone-Based GSI Criteria during the October 2021 event. During the April 2022 event, 3&4-methylphenol was detected above Chronic Mixing Zone-Based GSI Criteria. In July 2022, 2,4-dimethylphenol and 3&4-methylphenol were detected above Acute Mixing Zone-Based GSI Criteria, exceeding concentrations observed in January 2021. In the October 2022 and December 2023 monitoring events, analysis of samples obtained from GSI-1200C resulted in the detection of 3&4-methylphenol at a concentration above Acute Mixing Zone-Based GSI Criteria. Analysis of samples collected from GSI-1200C in December 2024 did not result in the detection of VOCs or SVOCs above Mixing Zone-Based GSI Criteria.

Analysis of samples collected from the upland monitoring well cluster, GSI-1300, installed at the approximate midpoint between the GSI-100 and GSI-600 well clusters, resulted in the detection of ethylbenzene above Chronic Mixing Zone-Based GSI Criteria in GSI-1300A for the second time since monitoring began at that location in 2019. In the December 2024 monitoring event, ethylbenzene and xylenes were detected in concentrations exceeding Acute Mixing Zone-Based GSI Criteria. Ethylbenzene and xylenes were detected above Acute Mixing Zone-Based GSI Criteria in GSI-1300B in January 2021, but only xylenes were above Acute Mixing Zone-Based GSI Criteria in October 2021. Naphthalene was detected in GSI-1300B above Acute Mixing Zone-Based GSI Criteria in the January 2021 monitoring event but only above Chronic Mixing Zone-Based GSI Criteria in October 2021. Naphthalene was detected in GSI-1300B above Acute Mixing Zone-Based GSI Criteria during the April 2022 monitoring event. During the July 2022 monitoring event, naphthalene, 1,2,4-trimethylbenzene, and xylenes were detected above Acute Mixing Zone-Based GSI Criteria. Analysis of samples obtained from GSI-1300B in October 2022 yielded exceedances of Acute Mixing Zone-Based Criteria for naphthalene, xylenes, and ethylbenzene and exceedances of Chronic Mixing Zone-Based Criteria for 1,2,4-trimethylbenzene. In December 2023, analysis of samples collected from GSI-1300B detected xylenes above Acute Mixing Zone-Based GSI Criteria and naphthalene and 1,2,4-trimethylbenzene in above Chronic Mixing Zone-Based GSI Criteria. Analysis of samples collected from GSI-1300B in December 2024 did not result in the detection of VOCs or SVOCs above Mixing Zone-Based GSI Criteria for the first time since monitoring began at that location in 2019.

Analysis of samples collected from the lateral GSI delineation monitoring well cluster, GSI-1400, installed south of GSI-1000 well cluster, resulted in the detection of ethylbenzene, naphthalene, 1,2,4-trimethybenzene, and xylenes above Acute Mixing Zone-Based GSI Criteria in GSI-1400B in January 2021, but not in October 2021. In the 2022 and 2023 monitoring events, ethylbenzene, 1,2,4-trimethylbenzene, xylenes and naphthalene were detected above Acute Mixing Zone-Based GSI Criteria. In the 2024 monitoring event, 1,2,4-trimethylbenzene was detected above Acute Mixing Zone-Based GSI Criteria and xylenes were detected above Chronic Mixing Zone-Based GSI Criteria.

A summary of the observed elevation and groundwater quality data in GSI-1400 wells in comparison to Lake Superior data collected during the December 2024 monitoring event is included in Table 4 below.

Table 4. GSI-1400 Well Series Water Quality Data

December 10, 2024							
Monitoring Location	**Elevation (ft AMSL)**	**Temperature (°C)**	**Conductivity (µS)**	**Dissolved Oxygen (ppm)**	**pH**	**ORP (mV)**	**Turbidity (NTU)**
GSI-1400A	602.57	6.2	316.5	0.67	6.70	-21.3	18.22
GSI-1400B	602.03	8.2	748	5.25	6.51	-93.7	73.06[C]
GSI-1400C	602.06	7.9	559	5.27	7.42	-143.7	20.11[C]
Lake Superior[A]	601.40[B]	3.9	66.9	12.72	7.92	-26.5	1.94

[A] - Collected directly downgradient from monitoring well cluster at shoreline
[B] - Data obtained from Marquette Coast Guard Station ID: 9099018
[C] - Effervescence observed in groundwater impacted turbidity readings

As indicated, the groundwater elevation in each monitoring well is higher than Lake Superior surface water elevation. Furthermore, water quality data from each monitoring well differed from that of Lake Superior water quality data. The variations between dissolved oxygen, pH, ORP, and conductivity observed in GSI-1400 and Lake Superior indicates surface water from Lake Superior was not interacting with groundwater in the area at the time of the monitoring event.

Analysis of samples collected from the lateral GSI delineation monitoring well cluster, GSI-1500, installed north of GSI-1100 well cluster, did not result in the detection of VOCs or SVOCs above Mixing Zone-Based GSI Criteria. Analysis of samples collected from GSI-1500C did not result in the detection of VOCs or SVOCs above laboratory reporting limits.

A summary of the observed elevation and groundwater quality data in GSI-1500 wells in comparison to Lake Superior data collected during the December 2024 monitoring event is included in Table 5 below.

Table 5. GSI-1500 Well Series Water Quality Data

December 10, 2024							
Monitoring Location	**Elevation (ft AMSL)**	**Temperature (°C)**	**Conductivity (µS)**	**Dissolved Oxygen (ppm)**	**pH**	**ORP (mV)**	**Turbidity (NTU)**
GSI-1500A	601.96	7.15	492.4	0.65	6.80	336.7	3.14
GSI-1500B	601.84	7.81	804.3	0.17	6.96	17.9	1.94
GSI-1500C	601.87	7.67	648.0	0.14	8.08	-70.7	6.34
Lake Superior[A]	601.40[B]	3.89	68.3	12.62	7.79	2.17	32.3

[A] – Collected directly downgradient from monitoring well cluster at shoreline
[B] – Data obtained from Marquette Coast Guard Station ID: 9099018
[C] – Effervescence observed in groundwater impacted turbidity readings

As indicated, the groundwater elevation in each monitoring well is higher than Lake Superior surface water elevation. Furthermore, water quality data from each monitoring well differed from

that of Lake Superior water quality data. The variations between dissolved oxygen, pH, ORP, and conductivity observed in GSI-1500 and Lake Superior indicates surface water from Lake Superior was not interacting with groundwater in the area at the time of the monitoring event.

Analysis of groundwater samples collected from the remaining GSI compliance monitoring wells has resulted in the lack of detections above laboratory reporting limits or detection at very low concentrations.

Using the analytical data from the 2021-2023 monitoring events, the approximate extent of the dissolved phase groundwater plume was slightly refined as compared to previous plume depictions. The approximate plume boundaries are shown Figure 4 in Appendix A.

GSI Monitoring Point Analytical Data Summary

Analysis of groundwater samples collected from GSI compliance and delineation monitoring points in 2024 resulted in the detection of both VOCs and SVOCs above Acute Mixing Zone-Based GSI Criteria GSI-1300 and GSI-1400 wells and above Chronic Mixing Zone-Based GSI Criteria in GSI-1000 and GSI-1100 wells. Specifically, ethylbenzene and xylenes were detected above Acute Mixing Zone-Based GSI Criteria in GSI-1300A and 1,2,4-trimethylbenzene was detected above Acute Mixing Zone-Based GSI Criteria in GSI-1400B. Analytical results from each of the three nested well intervals have generally resulted in detections above Acute Mixing Zone-Based GSI Criteria with the mid-depth interval (B-interval) consisting of approximately 19 to 27 below the ground surface. An exception to this pattern is present in the GSI-1100 cluster where the highest contaminant concentrations have been observed in GSI-1100C.

Plume Axis Monitoring Wells

Well cluster UPG-400 was abandoned in April 2020 as part of the road realignment project. However, analysis of groundwater samples collected from the UPG-400 well cluster prior to that time resulted in detection of 1,2,4-trimethylbenzene in UPG-400B above Chronic Mixing Zone-Based GSI Criteria during the January and February 2020 monitoring events and xylenes above Chronic Mixing Zone-Based GSI Criteria during the February 2020 monitoring event. A replacement well cluster, designated UPG-400R, was installed in late June 2022 prior to the July monitoring event. Analysis of groundwater samples collected from the UPG-400R well cluster in December 2023 and December 2024 resulted in the detection of 3&4-methylphenol above Acute Mixing Zone-Based GSI Criteria in the B interval.

Analysis of groundwater samples collected from the UPG-500 well cluster, a side-gradient monitoring point installed in 2019, did not result in the detection of the analyzed compounds above Mixing Zone-Based GSI Criteria. As such, the UPG-500 well cluster is representative of the side-gradient plume boundary.

Analysis of groundwater samples collected from the UPG-600 well cluster resulted in the detection of select VOC and SVOC constituents in the A, B, and C intervals. Ethylbenzene and xylenes

were detected above Acute Mixing Zone-Based GSI Criteria in samples collected from UPG-600A in January 2021, but only ethylbenzene was detected above Acute Mixing Zone-Based GSI Criteria in October 2021 and April 2022. In July 2022, analysis of groundwater samples from UPG-600A resulted in the detection of ethylbenzene and xylenes above Acute Mixing Zone-Based GSI Criteria. In October 2022, concentrations returned to levels previously observed in October 2021 and April 2022, with ethylbenzene concentrations exceeding Acute Mixing Zone-Based GSI Criteria and xylenes exceeding Chronic Mixing Zone-Based GSI Criteria. In December 2023, concentrations of ethylbenzene and xylenes exceeded Acute Mixing Zone-Based GSI Criteria and concentrations of 1,2,4-trimethylbenzene exceeded Chronic Mixing Zone-Based GSI Criteria. In December 2024, concentrations of ethylbenzene and xylenes exceeded Acute Mixing Zone-Based GSI Criteria. Ethylbenzene, 1,2,4-trimethylbenzene, xylenes and naphthalene were detected above Acute Mixing Zone-Based GSI Criteria in samples collected from UPG-600B in January 2021. While only ethylbenzene and xylenes were detected above Acute Mixing Zone-Based GSI Criteria in October 2021, levels of ethylbenzene, 1,2,4-trimethylbenzene, naphthalene and xylenes again exceeded Acute Mixing Zone-Based Criteria in April 2022. In July 2022, analysis of groundwater samples from UPG-600B resulted in concentrations of ethylbenzene, 1,2,4-trimethylbenzene, and xylenes exceeding Acute Mixing Zone-Based GSI Criteria. In October 2022, December 2023, and December 2024, concentrations of ethylbenzene, 1,2,4-trimethylbenzene, naphthalene and xylenes exceeded Acute Mixing Zone-Based Criteria in samples collected from UPG-600B. VOC compounds were previously detected above Acute Mixing Zone-Based GSI Criteria in samples collected from UPG-600C. However, the 2022, 2023, and 2024 laboratory analytical data indicate that concentrations have decreased to levels below Chronic Mixing Zone-Based Criteria.

Analysis of groundwater samples collected from the UPG-700 well cluster, a well cluster installed to define the southern lateral extent of groundwater impacts at the Site did not result in the detection of analyzed compounds above laboratory reporting limits. Thus, well cluster UPG-700 is representative of the southern side-gradient plume boundary.

4.0 REGULATORY STATUS

The majority of the former Cliffs-Dow Plant property was purchased by the City of Marquette on October 28, 1997. As a condition of the sale and likely due to the results of previous investigations, a Restrictive Covenant is in place that prohibits residential use of the property without approval of EGLE. In 2002 and 2003, the majority of the remaining above-grade plant structures were demolished, leaving only partial building foundations and concrete slabs visible at the surface. The Site was formerly used by the City for material storage purposes including composting. Soil and fill materials from various offsite sources were stored at the Site. The City has completed three projects on and adjacent to the Site. The completed projects include the extension of Wright Street east to Lakeshore Boulevard, installation of a sanitary sewer force main along the eastern edges of the property and the relocation of Lakeshore Boulevard inland

to the west due to repetitive and sustained damage from Lake Superior storms and high-water levels.

As a result of contaminant concentrations from recent groundwater monitoring events exceeding Acute Mixing Zone-Based GSI Criteria at various GSI compliance points, additional response actions pursuant to Parts 201 and Part 31 of NREPA may be necessary and/or an evaluation of the location of the GSI compliance points.

5.0 SUMMARY AND RECOMMENDATIONS

Based on current groundwater analytical results and concentration trends, an evaluation of the extent of monitoring wells included in the semi-annual events is recommended. This evaluation may include a reduction in monitoring wells included for analytical data collection.

Also, as a result of Acute Mixing Zone-Based GSI Criteria exceedances at current GSI compliance points, an evaluation of potential alternative GSI compliance points is recommended. This approach could involve methods previously employed at offshore locations by EGLE Geological Services Division or other alternative methods. Additionally, forensic analysis may assist in determining if offshore pore water detections are the result of former onshore operations or are associated with Cliff-Dow deposition of material off-site or historical discharges to the lake.

In addition, the City of Marquette was recently awarded a Cleanup Grant for the project period October 1, 2023 through September 30, 2027. Through a request for proposal process, TriMedia was selected as the qualified environmental professional to perform cleanup planning, contractor procurement, and monitoring and reporting activities. The cleanup project officially kicked off in April 2024 and planning and procurement activities are currently in progress.

APPENDICES

APPENDIX A FIGURES

Figure 1 – Site Location
Figure 2 – Monitoring Well Locations
Figure 3A – Groundwater Contours A-Series Wells – December 9, 2024
Figure 3B – Groundwater Contours B-Series Wells – December 9, 2024
Figure 3C – Groundwater Contours C-Series Wells – December 9, 2024
Figure 4 – Estimated Extent of Dissolved Phase Groundwater Plume

APPENDIX B FIELD FORMS

Groundwater Elevation Data – December 2024
Well Purge Records – December 2024

APPENDIX C TABLES AND DATA

Table 1 - Summary of Groundwater Analytical Results – 2009 to 2024

APPENDIX D LABORATORY ANALYTICAL REPORTS

ALS Laboratory Report – Work Order: HN2410635, dated December 27, 2024

Appendix A

Figures

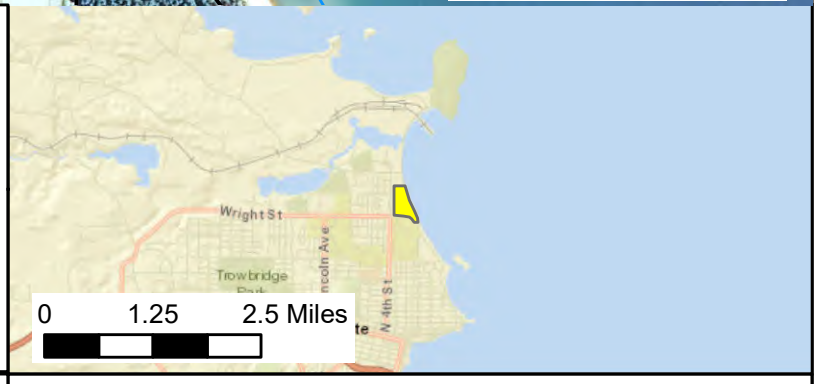


T48N, R25W
Sec 11 & 14
Marquette County
Marquette
Michigan

Legend

- Former Cliffs-Dow Plant Property
- Project Site

N



TRIMEDIA ENVIRONMENTAL & ENGINEERING

Former Cliffs - Dow Site
Marquette, Michigan

PROJECT: 99-059	CHK'D: RJW
DGN: RJW	APP'D RJW
DWN: KGK	DATE: 11/9/2020

Figure 1
Site Location



FIGURE NUMBER	2
SHEET TITLE:	Monitoring Well Locations
TRIMEDIA JOB NUMBER	99-059

DESIGNED:	RJW
DRAWN:	KGK
CHECKED:	RJW
APPROVED:	RJW

DATE	DESCRIPTION:	ISSUED:

City of Marquette
Former Cliffs - Dow Site
Monitoring Well Locations
Marquette, Michigan

TRIMEDIA ENVIRONMENTAL & ENGINEERING

Document Path: P:\1999\99-059 City of Marquette\GIS\MXD\8-2-2022\Fig-2.mxd



FIGURE NUMBER	3A	TRIMEDIA JOB NUMBER	99-059
SHEET TITLE:	A-Series Wells Groundwater Contours (December 9, 2024)		

DESIGNED:	RJW		
DRAWN:	ESN		
CHECKED:	HAA		
APPROVED:	RJW		
DATE	DESCRIPTION:	ISSUED:	

City of Marquette
Former Cliffs - Dow Site
Groundwater Contours
Marquette, Michigan

TRIMEDIA ENVIRONMENTAL & ENGINEERING

Document Path: P:\1999\99-059 City of Marquette\GIS\MXD\1-6-2025\Fig-3A.mxd



FIGURE NUMBER	3B
SHEET TITLE:	B-Series Wells Groundwater Contours (December 9, 2024)
TRIMEDIA JOB NUMBER	99-059

DESIGNED:	RJW		
DRAWN:	ESN		
CHECKED:	HAA		
APPROVED:	RJW		
DATE	DESCRIPTION:	ISSUED:	

City of Marquette
Former Cliffs - Dow Site
Groundwater Contours
Marquette, Michigan

TRIMEDIA ENVIRONMENTAL & ENGINEERING

Document Path: P:\1999\99-059 City of Marquette\GIS\MXD\1-6-2025\Fig-3B.mxd



FIGURE NUMBER	3C	TRIMEDIA JOB NUMBER	99-059
SHEET TITLE:	C-Series Wells Groundwater Contours (December 9, 2024)		

DESIGNED:	RJW		
DRAWN:	ESN		
CHECKED:	HAA		
APPROVED:	RJW		
DATE	DESCRIPTION:	ISSUED:	

City of Marquette
Former Cliffs - Dow Site
Groundwater Contours
Marquette, Michigan

TRIMEDIA ENVIRONMENTAL & ENGINEERING

Document Path: P:\1999\99-059 City of Marquette\GIS\MXD\1-6-2025\Fig-3C.mxd



TRIMEDIA
ENVIRONMENTAL & ENGINEERING

City of Marquette
Former Cliffs - Dow Site
Groundwater Plume
Marquette, Michigan

	DATE
	1/19/2023

DESIGNED: RJW
DRAWN: DJF
CHECKED: RJW
APPROVED: RJW

TRIMEDIA JOB NUMBER
99-059

SHEET TITLE:

Estimated Extent of Dissolved Phase Groundwater Plume

FIGURE NUMBER:
4

Path: P:\1999\99-059 City of Marquette\GIS\MXD\99-259 City of Marquette Cliffs Dow\99-259 City of Marquette Cliffs Dow.aprx

Appendix B

Field Forms

GROUNDWATER ELEVATION LOG
CITY OF MARQUETTE / FORMER CLIFFS-DOW PLANT SITE
TRIMEDIA PROJECT NUMBER 99-059

DATE: **12/9/2024**

WELL ID	TOP OF CASING ELEVATION[1] (ft)	WELL DEPTH (ft)	SCREEN DIAMETER / LENGTH (in / ft)	WELL SCREEN MATERIALS	DATE INSTALLED	DEPTH TO WATER (ft)	STATIC GROUNDWATER ELEVATION (ft)
UPG-100A	612.28	9.70	0.75 / 5	PVC	09/21/09	5.92	606.36
UPG-100B	612.43	21.41	0.75 / 5	PVC	09/21/09	5.43	607.00
UPG-100CR	612.73	46.29	1.00 / 5	PVC	10/19/09		612.73
UPG-200A	606.85	9.97	0.75 / 5	PVC	09/21/09		
UPG-200B	606.61	15.61	0.75 / 5	PVC	09/21/09		
UPG-200C	606.47	38.33	1.00 / 5	PVC	09/21/09		
UPG-300A	611.31	9.78	0.75 / 5	PVC	09/21/09	2.70	608.61
UPG-300B	611.39	24.69	0.75 / 5	PVC	09/21/09	2.77	608.62
UPG-300C	611.28	52.02	1.00 / 5	PVC	09/21/09	2.69	608.59
UPG-400AR	613.74	13.00	2.00 / 5	PVC	06/29/22	10.38	603.36
UPG-400BR	613.72	25.00	2.00 / 5	PVC	06/29/22	10.34	603.38
UPG-400CR	613.60	45.00	2.00 / 5	PVC	06/29/22	10.21	603.39
UPG-500A	617.14	13.80	2.00 / 5	PVC	06/27/19	12.62	604.52
UPG-500B	617.20	28.20	2.00 / 5	PVC	06/27/19	12.65	604.55
UPG-500C	617.25	48.50	2.00 / 5	PVC	06/27/19	12.69	604.56
UPG-600A	613.25	12.35	2.00 / 5	PVC	06/25/19	7.77	605.48
UPG-600B	613.21	28.36	2.00 / 5	PVC	06/25/19	8.64	604.57
UPG-600C	613.34	48.35	2.00 / 5	PVC	06/25/19	8.74	604.60
UPG-600D	612.22	64.03	2.00 / 5	PVC	05/19/20	7.34	604.88
UPG-700A	614.22	11.71	2.00 / 5	PVC	11/20/19	9.46	604.76
UPG-700B	614.12	28.68	2.00 / 5	PVC	11/20/19	9.35	604.77
UPG-700C	613.99	48.26	2.00 / 5	PVC	11/20/19	9.20	604.79
GSI-100A	605.59	9.90	0.75 / 5	PVC	09/21/09	3.05	602.54
GSI-100B	609.75	28.69	0.75 / 5	PVC	09/21/09	7.17	602.58
GSI-100C	605.52	40.21	1.00 / 5	PVC	09/21/09	3.00	602.52
GSI-200A	610.43	13.83	0.75 / 5	PVC	09/21/09	7.96	602.47
GSI-200B	606.37	15.61	0.75 / 5	PVC	09/21/09	3.87	602.50
GSI-200C	606.05	47.65	1.00 / 5	PVC	09/21/09	3.79	602.26
GSI-300A	607.14	9.74	0.75 / 5	PVC	09/21/09		607.14
GSI-300B	611.05	23.52	0.75 / 5	PVC	09/30/09		611.05
GSI-300C	606.97	49.00	1.00 / 5	PVC	09/21/09		606.97
GSI-400A	606.10	21.21	0.75 / 5	PVC	09/21/09	3.59	602.51
GSI-400B	610.10	55.50	0.75 / 5	PVC	09/30/09	7.50	602.60
GSI-400C	605.77	45.00	1.00 / 5	PVC	09/21/09	2.83	
GSI-500A	607.03	9.90	0.75 / 5	PVC	09/21/09	4.50	602.53
GSI-500B	610.56	28.33	0.75 / 5	PVC	09/30/09	8.17	602.39
GSI-500C	606.91	53.12	1.00 / 5	PVC	09/21/09	3.79	603.12
GSI-600A	606.19	9.89	0.75 / 5	PVC	09/21/09	3.75	602.44
GSI-600B	610.10	23.41	0.75 / 5	PVC	09/30/09	7.58	602.52
GSI-600C	606.11	45.11	1.00 / 5	PVC	09/21/09	3.60	602.51

GROUNDWATER ELEVATION LOG
CITY OF MARQUETTE / FORMER CLIFFS-DOW PLANT SITE
TRIMEDIA PROJECT NUMBER 99-059

DATE: **12/9/2024**

WELL ID	TOP OF CASING ELEVATION[1] (ft)	WELL DEPTH (ft)	SCREEN DIAMETER / LENGTH (in / ft)	WELL SCREEN MATERIALS	DATE INSTALLED	DEPTH TO WATER (ft)	STATIC GROUNDWATER ELEVATION (ft)
GSI-700A	605.70	9.67	0.75 / 5	PVC	09/21/09		
GSI-700B	609.81	28.27	0.75 / 5	PVC	09/30/09		
GSI-700C	605.84	45.79	1.00 / 5	PVC	09/21/09		
GSI-800A	610.05	14.13	0.75 / 5	PVC	09/21/09	7.55	602.50
GSI-800B	606.26	24.51	0.75 / 5	PVC	09/30/09	3.74	602.52
GSI-800C	605.94	49.56	1.00 / 5	PVC	09/21/09	3.18	602.76
GSI-900A	608.98	14.15	0.75 / 5	PVC	09/21/09	6.40	602.58
GSI-900B	604.74	21.80	0.75 / 5	PVC	09/30/09	2.17	602.57
GSI-900C	604.77	46.40	1.00 / 5	PVC	09/21/09		
GSI-1000A	609.28	12.62	2.00 / 5	PVC	06/26/19	7.13	602.15
GSI-1000B	609.39	28.01	2.00 / 5	PVC	06/26/19	7.48	601.91
GSI-1000C	609.37	48.05	2.00 / 5	PVC	06/26/19	7.44	601.93
GSI-1100A	609.37	12.27	2.00 / 5	PVC	06/26/19	7.41	601.96
GSI-1100B	609.21	27.99	2.00 / 5	PVC	06/26/19	7.29	601.92
GSI-1100C	609.20	48.05	2.00 / 5	PVC	06/26/19	7.17	602.03
GSI-1100D	607.49	59.77	2.00 / 5	PVC	03/11/20	3.43	604.06
GSI-1200A	611.12	14.03	2.00 / 5	PVC	06/25/19	8.28	602.84
GSI-1200B	611.26	28.84	2.00 / 5	PVC	06/25/19	8.41	602.85
GSI-1200C	611.28	48.14	2.00 / 5	PVC	06/25/19	8.42	602.86
GSI-1300A	609.83	12.64	2.00 / 5	PVC	06/27/19	7.09	602.74
GSI-1300B	609.81	28.58	2.00 / 5	PVC	06/27/19	7.00	602.81
GSI-1300C	609.78	48.19	2.00 / 5	PVC	06/27/19	6.97	602.81
GSI-1400A	608.89	11.82	2.00 / 5	PVC	11/19/19	6.32	602.57
GSI-1400B	608.95	27.45	2.00 / 5	PVC	11/19/19	6.92	602.03
GSI-1400C	609.12	48.40	2.00 / 5	PVC	11/19/19	7.06	602.06
GSI-1500A	609.14	11.93	2.00 / 5	PVC	11/19/19	7.18	601.96
GSI-1500B	608.93	27.96	2.00 / 5	PVC	11/19/19	7.09	601.84
GSI-1500C	609.14	47.08	2.00 / 5	PVC	11/18/19	7.27	601.87
MW-500A	610.03	9.98	0.75 / 5	PVC	09/02/10	4.58	605.45
MW-500B	609.90	24.98	0.75 / 5	PVC	08/24/10		
MW-500C	610.02	49.98	0.75 / 5	PVC	08/24/10	4.56	605.46
MW-600A	610.90	9.78	0.75 / 5	PVC	09/02/10		
MW-600B	610.91	24.53	0.75 / 5	PVC	08/24/10		
MW-600C	611.03	54.74	0.75 / 5	PVC	08/24/10		
MW-700B	610.97	24.59	0.75 / 5	PVC	08/25/10		
MW-700C	611.03	49.64	0.75 / 5	PVC	08/25/10		
MW-800B	611.05	24.69	0.75 / 5	PVC	08/25/10		
MW-800C	611.10	47.90	0.75 / 5	PVC	08/25/10		

[1] Top of casing elevations are referenced to NAVD88.

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WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name
Former Cliffs Dow Site	**99-059**		**UPG-400AR**
Facility Location/Address	Field Technician	Reviewer	Date
Lakeshore Boulevard, Marquette, MI	NAK	RJW	**12/9/2024**
Facility ID No	Temperature and Weather Conditions		Start Time / End Time
	33 ºF	overcast	9:45 AM / 10:07 AM
Sample No / Time	Field Blank / Time		Duplicate / Time
UPG-400AR / 10:07 AM			

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
9:45 AM	10.38								
9:52 AM	10.42	0.10	9.8	781.0	1100.0	0.89	6.60	-57.5	51.94
9:57 AM	10.42	0.30	9.8	773.0	1091.0	0.71	6.63	-65.8	27.86
10:02 AM	10.42	0.60	9.9	777.0	1091.0	0.64	6.64	-70.9	14.50
10:07 AM	10.42	0.90	9.9	781.0	1093.0	0.60	6.64	-74.3	14.43

Notes: _____

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name
Former Cliffs Dow Site	99-059		**UPG-400BR**
Facility Location/Address	Field Technician	Reviewer	Date
Lakeshore Boulevard, Marquette, MI	NAK	RJW	**12/9/2024**
Facility ID No	Temperature and Weather Conditions		Start Time / End Time
	33 ºF	overcast	10:30 AM / 10:45 AM
Sample No / Time	Field Blank / Time		Duplicate / Time
UPG-400BR / 10:45 AM			

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	10.34								
10:30 AM	10.38	0.20	9.4	879.0	1251.0	0.60	6.86	-92.8	7.07
10:35 AM	10.38	0.50	9.4	872.0	1243.0	0.50	6.86	-114.4	5.67
10:40 AM	10.38	0.90	9.6	874.0	1238.0	0.46	6.85	-137.1	4.66
10:45 AM	10.38		9.6	872.0	1237.0	0.44	6.83	-142.3	4.48

Notes: Bubbles, fizz, odor

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name
Former Cliffs Dow Site	99-059		**UPG-400CR**
Facility Location/Address	Field Technician	Reviewer	Date
Lakeshore Boulevard, Marquette, MI	NAK	RJW	**12/9/2024**
Facility ID No	Temperature and Weather Conditions		Start Time / End Time
	33 ºF	overcast	11:10 AM / 11:30 AM
Sample No / Time	Field Blank / Time		Duplicate / Time
UPG-400CR / 11:30 AM			

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
11:10 AM	10.21								
11:15 AM	10.27	0.30	8.3	722.0	1059.0	0.54	7.43	-161.3	23.41
11:20 AM	10.27	0.50	8.5	725.0	1059.0	0.45	7.43	-170.1	23.33
11:25 AM	10.27	0.90	8.7	729.0	1060.0	0.42	7.45	-175.9	24.64
11:30 AM	10.27	1.50	8.7	730.0	1060.0	0.40	7.45	-179.2	20.41

Notes: _____

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name
Former Cliffs Dow Site	99-059		**UPG-500A**
Facility Location/Address	Field Technician	Reviewer	Date
Lakeshore Boulevard, Marquette, MI	HAW	RJW	**12/9/2024**
Facility ID No	Temperature and Weather Conditions		Start Time / End Time
	3s ºF	overcast	1:10 PM / 1:47 PM
Sample No / Time	Field Blank / Time		Duplicate / Time
UPG-500A / 1:32 PM			

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	12.62								
1:17 PM	12.76	0.40	9.2	588.0	842.0	7.19	6.55	-33.4	23.24
1:22 PM	12.78	0.75	9.5	586.0	832.0	6.16	6.46	-67.8	4.45
1:27 PM	12.78	0.95	9.5	584.0	829.0	5.96	6.46	-75.3	3.74
1:32 PM	12.78	1.25	9.6	588.0	834.0	5.78	6.46	-82.6	3.26

Notes: _____

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name
Former Cliffs Dow Site	99-059		**UPG-500B**
Facility Location/Address	Field Technician	Reviewer	Date
Lakeshore Boulevard, Marquette, MI	HAW	RJW	**12/9/2024**
Facility ID No	Temperature and Weather Conditions		Start Time / End Time
	32 ºF	overcast	2:20 PM / 3:03 PM
Sample No / Time	Field Blank / Time		Duplicate / Time
UPG-500B / 2:49 PM			

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	12.65								
2:34 PM	12.69	0.30	9.8	789.0	1110.0	6.29	7.26	-175.1	3.53
2:39 PM	12.69	0.60	9.8	811.0	1142.0	5.46	7.19	-233.7	2.67
2:44 PM	12.69	0.90	9.9	814.0	1144.0	5.32	7.22	-247.6	2.62
2:49 PM	12.69	1.25	9.9	814.0	1144.0	5.26	7.19	-251.7	2.64

Notes: _____

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name
Former Cliffs Dow Site	99-059		**UPG-500C**
Facility Location/Address	Field Technician	Reviewer	Date
Lakeshore Boulevard, Marquette, MI	HAW	RJW	**12/9/2024**
Facility ID No	Temperature and Weather Conditions		Start Time / End Time
	32 ºF	overcast	1:48 PM / 2:19 PM
Sample No / Time	Field Blank / Time		Duplicate / Time
UPG-500C / 2:12 PM			

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	12.69								
1:52 PM	12.78	0.40	7.9	684.0	1018.0	8.70	7.45	-65.1	5.89
1:57 PM	12.78	0.75	8.8	770.0	1116.0	5.73	7.60	-243.6	8.61
2:02 PM	12.78	1.00	8.8	759.0	1099.0	5.52	7.61	-273.5	25.79
2:07 PM	12.78	1.40	8.7	749.0	1087.0	5.52	7.62	-286.9	50.99
2:12 PM	12.78	1.75	8.6	745.0	1084.0	5.44	7.61	-296.5	34.21

Notes: Bubbles observed in flow cell.

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name
Former Cliffs Dow Site	99-059		**UPG-600A**
Facility Location/Address	Field Technician	Reviewer	Date
Lakeshore Boulevard, Marquette, MI	HAW	RJW	**12/9/2024**
Facility ID No	Temperature and Weather Conditions		Start Time / End Time
	32 ºF	raining	10:45 AM / 11:23 AM
Sample No / Time	Field Blank / Time		Duplicate / Time
UPG-600A / 11:13 AM			

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	7.77								
10:53 AM	7.96	0.35	9.1	746.0	1071.0	7.03	6.70	-111.3	251.01
10:58 AM	7.96	0.75	9.5	719.0	1022.0	5.52	6.71	-145.2	32.54
11:03 AM	7.96	1.00	9.8	723.0	1020.0	5.25	6.69	-161.9	12.00
11:08 AM	7.96	1.40	9.8	727.0	1024.0	5.15	6.70	-174.2	6.29
11:13 AM	7.96	1.75	9.9	721.0	1013.0	5.09	6.71	-182.3	4.10

Notes: _____

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name
Former Cliffs Dow Site	99-059		**UPG-600B**
Facility Location/Address	Field Technician	Reviewer	Date
Lakeshore Boulevard, Marquette, MI	HAW	RJW	**12/9/2024**
Facility ID No	Temperature and Weather Conditions		Start Time / End Time
	32 ºF	raining	11:24 AM / 12:08 PM
Sample No / Time	Field Blank / Time		Duplicate / Time
UPG-600B / 11:54 AM			

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	8.64								
11:39 AM	8.67	0.25	9.7	637.0	900.0	8.13	7.01	-123.9	12.87
11:44 AM	8.67	0.50	9.6	626.0	887.0	5.98	6.98	-179.8	9.30
11:49 AM	8.67	0.75	9.5	645.0	915.0	5.47	6.91	-191.4	10.47
11:54 AM	8.67	0.90	9.5	642.0	912.0	5.38	6.90	-196.7	11.91

Notes: _____

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name
Former Cliffs Dow Site	99-059		**UPG-600C**
Facility Location/Address	Field Technician	Reviewer	Date
Lakeshore Boulevard, Marquette, MI	HAW	RJW	**12/9/2024**
Facility ID No	Temperature and Weather Conditions		Start Time / End Time
	32 ºF	raining	10:00 AM / 10:44 AM
Sample No / Time	Field Blank / Time		Duplicate / Time
UPG-600C / 10:25 AM			

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	8.74								
10:11 AM	8.80	0.15	8.9	593.0	858.0	6.80	7.18	108.7	2.99
10:14 AM	8.81	0.40	8.6	595.0	867.0	5.98	7.30	43.3	2.82
10:17 AM	8.81	0.60	8.3	590.0	867.0	5.82	7.35	-42.1	2.81
10:20 AM	8.81	0.75	8.3	590.0	867.0	5.77	7.37	-46.5	2.80
10:25 AM	8.81	1.00	8.3	592.0	868.0	5.64	7.41	-48.4	2.81

Notes: Began at 3 min internvals then switched to 5 min interval. Odor in purged groundwater.

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name
Former Cliffs Dow Site	99-059		**UPG-600D**
Facility Location/Address	Field Technician	Reviewer	Date
Lakeshore Boulevard, Marquette, MI	HAW	RJW	**12/9/2024**
Facility ID No	Temperature and Weather Conditions		Start Time / End Time
	32 ºF	raining	12:10 PM / 12:53 PM
Sample No / Time	Field Blank / Time		Duplicate / Time
UPG-600D / 12:39 PM			

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	7.34								
12:14 PM	8.18	0.25	8.6	512.0	747.0	7.18	7.79	-108.9	22.11
12:19 PM	8.28	0.50	6.0	476.6	732.0	7.10	7.77	-90.5	13.70
12:24 PM	8.38	0.75	8.2	501.0	737.0	6.37	7.71	-140.3	13.61
12:29 PM	8.41	1.00	8.5	503.0	734.0	5.72	7.72	-181.6	17.91
12:34 PM	8.45	1.25	8.6	504.0	735.0	5.57	7.73	-199.5	27.69
12:39 PM	8.47	1.50	8.6	504.0	734.0	5.53	7.73	-208.2	29.88

Notes: _____

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name
Former Cliffs Dow Site	99-059		**UPG-700A**
Facility Location/Address	Field Technician	Reviewer	Date
Lakeshore Boulevard, Marquette, MI	NAK	RJW	**12/9/2024**
Facility ID No	Temperature and Weather Conditions		Start Time / End Time
	33 ºF	raining	12:25 PM / 12:50 PM
Sample No / Time	Field Blank / Time		Duplicate / Time
UPG-700A / 12:50 PM			

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	9.46								
12:30 PM	9.55	0.20	8.1	721.0	1064.0	0.60	6.47	-84.1	82.69
12:35 PM	9.55	0.50	8.3	751.0	1103.0	0.44	6.44	-85.3	36.02
12:40 PM	9.55	0.80	8.3	765.0	1124.0	0.42	6.43	-85.1	16.53
12:45 PM	9.55	1.00	8.4	766.0	1124.0	0.41	6.44	-85.1	18.92
12:50 PM	9.55	1.30	8.5	769.0	1129.0	0.41	6.43	-83.2	16.85

Notes: Oramge

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name
Former Cliffs Dow Site	99-059		**UPG-700B**
Facility Location/Address	Field Technician	Reviewer	Date
Lakeshore Boulevard, Marquette, MI	NAK	RJW	**12/9/2024**
Facility ID No	Temperature and Weather Conditions		Start Time / End Time
	33 ºF	raining	1:05 PM / 1:35 PM
Sample No / Time	Field Blank / Time		Duplicate / Time
UPG-700B / 1:35 PM			

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	9.35								
1:10 PM	9.35	0.20	8.8	755.0	1093.0	1.57	7.07	-74.9	722.2
1:15 PM	9.35	0.50	8.9	767.0	1108.0	0.56	7.08	-87.7	486.1
1:20 PM	9.35	0.80	9.0	800.0	1152.0	0.64	7.06	-84.2	251.4
1:25 PM	9.35	1.20	9.0	806.0	1161.0	0.48	7.06	-89.5	151.6
1:30 PM	9.35	1.50	9.0	809.0	1166.0	0.46	7.06	-91.5	135.8
1:35 PM	9.35	1.80	9.0	814.0	1172.0	0.43	7.05	-93.6	112.8

Notes: Orange and cloudy. 13:17 cleared flow cell

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name
Former Cliffs Dow Site	99-059		**UPG-700C**
Facility Location/Address	Field Technician	Reviewer	Date
Lakeshore Boulevard, Marquette, MI	NAK	RJW	**12/9/2024**
Facility ID No	Temperature and Weather Conditions		Start Time / End Time
	33 ºF	raining	1:45 PM / 2:05 PM
Sample No / Time	Field Blank / Time		Duplicate / Time
UPG-700C / 2:05 PM			

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	9.20								
1:50 PM	9.70	0.20	8.4	845.0	1239.0	1.65	7.18	-23.8	5.01
1:55 PM	9.70	0.50	9.3	852.0	1250.0	0.80	7.18	-16.6	8.41
2:00 PM	9.70	0.80	8.5	854.0	1249.0	0.60	7.18	-13.7	6.82
2:05 PM	9.70	1.20	8.5	853.0	1245.0	0.56	7.19	-11.7	5.11

Notes: _____

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name
Former Cliffs Dow Site	99-059		**GSI-100A**
Facility Location/Address	Field Technician	Reviewer	Date
Lakeshore Boulevard, Marquette, MI	MBM	RJW	**12/10/2024**
Facility ID No	Temperature and Weather Conditions		Start Time / End Time
	28 ºF	overcast	12:20 PM / 12:55 PM
Sample No / Time	Field Blank / Time		Duplicate / Time
GSI-100A / 12:55 PM			

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
12:30 PM	3.08	0.40	10.18	796.6	1110.7	1.73	6.84	19.9	61.79
12:35 PM	3.08	0.60	10.38	802.1	1113.1	1.34	6.79	3.3	71.95
12:40 PM	3.09	0.80	10.27	799.2	1112.2	1.32	6.78	-7.8	81.53
12:45 PM	3.09	1.00	10.29	799.4	1111.5	1.26	6.76	-15.9	95.76
12:50 PM	3.09	1.20	10.32	799.1	1110.7	1.28	6.75	-20.9	107.62
12:55 PM	3.09	1.40	10.32	799.1	1111.2	1.37	6.74	-24.2	135.91

Notes: Bubbles on turbidity meter.

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WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name
Former Cliffs Dow Site	99-059		**GSI-100B**
Facility Location/Address	Field Technician	Reviewer	Date
Lakeshore Boulevard, Marquette, MI	MBM	RJW	**12/10/2024**
Facility ID No	Temperature and Weather Conditions		Start Time / End Time
	28 ºF	overcast	1:05 PM / 1:35 PM
Sample No / Time	Field Blank / Time		Duplicate / Time
GSI-100B / 1:35 PM			

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
1:10 PM	7.36	0.20	9.17	779.4	1119.2	2.67	7.13	-12.6	16.26
1:15 PM	7.36	0.40	9.26	786.1	1124.8	0.30	7.02	-40.2	6.68
1:20 PM	7.36	0.60	9.02	779.3	1121.6	0.01	7.02	-52.1	8.08
1:25 PM	7.36	0.80	8.99	772.5	1110.5	0.09	7.02	-46.0	10.35
1:30 PM	7.36	1.00	9.28	778.7	1113.1	0.12	7.00	-68.5	12.38
1:35 PM	7.36	1.20	9.32	779.6	1111.7	0.14	7.00	-73.1	14.71

Notes: _____

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name
Former Cliffs Dow Site	99-059		**GSI-100C**
Facility Location/Address	Field Technician	Reviewer	Date
Lakeshore Boulevard, Marquette, MI	MBM	RJW	**12/10/2024**
Facility ID No	Temperature and Weather Conditions		Start Time / End Time
	28 ºF	overcast	1:50 PM / 2:25 PM
Sample No / Time	Field Blank / Time		Duplicate / Time
GSI-100C / 2:25 PM			

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
2:00 PM	3.41	0.20	9.17	779.4	1119.2	2.67	7.46	-36.9	20.59
2:05 PM	3.41	0.40	9.26	786.1	1124.8	0.30	7.55	-52.1	5.50
2:10 PM	3.42	0.60	9.02	779.3	1121.6	0.01	7.58	-65.2	4.77
2:15 PM	3.42	0.80	8.99	772.5	1110.5	0.09	7.61	-72.2	3.20
2:20 PM	3.42	1.00	9.28	778.7	1113.1	0.12	7.63	-77.9	3.37
2:25 PM	3.42	1.20	9.32	779.6	1111.7	0.14	7.64	-81.9	3.48

Notes: _____

TRIMEDIA ENVIRONMENTAL & ENGINEERING

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name	
Former Cliffs Dow Site	99-059		**GSI-200A**	
Facility Location/Address	Field Technician	Reviewer	Date	
Lakeshore Boulevard, Marquette, MI	HAW	RJW	**12/10/2024**	
Facility ID No	Temperature and Weather Conditions		Start Time	End Time
	28 ºF	overcast	1:05 PM	1:44 PM
Sample No	Time	Field Blank	Time	Duplicate	Time
GSI-200A	1:33 PM				

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	7.96								
1:18 PM	8.02	0.25	8.2	746.0	1097.0	6.23	6.78	-98.7	12.82
1:23 PM	8.02	0.60	9.0	764.0	1099.0	8.22	6.67	-122.0	8.67
1:28 PM	8.02	0.90	9.3	767.0	1098.0	4.99	6.66	-134.3	11.42
1:33 PM	8.02	1.25	9.3	768.0	1097.0	4.91	6.65	-140.9	16.75

Notes:

TRIMEDIA ENVIRONMENTAL & ENGINEERING

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name
Former Cliffs Dow Site	99-059		**GSI-200B**
Facility Location/Address	Field Technician	Reviewer	Date
Lakeshore Boulevard, Marquette, MI	HAW	RJW	**12/10/2024**
Facility ID No	Temperature and Weather Conditions		Start Time / End Time
	28 ºF	overcast	1:45 PM / 2:18 PM
Sample No / Time	Field Blank / Time		Duplicate / Time
GSI-200B / 2:07 PM			

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	3.87								
1:52 PM	5.05	0.25	9.8	765.0	1078.0	5.81	7.07	-114.9	29.26
1:57 PM	5.11	0.60	10.0	792.0	1107.0	4.98	7.04	-146.0	5.65
2:02 PM	5.15	1.00	10.1	792.0	1106.0	4.85	7.06	-158.3	4.69
2:07 PM	5.18	1.25	10.0	790.0	1107.0	4.80	7.03	-163.5	4.20

Notes:

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name
Former Cliffs Dow Site	99-059		**GSI-200C**
Facility Location/Address	Field Technician	Reviewer	Date
Lakeshore Boulevard, Marquette, MI	HAW	RJW	**12/10/2024**
Facility ID No	Temperature and Weather Conditions		Start Time / End Time
	28 ºF	overcast	2:19 PM / 2:59 PM
Sample No / Time	Field Blank / Time		Duplicate / Time
GSI-200C / 2:43 PM			

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	3.79								
2:28 PM	5.63	0.30	8.8	1251.0	1806.0	6.20	7.05	-147.8	29.91
2:33 PM	5.82	0.60	8.7	1297.0	1882.0	5.20	7.03	-193.1	14.45
2:38 PM	5.84	1.00	8.7	1319.0	1916.0	5.07	7.04	-196.8	15.59
2:43 PM	5.85	1.25	8.9	1332.0	1929.0	5.02	7.04	-196.5	14.09

Notes: Line frozen - had to thaw in truck prior to purging.

TRIMEDIA ENVIRONMENTAL & ENGINEERING

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name
Former Cliffs Dow Site	99-059		**GSI-600A**
Facility Location/Address	Field Technician	Reviewer	Date
Lakeshore Boulevard, Marquette, MI	NAK	RJW	**12/10/2024**
Facility ID No	Temperature and Weather Conditions		Start Time / End Time
	28 ºF	overcast	12:20 PM / 12:40 PM
Sample No / Time	Field Blank / Time		Duplicate / Time
GSI-600A / 12:40 PM			

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	3.75								
12:25 PM	3.78	0.20	9.2	1054.0	1510.0	0.66	6.61	-61.9	5.81
12:30 PM	3.78	0.40	9.3	1066.0	1524.0	0.59	6.61	-65.4	3.56
12:35 PM	3.78	0.70	9.5	1074.0	1527.0	0.53	6.62	-69.8	2.56
12:40 PM	3.78	1.00	9.4	1072.0	1530.0	0.52	6.62	-71.8	2.70

Notes:

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name	
Former Cliffs Dow Site	99-059		**GSI-600B**	
Facility Location/Address	Field Technician	Reviewer	Date	
Lakeshore Boulevard, Marquette, MI	NAK	RJW	**12/10/2024**	
Facility ID No	Temperature and Weather Conditions		Start Time	End Time
	28 ºF	overcast	11:30 AM	12:00 PM
Sample No	Time	Field Blank	Time	Duplicate	Time
GSI-600B	12:00 PM				

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	7.58								
11:35 AM	7.68	0.20	7.8	1257.0	1872.0	0.78	6.74	-95.1	8.36
11:40 AM	7.68	0.40	7.8	1257.0	1901.0	0.61	6.75	-98.9	4.82
11:45 AM	7.68	0.60	7.9	1288.0	1912.0	0.56	6.75	-100.9	4.46
11:50 AM	7.68	0.80	8.1	1296.0	1912.0	0.52	6.75	-102.4	5.29
11:55 AM	7.68	1.10	7.8	1288.0	1919.0	0.50	6.76	-103.9	4.54
12:00 PM	7.68	1.40	7.9	1281.0	1918.0	0.51	6.76	-104.4	4.68

Notes:

TRIMEDIA ENVIRONMENTAL & ENGINEERING

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name	
Former Cliffs Dow Site	99-059		**GSI-600C**	
Facility Location/Address	Field Technician	Reviewer	Date	
Lakeshore Boulevard, Marquette, MI	NAK	RJW	**12/10/2024**	
Facility ID No	Temperature and Weather Conditions		Start Time	End Time
	28 ºF	overcast	1:00 PM	1:20 PM
Sample No	Time	Field Blank	Time	Duplicate	Time
GSI-600C	1:20 PM				

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	3.60								
1:05 PM	3.70	0.30	8.6	655.0	955.0	0.56	7.36	-112.1	5.70
1:10 PM	3.70	0.60	8.5	659.0	961.0	0.50	7.37	-116.1	4.23
1:15 PM	3.70	1.00	8.5	661.0	964.0	0.49	7.37	-118.1	3.39
1:20 PM	3.70	1.30	8.6	663.0	965.0	0.48	7.37	-119.7	3.03

Notes:

TRIMEDIA ENVIRONMENTAL & ENGINEERING

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name	
Former Cliffs Dow Site	99-059		**GSI-1000A**	
Facility Location/Address	Field Technician	Reviewer	Date	
Lakeshore Boulevard, Marquette, MI	NAK	RJW	**12/10/2024**	
Facility ID No	Temperature and Weather Conditions		Start Time	End Time
	28 ºF	overcast	9:20 AM	9:40 AM
Sample No	Time	Field Blank	Time	Duplicate	Time
GSI-1000A	9:40 AM				

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	7.13								
9:25 AM	7.40	0.30	4.0	229.2	383.0	4.85	6.44	87.2	26.77
9:30 AM	7.40	0.70	4.0	230.0	383.7	4.19	6.48	66.1	18.89
9:35 AM	7.40	1.00	4.2	230.7	383.2	4.36	6.52	63.5	23.59
9:40 AM	7.40	1.40	4.0	230.7	384.9	4.26	6.53	59.9	18.61

Notes: Orange organics, purge clear than low flow. ~1.5 gals

GSI 1000 LAKE

Temp	3.8
Cond.	67.1
Sp. Cond.	112.7
DO	12.62
pH	7.57
Turbidity	1.98
ORP	-12.5

TRIMEDIA ENVIRONMENTAL & ENGINEERING

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name	
Former Cliffs Dow Site	99-059		**GSI-1000B**	
Facility Location/Address	Field Technician	Reviewer	Date	
Lakeshore Boulevard, Marquette, MI	NAK	RJW	**12/10/2024**	
Facility ID No	Temperature and Weather Conditions		Start Time	End Time
	28 ºF	overcast	9:53 AM	10:18 AM
Sample No	Time	Field Blank	Time	Duplicate	Time
GSI-1000B	10:18 AM				

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	7.48								
9:58 AM	7.58	0.50	8.5	693.0	1013.0	0.70	6.60	-79.1	8.55
10:03 AM	7.58	1.00	8.6	697.0	1014.0	0.59	6.60	-88.1	6.10
10:08 AM	7.58	1.50	8.9	703.0	1016.0	0.54	6.59	-94.8	8.03
10:13 AM	7.58	2.00	9.0	708.0	1020.0	0.51	6.59	-99.3	5.23
10:18 AM	7.58	2.50	8.9	710.0	1025.0	0.49	6.58	-103.3	5.39

Notes:

TRIMEDIA ENVIRONMENTAL & ENGINEERING

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name
Former Cliffs Dow Site	99-059		**GSI-1000C**
Facility Location/Address	Field Technician	Reviewer	Date
Lakeshore Boulevard, Marquette, MI	NAK	RJW	**12/10/2024**
Facility ID No	Temperature and Weather Conditions		Start Time / End Time
	28 ºF	overcast	10:40 AM / 11:00 AM
Sample No / Time	Field Blank / Time		Duplicate / Time
GSI-1000C / 11:00 AM			

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	7.44								
10:45 AM	7.44	0.50	7.6	679.0	1018.0	0.54	7.50	-143.7	3.94
10:50 AM	7.44	1.00	7.6	678.0	1017.0	0.52	7.51	-148.1	3.89
10:55 AM	7.44	1.50	7.5	676.0	1016.0	0.51	7.52	-149.8	3.90
11:00 AM	7.44	2.00	7.5	676.0	1016.0	0.49	7.53	-150.6	3.89

Notes:

TRIMEDIA ENVIRONMENTAL & ENGINEERING

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name	
Former Cliffs Dow Site	99-059		**GSI-1100A**	
Facility Location/Address	Field Technician	Reviewer	Date	
Lakeshore Boulevard, Marquette, MI	HAW	RJW	**12/10/2024**	
Facility ID No	Temperature and Weather Conditions		Start Time	End Time
	28 ºF	overcast	11:31 AM	12:14 PM
Sample No	Time	Field Blank	Time	Duplicate	Time
GSI-1100A	12:02 PM				

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	7.41								
11:37 AM	7.53	0.40	5.2	90.9	145.8	11.88	7.39	-56.2	12.76
11:42 AM	7.53	0.80	5.8	198.6	313.6	10.76	6.67	-7.4	5.33
11:47 AM	7.53	1.25	6.0	242.6	381.7	10.07	6.56	-7.3	4.91
11:52 AM	7.53	1.60	5.9	261.8	413.4	9.55	6.52	12.0	3.96
11:57 AM	7.53	2.00	5.9	276.7	435.6	9.04	6.50	13.3	3.52
12:02 PM	7.53	2.50	5.8	293.4	464.2	8.77	6.50	14.3	3.10

Notes:

TRIMEDIA ENVIRONMENTAL & ENGINEERING

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name	
Former Cliffs Dow Site	99-059		**GSI-1100B**	
Facility Location/Address	Field Technician	Reviewer	Date	
Lakeshore Boulevard, Marquette, MI	HAW	RJW	**12/10/2024**	
Facility ID No	Temperature and Weather Conditions		Start Time	End Time
	28 ºF	overcast	10:45 AM	11:30 AM
Sample No	Time	Field Blank	Time	Duplicate	Time
GSI-1100B	11:19 AM				

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	7.29								
11:04 AM	7.35		7.6	724.0	1082.0	6.12	6.48	-48.9	3.76
11:09 AM	7.35		8.1	740.0	1092.0	5.40	6.59	-81.6	3.34
11:14 AM	7.35		8.5	750.0	1097.0	5.18	6.61	-93.9	3.03
11:19 AM	7.35	1.50	8.4	748.0	1097.0	5.12	6.62	-103.3	2.93

Notes: **GSI 1100 LAKE**

Temp	**3.9**
Cond	**65.4**
Sp Cond	**109.4**
DO	**12.91**
pH	**7.49**
ORP	**15.1**
Turb	**4.29**

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name
Former Cliffs Dow Site	99-059		**GSI-1100C**
Facility Location/Address	Field Technician	Reviewer	Date
Lakeshore Boulevard, Marquette, MI	HAW	RJW	**12/10/2024**
Facility ID No	Temperature and Weather Conditions		Start Time / End Time
	28 ºF	Overcast	12:15 PM / 1:01 PM
Sample No / Time	Field Blank / Time		Duplicate / Time
GSI-1100C / 12:49 PM			

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	7.17								
12:24 PM	7.46	0.60	7.2	4532.0	6859.0	5.89	7.14	-99.8	35.01
12:29 PM	7.48	1.25	7.6	1217.0	1810.0	5.45	7.20	-172.9	30.30
12:34 PM	7.49	1.75	7.8	1009.0	1501.0	5.33	7.20	-199.9	28.47
12:39 PM	7.50	2.40	7.7	976.0	1456.0	5.30	7.15	-213.2	26.95
12:44 PM	7.55	3.00	7.6	963.0	1441.0	5.28	7.14	-225.3	10.44
12:49 PM	7.55	3.50	7.8	955.0	1425.0	5.24	7.13	-234.3	12.52

Notes: Black sediment - purged before connecting to ProDSS. Purged GW is a yellow/green color

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name	
Former Cliffs Dow Site	99-059		**GSI-1100D**	
Facility Location/Address	Field Technician	Reviewer	Date	
Lakeshore Boulevard, Marquette, MI	NAK	RJW	**12/10/2024**	
Facility ID No	Temperature and Weather Conditions		Start Time	End Time
	28 ºF	overcast	1:55 PM	2:25 PM
Sample No	Time	Field Blank	Time	Duplicate	Time
GSI-1100D	2:25 PM				

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	3.43								
2:00 PM	3.60	0.50	7.3	840.0	1267.0	0.62	7.38	-109.6	29.87
2:05 PM	3.60	0.80	7.7	840.0	1254.0	0.54	7.36	-113.0	26.54
2:10 PM	3.60	1.20	7.4	820.0	1234.0	0.50	7.36	-116.5	33.41
2:15 PM	3.60	1.50	7.4	812.0	1235.0	0.50	7.35	-116.9	45.21
2:20 PM	3.60	1.80	7.4	806.0	1214.0	0.50	7.35	-117.6	41.37
2:25 PM	3.60	2.20	7.4	801.0	1209.0	0.48	7.35	-119.3	38.72

Notes: Fizz/changing turbidity (lay flow well on side, turbidity probe on bottom)

TRIMEDIA ENVIRONMENTAL & ENGINEERING

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name	
Former Cliffs Dow Site	99-059		**GSI-1200A**	
Facility Location/Address	Field Technician	Reviewer	Date	
Lakeshore Boulevard, Marquette, MI	HAW	RJW	**12/9/2024**	
Facility ID No	Temperature and Weather Conditions		Start Time	End Time
	32 ºF	overcast	4:07 PM	4:41 PM
Sample No	Time	Field Blank	Time	Duplicate	Time
GSI-1200A	4:33 PM				

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	8.28								
4:13 PM	8.34	0.40	9.6	577.0	816.0	7.28	6.90	-139.8	88.50
4:18 PM	8.34	0.80	10.3	690.0	958.0	5.55	6.75	-159.9	23.09
4:23 PM	8.34	1.20	10.4	731.0	1013.0	5.35	6.71	-170.4	12.07
4:28 PM	8.34	1.60	10.6	747.0	1029.0	5.20	6.70	-177.7	7.25
4:33 PM	8.34	2.00	10.7	760.0	1046.0	5.13	6.70	-182.5	5.23

Notes:

TRIMEDIA ENVIRONMENTAL & ENGINEERING

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name
Former Cliffs Dow Site	99-059		**GSI-1200B**
Facility Location/Address	Field Technician	Reviewer	Date
Lakeshore Boulevard, Marquette, MI	HAW	RJW	**12/9/2024**
Facility ID No	Temperature and Weather Conditions		Start Time / End Time
	32 ºF	overcast	4:42 PM / 5:11 PM
Sample No / Time	Field Blank / Time		Duplicate / Time
GSI-1200B / 5:01 PM			

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	8.41								
4:46 PM	8.48	0.50	10.0	722.0	1010.0	6.66	7.17	-135.1	6.31
4:51 PM	8.49	0.90	10.4	735.0	1020.0	5.46	7.10	-169.9	3.30
4:56 PM	8.50	1.40	10.4	735.0	1018.0	5.25	7.11	-189.3	3.13
5:01 PM	8.50	1.75	10.4	734.0	1018.0	5.21	7.11	-194.2	3.19

Notes:

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name	
Former Cliffs Dow Site	99-059		**GSI-1200C**	
Facility Location/Address	Field Technician	Reviewer	Date	
Lakeshore Boulevard, Marquette, MI	HAW	RJW	**12/9/2024**	
Facility ID No	Temperature and Weather Conditions		Start Time	End Time
	32 ºF	overcast	3:22 PM	4:06 PM
Sample No / Time	Field Blank / Time		Duplicate / Time	
GSI-1200C 3:48 PM			DUP-2	

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	8.42								
3:33 PM	8.46	0.25	9.8	645.0	909.0	7.28	7.52	-186.7	24.94
3:38 PM	8.46	0.75	9.5	611.0	867.0	5.78	7.66	-275.7	58.91
3:43 PM	8.46	1.20	9.6	612.0	867.0	5.60	7.64	-293.6	85.53
3:48 PM	8.46	1.50	9.4	613.0	873.0	5.51	7.57	-301.8	76.39

Notes: Bubbles observed in flow cell.

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name	
Former Cliffs Dow Site	99-059		**GSI-1300A**	
Facility Location/Address	Field Technician	Reviewer	Date	
Lakeshore Boulevard, Marquette, MI	NAK	RJW	**12/9/2024**	
Facility ID No	Temperature and Weather Conditions		Start Time	End Time
	33 ºF	overcast	3:05 PM	3:35 PM
Sample No	Time	Field Blank	Time	Duplicate	Time
GSI-1300A	3:35 PM				

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	7.09								
3:10 PM	7.12	0.10	8.7	712.0	1034.0	0.54	6.61	-76.3	4.92
3:15 PM	7.12	0.30	8.9	723.0	1044.0	0.42	6.62	-85.5	3.46
3:20 PM	7.12	0.50	9.0	736.0	1059.0	0.40	6.63	-95.3	3.13
3:25 PM	7.12	0.80	9.0	736.0	1060.0	0.40	6.63	-98.1	3.08
3:30 PM	7.12	1.00	9.0	737.0	1061.0	0.39	6.64	-99.9	3.01
3:35 PM	7.12	1.20	9.0	737.0	1063.0	0.39	6.64	-103.3	2.94

Notes: Odor, bubbles/fizz

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name	
Former Cliffs Dow Site	99-059		**GSI-1300B**	
Facility Location/Address	Field Technician	Reviewer	Date	
Lakeshore Boulevard, Marquette, MI	NAK	RJW	**12/9/2024**	
Facility ID No	Temperature and Weather Conditions		Start Time	End Time
	33 ºF	overcast	3:50 PM	4:20 PM
Sample No	Time	Field Blank	Time	Duplicate	Time
GSI-1300B	4:20 PM				

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	7.00								
4:00 PM	7.05	0.30	9.7	835.0	1179.0	0.55	6.73	-88.8	3.13
4:05 PM	7.05	0.60	9.7	834.0	1178.0	0.53	6.73	-89.4	3.05
4:10 PM	7.05	1.00	9.7	842.0	1191.0	0.49	6.81	-101.2	2.81
4:15 PM	7.05	1.50	9.7	850.0	1200.0	0.45	6.87	-114.8	3.10
4:20 PM	7.05	1.90	9.8	854.0	1205.0	0.42	6.88	-116.2	3.04

Notes: Odor, fizz

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name
Former Cliffs Dow Site	99-059		**GSI-1300C**
Facility Location/Address	Field Technician	Reviewer	Date
Lakeshore Boulevard, Marquette, MI	NAK	RJW	**12/9/2024**
Facility ID No	Temperature and Weather Conditions		Start Time / End Time
	33 ºF	overcast	4:30 PM / 4:45 PM
Sample No / Time	Field Blank / Time		Duplicate / Time
GSI-1300C / 4:45 PM			

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	6.97								
4:35 PM	7.00	0.30	8.9	667.0	963.0	1.27	7.49	-118.1	3.47
4:40 PM	7.00	0.70	8.8	666.0	964.0	1.14	7.49	-120.6	3.30
4:45 PM	7.00	1.00	8.8	669.0	970.0	0.83	7.49	-124.1	3.15

Notes: Odor, fizz

TRIMEDIA ENVIRONMENTAL & ENGINEERING

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name	
Former Cliffs Dow Site	99-059		**GSI-1400A**	
Facility Location/Address	Field Technician	Reviewer	Date	
Lakeshore Boulevard, Marquette, MI	NAK	RJW	**12/9/2024**	
Facility ID No	Temperature and Weather Conditions		Start Time	End Time
	33 ºF	overcast	2:25 PM	2:50 PM
Sample No	Time	Field Blank	Time	Duplicate	Time
GSI-1400A	2:50 PM				

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	6.32								
2:30 PM	6.42	0.10	6.4	321.3	499.5	0.81	6.86	-10.4	1108.40
2:35 PM	6.42	0.30	5.9	309.0	486.1	1.14	6.75	-20.2	48.68
2:40 PM	6.42	0.60	6.0	310.1	486.2	0.80	6.73	-19.7	34.99
2:45 PM	6.42	1.00	6.3	314.0	489.1	0.70	6.71	-20.8	16.43
2:50 PM	6.42	1.40	6.2	316.5	491.0	0.67	6.70	-21.3	18.22

Notes: Orange, 14:30 clear flow cell

TRIMEDIA ENVIRONMENTAL & ENGINEERING

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name	
Former Cliffs Dow Site	99-059		**GSI-1400B**	
Facility Location/Address	Field Technician	Reviewer	Date	
Lakeshore Boulevard, Marquette, MI	HAW	RJW	**12/10/2024**	
Facility ID No	Temperature and Weather Conditions		Start Time	End Time
	28 ºF	overcast	9:00 AM	9:52 AM
Sample No	Time	Field Blank	Time	Duplicate	Time
GSI-1400B	9:52 AM				

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	6.92								
9:24 AM	6.99	0.50	7.7	734.0	1098.0	5.92	6.47	22.7	98.62
9:29 AM	6.99	0.90	8.2	746.0	1101.0	5.40	6.49	-64.9	75.74
9:34 AM	6.99	1.25	8.2	748.0	1101.0	5.30	6.50	-80.4	78.58
9:39 AM	6.99	1.75	8.2	748.0	1101.0	5.25	6.51	-93.7	73.06

Notes:

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name	
Former Cliffs Dow Site	99-059		**GSI-1400C**	
Facility Location/Address	Field Technician	Reviewer	Date	
Lakeshore Boulevard, Marquette, MI	HAW	RJW	**12/10/2024**	
Facility ID No	Temperature and Weather Conditions		Start Time	End Time
	28 ºF	overcast	9:53 AM	10:41 AM
Sample No / Time	Field Blank / Time		Duplicate / Time	
GSI-1400C 10:41 AM				

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
	7.06								
9:58 AM	7.73	0.50	7.5	541.0	812.0	6.70	7.39	-108.1	18.91
10:03 AM	7.73	1.00	7.7	551.0	823.0	5.73	7.44	-130.0	10.48
10:08 AM	7.73	1.50	7.9	559.0	830.0	5.46	7.43	-137.0	17.41
10:13 AM	7.73	2.00	7.9	559.0	830.0	5.27	7.42	-143.7	20.11

Notes: Smith Construction dumped load right next to truck.

GSI 1400 LAKE

Temp	3.9
Cond.	66.9
Sp. Cond.	111.9
DO	12.72
pH	7.92
Turbidity	1.94
ORP	-26.5

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name
Former Cliffs Dow Site	99-059		**GSI-1500A**
Facility Location/Address	Field Technician	Reviewer	Date
Lakeshore Boulevard, Marquette, MI	MBM	RJW	**12/10/2024**
Facility ID No	Temperature and Weather Conditions		Start Time / End Time
	28 ºF	overcast	9:10 AM / 9:50 AM
Sample No / Time	Field Blank / Time		Duplicate / Time
GSI-1500A / 9:45 AM			

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
9:20 AM	7.22	0.3	6.67	500.7	768.3	1.95	6.81	329.0	9.55
9:25 AM	7.22	0.5	7.27	494.0	747.0	1.13	6.74	357.4	10.11
9:30 AM	7.22	0.7	7.28	491.7	742.9	0.97	6.76	339.8	4.72
9:35 AM	7.22	0.9	7.21	495.0	750.9	0.54	6.78	340.5	5.02
9:40 AM	7.22	1.1	7.27	494.5	748.8	0.62	6.79	339.0	4.25
9:45 AM	7.22	1.3	7.15	492.4	747.9	0.65	6.80	336.7	3.14

Notes:

TRIMEDIA ENVIRONMENTAL & ENGINEERING

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name	
Former Cliffs Dow Site	99-059		**GSI-1500B**	
Facility Location/Address	Field Technician	Reviewer	Date	
Lakeshore Boulevard, Marquette, MI	MBM	RJW	**12/10/2024**	
Facility ID No	Temperature and Weather Conditions		Start Time	End Time
	28 ºF	overcast	9:50 AM	11:20 AM
Sample No	Time	Field Blank	Time	Duplicate	Time
GSI-1500B	11:00 AM				

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
10:00 AM	7.12	0.4	8.33	795.4	1167.5	0.11	6.84	293.7	6.87
10:05 AM	7.12	0.6	8.22	800.1	1189.9	0.05	6.94	244.3	3.15
10:10 AM	7.12	0.8	7.02	780.0	1187.9	0.07	6.94	213.3	3.11
10:15 AM	7.12	1.0	6.97	776.0	1183.7	0.06	6.95	185.2	2.91
10:20 AM	7.12	1.2	3.37	764.0	1186.3	0.08	6.98	164.4	2.90
10:25 AM	7.12	1.4	5.79	773.8	1161.7	0.07	6.95	133.6	4.56
10:30 AM	7.12	1.6	8.65	820.8	1197.3	0.13	6.90	116.9	3.42
10:35 AM	7.12	1.8	8.09	811.3	1198.2	0.14	6.94	98.2	2.51
10:40 AM	7.12	2.0	7.83	804.1	1196.5	0.15	6.96	76.1	2.42
10:45 AM	7.12	2.2	8.00	810.5	1200.3	0.16	6.96	59.4	2.97
10:50 AM	7.12	2.5	7.86	806.9	1199.5	0.16	6.97	36.7	2.08
10:55 AM	7.12	2.7	7.54	789.4	1197.1	0.17	6.97	27.1	2.73
11:00 AM	7.12	2.9	7.81	804.3	1197.3	0.17	6.96	17.9	1.94

Notes:

GSI 1500 LAKE

Temp	3.89
Cond.	68.3
Sp. Cond.	102.0
DO	12.62
pH	7.79
Turbidity	32.3
ORP	2.17

TRIMEDIA ENVIRONMENTAL & ENGINEERING

WELL PURGE RECORD

Facility/Project Name	TriMedia Project Number		Well Name	
Former Cliffs Dow Site	99-059		**GSI-1500C**	
Facility Location/Address	Field Technician	Reviewer	Date	
Lakeshore Boulevard, Marquette, MI	MBM	RJW	**12/10/2024**	
Facility ID No	Temperature and Weather Conditions		Start Time	End Time
	28 ºF	overcast	11:20 AM	12:00 PM
Sample No	Time	Field Blank	Time	Duplicate	Time
GSI-1500C	11:55 AM				

Time	Depth to Water (DTW)	Volume Removed (gal.)	Temp C.	Conductivity uS (µS/m)	Sp. Conductivity	D.O.	pH	ORP (mV)	Turbidity (NTU)
11:25 AM	7.84	0.3	7.18	599.2	907.9	0.49	7.49	51.1	5.00
11:30 AM	8.03	0.5	7.76	620.4	943.2	0.06	7.77	8.1	2.53
11:35 AM	8.03	0.7	7.92	646.0	959.9	0.02	7.89	-16.8	2.88
11:40 AM	8.03	0.9	7.71	641.5	958.2	0.08	7.98	-36.3	3.61
11:45 AM	8.03	1.1	7.95	650.7	965.7	0.10	8.02	-50.6	4.21
11:50 AM	8.04	1.3	7.75	648.7	967.2	0.12	8.05	-61.2	4.88
11:55 AM	8.04	1.5	7.67	648.0	968.9	0.14	8.08	-70.7	6.34

Notes:

Appendix C

Tables and Data

Table 1 - Summary of Laboratory Analytical Results
UPG-400 - Groundwater VOCs & SVOCs
Former Cliffs Dow Site
Marquette, Michigan
TriMedia Project Number: 99-059

VOCs						UPG-400AR	UPG-400AR	UPG-400AR	UPG-400AR	UPG-400BR	UPG-400BR	UPG-400BR	UPG-400BR	UPG-400CR	UPG-400CR	UPG-400CR	UPG-400CR
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Water Quality Based Effluent Limits		Part 201 Generic Cleanup Criteria	Sample ID	UPG-400ARR	UPG-400AR	UPG-400AR	UPG-400AR	UPG-400BR	UPG-400BR	UPG-400BR	UPG-400BR	UPG-400CR	UPG-400CR	UPG-400CR	UPG-400CR
		Acute Criteria	Chronic Criteria	Groundwater Surface Water Interface	Screened Interval	8.0-13.0'	8.0-13.0'	8.0-13.0'	8.0-13.0'	20.0-25.0'	20.0-25.0'	20.0-25.0'	20.0-25.0'	40.0-45.0'	40.0-45.0'	40.0-45.0'	40.0-45.0'
					Date of Collection	7/14/2022	10/26/2022	12/5/2023	12/9/2024	7/14/2022	10/26/2022	12/5/2023	12/9/2024	7/14/2022	10/26/2022	12/5/2023	12/9/2024
					Date of Analysis	7/19/2022	11/8/2022	12/13/2023	12/27/2024	7/19/2022	11/8/2022	12/13/2023	12/27/2024	7/19/2022	11/8/2022	12/13/2023	12/27/2024
71432	1	--*	130	200 (X)	Benzene	2.1	5.6	2.1	5.8	ND	ND	19	8.1	ND	ND	ND	ND
100414	1	320	200	**18**	Ethylbenzene	**30**	11	8	9.8	**43**	**35**	**130**	**69.2**	**57**	**49**	**35**	**155**
108883	1	2,600	--*	270	Toluene	2.5	1.2	ND	1.3	12	21	220	117	4.9	ND	2.0	8.7
95636	1	310	190	**17**	1,2,4-Trimethylbenzene	**20**	4.7	ND	1.9	**110**	**98**	**120**	**83.4**	**33**	**34**	**17**	**133**
108678	1	810	500	45	1,3,5-Trimethylbenzene	ND	ND	ND	ND	30	27	34	22.4	1.8	ND	1.2	27.3
1330207	3	890	540	**41**	Xylenes, Total	**87**	33	ND	32	**120**	**86**	**430**	**211**	34	26	22	**209**

SVOCs						UPG-400AR	UPG-400AR	UPG-400AR	UPG-400AR	UPG-400BR	UPG-400BR	UPG-400BR	UPG-400BR	UPG-400CR	UPG-400CR	UPG-400CR	UPG-400CR
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Water Quality Based Effluent Limits		Part 201 Generic Cleanup Criteria	Sample ID	UPG-400AR	UPG-400AR	UPG-400AR	UPG-400AR	UPG-400BR	UPG-400BR	UPG-400BR	UPG-400BR	UPG-400CR	UPG-400CR	UPG-400CR	UPG-400CR
		Acute Criteria	Chronic Criteria	Groundwater Surface Water Interface	Screened Interval	8.0-13.0'	8.0-13.0'	8.0-13.0'	8.0-13.0'	20.0-25.0'	20.0-25.0'	20.0-25.0'	20.0-25.0'	40.0-45.0'	40.0-45.0'	40.0-45.0'	40.0-45.0'
					Date of Collection	7/14/2022	10/26/2022	12/5/2023	12/9/2024	7/14/2022	10/26/2022	12/5/2023	12/9/2024	7/14/2022	10/26/2022	12/5/2023	12/9/2024
					Date of Analysis	7/21/2022	11/2/2022	12/10/2023	12/27/2024	7/22/2022	11/2/2022	12/10/2023	12/27/2024	7/22/2022	11/2/2022	12/10/2023	12/27/2024
105679	5	2,700	--*	**380**	2,4-Dimethylphenol	ND	30	ND	19.8	5.7	30	1500	**614**	ND	ND	ND	ND
95487	10	1,400	840	(J)	2-Methylphenol	ND	ND	ND	ND	ND	12	410	191	ND	ND	ND	ND
106445	10	**450**	**275**	(J)	3&4-Methylphenol	ND	ND	ND	ND	ND	ND	**1,200**	**829**	ND	ND	ND	ND
132649	4	--*	44	**4.0**	Dibenzofuran	ND	ND	ND	ND	**4.9**	**5.0**	**4.7**	**6.20**	ND	ND	ND	3.2
91576	5	340	210	19	2-Methylnaphthalene	ND	ND	ND	ND	8.5	7.3	ND	ND	ND	ND	ND	ND
91203	5	200	120	**11**	Naphthalene	7.6	8.6	ND	1.7	**56**	**76**	**61**	**48.5**	5.5	ND	ND	**16.0**
108952	5	--*	5,000	210	Phenol	ND	ND	ND	ND	ND	ND	76.0	36.3	ND	ND	ND	ND

WATER QUALITY PARAMETERS					UPG-400AR	UPG-400AR	UPG-400AR	UPG-400AR	UPG-400BR	UPG-400BR	UPG-400BR	UPG-400BR	UPG-400CR	UPG-400CR	UPG-400CR	UPG-400CR
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Field Measured Parameters	Part 201 Generic Cleanup Criteria	Sample ID	UPG-400AR	UPG-400AR	UPG-400AR	UPG-400AR	UPG-400BR	UPG-400BR	UPG-400BR	UPG-400BR	UPG-400CR	UPG-400CR	UPG-400CR	UPG-400CR
		Mixing Zone Based Criteria	Groundwater Surface Water Interface	Screened Interval	8.0-13.0'	8.0-13.0'	8.0-13.0'	8.0-13.0'	20.0-25.0'	20.0-25.0'	20.0-25.0'	20.0-25.0'	40.0-45.0'	40.0-45.0'	40.0-45.0'	40.0-45.0'
				Date of Collection	7/14/2022	10/26/2022	12/5/2023	12/9/2024	7/14/2022	10/26/2022	12/5/2023	12/9/2024	7/14/2022	10/26/2022	12/5/2023	12/9/2024
				Date of Analysis	7/14/2022	10/26/2022	12/5/2023	12/9/2024	7/14/2022	10/26/2022	12/5/2023	12/9/2024	7/14/2022	10/26/2022	12/5/2023	12/9/2024
-	-	6.5-9.0	6.5-9.0	pH	6.7	6.7	6.9	6.6	6.8	7.0	7.0	6.8	7.3	7.6	7.6	7.5
-	-	-	NE	ORP	-152.4	46.6	-95.9	-74.3	-125.2	65.5	-145.2	-142.3	-160.8	84.8	-93.7	-179.2
-	-	-	(EE)	DO	5.1	0.1	0.1	0.60	5.3	0.1	0.0	0.44	5.3	0.2	0.4	0.4

Notes:
All results are presented in micrograms per liter (µg/L) or parts per billion (ppb)
ND - Compound not detected at a concentration greater than the laboratory's method detection limit
NS - Not Sampled
NE - Indicates criteria not established for the site
Bold denotes criteria that has been exceeded
Exceeds Mixing Zone-Based GSI Acute Criteria
Exceeds Mixing Zone-Based GSI Chronic Criteria
Analytical Methods EPA 8260 (VOCs), 8270 (SVOCs), EPA 8315A (Carbonyl)
* MDEQ Operations Memorandum 2 TDL not met for laboratory analysis
Footnoes and acronyms for the *PART 201 CRITERIA/PART 213 RISK BASED SCREENING LEVELS* can be located on MDEQ's website
Mixing Zone-Based GSI Criteria reflect MDEQ-developed criteria for site November 7, 2017
--* Indicates there is either no reasonable potential for compound to exceed Acute Criteria/Loading or the Acute Criteria is protective of the Chronic Criteria/Loading

Footnotes and acronyms for the *PART 201 CRITERIA/PART 213 RISK BASED SCREENING LEVELS* can be located on MDEQ's website

TRIMEDIA ENVIRONMENTAL & ENGINEERING

Table 1 - Summary of Laboratory Analytical Results
UPG-500 - Groundwater VOCs & SVOCs
Former Cliffs Dow Site
Marquette, Michigan
TriMedia Project Number: 99-059

VOCs					UPG-500A												UPG-500B												UPG-500C											
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Water Quality Based Effluent Limits		Part 201 Generic Cleanup Criteria	Sample ID	UPG-500A	UPG-500A	UPG-500A	UPG-500A	UPG-500A	UPG-500A	UPG-500A	UPG-500A	UPG-500A	UPG-500A	UPG-500A	UPG-500A	UPG-500A	UPG-500B	UPG-500B	UPG-500B	UPG-500B	UPG-500B	UPG-500B	UPG-500B	UPG-500B	UPG-500B	UPG-500B	UPG-500B	UPG-500C	UPG-500C	UPG-500C	UPG-500C	UPG-500C	UPG-500C	UPG-500C	UPG-500C	UPG-500C	UPG-500C	UPG-500C	UPG-500C
		Acute Criteria	Chronic Criteria	Groundwater Surface Water Interface	Screened Interval	4.84-9.84'	4.84-9.84'	4.84-9.84'	4.84-9.84'	4.84-9.84'	4.84-9.84'	4.84-9.84'	4.84-9.84'	4.84-9.84'	4.84-9.84'	4.84-9.84'	4.84-9.84'	4.84-9.84'	19.34-24.34'	19.34-24.34'	19.34-24.34'	19.34-24.34'	19.34-24.34'	19.34-24.34'	19.34-24.34'	19.34-24.34'	19.34-24.34'	19.34-24.34'	19.34-24.34'	19.34-24.34'	36.90-44.60'	36.90-44.60'	36.90-44.60'	36.90-44.60'	36.90-44.60'	36.90-44.60'	36.90-44.60'	36.90-44.60'	36.90-44.60'	36.90-44.60'	36.90-44.60'	36.90-44.60'
					Date of Collection	7/16/2019	11/26/2019	1/6/2020	2/11/2020	5/6/2020	1/4/2021	10/12/2021	4/18/2022	7/14/2022	10/25/2022	12/4/2023	12/9/2024		7/11/2019	11/26/2019	1/6/2020	2/11/2020	5/6/2020	1/4/2021	10/12/2021	4/18/2022	7/14/2022	10/25/2022	12/4/2023	12/9/2024		7/11/2019	11/26/2019	1/6/2020	2/11/2020	5/6/2020	1/4/2021	10/12/2021	4/18/2022	7/14/2022	10/25/2022	12/4/2023	12/9/2024
					Date of Analysis	7/24/2019	12/13/2019	1/21/2020	2/24/2020	5/18/2020	1/7/2021	10/23/2021	4/26/2022	7/19/2022	11/5/2022	12/11/2023	12/27/2024		7/19/2019	12/13/2019	1/21/2020	2/24/2020	5/18/2020	1/7/2021	10/23/2021	4/26/2022	7/19/2022	11/8/2022	12/11/2023	12/27/2024		7/19/2019	12/13/2019	1/21/2020	2/24/2020	5/18/2020	1/7/2021	10/23/2021	4/27/2022	7/19/2022	7/19/2022	12/11/2023	12/27/2024
71432	1	--*	130	200 (X)	Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	2.4	1.4	1.2	1.4	ND	1.2	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
100414	1	320	200	18	Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	**20**	**26**	**31**	**25**	16	13	ND	ND	ND	6.3	1.2		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
108883	1	2,600	--*	270	Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	7.3	5.8	4.8	8.4	1.6	16	ND	ND	ND	5.1	ND		ND	ND	ND	ND	ND	1.3	ND	ND	ND	ND
95636	1	310	190	17	1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	5.8	13	12	24	1.7	11	8.3	1.4	ND	6	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
108678	1	810	500	45	1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	2	2.8	1.8	8.9	2.3	5.5	4.2	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1330207	3	890	540	41	Xylenes, Total	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	27	40	39	38	17	**46**	ND	ND	ND	17	2.14		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

SVOCs					UPG-500A												UPG-500B												UPG-500C											
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Water Quality Based Effluent Limits		Part 201 Generic Cleanup Criteria	Sample ID	UPG-500A	UPG-500A	UPG-500A	UPG-500A	UPG-500A	UPG-500A	UPG-500A	UPG-500A	UPG-500A	UPG-500A	UPG-500A	UPG-500A	UPG-500A	UPG-500B	UPG-500B	UPG-500B	UPG-500B	UPG-500B	UPG-500B	UPG-500B	UPG-500B	UPG-500B	UPG-500B	UPG-500B	UPG-500C	UPG-500C	UPG-500C	UPG-500C	UPG-500C	UPG-500C	UPG-500C	UPG-500C	UPG-500C	UPG-500C	UPG-500C	UPG-500C
		Acute Criteria	Chronic Criteria	Groundwater Surface Water Interface	Screened Interval	4.84-9.84'	4.84-9.84'	4.84-9.84'	4.84-9.84'	4.84-9.84'	4.84-9.84'	4.84-9.84'	4.84-9.84'	4.84-9.84'	4.84-9.84'	4.84-9.84'	4.84-9.84'	4.84-9.84'	19.34-24.34'	19.34-24.34'	19.34-24.34'	19.34-24.34'	19.34-24.34'	19.34-24.34'	19.34-24.34'	19.34-24.34'	19.34-24.34'	19.34-24.34'	19.34-24.34'	19.34-24.34'	36.90-44.60'	36.90-44.60'	36.90-44.60'	36.90-44.60'	36.90-44.60'	36.90-44.60'	36.90-44.60'	36.90-44.60'	36.90-44.60'	36.90-44.60'	36.90-44.60'	36.90-44.60'
					Date of Collection	7/16/2019	11/26/2019	1/6/2020	2/11/2020	5/6/2020	1/4/2021	10/12/2021	4/18/2022	7/14/2022	10/25/2022	12/4/2023	12/9/2024		7/11/2019	11/26/2019	1/6/2020	2/11/2020	5/6/2020	1/4/2021	10/12/2021	4/18/2022	7/14/2022	10/25/2022	12/4/2023	12/9/2024		7/11/2019	11/26/2019	1/6/2020	2/11/2020	5/6/2020	1/4/2021	10/12/2021	4/18/2022	7/14/2022	10/25/2022	12/4/2023	12/9/2024
					Date of Analysis	7/24/2019	12/13/2019	1/21/2020	2/24/2020	5/18/2020	1/7/2021	10/19/2021	4/26/2022	7/22/2022	11/2/2022	12/10/2023	12/27/2024		7/19/2019	12/13/2019	1/21/2020	2/24/2020	5/18/2020	1/7/2021	10/19/2021	4/26/2022	7/22/2022	11/8/2022	12/10/2023	12/27/2024		7/19/2019	12/13/2019	1/21/2020	2/24/2020	5/18/2020	1/7/2021	10/23/2021	4/27/2022	7/22/2022	11/2/2022	12/10/2023	12/27/2024
105679	5	2,700	--*	380	2,4-Dimethylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	27	ND	6.6	160	ND	ND	ND	62	62		ND	ND	ND	ND	ND	76	11	55	48	7.6	22	22
95487	10	1,400	840	(J)	2-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	24	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
106445	10	450	275	(J)	3&4-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
132649	4	--*	44	4.0	Dibenzofuran	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
91576	5	340	210	19	2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	**22**	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
91203	5	200	120	11	Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.115
108952	5	--*	5,000	210	Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

WATER QUALITY PARAMETERS					UPG-500A												UPG-500B												UPG-500C											
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Field Measured Parameters	Part 201 Generic Cleanup Criteria	Sample ID	UPG-500A	UPG-500A	UPG-500A	UPG-500A	UPG-500A	UPG-500A	UPG-500A	UPG-500A	UPG-500A	UPG-500A	UPG-500A	UPG-500A	UPG-500A	UPG-500B	UPG-500B	UPG-500B	UPG-500B	UPG-500B	UPG-500B	UPG-500B	UPG-500B	UPG-500B	UPG-500B	UPG-500B	UPG-500B	UPG-500C	UPG-500C	UPG-500C	UPG-500C	UPG-500C	UPG-500C	UPG-500C	UPG-500C	UPG-500C	UPG-500C	UPG-500C	UPG-500C
		Mixing Zone Based Criteria	Groundwater Surface Water Interface	Screened Interval	4.84-9.84'	4.84-9.84'	4.84-9.84'	4.84-9.84'	4.84-9.84'	4.84-9.84'	4.84-9.84'	4.84-9.84'	4.84-9.84'	4.84-9.84'	4.84-9.84'	4.84-9.84'	4.84-9.84'	19.34-24.34'	19.34-24.34'	19.34-24.34'	19.34-24.34'	19.34-24.34'	19.34-24.34'	19.34-24.34'	19.34-24.34'	19.34-24.34'	19.34-24.34'	19.34-24.34'	19.34-24.34'	19.34-24.34'	36.90-44.60'	36.90-44.60'	36.90-44.60'	36.90-44.60'	36.90-44.60'	36.90-44.60'	36.90-44.60'	36.90-44.60'	36.90-44.60'	36.90-44.60'	36.90-44.60'	36.90-44.60'
				Date of Collection	7/11/2019	11/26/2019	1/6/2020	2/11/2020	5/6/2020	1/4/2021	10/12/2021	4/18/2022	7/14/2022	10/25/2022	12/4/2023	12/9/2024		7/11/2019	11/26/2019	1/6/2020	2/11/2020	5/6/2020	1/4/2021	10/12/2021	4/18/2022	7/14/2022	10/25/2022	12/4/2023	12/9/2024		7/11/2019	11/26/2019	1/6/2020	2/11/2020	5/6/2020	1/4/2021	10/12/2021	4/18/2022	7/14/2022	10/25/2022	12/4/2023	12/9/2024
				Date of Analysis	7/11/2019	11/26/2019	1/6/2020	2/11/2020	5/6/2020	1/4/2021	10/12/2021	4/26/2022	7/14/2022	10/25/2022	12/4/2023	12/9/2024		7/11/2019	11/26/2019	1/6/2020	2/11/2020	5/6/2020	1/4/2021	10/23/2021	4/26/2022	7/14/2022	10/25/2022	12/4/2023	12/9/2024		7/11/2019	11/26/2019	1/6/2020	2/11/2020	5/6/2020	1/4/2021	10/23/2021	4/27/2022	7/14/2022	10/25/2022	12/4/2023	12/4/2023
-	-	6.5-9.0	6.5-9.0	pH	6.2	6.3	6.4	6.3	6.4	6.0	6.3	6.2	6.2	6.4	6.4	6.5		6.9	6.7	6.9	6.8	6.8	6.5	7.1	6.9	6.9	7.2	7.1	7.2		7.2	7.4	7.5	7.5	7.6	7.1	7.4	7.2	7.2	7.4	7.5	7.6
-	-	-	NE	ORP	-27.6	-117.2	50.6	-60.9	-75.8	-25.1	-34.5	16.3	-46.3	-18.7	2.8	-82.6		-163.7	-178.5	-93.8	-113.6	-138.4	-94.3	-120.0	-134.3	-100.8	10.3	-70.6	-251.7		-196.1	-225.9	-159.9	-182.5	-212.4	-203.3	-194.4	-235.7	-196.0	-81.6	-124.3	-296.5
-	-	-	(EE)	DO	2.7	1.5	0.9	0.5	1.5	1.1	0.2	1.9	0.9	0.1	0.9	5.8		0.3	1.3	0.4	0.3	1.4	0.6	0.04	0.95	0.64	0.13	0.34	5.26		0.3	1.4	0.4	0.3	1.4	0.6	0.04	0.94	0.55	0.09	0.34	5.44

Notes:
All results are presented in micrograms per liter (µg/L) or parts per billion (ppb)
ND - Compound not detected at a concentration greater than the laboratory's method detection limit
NS - Not Sampled
NE - Indicates criteria not established for the site
Bold denotes criteria that has been exceeded
Exceeds Mixing Zone-Based GSI Acute Criteria
Exceeds Mixing Zone-Based GSI Chronic Criteria
Analytical Methods EPA 8260 (VOCs), 8270 (SVOCs), EPA 8315A (Carbonyl)
* MDEQ Operations Memorandum 2 TDL not met for laboratory analysis
Footnoes and acronyms for the *PART 201 CRITERIA/PART 213 RISK BASED SCREENING LEVELS* can be located on MDEQ's website
Mixing Zone-Based GSI Criteria reflect MDEQ-developed criteria for site November 7, 2017
--* Indicates there is either no reasonable potential for compound to exceed Acute Criteria/Loading or the Acute Criteria is protective of the Chronic Criteria/Loading

Footnotes and acronyms for the *PART 201 CRITERIA/PART 213 RISK BASED SCREENING LEVELS* can be located on MDEQ's website

Table 1 - Summary of Laboratory Analytical Results
UPG-600 - Groundwater VOCs & SVOCs
Former Cliffs Dow Site
Marquette, Michigan
TriMedia Project Number: 99-059

VOCs					UPG-600A												UPG-600B												UPG-600C												UPG-600D							
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Water Quality Based Effluent Limits		Part 201 Generic Cleanup Criteria	Sample ID	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600B	UPG-600B	UPG-600B	UPG-600B	UPG-600B	UPG-600B	UPG-600B	UPG-600B	UPG-600B	UPG-600B	UPG-600B	UPG-600B	UPG-600C	UPG-600C	UPG-600C	UPG-600C	UPG-600C	UPG-600C	UPG-600C	UPG-600C	UPG-600C	UPG-600C	UPG-600C	UPG-600C	UPG-600D	UPG-600D	UPG-600D	UPG-600D	UPG-600D	UPG-600D	UPG-600D	UPG-600D
		Acute Criteria	Chronic Criteria	Groundwater Surface Water Interface	Screened Interval	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	19.56-24.56'	19.56-24.56'	19.56-24.56'	19.56-24.56'	19.56-24.56'	19.56-24.56'	19.56-24.56'	19.56-24.56'	19.56-24.56'	19.56-24.56'	19.56-24.56'	19.56-24.56'	39.56-44.56	39.56-44.56	39.56-44.56	39.56-44.56	39.56-44.56	39.56-44.56	39.56-44.56	39.56-44.57	39.56-44.58	39.56-44.56	39.56-44.56	39.56-44.56	59.03-64.03	59.03-64.03	59.03-64.04	59.03-64.05	59.03-64.03	59.03-64.03	59.03-64.03	59.03-64.03
					Date of Collection	7/11/2019	11/26/2019	1/6/2020	2/11/2020	5/6/2020	1/5/2021	10/12/2021	4/18/2022	7/13/2022	10/25/2022	12/4/2023	12/9/2024	7/19/2019	12/13/2019	1/6/2020	2/11/2020	5/6/2020	1/5/2021	10/12/2021	4/18/2022	7/13/2022	10/25/2022	12/4/2023	12/9/2024	7/11/2019	11/26/2019	1/6/2020	2/11/2020	5/6/2020	1/5/2021	10/12/2021	4/18/2022	7/13/2022	10/25/2022	12/4/2023	12/9/2024	1/4/2021	10/12/2021	4/18/2022	7/13/2022	10/25/2022	12/4/2023	12/9/2024
					Date of Analysis	7/19/2019	12/13/2019	1/21/2020	2/24/2020	5/18/2020	1/7/2021	10/26/2021	4/27/2022	7/19/2022	11/5/2022	12/12/2023	12/27/2024	7/19/2019	12/13/2019	1/21/2020	2/24/2020	5/18/2020	1/7/2021	10/25/2021	4/27/2022	7/19/2022	11/5/2022	12/12/2023	12/27/2024	7/19/2019	12/13/2019	1/21/2020	2/24/2020	5/18/2020	1/7/2021	10/26/2021	4/27/2022	7/19/2022	11/5/2022	12/12/2023	12/27/2024	7/19/2022	10/23/2021	4/27/2022	7/19/2022	11/2/2022	12/12/2023	12/27/2024
71432	1	-*	130	200 (X)	Benzene	4.2	6.9	7.8	ND	6.4	4.2	4.9	5.1	ND	10	10	5.66	12	ND	ND	ND	ND	ND	4.6	ND	ND	ND	ND	ND	ND	2.7	1.9	ND	2.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
100414	1	**320**	**200**	**18**	Ethylbenzene	**320**	**510**	**470**	**460**	**490**	**530**	**360**	**320**	**510**	**400**	**630**	**464**	**990**	**1,100**	**920**	**870**	**690**	**740**	**870**	**740**	**790**	**770**	**690**	**766**	**480**	**400**	**300**	**280**	**200**	**300**	**38**	2.2	1.3	1.0	ND	ND	ND	1.5	ND	ND	ND	ND	ND	ND	ND
108883	1	2,600	-*	**270**	Toluene	5.8	7.3	7.3	ND	6.3	17	12	6.8	16	6.6	18	7.25	**1,100**	**1,100**	**1,000**	**780**	**550**	**410**	11	**850**	**770**	**850**	**720**	**661**	100	**330**	250	71	34	52	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
95636	1	**310**	**190**	**17**	1,2,4-Trimethylbenzene	**39**	**130**	**130**	**120**	**160**	**140**	**110**	**110**	**160**	**130**	**200**	**22.7**	**440**	**500**	**490**	**460**	**470**	**540**	**110**	**490**	**510**	**480**	**440**	**437**	**84**	**200**	**200**	**170**	**780**	**110**	**150**	**27**	12	5.5	1.5	ND	ND	ND	ND	ND	ND	ND	ND	ND
108678	1	810	500	**45**	1,3,5-Trimethylbenzene	12	33	38	32	38	36	24	32	34	34	**48**	44.8	**120**	**130**	**130**	**140**	**130**	**140**	**24**	**140**	**140**	**140**	**120**	**121**	ND	57	53	**42**	**42**	23	33	1.6	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1330207	3	**890**	**540**	**41**	Xylenes, Total	**630**	**890**	**850**	**850**	**880**	**960**	**660**	**630**	**890**	**690**	**1300**	**1030**	**4,100**	**4,300**	**3,900**	**3,600**	**2,800**	**2,600**	**3,400**	**2,900**	**3,200**	**3,300**	**2,800**	**2,850**	**1,700**	**1,500**	**1,100**	**960**	**650**	**610**	**100**	19	12	8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

SVOCs					UPG-600A												UPG-600B												UPG-600C												UPG-600D							
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Water Quality Based Effluent Limits		Part 201 Generic Cleanup Criteria	Sample ID	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600B	UPG-600B	UPG-600B	UPG-600B	UPG-600B	UPG-600B	UPG-600B	UPG-600B	UPG-600B	UPG-600B	UPG-600B	UPG-600B	UPG-600C	UPG-600C	UPG-600C	UPG-600C	UPG-600C	UPG-600C	UPG-600C	UPG-600C	UPG-600C	UPG-600C	UPG-600C	UPG-600C	UPG-600D	UPG-600D	UPG-600D	UPG-600D	UPG-600D	UPG-600D	UPG-600D	UPG-600D
		Acute Criteria	Chronic Criteria	Groundwater Surface Water Interface	Screened Interval	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	19.56-24.56'	19.56-24.56'	19.56-24.56'	19.56-24.56'	19.56-24.56'	19.56-24.56'	19.56-24.56'	19.56-24.56'	19.56-24.56'	19.56-24.56'	19.56-24.56'	19.56-24.56'	39.56-44.56	39.56-44.56	39.56-44.56	39.56-44.56	39.56-44.56	39.56-44.56	39.56-44.56	39.56-44.57	39.56-44.58	39.56-44.56	39.56-44.56	39.56-44.56	59.03-64.03	59.03-64.03	59.03-64.04	59.03-64.05	59.03-64.03	59.03-64.03	59.03-64.03	59.03-64.03
					Date of Collection	7/11/2019	11/26/2019	1/6/2020	2/11/2020	5/6/2020	1/5/2021	10/12/2021	4/18/2022	7/13/2022	10/25/2022	12/4/2023	12/9/2024	7/19/2019	12/13/2019	1/21/2020	2/24/2020	5/18/2020	1/7/2021	10/19/2021	4/26/2022	7/21/2022	11/2/2022	12/10/2023	12/27/2024	7/19/2019	12/13/2019	1/21/2020	2/24/2020	5/18/2020	1/7/2021	10/19/2021	4/26/2022	7/22/2022	11/2/2022	12/10/2023	12/27/2024	1/7/2021	10/19/2021	4/26/2022	7/22/2022	11/8/2022	12/10/2023	12/27/2024
105679	5	2,700	-*	**380**	2,4-Dimethylphenol	ND	ND	6.1	ND	ND	ND	ND	ND	ND	ND	ND	6.7	**980**	**720**	**470**	330	**540**	340	**650**	240	89	**600**	**510**	**571**	130	120	120	18	ND	15	ND	ND	ND	ND	ND	ND	ND	5.6	ND	ND	ND	ND	ND	3.11
95487	10	1,400	840	(J)	2-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	90	100	50	55	78	30	48	37	49	49	38	108	19	22	16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
106445	10	450	275	(J)	3&4-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	270	160	120	ND	130	46	150	58	140	200	98	196	10	31	37	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
132649	4	-*	44	4.0	Dibenzofuran	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
91576	5	340	210	**19**	2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.3	ND	8.1	3.7	**97**	**140**	**93**	**ND**	**88**	**110**	**100**	**99**	**110**	**110**	**130**	**118**	ND	**49**	8.4	8.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
91203	5	**200**	**120**	**11**	Naphthalene	**12**	**30**	**30**	**15**	**19**	**23**	**19**	**23**	**54**	**24**	**70**	**45**	**400**	**610**	**380**	**300**	**350**	**440**	**160**	**440**	**95**	**490**	**560**	**477**	ND	**160**	**150**	**100**	**92**	**63**	**32**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.174
108952	5	-*	5,000	210	Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	9.75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

WATER QUALITY PARAMETERS					UPG-600A												UPG-600B												UPG-600C												UPG-600D							
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Field Measured Parameters	Part 201 Generic Cleanup Criteria	Sample ID	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600A	UPG-600B	UPG-600B	UPG-600B	UPG-600B	UPG-600B	UPG-600B	UPG-600B	UPG-600B	UPG-600B	UPG-600B	UPG-600B	UPG-600B	UPG-600C	UPG-600C	UPG-600C	UPG-600C	UPG-600C	UPG-600C	UPG-600C	UPG-600C	UPG-600C	UPG-600C	UPG-600C	UPG-600C	UPG-600D	UPG-600D	UPG-600D	UPG-600D	UPG-600D	UPG-600D	UPG-600D	UPG-600D
		Mixing Zone Based Criteria	Groundwater Surface Water Interface	Screened Interval	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	3.32-8.32'	19.56-24.56'	19.56-24.56'	19.56-24.56'	19.56-24.56'	19.56-24.56'	19.56-24.56'	19.56-24.56'	19.56-24.56'	19.56-24.56'	19.56-24.56'	19.56-24.56'	19.56-24.56'	39.56-44.56	39.56-44.56	39.56-44.56	39.56-44.56	39.56-44.56	39.56-44.56	39.56-44.56	39.56-44.57	39.56-44.58	39.56-44.56	39.56-44.56	39.56-44.56	59.03-64.03	59.03-64.03	59.03-64.04	59.03-64.05	59.03-64.03	59.03-64.03	59.03-64.03	59.03-64.03
				Date of Collection	7/11/2019	11/26/2019	1/6/2020	2/11/2020	5/6/2020	1/5/2021	10/12/2021	4/18/2022	7/13/2022	10/25/2022	12/4/2023	12/9/2024	7/11/2019	11/26/2019	1/6/2020	2/11/2020	5/6/2020	1/5/2021	10/12/2021	4/18/2022	7/13/2022	10/25/2022	12/4/2023	12/9/2024	7/11/2019	11/26/2019	1/6/2020	2/11/2020	5/6/2020	1/5/2021	10/12/2021	4/18/2022	7/13/2022	10/25/2022	12/4/2023	12/9/2024	1/4/2021	10/12/2021	4/18/2022	7/13/2022	10/25/2022	12/4/2023	12/9/2024
				Date of Analysis	7/11/2019	11/26/2019	1/6/2020	2/11/2020	5/6/2020	1/5/2021	10/12/2021	4/18/2022	7/13/2022	10/25/2022	12/4/2023	12/9/2024	7/11/2019	11/26/2019	1/6/2020	2/11/2020	5/6/2020	1/5/2021	10/12/2021	4/18/2022	7/13/2022	10/25/2022	12/4/2023	12/9/2024	7/11/2019	11/26/2019	1/6/2020	2/11/2020	5/6/2020	1/5/2021	10/12/2021	4/18/2022	7/13/2022	10/25/2022	12/4/2023	12/9/2024	1/4/2021	10/12/2021	4/18/2022	7/13/2022	10/25/2022	12/4/2023	12/9/2024
-	-	6.5-9.0		pH	6.8	6.8	6.8	6.8	6.7	6.8	6.7	6.8	6.4	6.2	6.6	6.8	6.7	6.9	6.7	6.8	6.6	6.8	6.6	6.7	6.6	6.9	6.7	6.9	6.9	7.5	7.3	7.4	7.2	7.4	7.2	7.4	7.1	7.2	7.4	7.4	7.4	7.7	7.5	7.6	7.7	7.7	7.7
-	-	-		NE	ORP	-93.5	-169.5	-139.9	-92.7	-120.4	-132.8	-99.6	-103.1	-46.3	-58.6	-64.7	-182.3	-68.3	-161.2	-107.4	-41.3	-111.5	-116.8	-112.2	-111.9	-100.8	-41.7	-88.7	-196.7	-71.7	-176.3	-150.4	-81.4	-102.7	-146.1	-96.7	-107.8	-196.0	16.0	-89.1	-48.4	-175.7	-150.6	-159.5	-160.9	-102	-118.8	-208.2
-	-	-		(EE)	DO	0.3	1.3	0.4	0.4	1.5	0.7	0.1	0.33	0.92	0.12	4.53	5.09	1.1	1.3	0.4	0.4	1.4	0.6	0.1	0.2	0.6	0.5	0.30	5.38	1.2	1.3	0.3	0.4	1.4	0.6	0.1	0.3	0.6	0.1	0.33	5.64	0.66	0.06	0.2	1.05	0.07	0.35	5.53

Notes:
All results are presented in micrograms per liter (ug/L) or parts per billion (ppb)
ND - Compound not detected at a concentration greater than the laboratory's method detection limit
NS - Not Sampled
NE - Indicates criteria not established for the site
Bold denotes criteria that has been exceeded
Exceeds Mixing Zone-Based GSI Acute Criteria
Exceeds Mixing Zone-Based GSI Chronic Criteria
Analytical Methods EPA 8260 (VOCs), 8270 (SVOCs), EPA 8315A (Carbonyl)
* MDEQ Operations Memorandum 2 TDL not met for laboratory analysis
Footnoes and acronyms for the*PART 201 CRITERIA/PART 213 RISK BASED SCREENING LEVELS*can be located on MDEQ's website
Mixing Zone-Based GSI Criteria reflect MDEQ-developed criteria for site November 7, 2017
-* Indicates there is either no reasonable potential for compound to exceed Acute Criteria/Loading or the Acute Criteria is protective of the Chronic Criteria/Loading

Footnotes and acronyms for the*PART 201 CRITERIA/PART 213 RISK BASED SCREENING LEVELS*can be located on MDEQ's website

Table 1 - Summary of Laboratory Analytical Results
UPG-700 - Groundwater VOCs & SVOCs
Former Cliffs Dow Site
Marquette, Michigan
TriMedia Project Number: 99-059

VOCs						UPG-700A										UPG-700B										UPG-700C											
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Water Quality Based Effluent Limits		Part 201 Generic Cleanup Criteria	Sample ID	UPG-700A	UPG-700A	UPG-700A	UPG-700A	UPG-700A	UPG-700A	UPG-700A	UPG-700A	UPG-700A	UPG-700A	UPG-700A	UPG-700A	UPG-700B	UPG-700B	UPG-700B	UPG-700B	UPG-700B	UPG-700B	UPG-700B	UPG-700B	UPG-700B	UPG-700B	UPG-700C	UPG-700C	UPG-700C	UPG-700C	UPG-700C	UPG-700C	UPG-700C	UPG-700C	UPG-700C	UPG-700C	UPG-700C	UPG-700C
		Acute Criteria	Chronic Criteria	Groundwater Surface Water Interface	Screened Interval	6.71-11.71'	6.71-11.71'	6.71-11.71'	6.71-11.71'	6.71-11.71'	6.71-11.71'	6.71-11.71'	6.71-11.71'	6.71-11.71'	6.71-11.71'	6.71-11.71'	6.71-11.71'	23.68-28.68	23.68-28.68	23.68-28.68	23.68-28.68	23.68-28.68	23.68-28.68	23.68-28.69	23.68-28.70	23.68-28.68	23.68-28.68	23.68-28.68	43.26-48.26'	43.26-48.26'	43.26-48.26'	43.26-48.26'	43.26-48.26'	43.26-48.26'	43.26-48.26'	43.26-48.26'	43.26-48.26'	43.26-48.26'	43.26-48.26'
					Date of Collection	11/26/2019	1/6/2020	2/11/2020	5/6/2020	1/4/2021	10/12/2021	4/18/2022	7/13/2022	10/25/2022	12/5/2023	12/9/2024	11/26/2019	1/7/2020	5/6/2020	2/11/2020	1/4/2021	10/12/2021	4/18/2022	7/13/2022	10/25/2022	12/5/2023	12/9/2024	11/26/2019	1/7/2020	2/11/2020	5/6/2020	1/4/2021	10/12/2021	4/18/2022	7/13/2022	10/25/2022	12/5/2023	12/9/2024
					Date of Analysis	12/13/2019	1/21/2020	2/24/2020	5/18/2020	1/7/2021	10/23/2021	4/27/2022	7/19/2022	11/5/2022	12/11/2023	12/27/2024	12/13/2019	1/21/2020	5/18/2020	2/24/2020	1/7/2021	10/23/2021	4/28/2022	7/19/2022	11/5/2022	12/11/2023	12/27/2024	12/13/2019	1/21/2020	2/24/2020	5/18/2020	1/7/2021	10/23/2021	4/28/2022	7/19/2022	11/5/2022	12/11/2023	12/27/2024
71432	1	--*	130	200 (X)	Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
100414	1	320	200	18	Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
108883	1	2,600	--*	270	Toluene	32	2.0	1.1	ND	ND	ND	ND	ND	ND	ND	ND	19	6.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
95636	1	310	190	17	1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
108678	1	810	500	45	1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1330207	3	890	540	41	Xylenes, Total	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

SVOCs						UPG-700A										UPG-700B										UPG-700C											
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Water Quality Based Effluent Limits		Part 201 Generic Cleanup Criteria	Sample ID	UPG-700A	UPG-700A	UPG-700A	UPG-700A	UPG-700A	UPG-700A	UPG-700A	UPG-700A	UPG-700A	UPG-700A	UPG-700A	UPG-700A	UPG-700B	UPG-700B	UPG-700B	UPG-700B	UPG-700B	UPG-700B	UPG-700B	UPG-700B	UPG-700B	UPG-700B	UPG-700C	UPG-700C	UPG-700C	UPG-700C	UPG-700C	UPG-700C	UPG-700C	UPG-700C	UPG-700C	UPG-700C	UPG-700C	UPG-700C
		Acute Criteria	Chronic Criteria	Groundwater Surface Water Interface	Screened Interval	6.71-11.71'	6.71-11.71'	6.71-11.71'	6.71-11.71'	6.71-11.71'	6.71-11.71'	6.71-11.71'	6.71-11.71'	6.71-11.71'	6.71-11.71'	6.71-11.71'	6.71-11.71'	23.68-28.68	23.68-28.68	23.68-28.68	23.68-28.68	23.68-28.68	23.68-28.68	23.68-28.69	23.68-28.70	23.68-28.68	23.68-28.68	23.68-28.68	43.26-48.26'	43.26-48.26'	43.26-48.26'	43.26-48.26'	43.26-48.26'	43.26-48.26'	43.26-48.26'	43.26-48.26'	43.26-48.26'	43.26-48.26'	43.26-48.26'
					Date of Collection	11/26/2019	1/6/2020	2/11/2020	5/6/2020	1/4/2021	10/12/2021	4/18/2022	7/13/2022	10/25/2022	12/5/2023	12/9/2024	11/26/2019	1/7/2020	2/11/2020	5/6/2020	1/4/2021	10/12/2021	4/18/2022	7/13/2022	10/25/2022	12/5/2023	12/9/2024	11/26/2019	1/7/2020	2/11/2020	5/6/2020	1/4/2021	10/12/2021	4/18/2022	7/13/2022	10/25/2022	12/5/2023	12/9/2024
					Date of Analysis	12/13/2019	1/21/2020	2/24/2020	5/18/2020	1/7/2021	10/19/2021	4/26/2022	7/22/2022	11/2/2022	12/10/2023	12/27/2024	12/13/2019	1/21/2020	2/24/2020	5/18/2020	1/7/2021	10/19/2021	4/26/2022	7/22/2022	11/2/2022	12/10/2023	12/27/2024	12/13/2019	1/21/2020	2/24/2020	5/18/2020	1/7/2021	10/19/2021	4/26/2022	7/22/2022	11/2/2022	12/10/2023	12/27/2024
105679	5	2,700	--*	380	2,4-Dimethylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
95487	10	1,400	840	(J)	2-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
106445	10	450	275	(J)	3&4-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
132649	4	--*	44	4.0	Dibenzofuran	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
91576	5	340	210	19	2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
91203	5	200	120	11	Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
108952	5	--*	5,000	210	Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

WATER QUALITY PARAMETERS						UPG-700A										UPG-700B										UPG-700C											
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Field Measured Parameters	Part 201 Generic Cleanup Criteria	Sample ID		UPG-700A	UPG-700A	UPG-700A	UPG-700A	UPG-700A	UPG-700A	UPG-700A	UPG-700A	UPG-700A	UPG-700A	UPG-700A	UPG-700A	UPG-700B	UPG-700B	UPG-700B	UPG-700B	UPG-700B	UPG-700B	UPG-700B	UPG-700B	UPG-700B	UPG-700B	UPG-700B	UPG-700C	UPG-700C	UPG-700C	UPG-700C	UPG-700C	UPG-700C	UPG-700C	UPG-700C	UPG-700C	UPG-700C	UPG-700C
		Mixing Zone Based Criteria	Groundwater Surface Water Interface	Screened Interval		6.71-11.71'	6.71-11.71'	6.71-11.71'	6.71-11.71'	6.71-11.71'	6.71-11.71'	6.71-11.71'	6.71-11.71'	6.71-11.71'	6.71-11.71'	6.71-11.71'	6.71-11.71'	23.68-28.68	23.68-28.68	23.68-28.68	23.68-28.68	23.68-28.68	23.68-28.68	23.68-28.69	23.68-28.70	23.68-28.68	23.68-28.68	23.68-28.68	43.26-48.26'	43.26-48.26'	43.26-48.26'	43.26-48.26'	43.26-48.26'	43.26-48.26'	43.26-48.26'	43.26-48.26'	43.26-48.26'	43.26-48.26'	43.26-48.26'
				Date of Collection		11/26/2019	1/6/2020	2/11/2020	5/6/2020	1/4/2021	10/12/2021	4/18/2022	7/13/2022	10/25/2022	12/5/2023	12/9/2024	11/26/2019	1/7/2020	2/11/2020	5/6/2020	1/4/2021	10/12/2021	4/18/2022	7/13/2022	10/25/2022	12/5/2023	12/9/2024	11/26/2019	1/7/2020	2/11/2020	5/6/2020	1/4/2021	10/12/2021	4/18/2022	7/13/2022	10/25/2022	12/5/2023	12/9/2024
				Date of Analysis		11/26/2019	1/6/2020	2/11/2020	5/6/2020	1/4/2021	10/12/2021	4/18/2022	7/13/2022	10/25/2022	12/5/2023	12/9/2024	12/13/2019	1/7/2020	2/11/2020	5/6/2020	1/4/2021	10/12/2021	4/18/2022	7/13/2022	10/25/2022	12/5/2023	12/9/2024	11/26/2019	1/7/2020	2/11/2020	5/6/2020	1/4/2021	10/12/2021	4/18/2022	7/13/2022	10/25/2022	12/5/2023	12/9/2024
-	-	6.5-9.0	6.5-9.0	pH		6.6	6.7	6.5	6.4	6.2	6.4	6.1	6.2	6.4	6.4	6.4	6.2	6.6	6.6	6.6	6.6	7.1	6.9	6.9	7.0	7.4	7.1	7.0	6.9	6.9	7.1	7.1	7.4	7.2	7.3	7.3	7.5	7.2
-	-	-	NE	ORP		-112.9	-119.8	-39.6	-3.2	-74.9	-52.7	97.6	-86.3	55.9	-16.5	-83.2	-46.3	-83.5	-19.6	-74.2	-102.8	-93.9	-82.0	-87.9	-4.8	-89.5	-93.6	-103.1	-100.8	313.4	176.6	-94.3	13.6	22.3	-0.2	276.6	225.8	-11.7
-	-	-	(EE)	DO		2.0	0.4	0.4	1.6	0.7	0.0	0.5	11.1	0.1	0.4	0.4	0.9	0.6	0.4	1.5	0.6	0.1	1.5	0.6	0.1	0.2	0.4	1.5	0.6	0.4	1.5	0.6	0.0	0.3	0.6	0.2	0.3	0.6

Notes:
All results are presented in micrograms per liter (µg/L) or parts per billion (ppb)
ND - Compound not detected at a concentration greater than the laboratory's method detection limit
NS - Not Sampled
NE - Indicates criteria not established for the site
Bold denotes criteria that has been exceeded
Exceeds Mixing Zone-Based GSI Acute Criteria
Exceeds Mixing Zone-Based GSI Chronic Criteria
Analytical Methods EPA 8260 (VOCs), 8270 (SVOCs), EPA 8315A (Carbonyl)
* MDEQ Operations Memorandum 2 TDL not met for laboratory analysis
Footnoes and acronyms for the*PART 201 CRITERIA/PART 213 RISK BASED SCREENING LEVELS*can be located on MDEQ's website
Mixing Zone-Based GSI Criteria reflect MDEQ-developed criteria for site November 7, 2017
--* Indicates there is either no reasonable potential for compound to exceed Acute Criteria/Loading or the Acute Criteria is protective of the Chronic Criteria/Loading

Footnotes and acronyms for the*PART 201 CRITERIA/PART 213 RISK BASED SCREENING LEVELS*can be located on MDEQ's website

Table 1 - Summary of Laboratory Analytical Results
GSI-100 - Groundwater VOCs & SVOCs
Former Cliffs Dow Site
Marquette, Michigan
TriMedia Project Number: 99-059

VOCs

| Chemical Abstract Service Number | MDEQ GP Memo 2 TOL | Water Quality Based Effluent Limits | | Part 201 Generic Cleanup Criteria | Sample ID | GSI-100A | | |

TRIMEDIA
ENVIRONMENTAL & ENGINEERING

Table 1 - Summary of Laboratory Analytical Results
GSI-200 -Groundwater VOCs & SVOCs
Former Cliffs Dow Site
Marquette, Michigan
TriMedia Project Number: 99-059

VOCs

Chemical Abstract Service Number	MDEQ GP Memo 2 TOL	Water Quality Based Effluent Limits		Part 201 Generic Cleanup Criteria	Sample ID	GSI-200A																GSI-200B																		GSI-200C																	
		Acute Criteria	Chronic Criteria	Groundwater Surface Water Interface		GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200C	GSI-200C	GSI-200C	GSI-200C DUP#3	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C
					Screened Interval:	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'
					Date of Collection:	10/16/2009	4/16/2010	7/20/2010	10/19/2010	10/18/2011	6/4/2012	10/22/2012	6/13/2013	11/29/2018	7/10/2019	1/7/2020	2/17/2020	5/9/2020	1/5/2021	10/14/2021	4/19/2022	7/14/2022	10/27/2022	1/15/2023	12/6/2023	12/10/2024	10/16/2009	4/16/2010	7/20/2010	10/19/2010	2/10/2011	10/18/2011	6/4/2012	10/22/2012	6/13/2013	11/29/2018	7/10/2019	1/7/2020	2/17/2020	5/9/2020	1/5/2021	10/14/2021	4/19/2022	7/14/2022	10/27/2022	1/15/2023	12/6/2023	12/10/2024	10/16/2009	4/16/2010	7/20/2010	10/19/2010	2/10/2011	10/18/2011	6/4/2012	10/22/2012	6/13/2013	11/29/2018	7/10/2019	1/7/2020	2/17/2020	5/9/2020	1/5/2021	10/14/2021	4/19/2022	7/14/2022	10/27/2022	1/15/2023	12/6/2023	12/10/2024
					Date of Analysis:	10/24/2009	4/29/2010	7/26/2010	10/24/2010	10/27/2011	6/7/2012	10/30/2012	6/21/2013	12/6/2018	7/17/2019	1/21/2020	2/26/2020	5/18/2020	1/7/2021	10/22/2021	4/27/2022	7/21/2022	11/5/2022	1/21/2023	12/7/2023	12/17/2024	10/24/2009	4/29/2010	7/30/2010	10/24/2010	2/16/2011	10/27/2011	6/7/2012	10/30/2012	6/21/2013	12/6/2018	7/17/2019	1/21/2020	2/26/2020	5/18/2020	1/7/2021	10/22/2021	4/27/2022	7/21/2022	11/5/2022	1/21/2023	12/7/2023	12/17/2024	10/24/2009	4/29/2010	7/30/2010	10/24/2010	2/16/2011	10/27/2011	6/7/2012	10/30/2012	6/21/2013	12/6/2018	7/17/2019	1/21/2020	2/26/2020	5/18/2020	1/7/2021	10/22/2021	4/27/2022	7/21/2022	11/5/2022	1/21/2023	12/7/2023	12/17/2024
71432	1	-"	130	200 (A)	Benzene	ND	1.6	1.6	1.4	4.4	2.4	12	11	1.5	1.1	7.3	3.5	ND	ND	ND	52	34	22	30	19	33.5	34	31	9.6	56	61	3.8	31	42	10	53	36	130	79	76	83	110	65	70	110	120	140	18	7	24	13	21.4	47	40	38	35	27	29	23	26	23	26	36	27	18	21	24	36	38	41	41	91	48	30
100414	1		320	200	Ethylbenzene	24	16	14	4.4	2.4	12	11	1.5	1.1	7.3	3.5	ND	ND	ND	52	34	22	30	19	33.5	34	31	9.6	56	61	3.8	31	42	10	53	36	130	79	76	83	110	65	70	110	120	140	18	7	24	13	21.4	47	40	38	35	27	29	23	26	23	26	36	27	18	21	24	36	38	41	41	91	48	30
108883	1	-"	2,600	270	Toluene	2.4	3.2	1.2	ND	ND	ND	ND	1.2	ND	ND	ND	ND	ND	ND	ND	5.1	2.5	1.2	2.8	1.5	4.51	6.3	2.4	ND	12	6.0	1.1	3.9	6.9	2.0	9.2	19	68	23	29	24	32	8.7	7.5	6.4	31	63.0	5.2	5.5	3.7	2.9	2.7	11	3.9	2.9	3.6	1.7	ND	1.8	2.7	2.5	1.2	3.3	1.4	4.7	1.3	37	22	26	26	15	2.9	1.5
99035	1	310	190	17	1,2,4-Trimethylbenzene	9.9	9.3	ND	ND	ND	1.0	ND	ND	ND	7	2.2	ND	ND	ND	53	17	1.6	1.4	7	16.6	5.5	1.3	ND	37	66	3.4	25	41	37	33	70	160	150	120	160	130	110	160	220	220	120	100	54	43	15	8.4	15	7.8	5.7	6.0	1	ND	1.7	1.2	1.8	4.8	11	5.3	2.2	1.7	2.5	10	8	9	9.1	9.1	6.4	2.1
108678	3	810	500	41	1,3,5-Trimethylbenzene	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	46	14	4.2	ND	1.1	1.1	3.38	ND	ND	ND	8.2	12	ND	2.4	16	ND	12	8.6	78	55	52	42	38	40	46	58	79	40	45	18	15	7	1.4	3.8	1.9	1.3	1.4	1.3	ND	1.4	1.4	1.4	1.4	1.1	1.1	ND	ND	3.2	1.4	2.7	2.7	3.1	2.1	ND
1330207	1	850	540	41	Xylenes, Total	21	12	5.6	3.7	ND	4.4	6.3	ND	ND	4.6	ND	ND	ND	ND	25	20	6.2	9.8	8.1	21.7	16	13	4.0	35	77	ND	18	53	14	70	80	490	260	250	310	420	280	300	430	440	540	55	17	31	20	32.2	33	16	12	15	6.4	ND	6.9	9.3	9.3	23	74	36	14	14	24	66	65	73	72	50	24	10

SVOCs

Chemical Abstract Service Number	MDEQ GP Memo 2 TOL	Water Quality Based Effluent Limits		Part 201 Generic Cleanup Criteria	Sample ID	GSI-200A																GSI-200B																		GSI-200C																	
		Acute Criteria	Chronic Criteria	Groundwater Surface Water Interface		GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200C	GSI-200C	GSI-200C	GSI-200C DUP#3	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C
					Screened Interval:	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'
					Date of Collection:	10/16/2009	4/16/2010	7/21/2010	10/19/2010	10/18/2011	6/4/2012	10/22/2012	6/13/2013	11/29/2018	7/10/2019	1/7/2020	2/17/2020	5/9/2020	1/5/2021	10/14/2021	4/19/2022	7/14/2022	10/27/2022	1/15/2023	12/6/2023	12/10/2024	10/16/2009	4/16/2010	7/22/2010	10/19/2010	2/10/2011	10/18/2011	6/4/2012	10/22/2012	6/13/2013	11/29/2018	7/10/2019	1/7/2020	2/17/2020	5/9/2020	1/5/2021	10/14/2021	4/19/2022	7/14/2022	10/27/2022	1/15/2023	12/6/2023	12/10/2024	10/16/2009	4/16/2010	7/22/2010	10/19/2010	2/10/2011	10/18/2011	6/4/2012	10/22/2012	6/13/2013	11/29/2018	7/10/2019	1/7/2020	2/17/2020	5/9/2020	1/5/2021	10/14/2021	4/19/2022	7/14/2022	10/27/2022	1/15/2023	12/6/2023	12/10/2024
					Date of Analysis:	10/24/2009	4/24/2010	7/26/2010	10/27/2010	10/27/2011	6/7/2012	10/30/2012	6/20/2013	12/5/2018	7/18/2019	1/21/2020	2/26/2020	5/18/2020	1/7/2021	10/22/2021	4/26/2022	7/21/2022	11/4/2022	1/21/2023	12/7/2023	12/17/2024	10/24/2009	4/24/2010	7/29/2010	10/27/2010	2/15/2011	10/27/2011	6/7/2012	10/30/2012	6/20/2013	12/5/2018	7/18/2019	1/21/2020	2/26/2020	5/18/2020	1/7/2021	10/22/2021	4/26/2022	7/21/2022	11/4/2022	1/21/2023	12/7/2023	12/17/2024	10/24/2009	4/24/2010	7/29/2010	10/27/2010	2/15/2011	10/27/2011	6/7/2012	10/30/2012	6/20/2013	12/5/2018	7/18/2019	1/21/2020	2/26/2020	5/18/2020	1/7/2021	10/22/2021	4/26/2022	7/21/2022	11/4/2022	1/21/2023	12/7/2023	12/17/2024
105679	5	2,700	-"	380	2,4-Dimethylphenol	ND	ND	ND	0.39	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.4	ND	ND	ND	ND	ND	ND	9.5	NA	ND	ND	ND	ND	ND	NS	NS	NS	2.3	NS	460	1,500	75	ND	130	2,400	4,500	ND	ND	ND	ND	ND	870	160	ND	47	ND	NS	NS	NS	NS	870	1,600	220	330	ND	870	420	870	570	180	220	220
95487	10	1,400	840	-(J)	2-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	NS	NS	NS	79	NS	160	690	ND	25	19	820	ND	ND	ND	ND	ND	ND	300	190	30	16	5.2	110	49	98	96	24	13	ND
108445	10	450	275	-(J)	3&4-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	NS	NS	NS	21	NS	260	310	ND	34	1,600	14,000	ND	ND	ND	ND	ND	ND	160	18	17	13	140	ND	41	41	23	6.6	ND
132649	4	-"	44	4.0	Dibenzofuran	ND	ND	ND	0.30	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.03	ND	ND	ND	ND	ND	NS	NS	NS	110	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
91576	5	340	210	19	2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.55	NA	ND	ND	ND	ND	NS	NS	NS	55	NS	ND	7.8	ND	12	10	47	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
91203	5	200	120	11	Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.31	ND	ND	ND	ND	ND	ND	2.31	NA	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS	270	ND	70	200	270	460	290	230	79	11	ND	1.7	ND	ND	1.5	ND	ND	ND	ND	9.1	ND	ND	ND	ND	ND	ND	ND	ND
108952	5	-"	5,000	210	Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS	54	47	ND	ND	ND	170	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

CARBONYL COMPOUNDS

Chemical Abstract Service Number	MDEQ GP Memo 2 TOL	Water Quality Based Effluent Limits		Part 201 Generic Cleanup Criteria	Sample ID	GSI-200A																GSI-200B																		GSI-200C																	
		Acute Criteria	Chronic Criteria	Groundwater Surface Water Interface		GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200C	GSI-200C	GSI-200C	GSI-200C DUP#3	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C
					Screened Interval:	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'
					Date of Collection:	10/16/2009	4/16/2010	7/21/2010	10/19/2010	10/18/2011	6/4/2012	10/22/2012	6/13/2013	11/29/2018	7/10/2019	-	-	-	-	-	-	-	-	-	-	-	10/16/2009	4/16/2010	7/22/2010	10/19/2010	2/10/2011	10/18/2011	6/4/2012	10/22/2012	6/13/2013	-	-	-	-	-	-	-	-	-	-	-	-	10/16/2009	4/16/2010	7/22/2010	10/19/2010	2/10/2011	10/18/2011	6/4/2012	10/22/2012	6/13/2013	11/29/2018	7/10/2019	-	-	-	-	-	-	-	-	-	-
					Date of Analysis:	10/23/2009	4/24/2010	7/26/2010	10/27/2010	10/27/2011	6/7/2012	10/30/2012	6/20/2013	12/6/2018	7/18/2019	-	-	-	-	-	-	-	-	-	-	-	10/23/2009	4/24/2010	7/29/2010	10/27/2010	2/16/2011	10/27/2011	6/7/2012	10/30/2012	6/20/2013	-	-	-	-	-	-	-	-	-	-	-	-	10/23/2009	4/24/2010	7/29/2010	10/27/2010	2/16/2011	10/27/2011	6/7/2012	10/30/2012	6/20/2013	12/6/2018	7/18/2019	-	-	-	-	-	-	-	-	-	-
75070	100	2,400	1,430	130	Acetaldehyde	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
50000	100	NE	NE	120	Formaldehyde	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

WATER QUALITY PARAMETERS

Chemical Abstract Service Number	MDEQ GP Memo 2 TOL	Field Measured Parameters	Part 201 Generic Cleanup Criteria	Sample ID	GSI-200A																	GSI-200B																		GSI-200C																	
		Mixing Zone Based Criteria	Groundwater Surface Water Interface		GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200A	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200B	GSI-200C	GSI-200C	GSI-200C	GSI-200C DUP#3	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C	GSI-200C
				Screened Interval:	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	8.5'-13.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	10.5'-15.5'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'	42.6-47.6'
				Date of Collection:	10/16/2009	4/16/2010	7/22/2010	10/19/2010	2/10/2011	10/18/2011	6/4/2012	10/22/2012	6/13/2013	11/29/2018	7/10/2019	1/7/2020	2/17/2020	5/9/2020	1/5/2021	10/14/2021	4/19/2022	7/14/2022	10/27/2022	1/15/2023	12/6/2023	12/10/2024	10/16/2009	4/16/2010	7/22/2010	10/19/2010	2/10/2011	10/18/2011	6/4/2012	10/22/2012	6/13/2013	11/29/2018	7/10/2019	1/7/2020	2/17/2020	5/9/2020	1/5/2021	10/14/2021	4/19/2022	7/14/2022	10/27/2022	1/15/2023	12/6/2023	12/10/2024	10/16/2009	4/16/2010	7/22/2010	10/19/2010	2/10/2011	10/18/2011	6/4/2012	10/22/2012	6/13/2013	11/29/2018	7/10/2019	1/7/2020	2/17/2020	5/9/2020	1/5/2021	10/14/2021	4/19/2022	7/14/2022	10/27/2022	1/15/2023	12/6/2023	12/10/2024
				Date of Analysis:	10/16/2009	4/16/2010	7/22/2010	10/19/2010	2/10/2011	10/18/2011	6/4/2012	10/22/2012	6/13/2013	11/29/2018	7/10/2019	1/7/2020	2/17/2020	5/9/2020	1/5/2021	10/14/2021	4/19/2022	7/14/2022	10/27/2022	1/15/2023	12/6/2023	12/10/2024	10/16/2009	4/16/2010	7/22/2010	10/19/2010	2/10/2011	10/18/2011	6/4/2012	10/22/2012	6/13/2013	11/29/2018	7/10/2019	1/7/2020	2/17/2020	5/9/2020	1/5/2021	10/14/2021	4/19/2022	7/14/2022	10/27/2022	1/15/2023	12/6/2023	12/10/2024	10/16/2009	4/16/2010	7/22/2010	10/19/2010	2/10/2011	10/18/2011	6/4/2012	10/22/2012	6/13/2013	11/29/2018	7/10/2019	1/7/2020	2/17/2020	5/9/2020	1/5/2021	10/14/2021	4/19/2022	7/14/2022	10/27/2022	1/15/2023	12/6/2023	12/10/2024
-	-	6.5-9.0	6.5-9.0	pH	7.7	6.3	7.3	6.9	6.5	6.9	6.9	5.6	6.6	6.6	6.7	6.6	6.7	6.7	6.7	6.5	6.6	6.7	6.8	6.7	7.5	6.3	6.4	7.1	6.8	6.8	7.1	7.0	7.2	7.0	7.0	6.9	7.0	6.9	8.9	6.8	6.6	6.8	6.9	6.6	6.6	6.7	6.8	6.9	7.0	7.0	7.6	6.6	7.7	NA	7.1	7.3	7.3	7.2	7.3	7.0	7.1	7.1	7.2	7.0	7.1	6.9	7.0	7.2	7.1	7.0
-	-	NE	NE	ORP	23.2	102.8	33.5	-51.2	-79.4	-92.2	-69.2	34.0	-88.9	-82.2	-78.7	-83.2	-155.4	-179.9	-77.2	-98.2	-102.6	-18.0	-174.1	-140.9	-0.8	97.7	39.8	-36.4	-140.5	-88.8	-101.6	-88.4	-114.7	2.8	-58.9	-13.5	-90.8	-111.7	-83.9	-86.4	-91.5	-73.3	-164.9	-148.2	-96.5	-130.8	-168.4	-25.6	-202.3	-183.5	-34.5	80.5	-64.9	NA	-90.7	-91.4	-83.5	-38.8	-147.8	-127.5	-133.4	-185.7	-111.3	-82.3	-166.4	-242.8	-229.4	-187.5	-228.5	-89.3	-245.1	-196.5
-	-	-	-	(EE)	0.6	0.7	0.2	0.8	0.3	0.3	0.7	3.6	1.5	0.4	0.5	0.4	1.5	0.6	0.6	1.2	0.6	0.1	1.4	4.9	0.4	0.7	0.2	0.8	0.2	0.3	0.3	0.3	0.2	0.2	0.5	0.4	0.4	1.4	0.5	0.1	1.0	0.6	0.6	0.2	0.3	0.4	0.4	1.4	0.5	0.1	1.0	0.6	0.1	5.0

Notes:
All results are presented in micrograms per liter (ug/L) or parts per billion (ppb)
ND - Compound not detected at a concentration greater than the laboratory's method detection limit
NS - Not Sampled
NE - Indicates criteria not established for the site
Bold denotes criteria that has been exceeded
Exceeds Mixing Zone-Based GSI Acute Criteria
Exceeds Mixing Zone-Based GSI Chronic Criteria
Analytical Methods EPA 8260 (VOCs), 8270 (SVOCs), EPA 8315A (Carbonyl)
* MDEQ Operations Memorandum 2 TOL not met for laboratory analysis
Footnotes and acronyms for the *PART 201 CRITERIA/PART 213 RISK BASED SCREENING LEVELS*can be located on MDEQ's website
Mixing Zone-Based GSI Criteria reflect MDEQ-developed criteria for site November 7, 2017
-" Indicates there is either no reasonable potential for compound to exceed Acute Criteria/Loading or the Acute Criteria is protective of the Chronic Criteria/Loading

TRIMEDIA ENVIRONMENTAL & ENGINEERING

Table 1 - Summary of Laboratory Analytical Results
GSI-600 - Groundwater VOCs & SVOCs
Former Cliffs Dow Site
Marquette, Michigan
TriMedia Project Number: 99-059

VOCs						GSI-600A								GSI-600B								GSI-600C							
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Water Quality Based Effluent Limits		Part 201 Generic Cleanup Criteria	Sample ID	GSI-600A	GSI-600A	GSI-600A	GSI-600A	GSI-600A	GSI-600A	GSI-600A	GSI-600A	GSI-600B	GSI-600B	GSI-600B	GSI-600B	GSI-600B	GSI-600B	GSI-600B	GSI-600B	GSI-600C	GSI-600C	GSI-600C	GSI-600C	GSI-600C	GSI-600C	GSI-600C	GSI-600C
		Acute Criteria	Chronic Criteria	Groundwater Surface Water Interface	Screened Interval	4.9-9.9'	4.9-9.9'	4.9-9.9'	4.9-9.9'	4.9-9.9'	4.9-9.9'	4.9-9.9'	4.9-9.9'	18.4-23.4'	18.4-23.4'	18.4-23.4'	18.4-23.4'	18.4-23.4'	18.4-23.4'	18.4-23.4'	18.4-23.4'	40.1-45.1'	40.1-45.1'	40.1-45.1'	40.1-45.1'	40.1-45.1'	40.1-45.1'	40.1-45.1'	40.1-45.1'
					Date of Collection	10/8/2009	4/15/2010	7/22/2010	10/18/2010	11/28/2018	10/26/2022	12/5/2023	12/10/2024	10/29/2009	4/15/2010	7/22/2010	10/18/2010	11/28/2018	-	12/5/2023	12/10/2024	10/8/2009	4/15/2010	7/22/2010	10/18/2010	11/28/2018	10/26/2022	12/5/2023	12/10/2024
					Date of Analysis	10/17/2009	4/29/2010	7/28/2010	10/23/2010	12/4/2018	11/5/2022	12/12/2023	12/27/2024	11/6/2009	4/29/2010	7/28/2010	10/23/2010	12/4/2018	-	12/12/2023	12/27/2024	10/20/2009	4/29/2010	7/28/2010	10/23/2010	12/4/2018	11/5/2022	12/12/2023	12/27/2024
71432	1	--*	130	200 (X)	Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
100414	1	320	200	18	Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
108883	1	2,600	--*	270	Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
95636	1	310	190	17	1,2,4-Trimethylbenzene	ND	ND	ND	1.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
108678	1	810	500	45	1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1330207	3	890	540	41	Xylenes, Total	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

SVOCs						GSI-600A								GSI-600B								GSI-600C							
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Water Quality Based Effluent Limits		Part 201 Generic Cleanup Criteria	Sample ID	GSI-600A	GSI-600A	GSI-600A	GSI-600A	GSI-600A	GSI-600A	GSI-600A	GSI-600A	GSI-600B	GSI-600B	GSI-600B	GSI-600B	GSI-600B	GSI-600B	GSI-600B	GSI-600B	GSI-600C	GSI-600C	GSI-600C	GSI-600C	GSI-600C	GSI-600C	GSI-600C	GSI-600C
		Acute Criteria	Chronic Criteria	Groundwater Surface Water Interface	Screened Interval	4.9-9.9'	4.9-9.9'	4.9-9.9'	4.9-9.9'	4.9-9.9'	4.9-9.9'	4.9-9.9'	4.9-9.9'	18.4-23.4'	18.4-23.4'	18.4-23.4'	18.4-23.4'	18.4-23.4'	18.4-23.4'	18.4-23.4'	18.4-23.4'	40.1-45.1'	40.1-45.1'	40.1-45.1'	40.1-45.1'	40.1-45.1'	40.1-45.1'	40.1-45.1'	40.1-45.1'
					Date of Collection	10/9/2009	4/15/2010	7/22/2010	10/18/2010	11/28/2018	10/26/2022	12/5/2023	12/10/2024	10/9/2009	4/15/2010	7/22/2010	10/18/2010	11/28/2018	-	12/5/2023	12/10/2024	10/9/2009	4/15/2010	7/22/2010	10/18/2010	11/28/2018	10/26/2022	12/5/2023	12/10/2024
					Date of Analysis	10/16/2009	4/23/2010	7/29/2010	10/26/2010	12/4/2018	11/2/2022	12/10/2023	12/27/2024	10/16/2009	4/23/2010	6/26/2013	10/26/2010	12/4/2018	-	12/10/2023	12/27/2024	10/16/2009	4/23/2010	7/29/2010	10/26/2010	12/4/2018	11/2/2022	12/10/2023	12/27/2024
105679	5	2,700	--*	380	2,4-Dimethylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
95487	10	1,400	840	(J)	2-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
106445	10	450	275	(J)	3&4-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
132649	4	--*	44	4.0	Dibenzofuran	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
91576	5	340	210	19	2-Methylnaphthalene	ND	ND	ND	0.51	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
91203	5	200	120	11	Naphthalene	ND	ND	ND	1.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
108952	5	--*	5,000	210	Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

CARBONYL COMPOUNDS						GSI-600A								GSI-600B								GSI-600C							
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Water Quality Based Effluent Limits		Part 201 Generic Cleanup Criteria	Sample ID	GSI-600A	GSI-600A	GSI-600A	GSI-600A	GSI-600A	GSI-600A	GSI-600A	GSI-600A	GSI-600B	GSI-600B	GSI-600B	GSI-600B	GSI-600B	GSI-600B	GSI-600B	GSI-600B	GSI-600C	GSI-600C	GSI-600C	GSI-600C	GSI-600C	GSI-600C	GSI-600C	GSI-600C
		Acute Criteria	Chronic Criteria	Groundwater Surface Water Interface	Screened Interval	4.9-9.9'	4.9-9.9'	4.9-9.9'	4.9-9.9'	4.9-9.9'	4.9-9.9'	4.9-9.9'	4.9-9.9'	18.4-23.4'	18.4-23.4'	18.4-23.4'	18.4-23.4'	18.4-23.4'	18.4-23.4'	18.4-23.4'	18.4-23.4'	40.1-45.1'	40.1-45.1'	40.1-45.1'	40.1-45.1'	40.1-45.1'	40.1-45.1'	40.1-45.1'	40.1-45.1'
					Date of Collection	-	-	-	-	11/28/2018	-	-	-	-	-	-	-	11/28/2018	-	-	-	-	-	-	-	11/28/2018	-	-	-
					Date of Analysis	-	-	-	-	11/30/2018	-	-	-	-	-	-	-	11/30/2018	-	-	-	-	-	-	-	11/30/2018	-	-	-
75070	100	2,400	1,430	130	Acetaldehyde	NS	NS	NS	NS	ND	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS
50000	100	NE	NE	120	Formaldehyde	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

WATER QUALITY PARAMETERS					GSI-600A								GSI-600B								GSI-600C							
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Field Measured Parameters	Part 201 Generic Cleanup Criteria	Sample ID	GSI-600A	GSI-600A	GSI-600A	GSI-600A	GSI-600A	GSI-600A	GSI-600A	GSI-600A	GSI-600B	GSI-600B	GSI-600B	GSI-600B	GSI-600B	GSI-600B	GSI-600B	GSI-600B	GSI-600C	GSI-600C	GSI-600C	GSI-600C	GSI-600C	GSI-600C	GSI-600C	GSI-600C
		Mixing Zone Based Criteria	Groundwater Surface Water Interface	Screened Interval	4.9-9.9'	4.9-9.9'	4.9-9.9'	4.9-9.9'	4.9-9.9'	4.9-9.9'	4.9-9.9'	4.9-9.9'	18.4-23.4'	18.4-23.4'	18.4-23.4'	18.4-23.4'	18.4-23.4'	18.4-23.4'	18.4-23.4'	18.4-23.4'	40.1-45.1'	40.1-45.1'	40.1-45.1'	40.1-45.1'	40.1-45.1'	40.1-45.1'	40.1-45.1'	40.1-45.1'
				Date of Collection	10/8/2009	4/15/2010	7/22/2010	10/18/2010	11/28/2018	10/26/2022	12/5/2023	12/10/2024	10/9/2009	4/15/2010	7/22/2010	10/18/2010	11/28/2018	10/26/2022	12/5/2023	12/10/2024	10/8/2009	4/15/2010	7/22/2010	10/18/2010	11/28/2018	10/26/2022	12/5/2023	12/10/2024
				Date of Analysis	10/8/2009	4/15/2010	7/22/2010	10/18/2010	11/28/2018	10/26/2022	12/5/2023	12/10/2024	10/9/2009	4/15/2010	7/22/2010	10/18/2010	11/28/2018	10/26/2022	12/5/2023	12/10/2024	10/8/2009	4/15/2010	7/22/2010	10/18/2010	11/28/2018	10/26/2022	12/5/2023	12/10/2024
-	-	6.5-9.0	6.5-9.0	pH	7.6	6.6	7.3	7.4	6.9	6.7	6.9	6.6	7.6	6.5	7.6	7.4	7.0	NS	6.8	6.8	7.7	7.0	7.8	7.1	7.7	7.5	7.6	7.4
-	-	-	NE	ORP	-4.9	71.5	-11.1	-43.0	-85.2	74.1	-103	-71.8	-34.4	79.8	7.2	-47.3	-87.2	NS	-67.0	-104.4	31.4	52.7	-3.6	-62.5	-112.4	26.3	-123.3	-119.7
-	-	-	(EE)	DO	0.3	0.8	0.1	1.0	0.2	0.1	0.03	0.52	0.3	0.6	0.1	0.9	0.2	NS	0.5	0.5	0.2	0.7	0.1	0.7	0.2	0.1	0.2	0.5

Notes:
All results are presented in micrograms per liter (µg/L) or parts per billion (ppb)
ND - Compound not detected at a concentration greater than the laboratory's method detection limit
NS - Not Sampled
NE - Indicates criteria not established for the site
Bold denotes criteria that has been exceeded
Exceeds Mixing Zone-Based GSI Acute Criteria
Exceeds Mixing Zone-Based GSI Chronic Criteria
Analytical Methods EPA 8260 (VOCs), 8270 (SVOCs), EPA 8315A (Carbonyl)
* MDEQ Operations Memorandum 2 TDL not met for laboratory analysis
Footnotes and acronyms for the *PART 201 CRITERIA/PART 213 RISK BASED SCREENING LEVELS* can be located on MDEQ's website
Mixing Zone-Based GSI Criteria reflect MDEQ-developed criteria for site November 7, 2017
--* Indicates there is either no reasonable potential for compound to exceed Acute Criteria/Loading or the Acute Criteria is protective of the Chronic Criteria/Loading

TRIMEDIA ENVIRONMENTAL & ENGINEERING

Table 1 - Summary of Laboratory Analytical Results
GSI-1000 - Groundwater VOCs & SVOCs
Former Cliffs Dow Site
Marquette, Michigan
TriMedia Project Number: 99-059

VOCs						GSI-1000A											GSI-1000B											GSI-1000C										
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Water Quality Based Effluent Limits		Part 201 Generic Cleanup Criteria	Sample ID	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C
		Acute Criteria	Chronic Criteria	Groundwater Surface Water Interface	Screened Interval	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'
					Date of Collection	7/16/2019	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/6/2021	10/14/2021	4/20/2022	7/15/2022	10/26/2022	12/6/2023	12/10/2024	7/11/2019	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/6/2021	10/15/2021	4/20/2022	7/15/2022	10/26/2022	12/6/2023	12/10/2024	7/11/2019	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/7/2021	10/15/2021	4/20/2022	7/15/2022	10/26/2022	12/6/2023	12/10/2024
					Date of Analysis	7/23/2019	12/13/2019	1/22/2020	2/24/2020	5/18/2020	1/12/2021	10/24/2021	4/27/2022	4/27/2022	11/5/2022	12/15/2023	12/27/2024	7/19/2019	12/13/2019	1/22/2020	2/24/2020	5/18/2020	1/12/2021	10/28/2021	4/27/2022	7/21/2022	11/2/2022	12/15/2023	12/27/2024	7/19/2019	12/13/2019	1/22/2020	2/24/2020	5/18/2020	1/12/2021	10/28/2021	4/27/2022	7/21/2022	11/2/2022	12/16/2023	12/27/2024
71432	1	--*	130	200 (X)	Benzene	ND	ND	ND	ND	ND	ND	ND	1.6	1.5	ND	14	ND	36	15	13	11	28	28	20	55	71	72	45	9.45	ND	ND	ND	ND	3.3	ND	ND	ND	ND	ND	ND	ND
100414	1	320	200	**18**	Ethylbenzene	**130**	**500**	**150**	**160**	**74**	**360**	**23**	**93**	**100**	12	**320**	ND	**170**	**32**	**27**	**27**	**130**	**200**	**220**	**560**	**400**	**440**	**450**	**116**	3.6	4.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
108883	1	2,600	--*	270	Toluene	150	250	38	31	8.8	**230**	ND	7.4	9.9	ND	61	ND	270	15	ND	4.2	**280**	**280**	**290**	**1,000**	**710**	**1,100**	**900**	160	7.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
95636	1	310	**190**	**17**	1,2,4-Trimethylbenzene	**98**	**260**	**120**	**160**	**43**	**340**	**25**	**66**	**99**	9.8	**140**	ND	**93**	**75**	**52**	**44**	**34**	**110**	**90**	**190**	**240**	**220**	**310**	228	1.7	1.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
108678	1	810	500	**45**	1,3,5-Trimethylbenzene	16	**60**	32	30	5.8	**84**	1.6	3.9	2.9	2.9	13	ND	22	19	12	10	10	32	23	**54**	**58**	**58**	**92**	**59.5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1330207	3	**890**	**540**	**41**	Xylenes, Total	**460**	**1,500**	**590**	**590**	**180**	**1,600**	39	**120**	**67**	ND	**380**	ND	**530**	**82**	**52**	**47**	**370**	**620**	**660**	**1,900**	**1,300**	**1,500**	**1,600**	**643**	11	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

SVOCs						GSI-1000A											GSI-1000B											GSI-1000C										
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Water Quality Based Effluent Limits		Part 201 Generic Cleanup Criteria	Sample ID	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C
		Acute Criteria	Chronic Criteria	Groundwater Surface Water Interface	Screened Interval	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'
					Date of Collection	7/16/2019	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/6/2021	10/14/2021	4/20/2022	7/15/2022	10/26/2022	12/6/2023	12/10/2024	7/11/2019	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/6/2021	10/15/2021	4/20/2022	7/15/2022	10/26/2022	12/6/2023	12/10/2024	7/11/2019	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/7/2021	10/15/2021	4/20/2022	7/15/2022	10/26/2022	12/6/2023	12/10/2024
					Date of Analysis	7/23/2019	12/13/2019	1/22/2020	2/24/2020	5/18/2020	1/11/2021	10/22/2021	4/26/2022	7/26/2022	11/3/2022	12/13/2023	12/27/2024	7/19/2019	12/13/2019	1/22/2020	2/24/2020	5/18/2020	1/12/2021	10/25/2021	4/26/2022	7/25/2022	11/5/2022	12/13/2023	12/27/2024	7/19/2019	12/13/2019	1/22/2020	2/24/2020	5/18/2020	1/11/2021	10/25/2021	4/26/2022	7/26/2022	11/5/2022	12/13/2023	12/27/2024
105679	5	2,700	--*	**380**	2,4-Dimethylphenol	20	20	11	ND	ND	17	ND	ND	ND	ND	120	ND	**520**	100	21	ND	**600**	**1,100**	**510**	**2,100**	**2,200**	**2,600**	**2,000**	**420**	17	ND	**4,400**	ND	16	ND	ND	ND	ND	ND	ND	ND
95487	10	1,400	840	(J)	2-Methylphenol	6.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	28	ND	38	ND	ND	ND	190	160	ND	760	**1,100**	**1,200**	740	165	ND	ND	**1,600**	ND	ND	ND	ND	ND	ND	ND	ND	ND
106445	10	450	275	(J)	3&4-Methylphenol	23	6.7	ND	ND	ND	7.6	ND	ND	ND	ND	20	ND	ND	ND	ND	ND	190	210	60	**1,900**	**3,000**	**3,400**	**1,200**	140	ND	ND	**3,200**	ND	ND	ND	ND	ND	ND	ND	ND	ND
132649	4	--*	44	4.0	Dibenzofuran	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.94	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
91576	5	340	210	**19**	2-Methylnaphthalene	6	**98**	**44**	**26**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**19.8**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
91203	5	200	120	**11**	Naphthalene	47	**230**	**53**	**54**	**19**	**170**	9.9	**44**	**55**	ND	**92**	ND	**76**	**77**	**52**	**18**	10	42	45	**79**	**73**	**92**	**120**	**55.5**	ND	ND	87	ND	ND	ND	ND	ND	ND	ND	ND	ND
108952	5	--*	5,000	210	Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	170	**270**	**260**	190	11.5	ND	ND	**520**	ND	ND	ND	ND	ND	ND	ND	ND	ND

CARBONYL COMPOUNDS						GSI-1000A											GSI-1000B											GSI-1000C										
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Water Quality Based Effluent Limits		Part 201 Generic Cleanup Criteria	Sample ID	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C
		Acute Criteria	Chronic Criteria	Groundwater Surface Water Interface	Screened Interval	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'
					Date of Collection	7/16/2019	-	-	-	-	-	-	-	-	-	-	-	-	7/11/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
					Date of Analysis	7/23/2019	-	-	-	-	-	-	-	-	-	-	-	-	7/19/2019	-	-	-	-	-	-	-	-	-	-	-	7/19/2019	-	-	-	-	-	-	-	-	-	-
75070	100	2,400	1,430	130	Acetaldehyde	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS

WATER QUALITY PARAMETERS						GSI-1000A											GSI-1000B											GSI-1000C										
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Field Measured Parameters		Part 201 Generic Cleanup Criteria	Sample ID	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000A	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000B	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C	GSI-1000C
		Mixing Zone Based Criteria		Groundwater Surface Water Interface	Screened Interval	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	3.88-8.88'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	19.12-24.12'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'	39.56-44.56'
					Date of Collection	7/11/2019	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/6/2021	10/14/2021	4/20/2022	7/15/2022	7/15/2022	12/6/2023	12/10/2024	7/11/2019	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/6/2021	10/15/2021	4/20/2022	7/15/2022	10/26/2022	12/6/2023	12/10/2024	7/11/2019	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/7/2021	10/15/2021	4/20/2022	7/15/2022	10/26/2022	12/6/2023	12/10/2024
					Date of Analysis	7/11/2019	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/6/2021	10/14/2021	4/20/2022	7/15/2022	7/15/2022	12/6/2023	12/10/2024	7/11/2019	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/6/2021	10/15/2021	4/20/2022	7/15/2022	10/26/2022	12/6/2023	12/10/2024	7/11/2019	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/7/2021	10/15/2021	4/20/2022	7/15/2022	10/26/2022	12/6/2023	12/10/2024
-	-	6.5-9.0		6.5-9.0	pH	6.5	6.8	6.9	6.6	6.8	6.6	6.8	6.5	6.5	6.7	6.7	6.5	6.6	6.7	6.8	6.6	6.7	6.5	6.8	6.5	6.6	6.7	6.5	7.7	7.4	7.8	7.6	7.7	7.4	7.7	7.4	7.7	7.7	7.5
-	-	-		NE	ORP	-105.7	-104.1	-19.7	-80.2	-82.7	-110.5	-93.4	-48.9	-109.9	72.4	-123.1	59.9	-87.0	-99.5	-32.4	-82.3	-100.9	-95.2	-106.5	-114.0	-109.1	79.4	-161.2	-102.3	-103.9	-148.6	-27.4	-136.6	-146.6	-150.7	-130.4	-155.8	-142.9	124.9	-176.1	-150.6
-	-	-		(EE)	DO	0.3	0.4	1.7	0.4	1.6	0.6	0.1	0.7	4.8	0.1	0.02	4.26	0.2	0.3	1.6	0.4	1.5	0.5	0.1	0.2	4.9	0.1	0.01	0.49	1.06	0.3	1.67	0.4	1.4	0.7	0.1	0.3	5.0	0.2	0.01	0.49

Notes:
All results are presented in micrograms per liter (µg/L) or parts per billion (ppb)
ND - Compound not detected at a concentration greater than the laboratory's method detection limit
NS - Not Sampled
NE - Indicates criteria not established for the site
Bold denotes criteria that has been exceeded
Exceeds Mixing Zone-Based GSI Acute Criteria
Exceeds Mixing Zone-Based GSI Chronic Criteria
Analytical Methods EPA 8260 (VOCs), 8270 (SVOCs), EPA 8315A (Carbonyl)
* MDEQ Operations Memorandum 2 TDL not met for laboratory analysis
Footnotes and acronyms for the *PART 201 CRITERIA/PART 213 RISK BASED SCREENING LEVELS* can be located on MDEQ's website
Mixing Zone-Based GSI Criteria reflect MDEQ-developed criteria for site November 7, 2017
--* Indicates there is either no reasonable potential for compound to exceed Acute Criteria/Loading or the Acute Criteria is protective of the Chronic Criteria/Loading

TRIMEDIA ENVIRONMENTAL & ENGINEERING

Table 1 - Summary of Laboratory Analytical Results
GSI-1100 - Groundwater VOCs & SVOCs
Former Cliffs Dow Site
Marquette, Michigan
TriMedia Project Number: 99-059

VOCs

Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Water Quality Based Effluent Limits		Part 201 Generic Cleanup Criteria	Sample ID	GSI-1100A												GSI-1100B												GSI-1100C												GSI-1100D								
		Acute Criteria	Chronic Criteria	Groundwater Surface Water Interface	Screened Interval	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	54.77-59.77'	54.77-59.77'	54.77-59.77'	54.77-59.77'	54.77-59.77'	54.77-59.77'	54.77-59.77'	54.77-59.77'	54.77-59.77'
					Date of Collection	7/11/2019	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/7/2021	10/15/2021	4/20/2022	7/15/2022	10/27/2022	12/6/2023	12/10/2024	7/11/2019	7/31/2019	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/7/2021	10/15/2021	4/20/2022	7/15/2022	10/27/2022	12/6/2023	12/10/2024	7/11/2019	7/31/2019	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/7/2021	10/15/2021	4/20/2022	7/15/2022	10/27/2022	12/6/2023	12/10/2024	5/7/2020	1/7/2021	10/15/2021	4/20/2022	7/15/2022	10/27/2022	12/6/2023	12/10/2024
					Date of Analysis	7/19/2019	12/13/2019	1/22/2020	2/24/2020	5/18/2020	1/11/2021	10/28/2021	4/27/2022	7/21/2022	11/5/2022	12/15/2023	12/27/2024	7/19/2019	8/6/2019	12/13/2019	1/22/2020	2/24/2020	5/18/2020	1/11/2021	10/28/2021	4/27/2022	7/21/2022	11/5/2022	12/15/2023	12/27/2024	7/19/2019	8/6/2019	12/13/2019	1/22/2020	2/24/2020	5/18/2020	1/11/2021	10/28/2021	4/27/2022	7/21/2022	11/5/2022	12/15/2023	12/27/2024	5/18/2020	1/11/2021	10/28/2021	4/27/2022	7/21/2022	11/5/2022	12/15/2023	12/27/2024
71432	1	--*	130	200 (K)	Benzene	ND	ND	ND	ND	ND	ND	2.2	1.4	ND	ND	1.2	ND	ND	ND	ND	ND	2.7	9.0	ND	6.2	11	13	ND	ND	ND	ND	ND	ND	ND	13	2.4	ND	ND	ND	1.7	1.9	ND	1.6	ND	ND	1.5	1.36
100414	1	320	200	18	Ethylbenzene	ND	ND	ND	ND	ND	ND	51	9.2	6.4	15	11	3.26	140	160	150	150	160	130	160	190	130	200	140	82	64.9	160	190	160	130	150	170	130	170	210	200	180	130	90.4	3.8	7.6	ND	5.3	4.1	ND	3.4	ND
108883	1	2,600	--*	270	Toluene	ND	ND	ND	ND	ND	ND	3.5	1.3	ND	ND	ND	ND	81	73	76	85	70	170	73	120	120	180	120	ND	3.49	230	340	340	170	230	390	160	190	240	280	280	110	76.2	1.2	1.4	ND	1.3	1.1	ND	1.4	1.24
95636	1	310	190	17	1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	ND	22	4	1.7	6.4	ND	ND	210	250	280	290	270	250	240	230	190	240	230	170	200	96	110	68	64	80	82	61	63	100	80	81	55	57.3	ND	ND	ND	1.3	ND	ND	ND	ND
108678	1	810	500	45	1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	ND	4.3	1.1	ND	ND	ND	ND	62	70	55	86	78	76	78	72	63	78	80	51	71.2	30	32	21	19	21	25	18	18	140	23	25	ND	15.1	ND	ND	ND	ND	ND	ND	ND	ND
1330207	3	890	540	41	Xylenes, Total	ND	ND	ND	ND	ND	ND	71	5.3	ND	ND	ND	ND	500	580	560	560	560	430	620	740	480	620	490	320	222	570	730	600	480	540	630	410	530	700	560	580	370	271	3.2	3.9	ND	6.1	3.9	ND	5.2	5.29

SVOCs

Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Water Quality Based Effluent Limits		Part 201 Generic Cleanup Criteria	Sample ID	GSI-1100A												GSI-1100B												GSI-1100C												GSI-1100D								
		Acute Criteria	Chronic Criteria	Groundwater Surface Water Interface	Screened Interval	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	54.77-59.77'	54.77-59.77'	54.77-59.77'	54.77-59.77'	54.77-59.77'	54.77-59.77'	54.77-59.77'	54.77-59.77'	54.77-59.77'
					Date of Collection	7/11/2019	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/7/2021	10/15/2021	4/20/2022	7/15/2022	10/27/2022	12/6/2023	12/10/2024	7/11/2019	7/31/2019	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/7/2021	10/15/2021	4/20/2022	7/15/2022	10/27/2022	12/6/2023	12/10/2024	7/11/2019	7/31/2019	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/7/2021	10/15/2021	4/20/2022	7/15/2022	10/27/2022	12/6/2023	12/10/2024	5/7/2020	1/7/2021	10/15/2021	4/20/2022	7/15/2022	10/27/2022	12/6/2023	12/10/2024
					Date of Analysis	7/19/2019	12/13/2019	1/22/2020	2/24/2020	5/18/2020	1/12/2021	10/25/2021	4/26/2022	7/26/2022	11/5/2022	12/13/2023	12/27/2024	7/19/2019	8/2/2019	12/13/2019	1/22/2020	2/24/2020	5/18/2020	1/12/2021	10/25/2021	4/26/2022	7/25/2022	11/5/2022	12/13/2023	12/27/2024	7/19/2019	8/2/2019	12/13/2019	1/22/2020	2/24/2020	5/18/2020	1/11/2021	10/25/2021	4/26/2022	7/25/2022	11/5/2022	12/13/2023	12/27/2024	5/18/2020	1/12/2021	10/25/2021	4/26/2022	7/26/2022	11/7/2022	12/13/2023	12/27/2024
105679	5	2,700	--*	380	2,4-Dimethylphenol	250	ND	ND	ND	ND	52	ND	160	ND	14	ND	ND	800	1,200	1,300	1,800	1,500	2,700	1,500	2,600	2,100	2,600	1,200	200	42	9,900	1,100	8,300	5,400	6,100	5,700	3,500	1,200	4,900	4,300	5,800	3,500	2,200	130	140	ND	250	460	290	370	289
95487	10	1,400	840	(J)	2-Methylphenol	ND	ND	ND	ND	ND	39	ND	39	ND	ND	ND	ND	160	ND	ND	190	150	260	ND	ND	410	140	140	17	ND	1,800	ND	ND	1,800	2,100	3,200	700	160	1,000	490	1,100	730	208	ND	ND	ND	ND	ND	ND	ND	ND
106445	10	450	275	(J)	3&4-Methylphenol	ND	ND	ND	ND	ND	51	ND	51	ND	ND	ND	ND	60	320	ND	240	ND	190	540	1100	410	260	100	ND	ND	15,000	1,100	5,900	4,000	3,800	7,600	2,700	500	2,200	820	1,800	370	135	11	ND	ND	ND	ND	ND	ND	ND	ND
132649	4	--*	44	4.0	Dibenzofuran	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
91576	5	340	210	19	2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	46	46	56	54	ND	43	58	62	69	77	71	15	ND	ND	ND	ND	10	10	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
91203	5	200	120	11	Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.146	440	640	570	720	600	640	540	NO	490	260	405	110	18.8	140	13	100	100	110	92	ND	53	110	78	50	65	50	ND	ND	ND	ND	ND	ND	ND	1.0
108952	5	--*	5,000	210	Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	850	ND	ND	620	630	2,200	300	ND	520	210	620	93	27.4	ND	ND	ND	ND	ND	ND	ND

CARBONYL COMPOUNDS

Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Water Quality Based Effluent Limits		Part 201 Generic Cleanup Criteria	Sample ID	GSI-1100A												GSI-1100B												GSI-1100C												GSI-1100D								
		Acute Criteria	Chronic Criteria	Groundwater Surface Water Interface	Screened Interval	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	54.77-59.77'	54.77-59.77'	54.77-59.77'	54.77-59.77'	54.77-59.77'	54.77-59.77'	54.77-59.77'	54.77-59.77'	54.77-59.77'
					Date of Collection	7/11/2019	11/26/2019	-	-	-	-	-	-	-	-	-	-	7/11/2019	-	-	-	-	-	-	-	-	-	-	-	7/11/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
					Date of Analysis	7/19/2019	12/13/2019	-	-	-	-	-	-	-	-	-	-	7/19/2019	-	-	-	-	-	-	-	-	-	-	-	7/19/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
75070	100	2,400	1,430	130	Acetaldehyde	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

WATER QUALITY PARAMETERS

Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Field Measured Parameters		Part 201 Generic Cleanup Criteria	Sample ID	GSI-1100A												GSI-1100B												GSI-1100C												GSI-1100D								
		Mixing Zone Based Criteria		Groundwater Surface Water Interface	Screened Interval	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	3.35-8.35'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	19.00-24.00'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	39.26-44.26'	54.77-59.77'	54.77-59.77'	54.77-59.77'	54.77-59.77'	54.77-59.77'	54.77-59.77'	54.77-59.77'	54.77-59.77'	54.77-59.77'
					Date of Collection	7/11/2019	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/7/2021	10/15/2021	4/20/2022	7/15/2022	10/27/2022	12/6/2023	12/10/2024	7/11/2019	7/31/2019	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/7/2021	10/15/2021	4/20/2022	7/15/2022	10/27/2022	12/6/2023	12/10/2024	7/11/2019	7/31/2019	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/7/2021	10/15/2021	4/20/2022	7/15/2022	10/27/2022	12/6/2023	12/10/2024	5/7/2020	1/7/2021	10/15/2021	4/20/2022	7/15/2022	10/27/2022	12/6/2023	12/10/2024
					Date of Analysis	7/11/2019	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/7/2021	10/15/2021	4/20/2022	7/15/2022	10/27/2022	12/6/2023	12/10/2024	7/11/2019	7/31/2019	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/7/2021	10/15/2021	4/20/2022	7/15/2022	10/27/2022	12/6/2023	12/10/2024	7/11/2019	7/31/2019	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/7/2021	10/15/2021	4/20/2022	7/15/2022	10/27/2022	12/6/2023	12/10/2024	5/7/2020	1/7/2021	10/15/2021	4/20/2022	7/15/2022	10/27/2022	12/6/2023	12/10/2024
-	-	6.5-9.0			pH	6.6	6.6	6.8	6.6	6.7	6.7	6.7	6.4	6.5	7.9	6.5	6.5	6.7	6.8	6.9	6.9	6.7	6.7	6.5	6.8	6.6	6.6	6.7	6.8	6.6	6.9	6.8	6.9	6.9	6.8	6.8	7.0	7.1	6.9	7.0	7.1	7.2	7.1	8.2	7.7	7.5	7.5	7.5	7.7	7.6	7.4
-	-	-	-	NE	ORP	-61.4	-46.7	-57.8	-86.3	-140.8	-82.1	-43.5	-22.5	-88.0	23.3	-4.4	14.3	-83.2	-113.1	-77.2	-78.3	-120.6	-174.3	-96.7	-75.9	-101.8	-104.3	-119.2	-93.3	-103.3	-99.1	-143.4	-142.1	-130.1	-151.6	-214.5	-294.1	-196.9	-231.6	-204.4	-234.9	-154.4	-234.3	-274.1	-304.9	-125.5	-199.4	-180.3	-224.3	-169.5	-119.3
-	-	-	-	(EE)	DO	0.4	0.4	0.4	0.4	1.5	0.7	0.2	2.1	4.6	11.9	1.0	8.8	0.3	1.1	0.3	0.4	0.3	1.4	0.6	0.0	1.0	5.1	0.0	0.37	5.12	1.0	1.0	0.3	0.4	0.3	1.4	0.5	0.1	0.9	5.1	0.1	0.31	5.24	1.4	0.6	0.0	0.9	4.9	0.0	0.06	0.48

Notes:
All results are presented in micrograms per liter (ug/L) or parts per billion (ppb)
ND - Compound not detected at a concentration greater than the laboratory's method detection limit
NS - Not Sampled
NE - Indicates criteria not established for the site
Bold denotes criteria that has been exceeded
Exceeds Mixing Zone-Based GSI Acute Criteria
Exceeds Mixing Zone-Based GSI Chronic Criteria
Analytical Methods EPA 8260 (VOCs), 8270 (SVOCs), EPA 8315A (Carbonyl)
* MDEQ Operations Memorandum 2 TDL not met for laboratory analysis
Footnotes and acronyms for the *PART 201 CRITERIA/PART 213 RISK BASED SCREENING LEVELS* can be located on MDEQ's website
Mixing Zone-Based GSI Criteria reflect MDEQ-developed criteria for site November 7, 2017
--* Indicates there is either no reasonable potential for compound to exceed Acute Criteria/Loading or the Acute Criteria is protective of the Chronic Criteria/Loading

TRIMEDIA ENVIRONMENTAL & ENGINEERING

Table 1 - Summary of Laboratory Analytical Results
GSI-1200 - Groundwater VOCs & SVOCs
Former Cliffs Dow Site
Marquette, Michigan
TriMedia Project Number: 99-059

VOCs						GSI-1200A										GSI-1200B										GSI-1200C									
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Water Quality Based Effluent Limits		Part 201 Generic Cleanup Criteria	Sample ID	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200C	GSI-1200C	GSI-1200C	GSI-1200C	GSI-1200C	GSI-1200C	GSI-1200C	GSI-1200C	GSI-1200C	GSI-1200C
		Acute Criteria	Chronic Criteria	Groundwater Surface Water Interface	Screened Interval	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	19.68-24.68'	19.68-24.68'	19.68-24.68'	19.68-24.68'	19.68-24.68'	19.68-24.68'	19.68-24.68'	19.68-24.68'	19.68-24.68'	19.68-24.68'	39.11-44.11'	39.11-44.11'	39.11-44.11'	39.11-44.11'	39.11-44.11'	39.11-44.11'	39.11-44.11'	39.11-44.11'	39.11-44.11'	39.11-44.11'
					Date of Collection	7/16/2019	1/8/2020	2/11/2020	5/6/2020	1/5/2021	10/13/2021	4/19/2022	7/14/2022	10/27/2022	12/5/2023	12/9/2024		7/11/2019	1/8/2020	2/11/2020	5/6/2020	1/5/2021	10/13/2021	4/19/2022	7/14/2022	10/27/2022	12/5/2023	12/9/2024		7/11/2019	1/8/2020	2/11/2020	5/6/2020	1/5/2021	10/13/2021	4/19/2022	7/14/2022	10/27/2022	12/5/2023	12/9/2024
					Date of Analysis	7/24/2019	1/21/2020	2/24/2020	5/18/2020	1/7/2021	10/23/2021	4/27/2022	7/21/2022	11/4/2022	12/12/2023	12/27/2024		7/19/2019	1/21/2020	2/24/2020	5/18/2020	1/7/2021	10/23/2021	4/27/2022	7/21/2022	11/5/2022	12/12/2023	12/27/2024		7/19/2019	1/21/2020	2/24/2020	5/18/2020	1/7/2021	10/24/2021	4/27/2022	7/21/2022	11/5/2022	12/12/2023	12/27/2024
71432	1	--*	130	200 (X)	Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		1.5	1.6	1.7	1.2	1.9	ND	ND	ND	ND	ND	ND		ND	1.9	1.6	1.7	1.9	1.5	ND	2.0	1.3	1.7	ND
100414	1	320	200	18	Ethylbenzene	ND	ND	ND	ND	ND	7.4	ND	**26**	**11**	6.3	11.4		1.4	4.0	6.7	2.0	2.2	ND	ND	ND	ND	ND	ND		**19**	17	16	17	**24**	11	3.5	**22**	**13**	9.9	2.06
108883	1	2,600	--*	270	Toluene	ND	ND	ND	ND	ND	ND	ND	1.8	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		31	30	23	28	34	18	4.2	34	22	19	2.22
95636	1	310	190	17	1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	24	ND	**66**	**37**	10	2.33		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		15	14	8.6	11	16	7.9	3.3	**17**	**9**	5.9	1.36
108678	1	810	500	45	1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	2	ND	8.5	5.0	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	4.0	2.4	3.0	4.5	2.3	1.0	4.7	2.6	1.8	ND
1330207	3	890	540	41	Xylenes, Total	ND	ND	ND	ND	ND	12	ND	39	20	9.2	4.69		ND	ND	ND	3.0	3.7	ND	ND	ND	ND	ND	ND		**67**	**66**	**58**	**65**	**94**	**43**	14	**85**	**52**	37	6.6

SVOCs						GSI-1200A										GSI-1200B										GSI-1200C									
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Water Quality Based Effluent Limits		Part 201 Generic Cleanup Criteria	Sample ID	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200C	GSI-1200C	GSI-1200C	GSI-1200C	GSI-1200C	GSI-1200C	GSI-1200C	GSI-1200C	GSI-1200C	GSI-1200C
		Acute Criteria	Chronic Criteria	Groundwater Surface Water Interface	Screened Interval	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	19.68-24.68'	19.68-24.68'	19.68-24.68'	19.68-24.68'	19.68-24.68'	19.68-24.68'	19.68-24.68'	19.68-24.68'	19.68-24.68'	19.68-24.68'	39.11-44.11'	39.11-44.11'	39.11-44.11'	39.11-44.11'	39.11-44.11'	39.11-44.11'	39.11-44.11'	39.11-44.11'	39.11-44.11'	39.11-44.11'
					Date of Collection	7/16/2019	1/8/2020	2/11/2020	5/6/2020	1/5/2021	10/13/2021	4/19/2022	7/14/2022	10/27/2022	12/5/2023	12/9/2024		7/11/2019	1/8/2020	2/11/2020	5/6/2020	1/5/2021	10/13/2021	4/19/2022	7/14/2022	10/27/2022	12/5/2023	12/9/2024		7/11/2019	1/8/2020	2/11/2020	5/6/2020	1/5/2021	10/13/2021	4/19/2022	7/14/2022	10/27/2022	12/5/2023	12/9/2024
					Date of Analysis	7/24/2019	1/21/2020	2/24/2020	5/18/2020	1/8/2021	10/21/2021	4/26/2022	7/21/2022	11/5/2022	12/11/2023	12/27/2024		7/19/2019	1/21/2020	2/24/2020	5/18/2020	1/8/2021	10/21/2021	4/26/2022	7/21/2022	11/4/2022	12/11/2023	12/27/2024		7/19/2019	1/21/2020	2/24/2020	5/18/2020	1/8/2021	10/22/2021	4/26/2022	7/21/2022	11/8/2022	12/10/2023	12/27/2024
105679	5	2,700	--*	380	2,4-Dimethylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		**2,900**	**2,300**	**1,400**	**1,700**	**2,800**	**2,300**	220	**2,700**	**2,100**	**2,400**	223
95487	10	1,400	840	(J)	2-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		210	t80	ND	210	390	140	41	440	230	110	3
106445	10	430	275	(J)	3&4-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		**5,800**	**5,200**	**3,400**	**3,200**	**2,800**	**2,300**	**390**	**6,700**	**4,700**	**3,500**	26
132649	4	--*	44	4.0	Dibenzofuran	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
91576	5	340	210	19	2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.25
91203	5	200	120	11	Naphthalene	ND	ND	ND	ND	ND	ND	ND	**18**	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	**14**	**12**	10	**12**	ND	ND	**18**	**ND**	ND	1.33
108952	5	--*	5,000	210	Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		68	63	28	140	**230**	ND	48	**420**	**220**	45	1.15

CARBONYL COMPOUNDS						GSI-1200A										GSI-1200B										GSI-1200C									
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Water Quality Based Effluent Limits		Part 201 Generic Cleanup Criteria	Sample ID	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200C	GSI-1200C	GSI-1200C	GSI-1200C	GSI-1200C	GSI-1200C	GSI-1200C	GSI-1200C	GSI-1200C	GSI-1200C
		Acute Criteria	Chronic Criteria	Groundwater Surface Water Interface	Screened Interval	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	19.68-24.68'	19.68-24.68'	19.68-24.68'	19.68-24.68'	19.68-24.68'	19.68-24.68'	19.68-24.68'	19.68-24.68'	19.68-24.68'	19.68-24.68'	39.11-44.11'	39.11-44.11'	39.11-44.11'	39.11-44.11'	39.11-44.11'	39.11-44.11'	39.11-44.11'	39.11-44.11'	39.11-44.11'	39.11-44.11'
					Date of Collection	7/21/2019	-	-	-	-	-	-	-	-	-	-	-	7/11/2019	-	-	-	-	-	-	-	-	-	-	7/11/2019	-	-	-	-	-	-	-	-	-
					Date of Analysis	7/24/2019	-	-	-	-	-	-	-	-	-	-	-	7/19/2019	-	-	-	-	-	-	-	-	-	-	7/19/2019	-	-	-	-	-	-	-	-	-
75070	100	2,400	1,430	130	Acetaldehyde	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

WATER QUALITY PARAMETERS						GSI-1200A										GSI-1200B										GSI-1200C									
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Field Measured Parameters		Part 201 Generic Cleanup Criteria	Sample ID	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200A	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200B	GSI-1200C	GSI-1200C	GSI-1200C	GSI-1200C	GSI-1200C	GSI-1200C	GSI-1200C	GSI-1200C	GSI-1200C	GSI-1200C
		Mixing Zone Based Criteria		Groundwater Surface Water Interface	Screened Interval	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	5.26-10.26'	19.68-24.68'	19.68-24.68'	19.68-24.68'	19.68-24.68'	19.68-24.68'	19.68-24.68'	19.68-24.68'	19.68-24.68'	19.68-24.68'	19.68-24.68'	39.11-44.11'	39.11-44.11'	39.11-44.11'	39.11-44.11'	39.11-44.11'	39.11-44.11'	39.11-44.11'	39.11-44.11'	39.11-44.11'	39.11-44.11'
					Date of Collection	7/11/2019	1/8/2020	2/11/2020	5/6/2020	1/5/2021	10/13/2021	4/19/2022	7/14/2022	10/27/2022	12/5/2023	12/9/2024		7/11/2019	1/8/2020	2/11/2020	5/6/2020	1/5/2021	10/13/2021	4/19/2022	7/14/2022	10/27/2022	12/5/2023	12/9/2024		7/11/2019	1/8/2020	2/11/2020	5/6/2020	1/5/2021	10/13/2021	4/19/2022	7/14/2022	10/27/2022	12/5/2023	12/9/2024
					Date of Analysis	7/11/2019	1/8/2020	2/11/2020	5/6/2020	1/5/2021	10/13/2021	4/19/2022	7/14/2022	10/27/2022	12/5/2023	12/9/2024		7/11/2019	1/8/2020	2/11/2020	5/6/2020	1/5/2021	10/13/2021	4/19/2022	7/14/2022	10/27/2022	12/5/2023	12/9/2024		7/11/2019	1/8/2020	2/11/2020	5/6/2020	1/5/2021	10/13/2021	4/19/2022	7/14/2022	10/27/2022	12/5/2023	12/9/2024
-	-	6.5-9.0		6.5-9.0	pH	6.9	6.8	6.8	6.8	6.6	6.7	6.7	6.5	6.6	6.8	6.8		6.7	6.9	6.9	6.9	6.8	6.9	6.8	6.8	7.3	7.2	7.1		7.0	7.3	7.3	7.2	7.0	7.2	7.3	7.0	7.5	7.3	7.6
-	-	-		NE	ORP	-23.2	-94.8	-137.4	-187.0	-101.9	-77.1	-129.6	-85.0	117.5	-77.1	-77.1		-171.2	-98.3	-164.3	-200.3	-102.7	-67	-164.9	-67.2	-71.3	-94.1	-194.2		-232.8	-157.4	-220.6	-260.0	-250.9	-190.5	-246.6	-234.4	-187.2	-120.4	-301.8
-	-	-		(EE)	DO	1.2	0.5	0.4	1.53	0.61	0.04	2.07	0.65	0.27	0.1	0.1		0.2	0.5	0.3	1.41	0.54	0.03	0.22	0.61	0.14	0.04	5.21		0.26	0.49	0.3	1.35	0.51	0.08	0.31	0.53	0.12	0.32	5.51

Notes:
All results are presented in micrograms per liter (µg/L) or parts per billion (ppb)
ND - Compound not detected at a concentration greater than the laboratory's method detection limit
NS - Not Sampled
NE - Indicates criteria not established for the site
Bold denotes criteria that has been exceeded
Exceeds Mixing Zone-Based GSI Acute Criteria
Exceeds Mixing Zone-Based GSI Chronic Criteria
Analytical Methods EPA 8260 (VOCs), 8270 (SVOCs), EPA 8315A (Carbonyl)
* MDEQ Operations Memorandum 2 TDL not met for laboratory analysis
Footnotes and acronyms for the *PART 201 CRITERIA/PART 213 RISK BASED SCREENING LEVELS* can be located on MDEQ's website
Mixing Zone-Based GSI Criteria reflect MDEQ-developed criteria for site November 7, 2017
--* Indicates there is either no reasonable potential for compound to exceed Acute Criteria/Loading or the Acute Criteria is protective of the Chronic Criteria/Loading

Table 1 - Summary of Laboratory Analytical Results
GSI-1300 - Groundwater VOCs & SVOCs
Former Cliffs Dow Site
Marquette, Michigan
TriMedia Project Number: 99-059

VOCs					GSI-1300A											GSI-1300B											GSI-1300C										
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Water Quality Based Effluent Limits		Part 201 Generic Cleanup Criteria	Sample ID																															
		Acute Criteria	Chronic Criteria	Groundwater Surface Water Interface	Screened Interval	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'
					Date of Collection	7/11/2019	1/8/2020	2/11/2020	5/6/2020	1/6/2021	10/13/2021	4/19/2022	7/13/2022	10/26/2022	12/7/2023	12/9/2024	7/11/2019	1/8/2020	2/11/2020	5/6/2020	1/6/2021	10/13/2021	4/19/2022	7/13/2022	10/26/2022	12/7/2023	12/9/2024	7/11/2019	1/8/2020	2/11/2020	5/6/2020	1/6/2021	10/13/2021	4/19/2022	7/13/2022	10/26/2022	12/7/2023	12/9/2024
					Date of Analysis	7/19/2019	1/21/2020	2/24/2020	5/18/2020	1/11/2021	10/23/2021	4/27/2022	7/19/2022	11/5/2022	12/19/2023	12/27/2024	7/19/2019	1/21/2020	2/24/2020	5/18/2020	1/11/2021	10/23/2021	4/27/2022	7/19/2022	11/5/2022	12/19/2023	12/27/2024	7/19/2019	1/21/2020	2/24/2020	5/18/2020	1/11/2021	10/23/2021	4/27/2022	7/19/2022	11/5/2022	12/19/2023	12/27/2024
71432	1	--*	130	200 (X)	Benzene	ND	ND	ND	ND	ND	2.7	ND	ND	ND	ND	ND	ND	7.8	ND	20	16	3.5	13	ND	ND	ND	ND	2.8	2.3	2.7	2.0	ND	1.3	4.7	6.5	6.2	12	6.9
100414	1	**320**	**200**	**18**	Ethylbenzene	ND	ND	2.7	1.1	ND	**120**	ND	**130**	**170**	**230**	**373**	**280**	**730**	**520**	**950**	**470**	**290**	**190**	**560**	**330**	**410**	**166**	**27**	5.3	5.7	13	**43**	**32**	**96**	**80**	**82**	**120**	**50.6**
108883	1	2,600	--*	270	Toluene	ND	ND	ND	ND	ND	2.3	ND	ND	17	9.2	99.9	140	**560**	**530**	**1300**	**660**	94	230	**460**	**460**	240	16.8	17	2.9	1.9	10	10	12	70	67	63	95	34
95636	1	310	**190**	**17**	1,2,4-Trimethylbenzene	1.2	ND	ND	ND	ND	**28**	ND	**83**	**32**	**81**	**164**	**290**	**430**	**370**	**460**	**300**	**300**	**90**	**420**	**270**	**280**	**174**	6.0	2.3	2.1	2.0	12	16	**52**	**32**	**31**	**47**	**28.1**
108678	1	810	500	45	1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	3.3	ND	ND	ND	16	36.4	**79**	**110**	**97**	**130**	**72**	**73**	**28**	**110**	**190**	**70**	36.3	1.1	ND	ND	ND	2.1	3.7	13	7.7	7.7	10	7.04
1330207	3	**890**	**540**	**41**	Xylenes, Total	ND	ND	ND	3.8	ND	**120**	ND	**180**	**140**	**230**	**974**	**890**	**2,800**	**1,900**	**3,400**	**1,700**	**960**	**630**	**1,800**	**980**	**1,300**	**251**	**76**	8.7	8.5	22	**120**	**87**	**270**	**230**	**220**	**300**	**117**

SVOCs					GSI-1300A											GSI-1300B											GSI-1300C										
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Water Quality Based Effluent Limits		Part 201 Generic Cleanup Criteria	Sample ID																															
		Acute Criteria	Chronic Criteria	Groundwater Surface Water Interface	Screened Interval	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'
					Date of Collection	7/11/2019	1/8/2020	2/11/2020	5/6/2020	1/6/2021	10/13/2021	4/19/2022	7/13/2022	10/26/2022	12/7/2023	12/9/2024	7/11/2019	1/8/2020	2/11/2020	5/6/2020	1/6/2021	10/13/2021	4/19/2022	7/13/2022	10/26/2022	12/7/2023	12/9/2024	7/11/2019	1/8/2020	2/11/2020	5/6/2020	1/6/2021	10/13/2021	4/19/2022	7/13/2022	10/26/2022	12/7/2023	12/9/2024
					Date of Analysis	7/19/2019	1/21/2020	2/24/2020	5/18/2020	1/12/2021	10/22/2021	4/26/2022	7/21/2022	11/3/2022	12/13/2023	12/27/2024	7/19/2019	1/21/2020	2/24/2020	5/18/2020	1/13/2021	10/22/2021	4/26/2022	7/21/2022	11/2/2022	12/13/2023	12/27/2024	7/19/2019	1/21/2020	2/24/2020	5/18/2020	1/12/2021	10/22/2021	4/27/2022	7/21/2022	11/3/2022	12/13/2023	12/27/2024
105679	5	2,700	--*	380	2,4-Dimethylphenol	ND	ND	ND	ND	ND	27.0	ND	6.8	ND	26	279	80	**520**	380	**1000**	**820**	100	**600**	370	140	61	ND	32	7.3	ND	10	ND	5.7	160	200	130	350	150
95487	10	1,400	840	(J)	2-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	44	ND	150	100	150	92	ND	72	27	ND	12	ND	ND	ND	ND	ND	ND	ND	14	ND	39	7.1
106445	10	450	275	(J)	3&4-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	64.2	ND	240	ND	**280**	**310**	ND	150	78	49	19	ND	ND	ND	ND	ND	ND	ND	39	37	ND	ND	14	5.4
132649	4	--*	44	4.0	Dibenzofuran	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
91576	5	340	210	19	2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.7	**44**	**55**	**43**	ND	ND	ND	**66**	**42**	**44**	**48**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1
91203	5	200	120	**11**	Naphthalene	ND	ND	ND	ND	ND	6.9	ND	**22**	8.4	**46**	**107**	**180**	**220**	**200**	**180**	**220**	**150**	**320**	**220**	**200**	**180**	**139**	ND	5.6	ND	ND	7.9	6.5	**39**	**24**	**20**	**41**	**25.6**
108952	5	--*	5,000	210	Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

CARBONYL COMPOUNDS					GSI-1300A											GSI-1300B											GSI-1300C										
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Water Quality Based Effluent Limits		Part 201 Generic Cleanup Criteria	Sample ID																															
		Acute Criteria	Chronic Criteria	Groundwater Surface Water Interface	Screened Interval	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'
					Date of Collection	7/11/2019	-	-	-	-	-	-	-	-	-	-	7/11/2019	-	-	-	-	-	-	-	-	-	-	7/11/2019	-	-	-	-	-	-	-	-	-	-
					Date of Analysis	7/19/2019	-	-	-	-	-	-	-	-	-	-	7/19/2019	-	-	-	-	-	-	-	-	-	-	7/19/2019	-	-	-	-	-	-	-	-	-	-
75070	100	2,400	1,430	130	Acetaldehyde	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

WATER QUALITY PARAMETERS					GSI-1300A											GSI-1300B											GSI-1300C										
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Field Measured Parameters		Part 201 Generic Cleanup Criteria	Sample ID																															
		Mixing Zone Based Criteria		Groundwater Surface Water Interface	Screened Interval	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	3.89-8.89'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	19.80-24.80'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'	39.49-44.49'
					Date of Collection	7/11/2019	1/8/2020	2/11/2020	5/6/2020	1/6/2021	10/13/2021	4/19/2022	7/13/2022	10/26/2022	12/7/2023	12/9/2024	7/11/2019	1/8/2020	2/11/2020	5/6/2020	1/6/2021	10/13/2021	4/19/2022	7/13/2022	10/26/2022	12/7/2023	12/9/2024	7/11/2019	1/8/2020	2/11/2020	5/6/2020	1/6/2021	10/13/2021	4/19/2022	7/13/2022	10/26/2022	12/7/2023	12/9/2024
					Date of Analysis	7/11/2019	1/8/2020	2/11/2020	5/6/2020	1/6/2021	10/13/2021	4/19/2022	7/13/2022	10/26/2022	12/7/2023	12/9/2024	7/11/2019	1/8/2020	2/11/2020	5/6/2020	1/6/2021	10/13/2021	4/19/2022	7/13/2022	10/26/2022	12/7/2023	12/9/2024	7/11/2019	1/8/2020	2/11/2020	5/6/2020	1/6/2021	10/13/2021	4/19/2022	7/13/2022	10/26/2022	12/7/2023	12/9/2024
-	-	6.5-9.0		6.5-9.0	pH	6.7	6.8	6.8	6.8	6.6	6.8	6.7	6.5	6.8	6.6	6.6	6.9	6.7	6.7	6.8	6.6	6.8	6.6	6.5	6.9	6.9	6.9	7.7	7.6	7.4	7.6	7.4	7.7	7.4	7.4	7.7	7.6	7.5
-	-	-		NE	ORP	-131.8	-89.4	-94.4	-128.2	-104.6	-101.0	-93.6	-112.6	55.5	-8.0	-103.3	-40.7	-86.7	-96.5	-129.1	-105.9	-95.8	-146.6	-90.6	46.4	-41.5	-116.2	-70.5	-121.1	-135.9	-158.4	-156.2	-127.0	-189.2	-142.9	66.7	-78.9	-124.1
-	-	-		(EE)	DO	0.3	0.5	0.5	1.4	0.7	0.0	0.7	0.5	0.1	0.57	0.39	1.2	0.3	0.3	1.3	0.6	0.0	0.2	0.6	0.5	0.45	0.42	1.2	0.4	0.4	1.3	0.6	0.0	0.3	0.5	0.1	0.4	0.8

Notes:
All results are presented in micrograms per liter (µg/L) or parts per billion (ppb)
ND - Compound not detected at a concentration greater than the laboratory's method detection limit
NS - Not Sampled
NE - Indicates criteria not established for the site
Bold denotes criteria that has been exceeded
Exceeds Mixing Zone-Based GSI Acute Criteria
Exceeds Mixing Zone-Based GSI Chronic Criteria
Analytical Methods EPA 8260 (VOCs), 8270 (SVOCs), EPA 8315A (Carbonyl)
* MDEQ Operations Memorandum 2 TDL not met for laboratory analysis
Footnotes and acronyms for the *PART 201 CRITERIA/PART 213 RISK BASED SCREENING LEVELS* can be located on MDEQ's website
Mixing Zone-Based GSI Criteria reflect MDEQ-developed criteria for site November 7, 2017
--* Indicates there is either no reasonable potential for compound to exceed Acute Criteria/Loading or the Acute Criteria is protective of the Chronic Criteria/Loading

Table 1 - Summary of Laboratory Analytical Results
GSI-1400 - Groundwater VOCs & SVOCs
Former Cliffs Dow Site
Marquette, Michigan
TriMedia Project Number: 99-059

VOCs					GSI-1400A											GSI-1400B										GSI-1400C										
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Water Quality Based Effluent Limits		Part 201 Generic Cleanup Criteria	Sample ID	GSI-1400A	GSI-1400A	GSI-1400A	GSI-1400A	GSI-1400A	GSI-1400A	GSI-1400A	GSI-1400A	GSI-1400A	GSI-1400A	GSI-1400A	GSI-1400B	GSI-1400B	GSI-1400B	GSI-1400B	GSI-1400B	GSI-1400B	GSI-1400B	GSI-1400B	GSI-1400B	GSI-1400B	GSI-1400B	GSI-1400C	GSI-1400C	GSI-1400C	GSI-1400C	GSI-1400C	GSI-1400C	GSI-1400C	GSI-1400C	GSI-1400C	GSI-1400C	GSI-1400C
		Acute Criteria	Chronic Criteria	Groundwater Surface Water Interface	Screened Interval	6.82-11.82'	6.82-11.82'	6.82-11.82'	6.82-11.82'	6.82-11.82'	6.82-11.82'	6.82-11.82'	6.82-11.82'	6.82-11.82'	6.82-11.82'	6.82-11.82'	22.45-27.45'	22.45-27.45'	22.45-27.45'	22.45-27.45'	22.45-27.45'	22.45-27.45'	22.45-27.45'	22.45-27.45'	22.45-27.45'	22.45-27.45'	43.40-48.40'	43.40-48.40'	43.40-48.40'	43.40-48.40'	43.40-48.40'	43.40-48.40'	43.40-48.40'	43.40-48.40'	43.40-48.40'	43.40-48.40'	43.40-48.40'
					Date of Collection	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/6/2021	10/14/2021	4/19/2022	7/14/2022	10/26/2022	12/6/2023	12/9/2024	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/6/2021	10/14/2021	4/19/2022	7/14/2022	10/26/2022	12/6/2023	12/10/2024	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/6/2021	10/14/2021	4/19/2022	7/14/2022	10/26/2022	12/6/2023	12/10/2024
					Date of Analysis	12/13/2019	1/22/2020	2/24/2020	5/18/2020	1/11/2021	10/23/2021	4/27/2022	7/19/2022	11/5/2022	12/15/2023	12/27/2024	12/13/2019	1/22/2020	2/24/2020	5/18/2020	1/11/2021	10/23/2021	4/27/2022	7/19/2022	11/5/2022	12/15/2023	12/27/2024	12/13/2019	1/22/2020	2/24/2020	5/18/2020	1/12/2021	10/23/2021	4/27/2022	7/19/2022	11/5/2022	12/15/2023	12/27/2024
71432	1	--*	130	200 (X)	Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.3	ND	18	ND	ND	ND	11	2.5	6.2	ND	ND	ND	ND	4.4	3.7	2.8	3	1.4	1.9	2.7	4.2	3.3	9	6.15
100414	1	320	200	**18**	Ethylbenzene	ND	ND	ND	ND	ND	ND	17	1.7	1.3	**50**	1.52	**600**	**370**	**430**	**250**	**630**	**230**	**720**	**540**	**440**	**300**	13.6	**28**	**40**	**27**	15	**18**	**28**	**21**	**29**	**29**	**31**	**51**
108883	1	2,600	--*	270	Toluene	ND	ND	ND	ND	ND	ND	3.5	ND	ND	1.2	ND	**680**	**350**	**390**	180	**640**	**98**	**630**	250	270	160	125	29	22	41	4.3	1.9	2.6	14	14	18	32	36.6
95636	1	**310**	**190**	**17**	1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	ND	2.4	ND	ND	16	1.12	**290**	**290**	**230**	**140**	**400**	**170**	**320**	**320**	**370**	**350**	**312**	10	14	8.9	13	7.7	12	8.6	8.6	10	**42**	**22.4**
108678	1	810	500	**45**	1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.4	ND	**84**	**76**	**60**	39	**110**	**39**	**83**	**83**	**96**	**98**	77.9	2.3	2.6	1.4	2.7	1.3	1.3	1.1	ND	1.6	8.6	4.07
1330207	3	890	**540**	**41**	Xylenes, Total	ND	ND	ND	ND	ND	ND	20	ND	ND	19	ND	**2,100**	**1,300**	**1,600**	**890**	**2,300**	**770**	**2,600**	**1,900**	**1,500**	**1,000**	**715**	**66**	**70**	**44**	27	27	35	**42**	**63**	**60**	**220**	**78.6**

SVOCs					GSI-1400A											GSI-1400B										GSI-1400C										
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Water Quality Based Effluent Limits		Part 201 Generic Cleanup Criteria	Sample ID	GSI-1400A	GSI-1400A	GSI-1400A	GSI-1400A	GSI-1400A	GSI-1400A	GSI-1400A	GSI-1400A	GSI-1400A	GSI-1400A	GSI-1400A	GSI-1400B	GSI-1400B	GSI-1400B	GSI-1400B	GSI-1400B	GSI-1400B	GSI-1400B	GSI-1400B	GSI-1400B	GSI-1400B	GSI-1400B	GSI-1400C	GSI-1400C	GSI-1400C	GSI-1400C	GSI-1400C	GSI-1400C	GSI-1400C	GSI-1400C	GSI-1400C	GSI-1400C	GSI-1400C
		Acute Criteria	Chronic Criteria	Groundwater Surface Water Interface	Screened Interval	6.82-11.82'	6.82-11.82'	6.82-11.82'	6.82-11.82'	6.82-11.82'	6.82-11.82'	6.82-11.82'	6.82-11.82'	6.82-11.82'	6.82-11.82'	6.82-11.82'	22.45-27.45'	22.45-27.45'	22.45-27.45'	22.45-27.45'	22.45-27.45'	22.45-27.45'	22.45-27.45'	22.45-27.45'	22.45-27.45'	22.45-27.45'	43.40-48.40'	43.40-48.40'	43.40-48.40'	43.40-48.40'	43.40-48.40'	43.40-48.40'	43.40-48.40'	43.40-48.40'	43.40-48.40'	43.40-48.40'	43.40-48.40'
					Date of Collection	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/6/2021	10/14/2021	4/19/2022	7/14/2022	10/26/2022	12/6/2023	12/9/2024	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/6/2021	10/14/2021	4/19/2022	7/14/2022	10/26/2022	12/6/2023	12/10/2024	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/6/2021	10/14/2021	4/19/2022	7/14/2022	10/26/2022	12/6/2023	12/10/2024
					Date of Analysis	12/13/2019	1/22/2020	2/24/2020	5/18/2020	1/12/2021	10/22/2021	4/27/2022	7/21/2022	11/3/2022	12/14/2023	12/27/2024	12/13/2019	1/22/2020	2/24/2020	5/18/2020	1/13/2021	10/22/2021	4/27/2022	7/21/2022	11/3/2022	12/14/2023	12/27/2024	12/13/2019	1/22/2020	2/24/2020	5/18/2020	1/12/2021	10/22/2021	4/27/2022	7/21/2022	11/3/2022	12/14/2023	12/27/2024
105679	5	2,700	--*	380	2,4-Dimethylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1,100**	**470**	**410**	**370**	**590**	140	**400**	130	290	220	212	18	18	ND	ND	ND	ND	25	100	35	100	46
95487	10	1,400	840	(J)	2-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	280	100	120	79	150	ND	44	23	100	68	58.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.1	ND
106445	10	450	275	(J)	3&4-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**640**	89	120	180	**360**	35	97	35	140	19	77.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
132649	4	--*	44	4.0	Dibenzofuran	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.56	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
91576	5	340	210	**19**	2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	17	18	18	16	ND	**25**	ND	14	**25**	**55**	**28.8**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
91203	5	200	120	**11**	Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	9.2	9.2	ND	**170**	**120**	**140**	**210**	**190**	**230**	**220**	ND	**210**	**220**	**83.5**	7.3	7.9	ND	5.7	6.9	6.3	ND	ND	5.4	**23**	**12.9**
108952	5	--*	5,000	210	Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	35	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

WATER QUALITY PARAMETERS					GSI-1400A											GSI-1400B										GSI-1400C										
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Field Measured Parameters		Part 201 Generic Cleanup Criteria	Sample ID	GSI-1400A	GSI-1400A	GSI-1400A	GSI-1400A	GSI-1400A	GSI-1400A	GSI-1400A	GSI-1400A	GSI-1400A	GSI-1400A	GSI-1400A	GSI-1400B	GSI-1400B	GSI-1400B	GSI-1400B	GSI-1400B	GSI-1400B	GSI-1400B	GSI-1400B	GSI-1400B	GSI-1400B	GSI-1400B	GSI-1400C	GSI-1400C	GSI-1400C	GSI-1400C	GSI-1400C	GSI-1400C	GSI-1400C	GSI-1400C	GSI-1400C	GSI-1400C	GSI-1400C
		Mixing Zone Based Criteria		Groundwater Surface Water Interface	Screened Interval	6.82-11.82'	6.82-11.82'	6.82-11.82'	6.82-11.82'	6.82-11.82'	6.82-11.82'	6.82-11.82'	6.82-11.82'	6.82-11.82'	6.82-11.82'	6.82-11.82'	22.45-27.45'	22.45-27.45'	22.45-27.45'	22.45-27.45'	22.45-27.45'	22.45-27.45'	22.45-27.45'	22.45-27.45'	22.45-27.45'	22.45-27.45'	22.45-27.45'	43.40-48.40'	43.40-48.40'	43.40-48.40'	43.40-48.40'	43.40-48.40'	43.40-48.40'	43.40-48.40'	43.40-48.40'	43.40-48.40'	43.40-48.40'	43.40-48.40'
					Date of Collection	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/6/2021	10/14/2021	4/19/2022	7/14/2022	10/26/2022	12/6/2023	12/9/2024	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/6/2021	10/14/2021	4/19/2022	7/14/2022	10/26/2022	12/6/2023	12/10/2024	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/6/2021	10/14/2021	4/19/2022	7/14/2022	10/26/2022	12/6/2023	12/10/2024
					Date of Analysis	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/6/2021	10/14/2021	4/20/2022	7/14/2022	10/26/2022	12/6/2023	12/9/2024	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/6/2021	10/14/2021	4/19/2022	7/14/2022	10/26/2022	12/6/2023	12/10/2024	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/6/2021	10/14/2021	4/19/2022	7/14/2022	10/26/2022	12/6/2023	12/10/2024
-	-	6.5-9.0		6.5-9.0	pH	6.8	6.6	6.5	6.7	6.5	6.5	6.5	6.7	7.6	6.7	6.7	6.2	6.7	6.7	6.7	6.8	6.5	6.7	6.6	6.7	6.7	6.5	7.4	6.9	7.2	7.6	7.4	7.6	7.4	7.4	7.6	7.6	7.4
-	-	-		NE	ORP	-75.1	-34.2	-51.7	-81.1	-106.3	-83.3	-107.8	-130.5	24.9	-40.8	-21.3	-46.3	-69.2	-71.6	-104.1	-100.6	-92.6	-137.7	-132.8	60.1	-52.5	-93.7	-79.1	-100.8	-58.9	-131	-161.1	-113.3	-166.6	-156.0	90.7	-99.4	-143.7
-	-	-		(EE)	DO	0.3	0.6	0.6	1.6	0.7	0.1	1.3	4.7	11.2	0.43	0.67	0.9	0.4	0.4	1.4	0.6	0.0	1.0	5.1	0.1	0.37	5.25	0.4	0.6	0.5	1.5	0.6	0.0	1.0	5.4	0.2	0.68	5.27

Notes:
All results are presented in micrograms per liter (µg/L) or parts per billion (ppb)
ND - Compound not detected at a concentration greater than the laboratory's method detection limit
NS - Not Sampled
NE - Indicates criteria not established for the site
Bold denotes criteria that has been exceeded
Exceeds Mixing Zone-Based GSI Acute Criteria
Exceeds Mixing Zone-Based GSI Chronic Criteria
Analytical Methods EPA 8260 (VOCs), 8270 (SVOCs), EPA 8315A (Carbonyl)
* MDEQ Operations Memorandum 2 TDL not met for laboratory analysis
Footnotes and acronyms for the*PART 201 CRITERIA/PART 213 RISK BASED SCREENING LEVELS*can be located on MDEQ's website
Mixing Zone-Based GSI Criteria reflect MDEQ-developed criteria for site November 7, 2017
--* Indicates there is either no reasonable potential for compound to exceed Acute Criteria/Loading or the Acute Criteria is protective of the Chronic Criteria/Loading

TRIMEDIA ENVIRONMENTAL & ENGINEERING

Table 1 - Summary of Laboratory Analytical Results
GSI-1500 - Groundwater VOCs & SVOCs
Former Cliffs Dow Site
Marquette, Michigan
TriMedia Project Number: 99-059

VOCs						GSI-1500A										GSI-1500B										GSI-1500C									
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Water Quality Based Effluent Limits		Part 201 Generic Cleanup Criteria	Sample ID	GSI-1500A	GSI-1500A	GSI-1500A	GSI-1500A	GSI-1500A	GSI-1500A	GSI-1500A	GSI-1500A	GSI-1500A	GSI-1500A	GSI-1500A	GSI-1500A	GSI-1500B	GSI-1500B	GSI-1500B	GSI-1500B	GSI-1500B	GSI-1500B	GSI-1500B	GSI-1500B	GSI-1500B	GSI-1500B	GSI-1500B	GSI-1500C	GSI-1500C	GSI-1500C	GSI-1500C	GSI-1500C	GSI-1500C	GSI-1500C	GSI-1500C	GSI-1500C	GSI-1500C
		Acute Criteria	Chronic Criteria	Groundwater Surface Water Interface	Screened Interval	6.93-11.93'	6.93-11.93'	6.93-11.93'	6.93-11.93'	6.93-11.93'	6.93-11.93'	6.93-11.93'	6.93-11.93'	6.93-11.93'	6.93-11.93'	6.93-11.93'	6.93-11.93'	22.96-27.96'	22.96-27.96'	22.96-27.96'	22.96-27.96'	22.96-27.96'	22.96-27.96'	22.96-27.96'	22.96-27.96'	22.96-27.96'	22.96-27.96'	22.96-27.96'	42.08-47.08'	42.08-47.08'	42.08-47.08'	42.08-47.08'	42.08-47.08'	42.08-47.08'	42.08-47.08'	42.08-47.08'	42.08-47.08'	42.08-47.08'
					Date of Collection	11/26/2019	1/9/2020	2/17/2020	5/7/2020	1/7/2021	10/14/2021	4/20/2022	7/14/2022	10/27/2022	12/7/2023	12/10/2024	11/26/2019	1/9/2020	2/17/2020	5/7/2020	1/7/2021	10/14/2021	4/20/2022	7/14/2022	10/27/2022	12/7/2023	12/10/2024	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/7/2021	10/14/2021	4/20/2022	7/14/2022	10/27/2022	12/7/2023	12/10/2024
					Date of Analysis	12/13/2019	1/22/2020	2/26/2020	5/18/2020	1/11/2021	10/23/2021	4/27/2022	7/21/2022	11/8/2022	12/19/2023	12/27/2024	12/13/2019	1/22/2020	2/26/2020	5/18/2020	1/11/2021	10/23/2021	4/27/2022	7/19/2022	11/8/2022	12/19/2023	12/27/2024	12/13/2019	1/22/2020	2/24/2020	5/18/2020	1/11/2021	10/23/2021	4/27/2022	7/19/2022	11/8/2022	12/19/2023	12/27/2024
71432	1	--*	130	200 (X)	Benzene	ND	ND	ND	ND	ND	ND	ND	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
100414	1	320	200	**18**	Ethylbenzene	ND	ND	ND	ND	ND	6	**30**	**73**	13	17	**41.2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.8	7.36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
108883	1	2,600	--*	270	Toluene	ND	ND	ND	ND	ND	ND	7.7	25	1.6	1.1	4.81	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.2	2.06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
95636	1	310	190	**17**	1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	9.3	**20**	**30**	**22**	12	**23.7**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.39	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
108678	1	810	500	45	1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	4.4	2.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1330207	3	890	540	41	Xylenes, Total	ND	ND	ND	ND	ND	5.9	**43**	**110**	19	12	25.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.8	13.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

SVOCs						GSI-1500A										GSI-1500B										GSI-1500C									
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Water Quality Based Effluent Limits		Part 201 Generic Cleanup Criteria	Sample ID	GSI-1500A	GSI-1500A	GSI-1500A	GSI-1500A	GSI-1500A	GSI-1500A	GSI-1500A	GSI-1500A	GSI-1500A	GSI-1500A	GSI-1500A	GSI-1500A	GSI-1500B	GSI-1500B	GSI-1500B	GSI-1500B	GSI-1500B	GSI-1500B	GSI-1500B	GSI-1500B	GSI-1500B	GSI-1500B	GSI-1500B	GSI-1500C	GSI-1500C	GSI-1500C	GSI-1500C	GSI-1500C	GSI-1500C	GSI-1500C	GSI-1500C	GSI-1500C	GSI-1500C
		Acute Criteria	Chronic Criteria	Groundwater Surface Water Interface	Screened Interval	6.93-11.93'	6.93-11.93'	6.93-11.93'	6.93-11.93'	6.93-11.93'	6.93-11.93'	6.93-11.93'	6.93-11.93'	6.93-11.93'	6.93-11.93'	6.93-11.93'	6.93-11.93'	22.96-27.96'	22.96-27.96'	22.96-27.96'	22.96-27.96'	22.96-27.96'	22.96-27.96'	22.96-27.96'	22.96-27.96'	22.96-27.96'	22.96-27.96'	22.96-27.96'	42.08-47.08'	42.08-47.08'	42.08-47.08'	42.08-47.08'	42.08-47.08'	42.08-47.08'	42.08-47.08'	42.08-47.08'	42.08-47.08'	42.08-47.08'
					Date of Collection	11/26/2019	1/9/2020	2/17/2020	5/7/2020	1/7/2021	10/14/2021	4/20/2022	7/14/2022	10/27/2022	12/7/2023	12/10/2024	11/26/2019	1/9/2020	2/17/2020	5/7/2020	1/7/2021	10/14/2021	4/20/2022	7/14/2022	10/27/2022	12/7/2023	12/10/2024	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/7/2021	10/14/2021	4/20/2022	7/14/2022	10/27/2022	12/7/2023	12/10/2024
					Date of Analysis	12/13/2019	1/22/2020	2/26/2020	5/18/2020	1/13/2021	10/22/2021	4/27/2022	7/21/2022	11/5/2022	12/14/2023	12/27/2024	12/13/2019	1/22/2020	2/26/2020	5/18/2020	1/11/2021	10/22/2021	4/27/2022	7/21/2022	11/7/2022	12/14/2023	12/27/2024	12/13/2019	1/22/2020	2/24/2020	5/18/2020	1/11/2021	10/22/2021	4/27/2022	7/21/2022	11/7/2022	12/14/2023	12/27/2024
105679	5	2,700	--*	380	2,4-Dimethylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
95487	10	1,400	840	(J)	2-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
106445	10	450	275	(J)	3&4-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
132649	4	--*	44	4.0	Dibenzofuran	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
91576	5	340	210	19	2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
91203	5	200	120	11	Naphthalene	ND	ND	ND	ND	ND	ND	ND	**15**	9	ND	7.57	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
108952	5	--*	5,000	210	Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

WATER QUALITY PARAMETERS						GSI-1500A										GSI-1500B										GSI-1500C									
Chemical Abstract Service Number	MDEQ OP Memo 2 TDL	Field Measured Parameters	Part 201 Generic Cleanup Criteria	Sample ID		GSI-1500A	GSI-1500A	GSI-1500A	GSI-1500A	GSI-1500A	GSI-1500A	GSI-1500A	GSI-1500A	GSI-1500A	GSI-1500A	GSI-1500A	GSI-1500A	GSI-1500B	GSI-1500B	GSI-1500B	GSI-1500B	GSI-1500B	GSI-1500B	GSI-1500B	GSI-1500B	GSI-1500B	GSI-1500B	GSI-1500B	GSI-1500C	GSI-1500C	GSI-1500C	GSI-1500C	GSI-1500C	GSI-1500C	GSI-1500C	GSI-1500C	GSI-1500C	GSI-1500C
		Mixing Zone Based Criteria	Groundwater Surface Water Interface	Screened Interval		6.93-11.93'	6.93-11.93'	6.93-11.93'	6.93-11.93'	6.93-11.93'	6.93-11.93'	6.93-11.93'	6.93-11.93'	6.93-11.93'	6.93-11.93'	6.93-11.93'	6.93-11.93'	22.96-27.96'	22.96-27.96'	22.96-27.96'	22.96-27.96'	22.96-27.96'	22.96-27.96'	22.96-27.96'	22.96-27.96'	22.96-27.96'	22.96-27.96'	22.96-27.96'	42.08-47.08'	42.08-47.08'	42.08-47.08'	42.08-47.08'	42.08-47.08'	42.08-47.08'	42.08-47.08'	42.08-47.08'	42.08-47.08'	42.08-47.08'
				Date of Collection		11/26/2019	1/9/2020	2/17/2020	5/7/2020	1/7/2021	10/14/2021	10/14/2021	7/14/2022	10/27/2022	12/7/2023	12/10/2024	11/26/2019	1/9/2020	2/17/2020	5/7/2020	1/7/2021	10/14/2021	4/20/2022	7/14/2022	10/27/2022	12/7/2023	12/10/2024	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/7/2021	10/14/2021	4/20/2022	4/20/2022	10/27/2022	12/7/2023	12/10/2024
				Date of Analysis		11/26/2019	1/9/2020	2/17/2020	5/7/2020	1/7/2021	10/14/2021	10/14/2021	7/14/2022	10/27/2022	12/7/2023	12/10/2024	11/26/2019	1/9/2020	2/17/2020	5/7/2020	1/7/2021	10/14/2021	4/20/2022	7/14/2022	10/27/2022	12/7/2023	12/10/2024	11/26/2019	1/9/2020	2/12/2020	5/7/2020	1/7/2021	10/14/2021	4/20/2022	4/20/2022	10/27/2022	12/7/2023	12/10/2024
-	-	6.5-9.0	6.5-9.0	pH		6.7	6.9	6.7	6.7	6.5	6.7	6.7	6.6	8.0	6.7	6.8	6.2	6.9	6.8	6.9	6.6	6.8	6.6	6.8	6.9	6.9	7.0	7.4	6.9	7.0	7.6	7.5	7.8	7.6	7.7	7.9	8.1	8.1
-	-	-	NE	ORP		-28.9	59.6	53.4	-15.3	-37.3	-56.1	-56.1	-73.2	71.3	-48.3	336.7	-46.3	-12.6	-10.8	-93.6	-86.6	-84.5	-126.4	-93.0	54.3	-125.1	17.9	-60.7	-100.8	-118.5	-134.7	-153	-143.9	-202.6	-152.0	-39.8	-174.1	-70.7
-	-	-	(EE)	DO		0.3	2.4	2.6	1.9	0.8	0.2	0.2	4.5	11.6	0.29	0.65	0.9	1.5	0.4	1.6	0.6	0.0	0.3	5.1	0.2	0.06	0.17	0.3	0.6	0.4	1.4	0.7	0.0	0.3	5.1	0.1	0.1	0.1

Notes:
All results are presented in micrograms per liter (µg/L) or parts per billion (ppb)
ND - Compound not detected at a concentration greater than the laboratory's method detection limit
NS - Not Sampled
NE - Indicates criteria not established for the site
Bold denotes criteria that has been exceeded
Exceeds Mixing Zone-Based GSI Acute Criteria
Exceeds Mixing Zone-Based GSI Chronic Criteria
Analytical Methods EPA 8260 (VOCs), 8270 (SVOCs), EPA 8315A (Carbonyl)
* MDEQ Operations Memorandum 2 TDL not met for laboratory analysis
Footnotes and acronyms for the *PART 201 CRITERIA/PART 213 RISK BASED SCREENING LEVELS* can be located on MDEQ's website
Mixing Zone-Based GSI Criteria reflect MDEQ-developed criteria for site November 7, 2017
--* Indicates there is either no reasonable potential for compound to exceed Acute Criteria/Loading or the Acute Criteria is protective of the Chronic Criteria/Loading

Appendix D

Analytical Laboratory Reports

January 06, 2025

Ryan Whaley
TriMedia Environmental & Engineering Svcs
830 W. Washington St.
Marquette, MI 49855

Work Order: **HN2410635**
Revision: **1**

Re: **99-059**

Dear Ryan,

Enclosed are the results of the sample(s) submitted to our laboratory.

The analytical data provided relates to the samples received by ALS Environmental and for the analysis requested.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to contact me:
ADDRESS: 3352 128th Avenue, Holland, MI, USA PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Jodi Blouw
/S/ JODI BLOUW

Project Manager

Narrative Documents

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059 **Date Received:** 13-Dec-2024

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt

50 groundwater, water samples were received for analysis at ALS Environmental on 13-Dec-2024. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Organics

EPA 8260D-FULL HN-W

Batch ID: 2847846

The RPD between the MS and MSD was outside of the control limit. The corresponding result should be considered estimated for this compound: Tetrahydrofuran
The reporting limit is elevated due to dilution needed to eliminate matrix-related interference.
HN2410635-043: The reporting limit is elevated due to dilution needed to eliminate matrix-related interference.

Batch ID: 2848520

The LCS recovery was below the lower control limit. Instrument sensitivity was verified as sufficient through the analysis of a low-level standard. The following non-detects are reported without qualification: Di-isopropylether, Acrylonitrile, Methyl tert-butyl ether, 1,1-Dichloroethane, Methylene Chloride, trans-1,2-Dichloroethene
No MS/MSD analyzed due to analyst error(spiked low).

Batch ID: 2833351

The concentration in the Method Blank was greater than the quantitation limit. All samples in the batch were non-detect; therefore, no qualification is needed for this analyte: toluene

Batch ID: 2839457

HN2410635-002: The reporting limit is elevated due to dilution needed to eliminate matrix-related interference.

HN2410635-003: The reporting limit is elevated due to dilution needed to eliminate matrix-related interference.

HN2410635-009: The reporting limit is elevated due to dilution needed to eliminate matrix-related interference.

HN2410635-010: The reporting limit is elevated due to dilution needed to eliminate matrix-related interference.

HN2410635-013: The reporting limit is elevated due to dilution needed to eliminate matrix-related interference.

HN2410635-024: The reporting limit is elevated due to dilution needed to eliminate matrix-related interference.

Batch ID: 2836989

HN2410635-028: The reporting limit is elevated due to dilution needed to eliminate matrix-related interference.

HN2410635-034: The reporting limit is elevated due to dilution needed to eliminate matrix-related interference.

Batch ID: 2839399

HN2410635-038: The reporting limit is elevated due to dilution needed to eliminate matrix-related interference.

HN2410635-041: The reporting limit is elevated due to dilution needed to eliminate matrix-related interference.

EPA 8270E-FULL HN-3510-W

Batch ID: 2833990

The Continuing Calibration Verification did not meet acceptance criteria with low bias. Instrument sensitivity was verified as sufficient through the analysis of a low-level standard. The following non-detects are reported without qualification: Pentachlorophenol.
HN2410635-028: One or more of the surrogates were below the limits due to matrix interference.

Batch ID: 2834033

The Continuing Calibration Verification did not meet acceptance criteria with low bias. Instrument sensitivity was verified as sufficient through the analysis of a low-level standard. The following non-detects are reported without qualification: Pentachlorophenol.
The LCSD recovery was above the upper control limit. All sample results in the batch were non-detect. No qualification is necessary for this analyte: Nitrobenzene.
The LCS recovery was above the upper control limit. All the sample results in the batch were non-detect. No qualification is necessary for this analyte: Nitrobenzene.

SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting limits.

For a full listing of sample results, continue to the Sample Results section of this Report.

CLIENT ID: UPG-400 AR			Lab ID: HN2410635-001			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1,2,4-Trimethylbenzene	1.85		0.450	1.00	µg/L	EPA 8260D
1-Methylnaphthalene	2.19		0.0830	0.100	µg/L	EPA 8270E
2,4-Dimethylphenol	19.8		0.360	1.00	µg/L	EPA 8270E
Benzene	5.77		0.460	1.00	µg/L	EPA 8260D
Ethylbenzene	9.81		0.340	1.00	µg/L	EPA 8260D
m+p-Xylene	18.0		0.810	2.00	µg/L	EPA 8260D
Naphthalene	1.73		0.0670	0.100	µg/L	EPA 8270E
o-Xylene	14.1		0.310	1.00	µg/L	EPA 8260D
Tetrahydrofuran (THF)	1.34		0.730	1.00	µg/L	EPA 8260D
Toluene	1.33		0.450	1.00	µg/L	EPA 8260D
Total Xylene	32.1		0.810	2.00	µg/L	EPA 8260D

CLIENT ID: UPG-400 BR			Lab ID: HN2410635-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1,1'-Biphenyl (BZ-0)	11.9		0.420	1.00	µg/L	EPA 8270E
1,2,4-Trimethylbenzene	83.4		2.25	5.00	µg/L	EPA 8260D
1,3,5-Trimethylbenzene	22.4		3.25	5.00	µg/L	EPA 8260D
1-Methylnaphthalene	122		1.63	1.96	µg/L	EPA 8270E
2,4-Dimethylphenol	614		7.06	19.6	µg/L	EPA 8270E
2-Butanone (Methyl ethyl ketone, MEK)	35.5		12.1	25.0	µg/L	EPA 8260D
2-Methylphenol (o-Cresol)	191		4.90	19.6	µg/L	EPA 8270E
3&4-Methylphenol	829		4.12	19.6	µg/L	EPA 8270E
Acenaphthene	5.09		0.0810	0.100	µg/L	EPA 8270E
Benzene	8.10		2.30	5.00	µg/L	EPA 8260D
Dibenzofuran	6.20		0.230	1.00	µg/L	EPA 8270E
Ethylbenzene	69.2		1.70	5.00	µg/L	EPA 8260D
m+p-Xylene	136		4.05	10.0	µg/L	EPA 8260D
Methylphenol, Total	1020		9.02	39.2	µg/L	EPA 8270E
Naphthalene	48.5		0.0670	0.100	µg/L	EPA 8270E
o-Xylene	74.7		1.55	5.00	µg/L	EPA 8260D
Phenol	36.3		0.210	1.00	µg/L	EPA 8270E
Toluene	117		2.25	5.00	µg/L	EPA 8260D
Total Xylene	211		4.05	10.0	µg/L	EPA 8260D

CLIENT ID: DUP-1			Lab ID: HN2410635-003			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1,1'-Biphenyl (BZ-0)	10.8		0.420	1.00	µg/L	EPA 8270E
1,2,4-Trimethylbenzene	81.6		2.25	5.00	µg/L	EPA 8260D
1,3,5-Trimethylbenzene	21.0		3.25	5.00	µg/L	EPA 8260D
1-Methylnaphthalene	56.7		0.806	0.972	µg/L	EPA 8270E
2,4-Dimethylphenol	300		3.50	9.72	µg/L	EPA 8270E

SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting limits.

For a full listing of sample results, continue to the Sample Results section of this Report.

CLIENT ID: DUP-1			Lab ID: HN2410635-003			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
2-Methylphenol (o-Cresol)	94.6		2.43	9.72	µg/L	EPA 8270E
3&4-Methylphenol	407		2.04	9.72	µg/L	EPA 8270E
Acenaphthene	5.01		0.0810	0.100	µg/L	EPA 8270E
Benzene	8.20		2.30	5.00	µg/L	EPA 8260D
Dibenzofuran	5.82		0.230	1.00	µg/L	EPA 8270E
Ethylbenzene	70.1		1.70	5.00	µg/L	EPA 8260D
m+p-Xylene	141		4.05	10.0	µg/L	EPA 8260D
Methylphenol, Total	502		4.47	19.4	µg/L	EPA 8270E
Naphthalene	41.9		0.0670	0.100	µg/L	EPA 8270E
o-Xylene	78.1		1.55	5.00	µg/L	EPA 8260D
Phenol	34.8		0.210	1.00	µg/L	EPA 8270E
Toluene	124		2.25	5.00	µg/L	EPA 8260D
Total Xylene	219		4.05	10.0	µg/L	EPA 8260D

CLIENT ID: UPG-400 CR			Lab ID: HN2410635-004			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1,1'-Biphenyl (BZ-0)	4.08		0.420	1.00	µg/L	EPA 8270E
1,2,4-Trimethylbenzene	133		2.25	5.00	µg/L	EPA 8260D
1,3,5-Trimethylbenzene	27.3		0.650	1.00	µg/L	EPA 8260D
1-Methylnaphthalene	31.5		0.0830	0.100	µg/L	EPA 8270E
2,4-Dichlorophenol	6.43		0.350	1.00	µg/L	EPA 8270E
Acenaphthene	1.54		0.0810	0.100	µg/L	EPA 8270E
Dibenzofuran	3.18		0.230	1.00	µg/L	EPA 8270E
Ethylbenzene	155		1.70	5.00	µg/L	EPA 8260D
Fluoranthene	0.136		0.0827	0.100	µg/L	EPA 8270E
Fluorene	0.731		0.0510	0.100	µg/L	EPA 8270E
m+p-Xylene	144		0.810	2.00	µg/L	EPA 8260D
Naphthalene	16.0		0.0670	0.100	µg/L	EPA 8270E
o-Xylene	64.4		0.310	1.00	µg/L	EPA 8260D
Phenanthrene	0.497		0.0810	0.100	µg/L	EPA 8270E
Toluene	8.68		0.450	1.00	µg/L	EPA 8260D
Total Xylene	209		0.810	2.00	µg/L	EPA 8260D

CLIENT ID: GSI-1400 A			Lab ID: HN2410635-008			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1,2,4-Trimethylbenzene	1.12		0.450	1.00	µg/L	EPA 8260D
Ethylbenzene	1.52		0.340	1.00	µg/L	EPA 8260D
Naphthalene	0.248		0.0670	0.100	µg/L	EPA 8270E

CLIENT ID: GSI-1300 A			Lab ID: HN2410635-009			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1,2,4-Trimethylbenzene	164		4.50	10.0	µg/L	EPA 8260D

SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting limits.

For a full listing of sample results, continue to the Sample Results section of this Report.

CLIENT ID: GSI-1300 A			Lab ID: HN2410635-009			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1,3,5-Trimethylbenzene	36.4		6.50	10.0	µg/L	EPA 8260D
1-Methylnaphthalene	13.3		0.0830	0.100	µg/L	EPA 8270E
2,4-Dimethylphenol	279		3.56	9.90	µg/L	EPA 8270E
2-Methylnaphthalene	4.73		0.0650	0.100	µg/L	EPA 8270E
2-Methylphenol (o-Cresol)	43.5		0.250	1.00	µg/L	EPA 8270E
3&4-Methylphenol	64.2		2.08	9.90	µg/L	EPA 8270E
Ethylbenzene	373		3.40	10.0	µg/L	EPA 8260D
m+p-Xylene	615		8.10	20.0	µg/L	EPA 8260D
Methylphenol, Total	108		4.55	19.8	µg/L	EPA 8270E
Naphthalene	107		0.663	0.990	µg/L	EPA 8270E
o-Xylene	359		3.10	10.0	µg/L	EPA 8260D
Toluene	99.9		4.50	10.0	µg/L	EPA 8260D
Total Xylene	974		8.10	20.0	µg/L	EPA 8260D

CLIENT ID: GSI-1300 B			Lab ID: HN2410635-010			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1,2,4-Trimethylbenzene	174		2.25	5.00	µg/L	EPA 8260D
1,3,5-Trimethylbenzene	36.3		3.25	5.00	µg/L	EPA 8260D
1-Methylnaphthalene	74.2		0.802	0.966	µg/L	EPA 8270E
Acenaphthene	2.72		0.0810	0.100	µg/L	EPA 8270E
Dibenzofuran	3.00		0.230	1.00	µg/L	EPA 8270E
Ethylbenzene	166		1.70	5.00	µg/L	EPA 8260D
m+p-Xylene	187		4.05	10.0	µg/L	EPA 8260D
Naphthalene	139		0.647	0.966	µg/L	EPA 8270E
o-Xylene	64.0		1.55	5.00	µg/L	EPA 8260D
Toluene	16.8		2.25	5.00	µg/L	EPA 8260D
Total Xylene	251		4.05	10.0	µg/L	EPA 8260D

CLIENT ID: GSI-1300 C			Lab ID: HN2410635-011			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1,2,4-Trimethylbenzene	28.1		0.450	1.00	µg/L	EPA 8260D
1,3,5-Trimethylbenzene	7.04		0.650	1.00	µg/L	EPA 8260D
1-Methylnaphthalene	3.32		0.0830	0.100	µg/L	EPA 8270E
2,4-Dimethylphenol	150		3.50	9.73	µg/L	EPA 8270E
2-Methylnaphthalene	1.14		0.0650	0.100	µg/L	EPA 8270E
2-Methylphenol (o-Cresol)	7.12		0.250	1.00	µg/L	EPA 8270E
3&4-Methylphenol	5.38		0.210	1.00	µg/L	EPA 8270E
Acenaphthene	0.759		0.0810	0.100	µg/L	EPA 8270E
Benzene	6.88		0.460	1.00	µg/L	EPA 8260D
Ethylbenzene	50.6		0.340	1.00	µg/L	EPA 8260D
m+p-Xylene	75.0		0.810	2.00	µg/L	EPA 8260D

SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting limits.

For a full listing of sample results, continue to the Sample Results section of this Report.

CLIENT ID: GSI-1300 C			Lab ID: HN2410635-011			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Methylphenol, Total	12.5		0.460	2.00	µg/L	EPA 8270E
Naphthalene	25.6		0.0670	0.100	µg/L	EPA 8270E
o-Xylene	41.9		0.310	1.00	µg/L	EPA 8260D
Toluene	34.0		0.450	1.00	µg/L	EPA 8260D
Total Xylene	117		0.810	2.00	µg/L	EPA 8260D

CLIENT ID: GSI-1000 B			Lab ID: HN2410635-013			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1,1'-Biphenyl (BZ-0)	9.55		0.420	1.00	µg/L	EPA 8270E
1,2,4-Trimethylbenzene	228		2.25	5.00	µg/L	EPA 8260D
1,3,5-Trimethylbenzene	59.5		3.25	5.00	µg/L	EPA 8260D
1-Methylnaphthalene	55.0		0.0830	0.100	µg/L	EPA 8270E
2,4-Dimethylphenol	420		6.96	19.3	µg/L	EPA 8270E
2-Methylnaphthalene	19.8		0.0650	0.100	µg/L	EPA 8270E
2-Methylphenol (o-Cresol)	165		4.83	19.3	µg/L	EPA 8270E
3&4-Methylphenol	140		4.06	19.3	µg/L	EPA 8270E
Acenaphthene	2.93		0.0810	0.100	µg/L	EPA 8270E
Benzene	9.45		2.30	5.00	µg/L	EPA 8260D
Dibenzofuran	3.94		0.230	1.00	µg/L	EPA 8270E
Ethylbenzene	116		1.70	5.00	µg/L	EPA 8260D
m+p-Xylene	405		4.05	10.0	µg/L	EPA 8260D
Methylphenol, Total	305		8.89	38.7	µg/L	EPA 8270E
Naphthalene	55.5		1.30	1.93	µg/L	EPA 8270E
o-Xylene	238		1.55	5.00	µg/L	EPA 8260D
Phenol	11.5		0.210	1.00	µg/L	EPA 8270E
Toluene	160		2.25	5.00	µg/L	EPA 8260D
Total Xylene	643		4.05	10.0	µg/L	EPA 8260D

CLIENT ID: GSI-1000 C			Lab ID: HN2410635-014			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Fluorene	0.145		0.0510	0.100	µg/L	EPA 8270E

CLIENT ID: GSI-600 B			Lab ID: HN2410635-015			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Acenaphthene	0.233		0.0810	0.100	µg/L	EPA 8270E

CLIENT ID: GSI-1100 D			Lab ID: HN2410635-018			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
2,4-Dimethylphenol	289		3.51	9.74	µg/L	EPA 8270E
Acenaphthylene	0.847		0.0750	0.100	µg/L	EPA 8270E
Benzene	1.36		0.460	1.00	µg/L	EPA 8260D
Di-isopropylether (DIPE)	9.53		0.410	1.00	µg/L	EPA 8260D

SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting limits.

For a full listing of sample results, continue to the Sample Results section of this Report.

CLIENT ID: GSI-1100 D	Lab ID: HN2410635-018					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
m+p-Xylene	3.55		0.810	2.00	µg/L	EPA 8260D
Naphthalene	1.00		0.0670	0.100	µg/L	EPA 8270E
o-Xylene	1.74		0.310	1.00	µg/L	EPA 8260D
Toluene	1.24		0.450	1.00	µg/L	EPA 8260D
Total Xylene	5.29		0.810	2.00	µg/L	EPA 8260D

CLIENT ID: GSI-200 A	Lab ID: HN2410635-019					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1,1'-Biphenyl (BZ-0)	4.64		0.420	1.00	µg/L	EPA 8270E
1,2,4-Trimethylbenzene	15.6		0.450	1.00	µg/L	EPA 8260D
1,3,5-Trimethylbenzene	3.38		0.650	1.00	µg/L	EPA 8260D
1-Methylnaphthalene	24.6		0.0830	0.100	µg/L	EPA 8270E
Acenaphthene	1.23		0.0810	0.100	µg/L	EPA 8270E
Benzene	1.07		0.460	1.00	µg/L	EPA 8260D
Dibenzofuran	1.53		0.230	1.00	µg/L	EPA 8270E
Ethylbenzene	33.5		0.340	1.00	µg/L	EPA 8260D
Fluorene	0.535		0.0510	0.100	µg/L	EPA 8270E
m+p-Xylene	12.2		0.810	2.00	µg/L	EPA 8260D
Naphthalene	2.31		0.0670	0.100	µg/L	EPA 8270E
o-Xylene	9.54		0.310	1.00	µg/L	EPA 8260D
Tetrahydrofuran (THF)	1.70		0.730	1.00	µg/L	EPA 8260D
Toluene	4.51		0.450	1.00	µg/L	EPA 8260D
Total Xylene	21.7		0.810	2.00	µg/L	EPA 8260D

CLIENT ID: GSI-200 B	Lab ID: HN2410635-020					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1,1'-Biphenyl (BZ-0)	7.04		0.420	1.00	µg/L	EPA 8270E
1,2,4-Trimethylbenzene	8.40		0.450	1.00	µg/L	EPA 8260D
1,3,5-Trimethylbenzene	1.44		0.650	1.00	µg/L	EPA 8260D
1-Methylnaphthalene	54.1		0.0830	0.100	µg/L	EPA 8270E
Acenaphthene	1.92		0.0810	0.100	µg/L	EPA 8270E
Benzene	1.44		0.460	1.00	µg/L	EPA 8260D
Dibenzofuran	1.48		0.230	1.00	µg/L	EPA 8270E
Ethylbenzene	21.4		0.340	1.00	µg/L	EPA 8260D
Fluoranthene	0.552		0.0827	0.100	µg/L	EPA 8270E
m+p-Xylene	28.0		0.810	2.00	µg/L	EPA 8260D
Naphthalene	1.70		0.0670	0.100	µg/L	EPA 8270E
o-Xylene	4.25		0.310	1.00	µg/L	EPA 8260D
Toluene	2.72		0.450	1.00	µg/L	EPA 8260D
Total Xylene	32.2		0.810	2.00	µg/L	EPA 8260D

SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting limits.

For a full listing of sample results, continue to the Sample Results section of this Report.

CLIENT ID: GSI-200 C	Lab ID: HN2410635-021					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1,2,4-Trimethylbenzene	2.12		0.450	1.00	µg/L	EPA 8260D
1-Methylnaphthalene	3.85		0.0830	0.100	µg/L	EPA 8270E
Ethylbenzene	30.2		0.340	1.00	µg/L	EPA 8260D
m+p-Xylene	6.68		0.810	2.00	µg/L	EPA 8260D
Naphthalene	1.27		0.0670	0.100	µg/L	EPA 8270E
o-Xylene	3.68		0.310	1.00	µg/L	EPA 8260D
Toluene	1.52		0.450	1.00	µg/L	EPA 8260D
Total Xylene	10.4		0.810	2.00	µg/L	EPA 8260D

CLIENT ID: GSI-1100 A	Lab ID: HN2410635-022					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1-Methylnaphthalene	1.61		0.0830	0.100	µg/L	EPA 8270E
Acenaphthene	0.126		0.0810	0.100	µg/L	EPA 8270E
Ethylbenzene	3.26		0.340	1.00	µg/L	EPA 8260D
Naphthalene	0.146		0.0670	0.100	µg/L	EPA 8270E

CLIENT ID: GSI-1110 B	Lab ID: HN2410635-023					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1,1'-Biphenyl (BZ-0)	5.04		0.420	1.00	µg/L	EPA 8270E
1,2,4-Trimethylbenzene	200		22.5	50.0	µg/L	EPA 8260D
1,3,5-Trimethylbenzene	71.2		0.650	1.00	µg/L	EPA 8260D
1-Methylnaphthalene	156		0.793	0.955	µg/L	EPA 8270E
2,4-Dichlorophenol	30.6		0.350	1.00	µg/L	EPA 8270E
2,4-Dimethylphenol	41.7		0.360	1.00	µg/L	EPA 8270E
Acenaphthene	3.68		0.0810	0.100	µg/L	EPA 8270E
Dibenzofuran	1.18		0.230	1.00	µg/L	EPA 8270E
Ethylbenzene	64.9		0.340	1.00	µg/L	EPA 8260D
Fluoranthene	2.70		0.0827	0.100	µg/L	EPA 8270E
m+p-Xylene	142		0.810	2.00	µg/L	EPA 8260D
Naphthalene	18.8		0.0670	0.100	µg/L	EPA 8270E
o-Xylene	80.2		0.310	1.00	µg/L	EPA 8260D
Toluene	3.49		0.450	1.00	µg/L	EPA 8260D
Total Xylene	222		0.810	2.00	µg/L	EPA 8260D

CLIENT ID: GSI-1100 C	Lab ID: HN2410635-024					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1,2,4-Trimethylbenzene	57.3		2.25	5.00	µg/L	EPA 8260D
1,3,5-Trimethylbenzene	15.1		3.25	5.00	µg/L	EPA 8260D
1-Methylnaphthalene	20.0		0.0830	0.100	µg/L	EPA 8270E
2,4-Dimethylphenol	2200		69.9	194	µg/L	EPA 8270E
2-Methylphenol (o-Cresol)	208		4.86	19.4	µg/L	EPA 8270E
3&4-Methylphenol	135		4.08	19.4	µg/L	EPA 8270E

SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting limits.

For a full listing of sample results, continue to the Sample Results section of this Report.

CLIENT ID: GSI-1100 C	Lab ID: HN2410635-024					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Acenaphthene	1.69		0.0810	0.100	µg/L	EPA 8270E
Ethylbenzene	98.4		1.70	5.00	µg/L	EPA 8260D
m+p-Xylene	184		4.05	10.0	µg/L	EPA 8260D
Methylphenol, Total	344		8.94	38.8	µg/L	EPA 8270E
Naphthalene	50.0		0.0670	0.100	µg/L	EPA 8270E
o-Xylene	87.0		1.55	5.00	µg/L	EPA 8260D
Phenol	27.4		0.210	1.00	µg/L	EPA 8270E
Toluene	76.2		2.25	5.00	µg/L	EPA 8260D
Total Xylene	271		4.05	10.0	µg/L	EPA 8260D

CLIENT ID: GSI-1200 A	Lab ID: HN2410635-025					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1,1'-Biphenyl (BZ-0)	1.41		0.420	1.00	µg/L	EPA 8270E
1,2,4-Trimethylbenzene	2.33		0.450	1.00	µg/L	EPA 8260D
1-Methylnaphthalene	25.2		0.0830	0.100	µg/L	EPA 8270E
Acenaphthene	0.435		0.0810	0.100	µg/L	EPA 8270E
Acenaphthylene	0.222		0.0750	0.100	µg/L	EPA 8270E
Ethylbenzene	11.4		0.340	1.00	µg/L	EPA 8260D
Fluorene	0.106		0.0510	0.100	µg/L	EPA 8270E
o-Xylene	4.69		0.310	1.00	µg/L	EPA 8260D
Total Xylene	4.69		0.810	2.00	µg/L	EPA 8260D

CLIENT ID: GSI-1200 B	Lab ID: HN2410635-026					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Acenaphthene	0.563		0.0810	0.100	µg/L	EPA 8270E
Fluorene	0.146		0.0510	0.100	µg/L	EPA 8270E

CLIENT ID: GSI-1200 C	Lab ID: HN2410635-027					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1,2,4-Trimethylbenzene	1.36		0.450	1.00	µg/L	EPA 8260D
1-Methylnaphthalene	0.483		0.0830	0.100	µg/L	EPA 8270E
2,4-Dimethylphenol	223		3.48	9.66	µg/L	EPA 8270E
2-Methylnaphthalene	0.251		0.0650	0.100	µg/L	EPA 8270E
2-Methylphenol (o-Cresol)	3.22		0.250	1.00	µg/L	EPA 8270E
3&4-Methylphenol	26.4		0.210	1.00	µg/L	EPA 8270E
Ethylbenzene	2.06		0.340	1.00	µg/L	EPA 8260D
m+p-Xylene	4.18		0.810	2.00	µg/L	EPA 8260D
Methylphenol, Total	29.6		0.460	2.00	µg/L	EPA 8270E
Naphthalene	1.33		0.0670	0.100	µg/L	EPA 8270E
o-Xylene	2.42		0.310	1.00	µg/L	EPA 8260D
Phenol	1.15		0.210	1.00	µg/L	EPA 8270E
Toluene	2.22		0.450	1.00	µg/L	EPA 8260D

SAMPLE DETECTION SUMMARY

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CLIENT ID: GSI-1200 C			Lab ID: HN2410635-027			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Total Xylene	6.60		0.810	2.00	µg/L	EPA 8260D

CLIENT ID: GSI-1400 B			Lab ID: HN2410635-028			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1,1'-Biphenyl (BZ-0)	4.34		0.420	1.00	µg/L	EPA 8270E
1,2,4-Trimethylbenzene	312		4.50	10.0	µg/L	EPA 8260D
1,3,5-Trimethylbenzene	77.9		6.50	10.0	µg/L	EPA 8260D
1-Methylnaphthalene	26.0		0.0830	0.100	µg/L	EPA 8270E
2,4-Dimethylphenol	212		3.46	9.62	µg/L	EPA 8270E
2-Methylnaphthalene	28.8		0.0650	0.100	µg/L	EPA 8270E
2-Methylphenol (o-Cresol)	58.8		2.40	9.62	µg/L	EPA 8270E
3&4-Methylphenol	77.2		2.02	9.62	µg/L	EPA 8270E
Benzene	13.6		4.60	10.0	µg/L	EPA 8260D
Dibenzofuran	1.56		0.230	1.00	µg/L	EPA 8270E
Ethylbenzene	278		3.40	10.0	µg/L	EPA 8260D
m+p-Xylene	453		8.10	20.0	µg/L	EPA 8260D
Methylphenol, Total	136		4.42	19.2	µg/L	EPA 8270E
Naphthalene	83.5		0.645	0.962	µg/L	EPA 8270E
o-Xylene	262		3.10	10.0	µg/L	EPA 8260D
Toluene	125		4.50	10.0	µg/L	EPA 8260D
Total Xylene	715		8.10	20.0	µg/L	EPA 8260D

CLIENT ID: GSI-1400 C			Lab ID: HN2410635-029			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1,2,4-Trimethylbenzene	22.4		0.450	1.00	µg/L	EPA 8260D
1,3,5-Trimethylbenzene	4.07		0.650	1.00	µg/L	EPA 8260D
1-Methylnaphthalene	2.60		0.0830	0.100	µg/L	EPA 8270E
2,4-Dimethylphenol	46.4		0.360	1.00	µg/L	EPA 8270E
Benzene	6.15		0.460	1.00	µg/L	EPA 8260D
Ethylbenzene	51.0		0.340	1.00	µg/L	EPA 8260D
m+p-Xylene	47.0		0.810	2.00	µg/L	EPA 8260D
Naphthalene	12.9		0.0670	0.100	µg/L	EPA 8270E
o-Xylene	31.6		0.310	1.00	µg/L	EPA 8260D
Toluene	36.6		0.450	1.00	µg/L	EPA 8260D
Total Xylene	78.6		0.810	2.00	µg/L	EPA 8260D

CLIENT ID: UPG-500 B			Lab ID: HN2410635-031			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1,1'-Biphenyl (BZ-0)	1.34		0.420	1.00	µg/L	EPA 8270E
1-Methylnaphthalene	3.44		0.0830	0.100	µg/L	EPA 8270E
Acenaphthene	0.663		0.0810	0.100	µg/L	EPA 8270E
Ethylbenzene	1.20		0.340	1.00	µg/L	EPA 8260D

SAMPLE DETECTION SUMMARY

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For a full listing of sample results, continue to the Sample Results section of this Report.

CLIENT ID: UPG-500 B	Lab ID: HN2410635-031					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Fluorene	0.341		0.0510	0.100	µg/L	EPA 8270E
m+p-Xylene	2.14		0.810	2.00	µg/L	EPA 8260D
Total Xylene	2.14		0.810	2.00	µg/L	EPA 8260D

CLIENT ID: UPG-500 C	Lab ID: HN2410635-032					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Naphthalene	0.115		0.0670	0.100	µg/L	EPA 8270E

CLIENT ID: UPG-600 A	Lab ID: HN2410635-033					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1,2,4-Trimethylbenzene	227		4.50	10.0	µg/L	EPA 8260D
1,3,5-Trimethylbenzene	44.8		0.650	1.00	µg/L	EPA 8260D
1-Methylnaphthalene	8.78		0.0830	0.100	µg/L	EPA 8270E
2,4-Dimethylphenol	6.65		0.360	1.00	µg/L	EPA 8270E
2-Methylnaphthalene	3.68		0.0650	0.100	µg/L	EPA 8270E
Benzene	5.66		0.460	1.00	µg/L	EPA 8260D
Ethylbenzene	464		3.40	10.0	µg/L	EPA 8260D
m+p-Xylene	808		8.10	20.0	µg/L	EPA 8260D
Naphthalene	45.0		0.0670	0.100	µg/L	EPA 8270E
o-Xylene	223		3.10	10.0	µg/L	EPA 8260D
Tetrahydrofuran (THF)	5.58		0.730	1.00	µg/L	EPA 8260D
Toluene	7.25		0.450	1.00	µg/L	EPA 8260D
Total Xylene	1030		8.10	20.0	µg/L	EPA 8260D

CLIENT ID: UPG-600 B	Lab ID: HN2410635-034					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1,2,4-Trimethylbenzene	437		4.50	10.0	µg/L	EPA 8260D
1,3,5-Trimethylbenzene	121		6.50	10.0	µg/L	EPA 8260D
1-Methylnaphthalene	77.0		1.61	1.94	µg/L	EPA 8270E
2,4-Dimethylphenol	571		7.00	19.4	µg/L	EPA 8270E
2-Methylnaphthalene	118		1.26	1.94	µg/L	EPA 8270E
2-Methylphenol (o-Cresol)	108		4.86	19.4	µg/L	EPA 8270E
3&4-Methylphenol	196		4.08	19.4	µg/L	EPA 8270E
Ethylbenzene	766		3.40	10.0	µg/L	EPA 8260D
m+p-Xylene	1880		8.10	20.0	µg/L	EPA 8260D
Methylphenol, Total	304		8.94	38.9	µg/L	EPA 8270E
Naphthalene	477		1.30	1.94	µg/L	EPA 8270E
o-Xylene	971		3.10	10.0	µg/L	EPA 8260D
Phenol	9.75		0.210	1.00	µg/L	EPA 8270E
Toluene	661		4.50	10.0	µg/L	EPA 8260D
Total Xylene	2850		8.10	20.0	µg/L	EPA 8260D

SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting limits.

For a full listing of sample results, continue to the Sample Results section of this Report.

CLIENT ID: UPG-600 C	Lab ID: HN2410635-035					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1-Methylnaphthalene	2.44		0.0830	0.100	µg/L	EPA 8270E

CLIENT ID: UPG-600 D	Lab ID: HN2410635-036					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
2,4-Dimethylphenol	3.11		0.360	1.00	µg/L	EPA 8270E
Naphthalene	0.174		0.0670	0.100	µg/L	EPA 8270E
Tetrahydrofuran (THF)	11.8		0.730	1.00	µg/L	EPA 8260D

CLIENT ID: DUP-2	Lab ID: HN2410635-037					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1-Methylnaphthalene	0.975		0.0830	0.100	µg/L	EPA 8270E
2,4-Dimethylphenol	611		6.95	19.3	µg/L	EPA 8270E
2-Methylnaphthalene	0.502		0.0650	0.100	µg/L	EPA 8270E
2-Methylphenol (o-Cresol)	25.6		0.250	1.00	µg/L	EPA 8270E
3&4-Methylphenol	238		4.05	19.3	µg/L	EPA 8270E
Methylphenol, Total	264		8.88	38.6	µg/L	EPA 8270E
Naphthalene	2.97		0.0670	0.100	µg/L	EPA 8270E
Phenol	16.1		0.210	1.00	µg/L	EPA 8270E

CLIENT ID: GSI-1500 A	Lab ID: HN2410635-038					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1,2,4-Trimethylbenzene	23.7		0.450	1.00	µg/L	EPA 8260D
1-Methylnaphthalene	7.25		0.0830	0.100	µg/L	EPA 8270E
2,4-Dichlorophenol	3.74		0.350	1.00	µg/L	EPA 8270E
Ethylbenzene	41.2		0.340	1.00	µg/L	EPA 8260D
m+p-Xylene	12.8		0.810	2.00	µg/L	EPA 8260D
Naphthalene	7.57		0.0670	0.100	µg/L	EPA 8270E
o-Xylene	12.4		0.310	1.00	µg/L	EPA 8260D
Toluene	4.81		0.450	1.00	µg/L	EPA 8260D
Total Xylene	25.2		0.810	2.00	µg/L	EPA 8260D

CLIENT ID: GSI-1500 B	Lab ID: HN2410635-039					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1,2,4-Trimethylbenzene	1.39		0.450	1.00	µg/L	EPA 8260D
Acenaphthene	1.34		0.0810	0.100	µg/L	EPA 8270E
Ethylbenzene	7.36		0.340	1.00	µg/L	EPA 8260D
m+p-Xylene	8.10		0.810	2.00	µg/L	EPA 8260D
o-Xylene	5.10		0.310	1.00	µg/L	EPA 8260D
Toluene	2.06		0.450	1.00	µg/L	EPA 8260D
Total Xylene	13.2		0.810	2.00	µg/L	EPA 8260D

SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting limits.

For a full listing of sample results, continue to the Sample Results section of this Report.

CLIENT ID: GSI-100 A			Lab ID: HN2410635-041			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1,2,4-Trimethylbenzene	102		4.50	10.0	µg/L	EPA 8260D
1,3,5-Trimethylbenzene	11.6		6.50	10.0	µg/L	EPA 8260D
1-Methylnaphthalene	12.3		0.0830	0.100	µg/L	EPA 8270E
2,4-Dimethylphenol	265		3.57	9.93	µg/L	EPA 8270E
Benzene	30.6		4.60	10.0	µg/L	EPA 8260D
Ethylbenzene	216		3.40	10.0	µg/L	EPA 8260D
m+p-Xylene	105		8.10	20.0	µg/L	EPA 8260D
Naphthalene	14.3		0.0670	0.100	µg/L	EPA 8270E
o-Xylene	87.7		3.10	10.0	µg/L	EPA 8260D
Phenol	12.8		0.210	1.00	µg/L	EPA 8270E
Toluene	64.2		4.50	10.0	µg/L	EPA 8260D
Total Xylene	193		8.10	20.0	µg/L	EPA 8260D

CLIENT ID: GSI-100 B			Lab ID: HN2410635-042			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1,1'-Biphenyl (BZ-0)	10.6		0.420	1.00	µg/L	EPA 8270E
1,2,4-Trimethylbenzene	25.4		0.450	1.00	µg/L	EPA 8260D
1,3,5-Trimethylbenzene	5.36		0.650	1.00	µg/L	EPA 8260D
1-Methylnaphthalene	100		0.822	0.990	µg/L	EPA 8270E
2,4-Dimethylphenol	325		3.56	9.90	µg/L	EPA 8270E
2-Methylphenol (o-Cresol)	55.1		0.250	1.00	µg/L	EPA 8270E
3&4-Methylphenol	27.9		0.210	1.00	µg/L	EPA 8270E
Acenaphthene	4.12		0.0810	0.100	µg/L	EPA 8270E
Benzene	8.20		0.460	1.00	µg/L	EPA 8260D
Dibenzofuran	5.00		0.230	1.00	µg/L	EPA 8270E
Ethylbenzene	30.5		0.340	1.00	µg/L	EPA 8260D
m+p-Xylene	44.2		0.810	2.00	µg/L	EPA 8260D
Methylphenol, Total	83.0		0.460	2.00	µg/L	EPA 8270E
Naphthalene	35.8		0.0670	0.100	µg/L	EPA 8270E
o-Xylene	28.4		0.310	1.00	µg/L	EPA 8260D
Phenanthrene	0.485		0.0810	0.100	µg/L	EPA 8270E
Toluene	61.3		0.450	1.00	µg/L	EPA 8260D
Total Xylene	72.6		0.810	2.00	µg/L	EPA 8260D

CLIENT ID: GSI-100 C			Lab ID: HN2410635-043			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1,1'-Biphenyl (BZ-0)	2.11		0.437	1.04	µg/L	EPA 8270E
1,2,4-Trimethylbenzene	26.3		0.450	1.00	µg/L	EPA 8260D
1,3,5-Trimethylbenzene	5.16		0.650	1.00	µg/L	EPA 8260D
1-Methylnaphthalene	16.6		0.0863	0.104	µg/L	EPA 8270E
2,4-Dimethylphenol	5.88		0.374	1.04	µg/L	EPA 8270E

SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting limits.

For a full listing of sample results, continue to the Sample Results section of this Report.

CLIENT ID: GSI-100 C			Lab ID: HN2410635-043			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Acenaphthene	0.801		0.0842	0.104	µg/L	EPA 8270E
Dibenzofuran	1.10		0.239	1.04	µg/L	EPA 8270E
Ethylbenzene	99.0		0.340	1.00	µg/L	EPA 8260D
Fluorene	0.208		0.0530	0.104	µg/L	EPA 8270E
m+p-Xylene	105		0.810	2.00	µg/L	EPA 8260D
Naphthalene	7.79		0.0697	0.104	µg/L	EPA 8270E
o-Xylene	49.7		0.310	1.00	µg/L	EPA 8260D
Toluene	12.6		2.25	5.00	µg/L	EPA 8260D
Total Xylene	155		0.810	2.00	µg/L	EPA 8260D

Sample Receipt Information

SAMPLE SUMMARY

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Workorder: HN2410635

Laboratory Sample ID	Client Sample ID	Sample Matrix	Collection Date	Date Received
HN2410635-001	UPG-400 AR	GROUNDWATER	12/09/24 10:07	12/13/24 10:00
HN2410635-002	UPG-400 BR	GROUNDWATER	12/09/24 10:45	12/13/24 10:00
HN2410635-003	DUP-1	GROUNDWATER	12/09/24	12/13/24 10:00
HN2410635-004	UPG-400 CR	GROUNDWATER	12/09/24 11:30	12/13/24 10:00
HN2410635-005	UPG-700 A	GROUNDWATER	12/09/24 12:50	12/13/24 10:00
HN2410635-006	UPG-700 B	GROUNDWATER	12/09/24 13:35	12/13/24 10:00
HN2410635-007	UPG-700 C	GROUNDWATER	12/09/24 14:05	12/13/24 10:00
HN2410635-008	GSI-1400 A	GROUNDWATER	12/09/24 14:50	12/13/24 10:00
HN2410635-009	GSI-1300 A	GROUNDWATER	12/09/24 15:35	12/13/24 10:00
HN2410635-010	GSI-1300 B	GROUNDWATER	12/09/24 16:20	12/13/24 10:00
HN2410635-011	GSI-1300 C	GROUNDWATER	12/09/24 16:45	12/13/24 10:00
HN2410635-012	GSI-1000 A	GROUNDWATER	12/10/24 09:40	12/13/24 10:00
HN2410635-013	GSI-1000 B	GROUNDWATER	12/10/24 10:18	12/13/24 10:00
HN2410635-014	GSI-1000 C	GROUNDWATER	12/10/24 11:00	12/13/24 10:00
HN2410635-015	GSI-600 B	GROUNDWATER	12/10/24 12:00	12/13/24 10:00
HN2410635-016	GSI-600 C	GROUNDWATER	12/10/24 13:20	12/13/24 10:00
HN2410635-017	GSI-600 A	GROUNDWATER	12/10/24 12:40	12/13/24 10:00
HN2410635-018	GSI-1100 D	GROUNDWATER	12/10/24 14:25	12/13/24 10:00
HN2410635-019	GSI-200 A	GROUNDWATER	12/10/24 13:33	12/13/24 10:00
HN2410635-020	GSI-200 B	GROUNDWATER	12/10/24	12/13/24 10:00
HN2410635-021	GSI-200 C	GROUNDWATER	12/10/24 14:43	12/13/24 10:00
HN2410635-022	GSI-1100 A	GROUNDWATER	12/10/24 12:02	12/13/24 10:00
HN2410635-023	GSI-1110 B	GROUNDWATER	12/10/24 11:19	12/13/24 10:00
HN2410635-024	GSI-1100 C	GROUNDWATER	12/10/24 12:49	12/13/24 10:00
HN2410635-025	GSI-1200 A	GROUNDWATER	12/09/24 16:33	12/13/24 10:00
HN2410635-026	GSI-1200 B	GROUNDWATER	12/09/24 17:01	12/13/24 10:00
HN2410635-027	GSI-1200 C	GROUNDWATER	12/09/24 15:48	12/13/24 10:00
HN2410635-028	GSI-1400 B	GROUNDWATER	12/10/24 09:39	12/13/24 10:00
HN2410635-029	GSI-1400 C	GROUNDWATER	12/10/24 10:13	12/13/24 10:00
HN2410635-030	UPG-500 A	GROUNDWATER	12/09/24 13:32	12/13/24 10:00
HN2410635-031	UPG-500 B	GROUNDWATER	12/09/24 14:49	12/13/24 10:00
HN2410635-032	UPG-500 C	GROUNDWATER	12/09/24 14:12	12/13/24 10:00
HN2410635-033	UPG-600 A	GROUNDWATER	12/09/24 11:13	12/13/24 10:00
HN2410635-034	UPG-600 B	GROUNDWATER	12/09/24 11:54	12/13/24 10:00

SAMPLE SUMMARY

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Workorder: HN2410635

Laboratory Sample ID	Client Sample ID	Sample Matrix	Collection Date	Date Received
HN2410635-035	UPG-600 C	GROUNDWATER	12/09/24 10:25	12/13/24 10:00
HN2410635-036	UPG-600 D	GROUNDWATER	12/09/24 12:39	12/13/24 10:00
HN2410635-037	DUP-2	GROUNDWATER	12/09/24	12/13/24 10:00
HN2410635-038	GSI-1500 A	GROUNDWATER	12/10/24 09:45	12/13/24 10:00
HN2410635-039	GSI-1500 B	GROUNDWATER	12/10/24 11:00	12/13/24 10:00
HN2410635-040	GSI-1500 C	GROUNDWATER	12/10/24 11:55	12/13/24 10:00
HN2410635-041	GSI-100 A	GROUNDWATER	12/10/24 12:55	12/13/24 10:00
HN2410635-042	GSI-100 B	GROUNDWATER	12/10/24 13:35	12/13/24 10:00
HN2410635-043	GSI-100 C	GROUNDWATER	12/10/24 14:25	12/13/24 10:00
HN2410635-044	Trip Blank #1	WATER	12/13/24	12/13/24 10:00
HN2410635-045	Trip Blank #2	WATER	12/13/24	12/13/24 10:00
HN2410635-046	Trip Blank #3	WATER	12/13/24	12/13/24 10:00
HN2410635-047	Trip Blank #4	WATER	12/13/24	12/13/24 10:00
HN2410635-048	Trip Blank #5	WATER	12/13/24	12/13/24 10:00
HN2410635-049	Trip Blank #6	WATER	12/13/24	12/13/24 10:00
HN2410635-050	Trip Blank #7	WATER	12/13/24	12/13/24 10:00

Chain of Custody Form

ALS Group USA, Corp

Work Order

Company Name	TriMedia Environmental & Engineering Svcs	Purchase Order		Parameter/Method Request for Analysis	
		Company Name	TriMedia Environmental & Engineering Svcs	A	BTEX, TMBs
Send Report To	Ryan Whaley	Invoice Attn	Lorelei Sorensen	B	SVOCs
Project Name		Project #	99-059	C	TETRAHYDROFUREAN
Address	830 W. Washington St.	Address	830 W. Washington St.	D	
				E	
				F	
City State Zip	Marquette, MI 49855	City State Zip	Marquette, MI 49855	G	
Phone	9062285125	Phone	9062285125	H	
e-Mail Address	Rwhaley@Trimediaee.com	e-Mail Address	LSorensen@Trimediaee.com	I	
				J	

Environmental Division Holland

Work Order Reference

HN2410635

Telephone : +1 616 399 6070

#	Sample Description	Date	Time	Matrix	Preservative	# Bottles	A	B	C	D	E	F	G	H	I	J	Sample Notes
1	UPG-400 AR	12-9-24	1007	GW	1,8	5	X	X	X								2.5°C IR5
2	UPG-400 BR		1045														5.1°C
3	DUP-1																3.8°C
4	UPG-400 CR		1130														4.1°C
5	UPG-700 A		1250														5.3°C
6	UPG-700 B		1335														5.1°C
7	UPG-700 C		1405														5.4°C
8	GSI-1400 A		1450														5.8°C
9	GSI-1300 A		1535														
10	GSI-1300 B		1620														

Notes: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035

Required Turnaround Time: ___ Std 10 Wk days ___ 5 Wk days ___ 2 Wk days ___ 24 hr

Results Due:

Relinquished by	Date	Time	Received by	Date	Time
Kelly Wilson	12/10/24	16:00	VAS	12/13/24	1000

NOTES:

QC Reporting Level: (check box below)

- Level II: Standard QC
- Level III: Std QC + Raw data
- Level IV: SW846 CLP-Like
- Other:

ALS Group USA, Corp | 3352 128th Ave | | Holland Michigan 49424 | TEL. (616) 399-6070

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City of Marquette, MI

Chain of Custody Form

ALS Group USA, Corp

Work Order: _____

Company Name	TriMedia Environmental & Engineering Svcs	Purchase Order	
		Company Name	TriMedia Environmental & Engineering Svcs
Send Report To	Ryan Whaley	Invoice Attn	Lorelei Sorensen
Project Name		Project #	99-059
Address	830 W. Washington St.	Address	830 W. Washington St.
City State Zip	Marquette, MI 49855	City State Zip	Marquette, MI 49855
Phone	9062285125	Phone	9062285125
e-Mail Address	RWhaley@TriMediaee.com	e-Mail Address	LSorensen@TriMediaee.com

Parameter/Method Request for Analysis

A	BTEX, TMBs
B	SVOCs
C	TETRAHYDROFURAN
D	
E	
F	
G	
H	
I	
J	

#	Sample Description	Date	Time	Matrix	Preservative	# Bottles	A	B	C	D	E	F	G	H	I	J	Sample Notes
1	GSI - 1300 C	12-9-24	1645	GW	1, 8	5	X	X	X								
2	GSI - 1000 A	12-10-24	940														
3	GSI - 1000 B		1018														
4	GSI - 1000 C		1100														
5	GSI - 600B		1200														
6	GSI - 600 C		1320														
7	GSI - 600 A		1240														
8	GSI - 1100 D		1425														
9	GSI - 200 A		13:33														
10	GSI - 200B																

Notes: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035

Required Turnaround Time: _____
___ Std 10 Wk days ___ 5 Wk days ___ 2 Wk days ___ 24 hr

Results Due:

Relinquised by	Date	Time	Received by	Date	Time
A. Wilson TMEE	12/10/24	16:00	UPS	12/13/24	1000

NOTES:

QC Reporting Level: (check box below)

- Level II: Standard QC
- Level III: Std QC + Raw data
- Level IV: SW846 CLP-Like
- Other:

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Chain of Custody Form

Page _____ of _____

COC ID: 065533

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for An.
Purchase Order		Project Name	A	BTEX, TMBs
Quote #	99-059	Project Number	B	SVOCs
Company Name	TRIMEDIA	Bill To Company	C	TETRAHYDROFUREON
Send Report To	RYAN WHALEY	Invoice Attn	D	
Address	830 W. WASHINGTON	Address	E	
			F	
City/State/Zip	MARQUETTE MI 49855	City/State/Zip	G	
Phone	906-228-5125	Phone	H	
Fax		Fax	I	
e-Mail Address	RWHALEY@TRIMEDIAEE.COM	e-Mail Address	LSORENSEN@TRIMEDIAEE.COM	J

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H
1	GS1-200C	12/10/24	14:43	GW	1,8	5	X	X	X					
2	GS1-1100A		12:02											
3	GS1-1100B		11:19											
4	GS1-1100C		12:49											
5	GS1-1200A	12/9/24	16:33											
6	GS1-1200B		17:01											
7	GS1-1200C		15:48											
8	GS1-1400B	12/10/24	9:39											
9	GS1-1400C	12/10/24	10:13											
10	UPG-500A	12/9/24	13:32											

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Sampler(s) Please Print & Sign: Kelli Wilson

Shipment Method: UPS

Turnaround Time in Business Days (BD): ☐ 10 BD ☐ 5 BD ☐ 3 BD ☐ 2 BD ☐ 1 BD Other: _____

Results: [illegible]

Relinquished by:	Date:	Time:	Received by:	Notes:
Kelli Wilson TMEE	12/10/24	16:00	UPS	12/13/24 1000
Relinquished by:	Date:	Time:	Received by (Laboratory):	
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	

Cooler ID	Cooler Temp.

QC Package: (Check One B[illegible])
☐ Level II Std QC
☐ Level III Std QC/Raw Date
☐ Level IV SW846/CLP
☐ Other _____

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
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3. The Chain of Custody is a legal document. All information must be completed accurately.

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Chain of Custody Form

Page ____ of ____

COC ID: 065533

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis
Purchase Order		Project Name		A: BTEX, TMBs
Quote #	99-059	Project Number		B: SVOCs
Company Name		Bill To Company		C: TETRAHYDROFURAN
Send Report To	RYAN WHARTON	Invoice Attn		D
Address		Address		E
				F
City/State/Zip		City/State/Zip		G
Phone		Phone		H
Fax		Fax		I
e-Mail Address	RWHARTON@TETRATECH.COM	e-Mail Address	LSORENSEN@TETRATECH.COM	J

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H
1	UPG-500B	12/9/24	14:49	GW	1,8	5	X	X	X					
2	UPG-500C		14:12											
3	UPG-600A		11:13											
4	UPG-600B		11:54											
5	UPG-600C		10:25											
6	UPG-600D		12:39											
7	DUP-2		—											
8	GS1-1500A	12/10/24	9:45											
9	GS1-1500B		11:00											
10	GS1-1500C		11:55											

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Sampler(s) Please Print & Sign: Kate Wilson

Shipment Method: UPS

Turnaround Time in Business Days (BD): ☐ 10 BD ☐ 5 BD ☐ 3 BD ☐ 2 BD ☐ 1 BD Other: ____

Results Due:

Relinquished by:	Date:	Time:	Received by:
Kate Wilson TTMEE	12/10/24	16:00	UPS
Relinquished by:	Date:	Time:	Received by (Laboratory): 12/13/24 1000
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes:

Cooler ID	Cooler Temp.

QC Package: (Check One Box Only)
☐ Level II Std QC
☐ Level III Std QC/Raw Data
☐ Level IV SW846/CLP
☐ Other ____

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

City of Marquette MI

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
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Chain of Custody Form

Page _____ of _____

COC ID: 065533

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name		A	BTEX, TMBs
Quote #	99-059	Project Number		B	SVOCs
Company Name	TRIMEDIA	Bill To Company		C	TETRAHYDROFURAN
Send Report To	RYAN WHALEY	Invoice Attn		D	
Address		Address		E	
				F	
City/State/Zip		City/State/Zip		G	
Phone		Phone		H	
Fax		Fax		J	
e-Mail Address	RWHALEY@TRIMEDIATE.COM	e-Mail Address	LSORENSEN@TRIMEDIATE.COM		

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H
1	GS1-100A	12/10/24	12:55	GW	1,8	5	X	X	X					
2	GS1-100B	↓	13:35	GW	1,8	5	X	X	X					
3	GS1-100C		14:25	GW	1,8	5	X	X	X					
4														
5														
6														
7														
8														
9														
10														

Sampler(s) Please Print & Sign: Rob Wilson

Shipment Method: UPS

Turnaround Time In Business Days (BD): ☐ 10 BD ☐ 5 BD ☐ 3 BD ☐ 2 BD ☐ 1 BD Other: _____

Results Due:

Relinquished by:	Date:	Time:	Received by:
Rob Wilson TMEE	12/10/24	16:00	UPS
Relinquished by:	Date:	Time:	Received by (Laboratory): 12/12/24 1000
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes:

Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)
☐ Level II Std QC
☐ Level III Std QC/Raw Date
☐ Level IV SW846/CLP
☐ Other _____

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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City of Marquette, MI

ALS Holland Sample Receiving Checklist

Received by:	KEITH
Date/Time:	12/13/24 1000
Carrier Name:	UPS
Shipping container/cooler in good condition?	Yes / No / Not Present
Custody seals intact on shipping container/cooler?	Yes / No / Not Present
Custody seals intact on sample bottles?	Yes / No / Not Present
Chain of Custody present?	Yes / No
COC signed when relinquished and received?	Yes / No
COC agrees with sample labels?	Yes / No
Samples in proper container/bottle?	Yes / No
Sample containers intact?	Yes / No
Sufficient sample volume for indicated test?	Yes / No
All samples received within holding time?	Yes / No
Container/Temp Blank temperature in compliance?	Yes / No
Temperature(s) (°C):	2.5, 5.1, 3.8, 4.1, 5.3, 5.1, 5.4, 5.8 °C
Thermometer(s):	DF2
Sample(s) received on ice?	Yes / No
Matrix/Matrices:	WATER
Cooler(s)/Kit(s):	
Date/Time sample(s) sent to storage:	12/13/24 1430
Water – VOA vials have zero headspace?	Yes / No / No Vials
Water – pH acceptable upon receipt?	Yes / No / N/A
pH strip lot #: _____	< 2 _____ > 12 _____ Other _____
pH adjusted (note adjustments below)?	Yes / No / N/A
pH adjusted by:	

Login Notes:

HN-SHT-160-R00, Sample Receipt Checklist 1-25-24

Miscellaneous Forms

REPORT QUALIFIERS AND DEFINITIONS

*	Value exceeds Regulatory Limit (if MCL displayed)
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Analyte accreditation is not offered
NC	Not Calculated
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
V	The Continuing Calibration Verification was outside of control criteria
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Holland Laboratory Certifications[1]

Agency	Type	ID	Issued	Expires
Alabama	Drinking Water (Secondary)	42500	1/1/2024	12/31/2024
Colorado	UST		6/21/2024	6/30/2025
Connecticut	Drinking Water (Secondary)	PH-0155	12/26/2024	12/31/2026
Florida	NELAP (Primary)	E871106	7/1/2024	6/30/2025
Illinois	NELAP (Secondary)	200076	11/14/2024	12/31/2025
Indiana	Drinking Water (Secondary)	C-MI-08	4/4/2024	9/4/2026
Iowa	State Specific	403	9/18/2023	9/1/2025
Kansas	NELAP (Secondary)	E-10411	7/09/2024	7/31/2025
Kentucky	Waste Water	KY98004	12/26/2024	12/31/2025
Kentucky	UST	120474	6/24/24	6/30/2025
Michigan	Drinking Water (Primary)	0022	12/19/2023	9/4/2026
Minnesota	NELAP (Secondary)	026-999-449	12/17/2024	12/31/2025
New Jersey	NELAP (Secondary)	MI015	7/1/2024	6/30/2025
New York	Drinking Water (Secondary)	12128	3/29/2024	4/1/2025
North Dakota	State Specific	R-192	11/18/2024	6/30/2025
Ohio	Drinking Water (Secondary)	87783	7/1/2024	6/30/2025
Pennsylvania	NELAP (Secondary)	68-03827	6/14/2024	7/31/2025
Texas	NELAP (Secondary)	T104704494	2/1/2024	1/31/2025
USDA	Domestic CA	Soil-MI-007	8/21/2023	2/18/2025
USDA	Soil Import	P330-19-00039	3/3/2023	3/3/2026
West Virginia	State Specific	355	6/24/2024	8/31/2025
Wisconsin	State Specific	399084510	8/15/2024	8/31/2025

1 - Scope available upon request

ANALYST SUMMARY

Client: TriMedia Environmental & Engineering Svcs
Work Order: HN2410635
Project: 99-059

Sample Name: UPG-400 AR
Laboratory Code: HN2410635-001
Sample Matrix: GROUNDWATER
Date Collected: 12/09/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1814114		2833270	Sean Bradfield
EPA 8270E	1810523	Danielle Maleski	2834033	Sam Marcotte

Sample Name: UPG-400 BR
Laboratory Code: HN2410635-002
Sample Matrix: GROUNDWATER
Date Collected: 12/09/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1814114		2839457	Sean Bradfield
EPA 8270E	1810523	Danielle Maleski	2834033	Sam Marcotte
EPA 8270E	1810523	Danielle Maleski	2837833	Erin Wall

Sample Name: DUP-1
Laboratory Code: HN2410635-003
Sample Matrix: GROUNDWATER
Date Collected: 12/09/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1814114		2839457	Sean Bradfield
EPA 8270E	1810523	Danielle Maleski	2834033	Sam Marcotte
EPA 8270E	1810523	Danielle Maleski	2837833	Erin Wall

Sample Name: UPG-400 CR
Laboratory Code: HN2410635-004
Sample Matrix: GROUNDWATER
Date Collected: 12/09/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1814114		2833270	Sean Bradfield
EPA 8260D	1814114		2839457	Sean Bradfield
EPA 8270E	1810523	Danielle Maleski	2834033	Sam Marcotte

ANALYST SUMMARY

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Work Order: HN2410635

Sample Name: UPG-700 A
Laboratory Code: HN2410635-005
Sample Matrix: GROUNDWATER
Date Collected: 12/09/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1814114		2833270	Sean Bradfield
EPA 8270E	1810523	Danielle Maleski	2834033	Sam Marcotte

Sample Name: UPG-700 B
Laboratory Code: HN2410635-006
Sample Matrix: GROUNDWATER
Date Collected: 12/09/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1814150		2844274	Sean Bradfield
EPA 8270E	1810523	Danielle Maleski	2834033	Sam Marcotte

Sample Name: UPG-700 C
Laboratory Code: HN2410635-007
Sample Matrix: GROUNDWATER
Date Collected: 12/09/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1814150		2833351	Sean Bradfield
EPA 8270E	1810523	Danielle Maleski	2834033	Sam Marcotte

Sample Name: GSI-1400 A
Laboratory Code: HN2410635-008
Sample Matrix: GROUNDWATER
Date Collected: 12/09/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1814150		2833351	Sean Bradfield
EPA 8270E	1810523	Danielle Maleski	2834033	Sam Marcotte

ANALYST SUMMARY

Client: TriMedia Environmental & Engineering Svcs
Work Order: HN2410635
Project: 99-059

Sample Name: GSI-1300 A
Laboratory Code: HN2410635-009
Sample Matrix: GROUNDWATER
Date Collected: 12/09/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1814150		2839457	Sean Bradfield
EPA 8270E	1810523	Danielle Maleski	2834033	Sam Marcotte
EPA 8270E	1810523	Danielle Maleski	2837833	Erin Wall

Sample Name: GSI-1300 B
Laboratory Code: HN2410635-010
Sample Matrix: GROUNDWATER
Date Collected: 12/09/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1814150		2839457	Sean Bradfield
EPA 8270E	1810523	Danielle Maleski	2834033	Sam Marcotte
EPA 8270E	1810523	Danielle Maleski	2837833	Erin Wall

Sample Name: GSI-1300 C
Laboratory Code: HN2410635-011
Sample Matrix: GROUNDWATER
Date Collected: 12/09/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1814150		2839457	Sean Bradfield
EPA 8270E	1810523	Danielle Maleski	2834033	Sam Marcotte
EPA 8270E	1810523	Danielle Maleski	2837833	Erin Wall

Sample Name: GSI-1000 A
Laboratory Code: HN2410635-012
Sample Matrix: GROUNDWATER
Date Collected: 12/10/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1814150		2833351	Sean Bradfield
EPA 8270E	1811295	Lillian Cole	2836434	Sam Marcotte

ANALYST SUMMARY

Client: TriMedia Environmental & Engineering Svcs
Work Order: HN2410635
Project: 99-059

Sample Name: GSI-1000 B
Laboratory Code: HN2410635-013
Sample Matrix: GROUNDWATER
Date Collected: 12/10/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1814150		2839457	Sean Bradfield
EPA 8270E	1811295	Lillian Cole	2836434	Sam Marcotte
EPA 8270E	1811295	Lillian Cole	2839145	Erin Wall

Sample Name: GSI-1000 C
Laboratory Code: HN2410635-014
Sample Matrix: GROUNDWATER
Date Collected: 12/10/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1814150		2833351	Sean Bradfield
EPA 8270E	1811295	Lillian Cole	2836434	Sam Marcotte

Sample Name: GSI-600 B
Laboratory Code: HN2410635-015
Sample Matrix: GROUNDWATER
Date Collected: 12/10/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1814150		2833351	Sean Bradfield
EPA 8270E	1811295	Lillian Cole	2836434	Sam Marcotte

Sample Name: GSI-600 C
Laboratory Code: HN2410635-016
Sample Matrix: GROUNDWATER
Date Collected: 12/10/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1814150		2833351	Sean Bradfield
EPA 8270E	1811295	Lillian Cole	2836434	Sam Marcotte

ANALYST SUMMARY

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Work Order: HN2410635

Sample Name: GSI-600 A
Laboratory Code: HN2410635-017
Sample Matrix: GROUNDWATER
Date Collected: 12/10/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1814150		2833351	Sean Bradfield
EPA 8270E	1811295	Lillian Cole	2836434	Sam Marcotte

Sample Name: GSI-1100 D
Laboratory Code: HN2410635-018
Sample Matrix: GROUNDWATER
Date Collected: 12/10/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1815949		2836293	Sean Bradfield
EPA 8270E	1811295	Lillian Cole	2836434	Sam Marcotte
EPA 8270E	1811295	Lillian Cole	2839145	Erin Wall

Sample Name: GSI-200 A
Laboratory Code: HN2410635-019
Sample Matrix: GROUNDWATER
Date Collected: 12/10/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1814150		2839457	Sean Bradfield
EPA 8270E	1811295	Lillian Cole	2836434	Sam Marcotte

Sample Name: GSI-200 B
Laboratory Code: HN2410635-020
Sample Matrix: GROUNDWATER
Date Collected: 12/10/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1814150		2839457	Sean Bradfield
EPA 8270E	1810527	Danielle Maleski	2833990	Sam Marcotte

ANALYST SUMMARY

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Work Order: HN2410635

Sample Name: GSI-200 C
Laboratory Code: HN2410635-021
Sample Matrix: GROUNDWATER
Date Collected: 12/10/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1814150		2839457	Sean Bradfield
EPA 8270E	1811295	Lillian Cole	2836434	Sam Marcotte

Sample Name: GSI-1100 A
Laboratory Code: HN2410635-022
Sample Matrix: GROUNDWATER
Date Collected: 12/10/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1814150		2833351	Sean Bradfield
EPA 8270E	1811295	Lillian Cole	2836434	Sam Marcotte

Sample Name: GSI-1110 B
Laboratory Code: HN2410635-023
Sample Matrix: GROUNDWATER
Date Collected: 12/10/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1814150		2839457	Sean Bradfield
EPA 8260D	1814150		2836303	Sean Bradfield
EPA 8270E	1811295	Lillian Cole	2836434	Sam Marcotte
EPA 8270E	1811295	Lillian Cole	2839145	Erin Wall

Sample Name: GSI-1100 C
Laboratory Code: HN2410635-024
Sample Matrix: GROUNDWATER
Date Collected: 12/10/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1815960		2839457	Sean Bradfield
EPA 8270E	1811295	Lillian Cole	2836434	Sam Marcotte
EPA 8270E	1811295	Lillian Cole	2839145	Erin Wall

ANALYST SUMMARY

Client: TriMedia Environmental & Engineering Svcs
Work Order: HN2410635
Project: 99-059

Sample Name: GSI-1100 C
Laboratory Code: HN2410635-024
Sample Matrix: GROUNDWATER
Date Collected: 12/10/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8270E	1811295	Lillian Cole	2843954	Sam Marcotte

Sample Name: GSI-1200 A
Laboratory Code: HN2410635-025
Sample Matrix: GROUNDWATER
Date Collected: 12/09/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1816383		2836989	Sean Bradfield
EPA 8270E	1810523	Danielle Maleski	2834033	Sam Marcotte

Sample Name: GSI-1200 B
Laboratory Code: HN2410635-026
Sample Matrix: GROUNDWATER
Date Collected: 12/09/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1816383		2836989	Sean Bradfield
EPA 8270E	1810523	Danielle Maleski	2834033	Sam Marcotte

Sample Name: GSI-1200 C
Laboratory Code: HN2410635-027
Sample Matrix: GROUNDWATER
Date Collected: 12/09/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1816383		2839457	Sean Bradfield
EPA 8270E	1810523	Danielle Maleski	2834033	Sam Marcotte
EPA 8270E	1810523	Danielle Maleski	2837833	Erin Wall

ANALYST SUMMARY

Client: TriMedia Environmental & Engineering Svcs
Work Order: HN2410635
Project: 99-059

Sample Name: GSI-1400 B
Laboratory Code: HN2410635-028
Sample Matrix: GROUNDWATER
Date Collected: 12/10/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1816383		2836989	Sean Bradfield
EPA 8270E	1810527	Danielle Maleski	2833990	Sam Marcotte
EPA 8270E	1810527	Danielle Maleski	2837833	Erin Wall

Sample Name: GSI-1400 C
Laboratory Code: HN2410635-029
Sample Matrix: GROUNDWATER
Date Collected: 12/10/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1816383		2839457	Sean Bradfield
EPA 8270E	1810527	Danielle Maleski	2833990	Sam Marcotte

Sample Name: UPG-500 A
Laboratory Code: HN2410635-030
Sample Matrix: GROUNDWATER
Date Collected: 12/09/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1816383		2836989	Sean Bradfield
EPA 8270E	1810523	Danielle Maleski	2834033	Sam Marcotte

Sample Name: UPG-500 B
Laboratory Code: HN2410635-031
Sample Matrix: GROUNDWATER
Date Collected: 12/09/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1816383		2836989	Sean Bradfield
EPA 8270E	1810523	Danielle Maleski	2834033	Sam Marcotte

ANALYST SUMMARY

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Work Order: HN2410635

Sample Name: UPG-500 C
Laboratory Code: HN2410635-032
Sample Matrix: GROUNDWATER
Date Collected: 12/09/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1816383		2839457	Sean Bradfield
EPA 8270E	1810523	Danielle Maleski	2834033	Sam Marcotte

Sample Name: UPG-600 A
Laboratory Code: HN2410635-033
Sample Matrix: GROUNDWATER
Date Collected: 12/09/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1816383		2836989	Sean Bradfield
EPA 8260D	1817919		2839457	Sean Bradfield
EPA 8270E	1810523	Danielle Maleski	2834033	Sam Marcotte

Sample Name: UPG-600 B
Laboratory Code: HN2410635-034
Sample Matrix: GROUNDWATER
Date Collected: 12/09/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1816383		2836989	Sean Bradfield
EPA 8270E	1810523	Danielle Maleski	2834033	Sam Marcotte
EPA 8270E	1810523	Danielle Maleski	2837833	Erin Wall

Sample Name: UPG-600 C
Laboratory Code: HN2410635-035
Sample Matrix: GROUNDWATER
Date Collected: 12/09/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1817866		2839399	Sean Bradfield
EPA 8270E	1810523	Danielle Maleski	2834033	Sam Marcotte

ANALYST SUMMARY

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Work Order: HN2410635

Sample Name: UPG-600 D
Laboratory Code: HN2410635-036
Sample Matrix: GROUNDWATER
Date Collected: 12/09/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1817866		2839399	Sean Bradfield
EPA 8270E	1810527	Danielle Maleski	2833990	Sam Marcotte

Sample Name: DUP-2
Laboratory Code: HN2410635-037
Sample Matrix: GROUNDWATER
Date Collected: 12/09/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1817866		2839399	Sean Bradfield
EPA 8270E	1810527	Danielle Maleski	2833990	Sam Marcotte
EPA 8270E	1810527	Danielle Maleski	2837833	Erin Wall

Sample Name: GSI-1500 A
Laboratory Code: HN2410635-038
Sample Matrix: GROUNDWATER
Date Collected: 12/10/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1817866		2839399	Sean Bradfield
EPA 8270E	1810527	Danielle Maleski	2836434	Sam Marcotte

Sample Name: GSI-1500 B
Laboratory Code: HN2410635-039
Sample Matrix: GROUNDWATER
Date Collected: 12/10/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1817866		2839399	Sean Bradfield
EPA 8270E	1811295	Lillian Cole	2836434	Sam Marcotte

ANALYST SUMMARY

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Work Order: HN2410635

Sample Name: GSI-1500 C
Laboratory Code: HN2410635-040
Sample Matrix: GROUNDWATER
Date Collected: 12/10/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1817866		2839399	Sean Bradfield
EPA 8270E	1811295	Lillian Cole	2836434	Sam Marcotte

Sample Name: GSI-100 A
Laboratory Code: HN2410635-041
Sample Matrix: GROUNDWATER
Date Collected: 12/10/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1817866		2839399	Sean Bradfield
EPA 8270E	1811295	Lillian Cole	2840761	Sam Marcotte
EPA 8270E	1811295	Lillian Cole	2843954	Sam Marcotte

Sample Name: GSI-100 B
Laboratory Code: HN2410635-042
Sample Matrix: GROUNDWATER
Date Collected: 12/10/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1817866		2839399	Sean Bradfield
EPA 8270E	1811295	Lillian Cole	2840761	Sam Marcotte
EPA 8270E	1811295	Lillian Cole	2843954	Sam Marcotte

Sample Name: GSI-100 C
Laboratory Code: HN2410635-043
Sample Matrix: GROUNDWATER
Date Collected: 12/10/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1822129		2846454	Sean Bradfield
EPA 8260D	1822934		2847846	Sean Bradfield
EPA 8270E	1811295	Lillian Cole	2840761	Sam Marcotte

ANALYST SUMMARY

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Work Order: HN2410635

Sample Name: Trip Blank #1
Laboratory Code: HN2410635-044
Sample Matrix: WATER
Date Collected: 12/13/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1818373		2840144	Sean Bradfield

Sample Name: Trip Blank #2
Laboratory Code: HN2410635-045
Sample Matrix: WATER
Date Collected: 12/13/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1818373		2840144	Sean Bradfield

Sample Name: Trip Blank #3
Laboratory Code: HN2410635-046
Sample Matrix: WATER
Date Collected: 12/13/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1818373		2840144	Sean Bradfield

Sample Name: Trip Blank #4
Laboratory Code: HN2410635-047
Sample Matrix: WATER
Date Collected: 12/13/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1818373		2840144	Sean Bradfield

ANALYST SUMMARY

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Work Order: HN2410635

Sample Name: Trip Blank #5
Laboratory Code: HN2410635-048
Sample Matrix: WATER
Date Collected: 12/13/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1818373		2840144	Sean Bradfield

Sample Name: Trip Blank #6
Laboratory Code: HN2410635-049
Sample Matrix: WATER
Date Collected: 12/13/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1823426		2848520	Sean Bradfield

Sample Name: Trip Blank #7
Laboratory Code: HN2410635-050
Sample Matrix: WATER
Date Collected: 12/13/24
Date Received: 12/13/24

Analysis Method	Preparation Lot	Prepared By	Analysis Lot	Analyzed By
EPA 8260D	1823426		2848520	Sean Bradfield

Sample Results

Organics

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 10:07
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-400 AR	**Units:**	µg/L
Lab Code:	HN2410635-001		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	**1.85**		1.00	1	12/18/24 05:57	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/18/24 05:57	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/18/24 05:57	NA	
Acetone	ND	U	10.0	1	12/18/24 05:57	NA	
Benzene	**5.77**		1.00	1	12/18/24 05:57	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/18/24 05:57	NA	
Ethylbenzene	**9.81**		1.00	1	12/18/24 05:57	NA	
m+p-Xylene	**18.0**		2.00	1	12/18/24 05:57	NA	
o-Xylene	**14.1**		1.00	1	12/18/24 05:57	NA	
Tetrahydrofuran (THF)	**1.34**		1.00	1	12/18/24 05:57	NA	
Toluene	**1.33**		1.00	1	12/18/24 05:57	NA	
Total Xylene	**32.1**		2.00	1	12/18/24 05:57	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	104	80 - 120	12/18/24 05:57	
4-Bromofluorobenzene	104	80 - 120	12/18/24 05:57	
Dibromofluoromethane	99.9	80 - 120	12/18/24 05:57	
Toluene-d8	92.3	80 - 120	12/18/24 05:57	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 10:45
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-400 BR	**Units:**	µg/L
Lab Code:	HN2410635-002		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	**83.4**		5.00	5	12/19/24 20:24	NA	
1,3,5-Trimethylbenzene	**22.4**		5.00	5	12/19/24 20:24	NA	
2-Butanone (Methyl ethyl ketone, MEK)	**35.5**		25.0	5	12/19/24 20:24	NA	
Acetone	ND	U	50.0	5	12/19/24 20:24	NA	
Benzene	**8.10**		5.00	5	12/19/24 20:24	NA	
Di-isopropylether (DIPE)	ND	U	5.00	5	12/19/24 20:24	NA	
Ethylbenzene	**69.2**		5.00	5	12/19/24 20:24	NA	
m+p-Xylene	**136**		10.0	5	12/19/24 20:24	NA	
o-Xylene	**74.7**		5.00	5	12/19/24 20:24	NA	
Tetrahydrofuran (THF)	ND	U	5.00	5	12/19/24 20:24	NA	
Toluene	**117**		5.00	5	12/19/24 20:24	NA	
Total Xylene	**211**		10.0	5	12/19/24 20:24	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	107	80 - 120	12/19/24 20:24	
4-Bromofluorobenzene	98.2	80 - 120	12/19/24 20:24	
Dibromofluoromethane	94.1	80 - 120	12/19/24 20:24	
Toluene-d8	95.0	80 - 120	12/19/24 20:24	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	DUP-1	**Units:**	µg/L
Lab Code:	HN2410635-003		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	**81.6**		5.00	5	12/19/24 20:48	NA	
1,3,5-Trimethylbenzene	**21.0**		5.00	5	12/19/24 20:48	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	25.0	5	12/19/24 20:48	NA	
Acetone	ND	U	50.0	5	12/19/24 20:48	NA	
Benzene	**8.20**		5.00	5	12/19/24 20:48	NA	
Di-isopropylether (DIPE)	ND	U	5.00	5	12/19/24 20:48	NA	
Ethylbenzene	**70.1**		5.00	5	12/19/24 20:48	NA	
m+p-Xylene	**141**		10.0	5	12/19/24 20:48	NA	
o-Xylene	**78.1**		5.00	5	12/19/24 20:48	NA	
Tetrahydrofuran (THF)	ND	U	5.00	5	12/19/24 20:48	NA	
Toluene	**124**		5.00	5	12/19/24 20:48	NA	
Total Xylene	**219**		10.0	5	12/19/24 20:48	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	100	80 - 120	12/19/24 20:48	
4-Bromofluorobenzene	101	80 - 120	12/19/24 20:48	
Dibromofluoromethane	89.0	80 - 120	12/19/24 20:48	
Toluene-d8	97.4	80 - 120	12/19/24 20:48	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 11:30
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-400 CR	**Units:**	µg/L
Lab Code:	HN2410635-004		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	**133**	5.00	5	12/19/24 21:13	NA	
1,3,5-Trimethylbenzene	**27.3**	1.00	1	12/18/24 07:09	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND U	5.00	1	12/18/24 07:09	NA	
Acetone	ND U	10.0	1	12/18/24 07:09	NA	
Benzene	ND U	1.00	1	12/18/24 07:09	NA	
Di-isopropylether (DIPE)	ND U	1.00	1	12/18/24 07:09	NA	
Ethylbenzene	**155**	5.00	5	12/19/24 21:13	NA	
m+p-Xylene	**144**	2.00	1	12/18/24 07:09	NA	
o-Xylene	**64.4**	1.00	1	12/18/24 07:09	NA	
Tetrahydrofuran (THF)	ND U	1.00	1	12/18/24 07:09	NA	
Toluene	**8.68**	1.00	1	12/18/24 07:09	NA	
Total Xylene	**209**	2.00	1	12/18/24 07:09	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	97.4	80 - 120	12/18/24 07:09	
4-Bromofluorobenzene	109	80 - 120	12/18/24 07:09	
Dibromofluoromethane	95.4	80 - 120	12/18/24 07:09	
Toluene-d8	93.0	80 - 120	12/18/24 07:09	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 12:50
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-700 A	**Units:**	µg/L
Lab Code:	HN2410635-005		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/18/24 07:33	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/18/24 07:33	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/18/24 07:33	NA	
Acetone	ND	U	10.0	1	12/18/24 07:33	NA	
Benzene	ND	U	1.00	1	12/18/24 07:33	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/18/24 07:33	NA	
Ethylbenzene	ND	U	1.00	1	12/18/24 07:33	NA	
m+p-Xylene	ND	U	2.00	1	12/18/24 07:33	NA	
o-Xylene	ND	U	1.00	1	12/18/24 07:33	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/18/24 07:33	NA	
Toluene	ND	U	1.00	1	12/18/24 07:33	NA	
Total Xylene	ND	U	2.00	1	12/18/24 07:33	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	95.2	80 - 120	12/18/24 07:33	
4-Bromofluorobenzene	96.9	80 - 120	12/18/24 07:33	
Dibromofluoromethane	92.6	80 - 120	12/18/24 07:33	
Toluene-d8	95.8	80 - 120	12/18/24 07:33	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 13:35
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-700 B	**Units:**	µg/L
Lab Code:	HN2410635-006		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND U	1.00	1	12/21/24 03:48	NA	
1,3,5-Trimethylbenzene	ND U	1.00	1	12/21/24 03:48	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND U	5.00	1	12/21/24 03:48	NA	
Acetone	ND U	10.0	1	12/21/24 03:48	NA	
Benzene	ND U	1.00	1	12/21/24 03:48	NA	
Di-isopropylether (DIPE)	ND U	1.00	1	12/21/24 03:48	NA	
Ethylbenzene	ND U	1.00	1	12/21/24 03:48	NA	
m+p-Xylene	ND U	2.00	1	12/21/24 03:48	NA	
o-Xylene	ND U	1.00	1	12/21/24 03:48	NA	
Tetrahydrofuran (THF)	ND U	1.00	1	12/21/24 03:48	NA	
Toluene	ND U	1.00	1	12/21/24 03:48	NA	
Total Xylene	ND U	2.00	1	12/21/24 03:48	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	101	80 - 120	12/21/24 03:48	
4-Bromofluorobenzene	99.8	80 - 120	12/21/24 03:48	
Dibromofluoromethane	98.8	80 - 120	12/21/24 03:48	
Toluene-d8	95.6	80 - 120	12/21/24 03:48	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 14:05
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-700 C	**Units:**	µg/L
Lab Code:	HN2410635-007		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/18/24 00:10	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/18/24 00:10	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/18/24 00:10	NA	
Acetone	ND	U	10.0	1	12/18/24 00:10	NA	
Benzene	ND	U	1.00	1	12/18/24 00:10	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/18/24 00:10	NA	
Ethylbenzene	ND	U	1.00	1	12/18/24 00:10	NA	
m+p-Xylene	ND	U	2.00	1	12/18/24 00:10	NA	
o-Xylene	ND	U	1.00	1	12/18/24 00:10	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/18/24 00:10	NA	
Toluene	ND	BU	1.00	1	12/18/24 00:10	NA	
Total Xylene	ND	U	2.00	1	12/18/24 00:10	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	102	80 - 120	12/18/24 00:10	
4-Bromofluorobenzene	95.2	80 - 120	12/18/24 00:10	
Dibromofluoromethane	99.8	80 - 120	12/18/24 00:10	
Toluene-d8	94.0	80 - 120	12/18/24 00:10	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 14:50
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1400 A	**Units:**	µg/L
Lab Code:	HN2410635-008		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	**1.12**		1.00	1	12/18/24 00:26	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/18/24 00:26	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/18/24 00:26	NA	
Acetone	ND	U	10.0	1	12/18/24 00:26	NA	
Benzene	ND	U	1.00	1	12/18/24 00:26	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/18/24 00:26	NA	
Ethylbenzene	**1.52**		1.00	1	12/18/24 00:26	NA	
m+p-Xylene	ND	U	2.00	1	12/18/24 00:26	NA	
o-Xylene	ND	U	1.00	1	12/18/24 00:26	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/18/24 00:26	NA	
Toluene	ND	BU	1.00	1	12/18/24 00:26	NA	
Total Xylene	ND	U	2.00	1	12/18/24 00:26	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	105	80 - 120	12/18/24 00:26	
4-Bromofluorobenzene	94.0	80 - 120	12/18/24 00:26	
Dibromofluoromethane	105	80 - 120	12/18/24 00:26	
Toluene-d8	97.2	80 - 120	12/18/24 00:26	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 15:35
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1300 A	**Units:**	µg/L
Lab Code:	HN2410635-009		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	**164**	10.0	10	12/19/24 18:50	NA	
1,3,5-Trimethylbenzene	**36.4**	10.0	10	12/19/24 18:50	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND U	50.0	10	12/19/24 18:50	NA	
Acetone	ND U	100	10	12/19/24 18:50	NA	
Benzene	ND U	10.0	10	12/19/24 18:50	NA	
Di-isopropylether (DIPE)	ND U	10.0	10	12/19/24 18:50	NA	
Ethylbenzene	**373**	10.0	10	12/19/24 18:50	NA	
m+p-Xylene	**615**	20.0	10	12/19/24 18:50	NA	
o-Xylene	**359**	10.0	10	12/19/24 18:50	NA	
Tetrahydrofuran (THF)	ND U	10.0	10	12/19/24 18:50	NA	
Toluene	**99.9**	10.0	10	12/19/24 18:50	NA	
Total Xylene	**974**	20.0	10	12/19/24 18:50	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	104	80 - 120	12/19/24 18:50	
4-Bromofluorobenzene	99.8	80 - 120	12/19/24 18:50	
Dibromofluoromethane	91.8	80 - 120	12/19/24 18:50	
Toluene-d8	97.4	80 - 120	12/19/24 18:50	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 16:20
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1300 B	**Units:**	µg/L
Lab Code:	HN2410635-010		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	**174**		5.00	5	12/19/24 19:13	NA	
1,3,5-Trimethylbenzene	**36.3**		5.00	5	12/19/24 19:13	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	25.0	5	12/19/24 19:13	NA	
Acetone	ND	U	50.0	5	12/19/24 19:13	NA	
Benzene	ND	U	5.00	5	12/19/24 19:13	NA	
Di-isopropylether (DIPE)	ND	U	5.00	5	12/19/24 19:13	NA	
Ethylbenzene	**166**		5.00	5	12/19/24 19:13	NA	
m+p-Xylene	**187**		10.0	5	12/19/24 19:13	NA	
o-Xylene	**64.0**		5.00	5	12/19/24 19:13	NA	
Tetrahydrofuran (THF)	ND	U	5.00	5	12/19/24 19:13	NA	
Toluene	**16.8**		5.00	5	12/19/24 19:13	NA	
Total Xylene	**251**		10.0	5	12/19/24 19:13	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	102	80 - 120	12/19/24 19:13	
4-Bromofluorobenzene	99.9	80 - 120	12/19/24 19:13	
Dibromofluoromethane	91.8	80 - 120	12/19/24 19:13	
Toluene-d8	97.0	80 - 120	12/19/24 19:13	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 16:45
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1300 C	**Units:**	µg/L
Lab Code:	HN2410635-011		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	**28.1**		1.00	1	12/19/24 16:28	NA	
1,3,5-Trimethylbenzene	**7.04**		1.00	1	12/19/24 16:28	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/19/24 16:28	NA	
Acetone	ND	U	10.0	1	12/19/24 16:28	NA	
Benzene	**6.88**		1.00	1	12/19/24 16:28	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/19/24 16:28	NA	
Ethylbenzene	**50.6**		1.00	1	12/19/24 16:28	NA	
m+p-Xylene	**75.0**		2.00	1	12/19/24 16:28	NA	
o-Xylene	**41.9**		1.00	1	12/19/24 16:28	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/19/24 16:28	NA	
Toluene	**34.0**		1.00	1	12/19/24 16:28	NA	
Total Xylene	**117**		2.00	1	12/19/24 16:28	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	101	80 - 120	12/19/24 16:28	
4-Bromofluorobenzene	102	80 - 120	12/19/24 16:28	
Dibromofluoromethane	99.7	80 - 120	12/19/24 16:28	
Toluene-d8	90.6	80 - 120	12/19/24 16:28	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 09:40
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1000 A	**Units:**	µg/L
Lab Code:	HN2410635-012		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/18/24 01:32	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/18/24 01:32	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/18/24 01:32	NA	
Acetone	ND	U	10.0	1	12/18/24 01:32	NA	
Benzene	ND	U	1.00	1	12/18/24 01:32	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/18/24 01:32	NA	
Ethylbenzene	ND	U	1.00	1	12/18/24 01:32	NA	
m+p-Xylene	ND	U	2.00	1	12/18/24 01:32	NA	
o-Xylene	ND	U	1.00	1	12/18/24 01:32	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/18/24 01:32	NA	
Toluene	ND	BU	1.00	1	12/18/24 01:32	NA	
Total Xylene	ND	U	2.00	1	12/18/24 01:32	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	104	80 - 120	12/18/24 01:32	
4-Bromofluorobenzene	97.0	80 - 120	12/18/24 01:32	
Dibromofluoromethane	103	80 - 120	12/18/24 01:32	
Toluene-d8	99.2	80 - 120	12/18/24 01:32	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 10:18
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1000 B	**Units:**	µg/L
Lab Code:	HN2410635-013		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	**228**		5.00	5	12/19/24 19:37	NA	
1,3,5-Trimethylbenzene	**59.5**		5.00	5	12/19/24 19:37	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	25.0	5	12/19/24 19:37	NA	
Acetone	ND	U	50.0	5	12/19/24 19:37	NA	
Benzene	**9.45**		5.00	5	12/19/24 19:37	NA	
Di-isopropylether (DIPE)	ND	U	5.00	5	12/19/24 19:37	NA	
Ethylbenzene	**116**		5.00	5	12/19/24 19:37	NA	
m+p-Xylene	**405**		10.0	5	12/19/24 19:37	NA	
o-Xylene	**238**		5.00	5	12/19/24 19:37	NA	
Tetrahydrofuran (THF)	ND	U	5.00	5	12/19/24 19:37	NA	
Toluene	**160**		5.00	5	12/19/24 19:37	NA	
Total Xylene	**643**		10.0	5	12/19/24 19:37	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	98.6	80 - 120	12/19/24 19:37	
4-Bromofluorobenzene	103	80 - 120	12/19/24 19:37	
Dibromofluoromethane	91.2	80 - 120	12/19/24 19:37	
Toluene-d8	94.7	80 - 120	12/19/24 19:37	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 11:00
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1000 C	**Units:**	µg/L
Lab Code:	HN2410635-014		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/18/24 02:04	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/18/24 02:04	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/18/24 02:04	NA	
Acetone	ND	U	10.0	1	12/18/24 02:04	NA	
Benzene	ND	U	1.00	1	12/18/24 02:04	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/18/24 02:04	NA	
Ethylbenzene	ND	U	1.00	1	12/18/24 02:04	NA	
m+p-Xylene	ND	U	2.00	1	12/18/24 02:04	NA	
o-Xylene	ND	U	1.00	1	12/18/24 02:04	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/18/24 02:04	NA	
Toluene	ND	BU	1.00	1	12/18/24 02:04	NA	
Total Xylene	ND	U	2.00	1	12/18/24 02:04	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	104	80 - 120	12/18/24 02:04	
4-Bromofluorobenzene	94.1	80 - 120	12/18/24 02:04	
Dibromofluoromethane	108	80 - 120	12/18/24 02:04	
Toluene-d8	95.3	80 - 120	12/18/24 02:04	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 12:00
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-600 B	**Units:**	µg/L
Lab Code:	HN2410635-015		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/18/24 02:21	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/18/24 02:21	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/18/24 02:21	NA	
Acetone	ND	U	10.0	1	12/18/24 02:21	NA	
Benzene	ND	U	1.00	1	12/18/24 02:21	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/18/24 02:21	NA	
Ethylbenzene	ND	U	1.00	1	12/18/24 02:21	NA	
m+p-Xylene	ND	U	2.00	1	12/18/24 02:21	NA	
o-Xylene	ND	U	1.00	1	12/18/24 02:21	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/18/24 02:21	NA	
Toluene	ND	BU	1.00	1	12/18/24 02:21	NA	
Total Xylene	ND	U	2.00	1	12/18/24 02:21	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	100	80 - 120	12/18/24 02:21	
4-Bromofluorobenzene	96.1	80 - 120	12/18/24 02:21	
Dibromofluoromethane	104	80 - 120	12/18/24 02:21	
Toluene-d8	94.1	80 - 120	12/18/24 02:21	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 13:20
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-600 C	**Units:**	µg/L
Lab Code:	HN2410635-016		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/18/24 02:37	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/18/24 02:37	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/18/24 02:37	NA	
Acetone	ND	U	10.0	1	12/18/24 02:37	NA	
Benzene	ND	U	1.00	1	12/18/24 02:37	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/18/24 02:37	NA	
Ethylbenzene	ND	U	1.00	1	12/18/24 02:37	NA	
m+p-Xylene	ND	U	2.00	1	12/18/24 02:37	NA	
o-Xylene	ND	U	1.00	1	12/18/24 02:37	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/18/24 02:37	NA	
Toluene	ND	BU	1.00	1	12/18/24 02:37	NA	
Total Xylene	ND	U	2.00	1	12/18/24 02:37	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	106	80 - 120	12/18/24 02:37	
4-Bromofluorobenzene	100	80 - 120	12/18/24 02:37	
Dibromofluoromethane	104	80 - 120	12/18/24 02:37	
Toluene-d8	99.3	80 - 120	12/18/24 02:37	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 12:40
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-600 A	**Units:**	µg/L
Lab Code:	HN2410635-017		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/18/24 02:54	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/18/24 02:54	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/18/24 02:54	NA	
Acetone	ND	U	10.0	1	12/18/24 02:54	NA	
Benzene	ND	U	1.00	1	12/18/24 02:54	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/18/24 02:54	NA	
Ethylbenzene	ND	U	1.00	1	12/18/24 02:54	NA	
m+p-Xylene	ND	U	2.00	1	12/18/24 02:54	NA	
o-Xylene	ND	U	1.00	1	12/18/24 02:54	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/18/24 02:54	NA	
Toluene	ND	BU	1.00	1	12/18/24 02:54	NA	
Total Xylene	ND	U	2.00	1	12/18/24 02:54	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	107	80 - 120	12/18/24 02:54	
4-Bromofluorobenzene	98.2	80 - 120	12/18/24 02:54	
Dibromofluoromethane	106	80 - 120	12/18/24 02:54	
Toluene-d8	99.0	80 - 120	12/18/24 02:54	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 14:25
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1100 D	**Units:**	µg/L
Lab Code:	HN2410635-018		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/18/24 14:50	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/18/24 14:50	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/18/24 14:50	NA	
Acetone	ND	U	10.0	1	12/18/24 14:50	NA	
Benzene	**1.36**		1.00	1	12/18/24 14:50	NA	
Di-isopropylether (DIPE)	**9.53**		1.00	1	12/18/24 14:50	NA	
Ethylbenzene	ND	U	1.00	1	12/18/24 14:50	NA	
m+p-Xylene	**3.55**		2.00	1	12/18/24 14:50	NA	
o-Xylene	**1.74**		1.00	1	12/18/24 14:50	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/18/24 14:50	NA	
Toluene	**1.24**		1.00	1	12/18/24 14:50	NA	
Total Xylene	**5.29**		2.00	1	12/18/24 14:50	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	106	80 - 120	12/18/24 14:50	
4-Bromofluorobenzene	103	80 - 120	12/18/24 14:50	
Dibromofluoromethane	105	80 - 120	12/18/24 14:50	
Toluene-d8	93.9	80 - 120	12/18/24 14:50	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 13:33
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-200 A	**Units:**	µg/L
Lab Code:	HN2410635-019		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	**15.6**		1.00	1	12/19/24 16:52	NA	
1,3,5-Trimethylbenzene	**3.38**		1.00	1	12/19/24 16:52	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/19/24 16:52	NA	
Acetone	ND	U	10.0	1	12/19/24 16:52	NA	
Benzene	**1.07**		1.00	1	12/19/24 16:52	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/19/24 16:52	NA	
Ethylbenzene	**33.5**		1.00	1	12/19/24 16:52	NA	
m+p-Xylene	**12.2**		2.00	1	12/19/24 16:52	NA	
o-Xylene	**9.54**		1.00	1	12/19/24 16:52	NA	
Tetrahydrofuran (THF)	**1.70**		1.00	1	12/19/24 16:52	NA	
Toluene	**4.51**		1.00	1	12/19/24 16:52	NA	
Total Xylene	**21.7**		2.00	1	12/19/24 16:52	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	96.5	80 - 120	12/19/24 16:52	
4-Bromofluorobenzene	105	80 - 120	12/19/24 16:52	
Dibromofluoromethane	93.2	80 - 120	12/19/24 16:52	
Toluene-d8	94.6	80 - 120	12/19/24 16:52	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-200 B	**Units:**	µg/L
Lab Code:	HN2410635-020		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	**8.40**		1.00	1	12/19/24 17:15	NA	
1,3,5-Trimethylbenzene	**1.44**		1.00	1	12/19/24 17:15	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/19/24 17:15	NA	
Acetone	ND	U	10.0	1	12/19/24 17:15	NA	
Benzene	**1.44**		1.00	1	12/19/24 17:15	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/19/24 17:15	NA	
Ethylbenzene	**21.4**		1.00	1	12/19/24 17:15	NA	
m+p-Xylene	**28.0**		2.00	1	12/19/24 17:15	NA	
o-Xylene	**4.25**		1.00	1	12/19/24 17:15	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/19/24 17:15	NA	
Toluene	**2.72**		1.00	1	12/19/24 17:15	NA	
Total Xylene	**32.2**		2.00	1	12/19/24 17:15	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	94.0	80 - 120	12/19/24 17:15	
4-Bromofluorobenzene	100	80 - 120	12/19/24 17:15	
Dibromofluoromethane	91.2	80 - 120	12/19/24 17:15	
Toluene-d8	94.1	80 - 120	12/19/24 17:15	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 14:43
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-200 C	**Units:**	µg/L
Lab Code:	HN2410635-021		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	**2.12**		1.00	1	12/19/24 17:39	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/19/24 17:39	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/19/24 17:39	NA	
Acetone	ND	U	10.0	1	12/19/24 17:39	NA	
Benzene	ND	U	1.00	1	12/19/24 17:39	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/19/24 17:39	NA	
Ethylbenzene	**30.2**		1.00	1	12/19/24 17:39	NA	
m+p-Xylene	**6.68**		2.00	1	12/19/24 17:39	NA	
o-Xylene	**3.68**		1.00	1	12/19/24 17:39	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/19/24 17:39	NA	
Toluene	**1.52**		1.00	1	12/19/24 17:39	NA	
Total Xylene	**10.4**		2.00	1	12/19/24 17:39	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	95.7	80 - 120	12/19/24 17:39	
4-Bromofluorobenzene	104	80 - 120	12/19/24 17:39	
Dibromofluoromethane	92.4	80 - 120	12/19/24 17:39	
Toluene-d8	95.4	80 - 120	12/19/24 17:39	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 12:02
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1100 A	**Units:**	µg/L
Lab Code:	HN2410635-022		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/18/24 04:15	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/18/24 04:15	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/18/24 04:15	NA	
Acetone	ND	U	10.0	1	12/18/24 04:15	NA	
Benzene	ND	U	1.00	1	12/18/24 04:15	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/18/24 04:15	NA	
Ethylbenzene	**3.26**		1.00	1	12/18/24 04:15	NA	
m+p-Xylene	ND	U	2.00	1	12/18/24 04:15	NA	
o-Xylene	ND	U	1.00	1	12/18/24 04:15	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/18/24 04:15	NA	
Toluene	ND	BU	1.00	1	12/18/24 04:15	NA	
Total Xylene	ND	U	2.00	1	12/18/24 04:15	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	105	80 - 120	12/18/24 04:15	
4-Bromofluorobenzene	97.6	80 - 120	12/18/24 04:15	
Dibromofluoromethane	108	80 - 120	12/18/24 04:15	
Toluene-d8	94.0	80 - 120	12/18/24 04:15	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 11:19
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1110 B	**Units:**	µg/L
Lab Code:	HN2410635-023		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	**200**		50.0	50	12/18/24 23:46	NA	
1,3,5-Trimethylbenzene	**71.2**		1.00	1	12/19/24 18:02	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/19/24 18:02	NA	
Acetone	ND	U	10.0	1	12/19/24 18:02	NA	
Benzene	ND	U	1.00	1	12/19/24 18:02	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/19/24 18:02	NA	
Ethylbenzene	**64.9**		1.00	1	12/19/24 18:02	NA	
m+p-Xylene	**142**		2.00	1	12/19/24 18:02	NA	
o-Xylene	**80.2**		1.00	1	12/19/24 18:02	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/19/24 18:02	NA	
Toluene	**3.49**		1.00	1	12/19/24 18:02	NA	
Total Xylene	**222**		2.00	1	12/19/24 18:02	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	95.3	80 - 120	12/19/24 18:02	
4-Bromofluorobenzene	106	80 - 120	12/19/24 18:02	
Dibromofluoromethane	87.3	80 - 120	12/19/24 18:02	
Toluene-d8	95.6	80 - 120	12/19/24 18:02	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 12:49
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1100 C	**Units:**	µg/L
Lab Code:	HN2410635-024		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	**57.3**		5.00	5	12/19/24 20:00	NA	
1,3,5-Trimethylbenzene	**15.1**		5.00	5	12/19/24 20:00	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	25.0	5	12/19/24 20:00	NA	
Acetone	ND	U	50.0	5	12/19/24 20:00	NA	
Benzene	ND	U	5.00	5	12/19/24 20:00	NA	
Di-isopropylether (DIPE)	ND	U	5.00	5	12/19/24 20:00	NA	
Ethylbenzene	**98.4**		5.00	5	12/19/24 20:00	NA	
m+p-Xylene	**184**		10.0	5	12/19/24 20:00	NA	
o-Xylene	**87.0**		5.00	5	12/19/24 20:00	NA	
Tetrahydrofuran (THF)	ND	U	5.00	5	12/19/24 20:00	NA	
Toluene	**76.2**		5.00	5	12/19/24 20:00	NA	
Total Xylene	**271**		10.0	5	12/19/24 20:00	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	101	80 - 120	12/19/24 20:00	
4-Bromofluorobenzene	100	80 - 120	12/19/24 20:00	
Dibromofluoromethane	92.6	80 - 120	12/19/24 20:00	
Toluene-d8	97.6	80 - 120	12/19/24 20:00	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 16:33
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1200 A	**Units:**	µg/L
Lab Code:	HN2410635-025		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	**2.33**		1.00	1	12/19/24 06:51	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/19/24 06:51	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/19/24 06:51	NA	
Acetone	ND	U	10.0	1	12/19/24 06:51	NA	
Benzene	ND	U	1.00	1	12/19/24 06:51	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/19/24 06:51	NA	
Ethylbenzene	**11.4**		1.00	1	12/19/24 06:51	NA	
m+p-Xylene	ND	U	2.00	1	12/19/24 06:51	NA	
o-Xylene	**4.69**		1.00	1	12/19/24 06:51	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/19/24 06:51	NA	
Toluene	ND	U	1.00	1	12/19/24 06:51	NA	
Total Xylene	**4.69**		2.00	1	12/19/24 06:51	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	102	80 - 120	12/19/24 06:51	
4-Bromofluorobenzene	91.4	80 - 120	12/19/24 06:51	
Dibromofluoromethane	100.0	80 - 120	12/19/24 06:51	
Toluene-d8	94.5	80 - 120	12/19/24 06:51	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 17:01
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1200 B	**Units:**	µg/L
Lab Code:	HN2410635-026		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/19/24 07:07	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/19/24 07:07	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/19/24 07:07	NA	
Acetone	ND	U	10.0	1	12/19/24 07:07	NA	
Benzene	ND	U	1.00	1	12/19/24 07:07	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/19/24 07:07	NA	
Ethylbenzene	ND	U	1.00	1	12/19/24 07:07	NA	
m+p-Xylene	ND	U	2.00	1	12/19/24 07:07	NA	
o-Xylene	ND	U	1.00	1	12/19/24 07:07	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/19/24 07:07	NA	
Toluene	ND	U	1.00	1	12/19/24 07:07	NA	
Total Xylene	ND	U	2.00	1	12/19/24 07:07	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	101	80 - 120	12/19/24 07:07	
4-Bromofluorobenzene	92.8	80 - 120	12/19/24 07:07	
Dibromofluoromethane	98.4	80 - 120	12/19/24 07:07	
Toluene-d8	100	80 - 120	12/19/24 07:07	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 15:48
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1200 C	**Units:**	µg/L
Lab Code:	HN2410635-027		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	**1.36**		1.00	1	12/19/24 22:24	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/19/24 22:24	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/19/24 22:24	NA	
Acetone	ND	U	10.0	1	12/19/24 22:24	NA	
Benzene	ND	U	1.00	1	12/19/24 22:24	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/19/24 22:24	NA	
Ethylbenzene	**2.06**		1.00	1	12/19/24 22:24	NA	
m+p-Xylene	**4.18**		2.00	1	12/19/24 22:24	NA	
o-Xylene	**2.42**		1.00	1	12/19/24 22:24	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/19/24 22:24	NA	
Toluene	**2.22**		1.00	1	12/19/24 22:24	NA	
Total Xylene	**6.60**		2.00	1	12/19/24 22:24	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	99.0	80 - 120	12/19/24 22:24	
4-Bromofluorobenzene	102	80 - 120	12/19/24 22:24	
Dibromofluoromethane	91.0	80 - 120	12/19/24 22:24	
Toluene-d8	93.9	80 - 120	12/19/24 22:24	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 09:39
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1400 B	**Units:**	µg/L
Lab Code:	HN2410635-028		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	**312**		10.0	10	12/19/24 07:40	NA	
1,3,5-Trimethylbenzene	**77.9**		10.0	10	12/19/24 07:40	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	50.0	10	12/19/24 07:40	NA	
Acetone	ND	U	100	10	12/19/24 07:40	NA	
Benzene	**13.6**		10.0	10	12/19/24 07:40	NA	
Di-isopropylether (DIPE)	ND	U	10.0	10	12/19/24 07:40	NA	
Ethylbenzene	**278**		10.0	10	12/19/24 07:40	NA	
m+p-Xylene	**453**		20.0	10	12/19/24 07:40	NA	
o-Xylene	**262**		10.0	10	12/19/24 07:40	NA	
Tetrahydrofuran (THF)	ND	U	10.0	10	12/19/24 07:40	NA	
Toluene	**125**		10.0	10	12/19/24 07:40	NA	
Total Xylene	**715**		20.0	10	12/19/24 07:40	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	98.9	80 - 120	12/19/24 07:40	
4-Bromofluorobenzene	91.4	80 - 120	12/19/24 07:40	
Dibromofluoromethane	96.8	80 - 120	12/19/24 07:40	
Toluene-d8	97.8	80 - 120	12/19/24 07:40	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 10:13
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1400 C	**Units:**	µg/L
Lab Code:	HN2410635-029		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	**22.4**		1.00	1	12/19/24 22:47	NA	
1,3,5-Trimethylbenzene	**4.07**		1.00	1	12/19/24 22:47	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/19/24 22:47	NA	
Acetone	ND	U	10.0	1	12/19/24 22:47	NA	
Benzene	**6.15**		1.00	1	12/19/24 22:47	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/19/24 22:47	NA	
Ethylbenzene	**51.0**		1.00	1	12/19/24 22:47	NA	
m+p-Xylene	**47.0**		2.00	1	12/19/24 22:47	NA	
o-Xylene	**31.6**		1.00	1	12/19/24 22:47	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/19/24 22:47	NA	
Toluene	**36.6**		1.00	1	12/19/24 22:47	NA	
Total Xylene	**78.6**		2.00	1	12/19/24 22:47	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	98.8	80 - 120	12/19/24 22:47	
4-Bromofluorobenzene	93.8	80 - 120	12/19/24 22:47	
Dibromofluoromethane	93.2	80 - 120	12/19/24 22:47	
Toluene-d8	95.2	80 - 120	12/19/24 22:47	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 13:32
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-500 A	**Units:**	µg/L
Lab Code:	HN2410635-030		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/19/24 08:13	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/19/24 08:13	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/19/24 08:13	NA	
Acetone	ND	U	10.0	1	12/19/24 08:13	NA	
Benzene	ND	U	1.00	1	12/19/24 08:13	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/19/24 08:13	NA	
Ethylbenzene	ND	U	1.00	1	12/19/24 08:13	NA	
m+p-Xylene	ND	U	2.00	1	12/19/24 08:13	NA	
o-Xylene	ND	U	1.00	1	12/19/24 08:13	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/19/24 08:13	NA	
Toluene	ND	U	1.00	1	12/19/24 08:13	NA	
Total Xylene	ND	U	2.00	1	12/19/24 08:13	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	103	80 - 120	12/19/24 08:13	
4-Bromofluorobenzene	91.8	80 - 120	12/19/24 08:13	
Dibromofluoromethane	101	80 - 120	12/19/24 08:13	
Toluene-d8	99.0	80 - 120	12/19/24 08:13	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 14:49
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-500 B	**Units:**	µg/L
Lab Code:	HN2410635-031		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/19/24 08:29	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/19/24 08:29	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/19/24 08:29	NA	
Acetone	ND	U	10.0	1	12/19/24 08:29	NA	
Benzene	ND	U	1.00	1	12/19/24 08:29	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/19/24 08:29	NA	
Ethylbenzene	**1.20**		1.00	1	12/19/24 08:29	NA	
m+p-Xylene	**2.14**		2.00	1	12/19/24 08:29	NA	
o-Xylene	ND	U	1.00	1	12/19/24 08:29	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/19/24 08:29	NA	
Toluene	ND	U	1.00	1	12/19/24 08:29	NA	
Total Xylene	**2.14**		2.00	1	12/19/24 08:29	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	98.8	80 - 120	12/19/24 08:29	
4-Bromofluorobenzene	92.6	80 - 120	12/19/24 08:29	
Dibromofluoromethane	95.8	80 - 120	12/19/24 08:29	
Toluene-d8	95.0	80 - 120	12/19/24 08:29	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 14:12
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-500 C	**Units:**	µg/L
Lab Code:	HN2410635-032		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/19/24 23:11	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/19/24 23:11	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/19/24 23:11	NA	
Acetone	ND	U	10.0	1	12/19/24 23:11	NA	
Benzene	ND	U	1.00	1	12/19/24 23:11	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/19/24 23:11	NA	
Ethylbenzene	ND	U	1.00	1	12/19/24 23:11	NA	
m+p-Xylene	ND	U	2.00	1	12/19/24 23:11	NA	
o-Xylene	ND	U	1.00	1	12/19/24 23:11	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/19/24 23:11	NA	
Toluene	ND	U	1.00	1	12/19/24 23:11	NA	
Total Xylene	ND	U	2.00	1	12/19/24 23:11	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	97.6	80 - 120	12/19/24 23:11	
4-Bromofluorobenzene	92.8	80 - 120	12/19/24 23:11	
Dibromofluoromethane	92.3	80 - 120	12/19/24 23:11	
Toluene-d8	94.4	80 - 120	12/19/24 23:11	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 11:13
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-600 A	**Units:**	µg/L
Lab Code:	HN2410635-033		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	**227**		10.0	10	12/19/24 22:00	NA	
1,3,5-Trimethylbenzene	**44.8**		1.00	1	12/19/24 09:01	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/19/24 09:01	NA	
Acetone	ND	U	10.0	1	12/19/24 09:01	NA	
Benzene	**5.66**		1.00	1	12/19/24 09:01	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/19/24 09:01	NA	
Ethylbenzene	**464**		10.0	10	12/19/24 22:00	NA	
m+p-Xylene	**808**		20.0	10	12/19/24 22:00	NA	
o-Xylene	**223**		10.0	10	12/19/24 22:00	NA	
Tetrahydrofuran (THF)	**5.58**		1.00	1	12/19/24 09:01	NA	
Toluene	**7.25**		1.00	1	12/19/24 09:01	NA	
Total Xylene	**1030**		20.0	10	12/19/24 22:00	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	96.8	80 - 120	12/19/24 09:01	
4-Bromofluorobenzene	92.6	80 - 120	12/19/24 09:01	
Dibromofluoromethane	96.6	80 - 120	12/19/24 09:01	
Toluene-d8	90.6	80 - 120	12/19/24 09:01	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 11:54
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-600 B	**Units:**	µg/L
Lab Code:	HN2410635-034		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	**437**	10.0	10	12/19/24 09:18	NA	
1,3,5-Trimethylbenzene	**121**	10.0	10	12/19/24 09:18	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND U	50.0	10	12/19/24 09:18	NA	
Acetone	ND U	100	10	12/19/24 09:18	NA	
Benzene	ND U	10.0	10	12/19/24 09:18	NA	
Di-isopropylether (DIPE)	ND U	10.0	10	12/19/24 09:18	NA	
Ethylbenzene	**766**	10.0	10	12/19/24 09:18	NA	
m+p-Xylene	**1880**	20.0	10	12/19/24 09:18	NA	
o-Xylene	**971**	10.0	10	12/19/24 09:18	NA	
Tetrahydrofuran (THF)	ND U	10.0	10	12/19/24 09:18	NA	
Toluene	**661**	10.0	10	12/19/24 09:18	NA	
Total Xylene	**2850**	20.0	10	12/19/24 09:18	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	102	80 - 120	12/19/24 09:18	
4-Bromofluorobenzene	93.6	80 - 120	12/19/24 09:18	
Dibromofluoromethane	96.5	80 - 120	12/19/24 09:18	
Toluene-d8	91.0	80 - 120	12/19/24 09:18	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 10:25
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-600 C	**Units:**	µg/L
Lab Code:	HN2410635-035		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/19/24 19:08	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/19/24 19:08	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/19/24 19:08	NA	
Acetone	ND	U	10.0	1	12/19/24 19:08	NA	
Benzene	ND	U	1.00	1	12/19/24 19:08	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/19/24 19:08	NA	
Ethylbenzene	ND	U	1.00	1	12/19/24 19:08	NA	
m+p-Xylene	ND	U	2.00	1	12/19/24 19:08	NA	
o-Xylene	ND	U	1.00	1	12/19/24 19:08	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/19/24 19:08	NA	
Toluene	ND	U	1.00	1	12/19/24 19:08	NA	
Total Xylene	ND	U	2.00	1	12/19/24 19:08	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	108	80 - 120	12/19/24 19:08	
4-Bromofluorobenzene	101	80 - 120	12/19/24 19:08	
Dibromofluoromethane	106	80 - 120	12/19/24 19:08	
Toluene-d8	97.0	80 - 120	12/19/24 19:08	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 12:39
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-600 D	**Units:**	µg/L
Lab Code:	HN2410635-036		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/19/24 19:31	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/19/24 19:31	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/19/24 19:31	NA	
Acetone	ND	U	10.0	1	12/19/24 19:31	NA	
Benzene	ND	U	1.00	1	12/19/24 19:31	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/19/24 19:31	NA	
Ethylbenzene	ND	U	1.00	1	12/19/24 19:31	NA	
m+p-Xylene	ND	U	2.00	1	12/19/24 19:31	NA	
o-Xylene	ND	U	1.00	1	12/19/24 19:31	NA	
Tetrahydrofuran (THF)	**11.8**		1.00	1	12/19/24 19:31	NA	
Toluene	ND	U	1.00	1	12/19/24 19:31	NA	
Total Xylene	ND	U	2.00	1	12/19/24 19:31	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	109	80 - 120	12/19/24 19:31	
4-Bromofluorobenzene	109	80 - 120	12/19/24 19:31	
Dibromofluoromethane	107	80 - 120	12/19/24 19:31	
Toluene-d8	101	80 - 120	12/19/24 19:31	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	DUP-2	**Units:**	µg/L
Lab Code:	HN2410635-037		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND U	10.0	10	12/19/24 19:54	NA	
1,3,5-Trimethylbenzene	ND U	10.0	10	12/19/24 19:54	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND U	50.0	10	12/19/24 19:54	NA	
Acetone	ND U	100	10	12/19/24 19:54	NA	
Benzene	ND U	10.0	10	12/19/24 19:54	NA	
Di-isopropylether (DIPE)	ND U	10.0	10	12/19/24 19:54	NA	
Ethylbenzene	ND U	10.0	10	12/19/24 19:54	NA	
m+p-Xylene	ND U	20.0	10	12/19/24 19:54	NA	
o-Xylene	ND U	10.0	10	12/19/24 19:54	NA	
Tetrahydrofuran (THF)	ND U	10.0	10	12/19/24 19:54	NA	
Toluene	ND U	10.0	10	12/19/24 19:54	NA	
Total Xylene	ND U	20.0	10	12/19/24 19:54	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	105	80 - 120	12/19/24 19:54	
4-Bromofluorobenzene	101	80 - 120	12/19/24 19:54	
Dibromofluoromethane	104	80 - 120	12/19/24 19:54	
Toluene-d8	94.2	80 - 120	12/19/24 19:54	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 09:45
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1500 A	**Units:**	µg/L
Lab Code:	HN2410635-038		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	**23.7**		1.00	1	12/19/24 20:17	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/19/24 20:17	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/19/24 20:17	NA	
Acetone	ND	U	10.0	1	12/19/24 20:17	NA	
Benzene	ND	U	1.00	1	12/19/24 20:17	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/19/24 20:17	NA	
Ethylbenzene	**41.2**		1.00	1	12/19/24 20:17	NA	
m+p-Xylene	**12.8**		2.00	1	12/19/24 20:17	NA	
o-Xylene	**12.4**		1.00	1	12/19/24 20:17	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/19/24 20:17	NA	
Toluene	**4.81**		1.00	1	12/19/24 20:17	NA	
Total Xylene	**25.2**		2.00	1	12/19/24 20:17	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	104	80 - 120	12/19/24 20:17	
4-Bromofluorobenzene	100	80 - 120	12/19/24 20:17	
Dibromofluoromethane	95.7	80 - 120	12/19/24 20:17	
Toluene-d8	104	80 - 120	12/19/24 20:17	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 11:00
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1500 B	**Units:**	µg/L
Lab Code:	HN2410635-039		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	**1.39**		1.00	1	12/19/24 20:40	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/19/24 20:40	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/19/24 20:40	NA	
Acetone	ND	U	10.0	1	12/19/24 20:40	NA	
Benzene	ND	U	1.00	1	12/19/24 20:40	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/19/24 20:40	NA	
Ethylbenzene	**7.36**		1.00	1	12/19/24 20:40	NA	
m+p-Xylene	**8.10**		2.00	1	12/19/24 20:40	NA	
o-Xylene	**5.10**		1.00	1	12/19/24 20:40	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/19/24 20:40	NA	
Toluene	**2.06**		1.00	1	12/19/24 20:40	NA	
Total Xylene	**13.2**		2.00	1	12/19/24 20:40	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	105	80 - 120	12/19/24 20:40	
4-Bromofluorobenzene	103	80 - 120	12/19/24 20:40	
Dibromofluoromethane	101	80 - 120	12/19/24 20:40	
Toluene-d8	99.4	80 - 120	12/19/24 20:40	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 11:55
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1500 C	**Units:**	µg/L
Lab Code:	HN2410635-040		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/19/24 21:04	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/19/24 21:04	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/19/24 21:04	NA	
Acetone	ND	U	10.0	1	12/19/24 21:04	NA	
Benzene	ND	U	1.00	1	12/19/24 21:04	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/19/24 21:04	NA	
Ethylbenzene	ND	U	1.00	1	12/19/24 21:04	NA	
m+p-Xylene	ND	U	2.00	1	12/19/24 21:04	NA	
o-Xylene	ND	U	1.00	1	12/19/24 21:04	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/19/24 21:04	NA	
Toluene	ND	U	1.00	1	12/19/24 21:04	NA	
Total Xylene	ND	U	2.00	1	12/19/24 21:04	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	104	80 - 120	12/19/24 21:04	
4-Bromofluorobenzene	98.1	80 - 120	12/19/24 21:04	
Dibromofluoromethane	103	80 - 120	12/19/24 21:04	
Toluene-d8	97.1	80 - 120	12/19/24 21:04	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 12:55
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-100 A	**Units:**	µg/L
Lab Code:	HN2410635-041		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	**102**		10.0	10	12/19/24 21:27	NA	
1,3,5-Trimethylbenzene	**11.6**		10.0	10	12/19/24 21:27	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	50.0	10	12/19/24 21:27	NA	
Acetone	ND	U	100	10	12/19/24 21:27	NA	
Benzene	**30.6**		10.0	10	12/19/24 21:27	NA	
Di-isopropylether (DIPE)	ND	U	10.0	10	12/19/24 21:27	NA	
Ethylbenzene	**216**		10.0	10	12/19/24 21:27	NA	
m+p-Xylene	**105**		20.0	10	12/19/24 21:27	NA	
o-Xylene	**87.7**		10.0	10	12/19/24 21:27	NA	
Tetrahydrofuran (THF)	ND	U	10.0	10	12/19/24 21:27	NA	
Toluene	**64.2**		10.0	10	12/19/24 21:27	NA	
Total Xylene	**193**		20.0	10	12/19/24 21:27	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	99.2	80 - 120	12/19/24 21:27	
4-Bromofluorobenzene	98.8	80 - 120	12/19/24 21:27	
Dibromofluoromethane	100	80 - 120	12/19/24 21:27	
Toluene-d8	102	80 - 120	12/19/24 21:27	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 13:35
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-100 B	**Units:**	µg/L
Lab Code:	HN2410635-042		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	**25.4**		1.00	1	12/19/24 21:50	NA	
1,3,5-Trimethylbenzene	**5.36**		1.00	1	12/19/24 21:50	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/19/24 21:50	NA	
Acetone	ND	U	10.0	1	12/19/24 21:50	NA	
Benzene	**8.20**		1.00	1	12/19/24 21:50	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/19/24 21:50	NA	
Ethylbenzene	**30.5**		1.00	1	12/19/24 21:50	NA	
m+p-Xylene	**44.2**		2.00	1	12/19/24 21:50	NA	
o-Xylene	**28.4**		1.00	1	12/19/24 21:50	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/19/24 21:50	NA	
Toluene	**61.3**		1.00	1	12/19/24 21:50	NA	
Total Xylene	**72.6**		2.00	1	12/19/24 21:50	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	98.5	80 - 120	12/19/24 21:50	
4-Bromofluorobenzene	96.9	80 - 120	12/19/24 21:50	
Dibromofluoromethane	93.8	80 - 120	12/19/24 21:50	
Toluene-d8	98.7	80 - 120	12/19/24 21:50	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 14:25
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-100 C	**Units:**	µg/L
Lab Code:	HN2410635-043		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	**26.3**		1.00	1	12/24/24 05:29	NA	
1,3,5-Trimethylbenzene	**5.16**		1.00	1	12/24/24 05:29	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/24/24 05:29	NA	
Acetone	ND	U	10.0	1	12/24/24 05:29	NA	
Benzene	ND	U	5.00	5	12/24/24 18:30	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/24/24 05:29	NA	
Ethylbenzene	**99.0**		1.00	1	12/24/24 05:29	NA	
m+p-Xylene	**105**		2.00	1	12/24/24 05:29	NA	
o-Xylene	**49.7**		1.00	1	12/24/24 05:29	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/24/24 05:29	NA	
Toluene	**12.6**		5.00	5	12/24/24 18:30	NA	
Total Xylene	**155**		2.00	1	12/24/24 05:29	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	105	80 - 120	12/24/24 05:29	
4-Bromofluorobenzene	98.8	80 - 120	12/24/24 05:29	
Dibromofluoromethane	90.6	80 - 120	12/24/24 05:29	
Toluene-d8	103	80 - 120	12/24/24 05:29	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/13/24
Sample Matrix:	WATER	**Date Received:**	12/13/24 10:00
Sample Name:	Trip Blank #1	**Units:**	µg/L
Lab Code:	HN2410635-044		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/20/24 04:43	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/20/24 04:43	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/20/24 04:43	NA	
2-Methylnaphthalene	ND	U	5.00	1	12/20/24 04:43	NA	
Acetone	ND	U	10.0	1	12/20/24 04:43	NA	
Benzene	ND	U	1.00	1	12/20/24 04:43	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/20/24 04:43	NA	
Ethylbenzene	ND	U	1.00	1	12/20/24 04:43	NA	
m+p-Xylene	ND	U	2.00	1	12/20/24 04:43	NA	
Naphthalene	ND	U	5.00	1	12/20/24 04:43	NA	
o-Xylene	ND	U	1.00	1	12/20/24 04:43	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/20/24 04:43	NA	
Toluene	ND	U	1.00	1	12/20/24 04:43	NA	
Total Xylene	ND	U	2.00	1	12/20/24 04:43	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	106	80 - 120	12/20/24 04:43	
4-Bromofluorobenzene	95.8	80 - 120	12/20/24 04:43	
Dibromofluoromethane	104	80 - 120	12/20/24 04:43	
Toluene-d8	95.3	80 - 120	12/20/24 04:43	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/13/24
Sample Matrix:	WATER	**Date Received:**	12/13/24 10:00
Sample Name:	Trip Blank #2	**Units:**	µg/L
Lab Code:	HN2410635-045		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/20/24 05:06	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/20/24 05:06	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/20/24 05:06	NA	
2-Methylnaphthalene	ND	U	5.00	1	12/20/24 05:06	NA	
Acetone	ND	U	10.0	1	12/20/24 05:06	NA	
Benzene	ND	U	1.00	1	12/20/24 05:06	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/20/24 05:06	NA	
Ethylbenzene	ND	U	1.00	1	12/20/24 05:06	NA	
m+p-Xylene	ND	U	2.00	1	12/20/24 05:06	NA	
Naphthalene	ND	U	5.00	1	12/20/24 05:06	NA	
o-Xylene	ND	U	1.00	1	12/20/24 05:06	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/20/24 05:06	NA	
Toluene	ND	U	1.00	1	12/20/24 05:06	NA	
Total Xylene	ND	U	2.00	1	12/20/24 05:06	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	98.0	80 - 120	12/20/24 05:06	
4-Bromofluorobenzene	102	80 - 120	12/20/24 05:06	
Dibromofluoromethane	96.2	80 - 120	12/20/24 05:06	
Toluene-d8	99.6	80 - 120	12/20/24 05:06	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/13/24
Sample Matrix:	WATER	**Date Received:**	12/13/24 10:00
Sample Name:	Trip Blank #3	**Units:**	µg/L
Lab Code:	HN2410635-046		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/20/24 05:29	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/20/24 05:29	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/20/24 05:29	NA	
2-Methylnaphthalene	ND	U	5.00	1	12/20/24 05:29	NA	
Acetone	ND	U	10.0	1	12/20/24 05:29	NA	
Benzene	ND	U	1.00	1	12/20/24 05:29	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/20/24 05:29	NA	
Ethylbenzene	ND	U	1.00	1	12/20/24 05:29	NA	
m+p-Xylene	ND	U	2.00	1	12/20/24 05:29	NA	
Naphthalene	ND	U	5.00	1	12/20/24 05:29	NA	
o-Xylene	ND	U	1.00	1	12/20/24 05:29	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/20/24 05:29	NA	
Toluene	ND	U	1.00	1	12/20/24 05:29	NA	
Total Xylene	ND	U	2.00	1	12/20/24 05:29	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	104	80 - 120	12/20/24 05:29	
4-Bromofluorobenzene	99.4	80 - 120	12/20/24 05:29	
Dibromofluoromethane	100	80 - 120	12/20/24 05:29	
Toluene-d8	96.4	80 - 120	12/20/24 05:29	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/13/24
Sample Matrix:	WATER	**Date Received:**	12/13/24 10:00
Sample Name:	Trip Blank #4	**Units:**	µg/L
Lab Code:	HN2410635-047		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/20/24 05:52	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/20/24 05:52	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/20/24 05:52	NA	
2-Methylnaphthalene	ND	U	5.00	1	12/20/24 05:52	NA	
Acetone	ND	U	10.0	1	12/20/24 05:52	NA	
Benzene	ND	U	1.00	1	12/20/24 05:52	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/20/24 05:52	NA	
Ethylbenzene	ND	U	1.00	1	12/20/24 05:52	NA	
m+p-Xylene	ND	U	2.00	1	12/20/24 05:52	NA	
Naphthalene	ND	U	5.00	1	12/20/24 05:52	NA	
o-Xylene	ND	U	1.00	1	12/20/24 05:52	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/20/24 05:52	NA	
Toluene	ND	U	1.00	1	12/20/24 05:52	NA	
Total Xylene	ND	U	2.00	1	12/20/24 05:52	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	106	80 - 120	12/20/24 05:52	
4-Bromofluorobenzene	103	80 - 120	12/20/24 05:52	
Dibromofluoromethane	99.4	80 - 120	12/20/24 05:52	
Toluene-d8	97.0	80 - 120	12/20/24 05:52	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/13/24
Sample Matrix:	WATER	**Date Received:**	12/13/24 10:00
Sample Name:	Trip Blank #5	**Units:**	µg/L
Lab Code:	HN2410635-048		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/20/24 06:14	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/20/24 06:14	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/20/24 06:14	NA	
2-Methylnaphthalene	ND	U	5.00	1	12/20/24 06:14	NA	
Acetone	ND	U	10.0	1	12/20/24 06:14	NA	
Benzene	ND	U	1.00	1	12/20/24 06:14	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/20/24 06:14	NA	
Ethylbenzene	ND	U	1.00	1	12/20/24 06:14	NA	
m+p-Xylene	ND	U	2.00	1	12/20/24 06:14	NA	
Naphthalene	ND	U	5.00	1	12/20/24 06:14	NA	
o-Xylene	ND	U	1.00	1	12/20/24 06:14	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/20/24 06:14	NA	
Toluene	ND	U	1.00	1	12/20/24 06:14	NA	
Total Xylene	ND	U	2.00	1	12/20/24 06:14	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	103	80 - 120	12/20/24 06:14	
4-Bromofluorobenzene	102	80 - 120	12/20/24 06:14	
Dibromofluoromethane	96.9	80 - 120	12/20/24 06:14	
Toluene-d8	100	80 - 120	12/20/24 06:14	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/13/24
Sample Matrix:	WATER	**Date Received:**	12/13/24 10:00
Sample Name:	Trip Blank #6	**Units:**	µg/L
Lab Code:	HN2410635-049		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/27/24 04:03	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/27/24 04:03	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/27/24 04:03	NA	
2-Methylnaphthalene	ND	U	5.00	1	12/27/24 04:03	NA	
Acetone	ND	U	10.0	1	12/27/24 04:03	NA	
Benzene	ND	U	1.00	1	12/27/24 04:03	NA	
Di-isopropylether (DIPE)	ND	SU	1.00	1	12/27/24 04:03	NA	
Ethylbenzene	ND	U	1.00	1	12/27/24 04:03	NA	
m+p-Xylene	ND	U	2.00	1	12/27/24 04:03	NA	
Naphthalene	ND	U	5.00	1	12/27/24 04:03	NA	
o-Xylene	ND	U	1.00	1	12/27/24 04:03	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/27/24 04:03	NA	
Toluene	ND	U	1.00	1	12/27/24 04:03	NA	
Total Xylene	ND	U	2.00	1	12/27/24 04:03	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	98.2	80 - 120	12/27/24 04:03	
4-Bromofluorobenzene	89.2	80 - 120	12/27/24 04:03	
Dibromofluoromethane	103	80 - 120	12/27/24 04:03	
Toluene-d8	95.2	80 - 120	12/27/24 04:03	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/13/24
Sample Matrix:	WATER	**Date Received:**	12/13/24 10:00
Sample Name:	Trip Blank #7	**Units:**	µg/L
Lab Code:	HN2410635-050		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/27/24 03:39	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/27/24 03:39	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/27/24 03:39	NA	
2-Methylnaphthalene	ND	U	5.00	1	12/27/24 03:39	NA	
Acetone	ND	U	10.0	1	12/27/24 03:39	NA	
Benzene	ND	U	1.00	1	12/27/24 03:39	NA	
Di-isopropylether (DIPE)	ND	SU	1.00	1	12/27/24 03:39	NA	
Ethylbenzene	ND	U	1.00	1	12/27/24 03:39	NA	
m+p-Xylene	ND	U	2.00	1	12/27/24 03:39	NA	
Naphthalene	ND	U	5.00	1	12/27/24 03:39	NA	
o-Xylene	ND	U	1.00	1	12/27/24 03:39	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/27/24 03:39	NA	
Toluene	ND	U	1.00	1	12/27/24 03:39	NA	
Total Xylene	ND	U	2.00	1	12/27/24 03:39	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	99.2	80 - 120	12/27/24 03:39	
4-Bromofluorobenzene	90.8	80 - 120	12/27/24 03:39	
Dibromofluoromethane	101	80 - 120	12/27/24 03:39	
Toluene-d8	99.1	80 - 120	12/27/24 03:39	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 10:07
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-400 AR	**Units:**	µg/L
Lab Code:	HN2410635-001		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
1,2,4,5-Tetrachlorobenzene	ND	U	5.00	1	12/17/24 16:53	12/16/24 09:27	
1,4-Dioxane (1,4- Diethyleneoxide)	ND	U	5.00	1	12/17/24 16:53	12/16/24 09:27	
1-Methylnaphthalene	**2.19**		0.100	1	12/17/24 16:53	12/16/24 09:27	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
2,3,4,6-Tetrachlorophenol	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
2,4,5-Trichlorophenol	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
2,4,6-Trichlorophenol	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
2,4-Dichlorophenol	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
2,4-Dimethylphenol	**19.8**		1.00	1	12/17/24 16:53	12/16/24 09:27	
2,4-Dinitrophenol	ND	U	5.00	1	12/17/24 16:53	12/16/24 09:27	
2,4-Dinitrotoluene (2,4-DNT)	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
2,6-Dinitrotoluene (2,6-DNT)	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
2-Chloronaphthalene	ND	U	0.100	1	12/17/24 16:53	12/16/24 09:27	
2-Chlorophenol	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
2-Methylnaphthalene	ND	U	0.100	1	12/17/24 16:53	12/16/24 09:27	
2-Methylphenol (o-Cresol)	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
2-Nitroaniline	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
2-Nitrophenol	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
3&4-Methylphenol	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
3,3'-Dichlorobenzidine	ND	U	5.00	1	12/17/24 16:53	12/16/24 09:27	
3-Nitroaniline	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
4-Bromophenyl phenyl ether (BDE-3)	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
4-Chloro-3-methylphenol	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
4-Chloroaniline	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
4-Chlorophenyl phenylether	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
4-Nitroaniline	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
4-Nitrophenol	ND	U	5.00	1	12/17/24 16:53	12/16/24 09:27	
Acenaphthene	ND	U	0.100	1	12/17/24 16:53	12/16/24 09:27	
Acenaphthylene	ND	U	0.100	1	12/17/24 16:53	12/16/24 09:27	
Acetophenone	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
Anthracene	ND	U	0.100	1	12/17/24 16:53	12/16/24 09:27	
Atrazine	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
Benzaldehyde	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
Benzo(a)anthracene	ND	U	0.100	1	12/17/24 16:53	12/16/24 09:27	
Benzo(a)pyrene	ND	U	0.100	1	12/17/24 16:53	12/16/24 09:27	
Benzo(b)fluoranthene	ND	U	0.100	1	12/17/24 16:53	12/16/24 09:27	
Benzo(g,h,i)perylene	ND	U	0.100	1	12/17/24 16:53	12/16/24 09:27	
Benzo(k)fluoranthene	ND	U	0.100	1	12/17/24 16:53	12/16/24 09:27	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 10:07
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-400 AR	**Units:**	µg/L
Lab Code:	HN2410635-001		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
bis(2-Chloroethyl) ether	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
Butyl benzyl phthalate	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
Caprolactam	ND	U	5.00	1	12/17/24 16:53	12/16/24 09:27	
Carbazole	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
Chrysene	ND	U	0.100	1	12/17/24 16:53	12/16/24 09:27	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
Dibenz(a,h) anthracene	ND	U	0.100	1	12/17/24 16:53	12/16/24 09:27	
Dibenzofuran	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
Diethyl phthalate	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
Dimethyl phthalate	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
Di-n-butyl phthalate	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
Di-n-octyl phthalate	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
Fluoranthene	ND	U	0.100	1	12/17/24 16:53	12/16/24 09:27	
Fluorene	ND	U	0.100	1	12/17/24 16:53	12/16/24 09:27	
Hexachlorobenzene	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
Hexachlorobutadiene	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
Hexachlorocyclopentadiene	ND	U	5.00	1	12/17/24 16:53	12/16/24 09:27	
Hexachloroethane	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
Indeno(1,2,3-cd) pyrene	ND	U	0.100	1	12/17/24 16:53	12/16/24 09:27	
Isophorone	ND	U	5.00	1	12/17/24 16:53	12/16/24 09:27	
Methylphenol, Total	ND	U	2.00	1	12/17/24 16:53	12/16/24 09:27	
Naphthalene	**1.73**		0.100	1	12/17/24 16:53	12/16/24 09:27	
Nitrobenzene	ND	SU	1.00	1	12/17/24 16:53	12/16/24 09:27	
n-Nitrosodi-n-propylamine	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
N-Nitrosodiphenylamine	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
Pentachlorophenol	ND	U	5.00	1	12/17/24 16:53	12/16/24 09:27	
Phenanthrene	ND	U	0.100	1	12/17/24 16:53	12/16/24 09:27	
Phenol	ND	U	1.00	1	12/17/24 16:53	12/16/24 09:27	
Pyrene	ND	U	0.100	1	12/17/24 16:53	12/16/24 09:27	
Pyridine	ND	U	10.0	1	12/17/24 16:53	12/16/24 09:27	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	75.4	38 - 103	12/17/24 16:53	
2-Fluorobiphenyl	60.1	36 - 96	12/17/24 16:53	
2-Fluorophenol	36.2	20 - 73	12/17/24 16:53	
4-Terphenyl-d14	68.6	44 - 114	12/17/24 16:53	
Nitrobenzene-d5	63.5	33 - 100	12/17/24 16:53	
Phenol-d6	20.2	10 - 48	12/17/24 16:53	

Analytical Report

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Sample Matrix: GROUNDWATER

Work Order: HN2410635
Date Collected: 12/09/24 10:45
Date Received: 12/13/24 10:00

Sample Name: UPG-400 BR
Lab Code: HN2410635-002

Units: µg/L

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	**11.9**		1.00	1	12/17/24 17:14	12/16/24 09:27	
1,2,4,5-Tetrachlorobenzene	ND	U	5.00	1	12/17/24 17:14	12/16/24 09:27	
1,4-Dioxane (1,4- Diethyleneoxide)	ND	U	5.00	1	12/17/24 17:14	12/16/24 09:27	
1-Methylnaphthalene	**122**		1.96	20	12/19/24 01:34	12/16/24 09:27	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
2,3,4,6-Tetrachlorophenol	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
2,4,5-Trichlorophenol	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
2,4,6-Trichlorophenol	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
2,4-Dichlorophenol	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
2,4-Dimethylphenol	**614**		19.6	20	12/19/24 01:34	12/16/24 09:27	
2,4-Dinitrophenol	ND	U	5.00	1	12/17/24 17:14	12/16/24 09:27	
2,4-Dinitrotoluene (2,4-DNT)	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
2,6-Dinitrotoluene (2,6-DNT)	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
2-Chloronaphthalene	ND	U	0.100	1	12/17/24 17:14	12/16/24 09:27	
2-Chlorophenol	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
2-Methylnaphthalene	ND	U	0.100	1	12/17/24 17:14	12/16/24 09:27	
2-Methylphenol (o-Cresol)	**191**		19.6	20	12/19/24 01:34	12/16/24 09:27	
2-Nitroaniline	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
2-Nitrophenol	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
3&4-Methylphenol	**829**		19.6	20	12/19/24 01:34	12/16/24 09:27	
3,3'-Dichlorobenzidine	ND	U	5.00	1	12/17/24 17:14	12/16/24 09:27	
3-Nitroaniline	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
4-Bromophenyl phenyl ether (BDE-3)	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
4-Chloro-3-methylphenol	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
4-Chloroaniline	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
4-Chlorophenyl phenylether	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
4-Nitroaniline	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
4-Nitrophenol	ND	U	5.00	1	12/17/24 17:14	12/16/24 09:27	
Acenaphthene	**5.09**		0.100	1	12/17/24 17:14	12/16/24 09:27	
Acenaphthylene	ND	U	0.100	1	12/17/24 17:14	12/16/24 09:27	
Acetophenone	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
Anthracene	ND	U	0.100	1	12/17/24 17:14	12/16/24 09:27	
Atrazine	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
Benzaldehyde	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
Benzo(a)anthracene	ND	U	0.100	1	12/17/24 17:14	12/16/24 09:27	
Benzo(a)pyrene	ND	U	0.100	1	12/17/24 17:14	12/16/24 09:27	
Benzo(b)fluoranthene	ND	U	0.100	1	12/17/24 17:14	12/16/24 09:27	
Benzo(g,h,i)perylene	ND	U	0.100	1	12/17/24 17:14	12/16/24 09:27	
Benzo(k)fluoranthene	ND	U	0.100	1	12/17/24 17:14	12/16/24 09:27	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 10:45
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-400 BR	**Units:**	µg/L
Lab Code:	HN2410635-002		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
bis(2-Chloroethyl) ether	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
Butyl benzyl phthalate	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
Caprolactam	ND	U	5.00	1	12/17/24 17:14	12/16/24 09:27	
Carbazole	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
Chrysene	ND	U	0.100	1	12/17/24 17:14	12/16/24 09:27	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
Dibenz(a,h) anthracene	ND	U	0.100	1	12/17/24 17:14	12/16/24 09:27	
Dibenzofuran	**6.20**		1.00	1	12/17/24 17:14	12/16/24 09:27	
Diethyl phthalate	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
Dimethyl phthalate	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
Di-n-butyl phthalate	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
Di-n-octyl phthalate	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
Fluoranthene	ND	U	0.100	1	12/17/24 17:14	12/16/24 09:27	
Fluorene	ND	U	0.100	1	12/17/24 17:14	12/16/24 09:27	
Hexachlorobenzene	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
Hexachlorobutadiene	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
Hexachlorocyclopentadiene	ND	U	5.00	1	12/17/24 17:14	12/16/24 09:27	
Hexachloroethane	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
Indeno(1,2,3-cd) pyrene	ND	U	0.100	1	12/17/24 17:14	12/16/24 09:27	
Isophorone	ND	U	5.00	1	12/17/24 17:14	12/16/24 09:27	
Methylphenol, Total	**1020**		39.2	20	12/19/24 01:34	12/16/24 09:27	
Naphthalene	**48.5**		0.100	1	12/17/24 17:14	12/16/24 09:27	
Nitrobenzene	ND	SU	1.00	1	12/17/24 17:14	12/16/24 09:27	
n-Nitrosodi-n-propylamine	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
N-Nitrosodiphenylamine	ND	U	1.00	1	12/17/24 17:14	12/16/24 09:27	
Pentachlorophenol	ND	U	5.00	1	12/17/24 17:14	12/16/24 09:27	
Phenanthrene	ND	U	0.100	1	12/17/24 17:14	12/16/24 09:27	
Phenol	**36.3**		1.00	1	12/17/24 17:14	12/16/24 09:27	
Pyrene	ND	U	0.100	1	12/17/24 17:14	12/16/24 09:27	
Pyridine	ND	U	10.0	1	12/17/24 17:14	12/16/24 09:27	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	82.3	38 - 103	12/17/24 17:14	
2-Fluorobiphenyl	68.4	36 - 96	12/17/24 17:14	
2-Fluorophenol	45.1	20 - 73	12/17/24 17:14	
4-Terphenyl-d14	72.1	44 - 114	12/17/24 17:14	
Nitrobenzene-d5	67.7	33 - 100	12/17/24 17:14	
Phenol-d6	21.2	10 - 48	12/17/24 17:14	

Analytical Report

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Sample Matrix: GROUNDWATER

Work Order: HN2410635
Date Collected: 12/09/24
Date Received: 12/13/24 10:00

Sample Name: DUP-1
Lab Code: HN2410635-003

Units: µg/L

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	**10.8**		1.00	1	12/17/24 17:36	12/16/24 09:27	
1,2,4,5-Tetrachlorobenzene	ND	U	5.00	1	12/17/24 17:36	12/16/24 09:27	
1,4-Dioxane (1,4- Diethyleneoxide)	ND	U	5.00	1	12/17/24 17:36	12/16/24 09:27	
1-Methylnaphthalene	**56.7**		0.972	10	12/19/24 02:01	12/16/24 09:27	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
2,3,4,6-Tetrachlorophenol	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
2,4,5-Trichlorophenol	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
2,4,6-Trichlorophenol	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
2,4-Dichlorophenol	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
2,4-Dimethylphenol	**300**		9.72	10	12/19/24 02:01	12/16/24 09:27	
2,4-Dinitrophenol	ND	U	5.00	1	12/17/24 17:36	12/16/24 09:27	
2,4-Dinitrotoluene (2,4-DNT)	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
2,6-Dinitrotoluene (2,6-DNT)	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
2-Chloronaphthalene	ND	U	0.100	1	12/17/24 17:36	12/16/24 09:27	
2-Chlorophenol	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
2-Methylnaphthalene	ND	U	0.100	1	12/17/24 17:36	12/16/24 09:27	
2-Methylphenol (o-Cresol)	**94.6**		9.72	10	12/19/24 02:01	12/16/24 09:27	
2-Nitroaniline	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
2-Nitrophenol	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
3&4-Methylphenol	**407**		9.72	10	12/19/24 02:01	12/16/24 09:27	
3,3'-Dichlorobenzidine	ND	U	5.00	1	12/17/24 17:36	12/16/24 09:27	
3-Nitroaniline	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
4-Bromophenyl phenyl ether (BDE-3)	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
4-Chloro-3-methylphenol	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
4-Chloroaniline	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
4-Chlorophenyl phenylether	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
4-Nitroaniline	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
4-Nitrophenol	ND	U	5.00	1	12/17/24 17:36	12/16/24 09:27	
Acenaphthene	**5.01**		0.100	1	12/17/24 17:36	12/16/24 09:27	
Acenaphthylene	ND	U	0.100	1	12/17/24 17:36	12/16/24 09:27	
Acetophenone	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
Anthracene	ND	U	0.100	1	12/17/24 17:36	12/16/24 09:27	
Atrazine	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
Benzaldehyde	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
Benzo(a)anthracene	ND	U	0.100	1	12/17/24 17:36	12/16/24 09:27	
Benzo(a)pyrene	ND	U	0.100	1	12/17/24 17:36	12/16/24 09:27	
Benzo(b)fluoranthene	ND	U	0.100	1	12/17/24 17:36	12/16/24 09:27	
Benzo(g,h,i)perylene	ND	U	0.100	1	12/17/24 17:36	12/16/24 09:27	
Benzo(k)fluoranthene	ND	U	0.100	1	12/17/24 17:36	12/16/24 09:27	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	DUP-1	**Units:**	µg/L
Lab Code:	HN2410635-003		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
bis(2-Chloroethyl) ether	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
Butyl benzyl phthalate	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
Caprolactam	ND	U	5.00	1	12/17/24 17:36	12/16/24 09:27	
Carbazole	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
Chrysene	ND	U	0.100	1	12/17/24 17:36	12/16/24 09:27	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
Dibenz(a,h) anthracene	ND	U	0.100	1	12/17/24 17:36	12/16/24 09:27	
Dibenzofuran	**5.82**		1.00	1	12/17/24 17:36	12/16/24 09:27	
Diethyl phthalate	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
Dimethyl phthalate	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
Di-n-butyl phthalate	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
Di-n-octyl phthalate	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
Fluoranthene	ND	U	0.100	1	12/17/24 17:36	12/16/24 09:27	
Fluorene	ND	U	0.100	1	12/17/24 17:36	12/16/24 09:27	
Hexachlorobenzene	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
Hexachlorobutadiene	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
Hexachlorocyclopentadiene	ND	U	5.00	1	12/17/24 17:36	12/16/24 09:27	
Hexachloroethane	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
Indeno(1,2,3-cd) pyrene	ND	U	0.100	1	12/17/24 17:36	12/16/24 09:27	
Isophorone	ND	U	5.00	1	12/17/24 17:36	12/16/24 09:27	
Methylphenol, Total	**502**		19.4	10	12/19/24 02:01	12/16/24 09:27	
Naphthalene	**41.9**		0.100	1	12/17/24 17:36	12/16/24 09:27	
Nitrobenzene	ND	SU	1.00	1	12/17/24 17:36	12/16/24 09:27	
n-Nitrosodi-n-propylamine	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
N-Nitrosodiphenylamine	ND	U	1.00	1	12/17/24 17:36	12/16/24 09:27	
Pentachlorophenol	ND	U	5.00	1	12/17/24 17:36	12/16/24 09:27	
Phenanthrene	ND	U	0.100	1	12/17/24 17:36	12/16/24 09:27	
Phenol	**34.8**		1.00	1	12/17/24 17:36	12/16/24 09:27	
Pyrene	ND	U	0.100	1	12/17/24 17:36	12/16/24 09:27	
Pyridine	ND	U	10.0	1	12/17/24 17:36	12/16/24 09:27	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	76.7	38 - 103	12/17/24 17:36	
2-Fluorobiphenyl	64.5	36 - 96	12/17/24 17:36	
2-Fluorophenol	44.0	20 - 73	12/17/24 17:36	
4-Terphenyl-d14	70.7	44 - 114	12/17/24 17:36	
Nitrobenzene-d5	64.4	33 - 100	12/17/24 17:36	
Phenol-d6	21.0	10 - 48	12/17/24 17:36	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 11:30
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-400 CR	**Units:**	µg/L
Lab Code:	HN2410635-004		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	**4.08**		1.00	1	12/17/24 17:58	12/16/24 09:27	
1,2,4,5-Tetrachlorobenzene	ND	U	5.00	1	12/17/24 17:58	12/16/24 09:27	
1,4-Dioxane (1,4- Diethyleneoxide)	ND	U	5.00	1	12/17/24 17:58	12/16/24 09:27	
1-Methylnaphthalene	**31.5**		0.100	1	12/17/24 17:58	12/16/24 09:27	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
2,3,4,6-Tetrachlorophenol	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
2,4,5-Trichlorophenol	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
2,4,6-Trichlorophenol	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
2,4-Dichlorophenol	**6.43**		1.00	1	12/17/24 17:58	12/16/24 09:27	
2,4-Dimethylphenol	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
2,4-Dinitrophenol	ND	U	5.00	1	12/17/24 17:58	12/16/24 09:27	
2,4-Dinitrotoluene (2,4-DNT)	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
2,6-Dinitrotoluene (2,6-DNT)	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
2-Chloronaphthalene	ND	U	0.100	1	12/17/24 17:58	12/16/24 09:27	
2-Chlorophenol	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
2-Methylnaphthalene	ND	U	0.100	1	12/17/24 17:58	12/16/24 09:27	
2-Methylphenol (o-Cresol)	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
2-Nitroaniline	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
2-Nitrophenol	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
3&4-Methylphenol	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
3,3'-Dichlorobenzidine	ND	U	5.00	1	12/17/24 17:58	12/16/24 09:27	
3-Nitroaniline	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
4-Bromophenyl phenyl ether (BDE-3)	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
4-Chloro-3-methylphenol	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
4-Chloroaniline	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
4-Chlorophenyl phenylether	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
4-Nitroaniline	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
4-Nitrophenol	ND	U	5.00	1	12/17/24 17:58	12/16/24 09:27	
Acenaphthene	**1.54**		0.100	1	12/17/24 17:58	12/16/24 09:27	
Acenaphthylene	ND	U	0.100	1	12/17/24 17:58	12/16/24 09:27	
Acetophenone	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
Anthracene	ND	U	0.100	1	12/17/24 17:58	12/16/24 09:27	
Atrazine	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
Benzaldehyde	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
Benzo(a)anthracene	ND	U	0.100	1	12/17/24 17:58	12/16/24 09:27	
Benzo(a)pyrene	ND	U	0.100	1	12/17/24 17:58	12/16/24 09:27	
Benzo(b)fluoranthene	ND	U	0.100	1	12/17/24 17:58	12/16/24 09:27	
Benzo(g,h,i)perylene	ND	U	0.100	1	12/17/24 17:58	12/16/24 09:27	
Benzo(k)fluoranthene	ND	U	0.100	1	12/17/24 17:58	12/16/24 09:27	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 11:30
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-400 CR	**Units:**	µg/L
Lab Code:	HN2410635-004		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
bis(2-Chloroethyl) ether	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
Butyl benzyl phthalate	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
Caprolactam	ND	U	5.00	1	12/17/24 17:58	12/16/24 09:27	
Carbazole	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
Chrysene	ND	U	0.100	1	12/17/24 17:58	12/16/24 09:27	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
Dibenz(a,h) anthracene	ND	U	0.100	1	12/17/24 17:58	12/16/24 09:27	
Dibenzofuran	**3.18**		1.00	1	12/17/24 17:58	12/16/24 09:27	
Diethyl phthalate	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
Dimethyl phthalate	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
Di-n-butyl phthalate	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
Di-n-octyl phthalate	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
Fluoranthene	**0.136**		0.100	1	12/17/24 17:58	12/16/24 09:27	
Fluorene	**0.731**		0.100	1	12/17/24 17:58	12/16/24 09:27	
Hexachlorobenzene	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
Hexachlorobutadiene	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
Hexachlorocyclopentadiene	ND	U	5.00	1	12/17/24 17:58	12/16/24 09:27	
Hexachloroethane	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
Indeno(1,2,3-cd) pyrene	ND	U	0.100	1	12/17/24 17:58	12/16/24 09:27	
Isophorone	ND	U	5.00	1	12/17/24 17:58	12/16/24 09:27	
Methylphenol, Total	ND	U	2.00	1	12/17/24 17:58	12/16/24 09:27	
Naphthalene	**16.0**		0.100	1	12/17/24 17:58	12/16/24 09:27	
Nitrobenzene	ND	SU	1.00	1	12/17/24 17:58	12/16/24 09:27	
n-Nitrosodi-n-propylamine	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
N-Nitrosodiphenylamine	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
Pentachlorophenol	ND	U	5.00	1	12/17/24 17:58	12/16/24 09:27	
Phenanthrene	**0.497**		0.100	1	12/17/24 17:58	12/16/24 09:27	
Phenol	ND	U	1.00	1	12/17/24 17:58	12/16/24 09:27	
Pyrene	ND	U	0.100	1	12/17/24 17:58	12/16/24 09:27	
Pyridine	ND	U	10.0	1	12/17/24 17:58	12/16/24 09:27	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	78.9	38 - 103	12/17/24 17:58	
2-Fluorobiphenyl	64.9	36 - 96	12/17/24 17:58	
2-Fluorophenol	36.3	20 - 73	12/17/24 17:58	
4-Terphenyl-d14	65.5	44 - 114	12/17/24 17:58	
Nitrobenzene-d5	63.8	33 - 100	12/17/24 17:58	
Phenol-d6	21.6	10 - 48	12/17/24 17:58	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 12:50
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-700 A	**Units:**	µg/L
Lab Code:	HN2410635-005		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
1,2,4,5-Tetrachlorobenzene	ND U	5.00	1	12/17/24 18:20	12/16/24 09:27	
1,4-Dioxane (1,4- Diethyleneoxide)	ND U	5.00	1	12/17/24 18:20	12/16/24 09:27	
1-Methylnaphthalene	ND U	0.100	1	12/17/24 18:20	12/16/24 09:27	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
2,3,4,6-Tetrachlorophenol	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
2,4,5-Trichlorophenol	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
2,4,6-Trichlorophenol	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
2,4-Dichlorophenol	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
2,4-Dimethylphenol	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
2,4-Dinitrophenol	ND U	5.00	1	12/17/24 18:20	12/16/24 09:27	
2,4-Dinitrotoluene (2,4-DNT)	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
2,6-Dinitrotoluene (2,6-DNT)	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
2-Chloronaphthalene	ND U	0.100	1	12/17/24 18:20	12/16/24 09:27	
2-Chlorophenol	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
2-Methylnaphthalene	ND U	0.100	1	12/17/24 18:20	12/16/24 09:27	
2-Methylphenol (o-Cresol)	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
2-Nitroaniline	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
2-Nitrophenol	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
3&4-Methylphenol	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
3,3'-Dichlorobenzidine	ND U	5.00	1	12/17/24 18:20	12/16/24 09:27	
3-Nitroaniline	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
4-Bromophenyl phenyl ether (BDE-3)	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
4-Chloro-3-methylphenol	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
4-Chloroaniline	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
4-Chlorophenyl phenylether	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
4-Nitroaniline	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
4-Nitrophenol	ND U	5.00	1	12/17/24 18:20	12/16/24 09:27	
Acenaphthene	ND U	0.100	1	12/17/24 18:20	12/16/24 09:27	
Acenaphthylene	ND U	0.100	1	12/17/24 18:20	12/16/24 09:27	
Acetophenone	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
Anthracene	ND U	0.100	1	12/17/24 18:20	12/16/24 09:27	
Atrazine	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
Benzaldehyde	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
Benzo(a)anthracene	ND U	0.100	1	12/17/24 18:20	12/16/24 09:27	
Benzo(a)pyrene	ND U	0.100	1	12/17/24 18:20	12/16/24 09:27	
Benzo(b)fluoranthene	ND U	0.100	1	12/17/24 18:20	12/16/24 09:27	
Benzo(g,h,i)perylene	ND U	0.100	1	12/17/24 18:20	12/16/24 09:27	
Benzo(k)fluoranthene	ND U	0.100	1	12/17/24 18:20	12/16/24 09:27	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 12:50
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-700 A	**Units:**	µg/L
Lab Code:	HN2410635-005		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
bis(2-Chloroethyl) ether	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
Butyl benzyl phthalate	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
Caprolactam	ND U	5.00	1	12/17/24 18:20	12/16/24 09:27	
Carbazole	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
Chrysene	ND U	0.100	1	12/17/24 18:20	12/16/24 09:27	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
Dibenz(a,h) anthracene	ND U	0.100	1	12/17/24 18:20	12/16/24 09:27	
Dibenzofuran	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
Diethyl phthalate	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
Dimethyl phthalate	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
Di-n-butyl phthalate	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
Di-n-octyl phthalate	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
Fluoranthene	ND U	0.100	1	12/17/24 18:20	12/16/24 09:27	
Fluorene	ND U	0.100	1	12/17/24 18:20	12/16/24 09:27	
Hexachlorobenzene	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
Hexachlorobutadiene	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
Hexachlorocyclopentadiene	ND U	5.00	1	12/17/24 18:20	12/16/24 09:27	
Hexachloroethane	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
Indeno(1,2,3-cd) pyrene	ND U	0.100	1	12/17/24 18:20	12/16/24 09:27	
Isophorone	ND U	5.00	1	12/17/24 18:20	12/16/24 09:27	
Methylphenol, Total	ND U	2.00	1	12/17/24 18:20	12/16/24 09:27	
Naphthalene	ND U	0.100	1	12/17/24 18:20	12/16/24 09:27	
Nitrobenzene	ND SU	1.00	1	12/17/24 18:20	12/16/24 09:27	
n-Nitrosodi-n-propylamine	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
N-Nitrosodiphenylamine	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
Pentachlorophenol	ND U	5.00	1	12/17/24 18:20	12/16/24 09:27	
Phenanthrene	ND U	0.100	1	12/17/24 18:20	12/16/24 09:27	
Phenol	ND U	1.00	1	12/17/24 18:20	12/16/24 09:27	
Pyrene	ND U	0.100	1	12/17/24 18:20	12/16/24 09:27	
Pyridine	ND U	10.0	1	12/17/24 18:20	12/16/24 09:27	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	84.4	38 - 103	12/17/24 18:20	
2-Fluorobiphenyl	67.0	36 - 96	12/17/24 18:20	
2-Fluorophenol	38.3	20 - 73	12/17/24 18:20	
4-Terphenyl-d14	75.6	44 - 114	12/17/24 18:20	
Nitrobenzene-d5	67.8	33 - 100	12/17/24 18:20	
Phenol-d6	22.2	10 - 48	12/17/24 18:20	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 13:35
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-700 B	**Units:**	µg/L
Lab Code:	HN2410635-006		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
1,2,4,5-Tetrachlorobenzene	ND U	5.00	1	12/17/24 18:41	12/16/24 09:27	
1,4-Dioxane (1,4- Diethyleneoxide)	ND U	5.00	1	12/17/24 18:41	12/16/24 09:27	
1-Methylnaphthalene	ND U	0.100	1	12/17/24 18:41	12/16/24 09:27	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
2,3,4,6-Tetrachlorophenol	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
2,4,5-Trichlorophenol	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
2,4,6-Trichlorophenol	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
2,4-Dichlorophenol	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
2,4-Dimethylphenol	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
2,4-Dinitrophenol	ND U	5.00	1	12/17/24 18:41	12/16/24 09:27	
2,4-Dinitrotoluene (2,4-DNT)	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
2,6-Dinitrotoluene (2,6-DNT)	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
2-Chloronaphthalene	ND U	0.100	1	12/17/24 18:41	12/16/24 09:27	
2-Chlorophenol	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
2-Methylnaphthalene	ND U	0.100	1	12/17/24 18:41	12/16/24 09:27	
2-Methylphenol (o-Cresol)	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
2-Nitroaniline	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
2-Nitrophenol	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
3&4-Methylphenol	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
3,3'-Dichlorobenzidine	ND U	5.00	1	12/17/24 18:41	12/16/24 09:27	
3-Nitroaniline	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
4-Bromophenyl phenyl ether (BDE-3)	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
4-Chloro-3-methylphenol	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
4-Chloroaniline	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
4-Chlorophenyl phenylether	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
4-Nitroaniline	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
4-Nitrophenol	ND U	5.00	1	12/17/24 18:41	12/16/24 09:27	
Acenaphthene	ND U	0.100	1	12/17/24 18:41	12/16/24 09:27	
Acenaphthylene	ND U	0.100	1	12/17/24 18:41	12/16/24 09:27	
Acetophenone	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
Anthracene	ND U	0.100	1	12/17/24 18:41	12/16/24 09:27	
Atrazine	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
Benzaldehyde	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
Benzo(a)anthracene	ND U	0.100	1	12/17/24 18:41	12/16/24 09:27	
Benzo(a)pyrene	ND U	0.100	1	12/17/24 18:41	12/16/24 09:27	
Benzo(b)fluoranthene	ND U	0.100	1	12/17/24 18:41	12/16/24 09:27	
Benzo(g,h,i)perylene	ND U	0.100	1	12/17/24 18:41	12/16/24 09:27	
Benzo(k)fluoranthene	ND U	0.100	1	12/17/24 18:41	12/16/24 09:27	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 13:35
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-700 B	**Units:**	µg/L
Lab Code:	HN2410635-006		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
bis(2-Chloroethyl) ether	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
Butyl benzyl phthalate	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
Caprolactam	ND U	5.00	1	12/17/24 18:41	12/16/24 09:27	
Carbazole	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
Chrysene	ND U	0.100	1	12/17/24 18:41	12/16/24 09:27	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
Dibenz(a,h) anthracene	ND U	0.100	1	12/17/24 18:41	12/16/24 09:27	
Dibenzofuran	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
Diethyl phthalate	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
Dimethyl phthalate	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
Di-n-butyl phthalate	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
Di-n-octyl phthalate	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
Fluoranthene	ND U	0.100	1	12/17/24 18:41	12/16/24 09:27	
Fluorene	ND U	0.100	1	12/17/24 18:41	12/16/24 09:27	
Hexachlorobenzene	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
Hexachlorobutadiene	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
Hexachlorocyclopentadiene	ND U	5.00	1	12/17/24 18:41	12/16/24 09:27	
Hexachloroethane	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
Indeno(1,2,3-cd) pyrene	ND U	0.100	1	12/17/24 18:41	12/16/24 09:27	
Isophorone	ND U	5.00	1	12/17/24 18:41	12/16/24 09:27	
Methylphenol, Total	ND U	2.00	1	12/17/24 18:41	12/16/24 09:27	
Naphthalene	ND U	0.100	1	12/17/24 18:41	12/16/24 09:27	
Nitrobenzene	ND SU	1.00	1	12/17/24 18:41	12/16/24 09:27	
n-Nitrosodi-n-propylamine	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
N-Nitrosodiphenylamine	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
Pentachlorophenol	ND U	5.00	1	12/17/24 18:41	12/16/24 09:27	
Phenanthrene	ND U	0.100	1	12/17/24 18:41	12/16/24 09:27	
Phenol	ND U	1.00	1	12/17/24 18:41	12/16/24 09:27	
Pyrene	ND U	0.100	1	12/17/24 18:41	12/16/24 09:27	
Pyridine	ND U	10.0	1	12/17/24 18:41	12/16/24 09:27	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	74.0	38 - 103	12/17/24 18:41	
2-Fluorobiphenyl	60.9	36 - 96	12/17/24 18:41	
2-Fluorophenol	33.8	20 - 73	12/17/24 18:41	
4-Terphenyl-d14	74.9	44 - 114	12/17/24 18:41	
Nitrobenzene-d5	59.8	33 - 100	12/17/24 18:41	
Phenol-d6	19.5	10 - 48	12/17/24 18:41	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 14:05
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-700 C	**Units:**	µg/L
Lab Code:	HN2410635-007		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
1,2,4,5-Tetrachlorobenzene	ND U	5.00	1	12/17/24 19:03	12/16/24 09:27	
1,4-Dioxane (1,4- Diethyleneoxide)	ND U	5.00	1	12/17/24 19:03	12/16/24 09:27	
1-Methylnaphthalene	ND U	0.100	1	12/17/24 19:03	12/16/24 09:27	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
2,3,4,6-Tetrachlorophenol	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
2,4,5-Trichlorophenol	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
2,4,6-Trichlorophenol	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
2,4-Dichlorophenol	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
2,4-Dimethylphenol	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
2,4-Dinitrophenol	ND U	5.00	1	12/17/24 19:03	12/16/24 09:27	
2,4-Dinitrotoluene (2,4-DNT)	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
2,6-Dinitrotoluene (2,6-DNT)	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
2-Chloronaphthalene	ND U	0.100	1	12/17/24 19:03	12/16/24 09:27	
2-Chlorophenol	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
2-Methylnaphthalene	ND U	0.100	1	12/17/24 19:03	12/16/24 09:27	
2-Methylphenol (o-Cresol)	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
2-Nitroaniline	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
2-Nitrophenol	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
3&4-Methylphenol	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
3,3'-Dichlorobenzidine	ND U	5.00	1	12/17/24 19:03	12/16/24 09:27	
3-Nitroaniline	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
4-Bromophenyl phenyl ether (BDE-3)	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
4-Chloro-3-methylphenol	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
4-Chloroaniline	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
4-Chlorophenyl phenylether	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
4-Nitroaniline	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
4-Nitrophenol	ND U	5.00	1	12/17/24 19:03	12/16/24 09:27	
Acenaphthene	ND U	0.100	1	12/17/24 19:03	12/16/24 09:27	
Acenaphthylene	ND U	0.100	1	12/17/24 19:03	12/16/24 09:27	
Acetophenone	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
Anthracene	ND U	0.100	1	12/17/24 19:03	12/16/24 09:27	
Atrazine	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
Benzaldehyde	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
Benzo(a)anthracene	ND U	0.100	1	12/17/24 19:03	12/16/24 09:27	
Benzo(a)pyrene	ND U	0.100	1	12/17/24 19:03	12/16/24 09:27	
Benzo(b)fluoranthene	ND U	0.100	1	12/17/24 19:03	12/16/24 09:27	
Benzo(g,h,i)perylene	ND U	0.100	1	12/17/24 19:03	12/16/24 09:27	
Benzo(k)fluoranthene	ND U	0.100	1	12/17/24 19:03	12/16/24 09:27	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 14:05
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-700 C	**Units:**	µg/L
Lab Code:	HN2410635-007		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
bis(2-Chloroethyl) ether	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
Butyl benzyl phthalate	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
Caprolactam	ND U	5.00	1	12/17/24 19:03	12/16/24 09:27	
Carbazole	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
Chrysene	ND U	0.100	1	12/17/24 19:03	12/16/24 09:27	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
Dibenz(a,h) anthracene	ND U	0.100	1	12/17/24 19:03	12/16/24 09:27	
Dibenzofuran	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
Diethyl phthalate	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
Dimethyl phthalate	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
Di-n-butyl phthalate	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
Di-n-octyl phthalate	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
Fluoranthene	ND U	0.100	1	12/17/24 19:03	12/16/24 09:27	
Fluorene	ND U	0.100	1	12/17/24 19:03	12/16/24 09:27	
Hexachlorobenzene	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
Hexachlorobutadiene	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
Hexachlorocyclopentadiene	ND U	5.00	1	12/17/24 19:03	12/16/24 09:27	
Hexachloroethane	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
Indeno(1,2,3-cd) pyrene	ND U	0.100	1	12/17/24 19:03	12/16/24 09:27	
Isophorone	ND U	5.00	1	12/17/24 19:03	12/16/24 09:27	
Methylphenol, Total	ND U	2.00	1	12/17/24 19:03	12/16/24 09:27	
Naphthalene	ND U	0.100	1	12/17/24 19:03	12/16/24 09:27	
Nitrobenzene	ND SU	1.00	1	12/17/24 19:03	12/16/24 09:27	
n-Nitrosodi-n-propylamine	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
N-Nitrosodiphenylamine	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
Pentachlorophenol	ND U	5.00	1	12/17/24 19:03	12/16/24 09:27	
Phenanthrene	ND U	0.100	1	12/17/24 19:03	12/16/24 09:27	
Phenol	ND U	1.00	1	12/17/24 19:03	12/16/24 09:27	
Pyrene	ND U	0.100	1	12/17/24 19:03	12/16/24 09:27	
Pyridine	ND U	10.0	1	12/17/24 19:03	12/16/24 09:27	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	54.6	38 - 103	12/17/24 19:03	
2-Fluorobiphenyl	48.6	36 - 96	12/17/24 19:03	
2-Fluorophenol	25.8	20 - 73	12/17/24 19:03	
4-Terphenyl-d14	60.3	44 - 114	12/17/24 19:03	
Nitrobenzene-d5	47.3	33 - 100	12/17/24 19:03	
Phenol-d6	14.7	10 - 48	12/17/24 19:03	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 14:50
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1400 A	**Units:**	µg/L
Lab Code:	HN2410635-008		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND U	1.00	1	12/17/24 19:25	12/16/24 09:27	
1,2,4,5-Tetrachlorobenzene	ND U	5.00	1	12/17/24 19:25	12/16/24 09:27	
1,4-Dioxane (1,4- Diethyleneoxide)	ND U	5.00	1	12/17/24 19:25	12/16/24 09:27	
1-Methylnaphthalene	ND U	0.100	1	12/17/24 19:25	12/16/24 09:27	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND U	1.00	1	12/17/24 19:25	12/16/24 09:27	
2,3,4,6-Tetrachlorophenol	ND U	1.00	1	12/17/24 19:25	12/16/24 09:27	
2,4,5-Trichlorophenol	ND U	1.00	1	12/17/24 19:25	12/16/24 09:27	
2,4,6-Trichlorophenol	ND U	1.00	1	12/17/24 19:25	12/16/24 09:27	
2,4-Dichlorophenol	ND U	1.00	1	12/17/24 19:25	12/16/24 09:27	
2,4-Dimethylphenol	ND U	1.00	1	12/17/24 19:25	12/16/24 09:27	
2,4-Dinitrophenol	ND U	5.00	1	12/17/24 19:25	12/16/24 09:27	
2,4-Dinitrotoluene (2,4-DNT)	ND U	1.00	1	12/17/24 19:25	12/16/24 09:27	
2,6-Dinitrotoluene (2,6-DNT)	ND U	1.00	1	12/17/24 19:25	12/16/24 09:27	
2-Chloronaphthalene	ND U	0.100	1	12/17/24 19:25	12/16/24 09:27	
2-Chlorophenol	ND U	1.00	1	12/17/24 19:25	12/16/24 09:27	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND U	1.00	1	12/17/24 19:25	12/16/24 09:27	
2-Methylnaphthalene	ND U	0.100	1	12/17/24 19:25	12/16/24 09:27	
2-Methylphenol (o-Cresol)	ND U	1.00	1	12/17/24 19:25	12/16/24 09:27	
2-Nitroaniline	ND U	1.00	1	12/17/24 19:25	12/16/24 09:27	
2-Nitrophenol	ND U	1.00	1	12/17/24 19:25	12/16/24 09:27	
3&4-Methylphenol	ND U	1.00	1	12/17/24 19:25	12/16/24 09:27	
3,3'-Dichlorobenzidine	ND U	5.00	1	12/17/24 19:25	12/16/24 09:27	
3-Nitroaniline	ND U	1.00	1	12/17/24 19:25	12/16/24 09:27	
4-Bromophenyl phenyl ether (BDE-3)	ND U	1.00	1	12/17/24 19:25	12/16/24 09:27	
4-Chloro-3-methylphenol	ND U	1.00	1	12/17/24 19:25	12/16/24 09:27	
4-Chloroaniline	ND U	1.00	1	12/17/24 19:25	12/16/24 09:27	
4-Chlorophenyl phenylether	ND U	1.00	1	12/17/24 19:25	12/16/24 09:27	
4-Nitroaniline	ND U	1.00	1	12/17/24 19:25	12/16/24 09:27	
4-Nitrophenol	ND U	5.00	1	12/17/24 19:25	12/16/24 09:27	
Acenaphthene	ND U	0.100	1	12/17/24 19:25	12/16/24 09:27	
Acenaphthylene	ND U	0.100	1	12/17/24 19:25	12/16/24 09:27	
Acetophenone	ND U	1.00	1	12/17/24 19:25	12/16/24 09:27	
Anthracene	ND U	0.100	1	12/17/24 19:25	12/16/24 09:27	
Atrazine	ND U	1.00	1	12/17/24 19:25	12/16/24 09:27	
Benzaldehyde	ND U	1.00	1	12/17/24 19:25	12/16/24 09:27	
Benzo(a)anthracene	ND U	0.100	1	12/17/24 19:25	12/16/24 09:27	
Benzo(a)pyrene	ND U	0.100	1	12/17/24 19:25	12/16/24 09:27	
Benzo(b)fluoranthene	ND U	0.100	1	12/17/24 19:25	12/16/24 09:27	
Benzo(g,h,i)perylene	ND U	0.100	1	12/17/24 19:25	12/16/24 09:27	
Benzo(k)fluoranthene	ND U	0.100	1	12/17/24 19:25	12/16/24 09:27	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 14:50
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1400 A	**Units:**	µg/L
Lab Code:	HN2410635-008		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND	U	1.00	1	12/17/24 19:25	12/16/24 09:27	
bis(2-Chloroethyl) ether	ND	U	1.00	1	12/17/24 19:25	12/16/24 09:27	
Butyl benzyl phthalate	ND	U	1.00	1	12/17/24 19:25	12/16/24 09:27	
Caprolactam	ND	U	5.00	1	12/17/24 19:25	12/16/24 09:27	
Carbazole	ND	U	1.00	1	12/17/24 19:25	12/16/24 09:27	
Chrysene	ND	U	0.100	1	12/17/24 19:25	12/16/24 09:27	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND	U	1.00	1	12/17/24 19:25	12/16/24 09:27	
Dibenz(a,h) anthracene	ND	U	0.100	1	12/17/24 19:25	12/16/24 09:27	
Dibenzofuran	ND	U	1.00	1	12/17/24 19:25	12/16/24 09:27	
Diethyl phthalate	ND	U	1.00	1	12/17/24 19:25	12/16/24 09:27	
Dimethyl phthalate	ND	U	1.00	1	12/17/24 19:25	12/16/24 09:27	
Di-n-butyl phthalate	ND	U	1.00	1	12/17/24 19:25	12/16/24 09:27	
Di-n-octyl phthalate	ND	U	1.00	1	12/17/24 19:25	12/16/24 09:27	
Fluoranthene	ND	U	0.100	1	12/17/24 19:25	12/16/24 09:27	
Fluorene	ND	U	0.100	1	12/17/24 19:25	12/16/24 09:27	
Hexachlorobenzene	ND	U	1.00	1	12/17/24 19:25	12/16/24 09:27	
Hexachlorobutadiene	ND	U	1.00	1	12/17/24 19:25	12/16/24 09:27	
Hexachlorocyclopentadiene	ND	U	5.00	1	12/17/24 19:25	12/16/24 09:27	
Hexachloroethane	ND	U	1.00	1	12/17/24 19:25	12/16/24 09:27	
Indeno(1,2,3-cd) pyrene	ND	U	0.100	1	12/17/24 19:25	12/16/24 09:27	
Isophorone	ND	U	5.00	1	12/17/24 19:25	12/16/24 09:27	
Methylphenol, Total	ND	U	2.00	1	12/17/24 19:25	12/16/24 09:27	
Naphthalene	**0.248**		0.100	1	12/17/24 19:25	12/16/24 09:27	
Nitrobenzene	ND	SU	1.00	1	12/17/24 19:25	12/16/24 09:27	
n-Nitrosodi-n-propylamine	ND	U	1.00	1	12/17/24 19:25	12/16/24 09:27	
N-Nitrosodiphenylamine	ND	U	1.00	1	12/17/24 19:25	12/16/24 09:27	
Pentachlorophenol	ND	U	5.00	1	12/17/24 19:25	12/16/24 09:27	
Phenanthrene	ND	U	0.100	1	12/17/24 19:25	12/16/24 09:27	
Phenol	ND	U	1.00	1	12/17/24 19:25	12/16/24 09:27	
Pyrene	ND	U	0.100	1	12/17/24 19:25	12/16/24 09:27	
Pyridine	ND	U	10.0	1	12/17/24 19:25	12/16/24 09:27	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	67.4	38 - 103	12/17/24 19:25	
2-Fluorobiphenyl	50.2	36 - 96	12/17/24 19:25	
2-Fluorophenol	24.3	20 - 73	12/17/24 19:25	
4-Terphenyl-d14	62.1	44 - 114	12/17/24 19:25	
Nitrobenzene-d5	48.9	33 - 100	12/17/24 19:25	
Phenol-d6	14.4	10 - 48	12/17/24 19:25	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 15:35
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1300 A	**Units:**	µg/L
Lab Code:	HN2410635-009		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
1,2,4,5-Tetrachlorobenzene	ND	U	5.00	1	12/17/24 19:46	12/16/24 09:27	
1,4-Dioxane (1,4- Diethyleneoxide)	ND	U	5.00	1	12/17/24 19:46	12/16/24 09:27	
1-Methylnaphthalene	**13.3**		0.100	1	12/17/24 19:46	12/16/24 09:27	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
2,3,4,6-Tetrachlorophenol	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
2,4,5-Trichlorophenol	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
2,4,6-Trichlorophenol	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
2,4-Dichlorophenol	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
2,4-Dimethylphenol	**279**		9.90	10	12/19/24 02:28	12/16/24 09:27	
2,4-Dinitrophenol	ND	U	5.00	1	12/17/24 19:46	12/16/24 09:27	
2,4-Dinitrotoluene (2,4-DNT)	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
2,6-Dinitrotoluene (2,6-DNT)	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
2-Chloronaphthalene	ND	U	0.100	1	12/17/24 19:46	12/16/24 09:27	
2-Chlorophenol	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
2-Methylnaphthalene	**4.73**		0.100	1	12/17/24 19:46	12/16/24 09:27	
2-Methylphenol (o-Cresol)	**43.5**		1.00	1	12/17/24 19:46	12/16/24 09:27	
2-Nitroaniline	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
2-Nitrophenol	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
3&4-Methylphenol	**64.2**		9.90	10	12/19/24 02:28	12/16/24 09:27	
3,3'-Dichlorobenzidine	ND	U	5.00	1	12/17/24 19:46	12/16/24 09:27	
3-Nitroaniline	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
4-Bromophenyl phenyl ether (BDE-3)	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
4-Chloro-3-methylphenol	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
4-Chloroaniline	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
4-Chlorophenyl phenylether	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
4-Nitroaniline	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
4-Nitrophenol	ND	U	5.00	1	12/17/24 19:46	12/16/24 09:27	
Acenaphthene	ND	U	0.100	1	12/17/24 19:46	12/16/24 09:27	
Acenaphthylene	ND	U	0.100	1	12/17/24 19:46	12/16/24 09:27	
Acetophenone	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
Anthracene	ND	U	0.100	1	12/17/24 19:46	12/16/24 09:27	
Atrazine	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
Benzaldehyde	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
Benzo(a)anthracene	ND	U	0.100	1	12/17/24 19:46	12/16/24 09:27	
Benzo(a)pyrene	ND	U	0.100	1	12/17/24 19:46	12/16/24 09:27	
Benzo(b)fluoranthene	ND	U	0.100	1	12/17/24 19:46	12/16/24 09:27	
Benzo(g,h,i)perylene	ND	U	0.100	1	12/17/24 19:46	12/16/24 09:27	
Benzo(k)fluoranthene	ND	U	0.100	1	12/17/24 19:46	12/16/24 09:27	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 15:35
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1300 A	**Units:**	µg/L
Lab Code:	HN2410635-009		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
bis(2-Chloroethyl) ether	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
Butyl benzyl phthalate	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
Caprolactam	ND	U	5.00	1	12/17/24 19:46	12/16/24 09:27	
Carbazole	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
Chrysene	ND	U	0.100	1	12/17/24 19:46	12/16/24 09:27	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
Dibenz(a,h) anthracene	ND	U	0.100	1	12/17/24 19:46	12/16/24 09:27	
Dibenzofuran	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
Diethyl phthalate	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
Dimethyl phthalate	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
Di-n-butyl phthalate	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
Di-n-octyl phthalate	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
Fluoranthene	ND	U	0.100	1	12/17/24 19:46	12/16/24 09:27	
Fluorene	ND	U	0.100	1	12/17/24 19:46	12/16/24 09:27	
Hexachlorobenzene	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
Hexachlorobutadiene	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
Hexachlorocyclopentadiene	ND	U	5.00	1	12/17/24 19:46	12/16/24 09:27	
Hexachloroethane	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
Indeno(1,2,3-cd) pyrene	ND	U	0.100	1	12/17/24 19:46	12/16/24 09:27	
Isophorone	ND	U	5.00	1	12/17/24 19:46	12/16/24 09:27	
Methylphenol, Total	**108**		19.8	10	12/19/24 02:28	12/16/24 09:27	
Naphthalene	**107**		0.990	10	12/19/24 02:28	12/16/24 09:27	
Nitrobenzene	ND	SU	1.00	1	12/17/24 19:46	12/16/24 09:27	
n-Nitrosodi-n-propylamine	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
N-Nitrosodiphenylamine	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
Pentachlorophenol	ND	U	5.00	1	12/17/24 19:46	12/16/24 09:27	
Phenanthrene	ND	U	0.100	1	12/17/24 19:46	12/16/24 09:27	
Phenol	ND	U	1.00	1	12/17/24 19:46	12/16/24 09:27	
Pyrene	ND	U	0.100	1	12/17/24 19:46	12/16/24 09:27	
Pyridine	ND	U	10.0	1	12/17/24 19:46	12/16/24 09:27	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	75.6	38 - 103	12/17/24 19:46	
2-Fluorobiphenyl	67.2	36 - 96	12/17/24 19:46	
2-Fluorophenol	41.8	20 - 73	12/17/24 19:46	
4-Terphenyl-d14	70.3	44 - 114	12/17/24 19:46	
Nitrobenzene-d5	67.9	33 - 100	12/17/24 19:46	
Phenol-d6	21.9	10 - 48	12/17/24 19:46	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 16:20
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1300 B	**Units:**	µg/L
Lab Code:	HN2410635-010		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
1,2,4,5-Tetrachlorobenzene	ND	U	5.00	1	12/17/24 20:08	12/16/24 09:27	
1,4-Dioxane (1,4- Diethyleneoxide)	ND	U	5.00	1	12/17/24 20:08	12/16/24 09:27	
1-Methylnaphthalene	**74.2**		0.966	10	12/19/24 02:55	12/16/24 09:27	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
2,3,4,6-Tetrachlorophenol	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
2,4,5-Trichlorophenol	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
2,4,6-Trichlorophenol	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
2,4-Dichlorophenol	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
2,4-Dimethylphenol	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
2,4-Dinitrophenol	ND	U	5.00	1	12/17/24 20:08	12/16/24 09:27	
2,4-Dinitrotoluene (2,4-DNT)	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
2,6-Dinitrotoluene (2,6-DNT)	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
2-Chloronaphthalene	ND	U	0.100	1	12/17/24 20:08	12/16/24 09:27	
2-Chlorophenol	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
2-Methylnaphthalene	ND	U	0.100	1	12/17/24 20:08	12/16/24 09:27	
2-Methylphenol (o-Cresol)	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
2-Nitroaniline	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
2-Nitrophenol	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
3&4-Methylphenol	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
3,3'-Dichlorobenzidine	ND	U	5.00	1	12/17/24 20:08	12/16/24 09:27	
3-Nitroaniline	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
4-Bromophenyl phenyl ether (BDE-3)	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
4-Chloro-3-methylphenol	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
4-Chloroaniline	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
4-Chlorophenyl phenylether	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
4-Nitroaniline	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
4-Nitrophenol	ND	U	5.00	1	12/17/24 20:08	12/16/24 09:27	
Acenaphthene	**2.72**		0.100	1	12/17/24 20:08	12/16/24 09:27	
Acenaphthylene	ND	U	0.100	1	12/17/24 20:08	12/16/24 09:27	
Acetophenone	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
Anthracene	ND	U	0.100	1	12/17/24 20:08	12/16/24 09:27	
Atrazine	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
Benzaldehyde	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
Benzo(a)anthracene	ND	U	0.100	1	12/17/24 20:08	12/16/24 09:27	
Benzo(a)pyrene	ND	U	0.100	1	12/17/24 20:08	12/16/24 09:27	
Benzo(b)fluoranthene	ND	U	0.100	1	12/17/24 20:08	12/16/24 09:27	
Benzo(g,h,i)perylene	ND	U	0.100	1	12/17/24 20:08	12/16/24 09:27	
Benzo(k)fluoranthene	ND	U	0.100	1	12/17/24 20:08	12/16/24 09:27	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 16:20
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1300 B	**Units:**	µg/L
Lab Code:	HN2410635-010		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
bis(2-Chloroethyl) ether	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
Butyl benzyl phthalate	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
Caprolactam	ND	U	5.00	1	12/17/24 20:08	12/16/24 09:27	
Carbazole	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
Chrysene	ND	U	0.100	1	12/17/24 20:08	12/16/24 09:27	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
Dibenz(a,h) anthracene	ND	U	0.100	1	12/17/24 20:08	12/16/24 09:27	
Dibenzofuran	**3.00**		1.00	1	12/17/24 20:08	12/16/24 09:27	
Diethyl phthalate	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
Dimethyl phthalate	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
Di-n-butyl phthalate	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
Di-n-octyl phthalate	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
Fluoranthene	ND	U	0.100	1	12/17/24 20:08	12/16/24 09:27	
Fluorene	ND	U	0.100	1	12/17/24 20:08	12/16/24 09:27	
Hexachlorobenzene	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
Hexachlorobutadiene	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
Hexachlorocyclopentadiene	ND	U	5.00	1	12/17/24 20:08	12/16/24 09:27	
Hexachloroethane	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
Indeno(1,2,3-cd) pyrene	ND	U	0.100	1	12/17/24 20:08	12/16/24 09:27	
Isophorone	ND	U	5.00	1	12/17/24 20:08	12/16/24 09:27	
Methylphenol, Total	ND	U	2.00	1	12/17/24 20:08	12/16/24 09:27	
Naphthalene	**139**		0.966	10	12/19/24 02:55	12/16/24 09:27	
Nitrobenzene	ND	SU	1.00	1	12/17/24 20:08	12/16/24 09:27	
n-Nitrosodi-n-propylamine	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
N-Nitrosodiphenylamine	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
Pentachlorophenol	ND	U	5.00	1	12/17/24 20:08	12/16/24 09:27	
Phenanthrene	ND	U	0.100	1	12/17/24 20:08	12/16/24 09:27	
Phenol	ND	U	1.00	1	12/17/24 20:08	12/16/24 09:27	
Pyrene	ND	U	0.100	1	12/17/24 20:08	12/16/24 09:27	
Pyridine	ND	U	10.0	1	12/17/24 20:08	12/16/24 09:27	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	80.4	38 - 103	12/17/24 20:08	
2-Fluorobiphenyl	64.2	36 - 96	12/17/24 20:08	
2-Fluorophenol	34.5	20 - 73	12/17/24 20:08	
4-Terphenyl-d14	66.9	44 - 114	12/17/24 20:08	
Nitrobenzene-d5	66.7	33 - 100	12/17/24 20:08	
Phenol-d6	19.6	10 - 48	12/17/24 20:08	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 16:45
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1300 C	**Units:**	µg/L
Lab Code:	HN2410635-011		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
1,2,4,5-Tetrachlorobenzene	ND	U	5.00	1	12/17/24 20:30	12/16/24 09:27	
1,4-Dioxane (1,4- Diethyleneoxide)	ND	U	5.00	1	12/17/24 20:30	12/16/24 09:27	
1-Methylnaphthalene	**3.32**		0.100	1	12/17/24 20:30	12/16/24 09:27	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
2,3,4,6-Tetrachlorophenol	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
2,4,5-Trichlorophenol	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
2,4,6-Trichlorophenol	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
2,4-Dichlorophenol	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
2,4-Dimethylphenol	**150**		9.73	10	12/19/24 03:22	12/16/24 09:27	
2,4-Dinitrophenol	ND	U	5.00	1	12/17/24 20:30	12/16/24 09:27	
2,4-Dinitrotoluene (2,4-DNT)	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
2,6-Dinitrotoluene (2,6-DNT)	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
2-Chloronaphthalene	ND	U	0.100	1	12/17/24 20:30	12/16/24 09:27	
2-Chlorophenol	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
2-Methylnaphthalene	**1.14**		0.100	1	12/17/24 20:30	12/16/24 09:27	
2-Methylphenol (o-Cresol)	**7.12**		1.00	1	12/17/24 20:30	12/16/24 09:27	
2-Nitroaniline	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
2-Nitrophenol	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
3&4-Methylphenol	**5.38**		1.00	1	12/17/24 20:30	12/16/24 09:27	
3,3'-Dichlorobenzidine	ND	U	5.00	1	12/17/24 20:30	12/16/24 09:27	
3-Nitroaniline	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
4-Bromophenyl phenyl ether (BDE-3)	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
4-Chloro-3-methylphenol	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
4-Chloroaniline	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
4-Chlorophenyl phenylether	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
4-Nitroaniline	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
4-Nitrophenol	ND	U	5.00	1	12/17/24 20:30	12/16/24 09:27	
Acenaphthene	**0.759**		0.100	1	12/17/24 20:30	12/16/24 09:27	
Acenaphthylene	ND	U	0.100	1	12/17/24 20:30	12/16/24 09:27	
Acetophenone	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
Anthracene	ND	U	0.100	1	12/17/24 20:30	12/16/24 09:27	
Atrazine	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
Benzaldehyde	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
Benzo(a)anthracene	ND	U	0.100	1	12/17/24 20:30	12/16/24 09:27	
Benzo(a)pyrene	ND	U	0.100	1	12/17/24 20:30	12/16/24 09:27	
Benzo(b)fluoranthene	ND	U	0.100	1	12/17/24 20:30	12/16/24 09:27	
Benzo(g,h,i)perylene	ND	U	0.100	1	12/17/24 20:30	12/16/24 09:27	
Benzo(k)fluoranthene	ND	U	0.100	1	12/17/24 20:30	12/16/24 09:27	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 16:45
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1300 C	**Units:**	µg/L
Lab Code:	HN2410635-011		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
bis(2-Chloroethyl) ether	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
Butyl benzyl phthalate	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
Caprolactam	ND	U	5.00	1	12/17/24 20:30	12/16/24 09:27	
Carbazole	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
Chrysene	ND	U	0.100	1	12/17/24 20:30	12/16/24 09:27	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
Dibenz(a,h) anthracene	ND	U	0.100	1	12/17/24 20:30	12/16/24 09:27	
Dibenzofuran	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
Diethyl phthalate	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
Dimethyl phthalate	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
Di-n-butyl phthalate	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
Di-n-octyl phthalate	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
Fluoranthene	ND	U	0.100	1	12/17/24 20:30	12/16/24 09:27	
Fluorene	ND	U	0.100	1	12/17/24 20:30	12/16/24 09:27	
Hexachlorobenzene	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
Hexachlorobutadiene	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
Hexachlorocyclopentadiene	ND	U	5.00	1	12/17/24 20:30	12/16/24 09:27	
Hexachloroethane	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
Indeno(1,2,3-cd) pyrene	ND	U	0.100	1	12/17/24 20:30	12/16/24 09:27	
Isophorone	ND	U	5.00	1	12/17/24 20:30	12/16/24 09:27	
Methylphenol, Total	**12.5**		2.00	1	12/17/24 20:30	12/16/24 09:27	
Naphthalene	**25.6**		0.100	1	12/17/24 20:30	12/16/24 09:27	
Nitrobenzene	ND	SU	1.00	1	12/17/24 20:30	12/16/24 09:27	
n-Nitrosodi-n-propylamine	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
N-Nitrosodiphenylamine	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
Pentachlorophenol	ND	U	5.00	1	12/17/24 20:30	12/16/24 09:27	
Phenanthrene	ND	U	0.100	1	12/17/24 20:30	12/16/24 09:27	
Phenol	ND	U	1.00	1	12/17/24 20:30	12/16/24 09:27	
Pyrene	ND	U	0.100	1	12/17/24 20:30	12/16/24 09:27	
Pyridine	ND	U	10.0	1	12/17/24 20:30	12/16/24 09:27	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	76.7	38 - 103	12/17/24 20:30	
2-Fluorobiphenyl	64.2	36 - 96	12/17/24 20:30	
2-Fluorophenol	39.2	20 - 73	12/17/24 20:30	
4-Terphenyl-d14	61.2	44 - 114	12/17/24 20:30	
Nitrobenzene-d5	66.5	33 - 100	12/17/24 20:30	
Phenol-d6	22.8	10 - 48	12/17/24 20:30	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 09:40
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1000 A	**Units:**	µg/L
Lab Code:	HN2410635-012		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
1,2,4,5-Tetrachlorobenzene	ND U	5.00	1	12/18/24 21:12	12/16/24 15:48	
1,4-Dioxane (1,4- Diethyleneoxide)	ND U	5.00	1	12/18/24 21:12	12/16/24 15:48	
1-Methylnaphthalene	ND U	0.100	1	12/18/24 21:12	12/16/24 15:48	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
2,3,4,6-Tetrachlorophenol	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
2,4,5-Trichlorophenol	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
2,4,6-Trichlorophenol	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
2,4-Dichlorophenol	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
2,4-Dimethylphenol	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
2,4-Dinitrophenol	ND U	5.00	1	12/18/24 21:12	12/16/24 15:48	
2,4-Dinitrotoluene (2,4-DNT)	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
2,6-Dinitrotoluene (2,6-DNT)	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
2-Chloronaphthalene	ND U	0.100	1	12/18/24 21:12	12/16/24 15:48	
2-Chlorophenol	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
2-Methylnaphthalene	ND U	0.100	1	12/18/24 21:12	12/16/24 15:48	
2-Methylphenol (o-Cresol)	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
2-Nitroaniline	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
2-Nitrophenol	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
3&4-Methylphenol	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
3,3'-Dichlorobenzidine	ND U	5.00	1	12/18/24 21:12	12/16/24 15:48	
3-Nitroaniline	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
4-Bromophenyl phenyl ether (BDE-3)	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
4-Chloro-3-methylphenol	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
4-Chloroaniline	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
4-Chlorophenyl phenylether	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
4-Nitroaniline	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
4-Nitrophenol	ND U	5.00	1	12/18/24 21:12	12/16/24 15:48	
Acenaphthene	ND U	0.100	1	12/18/24 21:12	12/16/24 15:48	
Acenaphthylene	ND U	0.100	1	12/18/24 21:12	12/16/24 15:48	
Acetophenone	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
Anthracene	ND U	0.100	1	12/18/24 21:12	12/16/24 15:48	
Atrazine	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
Benzaldehyde	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
Benzo(a)anthracene	ND U	0.100	1	12/18/24 21:12	12/16/24 15:48	
Benzo(a)pyrene	ND U	0.100	1	12/18/24 21:12	12/16/24 15:48	
Benzo(b)fluoranthene	ND U	0.100	1	12/18/24 21:12	12/16/24 15:48	
Benzo(g,h,i)perylene	ND U	0.100	1	12/18/24 21:12	12/16/24 15:48	
Benzo(k)fluoranthene	ND U	0.100	1	12/18/24 21:12	12/16/24 15:48	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 09:40
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1000 A	**Units:**	µg/L
Lab Code:	HN2410635-012		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
bis(2-Chloroethyl) ether	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
Butyl benzyl phthalate	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
Caprolactam	ND U	5.00	1	12/18/24 21:12	12/16/24 15:48	
Carbazole	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
Chrysene	ND U	0.100	1	12/18/24 21:12	12/16/24 15:48	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
Dibenz(a,h) anthracene	ND U	0.100	1	12/18/24 21:12	12/16/24 15:48	
Dibenzofuran	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
Diethyl phthalate	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
Dimethyl phthalate	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
Di-n-butyl phthalate	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
Di-n-octyl phthalate	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
Fluoranthene	ND U	0.100	1	12/18/24 21:12	12/16/24 15:48	
Fluorene	ND U	0.100	1	12/18/24 21:12	12/16/24 15:48	
Hexachlorobenzene	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
Hexachlorobutadiene	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
Hexachlorocyclopentadiene	ND U	5.00	1	12/18/24 21:12	12/16/24 15:48	
Hexachloroethane	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
Indeno(1,2,3-cd) pyrene	ND U	0.100	1	12/18/24 21:12	12/16/24 15:48	
Isophorone	ND U	5.00	1	12/18/24 21:12	12/16/24 15:48	
Methylphenol, Total	ND U	2.00	1	12/18/24 21:12	12/16/24 15:48	
Naphthalene	ND U	0.100	1	12/18/24 21:12	12/16/24 15:48	
Nitrobenzene	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
n-Nitrosodi-n-propylamine	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
N-Nitrosodiphenylamine	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
Pentachlorophenol	ND U	5.00	1	12/18/24 21:12	12/16/24 15:48	
Phenanthrene	ND U	0.100	1	12/18/24 21:12	12/16/24 15:48	
Phenol	ND U	1.00	1	12/18/24 21:12	12/16/24 15:48	
Pyrene	ND U	0.100	1	12/18/24 21:12	12/16/24 15:48	
Pyridine	ND U	10.0	1	12/18/24 21:12	12/16/24 15:48	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	65.9	38 - 103	12/18/24 21:12	
2-Fluorobiphenyl	50.7	36 - 96	12/18/24 21:12	
2-Fluorophenol	35.1	20 - 73	12/18/24 21:12	
4-Terphenyl-d14	60.4	44 - 114	12/18/24 21:12	
Nitrobenzene-d5	51.8	33 - 100	12/18/24 21:12	
Phenol-d6	23.1	10 - 48	12/18/24 21:12	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 10:18
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1000 B	**Units:**	µg/L
Lab Code:	HN2410635-013		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	**9.55**		1.00	1	12/18/24 21:34	12/16/24 15:48	
1,2,4,5-Tetrachlorobenzene	ND	U	5.00	1	12/18/24 21:34	12/16/24 15:48	
1,4-Dioxane (1,4- Diethyleneoxide)	ND	U	5.00	1	12/18/24 21:34	12/16/24 15:48	
1-Methylnaphthalene	**55.0**		0.100	1	12/18/24 21:34	12/16/24 15:48	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
2,3,4,6-Tetrachlorophenol	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
2,4,5-Trichlorophenol	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
2,4,6-Trichlorophenol	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
2,4-Dichlorophenol	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
2,4-Dimethylphenol	**420**		19.3	20	12/19/24 21:50	12/16/24 15:48	
2,4-Dinitrophenol	ND	U	5.00	1	12/18/24 21:34	12/16/24 15:48	
2,4-Dinitrotoluene (2,4-DNT)	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
2,6-Dinitrotoluene (2,6-DNT)	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
2-Chloronaphthalene	ND	U	0.100	1	12/18/24 21:34	12/16/24 15:48	
2-Chlorophenol	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
2-Methylnaphthalene	**19.8**		0.100	1	12/18/24 21:34	12/16/24 15:48	
2-Methylphenol (o-Cresol)	**165**		19.3	20	12/19/24 21:50	12/16/24 15:48	
2-Nitroaniline	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
2-Nitrophenol	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
3&4-Methylphenol	**140**		19.3	20	12/19/24 21:50	12/16/24 15:48	
3,3'-Dichlorobenzidine	ND	U	5.00	1	12/18/24 21:34	12/16/24 15:48	
3-Nitroaniline	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
4-Bromophenyl phenyl ether (BDE-3)	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
4-Chloro-3-methylphenol	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
4-Chloroaniline	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
4-Chlorophenyl phenylether	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
4-Nitroaniline	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
4-Nitrophenol	ND	U	5.00	1	12/18/24 21:34	12/16/24 15:48	
Acenaphthene	**2.93**		0.100	1	12/18/24 21:34	12/16/24 15:48	
Acenaphthylene	ND	U	0.100	1	12/18/24 21:34	12/16/24 15:48	
Acetophenone	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
Anthracene	ND	U	0.100	1	12/18/24 21:34	12/16/24 15:48	
Atrazine	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
Benzaldehyde	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
Benzo(a)anthracene	ND	U	0.100	1	12/18/24 21:34	12/16/24 15:48	
Benzo(a)pyrene	ND	U	0.100	1	12/18/24 21:34	12/16/24 15:48	
Benzo(b)fluoranthene	ND	U	0.100	1	12/18/24 21:34	12/16/24 15:48	
Benzo(g,h,i)perylene	ND	U	0.100	1	12/18/24 21:34	12/16/24 15:48	
Benzo(k)fluoranthene	ND	U	0.100	1	12/18/24 21:34	12/16/24 15:48	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 10:18
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1000 B	**Units:**	µg/L
Lab Code:	HN2410635-013		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
bis(2-Chloroethyl) ether	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
Butyl benzyl phthalate	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
Caprolactam	ND	U	5.00	1	12/18/24 21:34	12/16/24 15:48	
Carbazole	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
Chrysene	ND	U	0.100	1	12/18/24 21:34	12/16/24 15:48	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
Dibenz(a,h) anthracene	ND	U	0.100	1	12/18/24 21:34	12/16/24 15:48	
Dibenzofuran	**3.94**		1.00	1	12/18/24 21:34	12/16/24 15:48	
Diethyl phthalate	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
Dimethyl phthalate	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
Di-n-butyl phthalate	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
Di-n-octyl phthalate	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
Fluoranthene	ND	U	0.100	1	12/18/24 21:34	12/16/24 15:48	
Fluorene	ND	U	0.100	1	12/18/24 21:34	12/16/24 15:48	
Hexachlorobenzene	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
Hexachlorobutadiene	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
Hexachlorocyclopentadiene	ND	U	5.00	1	12/18/24 21:34	12/16/24 15:48	
Hexachloroethane	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
Indeno(1,2,3-cd) pyrene	ND	U	0.100	1	12/18/24 21:34	12/16/24 15:48	
Isophorone	ND	U	5.00	1	12/18/24 21:34	12/16/24 15:48	
Methylphenol, Total	**305**		38.7	20	12/19/24 21:50	12/16/24 15:48	
Naphthalene	**55.5**		1.93	20	12/19/24 21:50	12/16/24 15:48	
Nitrobenzene	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
n-Nitrosodi-n-propylamine	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
N-Nitrosodiphenylamine	ND	U	1.00	1	12/18/24 21:34	12/16/24 15:48	
Pentachlorophenol	ND	U	5.00	1	12/18/24 21:34	12/16/24 15:48	
Phenanthrene	ND	U	0.100	1	12/18/24 21:34	12/16/24 15:48	
Phenol	**11.5**		1.00	1	12/18/24 21:34	12/16/24 15:48	
Pyrene	ND	U	0.100	1	12/18/24 21:34	12/16/24 15:48	
Pyridine	ND	U	10.0	1	12/18/24 21:34	12/16/24 15:48	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	71.5	38 - 103	12/18/24 21:34	
2-Fluorobiphenyl	58.3	36 - 96	12/18/24 21:34	
2-Fluorophenol	51.8	20 - 73	12/18/24 21:34	
4-Terphenyl-d14	63.1	44 - 114	12/18/24 21:34	
Nitrobenzene-d5	66.5	33 - 100	12/18/24 21:34	
Phenol-d6	25.2	10 - 48	12/18/24 21:34	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 11:00
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1000 C	**Units:**	µg/L
Lab Code:	HN2410635-014		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
1,2,4,5-Tetrachlorobenzene	ND U	5.00	1	12/18/24 21:56	12/16/24 15:48	
1,4-Dioxane (1,4- Diethyleneoxide)	ND U	5.00	1	12/18/24 21:56	12/16/24 15:48	
1-Methylnaphthalene	ND U	0.100	1	12/18/24 21:56	12/16/24 15:48	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
2,3,4,6-Tetrachlorophenol	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
2,4,5-Trichlorophenol	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
2,4,6-Trichlorophenol	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
2,4-Dichlorophenol	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
2,4-Dimethylphenol	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
2,4-Dinitrophenol	ND U	5.00	1	12/18/24 21:56	12/16/24 15:48	
2,4-Dinitrotoluene (2,4-DNT)	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
2,6-Dinitrotoluene (2,6-DNT)	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
2-Chloronaphthalene	ND U	0.100	1	12/18/24 21:56	12/16/24 15:48	
2-Chlorophenol	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
2-Methylnaphthalene	ND U	0.100	1	12/18/24 21:56	12/16/24 15:48	
2-Methylphenol (o-Cresol)	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
2-Nitroaniline	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
2-Nitrophenol	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
3&4-Methylphenol	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
3,3'-Dichlorobenzidine	ND U	5.00	1	12/18/24 21:56	12/16/24 15:48	
3-Nitroaniline	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
4-Bromophenyl phenyl ether (BDE-3)	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
4-Chloro-3-methylphenol	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
4-Chloroaniline	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
4-Chlorophenyl phenylether	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
4-Nitroaniline	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
4-Nitrophenol	ND U	5.00	1	12/18/24 21:56	12/16/24 15:48	
Acenaphthene	ND U	0.100	1	12/18/24 21:56	12/16/24 15:48	
Acenaphthylene	ND U	0.100	1	12/18/24 21:56	12/16/24 15:48	
Acetophenone	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
Anthracene	ND U	0.100	1	12/18/24 21:56	12/16/24 15:48	
Atrazine	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
Benzaldehyde	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
Benzo(a)anthracene	ND U	0.100	1	12/18/24 21:56	12/16/24 15:48	
Benzo(a)pyrene	ND U	0.100	1	12/18/24 21:56	12/16/24 15:48	
Benzo(b)fluoranthene	ND U	0.100	1	12/18/24 21:56	12/16/24 15:48	
Benzo(g,h,i)perylene	ND U	0.100	1	12/18/24 21:56	12/16/24 15:48	
Benzo(k)fluoranthene	ND U	0.100	1	12/18/24 21:56	12/16/24 15:48	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 11:00
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1000 C	**Units:**	µg/L
Lab Code:	HN2410635-014		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
bis(2-Chloroethyl) ether	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
Butyl benzyl phthalate	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
Caprolactam	ND U	5.00	1	12/18/24 21:56	12/16/24 15:48	
Carbazole	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
Chrysene	ND U	0.100	1	12/18/24 21:56	12/16/24 15:48	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
Dibenz(a,h) anthracene	ND U	0.100	1	12/18/24 21:56	12/16/24 15:48	
Dibenzofuran	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
Diethyl phthalate	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
Dimethyl phthalate	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
Di-n-butyl phthalate	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
Di-n-octyl phthalate	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
Fluoranthene	ND U	0.100	1	12/18/24 21:56	12/16/24 15:48	
Fluorene	**0.145**	0.100	1	12/18/24 21:56	12/16/24 15:48	
Hexachlorobenzene	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
Hexachlorobutadiene	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
Hexachlorocyclopentadiene	ND U	5.00	1	12/18/24 21:56	12/16/24 15:48	
Hexachloroethane	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
Indeno(1,2,3-cd) pyrene	ND U	0.100	1	12/18/24 21:56	12/16/24 15:48	
Isophorone	ND U	5.00	1	12/18/24 21:56	12/16/24 15:48	
Methylphenol, Total	ND U	2.00	1	12/18/24 21:56	12/16/24 15:48	
Naphthalene	ND U	0.100	1	12/18/24 21:56	12/16/24 15:48	
Nitrobenzene	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
n-Nitrosodi-n-propylamine	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
N-Nitrosodiphenylamine	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
Pentachlorophenol	ND U	5.00	1	12/18/24 21:56	12/16/24 15:48	
Phenanthrene	ND U	0.100	1	12/18/24 21:56	12/16/24 15:48	
Phenol	ND U	1.00	1	12/18/24 21:56	12/16/24 15:48	
Pyrene	ND U	0.100	1	12/18/24 21:56	12/16/24 15:48	
Pyridine	ND U	10.0	1	12/18/24 21:56	12/16/24 15:48	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	72.9	38 - 103	12/18/24 21:56	
2-Fluorobiphenyl	54.0	36 - 96	12/18/24 21:56	
2-Fluorophenol	34.1	20 - 73	12/18/24 21:56	
4-Terphenyl-d14	62.6	44 - 114	12/18/24 21:56	
Nitrobenzene-d5	56.0	33 - 100	12/18/24 21:56	
Phenol-d6	21.2	10 - 48	12/18/24 21:56	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 12:00
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-600 B	**Units:**	µg/L
Lab Code:	HN2410635-015		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
1,2,4,5-Tetrachlorobenzene	ND U	5.00	1	12/18/24 22:17	12/16/24 15:48	
1,4-Dioxane (1,4- Diethyleneoxide)	ND U	5.00	1	12/18/24 22:17	12/16/24 15:48	
1-Methylnaphthalene	ND U	0.100	1	12/18/24 22:17	12/16/24 15:48	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
2,3,4,6-Tetrachlorophenol	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
2,4,5-Trichlorophenol	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
2,4,6-Trichlorophenol	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
2,4-Dichlorophenol	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
2,4-Dimethylphenol	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
2,4-Dinitrophenol	ND U	5.00	1	12/18/24 22:17	12/16/24 15:48	
2,4-Dinitrotoluene (2,4-DNT)	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
2,6-Dinitrotoluene (2,6-DNT)	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
2-Chloronaphthalene	ND U	0.100	1	12/18/24 22:17	12/16/24 15:48	
2-Chlorophenol	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
2-Methylnaphthalene	ND U	0.100	1	12/18/24 22:17	12/16/24 15:48	
2-Methylphenol (o-Cresol)	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
2-Nitroaniline	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
2-Nitrophenol	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
3&4-Methylphenol	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
3,3'-Dichlorobenzidine	ND U	5.00	1	12/18/24 22:17	12/16/24 15:48	
3-Nitroaniline	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
4-Bromophenyl phenyl ether (BDE-3)	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
4-Chloro-3-methylphenol	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
4-Chloroaniline	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
4-Chlorophenyl phenylether	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
4-Nitroaniline	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
4-Nitrophenol	ND U	5.00	1	12/18/24 22:17	12/16/24 15:48	
Acenaphthene	**0.233**	0.100	1	12/18/24 22:17	12/16/24 15:48	
Acenaphthylene	ND U	0.100	1	12/18/24 22:17	12/16/24 15:48	
Acetophenone	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
Anthracene	ND U	0.100	1	12/18/24 22:17	12/16/24 15:48	
Atrazine	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
Benzaldehyde	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
Benzo(a)anthracene	ND U	0.100	1	12/18/24 22:17	12/16/24 15:48	
Benzo(a)pyrene	ND U	0.100	1	12/18/24 22:17	12/16/24 15:48	
Benzo(b)fluoranthene	ND U	0.100	1	12/18/24 22:17	12/16/24 15:48	
Benzo(g,h,i)perylene	ND U	0.100	1	12/18/24 22:17	12/16/24 15:48	
Benzo(k)fluoranthene	ND U	0.100	1	12/18/24 22:17	12/16/24 15:48	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 12:00
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-600 B	**Units:**	µg/L
Lab Code:	HN2410635-015		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
bis(2-Chloroethyl) ether	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
Butyl benzyl phthalate	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
Caprolactam	ND U	5.00	1	12/18/24 22:17	12/16/24 15:48	
Carbazole	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
Chrysene	ND U	0.100	1	12/18/24 22:17	12/16/24 15:48	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
Dibenz(a,h) anthracene	ND U	0.100	1	12/18/24 22:17	12/16/24 15:48	
Dibenzofuran	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
Diethyl phthalate	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
Dimethyl phthalate	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
Di-n-butyl phthalate	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
Di-n-octyl phthalate	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
Fluoranthene	ND U	0.100	1	12/18/24 22:17	12/16/24 15:48	
Fluorene	ND U	0.100	1	12/18/24 22:17	12/16/24 15:48	
Hexachlorobenzene	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
Hexachlorobutadiene	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
Hexachlorocyclopentadiene	ND U	5.00	1	12/18/24 22:17	12/16/24 15:48	
Hexachloroethane	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
Indeno(1,2,3-cd) pyrene	ND U	0.100	1	12/18/24 22:17	12/16/24 15:48	
Isophorone	ND U	5.00	1	12/18/24 22:17	12/16/24 15:48	
Methylphenol, Total	ND U	2.00	1	12/18/24 22:17	12/16/24 15:48	
Naphthalene	ND U	0.100	1	12/18/24 22:17	12/16/24 15:48	
Nitrobenzene	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
n-Nitrosodi-n-propylamine	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
N-Nitrosodiphenylamine	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
Pentachlorophenol	ND U	5.00	1	12/18/24 22:17	12/16/24 15:48	
Phenanthrene	ND U	0.100	1	12/18/24 22:17	12/16/24 15:48	
Phenol	ND U	1.00	1	12/18/24 22:17	12/16/24 15:48	
Pyrene	ND U	0.100	1	12/18/24 22:17	12/16/24 15:48	
Pyridine	ND U	10.0	1	12/18/24 22:17	12/16/24 15:48	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	84.2	38 - 103	12/18/24 22:17	
2-Fluorobiphenyl	67.2	36 - 96	12/18/24 22:17	
2-Fluorophenol	43.2	20 - 73	12/18/24 22:17	
4-Terphenyl-d14	70.1	44 - 114	12/18/24 22:17	
Nitrobenzene-d5	68.7	33 - 100	12/18/24 22:17	
Phenol-d6	25.3	10 - 48	12/18/24 22:17	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 13:20
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-600 C	**Units:**	µg/L
Lab Code:	HN2410635-016		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
1,2,4,5-Tetrachlorobenzene	ND U	5.00	1	12/18/24 22:39	12/16/24 15:48	
1,4-Dioxane (1,4- Diethyleneoxide)	ND U	5.00	1	12/18/24 22:39	12/16/24 15:48	
1-Methylnaphthalene	ND U	0.100	1	12/18/24 22:39	12/16/24 15:48	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
2,3,4,6-Tetrachlorophenol	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
2,4,5-Trichlorophenol	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
2,4,6-Trichlorophenol	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
2,4-Dichlorophenol	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
2,4-Dimethylphenol	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
2,4-Dinitrophenol	ND U	5.00	1	12/18/24 22:39	12/16/24 15:48	
2,4-Dinitrotoluene (2,4-DNT)	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
2,6-Dinitrotoluene (2,6-DNT)	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
2-Chloronaphthalene	ND U	0.100	1	12/18/24 22:39	12/16/24 15:48	
2-Chlorophenol	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
2-Methylnaphthalene	ND U	0.100	1	12/18/24 22:39	12/16/24 15:48	
2-Methylphenol (o-Cresol)	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
2-Nitroaniline	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
2-Nitrophenol	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
3&4-Methylphenol	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
3,3'-Dichlorobenzidine	ND U	5.00	1	12/18/24 22:39	12/16/24 15:48	
3-Nitroaniline	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
4-Bromophenyl phenyl ether (BDE-3)	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
4-Chloro-3-methylphenol	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
4-Chloroaniline	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
4-Chlorophenyl phenylether	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
4-Nitroaniline	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
4-Nitrophenol	ND U	5.00	1	12/18/24 22:39	12/16/24 15:48	
Acenaphthene	ND U	0.100	1	12/18/24 22:39	12/16/24 15:48	
Acenaphthylene	ND U	0.100	1	12/18/24 22:39	12/16/24 15:48	
Acetophenone	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
Anthracene	ND U	0.100	1	12/18/24 22:39	12/16/24 15:48	
Atrazine	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
Benzaldehyde	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
Benzo(a)anthracene	ND U	0.100	1	12/18/24 22:39	12/16/24 15:48	
Benzo(a)pyrene	ND U	0.100	1	12/18/24 22:39	12/16/24 15:48	
Benzo(b)fluoranthene	ND U	0.100	1	12/18/24 22:39	12/16/24 15:48	
Benzo(g,h,i)perylene	ND U	0.100	1	12/18/24 22:39	12/16/24 15:48	
Benzo(k)fluoranthene	ND U	0.100	1	12/18/24 22:39	12/16/24 15:48	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 13:20
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-600 C	**Units:**	µg/L
Lab Code:	HN2410635-016		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
bis(2-Chloroethyl) ether	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
Butyl benzyl phthalate	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
Caprolactam	ND U	5.00	1	12/18/24 22:39	12/16/24 15:48	
Carbazole	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
Chrysene	ND U	0.100	1	12/18/24 22:39	12/16/24 15:48	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
Dibenz(a,h) anthracene	ND U	0.100	1	12/18/24 22:39	12/16/24 15:48	
Dibenzofuran	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
Diethyl phthalate	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
Dimethyl phthalate	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
Di-n-butyl phthalate	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
Di-n-octyl phthalate	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
Fluoranthene	ND U	0.100	1	12/18/24 22:39	12/16/24 15:48	
Fluorene	ND U	0.100	1	12/18/24 22:39	12/16/24 15:48	
Hexachlorobenzene	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
Hexachlorobutadiene	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
Hexachlorocyclopentadiene	ND U	5.00	1	12/18/24 22:39	12/16/24 15:48	
Hexachloroethane	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
Indeno(1,2,3-cd) pyrene	ND U	0.100	1	12/18/24 22:39	12/16/24 15:48	
Isophorone	ND U	5.00	1	12/18/24 22:39	12/16/24 15:48	
Methylphenol, Total	ND U	2.00	1	12/18/24 22:39	12/16/24 15:48	
Naphthalene	ND U	0.100	1	12/18/24 22:39	12/16/24 15:48	
Nitrobenzene	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
n-Nitrosodi-n-propylamine	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
N-Nitrosodiphenylamine	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
Pentachlorophenol	ND U	5.00	1	12/18/24 22:39	12/16/24 15:48	
Phenanthrene	ND U	0.100	1	12/18/24 22:39	12/16/24 15:48	
Phenol	ND U	1.00	1	12/18/24 22:39	12/16/24 15:48	
Pyrene	ND U	0.100	1	12/18/24 22:39	12/16/24 15:48	
Pyridine	ND U	10.0	1	12/18/24 22:39	12/16/24 15:48	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	85.6	38 - 103	12/18/24 22:39	
2-Fluorobiphenyl	73.1	36 - 96	12/18/24 22:39	
2-Fluorophenol	42.3	20 - 73	12/18/24 22:39	
4-Terphenyl-d14	77.9	44 - 114	12/18/24 22:39	
Nitrobenzene-d5	73.1	33 - 100	12/18/24 22:39	
Phenol-d6	24.7	10 - 48	12/18/24 22:39	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 12:40
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-600 A	**Units:**	µg/L
Lab Code:	HN2410635-017		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
1,2,4,5-Tetrachlorobenzene	ND U	5.00	1	12/18/24 23:01	12/16/24 15:48	
1,4-Dioxane (1,4- Diethyleneoxide)	ND U	5.00	1	12/18/24 23:01	12/16/24 15:48	
1-Methylnaphthalene	ND U	0.100	1	12/18/24 23:01	12/16/24 15:48	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
2,3,4,6-Tetrachlorophenol	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
2,4,5-Trichlorophenol	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
2,4,6-Trichlorophenol	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
2,4-Dichlorophenol	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
2,4-Dimethylphenol	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
2,4-Dinitrophenol	ND U	5.00	1	12/18/24 23:01	12/16/24 15:48	
2,4-Dinitrotoluene (2,4-DNT)	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
2,6-Dinitrotoluene (2,6-DNT)	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
2-Chloronaphthalene	ND U	0.100	1	12/18/24 23:01	12/16/24 15:48	
2-Chlorophenol	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
2-Methylnaphthalene	ND U	0.100	1	12/18/24 23:01	12/16/24 15:48	
2-Methylphenol (o-Cresol)	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
2-Nitroaniline	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
2-Nitrophenol	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
3&4-Methylphenol	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
3,3'-Dichlorobenzidine	ND U	5.00	1	12/18/24 23:01	12/16/24 15:48	
3-Nitroaniline	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
4-Bromophenyl phenyl ether (BDE-3)	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
4-Chloro-3-methylphenol	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
4-Chloroaniline	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
4-Chlorophenyl phenylether	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
4-Nitroaniline	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
4-Nitrophenol	ND U	5.00	1	12/18/24 23:01	12/16/24 15:48	
Acenaphthene	ND U	0.100	1	12/18/24 23:01	12/16/24 15:48	
Acenaphthylene	ND U	0.100	1	12/18/24 23:01	12/16/24 15:48	
Acetophenone	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
Anthracene	ND U	0.100	1	12/18/24 23:01	12/16/24 15:48	
Atrazine	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
Benzaldehyde	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
Benzo(a)anthracene	ND U	0.100	1	12/18/24 23:01	12/16/24 15:48	
Benzo(a)pyrene	ND U	0.100	1	12/18/24 23:01	12/16/24 15:48	
Benzo(b)fluoranthene	ND U	0.100	1	12/18/24 23:01	12/16/24 15:48	
Benzo(g,h,i)perylene	ND U	0.100	1	12/18/24 23:01	12/16/24 15:48	
Benzo(k)fluoranthene	ND U	0.100	1	12/18/24 23:01	12/16/24 15:48	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 12:40
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-600 A	**Units:**	µg/L
Lab Code:	HN2410635-017		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
bis(2-Chloroethyl) ether	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
Butyl benzyl phthalate	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
Caprolactam	ND U	5.00	1	12/18/24 23:01	12/16/24 15:48	
Carbazole	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
Chrysene	ND U	0.100	1	12/18/24 23:01	12/16/24 15:48	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
Dibenz(a,h) anthracene	ND U	0.100	1	12/18/24 23:01	12/16/24 15:48	
Dibenzofuran	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
Diethyl phthalate	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
Dimethyl phthalate	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
Di-n-butyl phthalate	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
Di-n-octyl phthalate	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
Fluoranthene	ND U	0.100	1	12/18/24 23:01	12/16/24 15:48	
Fluorene	ND U	0.100	1	12/18/24 23:01	12/16/24 15:48	
Hexachlorobenzene	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
Hexachlorobutadiene	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
Hexachlorocyclopentadiene	ND U	5.00	1	12/18/24 23:01	12/16/24 15:48	
Hexachloroethane	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
Indeno(1,2,3-cd) pyrene	ND U	0.100	1	12/18/24 23:01	12/16/24 15:48	
Isophorone	ND U	5.00	1	12/18/24 23:01	12/16/24 15:48	
Methylphenol, Total	ND U	2.00	1	12/18/24 23:01	12/16/24 15:48	
Naphthalene	ND U	0.100	1	12/18/24 23:01	12/16/24 15:48	
Nitrobenzene	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
n-Nitrosodi-n-propylamine	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
N-Nitrosodiphenylamine	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
Pentachlorophenol	ND U	5.00	1	12/18/24 23:01	12/16/24 15:48	
Phenanthrene	ND U	0.100	1	12/18/24 23:01	12/16/24 15:48	
Phenol	ND U	1.00	1	12/18/24 23:01	12/16/24 15:48	
Pyrene	ND U	0.100	1	12/18/24 23:01	12/16/24 15:48	
Pyridine	ND U	10.0	1	12/18/24 23:01	12/16/24 15:48	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	89.5	38 - 103	12/18/24 23:01	
2-Fluorobiphenyl	72.9	36 - 96	12/18/24 23:01	
2-Fluorophenol	49.1	20 - 73	12/18/24 23:01	
4-Terphenyl-d14	61.4	44 - 114	12/18/24 23:01	
Nitrobenzene-d5	72.2	33 - 100	12/18/24 23:01	
Phenol-d6	30.7	10 - 48	12/18/24 23:01	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 14:25
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1100 D	**Units:**	µg/L
Lab Code:	HN2410635-018		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
1,2,4,5-Tetrachlorobenzene	ND U	5.00	1	12/18/24 23:22	12/16/24 15:48	
1,4-Dioxane (1,4- Diethyleneoxide)	ND U	5.00	1	12/18/24 23:22	12/16/24 15:48	
1-Methylnaphthalene	ND U	0.100	1	12/18/24 23:22	12/16/24 15:48	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
2,3,4,6-Tetrachlorophenol	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
2,4,5-Trichlorophenol	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
2,4,6-Trichlorophenol	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
2,4-Dichlorophenol	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
2,4-Dimethylphenol	**289**	9.74	10	12/19/24 22:17	12/16/24 15:48	
2,4-Dinitrophenol	ND U	5.00	1	12/18/24 23:22	12/16/24 15:48	
2,4-Dinitrotoluene (2,4-DNT)	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
2,6-Dinitrotoluene (2,6-DNT)	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
2-Chloronaphthalene	ND U	0.100	1	12/18/24 23:22	12/16/24 15:48	
2-Chlorophenol	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
2-Methylnaphthalene	ND U	0.100	1	12/18/24 23:22	12/16/24 15:48	
2-Methylphenol (o-Cresol)	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
2-Nitroaniline	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
2-Nitrophenol	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
3&4-Methylphenol	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
3,3'-Dichlorobenzidine	ND U	5.00	1	12/18/24 23:22	12/16/24 15:48	
3-Nitroaniline	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
4-Bromophenyl phenyl ether (BDE-3)	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
4-Chloro-3-methylphenol	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
4-Chloroaniline	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
4-Chlorophenyl phenylether	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
4-Nitroaniline	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
4-Nitrophenol	ND U	5.00	1	12/18/24 23:22	12/16/24 15:48	
Acenaphthene	ND U	0.100	1	12/18/24 23:22	12/16/24 15:48	
Acenaphthylene	**0.847**	0.100	1	12/18/24 23:22	12/16/24 15:48	
Acetophenone	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
Anthracene	ND U	0.100	1	12/18/24 23:22	12/16/24 15:48	
Atrazine	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
Benzaldehyde	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
Benzo(a)anthracene	ND U	0.100	1	12/18/24 23:22	12/16/24 15:48	
Benzo(a)pyrene	ND U	0.100	1	12/18/24 23:22	12/16/24 15:48	
Benzo(b)fluoranthene	ND U	0.100	1	12/18/24 23:22	12/16/24 15:48	
Benzo(g,h,i)perylene	ND U	0.100	1	12/18/24 23:22	12/16/24 15:48	
Benzo(k)fluoranthene	ND U	0.100	1	12/18/24 23:22	12/16/24 15:48	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 14:25
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1100 D	**Units:**	µg/L
Lab Code:	HN2410635-018		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
bis(2-Chloroethyl) ether	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
Butyl benzyl phthalate	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
Caprolactam	ND U	5.00	1	12/18/24 23:22	12/16/24 15:48	
Carbazole	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
Chrysene	ND U	0.100	1	12/18/24 23:22	12/16/24 15:48	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
Dibenz(a,h) anthracene	ND U	0.100	1	12/18/24 23:22	12/16/24 15:48	
Dibenzofuran	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
Diethyl phthalate	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
Dimethyl phthalate	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
Di-n-butyl phthalate	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
Di-n-octyl phthalate	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
Fluoranthene	ND U	0.100	1	12/18/24 23:22	12/16/24 15:48	
Fluorene	ND U	0.100	1	12/18/24 23:22	12/16/24 15:48	
Hexachlorobenzene	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
Hexachlorobutadiene	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
Hexachlorocyclopentadiene	ND U	5.00	1	12/18/24 23:22	12/16/24 15:48	
Hexachloroethane	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
Indeno(1,2,3-cd) pyrene	ND U	0.100	1	12/18/24 23:22	12/16/24 15:48	
Isophorone	ND U	5.00	1	12/18/24 23:22	12/16/24 15:48	
Methylphenol, Total	ND U	2.00	1	12/18/24 23:22	12/16/24 15:48	
Naphthalene	**1.00**	0.100	1	12/18/24 23:22	12/16/24 15:48	
Nitrobenzene	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
n-Nitrosodi-n-propylamine	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
N-Nitrosodiphenylamine	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
Pentachlorophenol	ND U	5.00	1	12/18/24 23:22	12/16/24 15:48	
Phenanthrene	ND U	0.100	1	12/18/24 23:22	12/16/24 15:48	
Phenol	ND U	1.00	1	12/18/24 23:22	12/16/24 15:48	
Pyrene	ND U	0.100	1	12/18/24 23:22	12/16/24 15:48	
Pyridine	ND U	10.0	1	12/18/24 23:22	12/16/24 15:48	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	77.7	38 - 103	12/18/24 23:22	
2-Fluorobiphenyl	55.1	36 - 96	12/18/24 23:22	
2-Fluorophenol	66.7	20 - 73	12/18/24 23:22	
4-Terphenyl-d14	64.5	44 - 114	12/18/24 23:22	
Nitrobenzene-d5	88.3	33 - 100	12/18/24 23:22	
Phenol-d6	24.6	10 - 48	12/18/24 23:22	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 13:33
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-200 A	**Units:**	µg/L
Lab Code:	HN2410635-019		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	**4.64**	1.00	1	12/18/24 23:44	12/16/24 15:48	
1,2,4,5-Tetrachlorobenzene	ND U	5.00	1	12/18/24 23:44	12/16/24 15:48	
1,4-Dioxane (1,4- Diethyleneoxide)	ND U	5.00	1	12/18/24 23:44	12/16/24 15:48	
1-Methylnaphthalene	**24.6**	0.100	1	12/18/24 23:44	12/16/24 15:48	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND U	1.00	1	12/18/24 23:44	12/16/24 15:48	
2,3,4,6-Tetrachlorophenol	ND U	1.00	1	12/18/24 23:44	12/16/24 15:48	
2,4,5-Trichlorophenol	ND U	1.00	1	12/18/24 23:44	12/16/24 15:48	
2,4,6-Trichlorophenol	ND U	1.00	1	12/18/24 23:44	12/16/24 15:48	
2,4-Dichlorophenol	ND U	1.00	1	12/18/24 23:44	12/16/24 15:48	
2,4-Dimethylphenol	ND U	1.00	1	12/18/24 23:44	12/16/24 15:48	
2,4-Dinitrophenol	ND U	5.00	1	12/18/24 23:44	12/16/24 15:48	
2,4-Dinitrotoluene (2,4-DNT)	ND U	1.00	1	12/18/24 23:44	12/16/24 15:48	
2,6-Dinitrotoluene (2,6-DNT)	ND U	1.00	1	12/18/24 23:44	12/16/24 15:48	
2-Chloronaphthalene	ND U	0.100	1	12/18/24 23:44	12/16/24 15:48	
2-Chlorophenol	ND U	1.00	1	12/18/24 23:44	12/16/24 15:48	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND U	1.00	1	12/18/24 23:44	12/16/24 15:48	
2-Methylnaphthalene	ND U	0.100	1	12/18/24 23:44	12/16/24 15:48	
2-Methylphenol (o-Cresol)	ND U	1.00	1	12/18/24 23:44	12/16/24 15:48	
2-Nitroaniline	ND U	1.00	1	12/18/24 23:44	12/16/24 15:48	
2-Nitrophenol	ND U	1.00	1	12/18/24 23:44	12/16/24 15:48	
3&4-Methylphenol	ND U	1.00	1	12/18/24 23:44	12/16/24 15:48	
3,3'-Dichlorobenzidine	ND U	5.00	1	12/18/24 23:44	12/16/24 15:48	
3-Nitroaniline	ND U	1.00	1	12/18/24 23:44	12/16/24 15:48	
4-Bromophenyl phenyl ether (BDE-3)	ND U	1.00	1	12/18/24 23:44	12/16/24 15:48	
4-Chloro-3-methylphenol	ND U	1.00	1	12/18/24 23:44	12/16/24 15:48	
4-Chloroaniline	ND U	1.00	1	12/18/24 23:44	12/16/24 15:48	
4-Chlorophenyl phenylether	ND U	1.00	1	12/18/24 23:44	12/16/24 15:48	
4-Nitroaniline	ND U	1.00	1	12/18/24 23:44	12/16/24 15:48	
4-Nitrophenol	ND U	5.00	1	12/18/24 23:44	12/16/24 15:48	
Acenaphthene	**1.23**	0.100	1	12/18/24 23:44	12/16/24 15:48	
Acenaphthylene	ND U	0.100	1	12/18/24 23:44	12/16/24 15:48	
Acetophenone	ND U	1.00	1	12/18/24 23:44	12/16/24 15:48	
Anthracene	ND U	0.100	1	12/18/24 23:44	12/16/24 15:48	
Atrazine	ND U	1.00	1	12/18/24 23:44	12/16/24 15:48	
Benzaldehyde	ND U	1.00	1	12/18/24 23:44	12/16/24 15:48	
Benzo(a)anthracene	ND U	0.100	1	12/18/24 23:44	12/16/24 15:48	
Benzo(a)pyrene	ND U	0.100	1	12/18/24 23:44	12/16/24 15:48	
Benzo(b)fluoranthene	ND U	0.100	1	12/18/24 23:44	12/16/24 15:48	
Benzo(g,h,i)perylene	ND U	0.100	1	12/18/24 23:44	12/16/24 15:48	
Benzo(k)fluoranthene	ND U	0.100	1	12/18/24 23:44	12/16/24 15:48	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 13:33
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-200 A	**Units:**	µg/L
Lab Code:	HN2410635-019		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND	U	1.00	1	12/18/24 23:44	12/16/24 15:48	
bis(2-Chloroethyl) ether	ND	U	1.00	1	12/18/24 23:44	12/16/24 15:48	
Butyl benzyl phthalate	ND	U	1.00	1	12/18/24 23:44	12/16/24 15:48	
Caprolactam	ND	U	5.00	1	12/18/24 23:44	12/16/24 15:48	
Carbazole	ND	U	1.00	1	12/18/24 23:44	12/16/24 15:48	
Chrysene	ND	U	0.100	1	12/18/24 23:44	12/16/24 15:48	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND	U	1.00	1	12/18/24 23:44	12/16/24 15:48	
Dibenz(a,h) anthracene	ND	U	0.100	1	12/18/24 23:44	12/16/24 15:48	
Dibenzofuran	**1.53**		1.00	1	12/18/24 23:44	12/16/24 15:48	
Diethyl phthalate	ND	U	1.00	1	12/18/24 23:44	12/16/24 15:48	
Dimethyl phthalate	ND	U	1.00	1	12/18/24 23:44	12/16/24 15:48	
Di-n-butyl phthalate	ND	U	1.00	1	12/18/24 23:44	12/16/24 15:48	
Di-n-octyl phthalate	ND	U	1.00	1	12/18/24 23:44	12/16/24 15:48	
Fluoranthene	ND	U	0.100	1	12/18/24 23:44	12/16/24 15:48	
Fluorene	**0.535**		0.100	1	12/18/24 23:44	12/16/24 15:48	
Hexachlorobenzene	ND	U	1.00	1	12/18/24 23:44	12/16/24 15:48	
Hexachlorobutadiene	ND	U	1.00	1	12/18/24 23:44	12/16/24 15:48	
Hexachlorocyclopentadiene	ND	U	5.00	1	12/18/24 23:44	12/16/24 15:48	
Hexachloroethane	ND	U	1.00	1	12/18/24 23:44	12/16/24 15:48	
Indeno(1,2,3-cd) pyrene	ND	U	0.100	1	12/18/24 23:44	12/16/24 15:48	
Isophorone	ND	U	5.00	1	12/18/24 23:44	12/16/24 15:48	
Methylphenol, Total	ND	U	2.00	1	12/18/24 23:44	12/16/24 15:48	
Naphthalene	**2.31**		0.100	1	12/18/24 23:44	12/16/24 15:48	
Nitrobenzene	ND	U	1.00	1	12/18/24 23:44	12/16/24 15:48	
n-Nitrosodi-n-propylamine	ND	U	1.00	1	12/18/24 23:44	12/16/24 15:48	
N-Nitrosodiphenylamine	ND	U	1.00	1	12/18/24 23:44	12/16/24 15:48	
Pentachlorophenol	ND	U	5.00	1	12/18/24 23:44	12/16/24 15:48	
Phenanthrene	ND	U	0.100	1	12/18/24 23:44	12/16/24 15:48	
Phenol	ND	U	1.00	1	12/18/24 23:44	12/16/24 15:48	
Pyrene	ND	U	0.100	1	12/18/24 23:44	12/16/24 15:48	
Pyridine	ND	U	10.0	1	12/18/24 23:44	12/16/24 15:48	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	81.4	38 - 103	12/18/24 23:44	
2-Fluorobiphenyl	66.1	36 - 96	12/18/24 23:44	
2-Fluorophenol	47.1	20 - 73	12/18/24 23:44	
4-Terphenyl-d14	68.2	44 - 114	12/18/24 23:44	
Nitrobenzene-d5	73.8	33 - 100	12/18/24 23:44	
Phenol-d6	28.5	10 - 48	12/18/24 23:44	

Analytical Report

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Sample Matrix: GROUNDWATER

Work Order: HN2410635
Date Collected: 12/10/24
Date Received: 12/13/24 10:00

Sample Name: GSI-200 B
Lab Code: HN2410635-020

Units: µg/L

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	**7.04**		1.00	1	12/18/24 00:07	12/16/24 09:28	
1,2,4,5-Tetrachlorobenzene	ND	U	5.00	1	12/18/24 00:07	12/16/24 09:28	
1,4-Dioxane (1,4- Diethyleneoxide)	ND	U	5.00	1	12/18/24 00:07	12/16/24 09:28	
1-Methylnaphthalene	**54.1**		0.100	1	12/18/24 00:07	12/16/24 09:28	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
2,3,4,6-Tetrachlorophenol	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
2,4,5-Trichlorophenol	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
2,4,6-Trichlorophenol	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
2,4-Dichlorophenol	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
2,4-Dimethylphenol	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
2,4-Dinitrophenol	ND	U	5.00	1	12/18/24 00:07	12/16/24 09:28	
2,4-Dinitrotoluene (2,4-DNT)	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
2,6-Dinitrotoluene (2,6-DNT)	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
2-Chloronaphthalene	ND	U	0.100	1	12/18/24 00:07	12/16/24 09:28	
2-Chlorophenol	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
2-Methylnaphthalene	ND	U	0.100	1	12/18/24 00:07	12/16/24 09:28	
2-Methylphenol (o-Cresol)	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
2-Nitroaniline	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
2-Nitrophenol	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
3&4-Methylphenol	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
3,3'-Dichlorobenzidine	ND	U	5.00	1	12/18/24 00:07	12/16/24 09:28	
3-Nitroaniline	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
4-Bromophenyl phenyl ether (BDE-3)	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
4-Chloro-3-methylphenol	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
4-Chloroaniline	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
4-Chlorophenyl phenylether	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
4-Nitroaniline	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
4-Nitrophenol	ND	U	5.00	1	12/18/24 00:07	12/16/24 09:28	
Acenaphthene	**1.92**		0.100	1	12/18/24 00:07	12/16/24 09:28	
Acenaphthylene	ND	U	0.100	1	12/18/24 00:07	12/16/24 09:28	
Acetophenone	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
Anthracene	ND	U	0.100	1	12/18/24 00:07	12/16/24 09:28	
Atrazine	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
Benzaldehyde	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
Benzo(a)anthracene	ND	U	0.100	1	12/18/24 00:07	12/16/24 09:28	
Benzo(a)pyrene	ND	U	0.100	1	12/18/24 00:07	12/16/24 09:28	
Benzo(b)fluoranthene	ND	U	0.100	1	12/18/24 00:07	12/16/24 09:28	
Benzo(g,h,i)perylene	ND	U	0.100	1	12/18/24 00:07	12/16/24 09:28	
Benzo(k)fluoranthene	ND	U	0.100	1	12/18/24 00:07	12/16/24 09:28	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-200 B	**Units:**	µg/L
Lab Code:	HN2410635-020		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
bis(2-Chloroethyl) ether	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
Butyl benzyl phthalate	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
Caprolactam	ND	U	5.00	1	12/18/24 00:07	12/16/24 09:28	
Carbazole	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
Chrysene	ND	U	0.100	1	12/18/24 00:07	12/16/24 09:28	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
Dibenz(a,h) anthracene	ND	U	0.100	1	12/18/24 00:07	12/16/24 09:28	
Dibenzofuran	**1.48**		1.00	1	12/18/24 00:07	12/16/24 09:28	
Diethyl phthalate	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
Dimethyl phthalate	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
Di-n-butyl phthalate	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
Di-n-octyl phthalate	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
Fluoranthene	**0.552**		0.100	1	12/18/24 00:07	12/16/24 09:28	
Fluorene	ND	U	0.100	1	12/18/24 00:07	12/16/24 09:28	
Hexachlorobenzene	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
Hexachlorobutadiene	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
Hexachlorocyclopentadiene	ND	U	5.00	1	12/18/24 00:07	12/16/24 09:28	
Hexachloroethane	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
Indeno(1,2,3-cd) pyrene	ND	U	0.100	1	12/18/24 00:07	12/16/24 09:28	
Isophorone	ND	U	5.00	1	12/18/24 00:07	12/16/24 09:28	
Methylphenol, Total	ND	U	2.00	1	12/18/24 00:07	12/16/24 09:28	
Naphthalene	**1.70**		0.100	1	12/18/24 00:07	12/16/24 09:28	
Nitrobenzene	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
n-Nitrosodi-n-propylamine	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
N-Nitrosodiphenylamine	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
Pentachlorophenol	ND	U	5.00	1	12/18/24 00:07	12/16/24 09:28	
Phenanthrene	ND	U	0.100	1	12/18/24 00:07	12/16/24 09:28	
Phenol	ND	U	1.00	1	12/18/24 00:07	12/16/24 09:28	
Pyrene	ND	U	0.100	1	12/18/24 00:07	12/16/24 09:28	
Pyridine	ND	U	10.0	1	12/18/24 00:07	12/16/24 09:28	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	62.5	38 - 103	12/18/24 00:07	
2-Fluorobiphenyl	51.4	36 - 96	12/18/24 00:07	
2-Fluorophenol	32.6	20 - 73	12/18/24 00:07	
4-Terphenyl-d14	59.1	44 - 114	12/18/24 00:07	
Nitrobenzene-d5	55.2	33 - 100	12/18/24 00:07	
Phenol-d6	18.7	10 - 48	12/18/24 00:07	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 14:43
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-200 C	**Units:**	µg/L
Lab Code:	HN2410635-021		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
1,2,4,5-Tetrachlorobenzene	ND U	5.00	1	12/19/24 00:06	12/16/24 15:48	
1,4-Dioxane (1,4- Diethyleneoxide)	ND U	5.00	1	12/19/24 00:06	12/16/24 15:48	
1-Methylnaphthalene	**3.85**	0.100	1	12/19/24 00:06	12/16/24 15:48	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
2,3,4,6-Tetrachlorophenol	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
2,4,5-Trichlorophenol	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
2,4,6-Trichlorophenol	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
2,4-Dichlorophenol	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
2,4-Dimethylphenol	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
2,4-Dinitrophenol	ND U	5.00	1	12/19/24 00:06	12/16/24 15:48	
2,4-Dinitrotoluene (2,4-DNT)	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
2,6-Dinitrotoluene (2,6-DNT)	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
2-Chloronaphthalene	ND U	0.100	1	12/19/24 00:06	12/16/24 15:48	
2-Chlorophenol	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
2-Methylnaphthalene	ND U	0.100	1	12/19/24 00:06	12/16/24 15:48	
2-Methylphenol (o-Cresol)	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
2-Nitroaniline	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
2-Nitrophenol	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
3&4-Methylphenol	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
3,3'-Dichlorobenzidine	ND U	5.00	1	12/19/24 00:06	12/16/24 15:48	
3-Nitroaniline	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
4-Bromophenyl phenyl ether (BDE-3)	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
4-Chloro-3-methylphenol	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
4-Chloroaniline	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
4-Chlorophenyl phenylether	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
4-Nitroaniline	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
4-Nitrophenol	ND U	5.00	1	12/19/24 00:06	12/16/24 15:48	
Acenaphthene	ND U	0.100	1	12/19/24 00:06	12/16/24 15:48	
Acenaphthylene	ND U	0.100	1	12/19/24 00:06	12/16/24 15:48	
Acetophenone	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
Anthracene	ND U	0.100	1	12/19/24 00:06	12/16/24 15:48	
Atrazine	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
Benzaldehyde	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
Benzo(a)anthracene	ND U	0.100	1	12/19/24 00:06	12/16/24 15:48	
Benzo(a)pyrene	ND U	0.100	1	12/19/24 00:06	12/16/24 15:48	
Benzo(b)fluoranthene	ND U	0.100	1	12/19/24 00:06	12/16/24 15:48	
Benzo(g,h,i)perylene	ND U	0.100	1	12/19/24 00:06	12/16/24 15:48	
Benzo(k)fluoranthene	ND U	0.100	1	12/19/24 00:06	12/16/24 15:48	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 14:43
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-200 C	**Units:**	µg/L
Lab Code:	HN2410635-021		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
bis(2-Chloroethyl) ether	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
Butyl benzyl phthalate	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
Caprolactam	ND U	5.00	1	12/19/24 00:06	12/16/24 15:48	
Carbazole	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
Chrysene	ND U	0.100	1	12/19/24 00:06	12/16/24 15:48	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
Dibenz(a,h) anthracene	ND U	0.100	1	12/19/24 00:06	12/16/24 15:48	
Dibenzofuran	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
Diethyl phthalate	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
Dimethyl phthalate	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
Di-n-butyl phthalate	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
Di-n-octyl phthalate	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
Fluoranthene	ND U	0.100	1	12/19/24 00:06	12/16/24 15:48	
Fluorene	ND U	0.100	1	12/19/24 00:06	12/16/24 15:48	
Hexachlorobenzene	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
Hexachlorobutadiene	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
Hexachlorocyclopentadiene	ND U	5.00	1	12/19/24 00:06	12/16/24 15:48	
Hexachloroethane	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
Indeno(1,2,3-cd) pyrene	ND U	0.100	1	12/19/24 00:06	12/16/24 15:48	
Isophorone	ND U	5.00	1	12/19/24 00:06	12/16/24 15:48	
Methylphenol, Total	ND U	2.00	1	12/19/24 00:06	12/16/24 15:48	
Naphthalene	**1.27**	0.100	1	12/19/24 00:06	12/16/24 15:48	
Nitrobenzene	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
n-Nitrosodi-n-propylamine	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
N-Nitrosodiphenylamine	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
Pentachlorophenol	ND U	5.00	1	12/19/24 00:06	12/16/24 15:48	
Phenanthrene	ND U	0.100	1	12/19/24 00:06	12/16/24 15:48	
Phenol	ND U	1.00	1	12/19/24 00:06	12/16/24 15:48	
Pyrene	ND U	0.100	1	12/19/24 00:06	12/16/24 15:48	
Pyridine	ND U	10.0	1	12/19/24 00:06	12/16/24 15:48	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	72.0	38 - 103	12/19/24 00:06	
2-Fluorobiphenyl	55.0	36 - 96	12/19/24 00:06	
2-Fluorophenol	35.9	20 - 73	12/19/24 00:06	
4-Terphenyl-d14	54.3	44 - 114	12/19/24 00:06	
Nitrobenzene-d5	71.1	33 - 100	12/19/24 00:06	
Phenol-d6	21.6	10 - 48	12/19/24 00:06	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 12:02
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1100 A	**Units:**	µg/L
Lab Code:	HN2410635-022		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND	U	1.00	1	12/19/24 00:28	12/16/24 15:48	
1,2,4,5-Tetrachlorobenzene	ND	U	5.00	1	12/19/24 00:28	12/16/24 15:48	
1,4-Dioxane (1,4- Diethyleneoxide)	ND	U	5.00	1	12/19/24 00:28	12/16/24 15:48	
1-Methylnaphthalene	**1.61**		0.100	1	12/19/24 00:28	12/16/24 15:48	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND	U	1.00	1	12/19/24 00:28	12/16/24 15:48	
2,3,4,6-Tetrachlorophenol	ND	U	1.00	1	12/19/24 00:28	12/16/24 15:48	
2,4,5-Trichlorophenol	ND	U	1.00	1	12/19/24 00:28	12/16/24 15:48	
2,4,6-Trichlorophenol	ND	U	1.00	1	12/19/24 00:28	12/16/24 15:48	
2,4-Dichlorophenol	ND	U	1.00	1	12/19/24 00:28	12/16/24 15:48	
2,4-Dimethylphenol	ND	U	1.00	1	12/19/24 00:28	12/16/24 15:48	
2,4-Dinitrophenol	ND	U	5.00	1	12/19/24 00:28	12/16/24 15:48	
2,4-Dinitrotoluene (2,4-DNT)	ND	U	1.00	1	12/19/24 00:28	12/16/24 15:48	
2,6-Dinitrotoluene (2,6-DNT)	ND	U	1.00	1	12/19/24 00:28	12/16/24 15:48	
2-Chloronaphthalene	ND	U	0.100	1	12/19/24 00:28	12/16/24 15:48	
2-Chlorophenol	ND	U	1.00	1	12/19/24 00:28	12/16/24 15:48	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND	U	1.00	1	12/19/24 00:28	12/16/24 15:48	
2-Methylnaphthalene	ND	U	0.100	1	12/19/24 00:28	12/16/24 15:48	
2-Methylphenol (o-Cresol)	ND	U	1.00	1	12/19/24 00:28	12/16/24 15:48	
2-Nitroaniline	ND	U	1.00	1	12/19/24 00:28	12/16/24 15:48	
2-Nitrophenol	ND	U	1.00	1	12/19/24 00:28	12/16/24 15:48	
3&4-Methylphenol	ND	U	1.00	1	12/19/24 00:28	12/16/24 15:48	
3,3'-Dichlorobenzidine	ND	U	5.00	1	12/19/24 00:28	12/16/24 15:48	
3-Nitroaniline	ND	U	1.00	1	12/19/24 00:28	12/16/24 15:48	
4-Bromophenyl phenyl ether (BDE-3)	ND	U	1.00	1	12/19/24 00:28	12/16/24 15:48	
4-Chloro-3-methylphenol	ND	U	1.00	1	12/19/24 00:28	12/16/24 15:48	
4-Chloroaniline	ND	U	1.00	1	12/19/24 00:28	12/16/24 15:48	
4-Chlorophenyl phenylether	ND	U	1.00	1	12/19/24 00:28	12/16/24 15:48	
4-Nitroaniline	ND	U	1.00	1	12/19/24 00:28	12/16/24 15:48	
4-Nitrophenol	ND	U	5.00	1	12/19/24 00:28	12/16/24 15:48	
Acenaphthene	**0.126**		0.100	1	12/19/24 00:28	12/16/24 15:48	
Acenaphthylene	ND	U	0.100	1	12/19/24 00:28	12/16/24 15:48	
Acetophenone	ND	U	1.00	1	12/19/24 00:28	12/16/24 15:48	
Anthracene	ND	U	0.100	1	12/19/24 00:28	12/16/24 15:48	
Atrazine	ND	U	1.00	1	12/19/24 00:28	12/16/24 15:48	
Benzaldehyde	ND	U	1.00	1	12/19/24 00:28	12/16/24 15:48	
Benzo(a)anthracene	ND	U	0.100	1	12/19/24 00:28	12/16/24 15:48	
Benzo(a)pyrene	ND	U	0.100	1	12/19/24 00:28	12/16/24 15:48	
Benzo(b)fluoranthene	ND	U	0.100	1	12/19/24 00:28	12/16/24 15:48	
Benzo(g,h,i)perylene	ND	U	0.100	1	12/19/24 00:28	12/16/24 15:48	
Benzo(k)fluoranthene	ND	U	0.100	1	12/19/24 00:28	12/16/24 15:48	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 12:02
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1100 A	**Units:**	µg/L
Lab Code:	HN2410635-022		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND U	1.00	1	12/19/24 00:28	12/16/24 15:48	
bis(2-Chloroethyl) ether	ND U	1.00	1	12/19/24 00:28	12/16/24 15:48	
Butyl benzyl phthalate	ND U	1.00	1	12/19/24 00:28	12/16/24 15:48	
Caprolactam	ND U	5.00	1	12/19/24 00:28	12/16/24 15:48	
Carbazole	ND U	1.00	1	12/19/24 00:28	12/16/24 15:48	
Chrysene	ND U	0.100	1	12/19/24 00:28	12/16/24 15:48	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND U	1.00	1	12/19/24 00:28	12/16/24 15:48	
Dibenz(a,h) anthracene	ND U	0.100	1	12/19/24 00:28	12/16/24 15:48	
Dibenzofuran	ND U	1.00	1	12/19/24 00:28	12/16/24 15:48	
Diethyl phthalate	ND U	1.00	1	12/19/24 00:28	12/16/24 15:48	
Dimethyl phthalate	ND U	1.00	1	12/19/24 00:28	12/16/24 15:48	
Di-n-butyl phthalate	ND U	1.00	1	12/19/24 00:28	12/16/24 15:48	
Di-n-octyl phthalate	ND U	1.00	1	12/19/24 00:28	12/16/24 15:48	
Fluoranthene	ND U	0.100	1	12/19/24 00:28	12/16/24 15:48	
Fluorene	ND U	0.100	1	12/19/24 00:28	12/16/24 15:48	
Hexachlorobenzene	ND U	1.00	1	12/19/24 00:28	12/16/24 15:48	
Hexachlorobutadiene	ND U	1.00	1	12/19/24 00:28	12/16/24 15:48	
Hexachlorocyclopentadiene	ND U	5.00	1	12/19/24 00:28	12/16/24 15:48	
Hexachloroethane	ND U	1.00	1	12/19/24 00:28	12/16/24 15:48	
Indeno(1,2,3-cd) pyrene	ND U	0.100	1	12/19/24 00:28	12/16/24 15:48	
Isophorone	ND U	5.00	1	12/19/24 00:28	12/16/24 15:48	
Methylphenol, Total	ND U	2.00	1	12/19/24 00:28	12/16/24 15:48	
Naphthalene	**0.146**	0.100	1	12/19/24 00:28	12/16/24 15:48	
Nitrobenzene	ND U	1.00	1	12/19/24 00:28	12/16/24 15:48	
n-Nitrosodi-n-propylamine	ND U	1.00	1	12/19/24 00:28	12/16/24 15:48	
N-Nitrosodiphenylamine	ND U	1.00	1	12/19/24 00:28	12/16/24 15:48	
Pentachlorophenol	ND U	5.00	1	12/19/24 00:28	12/16/24 15:48	
Phenanthrene	ND U	0.100	1	12/19/24 00:28	12/16/24 15:48	
Phenol	ND U	1.00	1	12/19/24 00:28	12/16/24 15:48	
Pyrene	ND U	0.100	1	12/19/24 00:28	12/16/24 15:48	
Pyridine	ND U	10.0	1	12/19/24 00:28	12/16/24 15:48	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	72.3	38 - 103	12/19/24 00:28	
2-Fluorobiphenyl	56.8	36 - 96	12/19/24 00:28	
2-Fluorophenol	34.7	20 - 73	12/19/24 00:28	
4-Terphenyl-d14	58.7	44 - 114	12/19/24 00:28	
Nitrobenzene-d5	58.6	33 - 100	12/19/24 00:28	
Phenol-d6	20.3	10 - 48	12/19/24 00:28	

Analytical Report

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Sample Matrix: GROUNDWATER

Work Order: HN2410635
Date Collected: 12/10/24 11:19
Date Received: 12/13/24 10:00

Sample Name: GSI-1110 B
Lab Code: HN2410635-023

Units: µg/L

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	**5.04**		1.00	1	12/19/24 00:49	12/16/24 15:48	
1,2,4,5-Tetrachlorobenzene	ND	U	5.00	1	12/19/24 00:49	12/16/24 15:48	
1,4-Dioxane (1,4- Diethyleneoxide)	ND	U	5.00	1	12/19/24 00:49	12/16/24 15:48	
1-Methylnaphthalene	**156**		0.955	10	12/19/24 22:44	12/16/24 15:48	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND	U	1.00	1	12/19/24 00:49	12/16/24 15:48	
2,3,4,6-Tetrachlorophenol	ND	U	1.00	1	12/19/24 00:49	12/16/24 15:48	
2,4,5-Trichlorophenol	ND	U	1.00	1	12/19/24 00:49	12/16/24 15:48	
2,4,6-Trichlorophenol	ND	U	1.00	1	12/19/24 00:49	12/16/24 15:48	
2,4-Dichlorophenol	**30.6**		1.00	1	12/19/24 00:49	12/16/24 15:48	
2,4-Dimethylphenol	**41.7**		1.00	1	12/19/24 00:49	12/16/24 15:48	
2,4-Dinitrophenol	ND	U	5.00	1	12/19/24 00:49	12/16/24 15:48	
2,4-Dinitrotoluene (2,4-DNT)	ND	U	1.00	1	12/19/24 00:49	12/16/24 15:48	
2,6-Dinitrotoluene (2,6-DNT)	ND	U	1.00	1	12/19/24 00:49	12/16/24 15:48	
2-Chloronaphthalene	ND	U	0.100	1	12/19/24 00:49	12/16/24 15:48	
2-Chlorophenol	ND	U	1.00	1	12/19/24 00:49	12/16/24 15:48	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND	U	1.00	1	12/19/24 00:49	12/16/24 15:48	
2-Methylnaphthalene	ND	U	0.100	1	12/19/24 00:49	12/16/24 15:48	
2-Methylphenol (o-Cresol)	ND	U	1.00	1	12/19/24 00:49	12/16/24 15:48	
2-Nitroaniline	ND	U	1.00	1	12/19/24 00:49	12/16/24 15:48	
2-Nitrophenol	ND	U	1.00	1	12/19/24 00:49	12/16/24 15:48	
3&4-Methylphenol	ND	U	1.00	1	12/19/24 00:49	12/16/24 15:48	
3,3'-Dichlorobenzidine	ND	U	5.00	1	12/19/24 00:49	12/16/24 15:48	
3-Nitroaniline	ND	U	1.00	1	12/19/24 00:49	12/16/24 15:48	
4-Bromophenyl phenyl ether (BDE-3)	ND	U	1.00	1	12/19/24 00:49	12/16/24 15:48	
4-Chloro-3-methylphenol	ND	U	1.00	1	12/19/24 00:49	12/16/24 15:48	
4-Chloroaniline	ND	U	1.00	1	12/19/24 00:49	12/16/24 15:48	
4-Chlorophenyl phenylether	ND	U	1.00	1	12/19/24 00:49	12/16/24 15:48	
4-Nitroaniline	ND	U	1.00	1	12/19/24 00:49	12/16/24 15:48	
4-Nitrophenol	ND	U	5.00	1	12/19/24 00:49	12/16/24 15:48	
Acenaphthene	**3.68**		0.100	1	12/19/24 00:49	12/16/24 15:48	
Acenaphthylene	ND	U	0.100	1	12/19/24 00:49	12/16/24 15:48	
Acetophenone	ND	U	1.00	1	12/19/24 00:49	12/16/24 15:48	
Anthracene	ND	U	0.100	1	12/19/24 00:49	12/16/24 15:48	
Atrazine	ND	U	1.00	1	12/19/24 00:49	12/16/24 15:48	
Benzaldehyde	ND	U	1.00	1	12/19/24 00:49	12/16/24 15:48	
Benzo(a)anthracene	ND	U	0.100	1	12/19/24 00:49	12/16/24 15:48	
Benzo(a)pyrene	ND	U	0.100	1	12/19/24 00:49	12/16/24 15:48	
Benzo(b)fluoranthene	ND	U	0.100	1	12/19/24 00:49	12/16/24 15:48	
Benzo(g,h,i)perylene	ND	U	0.100	1	12/19/24 00:49	12/16/24 15:48	
Benzo(k)fluoranthene	ND	U	0.100	1	12/19/24 00:49	12/16/24 15:48	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 11:19
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1110 B	**Units:**	µg/L
Lab Code:	HN2410635-023		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND U	1.00	1	12/19/24 00:49	12/16/24 15:48	
bis(2-Chloroethyl) ether	ND U	1.00	1	12/19/24 00:49	12/16/24 15:48	
Butyl benzyl phthalate	ND U	1.00	1	12/19/24 00:49	12/16/24 15:48	
Caprolactam	ND U	5.00	1	12/19/24 00:49	12/16/24 15:48	
Carbazole	ND U	1.00	1	12/19/24 00:49	12/16/24 15:48	
Chrysene	ND U	0.100	1	12/19/24 00:49	12/16/24 15:48	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND U	1.00	1	12/19/24 00:49	12/16/24 15:48	
Dibenz(a,h) anthracene	ND U	0.100	1	12/19/24 00:49	12/16/24 15:48	
Dibenzofuran	**1.18**	1.00	1	12/19/24 00:49	12/16/24 15:48	
Diethyl phthalate	ND U	1.00	1	12/19/24 00:49	12/16/24 15:48	
Dimethyl phthalate	ND U	1.00	1	12/19/24 00:49	12/16/24 15:48	
Di-n-butyl phthalate	ND U	1.00	1	12/19/24 00:49	12/16/24 15:48	
Di-n-octyl phthalate	ND U	1.00	1	12/19/24 00:49	12/16/24 15:48	
Fluoranthene	**2.70**	0.100	1	12/19/24 00:49	12/16/24 15:48	
Fluorene	ND U	0.100	1	12/19/24 00:49	12/16/24 15:48	
Hexachlorobenzene	ND U	1.00	1	12/19/24 00:49	12/16/24 15:48	
Hexachlorobutadiene	ND U	1.00	1	12/19/24 00:49	12/16/24 15:48	
Hexachlorocyclopentadiene	ND U	5.00	1	12/19/24 00:49	12/16/24 15:48	
Hexachloroethane	ND U	1.00	1	12/19/24 00:49	12/16/24 15:48	
Indeno(1,2,3-cd) pyrene	ND U	0.100	1	12/19/24 00:49	12/16/24 15:48	
Isophorone	ND U	5.00	1	12/19/24 00:49	12/16/24 15:48	
Methylphenol, Total	ND U	2.00	1	12/19/24 00:49	12/16/24 15:48	
Naphthalene	**18.8**	0.100	1	12/19/24 00:49	12/16/24 15:48	
Nitrobenzene	ND U	1.00	1	12/19/24 00:49	12/16/24 15:48	
n-Nitrosodi-n-propylamine	ND U	1.00	1	12/19/24 00:49	12/16/24 15:48	
N-Nitrosodiphenylamine	ND U	1.00	1	12/19/24 00:49	12/16/24 15:48	
Pentachlorophenol	ND U	5.00	1	12/19/24 00:49	12/16/24 15:48	
Phenanthrene	ND U	0.100	1	12/19/24 00:49	12/16/24 15:48	
Phenol	ND U	1.00	1	12/19/24 00:49	12/16/24 15:48	
Pyrene	ND U	0.100	1	12/19/24 00:49	12/16/24 15:48	
Pyridine	ND U	10.0	1	12/19/24 00:49	12/16/24 15:48	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	79.0	38 - 103	12/19/24 00:49	
2-Fluorobiphenyl	63.5	36 - 96	12/19/24 00:49	
2-Fluorophenol	43.3	20 - 73	12/19/24 00:49	
4-Terphenyl-d14	72.4	44 - 114	12/19/24 00:49	
Nitrobenzene-d5	70.3	33 - 100	12/19/24 00:49	
Phenol-d6	25.5	10 - 48	12/19/24 00:49	

Analytical Report

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Sample Matrix: GROUNDWATER

Work Order: HN2410635
Date Collected: 12/10/24 12:49
Date Received: 12/13/24 10:00

Sample Name: GSI-1100 C
Lab Code: HN2410635-024

Units: µg/L

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND	U	1.00	1	12/19/24 01:11	12/16/24 15:48	
1,2,4,5-Tetrachlorobenzene	ND	U	5.00	1	12/19/24 01:11	12/16/24 15:48	
1,4-Dioxane (1,4- Diethyleneoxide)	ND	U	5.00	1	12/19/24 01:11	12/16/24 15:48	
1-Methylnaphthalene	**20.0**		0.100	1	12/19/24 01:11	12/16/24 15:48	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND	U	1.00	1	12/19/24 01:11	12/16/24 15:48	
2,3,4,6-Tetrachlorophenol	ND	U	1.00	1	12/19/24 01:11	12/16/24 15:48	
2,4,5-Trichlorophenol	ND	U	1.00	1	12/19/24 01:11	12/16/24 15:48	
2,4,6-Trichlorophenol	ND	U	1.00	1	12/19/24 01:11	12/16/24 15:48	
2,4-Dichlorophenol	ND	U	1.00	1	12/19/24 01:11	12/16/24 15:48	
2,4-Dimethylphenol	**2200**		194	200	12/21/24 00:43	12/16/24 15:48	
2,4-Dinitrophenol	ND	U	5.00	1	12/19/24 01:11	12/16/24 15:48	
2,4-Dinitrotoluene (2,4-DNT)	ND	U	1.00	1	12/19/24 01:11	12/16/24 15:48	
2,6-Dinitrotoluene (2,6-DNT)	ND	U	1.00	1	12/19/24 01:11	12/16/24 15:48	
2-Chloronaphthalene	ND	U	0.100	1	12/19/24 01:11	12/16/24 15:48	
2-Chlorophenol	ND	U	1.00	1	12/19/24 01:11	12/16/24 15:48	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND	U	1.00	1	12/19/24 01:11	12/16/24 15:48	
2-Methylnaphthalene	ND	U	0.100	1	12/19/24 01:11	12/16/24 15:48	
2-Methylphenol (o-Cresol)	**208**		19.4	20	12/19/24 23:11	12/16/24 15:48	
2-Nitroaniline	ND	U	1.00	1	12/19/24 01:11	12/16/24 15:48	
2-Nitrophenol	ND	U	1.00	1	12/19/24 01:11	12/16/24 15:48	
3&4-Methylphenol	**135**		19.4	20	12/19/24 23:11	12/16/24 15:48	
3,3'-Dichlorobenzidine	ND	U	5.00	1	12/19/24 01:11	12/16/24 15:48	
3-Nitroaniline	ND	U	1.00	1	12/19/24 01:11	12/16/24 15:48	
4-Bromophenyl phenyl ether (BDE-3)	ND	U	1.00	1	12/19/24 01:11	12/16/24 15:48	
4-Chloro-3-methylphenol	ND	U	1.00	1	12/19/24 01:11	12/16/24 15:48	
4-Chloroaniline	ND	U	1.00	1	12/19/24 01:11	12/16/24 15:48	
4-Chlorophenyl phenylether	ND	U	1.00	1	12/19/24 01:11	12/16/24 15:48	
4-Nitroaniline	ND	U	1.00	1	12/19/24 01:11	12/16/24 15:48	
4-Nitrophenol	ND	U	5.00	1	12/19/24 01:11	12/16/24 15:48	
Acenaphthene	**1.69**		0.100	1	12/19/24 01:11	12/16/24 15:48	
Acenaphthylene	ND	U	0.100	1	12/19/24 01:11	12/16/24 15:48	
Acetophenone	ND	U	1.00	1	12/19/24 01:11	12/16/24 15:48	
Anthracene	ND	U	0.100	1	12/19/24 01:11	12/16/24 15:48	
Atrazine	ND	U	1.00	1	12/19/24 01:11	12/16/24 15:48	
Benzaldehyde	ND	U	1.00	1	12/19/24 01:11	12/16/24 15:48	
Benzo(a)anthracene	ND	U	0.100	1	12/19/24 01:11	12/16/24 15:48	
Benzo(a)pyrene	ND	U	0.100	1	12/19/24 01:11	12/16/24 15:48	
Benzo(b)fluoranthene	ND	U	0.100	1	12/19/24 01:11	12/16/24 15:48	
Benzo(g,h,i)perylene	ND	U	0.100	1	12/19/24 01:11	12/16/24 15:48	
Benzo(k)fluoranthene	ND	U	0.100	1	12/19/24 01:11	12/16/24 15:48	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 12:49
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1100 C	**Units:**	µg/L
Lab Code:	HN2410635-024		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND U	1.00	1	12/19/24 01:11	12/16/24 15:48	
bis(2-Chloroethyl) ether	ND U	1.00	1	12/19/24 01:11	12/16/24 15:48	
Butyl benzyl phthalate	ND U	1.00	1	12/19/24 01:11	12/16/24 15:48	
Caprolactam	ND U	5.00	1	12/19/24 01:11	12/16/24 15:48	
Carbazole	ND U	1.00	1	12/19/24 01:11	12/16/24 15:48	
Chrysene	ND U	0.100	1	12/19/24 01:11	12/16/24 15:48	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND U	1.00	1	12/19/24 01:11	12/16/24 15:48	
Dibenz(a,h) anthracene	ND U	0.100	1	12/19/24 01:11	12/16/24 15:48	
Dibenzofuran	ND U	1.00	1	12/19/24 01:11	12/16/24 15:48	
Diethyl phthalate	ND U	1.00	1	12/19/24 01:11	12/16/24 15:48	
Dimethyl phthalate	ND U	1.00	1	12/19/24 01:11	12/16/24 15:48	
Di-n-butyl phthalate	ND U	1.00	1	12/19/24 01:11	12/16/24 15:48	
Di-n-octyl phthalate	ND U	1.00	1	12/19/24 01:11	12/16/24 15:48	
Fluoranthene	ND U	0.100	1	12/19/24 01:11	12/16/24 15:48	
Fluorene	ND U	0.100	1	12/19/24 01:11	12/16/24 15:48	
Hexachlorobenzene	ND U	1.00	1	12/19/24 01:11	12/16/24 15:48	
Hexachlorobutadiene	ND U	1.00	1	12/19/24 01:11	12/16/24 15:48	
Hexachlorocyclopentadiene	ND U	5.00	1	12/19/24 01:11	12/16/24 15:48	
Hexachloroethane	ND U	1.00	1	12/19/24 01:11	12/16/24 15:48	
Indeno(1,2,3-cd) pyrene	ND U	0.100	1	12/19/24 01:11	12/16/24 15:48	
Isophorone	ND U	5.00	1	12/19/24 01:11	12/16/24 15:48	
Methylphenol, Total	**344**	38.8	20	12/19/24 23:11	12/16/24 15:48	
Naphthalene	**50.0**	0.100	1	12/19/24 01:11	12/16/24 15:48	
Nitrobenzene	ND U	1.00	1	12/19/24 01:11	12/16/24 15:48	
n-Nitrosodi-n-propylamine	ND U	1.00	1	12/19/24 01:11	12/16/24 15:48	
N-Nitrosodiphenylamine	ND U	1.00	1	12/19/24 01:11	12/16/24 15:48	
Pentachlorophenol	ND U	5.00	1	12/19/24 01:11	12/16/24 15:48	
Phenanthrene	ND U	0.100	1	12/19/24 01:11	12/16/24 15:48	
Phenol	**27.4**	1.00	1	12/19/24 01:11	12/16/24 15:48	
Pyrene	ND U	0.100	1	12/19/24 01:11	12/16/24 15:48	
Pyridine	ND U	10.0	1	12/19/24 01:11	12/16/24 15:48	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	81.5	38 - 103	12/19/24 01:11	
2-Fluorobiphenyl	57.7	36 - 96	12/19/24 01:11	
2-Fluorophenol	56.8	20 - 73	12/19/24 01:11	
4-Terphenyl-d14	71.1	44 - 114	12/19/24 01:11	
Nitrobenzene-d5	63.4	33 - 100	12/19/24 01:11	
Phenol-d6	33.7	10 - 48	12/19/24 01:11	

Analytical Report

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Sample Matrix: GROUNDWATER

Work Order: HN2410635
Date Collected: 12/09/24 16:33
Date Received: 12/13/24 10:00

Sample Name: GSI-1200 A
Lab Code: HN2410635-025

Units: µg/L

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	**1.41**	1.00	1	12/17/24 20:52	12/16/24 09:27	
1,2,4,5-Tetrachlorobenzene	ND U	5.00	1	12/17/24 20:52	12/16/24 09:27	
1,4-Dioxane (1,4- Diethyleneoxide)	ND U	5.00	1	12/17/24 20:52	12/16/24 09:27	
1-Methylnaphthalene	**25.2**	0.100	1	12/17/24 20:52	12/16/24 09:27	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND U	1.00	1	12/17/24 20:52	12/16/24 09:27	
2,3,4,6-Tetrachlorophenol	ND U	1.00	1	12/17/24 20:52	12/16/24 09:27	
2,4,5-Trichlorophenol	ND U	1.00	1	12/17/24 20:52	12/16/24 09:27	
2,4,6-Trichlorophenol	ND U	1.00	1	12/17/24 20:52	12/16/24 09:27	
2,4-Dichlorophenol	ND U	1.00	1	12/17/24 20:52	12/16/24 09:27	
2,4-Dimethylphenol	ND U	1.00	1	12/17/24 20:52	12/16/24 09:27	
2,4-Dinitrophenol	ND U	5.00	1	12/17/24 20:52	12/16/24 09:27	
2,4-Dinitrotoluene (2,4-DNT)	ND U	1.00	1	12/17/24 20:52	12/16/24 09:27	
2,6-Dinitrotoluene (2,6-DNT)	ND U	1.00	1	12/17/24 20:52	12/16/24 09:27	
2-Chloronaphthalene	ND U	0.100	1	12/17/24 20:52	12/16/24 09:27	
2-Chlorophenol	ND U	1.00	1	12/17/24 20:52	12/16/24 09:27	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND U	1.00	1	12/17/24 20:52	12/16/24 09:27	
2-Methylnaphthalene	ND U	0.100	1	12/17/24 20:52	12/16/24 09:27	
2-Methylphenol (o-Cresol)	ND U	1.00	1	12/17/24 20:52	12/16/24 09:27	
2-Nitroaniline	ND U	1.00	1	12/17/24 20:52	12/16/24 09:27	
2-Nitrophenol	ND U	1.00	1	12/17/24 20:52	12/16/24 09:27	
3&4-Methylphenol	ND U	1.00	1	12/17/24 20:52	12/16/24 09:27	
3,3'-Dichlorobenzidine	ND U	5.00	1	12/17/24 20:52	12/16/24 09:27	
3-Nitroaniline	ND U	1.00	1	12/17/24 20:52	12/16/24 09:27	
4-Bromophenyl phenyl ether (BDE-3)	ND U	1.00	1	12/17/24 20:52	12/16/24 09:27	
4-Chloro-3-methylphenol	ND U	1.00	1	12/17/24 20:52	12/16/24 09:27	
4-Chloroaniline	ND U	1.00	1	12/17/24 20:52	12/16/24 09:27	
4-Chlorophenyl phenylether	ND U	1.00	1	12/17/24 20:52	12/16/24 09:27	
4-Nitroaniline	ND U	1.00	1	12/17/24 20:52	12/16/24 09:27	
4-Nitrophenol	ND U	5.00	1	12/17/24 20:52	12/16/24 09:27	
Acenaphthene	**0.435**	0.100	1	12/17/24 20:52	12/16/24 09:27	
Acenaphthylene	**0.222**	0.100	1	12/17/24 20:52	12/16/24 09:27	
Acetophenone	ND U	1.00	1	12/17/24 20:52	12/16/24 09:27	
Anthracene	ND U	0.100	1	12/17/24 20:52	12/16/24 09:27	
Atrazine	ND U	1.00	1	12/17/24 20:52	12/16/24 09:27	
Benzaldehyde	ND U	1.00	1	12/17/24 20:52	12/16/24 09:27	
Benzo(a)anthracene	ND U	0.100	1	12/17/24 20:52	12/16/24 09:27	
Benzo(a)pyrene	ND U	0.100	1	12/17/24 20:52	12/16/24 09:27	
Benzo(b)fluoranthene	ND U	0.100	1	12/17/24 20:52	12/16/24 09:27	
Benzo(g,h,i)perylene	ND U	0.100	1	12/17/24 20:52	12/16/24 09:27	
Benzo(k)fluoranthene	ND U	0.100	1	12/17/24 20:52	12/16/24 09:27	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 16:33
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1200 A	**Units:**	µg/L
Lab Code:	HN2410635-025		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND	U	1.00	1	12/17/24 20:52	12/16/24 09:27	
bis(2-Chloroethyl) ether	ND	U	1.00	1	12/17/24 20:52	12/16/24 09:27	
Butyl benzyl phthalate	ND	U	1.00	1	12/17/24 20:52	12/16/24 09:27	
Caprolactam	ND	U	5.00	1	12/17/24 20:52	12/16/24 09:27	
Carbazole	ND	U	1.00	1	12/17/24 20:52	12/16/24 09:27	
Chrysene	ND	U	0.100	1	12/17/24 20:52	12/16/24 09:27	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND	U	1.00	1	12/17/24 20:52	12/16/24 09:27	
Dibenz(a,h) anthracene	ND	U	0.100	1	12/17/24 20:52	12/16/24 09:27	
Dibenzofuran	ND	U	1.00	1	12/17/24 20:52	12/16/24 09:27	
Diethyl phthalate	ND	U	1.00	1	12/17/24 20:52	12/16/24 09:27	
Dimethyl phthalate	ND	U	1.00	1	12/17/24 20:52	12/16/24 09:27	
Di-n-butyl phthalate	ND	U	1.00	1	12/17/24 20:52	12/16/24 09:27	
Di-n-octyl phthalate	ND	U	1.00	1	12/17/24 20:52	12/16/24 09:27	
Fluoranthene	ND	U	0.100	1	12/17/24 20:52	12/16/24 09:27	
Fluorene	**0.106**		0.100	1	12/17/24 20:52	12/16/24 09:27	
Hexachlorobenzene	ND	U	1.00	1	12/17/24 20:52	12/16/24 09:27	
Hexachlorobutadiene	ND	U	1.00	1	12/17/24 20:52	12/16/24 09:27	
Hexachlorocyclopentadiene	ND	U	5.00	1	12/17/24 20:52	12/16/24 09:27	
Hexachloroethane	ND	U	1.00	1	12/17/24 20:52	12/16/24 09:27	
Indeno(1,2,3-cd) pyrene	ND	U	0.100	1	12/17/24 20:52	12/16/24 09:27	
Isophorone	ND	U	5.00	1	12/17/24 20:52	12/16/24 09:27	
Methylphenol, Total	ND	U	2.00	1	12/17/24 20:52	12/16/24 09:27	
Naphthalene	ND	U	0.100	1	12/17/24 20:52	12/16/24 09:27	
Nitrobenzene	ND	SU	1.00	1	12/17/24 20:52	12/16/24 09:27	
n-Nitrosodi-n-propylamine	ND	U	1.00	1	12/17/24 20:52	12/16/24 09:27	
N-Nitrosodiphenylamine	ND	U	1.00	1	12/17/24 20:52	12/16/24 09:27	
Pentachlorophenol	ND	U	5.00	1	12/17/24 20:52	12/16/24 09:27	
Phenanthrene	ND	U	0.100	1	12/17/24 20:52	12/16/24 09:27	
Phenol	ND	U	1.00	1	12/17/24 20:52	12/16/24 09:27	
Pyrene	ND	U	0.100	1	12/17/24 20:52	12/16/24 09:27	
Pyridine	ND	U	10.0	1	12/17/24 20:52	12/16/24 09:27	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	81.4	38 - 103	12/17/24 20:52	
2-Fluorobiphenyl	65.1	36 - 96	12/17/24 20:52	
2-Fluorophenol	38.6	20 - 73	12/17/24 20:52	
4-Terphenyl-d14	69.7	44 - 114	12/17/24 20:52	
Nitrobenzene-d5	68.4	33 - 100	12/17/24 20:52	
Phenol-d6	23.0	10 - 48	12/17/24 20:52	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 17:01
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1200 B	**Units:**	µg/L
Lab Code:	HN2410635-026		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND U	1.00	1	12/17/24 21:13	12/16/24 09:27	
1,2,4,5-Tetrachlorobenzene	ND U	5.00	1	12/17/24 21:13	12/16/24 09:27	
1,4-Dioxane (1,4- Diethyleneoxide)	ND U	5.00	1	12/17/24 21:13	12/16/24 09:27	
1-Methylnaphthalene	ND U	0.100	1	12/17/24 21:13	12/16/24 09:27	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND U	1.00	1	12/17/24 21:13	12/16/24 09:27	
2,3,4,6-Tetrachlorophenol	ND U	1.00	1	12/17/24 21:13	12/16/24 09:27	
2,4,5-Trichlorophenol	ND U	1.00	1	12/17/24 21:13	12/16/24 09:27	
2,4,6-Trichlorophenol	ND U	1.00	1	12/17/24 21:13	12/16/24 09:27	
2,4-Dichlorophenol	ND U	1.00	1	12/17/24 21:13	12/16/24 09:27	
2,4-Dimethylphenol	ND U	1.00	1	12/17/24 21:13	12/16/24 09:27	
2,4-Dinitrophenol	ND U	5.00	1	12/17/24 21:13	12/16/24 09:27	
2,4-Dinitrotoluene (2,4-DNT)	ND U	1.00	1	12/17/24 21:13	12/16/24 09:27	
2,6-Dinitrotoluene (2,6-DNT)	ND U	1.00	1	12/17/24 21:13	12/16/24 09:27	
2-Chloronaphthalene	ND U	0.100	1	12/17/24 21:13	12/16/24 09:27	
2-Chlorophenol	ND U	1.00	1	12/17/24 21:13	12/16/24 09:27	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND U	1.00	1	12/17/24 21:13	12/16/24 09:27	
2-Methylnaphthalene	ND U	0.100	1	12/17/24 21:13	12/16/24 09:27	
2-Methylphenol (o-Cresol)	ND U	1.00	1	12/17/24 21:13	12/16/24 09:27	
2-Nitroaniline	ND U	1.00	1	12/17/24 21:13	12/16/24 09:27	
2-Nitrophenol	ND U	1.00	1	12/17/24 21:13	12/16/24 09:27	
3&4-Methylphenol	ND U	1.00	1	12/17/24 21:13	12/16/24 09:27	
3,3'-Dichlorobenzidine	ND U	5.00	1	12/17/24 21:13	12/16/24 09:27	
3-Nitroaniline	ND U	1.00	1	12/17/24 21:13	12/16/24 09:27	
4-Bromophenyl phenyl ether (BDE-3)	ND U	1.00	1	12/17/24 21:13	12/16/24 09:27	
4-Chloro-3-methylphenol	ND U	1.00	1	12/17/24 21:13	12/16/24 09:27	
4-Chloroaniline	ND U	1.00	1	12/17/24 21:13	12/16/24 09:27	
4-Chlorophenyl phenylether	ND U	1.00	1	12/17/24 21:13	12/16/24 09:27	
4-Nitroaniline	ND U	1.00	1	12/17/24 21:13	12/16/24 09:27	
4-Nitrophenol	ND U	5.00	1	12/17/24 21:13	12/16/24 09:27	
Acenaphthene	**0.563**	0.100	1	12/17/24 21:13	12/16/24 09:27	
Acenaphthylene	ND U	0.100	1	12/17/24 21:13	12/16/24 09:27	
Acetophenone	ND U	1.00	1	12/17/24 21:13	12/16/24 09:27	
Anthracene	ND U	0.100	1	12/17/24 21:13	12/16/24 09:27	
Atrazine	ND U	1.00	1	12/17/24 21:13	12/16/24 09:27	
Benzaldehyde	ND U	1.00	1	12/17/24 21:13	12/16/24 09:27	
Benzo(a)anthracene	ND U	0.100	1	12/17/24 21:13	12/16/24 09:27	
Benzo(a)pyrene	ND U	0.100	1	12/17/24 21:13	12/16/24 09:27	
Benzo(b)fluoranthene	ND U	0.100	1	12/17/24 21:13	12/16/24 09:27	
Benzo(g,h,i)perylene	ND U	0.100	1	12/17/24 21:13	12/16/24 09:27	
Benzo(k)fluoranthene	ND U	0.100	1	12/17/24 21:13	12/16/24 09:27	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 17:01
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1200 B	**Units:**	µg/L
Lab Code:	HN2410635-026		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND	U	1.00	1	12/17/24 21:13	12/16/24 09:27	
bis(2-Chloroethyl) ether	ND	U	1.00	1	12/17/24 21:13	12/16/24 09:27	
Butyl benzyl phthalate	ND	U	1.00	1	12/17/24 21:13	12/16/24 09:27	
Caprolactam	ND	U	5.00	1	12/17/24 21:13	12/16/24 09:27	
Carbazole	ND	U	1.00	1	12/17/24 21:13	12/16/24 09:27	
Chrysene	ND	U	0.100	1	12/17/24 21:13	12/16/24 09:27	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND	U	1.00	1	12/17/24 21:13	12/16/24 09:27	
Dibenz(a,h) anthracene	ND	U	0.100	1	12/17/24 21:13	12/16/24 09:27	
Dibenzofuran	ND	U	1.00	1	12/17/24 21:13	12/16/24 09:27	
Diethyl phthalate	ND	U	1.00	1	12/17/24 21:13	12/16/24 09:27	
Dimethyl phthalate	ND	U	1.00	1	12/17/24 21:13	12/16/24 09:27	
Di-n-butyl phthalate	ND	U	1.00	1	12/17/24 21:13	12/16/24 09:27	
Di-n-octyl phthalate	ND	U	1.00	1	12/17/24 21:13	12/16/24 09:27	
Fluoranthene	ND	U	0.100	1	12/17/24 21:13	12/16/24 09:27	
Fluorene	**0.146**		0.100	1	12/17/24 21:13	12/16/24 09:27	
Hexachlorobenzene	ND	U	1.00	1	12/17/24 21:13	12/16/24 09:27	
Hexachlorobutadiene	ND	U	1.00	1	12/17/24 21:13	12/16/24 09:27	
Hexachlorocyclopentadiene	ND	U	5.00	1	12/17/24 21:13	12/16/24 09:27	
Hexachloroethane	ND	U	1.00	1	12/17/24 21:13	12/16/24 09:27	
Indeno(1,2,3-cd) pyrene	ND	U	0.100	1	12/17/24 21:13	12/16/24 09:27	
Isophorone	ND	U	5.00	1	12/17/24 21:13	12/16/24 09:27	
Methylphenol, Total	ND	U	2.00	1	12/17/24 21:13	12/16/24 09:27	
Naphthalene	ND	U	0.100	1	12/17/24 21:13	12/16/24 09:27	
Nitrobenzene	ND	SU	1.00	1	12/17/24 21:13	12/16/24 09:27	
n-Nitrosodi-n-propylamine	ND	U	1.00	1	12/17/24 21:13	12/16/24 09:27	
N-Nitrosodiphenylamine	ND	U	1.00	1	12/17/24 21:13	12/16/24 09:27	
Pentachlorophenol	ND	U	5.00	1	12/17/24 21:13	12/16/24 09:27	
Phenanthrene	ND	U	0.100	1	12/17/24 21:13	12/16/24 09:27	
Phenol	ND	U	1.00	1	12/17/24 21:13	12/16/24 09:27	
Pyrene	ND	U	0.100	1	12/17/24 21:13	12/16/24 09:27	
Pyridine	ND	U	10.0	1	12/17/24 21:13	12/16/24 09:27	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	66.7	38 - 103	12/17/24 21:13	
2-Fluorobiphenyl	50.9	36 - 96	12/17/24 21:13	
2-Fluorophenol	27.0	20 - 73	12/17/24 21:13	
4-Terphenyl-d14	56.5	44 - 114	12/17/24 21:13	
Nitrobenzene-d5	49.0	33 - 100	12/17/24 21:13	
Phenol-d6	16.7	10 - 48	12/17/24 21:13	

Analytical Report

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Sample Matrix: GROUNDWATER

Work Order: HN2410635
Date Collected: 12/09/24 15:48
Date Received: 12/13/24 10:00

Sample Name: GSI-1200 C
Lab Code: HN2410635-027

Units: µg/L

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
1,2,4,5-Tetrachlorobenzene	ND	U	5.00	1	12/17/24 21:35	12/16/24 09:27	
1,4-Dioxane (1,4- Diethyleneoxide)	ND	U	5.00	1	12/17/24 21:35	12/16/24 09:27	
1-Methylnaphthalene	**0.483**		0.100	1	12/17/24 21:35	12/16/24 09:27	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
2,3,4,6-Tetrachlorophenol	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
2,4,5-Trichlorophenol	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
2,4,6-Trichlorophenol	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
2,4-Dichlorophenol	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
2,4-Dimethylphenol	**223**		9.66	10	12/19/24 03:50	12/16/24 09:27	
2,4-Dinitrophenol	ND	U	5.00	1	12/17/24 21:35	12/16/24 09:27	
2,4-Dinitrotoluene (2,4-DNT)	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
2,6-Dinitrotoluene (2,6-DNT)	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
2-Chloronaphthalene	ND	U	0.100	1	12/17/24 21:35	12/16/24 09:27	
2-Chlorophenol	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
2-Methylnaphthalene	**0.251**		0.100	1	12/17/24 21:35	12/16/24 09:27	
2-Methylphenol (o-Cresol)	**3.22**		1.00	1	12/17/24 21:35	12/16/24 09:27	
2-Nitroaniline	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
2-Nitrophenol	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
3&4-Methylphenol	**26.4**		1.00	1	12/17/24 21:35	12/16/24 09:27	
3,3'-Dichlorobenzidine	ND	U	5.00	1	12/17/24 21:35	12/16/24 09:27	
3-Nitroaniline	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
4-Bromophenyl phenyl ether (BDE-3)	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
4-Chloro-3-methylphenol	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
4-Chloroaniline	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
4-Chlorophenyl phenylether	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
4-Nitroaniline	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
4-Nitrophenol	ND	U	5.00	1	12/17/24 21:35	12/16/24 09:27	
Acenaphthene	ND	U	0.100	1	12/17/24 21:35	12/16/24 09:27	
Acenaphthylene	ND	U	0.100	1	12/17/24 21:35	12/16/24 09:27	
Acetophenone	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
Anthracene	ND	U	0.100	1	12/17/24 21:35	12/16/24 09:27	
Atrazine	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
Benzaldehyde	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
Benzo(a)anthracene	ND	U	0.100	1	12/17/24 21:35	12/16/24 09:27	
Benzo(a)pyrene	ND	U	0.100	1	12/17/24 21:35	12/16/24 09:27	
Benzo(b)fluoranthene	ND	U	0.100	1	12/17/24 21:35	12/16/24 09:27	
Benzo(g,h,i)perylene	ND	U	0.100	1	12/17/24 21:35	12/16/24 09:27	
Benzo(k)fluoranthene	ND	U	0.100	1	12/17/24 21:35	12/16/24 09:27	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 15:48
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1200 C	**Units:**	µg/L
Lab Code:	HN2410635-027		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
bis(2-Chloroethyl) ether	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
Butyl benzyl phthalate	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
Caprolactam	ND	U	5.00	1	12/17/24 21:35	12/16/24 09:27	
Carbazole	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
Chrysene	ND	U	0.100	1	12/17/24 21:35	12/16/24 09:27	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
Dibenz(a,h) anthracene	ND	U	0.100	1	12/17/24 21:35	12/16/24 09:27	
Dibenzofuran	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
Diethyl phthalate	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
Dimethyl phthalate	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
Di-n-butyl phthalate	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
Di-n-octyl phthalate	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
Fluoranthene	ND	U	0.100	1	12/17/24 21:35	12/16/24 09:27	
Fluorene	ND	U	0.100	1	12/17/24 21:35	12/16/24 09:27	
Hexachlorobenzene	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
Hexachlorobutadiene	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
Hexachlorocyclopentadiene	ND	U	5.00	1	12/17/24 21:35	12/16/24 09:27	
Hexachloroethane	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
Indeno(1,2,3-cd) pyrene	ND	U	0.100	1	12/17/24 21:35	12/16/24 09:27	
Isophorone	ND	U	5.00	1	12/17/24 21:35	12/16/24 09:27	
Methylphenol, Total	**29.6**		2.00	1	12/17/24 21:35	12/16/24 09:27	
Naphthalene	**1.33**		0.100	1	12/17/24 21:35	12/16/24 09:27	
Nitrobenzene	ND	SU	1.00	1	12/17/24 21:35	12/16/24 09:27	
n-Nitrosodi-n-propylamine	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
N-Nitrosodiphenylamine	ND	U	1.00	1	12/17/24 21:35	12/16/24 09:27	
Pentachlorophenol	ND	U	5.00	1	12/17/24 21:35	12/16/24 09:27	
Phenanthrene	ND	U	0.100	1	12/17/24 21:35	12/16/24 09:27	
Phenol	**1.15**		1.00	1	12/17/24 21:35	12/16/24 09:27	
Pyrene	ND	U	0.100	1	12/17/24 21:35	12/16/24 09:27	
Pyridine	ND	U	10.0	1	12/17/24 21:35	12/16/24 09:27	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	68.9	38 - 103	12/17/24 21:35	
2-Fluorobiphenyl	57.5	36 - 96	12/17/24 21:35	
2-Fluorophenol	32.4	20 - 73	12/17/24 21:35	
4-Terphenyl-d14	58.3	44 - 114	12/17/24 21:35	
Nitrobenzene-d5	66.1	33 - 100	12/17/24 21:35	
Phenol-d6	17.0	10 - 48	12/17/24 21:35	

Analytical Report

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Sample Matrix: GROUNDWATER

Work Order: HN2410635
Date Collected: 12/10/24 09:39
Date Received: 12/13/24 10:00

Sample Name: GSI-1400 B
Lab Code: HN2410635-028

Units: µg/L

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	**4.34**		1.00	1	12/18/24 00:29	12/16/24 09:28	
1,2,4,5-Tetrachlorobenzene	ND	U	5.00	1	12/18/24 00:29	12/16/24 09:28	
1,4-Dioxane (1,4- Diethyleneoxide)	ND	U	5.00	1	12/18/24 00:29	12/16/24 09:28	
1-Methylnaphthalene	**26.0**		0.100	1	12/18/24 00:29	12/16/24 09:28	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
2,3,4,6-Tetrachlorophenol	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
2,4,5-Trichlorophenol	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
2,4,6-Trichlorophenol	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
2,4-Dichlorophenol	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
2,4-Dimethylphenol	**212**		9.62	10	12/19/24 04:44	12/16/24 09:28	
2,4-Dinitrophenol	ND	U	5.00	1	12/18/24 00:29	12/16/24 09:28	
2,4-Dinitrotoluene (2,4-DNT)	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
2,6-Dinitrotoluene (2,6-DNT)	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
2-Chloronaphthalene	ND	U	0.100	1	12/18/24 00:29	12/16/24 09:28	
2-Chlorophenol	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
2-Methylnaphthalene	**28.8**		0.100	1	12/18/24 00:29	12/16/24 09:28	
2-Methylphenol (o-Cresol)	**58.8**		9.62	10	12/19/24 04:44	12/16/24 09:28	
2-Nitroaniline	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
2-Nitrophenol	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
3&4-Methylphenol	**77.2**		9.62	10	12/19/24 04:44	12/16/24 09:28	
3,3'-Dichlorobenzidine	ND	U	5.00	1	12/18/24 00:29	12/16/24 09:28	
3-Nitroaniline	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
4-Bromophenyl phenyl ether (BDE-3)	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
4-Chloro-3-methylphenol	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
4-Chloroaniline	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
4-Chlorophenyl phenylether	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
4-Nitroaniline	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
4-Nitrophenol	ND	U	5.00	1	12/18/24 00:29	12/16/24 09:28	
Acenaphthene	ND	U	0.100	1	12/18/24 00:29	12/16/24 09:28	
Acenaphthylene	ND	U	0.100	1	12/18/24 00:29	12/16/24 09:28	
Acetophenone	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
Anthracene	ND	U	0.100	1	12/18/24 00:29	12/16/24 09:28	
Atrazine	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
Benzaldehyde	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
Benzo(a)anthracene	ND	U	0.100	1	12/18/24 00:29	12/16/24 09:28	
Benzo(a)pyrene	ND	U	0.100	1	12/18/24 00:29	12/16/24 09:28	
Benzo(b)fluoranthene	ND	U	0.100	1	12/18/24 00:29	12/16/24 09:28	
Benzo(g,h,i)perylene	ND	U	0.100	1	12/18/24 00:29	12/16/24 09:28	
Benzo(k)fluoranthene	ND	U	0.100	1	12/18/24 00:29	12/16/24 09:28	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 09:39
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1400 B	**Units:**	µg/L
Lab Code:	HN2410635-028		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
bis(2-Chloroethyl) ether	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
Butyl benzyl phthalate	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
Caprolactam	ND	U	5.00	1	12/18/24 00:29	12/16/24 09:28	
Carbazole	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
Chrysene	ND	U	0.100	1	12/18/24 00:29	12/16/24 09:28	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
Dibenz(a,h) anthracene	ND	U	0.100	1	12/18/24 00:29	12/16/24 09:28	
Dibenzofuran	**1.56**		1.00	1	12/18/24 00:29	12/16/24 09:28	
Diethyl phthalate	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
Dimethyl phthalate	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
Di-n-butyl phthalate	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
Di-n-octyl phthalate	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
Fluoranthene	ND	U	0.100	1	12/18/24 00:29	12/16/24 09:28	
Fluorene	ND	U	0.100	1	12/18/24 00:29	12/16/24 09:28	
Hexachlorobenzene	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
Hexachlorobutadiene	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
Hexachlorocyclopentadiene	ND	U	5.00	1	12/18/24 00:29	12/16/24 09:28	
Hexachloroethane	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
Indeno(1,2,3-cd) pyrene	ND	U	0.100	1	12/18/24 00:29	12/16/24 09:28	
Isophorone	ND	U	5.00	1	12/18/24 00:29	12/16/24 09:28	
Methylphenol, Total	**136**		19.2	10	12/19/24 04:44	12/16/24 09:28	
Naphthalene	**83.5**		0.962	10	12/19/24 04:44	12/16/24 09:28	
Nitrobenzene	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
n-Nitrosodi-n-propylamine	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
N-Nitrosodiphenylamine	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
Pentachlorophenol	ND	U	5.00	1	12/18/24 00:29	12/16/24 09:28	
Phenanthrene	ND	U	0.100	1	12/18/24 00:29	12/16/24 09:28	
Phenol	ND	U	1.00	1	12/18/24 00:29	12/16/24 09:28	
Pyrene	ND	U	0.100	1	12/18/24 00:29	12/16/24 09:28	
Pyridine	ND	U	10.0	1	12/18/24 00:29	12/16/24 09:28	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	39.5	38 - 103	12/18/24 00:29	
2-Fluorobiphenyl	31.1	36 - 96	12/18/24 00:29	S
2-Fluorophenol	23.1	20 - 73	12/18/24 00:29	
4-Terphenyl-d14	40.2	44 - 114	12/18/24 00:29	S
Nitrobenzene-d5	33.8	33 - 100	12/18/24 00:29	
Phenol-d6	12.0	10 - 48	12/18/24 00:29	

Analytical Report

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Sample Matrix: GROUNDWATER

Work Order: HN2410635
Date Collected: 12/10/24 10:13
Date Received: 12/13/24 10:00

Sample Name: GSI-1400 C
Lab Code: HN2410635-029

Units: µg/L

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND	U	1.00	1	12/18/24 00:50	12/16/24 09:28	
1,2,4,5-Tetrachlorobenzene	ND	U	5.00	1	12/18/24 00:50	12/16/24 09:28	
1,4-Dioxane (1,4- Diethyleneoxide)	ND	U	5.00	1	12/18/24 00:50	12/16/24 09:28	
1-Methylnaphthalene	**2.60**		0.100	1	12/18/24 00:50	12/16/24 09:28	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND	U	1.00	1	12/18/24 00:50	12/16/24 09:28	
2,3,4,6-Tetrachlorophenol	ND	U	1.00	1	12/18/24 00:50	12/16/24 09:28	
2,4,5-Trichlorophenol	ND	U	1.00	1	12/18/24 00:50	12/16/24 09:28	
2,4,6-Trichlorophenol	ND	U	1.00	1	12/18/24 00:50	12/16/24 09:28	
2,4-Dichlorophenol	ND	U	1.00	1	12/18/24 00:50	12/16/24 09:28	
2,4-Dimethylphenol	**46.4**		1.00	1	12/18/24 00:50	12/16/24 09:28	
2,4-Dinitrophenol	ND	U	5.00	1	12/18/24 00:50	12/16/24 09:28	
2,4-Dinitrotoluene (2,4-DNT)	ND	U	1.00	1	12/18/24 00:50	12/16/24 09:28	
2,6-Dinitrotoluene (2,6-DNT)	ND	U	1.00	1	12/18/24 00:50	12/16/24 09:28	
2-Chloronaphthalene	ND	U	0.100	1	12/18/24 00:50	12/16/24 09:28	
2-Chlorophenol	ND	U	1.00	1	12/18/24 00:50	12/16/24 09:28	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND	U	1.00	1	12/18/24 00:50	12/16/24 09:28	
2-Methylnaphthalene	ND	U	0.100	1	12/18/24 00:50	12/16/24 09:28	
2-Methylphenol (o-Cresol)	ND	U	1.00	1	12/18/24 00:50	12/16/24 09:28	
2-Nitroaniline	ND	U	1.00	1	12/18/24 00:50	12/16/24 09:28	
2-Nitrophenol	ND	U	1.00	1	12/18/24 00:50	12/16/24 09:28	
3&4-Methylphenol	ND	U	1.00	1	12/18/24 00:50	12/16/24 09:28	
3,3'-Dichlorobenzidine	ND	U	5.00	1	12/18/24 00:50	12/16/24 09:28	
3-Nitroaniline	ND	U	1.00	1	12/18/24 00:50	12/16/24 09:28	
4-Bromophenyl phenyl ether (BDE-3)	ND	U	1.00	1	12/18/24 00:50	12/16/24 09:28	
4-Chloro-3-methylphenol	ND	U	1.00	1	12/18/24 00:50	12/16/24 09:28	
4-Chloroaniline	ND	U	1.00	1	12/18/24 00:50	12/16/24 09:28	
4-Chlorophenyl phenylether	ND	U	1.00	1	12/18/24 00:50	12/16/24 09:28	
4-Nitroaniline	ND	U	1.00	1	12/18/24 00:50	12/16/24 09:28	
4-Nitrophenol	ND	U	5.00	1	12/18/24 00:50	12/16/24 09:28	
Acenaphthene	ND	U	0.100	1	12/18/24 00:50	12/16/24 09:28	
Acenaphthylene	ND	U	0.100	1	12/18/24 00:50	12/16/24 09:28	
Acetophenone	ND	U	1.00	1	12/18/24 00:50	12/16/24 09:28	
Anthracene	ND	U	0.100	1	12/18/24 00:50	12/16/24 09:28	
Atrazine	ND	U	1.00	1	12/18/24 00:50	12/16/24 09:28	
Benzaldehyde	ND	U	1.00	1	12/18/24 00:50	12/16/24 09:28	
Benzo(a)anthracene	ND	U	0.100	1	12/18/24 00:50	12/16/24 09:28	
Benzo(a)pyrene	ND	U	0.100	1	12/18/24 00:50	12/16/24 09:28	
Benzo(b)fluoranthene	ND	U	0.100	1	12/18/24 00:50	12/16/24 09:28	
Benzo(g,h,i)perylene	ND	U	0.100	1	12/18/24 00:50	12/16/24 09:28	
Benzo(k)fluoranthene	ND	U	0.100	1	12/18/24 00:50	12/16/24 09:28	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 10:13
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1400 C	**Units:**	µg/L
Lab Code:	HN2410635-029		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND U	1.00	1	12/18/24 00:50	12/16/24 09:28	
bis(2-Chloroethyl) ether	ND U	1.00	1	12/18/24 00:50	12/16/24 09:28	
Butyl benzyl phthalate	ND U	1.00	1	12/18/24 00:50	12/16/24 09:28	
Caprolactam	ND U	5.00	1	12/18/24 00:50	12/16/24 09:28	
Carbazole	ND U	1.00	1	12/18/24 00:50	12/16/24 09:28	
Chrysene	ND U	0.100	1	12/18/24 00:50	12/16/24 09:28	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND U	1.00	1	12/18/24 00:50	12/16/24 09:28	
Dibenz(a,h) anthracene	ND U	0.100	1	12/18/24 00:50	12/16/24 09:28	
Dibenzofuran	ND U	1.00	1	12/18/24 00:50	12/16/24 09:28	
Diethyl phthalate	ND U	1.00	1	12/18/24 00:50	12/16/24 09:28	
Dimethyl phthalate	ND U	1.00	1	12/18/24 00:50	12/16/24 09:28	
Di-n-butyl phthalate	ND U	1.00	1	12/18/24 00:50	12/16/24 09:28	
Di-n-octyl phthalate	ND U	1.00	1	12/18/24 00:50	12/16/24 09:28	
Fluoranthene	ND U	0.100	1	12/18/24 00:50	12/16/24 09:28	
Fluorene	ND U	0.100	1	12/18/24 00:50	12/16/24 09:28	
Hexachlorobenzene	ND U	1.00	1	12/18/24 00:50	12/16/24 09:28	
Hexachlorobutadiene	ND U	1.00	1	12/18/24 00:50	12/16/24 09:28	
Hexachlorocyclopentadiene	ND U	5.00	1	12/18/24 00:50	12/16/24 09:28	
Hexachloroethane	ND U	1.00	1	12/18/24 00:50	12/16/24 09:28	
Indeno(1,2,3-cd) pyrene	ND U	0.100	1	12/18/24 00:50	12/16/24 09:28	
Isophorone	ND U	5.00	1	12/18/24 00:50	12/16/24 09:28	
Methylphenol, Total	ND U	2.00	1	12/18/24 00:50	12/16/24 09:28	
Naphthalene	**12.9**	0.100	1	12/18/24 00:50	12/16/24 09:28	
Nitrobenzene	ND U	1.00	1	12/18/24 00:50	12/16/24 09:28	
n-Nitrosodi-n-propylamine	ND U	1.00	1	12/18/24 00:50	12/16/24 09:28	
N-Nitrosodiphenylamine	ND U	1.00	1	12/18/24 00:50	12/16/24 09:28	
Pentachlorophenol	ND U	5.00	1	12/18/24 00:50	12/16/24 09:28	
Phenanthrene	ND U	0.100	1	12/18/24 00:50	12/16/24 09:28	
Phenol	ND U	1.00	1	12/18/24 00:50	12/16/24 09:28	
Pyrene	ND U	0.100	1	12/18/24 00:50	12/16/24 09:28	
Pyridine	ND U	10.0	1	12/18/24 00:50	12/16/24 09:28	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	57.5	38 - 103	12/18/24 00:50	
2-Fluorobiphenyl	43.2	36 - 96	12/18/24 00:50	
2-Fluorophenol	29.1	20 - 73	12/18/24 00:50	
4-Terphenyl-d14	55.0	44 - 114	12/18/24 00:50	
Nitrobenzene-d5	45.3	33 - 100	12/18/24 00:50	
Phenol-d6	17.9	10 - 48	12/18/24 00:50	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 13:32
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-500 A	**Units:**	µg/L
Lab Code:	HN2410635-030		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
1,2,4,5-Tetrachlorobenzene	ND U	5.00	1	12/17/24 21:57	12/16/24 09:27	
1,4-Dioxane (1,4- Diethyleneoxide)	ND U	5.00	1	12/17/24 21:57	12/16/24 09:27	
1-Methylnaphthalene	ND U	0.100	1	12/17/24 21:57	12/16/24 09:27	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
2,3,4,6-Tetrachlorophenol	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
2,4,5-Trichlorophenol	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
2,4,6-Trichlorophenol	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
2,4-Dichlorophenol	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
2,4-Dimethylphenol	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
2,4-Dinitrophenol	ND U	5.00	1	12/17/24 21:57	12/16/24 09:27	
2,4-Dinitrotoluene (2,4-DNT)	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
2,6-Dinitrotoluene (2,6-DNT)	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
2-Chloronaphthalene	ND U	0.100	1	12/17/24 21:57	12/16/24 09:27	
2-Chlorophenol	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
2-Methylnaphthalene	ND U	0.100	1	12/17/24 21:57	12/16/24 09:27	
2-Methylphenol (o-Cresol)	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
2-Nitroaniline	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
2-Nitrophenol	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
3&4-Methylphenol	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
3,3'-Dichlorobenzidine	ND U	5.00	1	12/17/24 21:57	12/16/24 09:27	
3-Nitroaniline	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
4-Bromophenyl phenyl ether (BDE-3)	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
4-Chloro-3-methylphenol	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
4-Chloroaniline	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
4-Chlorophenyl phenylether	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
4-Nitroaniline	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
4-Nitrophenol	ND U	5.00	1	12/17/24 21:57	12/16/24 09:27	
Acenaphthene	ND U	0.100	1	12/17/24 21:57	12/16/24 09:27	
Acenaphthylene	ND U	0.100	1	12/17/24 21:57	12/16/24 09:27	
Acetophenone	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
Anthracene	ND U	0.100	1	12/17/24 21:57	12/16/24 09:27	
Atrazine	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
Benzaldehyde	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
Benzo(a)anthracene	ND U	0.100	1	12/17/24 21:57	12/16/24 09:27	
Benzo(a)pyrene	ND U	0.100	1	12/17/24 21:57	12/16/24 09:27	
Benzo(b)fluoranthene	ND U	0.100	1	12/17/24 21:57	12/16/24 09:27	
Benzo(g,h,i)perylene	ND U	0.100	1	12/17/24 21:57	12/16/24 09:27	
Benzo(k)fluoranthene	ND U	0.100	1	12/17/24 21:57	12/16/24 09:27	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 13:32
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-500 A	**Units:**	µg/L
Lab Code:	HN2410635-030		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
bis(2-Chloroethyl) ether	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
Butyl benzyl phthalate	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
Caprolactam	ND U	5.00	1	12/17/24 21:57	12/16/24 09:27	
Carbazole	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
Chrysene	ND U	0.100	1	12/17/24 21:57	12/16/24 09:27	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
Dibenz(a,h) anthracene	ND U	0.100	1	12/17/24 21:57	12/16/24 09:27	
Dibenzofuran	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
Diethyl phthalate	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
Dimethyl phthalate	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
Di-n-butyl phthalate	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
Di-n-octyl phthalate	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
Fluoranthene	ND U	0.100	1	12/17/24 21:57	12/16/24 09:27	
Fluorene	ND U	0.100	1	12/17/24 21:57	12/16/24 09:27	
Hexachlorobenzene	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
Hexachlorobutadiene	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
Hexachlorocyclopentadiene	ND U	5.00	1	12/17/24 21:57	12/16/24 09:27	
Hexachloroethane	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
Indeno(1,2,3-cd) pyrene	ND U	0.100	1	12/17/24 21:57	12/16/24 09:27	
Isophorone	ND U	5.00	1	12/17/24 21:57	12/16/24 09:27	
Methylphenol, Total	ND U	2.00	1	12/17/24 21:57	12/16/24 09:27	
Naphthalene	ND U	0.100	1	12/17/24 21:57	12/16/24 09:27	
Nitrobenzene	ND SU	1.00	1	12/17/24 21:57	12/16/24 09:27	
n-Nitrosodi-n-propylamine	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
N-Nitrosodiphenylamine	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
Pentachlorophenol	ND U	5.00	1	12/17/24 21:57	12/16/24 09:27	
Phenanthrene	ND U	0.100	1	12/17/24 21:57	12/16/24 09:27	
Phenol	ND U	1.00	1	12/17/24 21:57	12/16/24 09:27	
Pyrene	ND U	0.100	1	12/17/24 21:57	12/16/24 09:27	
Pyridine	ND U	10.0	1	12/17/24 21:57	12/16/24 09:27	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	82.3	38 - 103	12/17/24 21:57	
2-Fluorobiphenyl	67.1	36 - 96	12/17/24 21:57	
2-Fluorophenol	35.6	20 - 73	12/17/24 21:57	
4-Terphenyl-d14	74.7	44 - 114	12/17/24 21:57	
Nitrobenzene-d5	65.3	33 - 100	12/17/24 21:57	
Phenol-d6	22.6	10 - 48	12/17/24 21:57	

Analytical Report

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Sample Matrix: GROUNDWATER

Work Order: HN2410635
Date Collected: 12/09/24 14:49
Date Received: 12/13/24 10:00

Sample Name: UPG-500 B
Lab Code: HN2410635-031

Units: µg/L

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	**1.34**		1.00	1	12/17/24 22:18	12/16/24 09:27	
1,2,4,5-Tetrachlorobenzene	ND	U	5.00	1	12/17/24 22:18	12/16/24 09:27	
1,4-Dioxane (1,4- Diethyleneoxide)	ND	U	5.00	1	12/17/24 22:18	12/16/24 09:27	
1-Methylnaphthalene	**3.44**		0.100	1	12/17/24 22:18	12/16/24 09:27	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
2,3,4,6-Tetrachlorophenol	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
2,4,5-Trichlorophenol	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
2,4,6-Trichlorophenol	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
2,4-Dichlorophenol	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
2,4-Dimethylphenol	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
2,4-Dinitrophenol	ND	U	5.00	1	12/17/24 22:18	12/16/24 09:27	
2,4-Dinitrotoluene (2,4-DNT)	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
2,6-Dinitrotoluene (2,6-DNT)	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
2-Chloronaphthalene	ND	U	0.100	1	12/17/24 22:18	12/16/24 09:27	
2-Chlorophenol	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
2-Methylnaphthalene	ND	U	0.100	1	12/17/24 22:18	12/16/24 09:27	
2-Methylphenol (o-Cresol)	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
2-Nitroaniline	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
2-Nitrophenol	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
3&4-Methylphenol	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
3,3'-Dichlorobenzidine	ND	U	5.00	1	12/17/24 22:18	12/16/24 09:27	
3-Nitroaniline	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
4-Bromophenyl phenyl ether (BDE-3)	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
4-Chloro-3-methylphenol	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
4-Chloroaniline	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
4-Chlorophenyl phenylether	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
4-Nitroaniline	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
4-Nitrophenol	ND	U	5.00	1	12/17/24 22:18	12/16/24 09:27	
Acenaphthene	**0.663**		0.100	1	12/17/24 22:18	12/16/24 09:27	
Acenaphthylene	ND	U	0.100	1	12/17/24 22:18	12/16/24 09:27	
Acetophenone	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
Anthracene	ND	U	0.100	1	12/17/24 22:18	12/16/24 09:27	
Atrazine	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
Benzaldehyde	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
Benzo(a)anthracene	ND	U	0.100	1	12/17/24 22:18	12/16/24 09:27	
Benzo(a)pyrene	ND	U	0.100	1	12/17/24 22:18	12/16/24 09:27	
Benzo(b)fluoranthene	ND	U	0.100	1	12/17/24 22:18	12/16/24 09:27	
Benzo(g,h,i)perylene	ND	U	0.100	1	12/17/24 22:18	12/16/24 09:27	
Benzo(k)fluoranthene	ND	U	0.100	1	12/17/24 22:18	12/16/24 09:27	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 14:49
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-500 B	**Units:**	µg/L
Lab Code:	HN2410635-031		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
bis(2-Chloroethyl) ether	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
Butyl benzyl phthalate	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
Caprolactam	ND	U	5.00	1	12/17/24 22:18	12/16/24 09:27	
Carbazole	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
Chrysene	ND	U	0.100	1	12/17/24 22:18	12/16/24 09:27	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
Dibenz(a,h) anthracene	ND	U	0.100	1	12/17/24 22:18	12/16/24 09:27	
Dibenzofuran	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
Diethyl phthalate	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
Dimethyl phthalate	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
Di-n-butyl phthalate	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
Di-n-octyl phthalate	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
Fluoranthene	ND	U	0.100	1	12/17/24 22:18	12/16/24 09:27	
Fluorene	**0.341**		0.100	1	12/17/24 22:18	12/16/24 09:27	
Hexachlorobenzene	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
Hexachlorobutadiene	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
Hexachlorocyclopentadiene	ND	U	5.00	1	12/17/24 22:18	12/16/24 09:27	
Hexachloroethane	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
Indeno(1,2,3-cd) pyrene	ND	U	0.100	1	12/17/24 22:18	12/16/24 09:27	
Isophorone	ND	U	5.00	1	12/17/24 22:18	12/16/24 09:27	
Methylphenol, Total	ND	U	2.00	1	12/17/24 22:18	12/16/24 09:27	
Naphthalene	ND	U	0.100	1	12/17/24 22:18	12/16/24 09:27	
Nitrobenzene	ND	SU	1.00	1	12/17/24 22:18	12/16/24 09:27	
n-Nitrosodi-n-propylamine	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
N-Nitrosodiphenylamine	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
Pentachlorophenol	ND	U	5.00	1	12/17/24 22:18	12/16/24 09:27	
Phenanthrene	ND	U	0.100	1	12/17/24 22:18	12/16/24 09:27	
Phenol	ND	U	1.00	1	12/17/24 22:18	12/16/24 09:27	
Pyrene	ND	U	0.100	1	12/17/24 22:18	12/16/24 09:27	
Pyridine	ND	U	10.0	1	12/17/24 22:18	12/16/24 09:27	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	62.7	38 - 103	12/17/24 22:18	
2-Fluorobiphenyl	57.0	36 - 96	12/17/24 22:18	
2-Fluorophenol	28.5	20 - 73	12/17/24 22:18	
4-Terphenyl-d14	46.7	44 - 114	12/17/24 22:18	
Nitrobenzene-d5	54.7	33 - 100	12/17/24 22:18	
Phenol-d6	15.7	10 - 48	12/17/24 22:18	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 14:12
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-500 C	**Units:**	µg/L
Lab Code:	HN2410635-032		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND U	1.00	1	12/17/24 22:40	12/16/24 09:27	
1,2,4,5-Tetrachlorobenzene	ND U	5.00	1	12/17/24 22:40	12/16/24 09:27	
1,4-Dioxane (1,4- Diethyleneoxide)	ND U	5.00	1	12/17/24 22:40	12/16/24 09:27	
1-Methylnaphthalene	ND U	0.100	1	12/17/24 22:40	12/16/24 09:27	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND U	1.00	1	12/17/24 22:40	12/16/24 09:27	
2,3,4,6-Tetrachlorophenol	ND U	1.00	1	12/17/24 22:40	12/16/24 09:27	
2,4,5-Trichlorophenol	ND U	1.00	1	12/17/24 22:40	12/16/24 09:27	
2,4,6-Trichlorophenol	ND U	1.00	1	12/17/24 22:40	12/16/24 09:27	
2,4-Dichlorophenol	ND U	1.00	1	12/17/24 22:40	12/16/24 09:27	
2,4-Dimethylphenol	ND U	1.00	1	12/17/24 22:40	12/16/24 09:27	
2,4-Dinitrophenol	ND U	5.00	1	12/17/24 22:40	12/16/24 09:27	
2,4-Dinitrotoluene (2,4-DNT)	ND U	1.00	1	12/17/24 22:40	12/16/24 09:27	
2,6-Dinitrotoluene (2,6-DNT)	ND U	1.00	1	12/17/24 22:40	12/16/24 09:27	
2-Chloronaphthalene	ND U	0.100	1	12/17/24 22:40	12/16/24 09:27	
2-Chlorophenol	ND U	1.00	1	12/17/24 22:40	12/16/24 09:27	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND U	1.00	1	12/17/24 22:40	12/16/24 09:27	
2-Methylnaphthalene	ND U	0.100	1	12/17/24 22:40	12/16/24 09:27	
2-Methylphenol (o-Cresol)	ND U	1.00	1	12/17/24 22:40	12/16/24 09:27	
2-Nitroaniline	ND U	1.00	1	12/17/24 22:40	12/16/24 09:27	
2-Nitrophenol	ND U	1.00	1	12/17/24 22:40	12/16/24 09:27	
3&4-Methylphenol	ND U	1.00	1	12/17/24 22:40	12/16/24 09:27	
3,3'-Dichlorobenzidine	ND U	5.00	1	12/17/24 22:40	12/16/24 09:27	
3-Nitroaniline	ND U	1.00	1	12/17/24 22:40	12/16/24 09:27	
4-Bromophenyl phenyl ether (BDE-3)	ND U	1.00	1	12/17/24 22:40	12/16/24 09:27	
4-Chloro-3-methylphenol	ND U	1.00	1	12/17/24 22:40	12/16/24 09:27	
4-Chloroaniline	ND U	1.00	1	12/17/24 22:40	12/16/24 09:27	
4-Chlorophenyl phenylether	ND U	1.00	1	12/17/24 22:40	12/16/24 09:27	
4-Nitroaniline	ND U	1.00	1	12/17/24 22:40	12/16/24 09:27	
4-Nitrophenol	ND U	5.00	1	12/17/24 22:40	12/16/24 09:27	
Acenaphthene	ND U	0.100	1	12/17/24 22:40	12/16/24 09:27	
Acenaphthylene	ND U	0.100	1	12/17/24 22:40	12/16/24 09:27	
Acetophenone	ND U	1.00	1	12/17/24 22:40	12/16/24 09:27	
Anthracene	ND U	0.100	1	12/17/24 22:40	12/16/24 09:27	
Atrazine	ND U	1.00	1	12/17/24 22:40	12/16/24 09:27	
Benzaldehyde	ND U	1.00	1	12/17/24 22:40	12/16/24 09:27	
Benzo(a)anthracene	ND U	0.100	1	12/17/24 22:40	12/16/24 09:27	
Benzo(a)pyrene	ND U	0.100	1	12/17/24 22:40	12/16/24 09:27	
Benzo(b)fluoranthene	ND U	0.100	1	12/17/24 22:40	12/16/24 09:27	
Benzo(g,h,i)perylene	ND U	0.100	1	12/17/24 22:40	12/16/24 09:27	
Benzo(k)fluoranthene	ND U	0.100	1	12/17/24 22:40	12/16/24 09:27	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 14:12
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-500 C	**Units:**	µg/L
Lab Code:	HN2410635-032		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND	U	1.00	1	12/17/24 22:40	12/16/24 09:27	
bis(2-Chloroethyl) ether	ND	U	1.00	1	12/17/24 22:40	12/16/24 09:27	
Butyl benzyl phthalate	ND	U	1.00	1	12/17/24 22:40	12/16/24 09:27	
Caprolactam	ND	U	5.00	1	12/17/24 22:40	12/16/24 09:27	
Carbazole	ND	U	1.00	1	12/17/24 22:40	12/16/24 09:27	
Chrysene	ND	U	0.100	1	12/17/24 22:40	12/16/24 09:27	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND	U	1.00	1	12/17/24 22:40	12/16/24 09:27	
Dibenz(a,h) anthracene	ND	U	0.100	1	12/17/24 22:40	12/16/24 09:27	
Dibenzofuran	ND	U	1.00	1	12/17/24 22:40	12/16/24 09:27	
Diethyl phthalate	ND	U	1.00	1	12/17/24 22:40	12/16/24 09:27	
Dimethyl phthalate	ND	U	1.00	1	12/17/24 22:40	12/16/24 09:27	
Di-n-butyl phthalate	ND	U	1.00	1	12/17/24 22:40	12/16/24 09:27	
Di-n-octyl phthalate	ND	U	1.00	1	12/17/24 22:40	12/16/24 09:27	
Fluoranthene	ND	U	0.100	1	12/17/24 22:40	12/16/24 09:27	
Fluorene	ND	U	0.100	1	12/17/24 22:40	12/16/24 09:27	
Hexachlorobenzene	ND	U	1.00	1	12/17/24 22:40	12/16/24 09:27	
Hexachlorobutadiene	ND	U	1.00	1	12/17/24 22:40	12/16/24 09:27	
Hexachlorocyclopentadiene	ND	U	5.00	1	12/17/24 22:40	12/16/24 09:27	
Hexachloroethane	ND	U	1.00	1	12/17/24 22:40	12/16/24 09:27	
Indeno(1,2,3-cd) pyrene	ND	U	0.100	1	12/17/24 22:40	12/16/24 09:27	
Isophorone	ND	U	5.00	1	12/17/24 22:40	12/16/24 09:27	
Methylphenol, Total	ND	U	2.00	1	12/17/24 22:40	12/16/24 09:27	
Naphthalene	**0.115**		0.100	1	12/17/24 22:40	12/16/24 09:27	
Nitrobenzene	ND	SU	1.00	1	12/17/24 22:40	12/16/24 09:27	
n-Nitrosodi-n-propylamine	ND	U	1.00	1	12/17/24 22:40	12/16/24 09:27	
N-Nitrosodiphenylamine	ND	U	1.00	1	12/17/24 22:40	12/16/24 09:27	
Pentachlorophenol	ND	U	5.00	1	12/17/24 22:40	12/16/24 09:27	
Phenanthrene	ND	U	0.100	1	12/17/24 22:40	12/16/24 09:27	
Phenol	ND	U	1.00	1	12/17/24 22:40	12/16/24 09:27	
Pyrene	ND	U	0.100	1	12/17/24 22:40	12/16/24 09:27	
Pyridine	ND	U	10.0	1	12/17/24 22:40	12/16/24 09:27	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	75.0	38 - 103	12/17/24 22:40	
2-Fluorobiphenyl	62.1	36 - 96	12/17/24 22:40	
2-Fluorophenol	32.3	20 - 73	12/17/24 22:40	
4-Terphenyl-d14	68.0	44 - 114	12/17/24 22:40	
Nitrobenzene-d5	65.8	33 - 100	12/17/24 22:40	
Phenol-d6	18.1	10 - 48	12/17/24 22:40	

Analytical Report

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Sample Matrix: GROUNDWATER

Work Order: HN2410635
Date Collected: 12/09/24 11:13
Date Received: 12/13/24 10:00

Sample Name: UPG-600 A
Lab Code: HN2410635-033

Units: µg/L

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
1,2,4,5-Tetrachlorobenzene	ND	U	5.00	1	12/17/24 23:02	12/16/24 09:27	
1,4-Dioxane (1,4- Diethyleneoxide)	ND	U	5.00	1	12/17/24 23:02	12/16/24 09:27	
1-Methylnaphthalene	**8.78**		0.100	1	12/17/24 23:02	12/16/24 09:27	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
2,3,4,6-Tetrachlorophenol	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
2,4,5-Trichlorophenol	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
2,4,6-Trichlorophenol	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
2,4-Dichlorophenol	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
2,4-Dimethylphenol	**6.65**		1.00	1	12/17/24 23:02	12/16/24 09:27	
2,4-Dinitrophenol	ND	U	5.00	1	12/17/24 23:02	12/16/24 09:27	
2,4-Dinitrotoluene (2,4-DNT)	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
2,6-Dinitrotoluene (2,6-DNT)	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
2-Chloronaphthalene	ND	U	0.100	1	12/17/24 23:02	12/16/24 09:27	
2-Chlorophenol	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
2-Methylnaphthalene	**3.68**		0.100	1	12/17/24 23:02	12/16/24 09:27	
2-Methylphenol (o-Cresol)	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
2-Nitroaniline	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
2-Nitrophenol	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
3&4-Methylphenol	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
3,3'-Dichlorobenzidine	ND	U	5.00	1	12/17/24 23:02	12/16/24 09:27	
3-Nitroaniline	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
4-Bromophenyl phenyl ether (BDE-3)	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
4-Chloro-3-methylphenol	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
4-Chloroaniline	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
4-Chlorophenyl phenylether	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
4-Nitroaniline	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
4-Nitrophenol	ND	U	5.00	1	12/17/24 23:02	12/16/24 09:27	
Acenaphthene	ND	U	0.100	1	12/17/24 23:02	12/16/24 09:27	
Acenaphthylene	ND	U	0.100	1	12/17/24 23:02	12/16/24 09:27	
Acetophenone	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
Anthracene	ND	U	0.100	1	12/17/24 23:02	12/16/24 09:27	
Atrazine	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
Benzaldehyde	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
Benzo(a)anthracene	ND	U	0.100	1	12/17/24 23:02	12/16/24 09:27	
Benzo(a)pyrene	ND	U	0.100	1	12/17/24 23:02	12/16/24 09:27	
Benzo(b)fluoranthene	ND	U	0.100	1	12/17/24 23:02	12/16/24 09:27	
Benzo(g,h,i)perylene	ND	U	0.100	1	12/17/24 23:02	12/16/24 09:27	
Benzo(k)fluoranthene	ND	U	0.100	1	12/17/24 23:02	12/16/24 09:27	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 11:13
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-600 A	**Units:**	µg/L
Lab Code:	HN2410635-033		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
bis(2-Chloroethyl) ether	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
Butyl benzyl phthalate	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
Caprolactam	ND	U	5.00	1	12/17/24 23:02	12/16/24 09:27	
Carbazole	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
Chrysene	ND	U	0.100	1	12/17/24 23:02	12/16/24 09:27	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
Dibenz(a,h) anthracene	ND	U	0.100	1	12/17/24 23:02	12/16/24 09:27	
Dibenzofuran	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
Diethyl phthalate	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
Dimethyl phthalate	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
Di-n-butyl phthalate	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
Di-n-octyl phthalate	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
Fluoranthene	ND	U	0.100	1	12/17/24 23:02	12/16/24 09:27	
Fluorene	ND	U	0.100	1	12/17/24 23:02	12/16/24 09:27	
Hexachlorobenzene	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
Hexachlorobutadiene	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
Hexachlorocyclopentadiene	ND	U	5.00	1	12/17/24 23:02	12/16/24 09:27	
Hexachloroethane	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
Indeno(1,2,3-cd) pyrene	ND	U	0.100	1	12/17/24 23:02	12/16/24 09:27	
Isophorone	ND	U	5.00	1	12/17/24 23:02	12/16/24 09:27	
Methylphenol, Total	ND	U	2.00	1	12/17/24 23:02	12/16/24 09:27	
Naphthalene	**45.0**		0.100	1	12/17/24 23:02	12/16/24 09:27	
Nitrobenzene	ND	SU	1.00	1	12/17/24 23:02	12/16/24 09:27	
n-Nitrosodi-n-propylamine	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
N-Nitrosodiphenylamine	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
Pentachlorophenol	ND	U	5.00	1	12/17/24 23:02	12/16/24 09:27	
Phenanthrene	ND	U	0.100	1	12/17/24 23:02	12/16/24 09:27	
Phenol	ND	U	1.00	1	12/17/24 23:02	12/16/24 09:27	
Pyrene	ND	U	0.100	1	12/17/24 23:02	12/16/24 09:27	
Pyridine	ND	U	10.0	1	12/17/24 23:02	12/16/24 09:27	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	80.8	38 - 103	12/17/24 23:02	
2-Fluorobiphenyl	63.9	36 - 96	12/17/24 23:02	
2-Fluorophenol	36.0	20 - 73	12/17/24 23:02	
4-Terphenyl-d14	69.5	44 - 114	12/17/24 23:02	
Nitrobenzene-d5	63.3	33 - 100	12/17/24 23:02	
Phenol-d6	20.0	10 - 48	12/17/24 23:02	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 11:54
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-600 B	**Units:**	µg/L
Lab Code:	HN2410635-034		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND U	1.00	1	12/17/24 23:24	12/16/24 09:27	
1,2,4,5-Tetrachlorobenzene	ND U	5.00	1	12/17/24 23:24	12/16/24 09:27	
1,4-Dioxane (1,4- Diethyleneoxide)	ND U	5.00	1	12/17/24 23:24	12/16/24 09:27	
1-Methylnaphthalene	**77.0**	1.94	20	12/19/24 04:17	12/16/24 09:27	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND U	1.00	1	12/17/24 23:24	12/16/24 09:27	
2,3,4,6-Tetrachlorophenol	ND U	1.00	1	12/17/24 23:24	12/16/24 09:27	
2,4,5-Trichlorophenol	ND U	1.00	1	12/17/24 23:24	12/16/24 09:27	
2,4,6-Trichlorophenol	ND U	1.00	1	12/17/24 23:24	12/16/24 09:27	
2,4-Dichlorophenol	ND U	1.00	1	12/17/24 23:24	12/16/24 09:27	
2,4-Dimethylphenol	**571**	19.4	20	12/19/24 04:17	12/16/24 09:27	
2,4-Dinitrophenol	ND U	5.00	1	12/17/24 23:24	12/16/24 09:27	
2,4-Dinitrotoluene (2,4-DNT)	ND U	1.00	1	12/17/24 23:24	12/16/24 09:27	
2,6-Dinitrotoluene (2,6-DNT)	ND U	1.00	1	12/17/24 23:24	12/16/24 09:27	
2-Chloronaphthalene	ND U	0.100	1	12/17/24 23:24	12/16/24 09:27	
2-Chlorophenol	ND U	1.00	1	12/17/24 23:24	12/16/24 09:27	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND U	1.00	1	12/17/24 23:24	12/16/24 09:27	
2-Methylnaphthalene	**118**	1.94	20	12/19/24 04:17	12/16/24 09:27	
2-Methylphenol (o-Cresol)	**108**	19.4	20	12/19/24 04:17	12/16/24 09:27	
2-Nitroaniline	ND U	1.00	1	12/17/24 23:24	12/16/24 09:27	
2-Nitrophenol	ND U	1.00	1	12/17/24 23:24	12/16/24 09:27	
3&4-Methylphenol	**196**	19.4	20	12/19/24 04:17	12/16/24 09:27	
3,3'-Dichlorobenzidine	ND U	5.00	1	12/17/24 23:24	12/16/24 09:27	
3-Nitroaniline	ND U	1.00	1	12/17/24 23:24	12/16/24 09:27	
4-Bromophenyl phenyl ether (BDE-3)	ND U	1.00	1	12/17/24 23:24	12/16/24 09:27	
4-Chloro-3-methylphenol	ND U	1.00	1	12/17/24 23:24	12/16/24 09:27	
4-Chloroaniline	ND U	1.00	1	12/17/24 23:24	12/16/24 09:27	
4-Chlorophenyl phenylether	ND U	1.00	1	12/17/24 23:24	12/16/24 09:27	
4-Nitroaniline	ND U	1.00	1	12/17/24 23:24	12/16/24 09:27	
4-Nitrophenol	ND U	5.00	1	12/17/24 23:24	12/16/24 09:27	
Acenaphthene	ND U	0.100	1	12/17/24 23:24	12/16/24 09:27	
Acenaphthylene	ND U	0.100	1	12/17/24 23:24	12/16/24 09:27	
Acetophenone	ND U	1.00	1	12/17/24 23:24	12/16/24 09:27	
Anthracene	ND U	0.100	1	12/17/24 23:24	12/16/24 09:27	
Atrazine	ND U	1.00	1	12/17/24 23:24	12/16/24 09:27	
Benzaldehyde	ND U	1.00	1	12/17/24 23:24	12/16/24 09:27	
Benzo(a)anthracene	ND U	0.100	1	12/17/24 23:24	12/16/24 09:27	
Benzo(a)pyrene	ND U	0.100	1	12/17/24 23:24	12/16/24 09:27	
Benzo(b)fluoranthene	ND U	0.100	1	12/17/24 23:24	12/16/24 09:27	
Benzo(g,h,i)perylene	ND U	0.100	1	12/17/24 23:24	12/16/24 09:27	
Benzo(k)fluoranthene	ND U	0.100	1	12/17/24 23:24	12/16/24 09:27	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 11:54
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-600 B	**Units:**	µg/L
Lab Code:	HN2410635-034		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND	U	1.00	1	12/17/24 23:24	12/16/24 09:27	
bis(2-Chloroethyl) ether	ND	U	1.00	1	12/17/24 23:24	12/16/24 09:27	
Butyl benzyl phthalate	ND	U	1.00	1	12/17/24 23:24	12/16/24 09:27	
Caprolactam	ND	U	5.00	1	12/17/24 23:24	12/16/24 09:27	
Carbazole	ND	U	1.00	1	12/17/24 23:24	12/16/24 09:27	
Chrysene	ND	U	0.100	1	12/17/24 23:24	12/16/24 09:27	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND	U	1.00	1	12/17/24 23:24	12/16/24 09:27	
Dibenz(a,h) anthracene	ND	U	0.100	1	12/17/24 23:24	12/16/24 09:27	
Dibenzofuran	ND	U	1.00	1	12/17/24 23:24	12/16/24 09:27	
Diethyl phthalate	ND	U	1.00	1	12/17/24 23:24	12/16/24 09:27	
Dimethyl phthalate	ND	U	1.00	1	12/17/24 23:24	12/16/24 09:27	
Di-n-butyl phthalate	ND	U	1.00	1	12/17/24 23:24	12/16/24 09:27	
Di-n-octyl phthalate	ND	U	1.00	1	12/17/24 23:24	12/16/24 09:27	
Fluoranthene	ND	U	0.100	1	12/17/24 23:24	12/16/24 09:27	
Fluorene	ND	U	0.100	1	12/17/24 23:24	12/16/24 09:27	
Hexachlorobenzene	ND	U	1.00	1	12/17/24 23:24	12/16/24 09:27	
Hexachlorobutadiene	ND	U	1.00	1	12/17/24 23:24	12/16/24 09:27	
Hexachlorocyclopentadiene	ND	U	5.00	1	12/17/24 23:24	12/16/24 09:27	
Hexachloroethane	ND	U	1.00	1	12/17/24 23:24	12/16/24 09:27	
Indeno(1,2,3-cd) pyrene	ND	U	0.100	1	12/17/24 23:24	12/16/24 09:27	
Isophorone	ND	U	5.00	1	12/17/24 23:24	12/16/24 09:27	
Methylphenol, Total	**304**		38.9	20	12/19/24 04:17	12/16/24 09:27	
Naphthalene	**477**		1.94	20	12/19/24 04:17	12/16/24 09:27	
Nitrobenzene	ND	SU	1.00	1	12/17/24 23:24	12/16/24 09:27	
n-Nitrosodi-n-propylamine	ND	U	1.00	1	12/17/24 23:24	12/16/24 09:27	
N-Nitrosodiphenylamine	ND	U	1.00	1	12/17/24 23:24	12/16/24 09:27	
Pentachlorophenol	ND	U	5.00	1	12/17/24 23:24	12/16/24 09:27	
Phenanthrene	ND	U	0.100	1	12/17/24 23:24	12/16/24 09:27	
Phenol	**9.75**		1.00	1	12/17/24 23:24	12/16/24 09:27	
Pyrene	ND	U	0.100	1	12/17/24 23:24	12/16/24 09:27	
Pyridine	ND	U	10.0	1	12/17/24 23:24	12/16/24 09:27	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	65.2	38 - 103	12/17/24 23:24	
2-Fluorobiphenyl	63.9	36 - 96	12/17/24 23:24	
2-Fluorophenol	40.2	20 - 73	12/17/24 23:24	
4-Terphenyl-d14	63.8	44 - 114	12/17/24 23:24	
Nitrobenzene-d5	63.2	33 - 100	12/17/24 23:24	
Phenol-d6	18.2	10 - 48	12/17/24 23:24	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 10:25
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-600 C	**Units:**	µg/L
Lab Code:	HN2410635-035		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
1,2,4,5-Tetrachlorobenzene	ND U	5.00	1	12/17/24 23:45	12/16/24 09:27	
1,4-Dioxane (1,4- Diethyleneoxide)	ND U	5.00	1	12/17/24 23:45	12/16/24 09:27	
1-Methylnaphthalene	**2.44**	0.100	1	12/17/24 23:45	12/16/24 09:27	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
2,3,4,6-Tetrachlorophenol	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
2,4,5-Trichlorophenol	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
2,4,6-Trichlorophenol	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
2,4-Dichlorophenol	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
2,4-Dimethylphenol	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
2,4-Dinitrophenol	ND U	5.00	1	12/17/24 23:45	12/16/24 09:27	
2,4-Dinitrotoluene (2,4-DNT)	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
2,6-Dinitrotoluene (2,6-DNT)	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
2-Chloronaphthalene	ND U	0.100	1	12/17/24 23:45	12/16/24 09:27	
2-Chlorophenol	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
2-Methylnaphthalene	ND U	0.100	1	12/17/24 23:45	12/16/24 09:27	
2-Methylphenol (o-Cresol)	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
2-Nitroaniline	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
2-Nitrophenol	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
3&4-Methylphenol	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
3,3'-Dichlorobenzidine	ND U	5.00	1	12/17/24 23:45	12/16/24 09:27	
3-Nitroaniline	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
4-Bromophenyl phenyl ether (BDE-3)	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
4-Chloro-3-methylphenol	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
4-Chloroaniline	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
4-Chlorophenyl phenylether	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
4-Nitroaniline	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
4-Nitrophenol	ND U	5.00	1	12/17/24 23:45	12/16/24 09:27	
Acenaphthene	ND U	0.100	1	12/17/24 23:45	12/16/24 09:27	
Acenaphthylene	ND U	0.100	1	12/17/24 23:45	12/16/24 09:27	
Acetophenone	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
Anthracene	ND U	0.100	1	12/17/24 23:45	12/16/24 09:27	
Atrazine	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
Benzaldehyde	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
Benzo(a)anthracene	ND U	0.100	1	12/17/24 23:45	12/16/24 09:27	
Benzo(a)pyrene	ND U	0.100	1	12/17/24 23:45	12/16/24 09:27	
Benzo(b)fluoranthene	ND U	0.100	1	12/17/24 23:45	12/16/24 09:27	
Benzo(g,h,i)perylene	ND U	0.100	1	12/17/24 23:45	12/16/24 09:27	
Benzo(k)fluoranthene	ND U	0.100	1	12/17/24 23:45	12/16/24 09:27	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 10:25
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-600 C	**Units:**	µg/L
Lab Code:	HN2410635-035		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
bis(2-Chloroethyl) ether	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
Butyl benzyl phthalate	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
Caprolactam	ND U	5.00	1	12/17/24 23:45	12/16/24 09:27	
Carbazole	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
Chrysene	ND U	0.100	1	12/17/24 23:45	12/16/24 09:27	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
Dibenz(a,h) anthracene	ND U	0.100	1	12/17/24 23:45	12/16/24 09:27	
Dibenzofuran	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
Diethyl phthalate	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
Dimethyl phthalate	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
Di-n-butyl phthalate	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
Di-n-octyl phthalate	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
Fluoranthene	ND U	0.100	1	12/17/24 23:45	12/16/24 09:27	
Fluorene	ND U	0.100	1	12/17/24 23:45	12/16/24 09:27	
Hexachlorobenzene	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
Hexachlorobutadiene	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
Hexachlorocyclopentadiene	ND U	5.00	1	12/17/24 23:45	12/16/24 09:27	
Hexachloroethane	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
Indeno(1,2,3-cd) pyrene	ND U	0.100	1	12/17/24 23:45	12/16/24 09:27	
Isophorone	ND U	5.00	1	12/17/24 23:45	12/16/24 09:27	
Methylphenol, Total	ND U	2.00	1	12/17/24 23:45	12/16/24 09:27	
Naphthalene	ND U	0.100	1	12/17/24 23:45	12/16/24 09:27	
Nitrobenzene	ND SU	1.00	1	12/17/24 23:45	12/16/24 09:27	
n-Nitrosodi-n-propylamine	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
N-Nitrosodiphenylamine	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
Pentachlorophenol	ND U	5.00	1	12/17/24 23:45	12/16/24 09:27	
Phenanthrene	ND U	0.100	1	12/17/24 23:45	12/16/24 09:27	
Phenol	ND U	1.00	1	12/17/24 23:45	12/16/24 09:27	
Pyrene	ND U	0.100	1	12/17/24 23:45	12/16/24 09:27	
Pyridine	ND U	10.0	1	12/17/24 23:45	12/16/24 09:27	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	81.1	38 - 103	12/17/24 23:45	
2-Fluorobiphenyl	58.5	36 - 96	12/17/24 23:45	
2-Fluorophenol	28.6	20 - 73	12/17/24 23:45	
4-Terphenyl-d14	68.8	44 - 114	12/17/24 23:45	
Nitrobenzene-d5	56.5	33 - 100	12/17/24 23:45	
Phenol-d6	17.6	10 - 48	12/17/24 23:45	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 12:39
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-600 D	**Units:**	µg/L
Lab Code:	HN2410635-036		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
1,2,4,5-Tetrachlorobenzene	ND U	5.00	1	12/18/24 01:12	12/16/24 09:28	
1,4-Dioxane (1,4- Diethyleneoxide)	ND U	5.00	1	12/18/24 01:12	12/16/24 09:28	
1-Methylnaphthalene	ND U	0.100	1	12/18/24 01:12	12/16/24 09:28	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
2,3,4,6-Tetrachlorophenol	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
2,4,5-Trichlorophenol	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
2,4,6-Trichlorophenol	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
2,4-Dichlorophenol	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
2,4-Dimethylphenol	**3.11**	1.00	1	12/18/24 01:12	12/16/24 09:28	
2,4-Dinitrophenol	ND U	5.00	1	12/18/24 01:12	12/16/24 09:28	
2,4-Dinitrotoluene (2,4-DNT)	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
2,6-Dinitrotoluene (2,6-DNT)	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
2-Chloronaphthalene	ND U	0.100	1	12/18/24 01:12	12/16/24 09:28	
2-Chlorophenol	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
2-Methylnaphthalene	ND U	0.100	1	12/18/24 01:12	12/16/24 09:28	
2-Methylphenol (o-Cresol)	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
2-Nitroaniline	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
2-Nitrophenol	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
3&4-Methylphenol	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
3,3'-Dichlorobenzidine	ND U	5.00	1	12/18/24 01:12	12/16/24 09:28	
3-Nitroaniline	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
4-Bromophenyl phenyl ether (BDE-3)	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
4-Chloro-3-methylphenol	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
4-Chloroaniline	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
4-Chlorophenyl phenylether	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
4-Nitroaniline	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
4-Nitrophenol	ND U	5.00	1	12/18/24 01:12	12/16/24 09:28	
Acenaphthene	ND U	0.100	1	12/18/24 01:12	12/16/24 09:28	
Acenaphthylene	ND U	0.100	1	12/18/24 01:12	12/16/24 09:28	
Acetophenone	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
Anthracene	ND U	0.100	1	12/18/24 01:12	12/16/24 09:28	
Atrazine	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
Benzaldehyde	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
Benzo(a)anthracene	ND U	0.100	1	12/18/24 01:12	12/16/24 09:28	
Benzo(a)pyrene	ND U	0.100	1	12/18/24 01:12	12/16/24 09:28	
Benzo(b)fluoranthene	ND U	0.100	1	12/18/24 01:12	12/16/24 09:28	
Benzo(g,h,i)perylene	ND U	0.100	1	12/18/24 01:12	12/16/24 09:28	
Benzo(k)fluoranthene	ND U	0.100	1	12/18/24 01:12	12/16/24 09:28	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24 12:39
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	UPG-600 D	**Units:**	µg/L
Lab Code:	HN2410635-036		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
bis(2-Chloroethyl) ether	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
Butyl benzyl phthalate	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
Caprolactam	ND U	5.00	1	12/18/24 01:12	12/16/24 09:28	
Carbazole	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
Chrysene	ND U	0.100	1	12/18/24 01:12	12/16/24 09:28	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
Dibenz(a,h) anthracene	ND U	0.100	1	12/18/24 01:12	12/16/24 09:28	
Dibenzofuran	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
Diethyl phthalate	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
Dimethyl phthalate	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
Di-n-butyl phthalate	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
Di-n-octyl phthalate	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
Fluoranthene	ND U	0.100	1	12/18/24 01:12	12/16/24 09:28	
Fluorene	ND U	0.100	1	12/18/24 01:12	12/16/24 09:28	
Hexachlorobenzene	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
Hexachlorobutadiene	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
Hexachlorocyclopentadiene	ND U	5.00	1	12/18/24 01:12	12/16/24 09:28	
Hexachloroethane	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
Indeno(1,2,3-cd) pyrene	ND U	0.100	1	12/18/24 01:12	12/16/24 09:28	
Isophorone	ND U	5.00	1	12/18/24 01:12	12/16/24 09:28	
Methylphenol, Total	ND U	2.00	1	12/18/24 01:12	12/16/24 09:28	
Naphthalene	**0.174**	0.100	1	12/18/24 01:12	12/16/24 09:28	
Nitrobenzene	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
n-Nitrosodi-n-propylamine	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
N-Nitrosodiphenylamine	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
Pentachlorophenol	ND U	5.00	1	12/18/24 01:12	12/16/24 09:28	
Phenanthrene	ND U	0.100	1	12/18/24 01:12	12/16/24 09:28	
Phenol	ND U	1.00	1	12/18/24 01:12	12/16/24 09:28	
Pyrene	ND U	0.100	1	12/18/24 01:12	12/16/24 09:28	
Pyridine	ND U	10.0	1	12/18/24 01:12	12/16/24 09:28	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	76.9	38 - 103	12/18/24 01:12	
2-Fluorobiphenyl	58.1	36 - 96	12/18/24 01:12	
2-Fluorophenol	42.2	20 - 73	12/18/24 01:12	
4-Terphenyl-d14	67.0	44 - 114	12/18/24 01:12	
Nitrobenzene-d5	69.5	33 - 100	12/18/24 01:12	
Phenol-d6	23.4	10 - 48	12/18/24 01:12	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	DUP-2	**Units:**	µg/L
Lab Code:	HN2410635-037		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND	U	1.00	1	12/18/24 01:34	12/16/24 09:28	
1,2,4,5-Tetrachlorobenzene	ND	U	5.00	1	12/18/24 01:34	12/16/24 09:28	
1,4-Dioxane (1,4- Diethyleneoxide)	ND	U	5.00	1	12/18/24 01:34	12/16/24 09:28	
1-Methylnaphthalene	**0.975**		0.100	1	12/18/24 01:34	12/16/24 09:28	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND	U	1.00	1	12/18/24 01:34	12/16/24 09:28	
2,3,4,6-Tetrachlorophenol	ND	U	1.00	1	12/18/24 01:34	12/16/24 09:28	
2,4,5-Trichlorophenol	ND	U	1.00	1	12/18/24 01:34	12/16/24 09:28	
2,4,6-Trichlorophenol	ND	U	1.00	1	12/18/24 01:34	12/16/24 09:28	
2,4-Dichlorophenol	ND	U	1.00	1	12/18/24 01:34	12/16/24 09:28	
2,4-Dimethylphenol	**611**		19.3	20	12/19/24 05:11	12/16/24 09:28	
2,4-Dinitrophenol	ND	U	5.00	1	12/18/24 01:34	12/16/24 09:28	
2,4-Dinitrotoluene (2,4-DNT)	ND	U	1.00	1	12/18/24 01:34	12/16/24 09:28	
2,6-Dinitrotoluene (2,6-DNT)	ND	U	1.00	1	12/18/24 01:34	12/16/24 09:28	
2-Chloronaphthalene	ND	U	0.100	1	12/18/24 01:34	12/16/24 09:28	
2-Chlorophenol	ND	U	1.00	1	12/18/24 01:34	12/16/24 09:28	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND	U	1.00	1	12/18/24 01:34	12/16/24 09:28	
2-Methylnaphthalene	**0.502**		0.100	1	12/18/24 01:34	12/16/24 09:28	
2-Methylphenol (o-Cresol)	**25.6**		1.00	1	12/18/24 01:34	12/16/24 09:28	
2-Nitroaniline	ND	U	1.00	1	12/18/24 01:34	12/16/24 09:28	
2-Nitrophenol	ND	U	1.00	1	12/18/24 01:34	12/16/24 09:28	
3&4-Methylphenol	**238**		19.3	20	12/19/24 05:11	12/16/24 09:28	
3,3'-Dichlorobenzidine	ND	U	5.00	1	12/18/24 01:34	12/16/24 09:28	
3-Nitroaniline	ND	U	1.00	1	12/18/24 01:34	12/16/24 09:28	
4-Bromophenyl phenyl ether (BDE-3)	ND	U	1.00	1	12/18/24 01:34	12/16/24 09:28	
4-Chloro-3-methylphenol	ND	U	1.00	1	12/18/24 01:34	12/16/24 09:28	
4-Chloroaniline	ND	U	1.00	1	12/18/24 01:34	12/16/24 09:28	
4-Chlorophenyl phenylether	ND	U	1.00	1	12/18/24 01:34	12/16/24 09:28	
4-Nitroaniline	ND	U	1.00	1	12/18/24 01:34	12/16/24 09:28	
4-Nitrophenol	ND	U	5.00	1	12/18/24 01:34	12/16/24 09:28	
Acenaphthene	ND	U	0.100	1	12/18/24 01:34	12/16/24 09:28	
Acenaphthylene	ND	U	0.100	1	12/18/24 01:34	12/16/24 09:28	
Acetophenone	ND	U	1.00	1	12/18/24 01:34	12/16/24 09:28	
Anthracene	ND	U	0.100	1	12/18/24 01:34	12/16/24 09:28	
Atrazine	ND	U	1.00	1	12/18/24 01:34	12/16/24 09:28	
Benzaldehyde	ND	U	1.00	1	12/18/24 01:34	12/16/24 09:28	
Benzo(a)anthracene	ND	U	0.100	1	12/18/24 01:34	12/16/24 09:28	
Benzo(a)pyrene	ND	U	0.100	1	12/18/24 01:34	12/16/24 09:28	
Benzo(b)fluoranthene	ND	U	0.100	1	12/18/24 01:34	12/16/24 09:28	
Benzo(g,h,i)perylene	ND	U	0.100	1	12/18/24 01:34	12/16/24 09:28	
Benzo(k)fluoranthene	ND	U	0.100	1	12/18/24 01:34	12/16/24 09:28	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/09/24
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	DUP-2	**Units:**	µg/L
Lab Code:	HN2410635-037		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND U	1.00	1	12/18/24 01:34	12/16/24 09:28	
bis(2-Chloroethyl) ether	ND U	1.00	1	12/18/24 01:34	12/16/24 09:28	
Butyl benzyl phthalate	ND U	1.00	1	12/18/24 01:34	12/16/24 09:28	
Caprolactam	ND U	5.00	1	12/18/24 01:34	12/16/24 09:28	
Carbazole	ND U	1.00	1	12/18/24 01:34	12/16/24 09:28	
Chrysene	ND U	0.100	1	12/18/24 01:34	12/16/24 09:28	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND U	1.00	1	12/18/24 01:34	12/16/24 09:28	
Dibenz(a,h) anthracene	ND U	0.100	1	12/18/24 01:34	12/16/24 09:28	
Dibenzofuran	ND U	1.00	1	12/18/24 01:34	12/16/24 09:28	
Diethyl phthalate	ND U	1.00	1	12/18/24 01:34	12/16/24 09:28	
Dimethyl phthalate	ND U	1.00	1	12/18/24 01:34	12/16/24 09:28	
Di-n-butyl phthalate	ND U	1.00	1	12/18/24 01:34	12/16/24 09:28	
Di-n-octyl phthalate	ND U	1.00	1	12/18/24 01:34	12/16/24 09:28	
Fluoranthene	ND U	0.100	1	12/18/24 01:34	12/16/24 09:28	
Fluorene	ND U	0.100	1	12/18/24 01:34	12/16/24 09:28	
Hexachlorobenzene	ND U	1.00	1	12/18/24 01:34	12/16/24 09:28	
Hexachlorobutadiene	ND U	1.00	1	12/18/24 01:34	12/16/24 09:28	
Hexachlorocyclopentadiene	ND U	5.00	1	12/18/24 01:34	12/16/24 09:28	
Hexachloroethane	ND U	1.00	1	12/18/24 01:34	12/16/24 09:28	
Indeno(1,2,3-cd) pyrene	ND U	0.100	1	12/18/24 01:34	12/16/24 09:28	
Isophorone	ND U	5.00	1	12/18/24 01:34	12/16/24 09:28	
Methylphenol, Total	**264**	38.6	20	12/19/24 05:11	12/16/24 09:28	
Naphthalene	**2.97**	0.100	1	12/18/24 01:34	12/16/24 09:28	
Nitrobenzene	ND U	1.00	1	12/18/24 01:34	12/16/24 09:28	
n-Nitrosodi-n-propylamine	ND U	1.00	1	12/18/24 01:34	12/16/24 09:28	
N-Nitrosodiphenylamine	ND U	1.00	1	12/18/24 01:34	12/16/24 09:28	
Pentachlorophenol	ND U	5.00	1	12/18/24 01:34	12/16/24 09:28	
Phenanthrene	ND U	0.100	1	12/18/24 01:34	12/16/24 09:28	
Phenol	**16.1**	1.00	1	12/18/24 01:34	12/16/24 09:28	
Pyrene	ND U	0.100	1	12/18/24 01:34	12/16/24 09:28	
Pyridine	ND U	10.0	1	12/18/24 01:34	12/16/24 09:28	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	62.0	38 - 103	12/18/24 01:34	
2-Fluorobiphenyl	47.5	36 - 96	12/18/24 01:34	
2-Fluorophenol	35.0	20 - 73	12/18/24 01:34	
4-Terphenyl-d14	57.6	44 - 114	12/18/24 01:34	
Nitrobenzene-d5	63.7	33 - 100	12/18/24 01:34	
Phenol-d6	19.2	10 - 48	12/18/24 01:34	

Analytical Report

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Sample Matrix: GROUNDWATER

Work Order: HN2410635
Date Collected: 12/10/24 09:45
Date Received: 12/13/24 10:00

Sample Name: GSI-1500 A
Lab Code: HN2410635-038

Units: µg/L

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND	U	1.00	1	12/18/24 20:50	12/16/24 09:28	
1,2,4,5-Tetrachlorobenzene	ND	U	5.00	1	12/18/24 20:50	12/16/24 09:28	
1,4-Dioxane (1,4- Diethyleneoxide)	ND	U	5.00	1	12/18/24 20:50	12/16/24 09:28	
1-Methylnaphthalene	**7.25**		0.100	1	12/18/24 20:50	12/16/24 09:28	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND	U	1.00	1	12/18/24 20:50	12/16/24 09:28	
2,3,4,6-Tetrachlorophenol	ND	U	1.00	1	12/18/24 20:50	12/16/24 09:28	
2,4,5-Trichlorophenol	ND	U	1.00	1	12/18/24 20:50	12/16/24 09:28	
2,4,6-Trichlorophenol	ND	U	1.00	1	12/18/24 20:50	12/16/24 09:28	
2,4-Dichlorophenol	**3.74**		1.00	1	12/18/24 20:50	12/16/24 09:28	
2,4-Dimethylphenol	ND	U	1.00	1	12/18/24 20:50	12/16/24 09:28	
2,4-Dinitrophenol	ND	U	5.00	1	12/18/24 20:50	12/16/24 09:28	
2,4-Dinitrotoluene (2,4-DNT)	ND	U	1.00	1	12/18/24 20:50	12/16/24 09:28	
2,6-Dinitrotoluene (2,6-DNT)	ND	U	1.00	1	12/18/24 20:50	12/16/24 09:28	
2-Chloronaphthalene	ND	U	0.100	1	12/18/24 20:50	12/16/24 09:28	
2-Chlorophenol	ND	U	1.00	1	12/18/24 20:50	12/16/24 09:28	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND	U	1.00	1	12/18/24 20:50	12/16/24 09:28	
2-Methylnaphthalene	ND	U	0.100	1	12/18/24 20:50	12/16/24 09:28	
2-Methylphenol (o-Cresol)	ND	U	1.00	1	12/18/24 20:50	12/16/24 09:28	
2-Nitroaniline	ND	U	1.00	1	12/18/24 20:50	12/16/24 09:28	
2-Nitrophenol	ND	U	1.00	1	12/18/24 20:50	12/16/24 09:28	
3&4-Methylphenol	ND	U	1.00	1	12/18/24 20:50	12/16/24 09:28	
3,3'-Dichlorobenzidine	ND	U	5.00	1	12/18/24 20:50	12/16/24 09:28	
3-Nitroaniline	ND	U	1.00	1	12/18/24 20:50	12/16/24 09:28	
4-Bromophenyl phenyl ether (BDE-3)	ND	U	1.00	1	12/18/24 20:50	12/16/24 09:28	
4-Chloro-3-methylphenol	ND	U	1.00	1	12/18/24 20:50	12/16/24 09:28	
4-Chloroaniline	ND	U	1.00	1	12/18/24 20:50	12/16/24 09:28	
4-Chlorophenyl phenylether	ND	U	1.00	1	12/18/24 20:50	12/16/24 09:28	
4-Nitroaniline	ND	U	1.00	1	12/18/24 20:50	12/16/24 09:28	
4-Nitrophenol	ND	U	5.00	1	12/18/24 20:50	12/16/24 09:28	
Acenaphthene	ND	U	0.100	1	12/18/24 20:50	12/16/24 09:28	
Acenaphthylene	ND	U	0.100	1	12/18/24 20:50	12/16/24 09:28	
Acetophenone	ND	U	1.00	1	12/18/24 20:50	12/16/24 09:28	
Anthracene	ND	U	0.100	1	12/18/24 20:50	12/16/24 09:28	
Atrazine	ND	U	1.00	1	12/18/24 20:50	12/16/24 09:28	
Benzaldehyde	ND	U	1.00	1	12/18/24 20:50	12/16/24 09:28	
Benzo(a)anthracene	ND	U	0.100	1	12/18/24 20:50	12/16/24 09:28	
Benzo(a)pyrene	ND	U	0.100	1	12/18/24 20:50	12/16/24 09:28	
Benzo(b)fluoranthene	ND	U	0.100	1	12/18/24 20:50	12/16/24 09:28	
Benzo(g,h,i)perylene	ND	U	0.100	1	12/18/24 20:50	12/16/24 09:28	
Benzo(k)fluoranthene	ND	U	0.100	1	12/18/24 20:50	12/16/24 09:28	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 09:45
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1500 A	**Units:**	µg/L
Lab Code:	HN2410635-038		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND U	1.00	1	12/18/24 20:50	12/16/24 09:28	
bis(2-Chloroethyl) ether	ND U	1.00	1	12/18/24 20:50	12/16/24 09:28	
Butyl benzyl phthalate	ND U	1.00	1	12/18/24 20:50	12/16/24 09:28	
Caprolactam	ND U	5.00	1	12/18/24 20:50	12/16/24 09:28	
Carbazole	ND U	1.00	1	12/18/24 20:50	12/16/24 09:28	
Chrysene	ND U	0.100	1	12/18/24 20:50	12/16/24 09:28	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND U	1.00	1	12/18/24 20:50	12/16/24 09:28	
Dibenz(a,h) anthracene	ND U	0.100	1	12/18/24 20:50	12/16/24 09:28	
Dibenzofuran	ND U	1.00	1	12/18/24 20:50	12/16/24 09:28	
Diethyl phthalate	ND U	1.00	1	12/18/24 20:50	12/16/24 09:28	
Dimethyl phthalate	ND U	1.00	1	12/18/24 20:50	12/16/24 09:28	
Di-n-butyl phthalate	ND U	1.00	1	12/18/24 20:50	12/16/24 09:28	
Di-n-octyl phthalate	ND U	1.00	1	12/18/24 20:50	12/16/24 09:28	
Fluoranthene	ND U	0.100	1	12/18/24 20:50	12/16/24 09:28	
Fluorene	ND U	0.100	1	12/18/24 20:50	12/16/24 09:28	
Hexachlorobenzene	ND U	1.00	1	12/18/24 20:50	12/16/24 09:28	
Hexachlorobutadiene	ND U	1.00	1	12/18/24 20:50	12/16/24 09:28	
Hexachlorocyclopentadiene	ND U	5.00	1	12/18/24 20:50	12/16/24 09:28	
Hexachloroethane	ND U	1.00	1	12/18/24 20:50	12/16/24 09:28	
Indeno(1,2,3-cd) pyrene	ND U	0.100	1	12/18/24 20:50	12/16/24 09:28	
Isophorone	ND U	5.00	1	12/18/24 20:50	12/16/24 09:28	
Methylphenol, Total	ND U	2.00	1	12/18/24 20:50	12/16/24 09:28	
Naphthalene	**7.57**	0.100	1	12/18/24 20:50	12/16/24 09:28	
Nitrobenzene	ND U	1.00	1	12/18/24 20:50	12/16/24 09:28	
n-Nitrosodi-n-propylamine	ND U	1.00	1	12/18/24 20:50	12/16/24 09:28	
N-Nitrosodiphenylamine	ND U	1.00	1	12/18/24 20:50	12/16/24 09:28	
Pentachlorophenol	ND U	5.00	1	12/18/24 20:50	12/16/24 09:28	
Phenanthrene	ND U	0.100	1	12/18/24 20:50	12/16/24 09:28	
Phenol	ND U	1.00	1	12/18/24 20:50	12/16/24 09:28	
Pyrene	ND U	0.100	1	12/18/24 20:50	12/16/24 09:28	
Pyridine	ND U	10.0	1	12/18/24 20:50	12/16/24 09:28	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	69.1	38 - 103	12/18/24 20:50	
2-Fluorobiphenyl	53.3	36 - 96	12/18/24 20:50	
2-Fluorophenol	31.8	20 - 73	12/18/24 20:50	
4-Terphenyl-d14	64.5	44 - 114	12/18/24 20:50	
Nitrobenzene-d5	53.4	33 - 100	12/18/24 20:50	
Phenol-d6	19.3	10 - 48	12/18/24 20:50	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 11:00
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1500 B	**Units:**	µg/L
Lab Code:	HN2410635-039		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
1,2,4,5-Tetrachlorobenzene	ND U	5.00	1	12/19/24 01:33	12/16/24 15:48	
1,4-Dioxane (1,4- Diethyleneoxide)	ND U	5.00	1	12/19/24 01:33	12/16/24 15:48	
1-Methylnaphthalene	ND U	0.100	1	12/19/24 01:33	12/16/24 15:48	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
2,3,4,6-Tetrachlorophenol	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
2,4,5-Trichlorophenol	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
2,4,6-Trichlorophenol	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
2,4-Dichlorophenol	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
2,4-Dimethylphenol	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
2,4-Dinitrophenol	ND U	5.00	1	12/19/24 01:33	12/16/24 15:48	
2,4-Dinitrotoluene (2,4-DNT)	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
2,6-Dinitrotoluene (2,6-DNT)	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
2-Chloronaphthalene	ND U	0.100	1	12/19/24 01:33	12/16/24 15:48	
2-Chlorophenol	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
2-Methylnaphthalene	ND U	0.100	1	12/19/24 01:33	12/16/24 15:48	
2-Methylphenol (o-Cresol)	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
2-Nitroaniline	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
2-Nitrophenol	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
3&4-Methylphenol	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
3,3'-Dichlorobenzidine	ND U	5.00	1	12/19/24 01:33	12/16/24 15:48	
3-Nitroaniline	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
4-Bromophenyl phenyl ether (BDE-3)	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
4-Chloro-3-methylphenol	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
4-Chloroaniline	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
4-Chlorophenyl phenylether	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
4-Nitroaniline	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
4-Nitrophenol	ND U	5.00	1	12/19/24 01:33	12/16/24 15:48	
Acenaphthene	**1.34**	0.100	1	12/19/24 01:33	12/16/24 15:48	
Acenaphthylene	ND U	0.100	1	12/19/24 01:33	12/16/24 15:48	
Acetophenone	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
Anthracene	ND U	0.100	1	12/19/24 01:33	12/16/24 15:48	
Atrazine	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
Benzaldehyde	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
Benzo(a)anthracene	ND U	0.100	1	12/19/24 01:33	12/16/24 15:48	
Benzo(a)pyrene	ND U	0.100	1	12/19/24 01:33	12/16/24 15:48	
Benzo(b)fluoranthene	ND U	0.100	1	12/19/24 01:33	12/16/24 15:48	
Benzo(g,h,i)perylene	ND U	0.100	1	12/19/24 01:33	12/16/24 15:48	
Benzo(k)fluoranthene	ND U	0.100	1	12/19/24 01:33	12/16/24 15:48	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 11:00
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1500 B	**Units:**	µg/L
Lab Code:	HN2410635-039		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
bis(2-Chloroethyl) ether	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
Butyl benzyl phthalate	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
Caprolactam	ND U	5.00	1	12/19/24 01:33	12/16/24 15:48	
Carbazole	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
Chrysene	ND U	0.100	1	12/19/24 01:33	12/16/24 15:48	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
Dibenz(a,h) anthracene	ND U	0.100	1	12/19/24 01:33	12/16/24 15:48	
Dibenzofuran	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
Diethyl phthalate	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
Dimethyl phthalate	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
Di-n-butyl phthalate	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
Di-n-octyl phthalate	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
Fluoranthene	ND U	0.100	1	12/19/24 01:33	12/16/24 15:48	
Fluorene	ND U	0.100	1	12/19/24 01:33	12/16/24 15:48	
Hexachlorobenzene	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
Hexachlorobutadiene	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
Hexachlorocyclopentadiene	ND U	5.00	1	12/19/24 01:33	12/16/24 15:48	
Hexachloroethane	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
Indeno(1,2,3-cd) pyrene	ND U	0.100	1	12/19/24 01:33	12/16/24 15:48	
Isophorone	ND U	5.00	1	12/19/24 01:33	12/16/24 15:48	
Methylphenol, Total	ND U	2.00	1	12/19/24 01:33	12/16/24 15:48	
Naphthalene	ND U	0.100	1	12/19/24 01:33	12/16/24 15:48	
Nitrobenzene	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
n-Nitrosodi-n-propylamine	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
N-Nitrosodiphenylamine	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
Pentachlorophenol	ND U	5.00	1	12/19/24 01:33	12/16/24 15:48	
Phenanthrene	ND U	0.100	1	12/19/24 01:33	12/16/24 15:48	
Phenol	ND U	1.00	1	12/19/24 01:33	12/16/24 15:48	
Pyrene	ND U	0.100	1	12/19/24 01:33	12/16/24 15:48	
Pyridine	ND U	10.0	1	12/19/24 01:33	12/16/24 15:48	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	78.6	38 - 103	12/19/24 01:33	
2-Fluorobiphenyl	54.5	36 - 96	12/19/24 01:33	
2-Fluorophenol	35.0	20 - 73	12/19/24 01:33	
4-Terphenyl-d14	61.0	44 - 114	12/19/24 01:33	
Nitrobenzene-d5	54.2	33 - 100	12/19/24 01:33	
Phenol-d6	23.9	10 - 48	12/19/24 01:33	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 11:55
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1500 C	**Units:**	µg/L
Lab Code:	HN2410635-040		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
1,2,4,5-Tetrachlorobenzene	ND U	5.00	1	12/19/24 01:55	12/16/24 15:48	
1,4-Dioxane (1,4- Diethyleneoxide)	ND U	5.00	1	12/19/24 01:55	12/16/24 15:48	
1-Methylnaphthalene	ND U	0.100	1	12/19/24 01:55	12/16/24 15:48	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
2,3,4,6-Tetrachlorophenol	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
2,4,5-Trichlorophenol	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
2,4,6-Trichlorophenol	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
2,4-Dichlorophenol	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
2,4-Dimethylphenol	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
2,4-Dinitrophenol	ND U	5.00	1	12/19/24 01:55	12/16/24 15:48	
2,4-Dinitrotoluene (2,4-DNT)	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
2,6-Dinitrotoluene (2,6-DNT)	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
2-Chloronaphthalene	ND U	0.100	1	12/19/24 01:55	12/16/24 15:48	
2-Chlorophenol	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
2-Methylnaphthalene	ND U	0.100	1	12/19/24 01:55	12/16/24 15:48	
2-Methylphenol (o-Cresol)	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
2-Nitroaniline	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
2-Nitrophenol	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
3&4-Methylphenol	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
3,3'-Dichlorobenzidine	ND U	5.00	1	12/19/24 01:55	12/16/24 15:48	
3-Nitroaniline	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
4-Bromophenyl phenyl ether (BDE-3)	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
4-Chloro-3-methylphenol	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
4-Chloroaniline	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
4-Chlorophenyl phenylether	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
4-Nitroaniline	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
4-Nitrophenol	ND U	5.00	1	12/19/24 01:55	12/16/24 15:48	
Acenaphthene	ND U	0.100	1	12/19/24 01:55	12/16/24 15:48	
Acenaphthylene	ND U	0.100	1	12/19/24 01:55	12/16/24 15:48	
Acetophenone	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
Anthracene	ND U	0.100	1	12/19/24 01:55	12/16/24 15:48	
Atrazine	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
Benzaldehyde	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
Benzo(a)anthracene	ND U	0.100	1	12/19/24 01:55	12/16/24 15:48	
Benzo(a)pyrene	ND U	0.100	1	12/19/24 01:55	12/16/24 15:48	
Benzo(b)fluoranthene	ND U	0.100	1	12/19/24 01:55	12/16/24 15:48	
Benzo(g,h,i)perylene	ND U	0.100	1	12/19/24 01:55	12/16/24 15:48	
Benzo(k)fluoranthene	ND U	0.100	1	12/19/24 01:55	12/16/24 15:48	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 11:55
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-1500 C	**Units:**	µg/L
Lab Code:	HN2410635-040		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
bis(2-Chloroethyl) ether	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
Butyl benzyl phthalate	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
Caprolactam	ND U	5.00	1	12/19/24 01:55	12/16/24 15:48	
Carbazole	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
Chrysene	ND U	0.100	1	12/19/24 01:55	12/16/24 15:48	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
Dibenz(a,h) anthracene	ND U	0.100	1	12/19/24 01:55	12/16/24 15:48	
Dibenzofuran	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
Diethyl phthalate	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
Dimethyl phthalate	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
Di-n-butyl phthalate	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
Di-n-octyl phthalate	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
Fluoranthene	ND U	0.100	1	12/19/24 01:55	12/16/24 15:48	
Fluorene	ND U	0.100	1	12/19/24 01:55	12/16/24 15:48	
Hexachlorobenzene	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
Hexachlorobutadiene	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
Hexachlorocyclopentadiene	ND U	5.00	1	12/19/24 01:55	12/16/24 15:48	
Hexachloroethane	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
Indeno(1,2,3-cd) pyrene	ND U	0.100	1	12/19/24 01:55	12/16/24 15:48	
Isophorone	ND U	5.00	1	12/19/24 01:55	12/16/24 15:48	
Methylphenol, Total	ND U	2.00	1	12/19/24 01:55	12/16/24 15:48	
Naphthalene	ND U	0.100	1	12/19/24 01:55	12/16/24 15:48	
Nitrobenzene	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
n-Nitrosodi-n-propylamine	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
N-Nitrosodiphenylamine	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
Pentachlorophenol	ND U	5.00	1	12/19/24 01:55	12/16/24 15:48	
Phenanthrene	ND U	0.100	1	12/19/24 01:55	12/16/24 15:48	
Phenol	ND U	1.00	1	12/19/24 01:55	12/16/24 15:48	
Pyrene	ND U	0.100	1	12/19/24 01:55	12/16/24 15:48	
Pyridine	ND U	10.0	1	12/19/24 01:55	12/16/24 15:48	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	81.5	38 - 103	12/19/24 01:55	
2-Fluorobiphenyl	69.5	36 - 96	12/19/24 01:55	
2-Fluorophenol	46.2	20 - 73	12/19/24 01:55	
4-Terphenyl-d14	75.2	44 - 114	12/19/24 01:55	
Nitrobenzene-d5	68.8	33 - 100	12/19/24 01:55	
Phenol-d6	28.7	10 - 48	12/19/24 01:55	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 12:55
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-100 A	**Units:**	µg/L
Lab Code:	HN2410635-041		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
1,2,4,5-Tetrachlorobenzene	ND U	5.00	1	12/19/24 23:59	12/16/24 15:48	
1,4-Dioxane (1,4- Diethyleneoxide)	ND U	5.00	1	12/19/24 23:59	12/16/24 15:48	
1-Methylnaphthalene	**12.3**	0.100	1	12/19/24 23:59	12/16/24 15:48	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
2,3,4,6-Tetrachlorophenol	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
2,4,5-Trichlorophenol	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
2,4,6-Trichlorophenol	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
2,4-Dichlorophenol	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
2,4-Dimethylphenol	**265**	9.93	10	12/21/24 01:05	12/16/24 15:48	
2,4-Dinitrophenol	ND U	5.00	1	12/19/24 23:59	12/16/24 15:48	
2,4-Dinitrotoluene (2,4-DNT)	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
2,6-Dinitrotoluene (2,6-DNT)	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
2-Chloronaphthalene	ND U	0.100	1	12/19/24 23:59	12/16/24 15:48	
2-Chlorophenol	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
2-Methylnaphthalene	ND U	0.100	1	12/19/24 23:59	12/16/24 15:48	
2-Methylphenol (o-Cresol)	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
2-Nitroaniline	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
2-Nitrophenol	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
3&4-Methylphenol	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
3,3'-Dichlorobenzidine	ND U	5.00	1	12/19/24 23:59	12/16/24 15:48	
3-Nitroaniline	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
4-Bromophenyl phenyl ether (BDE-3)	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
4-Chloro-3-methylphenol	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
4-Chloroaniline	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
4-Chlorophenyl phenylether	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
4-Nitroaniline	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
4-Nitrophenol	ND U	5.00	1	12/19/24 23:59	12/16/24 15:48	
Acenaphthene	ND U	0.100	1	12/19/24 23:59	12/16/24 15:48	
Acenaphthylene	ND U	0.100	1	12/19/24 23:59	12/16/24 15:48	
Acetophenone	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
Anthracene	ND U	0.100	1	12/19/24 23:59	12/16/24 15:48	
Atrazine	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
Benzaldehyde	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
Benzo(a)anthracene	ND U	0.100	1	12/19/24 23:59	12/16/24 15:48	
Benzo(a)pyrene	ND U	0.100	1	12/19/24 23:59	12/16/24 15:48	
Benzo(b)fluoranthene	ND U	0.100	1	12/19/24 23:59	12/16/24 15:48	
Benzo(g,h,i)perylene	ND U	0.100	1	12/19/24 23:59	12/16/24 15:48	
Benzo(k)fluoranthene	ND U	0.100	1	12/19/24 23:59	12/16/24 15:48	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 12:55
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-100 A	**Units:**	µg/L
Lab Code:	HN2410635-041		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
bis(2-Chloroethyl) ether	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
Butyl benzyl phthalate	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
Caprolactam	ND U	5.00	1	12/19/24 23:59	12/16/24 15:48	
Carbazole	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
Chrysene	ND U	0.100	1	12/19/24 23:59	12/16/24 15:48	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
Dibenz(a,h) anthracene	ND U	0.100	1	12/19/24 23:59	12/16/24 15:48	
Dibenzofuran	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
Diethyl phthalate	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
Dimethyl phthalate	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
Di-n-butyl phthalate	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
Di-n-octyl phthalate	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
Fluoranthene	ND U	0.100	1	12/19/24 23:59	12/16/24 15:48	
Fluorene	ND U	0.100	1	12/19/24 23:59	12/16/24 15:48	
Hexachlorobenzene	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
Hexachlorobutadiene	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
Hexachlorocyclopentadiene	ND U	5.00	1	12/19/24 23:59	12/16/24 15:48	
Hexachloroethane	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
Indeno(1,2,3-cd) pyrene	ND U	0.100	1	12/19/24 23:59	12/16/24 15:48	
Isophorone	ND U	5.00	1	12/19/24 23:59	12/16/24 15:48	
Methylphenol, Total	ND U	2.00	1	12/19/24 23:59	12/16/24 15:48	
Naphthalene	**14.3**	0.100	1	12/19/24 23:59	12/16/24 15:48	
Nitrobenzene	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
n-Nitrosodi-n-propylamine	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
N-Nitrosodiphenylamine	ND U	1.00	1	12/19/24 23:59	12/16/24 15:48	
Pentachlorophenol	ND VU	5.00	1	12/19/24 23:59	12/16/24 15:48	
Phenanthrene	ND U	0.100	1	12/19/24 23:59	12/16/24 15:48	
Phenol	**12.8**	1.00	1	12/19/24 23:59	12/16/24 15:48	
Pyrene	ND U	0.100	1	12/19/24 23:59	12/16/24 15:48	
Pyridine	ND U	10.0	1	12/19/24 23:59	12/16/24 15:48	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	66.0	38 - 103	12/19/24 23:59	
2-Fluorobiphenyl	50.3	36 - 96	12/19/24 23:59	
2-Fluorophenol	50.4	20 - 73	12/19/24 23:59	
4-Terphenyl-d14	52.8	44 - 114	12/19/24 23:59	
Nitrobenzene-d5	61.7	33 - 100	12/19/24 23:59	
Phenol-d6	24.7	10 - 48	12/19/24 23:59	

Analytical Report

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Sample Matrix: GROUNDWATER

Work Order: HN2410635
Date Collected: 12/10/24 13:35
Date Received: 12/13/24 10:00

Sample Name: GSI-100 B
Lab Code: HN2410635-042

Units: µg/L

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	**10.6**		1.00	1	12/20/24 00:21	12/16/24 15:48	
1,2,4,5-Tetrachlorobenzene	ND	U	5.00	1	12/20/24 00:21	12/16/24 15:48	
1,4-Dioxane (1,4- Diethyleneoxide)	ND	U	5.00	1	12/20/24 00:21	12/16/24 15:48	
1-Methylnaphthalene	**100**		0.990	10	12/21/24 01:27	12/16/24 15:48	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
2,3,4,6-Tetrachlorophenol	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
2,4,5-Trichlorophenol	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
2,4,6-Trichlorophenol	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
2,4-Dichlorophenol	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
2,4-Dimethylphenol	**325**		9.90	10	12/21/24 01:27	12/16/24 15:48	
2,4-Dinitrophenol	ND	U	5.00	1	12/20/24 00:21	12/16/24 15:48	
2,4-Dinitrotoluene (2,4-DNT)	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
2,6-Dinitrotoluene (2,6-DNT)	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
2-Chloronaphthalene	ND	U	0.100	1	12/20/24 00:21	12/16/24 15:48	
2-Chlorophenol	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
2-Methylnaphthalene	ND	U	0.100	1	12/20/24 00:21	12/16/24 15:48	
2-Methylphenol (o-Cresol)	**55.1**		1.00	1	12/20/24 00:21	12/16/24 15:48	
2-Nitroaniline	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
2-Nitrophenol	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
3&4-Methylphenol	**27.9**		1.00	1	12/20/24 00:21	12/16/24 15:48	
3,3'-Dichlorobenzidine	ND	U	5.00	1	12/20/24 00:21	12/16/24 15:48	
3-Nitroaniline	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
4-Bromophenyl phenyl ether (BDE-3)	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
4-Chloro-3-methylphenol	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
4-Chloroaniline	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
4-Chlorophenyl phenylether	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
4-Nitroaniline	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
4-Nitrophenol	ND	U	5.00	1	12/20/24 00:21	12/16/24 15:48	
Acenaphthene	**4.12**		0.100	1	12/20/24 00:21	12/16/24 15:48	
Acenaphthylene	ND	U	0.100	1	12/20/24 00:21	12/16/24 15:48	
Acetophenone	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
Anthracene	ND	U	0.100	1	12/20/24 00:21	12/16/24 15:48	
Atrazine	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
Benzaldehyde	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
Benzo(a)anthracene	ND	U	0.100	1	12/20/24 00:21	12/16/24 15:48	
Benzo(a)pyrene	ND	U	0.100	1	12/20/24 00:21	12/16/24 15:48	
Benzo(b)fluoranthene	ND	U	0.100	1	12/20/24 00:21	12/16/24 15:48	
Benzo(g,h,i)perylene	ND	U	0.100	1	12/20/24 00:21	12/16/24 15:48	
Benzo(k)fluoranthene	ND	U	0.100	1	12/20/24 00:21	12/16/24 15:48	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 13:35
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-100 B	**Units:**	µg/L
Lab Code:	HN2410635-042		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
bis(2-Chloroethyl) ether	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
Butyl benzyl phthalate	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
Caprolactam	ND	U	5.00	1	12/20/24 00:21	12/16/24 15:48	
Carbazole	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
Chrysene	ND	U	0.100	1	12/20/24 00:21	12/16/24 15:48	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
Dibenz(a,h) anthracene	ND	U	0.100	1	12/20/24 00:21	12/16/24 15:48	
Dibenzofuran	**5.00**		1.00	1	12/20/24 00:21	12/16/24 15:48	
Diethyl phthalate	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
Dimethyl phthalate	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
Di-n-butyl phthalate	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
Di-n-octyl phthalate	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
Fluoranthene	ND	U	0.100	1	12/20/24 00:21	12/16/24 15:48	
Fluorene	ND	U	0.100	1	12/20/24 00:21	12/16/24 15:48	
Hexachlorobenzene	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
Hexachlorobutadiene	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
Hexachlorocyclopentadiene	ND	U	5.00	1	12/20/24 00:21	12/16/24 15:48	
Hexachloroethane	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
Indeno(1,2,3-cd) pyrene	ND	U	0.100	1	12/20/24 00:21	12/16/24 15:48	
Isophorone	ND	U	5.00	1	12/20/24 00:21	12/16/24 15:48	
Methylphenol, Total	**83.0**		2.00	1	12/20/24 00:21	12/16/24 15:48	
Naphthalene	**35.8**		0.100	1	12/20/24 00:21	12/16/24 15:48	
Nitrobenzene	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
n-Nitrosodi-n-propylamine	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
N-Nitrosodiphenylamine	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
Pentachlorophenol	ND	VU	5.00	1	12/20/24 00:21	12/16/24 15:48	
Phenanthrene	**0.485**		0.100	1	12/20/24 00:21	12/16/24 15:48	
Phenol	ND	U	1.00	1	12/20/24 00:21	12/16/24 15:48	
Pyrene	ND	U	0.100	1	12/20/24 00:21	12/16/24 15:48	
Pyridine	ND	U	10.0	1	12/20/24 00:21	12/16/24 15:48	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	79.3	38 - 103	12/20/24 00:21	
2-Fluorobiphenyl	66.2	36 - 96	12/20/24 00:21	
2-Fluorophenol	51.5	20 - 73	12/20/24 00:21	
4-Terphenyl-d14	67.8	44 - 114	12/20/24 00:21	
Nitrobenzene-d5	71.5	33 - 100	12/20/24 00:21	
Phenol-d6	27.9	10 - 48	12/20/24 00:21	

Analytical Report

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Sample Matrix: GROUNDWATER

Work Order: HN2410635
Date Collected: 12/10/24 14:25
Date Received: 12/13/24 10:00

Sample Name: GSI-100 C
Lab Code: HN2410635-043

Units: µg/L

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	**2.11**		1.04	1	12/20/24 00:43	12/16/24 15:48	
1,2,4,5-Tetrachlorobenzene	ND	U	5.20	1	12/20/24 00:43	12/16/24 15:48	
1,4-Dioxane (1,4- Diethyleneoxide)	ND	U	5.20	1	12/20/24 00:43	12/16/24 15:48	
1-Methylnaphthalene	**16.6**		0.104	1	12/20/24 00:43	12/16/24 15:48	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
2,3,4,6-Tetrachlorophenol	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
2,4,5-Trichlorophenol	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
2,4,6-Trichlorophenol	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
2,4-Dichlorophenol	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
2,4-Dimethylphenol	**5.88**		1.04	1	12/20/24 00:43	12/16/24 15:48	
2,4-Dinitrophenol	ND	U	5.20	1	12/20/24 00:43	12/16/24 15:48	
2,4-Dinitrotoluene (2,4-DNT)	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
2,6-Dinitrotoluene (2,6-DNT)	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
2-Chloronaphthalene	ND	U	0.104	1	12/20/24 00:43	12/16/24 15:48	
2-Chlorophenol	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
2-Methylnaphthalene	ND	U	0.104	1	12/20/24 00:43	12/16/24 15:48	
2-Methylphenol (o-Cresol)	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
2-Nitroaniline	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
2-Nitrophenol	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
3&4-Methylphenol	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
3,3'-Dichlorobenzidine	ND	U	5.20	1	12/20/24 00:43	12/16/24 15:48	
3-Nitroaniline	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
4-Bromophenyl phenyl ether (BDE-3)	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
4-Chloro-3-methylphenol	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
4-Chloroaniline	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
4-Chlorophenyl phenylether	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
4-Nitroaniline	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
4-Nitrophenol	ND	U	5.20	1	12/20/24 00:43	12/16/24 15:48	
Acenaphthene	**0.801**		0.104	1	12/20/24 00:43	12/16/24 15:48	
Acenaphthylene	ND	U	0.104	1	12/20/24 00:43	12/16/24 15:48	
Acetophenone	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
Anthracene	ND	U	0.104	1	12/20/24 00:43	12/16/24 15:48	
Atrazine	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
Benzaldehyde	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
Benzo(a)anthracene	ND	U	0.104	1	12/20/24 00:43	12/16/24 15:48	
Benzo(a)pyrene	ND	U	0.104	1	12/20/24 00:43	12/16/24 15:48	
Benzo(b)fluoranthene	ND	U	0.104	1	12/20/24 00:43	12/16/24 15:48	
Benzo(g,h,i)perylene	ND	U	0.104	1	12/20/24 00:43	12/16/24 15:48	
Benzo(k)fluoranthene	ND	U	0.104	1	12/20/24 00:43	12/16/24 15:48	

Analytical Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	12/10/24 14:25
Sample Matrix:	GROUNDWATER	**Date Received:**	12/13/24 10:00
Sample Name:	GSI-100 C	**Units:**	µg/L
Lab Code:	HN2410635-043		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
bis(2-Chloroethyl) ether	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
Butyl benzyl phthalate	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
Caprolactam	ND	U	5.20	1	12/20/24 00:43	12/16/24 15:48	
Carbazole	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
Chrysene	ND	U	0.104	1	12/20/24 00:43	12/16/24 15:48	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
Dibenz(a,h) anthracene	ND	U	0.104	1	12/20/24 00:43	12/16/24 15:48	
Dibenzofuran	**1.10**		1.04	1	12/20/24 00:43	12/16/24 15:48	
Diethyl phthalate	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
Dimethyl phthalate	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
Di-n-butyl phthalate	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
Di-n-octyl phthalate	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
Fluoranthene	ND	U	0.104	1	12/20/24 00:43	12/16/24 15:48	
Fluorene	**0.208**		0.104	1	12/20/24 00:43	12/16/24 15:48	
Hexachlorobenzene	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
Hexachlorobutadiene	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
Hexachlorocyclopentadiene	ND	U	5.20	1	12/20/24 00:43	12/16/24 15:48	
Hexachloroethane	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
Indeno(1,2,3-cd) pyrene	ND	U	0.104	1	12/20/24 00:43	12/16/24 15:48	
Isophorone	ND	U	5.20	1	12/20/24 00:43	12/16/24 15:48	
Methylphenol, Total	ND	U	2.08	1	12/20/24 00:43	12/16/24 15:48	
Naphthalene	**7.79**		0.104	1	12/20/24 00:43	12/16/24 15:48	
Nitrobenzene	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
n-Nitrosodi-n-propylamine	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
N-Nitrosodiphenylamine	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
Pentachlorophenol	ND	VU	5.20	1	12/20/24 00:43	12/16/24 15:48	
Phenanthrene	ND	U	0.104	1	12/20/24 00:43	12/16/24 15:48	
Phenol	ND	U	1.04	1	12/20/24 00:43	12/16/24 15:48	
Pyrene	ND	U	0.104	1	12/20/24 00:43	12/16/24 15:48	
Pyridine	ND	U	10.4	1	12/20/24 00:43	12/16/24 15:48	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	88.6	38 - 103	12/20/24 00:43	
2-Fluorobiphenyl	69.6	36 - 96	12/20/24 00:43	
2-Fluorophenol	45.0	20 - 73	12/20/24 00:43	
4-Terphenyl-d14	71.7	44 - 114	12/20/24 00:43	
Nitrobenzene-d5	72.4	33 - 100	12/20/24 00:43	
Phenol-d6	25.6	10 - 48	12/20/24 00:43	

QC Summary Forms

Organics

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D **Analysis Lab Lot:** 2833270

Sample Name	Lab Code	1,2-Dichloroethane-d4 80 - 120	4-Bromofluorobenzene 80 - 120	Dibromofluoromethane 80 - 120
UPG-400 AR	HN2410635-001	104	104	99.9
UPG-400 CR	HN2410635-004	97.4	109	95.4
UPG-700 A	HN2410635-005	95.2	96.9	92.6
Method Blank	QC-1814114-001	94.7	92.0	91.7
Laboratory Control Sample	QC-1814114-002	97.6	104	99.0

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D **Analysis Lab Lot:** 2833270

Sample Name	Lab Code	Toluene-d8 80 - 120
UPG-400 AR	HN2410635-001	92.3
UPG-400 CR	HN2410635-004	93.0
UPG-700 A	HN2410635-005	95.8
Method Blank	QC-1814114-001	99.2
Laboratory Control Sample	QC-1814114-002	99.2

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D **Analysis Lab Lot:** 2833351

Sample Name	Lab Code	1,2-Dichloroethane-d4 80 - 120	4-Bromofluorobenzene 80 - 120	Dibromofluoromethane 80 - 120
UPG-700 C	HN2410635-007	102	95.2	99.8
GSI-1400 A	HN2410635-008	105	94.0	105
GSI-1000 A	HN2410635-012	104	97.0	103
GSI-1000 C	HN2410635-014	104	94.1	108
GSI-600 B	HN2410635-015	100	96.1	104
GSI-600 C	HN2410635-016	106	100	104
GSI-600 A	HN2410635-017	107	98.2	106
GSI-1100 A	HN2410635-022	105	97.6	108
Method Blank	QC-1814150-001	103	99.4	105
Laboratory Control Sample	QC-1814150-002	101	104	107

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D **Analysis Lab Lot:** 2833351

Sample Name	Lab Code	Toluene-d8 80 - 120
UPG-700 C	HN2410635-007	94.0
GSI-1400 A	HN2410635-008	97.2
GSI-1000 A	HN2410635-012	99.2
GSI-1000 C	HN2410635-014	95.3
GSI-600 B	HN2410635-015	94.1
GSI-600 C	HN2410635-016	99.3
GSI-600 A	HN2410635-017	99.0
GSI-1100 A	HN2410635-022	94.0
Method Blank	QC-1814150-001	95.4
Laboratory Control Sample	QC-1814150-002	98.0

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D **Analysis Lab Lot:** 2836293

		1,2-Dichloroethane-d4	4-Bromofluorobenzene	Dibromofluoromethane
Sample Name	**Lab Code**	**80 - 120**	**80 - 120**	**80 - 120**
GSI-1100 D	HN2410635-018	106	103	105
Method Blank	QC-1815949-001	103	96.2	101
Laboratory Control Sample	QC-1815949-002	104	106	107

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D **Analysis Lab Lot:** 2836293

Sample Name	Lab Code	Toluene-d8 80 - 120
GSI-1100 D	HN2410635-018	93.9
Method Blank	QC-1815949-001	97.1
Laboratory Control Sample	QC-1815949-002	96.2

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D **Analysis Lab Lot:** 2836303

Sample Name	Lab Code	1,2-Dichloroethane-d4 80 - 120	4-Bromofluorobenzene 80 - 120	Dibromofluoromethane 80 - 120
Method Blank	QC-1815960-001	94.0	90.4	92.8
Laboratory Control Sample	QC-1815960-002	94.4	104	94.6

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D **Analysis Lab Lot:** 2836303

Sample Name	Lab Code	Toluene-d8 80 - 120
Method Blank	QC-1815960-001	94.3
Laboratory Control Sample	QC-1815960-002	98.5

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D **Analysis Lab Lot:** 2836989

Sample Name	Lab Code	1,2-Dichloroethane-d4 80 - 120	4-Bromofluorobenzene 80 - 120	Dibromofluoromethane 80 - 120
GSI-1200 A	HN2410635-025	102	91.4	100.0
GSI-1200 B	HN2410635-026	101	92.8	98.4
GSI-1400 B	HN2410635-028	98.9	91.4	96.8
UPG-500 A	HN2410635-030	103	91.8	101
UPG-500 B	HN2410635-031	98.8	92.6	95.8
UPG-600 A	HN2410635-033	96.8	92.6	96.6
UPG-600 B	HN2410635-034	102	93.6	96.5
Method Blank	QC-1816383-001	102	90.4	100
Laboratory Control Sample	QC-1816383-002	102	98.1	103
Batch QC	QC-1816383-005	94.8	94.6	102
Batch QC	QC-1816383-006	93.1	95.5	110

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D **Analysis Lab Lot:** 2836989

Sample Name	Lab Code	Toluene-d8 80 - 120
GSI-1200 A	HN2410635-025	94.5
GSI-1200 B	HN2410635-026	100
GSI-1400 B	HN2410635-028	97.8
UPG-500 A	HN2410635-030	99.0
UPG-500 B	HN2410635-031	95.0
UPG-600 A	HN2410635-033	90.6
UPG-600 B	HN2410635-034	91.0
Method Blank	QC-1816383-001	97.3
Laboratory Control Sample	QC-1816383-002	97.4
Batch QC	QC-1816383-005	98.2
Batch QC	QC-1816383-006	98.9

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D **Analysis Lab Lot:** 2839399

Sample Name	Lab Code	1,2-Dichloroethane-d4 80 - 120	4-Bromofluorobenzene 80 - 120	Dibromofluoromethane 80 - 120
UPG-600 C	HN2410635-035	108	101	106
UPG-600 D	HN2410635-036	109	109	107
DUP-2	HN2410635-037	105	101	104
GSI-1500 A	HN2410635-038	104	100	95.7
GSI-1500 B	HN2410635-039	105	103	101
GSI-1500 C	HN2410635-040	104	98.1	103
GSI-100 A	HN2410635-041	99.2	98.8	100
GSI-100 B	HN2410635-042	98.5	96.9	93.8
Method Blank	QC-1817866-001	111	106	100
Laboratory Control Sample	QC-1817866-002	99.0	102	103
GSI-100 A	QC-1817866-005	98.4	103	95.6
GSI-100 A	QC-1817866-006	94.2	103	96.2

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D **Analysis Lab Lot:** 2839399

Sample Name	Lab Code	Toluene-d8 80 - 120
UPG-600 C	HN2410635-035	97.0
UPG-600 D	HN2410635-036	101
DUP-2	HN2410635-037	94.2
GSI-1500 A	HN2410635-038	104
GSI-1500 B	HN2410635-039	99.4
GSI-1500 C	HN2410635-040	97.1
GSI-100 A	HN2410635-041	102
GSI-100 B	HN2410635-042	98.7
Method Blank	QC-1817866-001	103
Laboratory Control Sample	QC-1817866-002	102
GSI-100 A	QC-1817866-005	105
GSI-100 A	QC-1817866-006	104

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D **Analysis Lab Lot:** 2839457

Sample Name	Lab Code	1,2-Dichloroethane-d4 80 - 120	4-Bromofluorobenzene 80 - 120	Dibromofluoromethane 80 - 120
UPG-400 BR	HN2410635-002	107	98.2	94.1
DUP-1	HN2410635-003	100	101	89.0
GSI-1300 A	HN2410635-009	104	99.8	91.8
GSI-1300 B	HN2410635-010	102	99.9	91.8
GSI-1300 C	HN2410635-011	101	102	99.7
GSI-1000 B	HN2410635-013	98.6	103	91.2
GSI-200 A	HN2410635-019	96.5	105	93.2
GSI-200 B	HN2410635-020	94.0	100	91.2
GSI-200 C	HN2410635-021	95.7	104	92.4
GSI-1110 B	HN2410635-023	95.3	106	87.3
GSI-1100 C	HN2410635-024	101	100	92.6
GSI-1200 C	HN2410635-027	99.0	102	91.0
GSI-1400 C	HN2410635-029	98.8	93.8	93.2
UPG-500 C	HN2410635-032	97.6	92.8	92.3
Method Blank	QC-1817919-001	99.6	89.4	100.0
Laboratory Control Sample	QC-1817919-002	98.6	102	100

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D **Analysis Lab Lot:** 2839457

Sample Name	Lab Code	Toluene-d8 80 - 120
UPG-400 BR	HN2410635-002	95.0
DUP-1	HN2410635-003	97.4
GSI-1300 A	HN2410635-009	97.4
GSI-1300 B	HN2410635-010	97.0
GSI-1300 C	HN2410635-011	90.6
GSI-1000 B	HN2410635-013	94.7
GSI-200 A	HN2410635-019	94.6
GSI-200 B	HN2410635-020	94.1
GSI-200 C	HN2410635-021	95.4
GSI-1110 B	HN2410635-023	95.6
GSI-1100 C	HN2410635-024	97.6
GSI-1200 C	HN2410635-027	93.9
GSI-1400 C	HN2410635-029	95.2
UPG-500 C	HN2410635-032	94.4
Method Blank	QC-1817919-001	95.2
Laboratory Control Sample	QC-1817919-002	98.2

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D **Analysis Lab Lot:** 2840144

Sample Name	Lab Code	1,2-Dichloroethane-d4 80 - 120	4-Bromofluorobenzene 80 - 120	Dibromofluoromethane 80 - 120
Trip Blank #1	HN2410635-044	106	95.8	104
Trip Blank #2	HN2410635-045	98.0	102	96.2
Trip Blank #3	HN2410635-046	104	99.4	100
Trip Blank #4	HN2410635-047	106	103	99.4
Trip Blank #5	HN2410635-048	103	102	96.9
Method Blank	QC-1818373-001	103	104	98.8
Laboratory Control Sample	QC-1818373-002	98.8	101	101

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D **Analysis Lab Lot:** 2840144

Sample Name	Lab Code	Toluene-d8 80 - 120
Trip Blank #1	HN2410635-044	95.3
Trip Blank #2	HN2410635-045	99.6
Trip Blank #3	HN2410635-046	96.4
Trip Blank #4	HN2410635-047	97.0
Trip Blank #5	HN2410635-048	100
Method Blank	QC-1818373-001	102
Laboratory Control Sample	QC-1818373-002	108

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D **Analysis Lab Lot:** 2844274

Sample Name	Lab Code	1,2-Dichloroethane-d4 80 - 120	4-Bromofluorobenzene 80 - 120	Dibromofluoromethane 80 - 120
UPG-700 B	HN2410635-006	101	99.8	98.8

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D **Analysis Lab Lot:** 2844274

Sample Name	Lab Code	Toluene-d8 80 - 120
UPG-700 B	HN2410635-006	95.6

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D **Analysis Lab Lot:** 2846454

Sample Name	Lab Code	1,2-Dichloroethane-d4 80 - 120	4-Bromofluorobenzene 80 - 120	Dibromofluoromethane 80 - 120
GSI-100 C	HN2410635-043	105	98.8	90.6
Method Blank	QC-1822129-001	99.6	92.3	98.6
Laboratory Control Sample	QC-1822129-002	93.8	104	99.6

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D **Analysis Lab Lot:** 2846454

Sample Name	Lab Code	Toluene-d8 80 - 120
GSI-100 C	HN2410635-043	103
Method Blank	QC-1822129-001	98.0
Laboratory Control Sample	QC-1822129-002	101

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D **Analysis Lab Lot:** 2847846

Sample Name	Lab Code	1,2-Dichloroethane-d4 80 - 120	4-Bromofluorobenzene 80 - 120	Dibromofluoromethane 80 - 120
Method Blank	QC-1822934-001	102	98.2	100
Laboratory Control Sample	QC-1822934-002	104	103	101
Batch QC	QC-1822934-005	95.6	102	97.5
Batch QC	QC-1822934-006	101	98.8	100

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D **Analysis Lab Lot:** 2847846

Sample Name	Lab Code	Toluene-d8 80 - 120
Method Blank	QC-1822934-001	98.2
Laboratory Control Sample	QC-1822934-002	101
Batch QC	QC-1822934-005	101
Batch QC	QC-1822934-006	98.2

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D **Analysis Lab Lot:** 2848520

Sample Name	Lab Code	1,2-Dichloroethane-d4 80 - 120	4-Bromofluorobenzene 80 - 120	Dibromofluoromethane 80 - 120
Trip Blank #6	HN2410635-049	98.2	89.2	103
Trip Blank #7	HN2410635-050	99.2	90.8	101
Method Blank	QC-1823426-001	101	96.4	102
Laboratory Control Sample	QC-1823426-002	93.8	107	99.4

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D **Analysis Lab Lot:** 2848520

Sample Name	Lab Code	Toluene-d8 80 - 120
Trip Blank #6	HN2410635-049	95.2
Trip Blank #7	HN2410635-050	99.1
Method Blank	QC-1823426-001	91.7
Laboratory Control Sample	QC-1823426-002	90.6

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Sample Matrix: WATER

Work Order: HN2410635
Date Collected: 12/09/2024
Date Received: 12/10/2024
Date Analyzed: 12/19/2024

Duplicate Matrix Spike Summary
Volatile Organic Compounds by GC-MS

Sample Name: Batch QC
Laboratory Code: HN2410479-001
Analysis Method: EPA 8260D

Units: µg/L
Analysis Lab Lot: 2836989

	Matrix Spike				Duplicate Matrix Spike					
	QC-1816383-005				QC-1816383-006					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,4-Trimethylbenzene	ND	1740	2000	86.9	1700	2000	84.9	74-118	2.33	30
1,3,5-Trimethylbenzene	ND	1850	2000	92.3	1770	2000	88.6	76-120	4.09	30
2-Butanone (Methyl ethyl ketone, MEK)	ND	2280	2000	114	2240	2000	112	69-147	1.99	30
2-Methylnaphthalene	2150	4260	2000	106	4220	2000	104	50-150	0.754	30
Acetone	ND	1750	2000	87.5	1660	2000	83.2	70-166	5.04	30
Benzene	69800	69600	2000	NC	69000	2000	NC	78-120	0.755	30
Di-isopropylether (DIPE)	ND	2070	2000	104	1940	2000	96.8	60-132	6.69	30
Ethylbenzene	<100	1980	2000	95.4	1910	2000	91.8	76-116	3.80	30
m+p-Xylene	479	4280	4000	95.1	4210	4000	93.3	77-116	1.72	30
Naphthalene	5360	7310	2000	97.5	7060	2000	85.0	56-142	3.48	30
o-Xylene	151	2000	2000	92.3	1920	2000	88.5	77-116	3.88	30
Tetrahydrofuran (THF)	ND	1680	2000	84.2	1590	2000	79.4	57-143	5.93	30
Toluene	5460	7460	2000	99.7	7100	2000	81.8	78-116	4.90	30
Total Xylene	630	6280	6000	94.2	6130	6000	91.7	77-119	2.40	30

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Sample Matrix: GROUNDWATER

Work Order: HN2410635
Date Collected: 12/10/2024
Date Received: 12/13/2024
Date Analyzed: 12/20/2024

Duplicate Matrix Spike Summary
Volatile Organic Compounds by GC-MS

Sample Name: GSI-100 A
Laboratory Code: HN2410635-041
Analysis Method: EPA 8260D

Units: µg/L
Analysis Lab Lot: 2839399

	Matrix Spike				Duplicate Matrix Spike					
	QC-1817866-005				QC-1817866-006					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,4-Trimethylbenzene	102	292	200	95.0	293	200	95.4	74-118	0.307	30
1,3,5-Trimethylbenzene	11.6	208	200	98.2	214	200	101	76-120	2.89	30
2-Butanone (Methyl ethyl ketone, MEK)	ND	193	200	96.6	187	200	93.4	69-147	3.42	30
2-Methylnaphthalene	ND	155	200	77.3	168	200	84.0	50-150	8.31	30
Acetone	ND	239	200	119	248	200	124	70-166	3.98	30
Benzene	30.6	228	200	98.8	225	200	97.4	78-120	1.28	30
Di-isopropylether (DIPE)	ND	191	200	95.4	181	200	90.4	60-132	5.49	30
Ethylbenzene	216	420	200	102	417	200	100	76-116	0.741	30
m+p-Xylene	105	497	400	98.0	509	400	101	77-116	2.42	30
Naphthalene	<50.0	206	200	90.2	202	200	87.8	56-142	2.40	30
o-Xylene	87.7	278	200	95.1	290	200	101	77-116	4.30	30
Tetrahydrofuran (THF)	ND	162	200	81.2	161	200	80.7	57-143	0.556	30
Toluene	64.2	264	200	99.7	259	200	97.6	78-116	1.61	30
Total Xylene	193	775	600	97.1	800	600	101	77-119	3.10	30

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Sample Matrix: GROUNDWATER

Work Order: HN2410635
Date Collected: 12/09/2024
Date Received: 12/13/2024
Date Analyzed: 12/20/2024

Duplicate Matrix Spike Summary
Volatile Organic Compounds by GC-MS

Sample Name: UPG-600 A
Laboratory Code: HN2410635-033
Analysis Method: EPA 8260D

Units: µg/L
Analysis Lab Lot: 2839457

		Matrix Spike			Duplicate Matrix Spike					
		QC-1817919-005			QC-1817919-006					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,4-Trimethylbenzene	227	431	200	102	436	200	104	74-118	1.11	30
Ethylbenzene	464	687	200	112	696	200	116	76-116	1.37	30
m+p-Xylene	808	1240	400	109	1240	400	109	77-116	0.217	30
o-Xylene	223	437	200	107	431	200	104	77-116	1.45	30
Total Xylene	1030	1680	600	108	1680	600	107	77-119	0.214	30

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Sample Matrix: WATER

Work Order: HN2410635
Date Collected: 12/12/2024
Date Received: 12/17/2024
Date Analyzed: 12/25/2024

Duplicate Matrix Spike Summary
Volatile Organic Compounds by GC-MS

Sample Name: Batch QC
Laboratory Code: HN2410810-017
Analysis Method: EPA 8260D

Units: µg/L
Analysis Lab Lot: 2847846

	Matrix Spike				Duplicate Matrix Spike					
	QC-1822934-005				QC-1822934-006					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,4-Trimethylbenzene	914	1940	1000	103	1900	1000	98.6	74-118	2.06	30
1,3,5-Trimethylbenzene	238	1200	1000	95.8	1250	1000	101	76-120	4.34	30
2-Butanone (Methyl ethyl ketone, MEK)	ND	792	1000	79.2	952	1000	95.2	69-147	18.3	30
2-Methylnaphthalene	ND	876	1000	80.4	864	1000	79.3	50-150	1.32	30
Acetone	ND	1020	1000	102	1200	1000	120	70-166	15.8	30
Benzene	ND	890	1000	89.0	1000	1000	100	78-120	11.7	30
Di-isopropylether (DIPE)	ND	726	1000	72.6	879	1000	87.9	60-132	19.1	30
Ethylbenzene	1350	2420	1000	107	2380	1000	102	76-116	2.06	30
m+p-Xylene	2230	4320	2000	104	4300	2000	103	77-116	0.441	30
Naphthalene	342	1340	1000	100	1350	1000	101	56-142	0.483	30
o-Xylene	1250	2260	1000	102	2230	1000	98.5	77-116	1.40	30
Tetrahydrofuran (THF)	ND	684	1000	68.4	946	1000	94.6	57-143	32.2 R	30
Toluene	736	1740	1000	101	1720	1000	98.9	78-116	1.10	30
Total Xylene	3480	6590	3000	103	6540	3000	102	77-119	0.770	30

QA/QC Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	NA
Sample Matrix:	WATER	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	QC-1814114-001		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/18/24 00:00	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/18/24 00:00	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/18/24 00:00	NA	
2-Methylnaphthalene	ND	U	5.00	1	12/18/24 00:00	NA	
Acetone	ND	U	10.0	1	12/18/24 00:00	NA	
Benzene	ND	U	1.00	1	12/18/24 00:00	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/18/24 00:00	NA	
Ethylbenzene	ND	U	1.00	1	12/18/24 00:00	NA	
m+p-Xylene	ND	U	2.00	1	12/18/24 00:00	NA	
Naphthalene	ND	U	5.00	1	12/18/24 00:00	NA	
o-Xylene	ND	U	1.00	1	12/18/24 00:00	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/18/24 00:00	NA	
Toluene	ND	U	1.00	1	12/18/24 00:00	NA	
Total Xylene	ND	U	2.00	1	12/18/24 00:00	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	94.7	80 - 120	12/18/24 00:00	
4-Bromofluorobenzene	92.0	80 - 120	12/18/24 00:00	
Dibromofluoromethane	91.7	80 - 120	12/18/24 00:00	
Toluene-d8	99.2	80 - 120	12/18/24 00:00	

QA/QC Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	NA
Sample Matrix:	WATER	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	QC-1814150-001		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/17/24 23:21	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/17/24 23:21	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/17/24 23:21	NA	
2-Methylnaphthalene	ND	U	5.00	1	12/17/24 23:21	NA	
Acetone	ND	U	10.0	1	12/17/24 23:21	NA	
Benzene	ND	U	1.00	1	12/17/24 23:21	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/17/24 23:21	NA	
Ethylbenzene	ND	U	1.00	1	12/17/24 23:21	NA	
m+p-Xylene	ND	U	2.00	1	12/17/24 23:21	NA	
Naphthalene	ND	U	5.00	1	12/17/24 23:21	NA	
o-Xylene	ND	U	1.00	1	12/17/24 23:21	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/17/24 23:21	NA	
Toluene	**1.09**	**B**	1.00	1	12/17/24 23:21	NA	
Total Xylene	ND	U	2.00	1	12/17/24 23:21	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	103	80 - 120	12/17/24 23:21	
4-Bromofluorobenzene	99.4	80 - 120	12/17/24 23:21	
Dibromofluoromethane	105	80 - 120	12/17/24 23:21	
Toluene-d8	95.4	80 - 120	12/17/24 23:21	

QA/QC Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	NA
Sample Matrix:	WATER	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	QC-1815949-001		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND U	1.00	1	12/18/24 14:18	NA	
1,3,5-Trimethylbenzene	ND U	1.00	1	12/18/24 14:18	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND U	5.00	1	12/18/24 14:18	NA	
2-Methylnaphthalene	ND U	5.00	1	12/18/24 14:18	NA	
Acetone	ND U	10.0	1	12/18/24 14:18	NA	
Benzene	ND U	1.00	1	12/18/24 14:18	NA	
Di-isopropylether (DIPE)	ND U	1.00	1	12/18/24 14:18	NA	
Ethylbenzene	ND U	1.00	1	12/18/24 14:18	NA	
m+p-Xylene	ND U	2.00	1	12/18/24 14:18	NA	
Naphthalene	ND U	5.00	1	12/18/24 14:18	NA	
o-Xylene	ND U	1.00	1	12/18/24 14:18	NA	
Tetrahydrofuran (THF)	ND U	1.00	1	12/18/24 14:18	NA	
Toluene	ND U	1.00	1	12/18/24 14:18	NA	
Total Xylene	ND U	2.00	1	12/18/24 14:18	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	103	80 - 120	12/18/24 14:18	
4-Bromofluorobenzene	96.2	80 - 120	12/18/24 14:18	
Dibromofluoromethane	101	80 - 120	12/18/24 14:18	
Toluene-d8	97.1	80 - 120	12/18/24 14:18	

QA/QC Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	NA
Sample Matrix:	WATER	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	QC-1815960-001		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/18/24 15:48	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/18/24 15:48	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/18/24 15:48	NA	
2-Methylnaphthalene	ND	U	5.00	1	12/18/24 15:48	NA	
Acetone	ND	U	10.0	1	12/18/24 15:48	NA	
Benzene	ND	U	1.00	1	12/18/24 15:48	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/18/24 15:48	NA	
Ethylbenzene	ND	U	1.00	1	12/18/24 15:48	NA	
m+p-Xylene	ND	U	2.00	1	12/18/24 15:48	NA	
Naphthalene	ND	U	5.00	1	12/18/24 15:48	NA	
o-Xylene	ND	U	1.00	1	12/18/24 15:48	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/18/24 15:48	NA	
Toluene	ND	U	1.00	1	12/18/24 15:48	NA	
Total Xylene	ND	U	2.00	1	12/18/24 15:48	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	94.0	80 - 120	12/18/24 15:48	
4-Bromofluorobenzene	90.4	80 - 120	12/18/24 15:48	
Dibromofluoromethane	92.8	80 - 120	12/18/24 15:48	
Toluene-d8	94.3	80 - 120	12/18/24 15:48	

QA/QC Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	NA
Sample Matrix:	WATER	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	QC-1816383-001		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/19/24 05:46	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/19/24 05:46	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/19/24 05:46	NA	
2-Methylnaphthalene	ND	U	5.00	1	12/19/24 05:46	NA	
Acetone	ND	U	10.0	1	12/19/24 05:46	NA	
Benzene	ND	U	1.00	1	12/19/24 05:46	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/19/24 05:46	NA	
Ethylbenzene	ND	U	1.00	1	12/19/24 05:46	NA	
m+p-Xylene	ND	U	2.00	1	12/19/24 05:46	NA	
Naphthalene	ND	U	5.00	1	12/19/24 05:46	NA	
o-Xylene	ND	U	1.00	1	12/19/24 05:46	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/19/24 05:46	NA	
Toluene	ND	U	1.00	1	12/19/24 05:46	NA	
Total Xylene	ND	U	2.00	1	12/19/24 05:46	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	102	80 - 120	12/19/24 05:46	
4-Bromofluorobenzene	90.4	80 - 120	12/19/24 05:46	
Dibromofluoromethane	100	80 - 120	12/19/24 05:46	
Toluene-d8	97.3	80 - 120	12/19/24 05:46	

QA/QC Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	NA
Sample Matrix:	WATER	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	QC-1817866-001		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/19/24 15:43	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/19/24 15:43	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/19/24 15:43	NA	
2-Methylnaphthalene	ND	U	5.00	1	12/19/24 15:43	NA	
Acetone	ND	U	10.0	1	12/19/24 15:43	NA	
Benzene	ND	U	1.00	1	12/19/24 15:43	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/19/24 15:43	NA	
Ethylbenzene	ND	U	1.00	1	12/19/24 15:43	NA	
m+p-Xylene	ND	U	2.00	1	12/19/24 15:43	NA	
Naphthalene	ND	U	5.00	1	12/19/24 15:43	NA	
o-Xylene	ND	U	1.00	1	12/19/24 15:43	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/19/24 15:43	NA	
Toluene	ND	U	1.00	1	12/19/24 15:43	NA	
Total Xylene	ND	U	2.00	1	12/19/24 15:43	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	111	80 - 120	12/19/24 15:43	
4-Bromofluorobenzene	106	80 - 120	12/19/24 15:43	
Dibromofluoromethane	100	80 - 120	12/19/24 15:43	
Toluene-d8	103	80 - 120	12/19/24 15:43	

QA/QC Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	NA
Sample Matrix:	WATER	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	QC-1817919-001		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/19/24 15:41	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/19/24 15:41	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/19/24 15:41	NA	
2-Methylnaphthalene	ND	U	5.00	1	12/19/24 15:41	NA	
Acetone	ND	U	10.0	1	12/19/24 15:41	NA	
Benzene	ND	U	1.00	1	12/19/24 15:41	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/19/24 15:41	NA	
Ethylbenzene	ND	U	1.00	1	12/19/24 15:41	NA	
m+p-Xylene	ND	U	2.00	1	12/19/24 15:41	NA	
Naphthalene	ND	U	5.00	1	12/19/24 15:41	NA	
o-Xylene	ND	U	1.00	1	12/19/24 15:41	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/19/24 15:41	NA	
Toluene	ND	U	1.00	1	12/19/24 15:41	NA	
Total Xylene	ND	U	2.00	1	12/19/24 15:41	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	99.6	80 - 120	12/19/24 15:41	
4-Bromofluorobenzene	89.4	80 - 120	12/19/24 15:41	
Dibromofluoromethane	100.0	80 - 120	12/19/24 15:41	
Toluene-d8	95.2	80 - 120	12/19/24 15:41	

QA/QC Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	NA
Sample Matrix:	WATER	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	QC-1818373-001		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/20/24 03:57	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/20/24 03:57	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/20/24 03:57	NA	
2-Methylnaphthalene	ND	U	5.00	1	12/20/24 03:57	NA	
Acetone	ND	U	10.0	1	12/20/24 03:57	NA	
Benzene	ND	U	1.00	1	12/20/24 03:57	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/20/24 03:57	NA	
Ethylbenzene	ND	U	1.00	1	12/20/24 03:57	NA	
m+p-Xylene	ND	U	2.00	1	12/20/24 03:57	NA	
Naphthalene	ND	U	5.00	1	12/20/24 03:57	NA	
o-Xylene	ND	U	1.00	1	12/20/24 03:57	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/20/24 03:57	NA	
Toluene	ND	U	1.00	1	12/20/24 03:57	NA	
Total Xylene	ND	U	2.00	1	12/20/24 03:57	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	103	80 - 120	12/20/24 03:57	
4-Bromofluorobenzene	104	80 - 120	12/20/24 03:57	
Dibromofluoromethane	98.8	80 - 120	12/20/24 03:57	
Toluene-d8	102	80 - 120	12/20/24 03:57	

QA/QC Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	NA
Sample Matrix:	WATER	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	QC-1822129-001		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/23/24 22:44	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/23/24 22:44	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/23/24 22:44	NA	
2-Methylnaphthalene	ND	U	5.00	1	12/23/24 22:44	NA	
Acetone	ND	U	10.0	1	12/23/24 22:44	NA	
Benzene	ND	U	1.00	1	12/23/24 22:44	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/23/24 22:44	NA	
Ethylbenzene	ND	U	1.00	1	12/23/24 22:44	NA	
m+p-Xylene	ND	U	2.00	1	12/23/24 22:44	NA	
Naphthalene	ND	U	5.00	1	12/23/24 22:44	NA	
o-Xylene	ND	U	1.00	1	12/23/24 22:44	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/23/24 22:44	NA	
Toluene	ND	U	1.00	1	12/23/24 22:44	NA	
Total Xylene	ND	U	2.00	1	12/23/24 22:44	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	99.6	80 - 120	12/23/24 22:44	
4-Bromofluorobenzene	92.3	80 - 120	12/23/24 22:44	
Dibromofluoromethane	98.6	80 - 120	12/23/24 22:44	
Toluene-d8	98.0	80 - 120	12/23/24 22:44	

QA/QC Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	NA
Sample Matrix:	WATER	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	QC-1822934-001		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/24/24 17:20	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/24/24 17:20	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/24/24 17:20	NA	
2-Methylnaphthalene	ND	U	5.00	1	12/24/24 17:20	NA	
Acetone	ND	U	10.0	1	12/24/24 17:20	NA	
Benzene	ND	U	1.00	1	12/24/24 17:20	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/24/24 17:20	NA	
Ethylbenzene	ND	U	1.00	1	12/24/24 17:20	NA	
m+p-Xylene	ND	U	2.00	1	12/24/24 17:20	NA	
Naphthalene	ND	U	5.00	1	12/24/24 17:20	NA	
o-Xylene	ND	U	1.00	1	12/24/24 17:20	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/24/24 17:20	NA	
Toluene	ND	U	1.00	1	12/24/24 17:20	NA	
Total Xylene	ND	U	2.00	1	12/24/24 17:20	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	102	80 - 120	12/24/24 17:20	
4-Bromofluorobenzene	98.2	80 - 120	12/24/24 17:20	
Dibromofluoromethane	100	80 - 120	12/24/24 17:20	
Toluene-d8	98.2	80 - 120	12/24/24 17:20	

QA/QC Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	NA
Sample Matrix:	WATER	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	QC-1823426-001		

Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trimethylbenzene	ND	U	1.00	1	12/27/24 03:15	NA	
1,3,5-Trimethylbenzene	ND	U	1.00	1	12/27/24 03:15	NA	
2-Butanone (Methyl ethyl ketone, MEK)	ND	U	5.00	1	12/27/24 03:15	NA	
2-Methylnaphthalene	ND	U	5.00	1	12/27/24 03:15	NA	
Acetone	ND	U	10.0	1	12/27/24 03:15	NA	
Benzene	ND	U	1.00	1	12/27/24 03:15	NA	
Di-isopropylether (DIPE)	ND	U	1.00	1	12/27/24 03:15	NA	
Ethylbenzene	ND	U	1.00	1	12/27/24 03:15	NA	
m+p-Xylene	ND	U	2.00	1	12/27/24 03:15	NA	
Naphthalene	ND	U	5.00	1	12/27/24 03:15	NA	
o-Xylene	ND	U	1.00	1	12/27/24 03:15	NA	
Tetrahydrofuran (THF)	ND	U	1.00	1	12/27/24 03:15	NA	
Toluene	ND	U	1.00	1	12/27/24 03:15	NA	
Total Xylene	ND	U	2.00	1	12/27/24 03:15	NA	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	101	80 - 120	12/27/24 03:15	
4-Bromofluorobenzene	96.4	80 - 120	12/27/24 03:15	
Dibromofluoromethane	102	80 - 120	12/27/24 03:15	
Toluene-d8	91.7	80 - 120	12/27/24 03:15	

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs
Work Order: HN2410635
Project: 99-059
Date Analyzed: 12/17/2024
Sample Matrix: WATER

Laboratory Control Sample Summary
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D
Units: µg/L
Analysis Lab Lot: 2833270

QC-1814114-002

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
1,2,4-Trimethylbenzene	19.5	20	97.5	74-118
1,3,5-Trimethylbenzene	19.8	20	99.2	76-120
2-Butanone (Methyl ethyl ketone, MEK)	19.2	20	96.0	69-147
2-Methylnaphthalene	19.1	20	95.6	50-150
Acetone	22.9	20	114	70-166
Benzene	20.0	20	100	78-120
Di-isopropylether (DIPE)	19.1	20	95.4	60-132
Ethylbenzene	19.7	20	98.4	76-116
m+p-Xylene	39.2	40	98.1	76-119
Naphthalene	18.7	20	93.3	56-142
o-Xylene	19.8	20	98.8	77-116
Tetrahydrofuran (THF)	17.6	20	88.2	57-143
Toluene	19.0	20	95.1	78-116
Total Xylene	59.0	60	98.3	77-119

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs
Work Order: HN2410635
Project: 99-059
Date Analyzed: 12/17/2024
Sample Matrix: WATER

Laboratory Control Sample Summary
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D
Units: µg/L
Analysis Lab Lot: 2833351

QC-1814150-002

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
1,2,4-Trimethylbenzene	17.9	20	89.7	74-118
1,3,5-Trimethylbenzene	18.6	20	92.9	76-120
2-Butanone (Methyl ethyl ketone, MEK)	17.5	20	87.5	69-147
2-Methylnaphthalene	23.1	20	116	50-150
Acetone	17.0	20	85.0	70-166
Benzene	19.3	20	96.3	78-120
Di-isopropylether (DIPE)	18.1	20	90.4	60-132
Ethylbenzene	18.8	20	94.0	76-116
m+p-Xylene	40.4	40	101	76-119
Naphthalene	18.8	20	94.2	56-142
o-Xylene	19.1	20	95.4	77-116
Tetrahydrofuran (THF)	19.7	20	98.3	57-143
Toluene	19.2	20	95.8	78-116
Total Xylene	59.5	60	99.2	77-119

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs
Work Order: HN2410635
Project: 99-059
Date Analyzed: 12/18/2024
Sample Matrix: WATER

Laboratory Control Sample Summary
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D
Units: µg/L
Analysis Lab Lot: 2836293

QC-1815949-002

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
1,2,4-Trimethylbenzene	18.1	20	90.4	74-118
1,3,5-Trimethylbenzene	18.7	20	93.6	76-120
2-Butanone (Methyl ethyl ketone, MEK)	19.7	20	98.3	69-147
2-Methylnaphthalene	21.6	20	108	50-150
Acetone	20.1	20	101	70-166
Benzene	19.2	20	95.8	78-120
Di-isopropylether (DIPE)	18.4	20	92.2	60-132
Ethylbenzene	18.5	20	92.6	76-116
m+p-Xylene	38.6	40	96.4	76-119
Naphthalene	18.8	20	93.8	56-142
o-Xylene	17.9	20	89.6	77-116
Tetrahydrofuran (THF)	23.3	20	116	57-143
Toluene	17.4	20	87.0	78-116
Total Xylene	56.5	60	94.2	77-119

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs
Work Order: HN2410635
Project: 99-059
Date Analyzed: 12/18/2024
Sample Matrix: WATER

Laboratory Control Sample Summary
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D
Units: µg/L
Analysis Lab Lot: 2836303

QC-1815960-002

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
1,2,4-Trimethylbenzene	19.2	20	96.0	74-118
1,3,5-Trimethylbenzene	19.7	20	98.6	76-120
2-Butanone (Methyl ethyl ketone, MEK)	19.1	20	95.6	69-147
2-Methylnaphthalene	17.9	20	89.6	50-150
Acetone	22.4	20	112	70-166
Benzene	18.6	20	92.9	78-120
Di-isopropylether (DIPE)	17.8	20	88.8	60-132
Ethylbenzene	18.9	20	94.4	76-116
m+p-Xylene	38.0	40	94.9	76-119
Naphthalene	17.5	20	87.4	56-142
o-Xylene	18.6	20	93.1	77-116
Tetrahydrofuran (THF)	15.0	20	74.8	57-143
Toluene	18.4	20	92.0	78-116
Total Xylene	56.6	60	94.3	77-119

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs
Work Order: HN2410635
Project: 99-059
Date Analyzed: 12/19/2024
Sample Matrix: WATER

Laboratory Control Sample Summary
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D
Units: µg/L
Analysis Lab Lot: 2836989

QC-1816383-002

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
1,2,4-Trimethylbenzene	16.7	20	83.4	74-118
1,3,5-Trimethylbenzene	17.3	20	86.7	76-120
2-Butanone (Methyl ethyl ketone, MEK)	23.9	20	120	69-147
2-Methylnaphthalene	16.3	20	81.4	50-150
Acetone	23.1	20	116	70-166
Benzene	19.4	20	97.0	78-120
Di-isopropylether (DIPE)	20.9	20	104	60-132
Ethylbenzene	18.6	20	93.1	76-116
m+p-Xylene	35.3	40	88.4	76-119
Naphthalene	17.3	20	86.4	56-142
o-Xylene	18.3	20	91.4	77-116
Tetrahydrofuran (THF)	18.6	20	92.8	57-143
Toluene	17.7	20	88.3	78-116
Total Xylene	53.6	60	89.4	77-119

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs
Work Order: HN2410635
Project: 99-059
Date Analyzed: 12/19/2024
Sample Matrix: WATER

Laboratory Control Sample Summary
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D
Units: µg/L
Analysis Lab Lot: 2839399

QC-1817866-002

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
1,2,4-Trimethylbenzene	16.8	20	84.0	74-118
1,3,5-Trimethylbenzene	17.7	20	88.6	76-120
2-Butanone (Methyl ethyl ketone, MEK)	19.7	20	98.6	69-147
2-Methylnaphthalene	14.2	20	71.1	50-150
Acetone	19.0	20	95.0	70-166
Benzene	17.0	20	85.2	78-120
Di-isopropylether (DIPE)	15.7	20	78.4	60-132
Ethylbenzene	16.9	20	84.6	76-116
m+p-Xylene	34.5	40	86.3	76-119
Naphthalene	15.7	20	78.5	56-142
o-Xylene	16.8	20	84.1	77-116
Tetrahydrofuran (THF)	16.9	20	84.3	57-143
Toluene	16.4	20	82.2	78-116
Total Xylene	51.4	60	85.6	77-119

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs
Work Order: HN2410635
Project: 99-059
Date Analyzed: 12/19/2024
Sample Matrix: WATER

Laboratory Control Sample Summary
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D
Units: µg/L
Analysis Lab Lot: 2839457

QC-1817919-002

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
1,2,4-Trimethylbenzene	18.5	20	92.5	74-118
1,3,5-Trimethylbenzene	19.3	20	96.3	76-120
2-Butanone (Methyl ethyl ketone, MEK)	20.8	20	104	69-147
2-Methylnaphthalene	17.1	20	85.4	50-150
Acetone	19.8	20	98.8	70-166
Benzene	19.0	20	95.0	78-120
Di-isopropylether (DIPE)	17.4	20	87.1	60-132
Ethylbenzene	18.5	20	92.3	76-116
m+p-Xylene	37.7	40	94.2	76-119
Naphthalene	16.8	20	83.8	56-142
o-Xylene	19.0	20	94.8	77-116
Tetrahydrofuran (THF)	17.3	20	86.4	57-143
Toluene	18.1	20	90.5	78-116
Total Xylene	56.6	60	94.4	77-119

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs
Work Order: HN2410635
Project: 99-059
Date Analyzed: 12/20/2024
Sample Matrix: WATER

Laboratory Control Sample Summary
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D
Units: µg/L
Analysis Lab Lot: 2840144

QC-1818373-002

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
1,2,4-Trimethylbenzene	17.4	20	86.8	74-118
1,3,5-Trimethylbenzene	17.9	20	89.4	76-120
2-Butanone (Methyl ethyl ketone, MEK)	18.8	20	94.2	69-147
2-Methylnaphthalene	15.0	20	75.2	50-150
Acetone	23.3	20	116	70-166
Benzene	18.4	20	92.0	78-120
Di-isopropylether (DIPE)	17.6	20	88.0	60-132
Ethylbenzene	17.4	20	86.9	76-116
m+p-Xylene	36.1	40	90.2	76-119
Naphthalene	15.8	20	78.8	56-142
o-Xylene	17.4	20	86.8	77-116
Tetrahydrofuran (THF)	16.9	20	84.6	57-143
Toluene	18.9	20	94.5	78-116
Total Xylene	53.4	60	89.0	77-119

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs
Work Order: HN2410635
Project: 99-059
Date Analyzed: 12/23/2024
Sample Matrix: WATER

Laboratory Control Sample Summary
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D
Units: µg/L
Analysis Lab Lot: 2846454

QC-1822129-002

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
1,2,4-Trimethylbenzene	18.4	20	91.9	74-118
1,3,5-Trimethylbenzene	18.4	20	91.8	76-120
2-Butanone (Methyl ethyl ketone, MEK)	17.6	20	87.8	69-147
2-Methylnaphthalene	20.0	20	100	50-150
Acetone	17.0	20	85.1	70-166
Benzene	18.4	20	92.0	78-120
Di-isopropylether (DIPE)	19.6	20	97.8	60-132
Ethylbenzene	18.5	20	92.6	76-116
m+p-Xylene	37.6	40	94.0	76-119
Naphthalene	19.1	20	95.5	56-142
o-Xylene	18.8	20	94.0	77-116
Tetrahydrofuran (THF)	17.5	20	87.5	57-143
Toluene	18.4	20	91.8	78-116
Total Xylene	56.4	60	94.0	77-119

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs
Work Order: HN2410635
Project: 99-059
Date Analyzed: 12/24/2024
Sample Matrix: WATER

Laboratory Control Sample Summary
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D
Units: µg/L
Analysis Lab Lot: 2847846

QC-1822934-002

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
1,2,4-Trimethylbenzene	18.5	20	92.6	74-118
1,3,5-Trimethylbenzene	19.1	20	95.4	76-120
2-Butanone (Methyl ethyl ketone, MEK)	14.6	20	72.8	69-147
2-Methylnaphthalene	13.0	20	65.0	50-150
Acetone	17.1	20	85.5	70-166
Benzene	18.4	20	92.2	78-120
Di-isopropylether (DIPE)	16.5	20	82.6	60-132
Ethylbenzene	18.4	20	91.9	76-116
m+p-Xylene	37.7	40	94.2	76-119
Naphthalene	14.6	20	73.0	56-142
o-Xylene	18.2	20	91.2	77-116
Tetrahydrofuran (THF)	13.1	20	65.6	57-143
Toluene	17.9	20	89.4	78-116
Total Xylene	55.9	60	93.2	77-119

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs
Work Order: HN2410635
Project: 99-059
Date Analyzed: 12/27/2024
Sample Matrix: WATER

Laboratory Control Sample Summary
Volatile Organic Compounds by GC-MS

Analysis Method: EPA 8260D
Units: µg/L
Analysis Lab Lot: 2848520

QC-1823426-002

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
1,2,4-Trimethylbenzene	19.8	20	98.8	74-118
1,3,5-Trimethylbenzene	20.8	20	104	76-120
2-Butanone (Methyl ethyl ketone, MEK)	16.6	20	82.8	69-147
2-Methylnaphthalene	16.8	20	83.9	50-150
Acetone	17.9	20	89.6	70-166
Benzene	19.8	20	99.2	78-120
Di-isopropylether (DIPE)	11.8	20	59.0 S	60-132
Ethylbenzene	19.5	20	97.4	76-116
m+p-Xylene	39.3	40	98.2	76-119
Naphthalene	18.6	20	93.1	56-142
o-Xylene	19.8	20	99.0	77-116
Tetrahydrofuran (THF)	15.5	20	77.6	57-143
Toluene	17.8	20	89.2	78-116
Total Xylene	59.1	60	98.5	77-119

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E **Analysis Lab Lot:** 2833990
Extraction Method: EPA 3510C

Sample Name	Lab Code	2,4,6-Tribromophenol 38 - 103	2-Fluorobiphenyl 36 - 96	2-Fluorophenol 20 - 73
GSI-200 B	HN2410635-020	62.5	51.4	32.6
GSI-1400 B	HN2410635-028	39.5	31.1 S	23.1
GSI-1400 C	HN2410635-029	57.5	43.2	29.1
UPG-600 D	HN2410635-036	76.9	58.1	42.2
DUP-2	HN2410635-037	62.0	47.5	35.0
Method Blank	QC-1810527-001	54.5	51.9	31.8
Laboratory Control Sample	QC-1810527-002	62.7	57.2	34.8
Laboratory Control Sample Duplicate	QC-1810527-003	59.8	53.5	36.5

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E **Analysis Lab Lot:** 2833990
Extraction Method: EPA 3510C

Sample Name	Lab Code	4-Terphenyl-d14 44 - 114	Nitrobenzene-d5 33 - 100	Phenol-d6 10 - 48
GSI-200 B	HN2410635-020	59.1	55.2	18.7
GSI-1400 B	HN2410635-028	40.2 S	33.8	12.0
GSI-1400 C	HN2410635-029	55.0	45.3	17.9
UPG-600 D	HN2410635-036	67.0	69.5	23.4
DUP-2	HN2410635-037	57.6	63.7	19.2
Method Blank	QC-1810527-001	67.4	49.8	18.5
Laboratory Control Sample	QC-1810527-002	67.0	55.8	19.4
Laboratory Control Sample Duplicate	QC-1810527-003	64.1	54.4	21.4

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E **Analysis Lab Lot:** 2834033
Extraction Method: EPA 3510C

Sample Name	Lab Code	2,4,6-Tribromophenol 38 - 103	2-Fluorobiphenyl 36 - 96	2-Fluorophenol 20 - 73
UPG-400 AR	HN2410635-001	75.4	60.1	36.2
UPG-400 BR	HN2410635-002	82.3	68.4	45.1
DUP-1	HN2410635-003	76.7	64.5	44.0
UPG-400 CR	HN2410635-004	78.9	64.9	36.3
UPG-700 A	HN2410635-005	84.4	67.0	38.3
UPG-700 B	HN2410635-006	74.0	60.9	33.8
UPG-700 C	HN2410635-007	54.6	48.6	25.8
GSI-1400 A	HN2410635-008	67.4	50.2	24.3
GSI-1300 A	HN2410635-009	75.6	67.2	41.8
GSI-1300 B	HN2410635-010	80.4	64.2	34.5
GSI-1300 C	HN2410635-011	76.7	64.2	39.2
GSI-1200 A	HN2410635-025	81.4	65.1	38.6
GSI-1200 B	HN2410635-026	66.7	50.9	27.0
GSI-1200 C	HN2410635-027	68.9	57.5	32.4
UPG-500 A	HN2410635-030	82.3	67.1	35.6
UPG-500 B	HN2410635-031	62.7	57.0	28.5
UPG-500 C	HN2410635-032	75.0	62.1	32.3
UPG-600 A	HN2410635-033	80.8	63.9	36.0
UPG-600 B	HN2410635-034	65.2	63.9	40.2
UPG-600 C	HN2410635-035	81.1	58.5	28.6
Method Blank	QC-1810523-001	74.6	74.9	36.3
Laboratory Control Sample	QC-1810523-002	81.6	71.2	38.9
Laboratory Control Sample Duplicate	QC-1810523-003	82.7	76.2	40.6

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E **Analysis Lab Lot:** 2834033
Extraction Method: EPA 3510C

Sample Name	Lab Code	4-Terphenyl-d14 44 - 114	Nitrobenzene-d5 33 - 100	Phenol-d6 10 - 48
UPG-400 AR	HN2410635-001	68.6	63.5	20.2
UPG-400 BR	HN2410635-002	72.1	67.7	21.2
DUP-1	HN2410635-003	70.7	64.4	21.0
UPG-400 CR	HN2410635-004	65.5	63.8	21.6
UPG-700 A	HN2410635-005	75.6	67.8	22.2
UPG-700 B	HN2410635-006	74.9	59.8	19.5
UPG-700 C	HN2410635-007	60.3	47.3	14.7
GSI-1400 A	HN2410635-008	62.1	48.9	14.4
GSI-1300 A	HN2410635-009	70.3	67.9	21.9
GSI-1300 B	HN2410635-010	66.9	66.7	19.6
GSI-1300 C	HN2410635-011	61.2	66.5	22.8
GSI-1200 A	HN2410635-025	69.7	68.4	23.0
GSI-1200 B	HN2410635-026	56.5	49.0	16.7
GSI-1200 C	HN2410635-027	58.3	66.1	17.0
UPG-500 A	HN2410635-030	74.7	65.3	22.6
UPG-500 B	HN2410635-031	46.7	54.7	15.7
UPG-500 C	HN2410635-032	68.0	65.8	18.1
UPG-600 A	HN2410635-033	69.5	63.3	20.0
UPG-600 B	HN2410635-034	63.8	63.2	18.2
UPG-600 C	HN2410635-035	68.8	56.5	17.6
Method Blank	QC-1810523-001	82.6	67.8	21.1
Laboratory Control Sample	QC-1810523-002	78.9	72.0	23.7
Laboratory Control Sample Duplicate	QC-1810523-003	80.9	77.6	24.8

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E **Analysis Lab Lot:** 2835452
Extraction Method: EPA 3510C

Sample Name	Lab Code	2,4,6-Tribromophenol 38 - 103	2-Fluorobiphenyl 36 - 96	2-Fluorophenol 20 - 73
Method Blank	QC-1811295-001	75.6	74.6	51.1
Laboratory Control Sample	QC-1811295-002	82.7	73.1	43.6
Laboratory Control Sample Duplicate	QC-1811295-003	85.2	76.2	48.7

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E **Analysis Lab Lot:** 2835452
Extraction Method: EPA 3510C

Sample Name	Lab Code	4-Terphenyl-d14 44 - 114	Nitrobenzene-d5 33 - 100	Phenol-d6 10 - 48
Method Blank	QC-1811295-001	80.7	71.8	30.1
Laboratory Control Sample	QC-1811295-002	75.1	70.8	25.0
Laboratory Control Sample Duplicate	QC-1811295-003	79.2	75.7	29.9

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E **Analysis Lab Lot:** 2836434
Extraction Method: EPA 3510C

Sample Name	Lab Code	2,4,6-Tribromophenol 38 - 103	2-Fluorobiphenyl 36 - 96	2-Fluorophenol 20 - 73
GSI-1000 A	HN2410635-012	65.9	50.7	35.1
GSI-1000 B	HN2410635-013	71.5	58.3	51.8
GSI-1000 C	HN2410635-014	72.9	54.0	34.1
GSI-600 B	HN2410635-015	84.2	67.2	43.2
GSI-600 C	HN2410635-016	85.6	73.1	42.3
GSI-600 A	HN2410635-017	89.5	72.9	49.1
GSI-1100 D	HN2410635-018	77.7	55.1	66.7
GSI-200 A	HN2410635-019	81.4	66.1	47.1
GSI-200 C	HN2410635-021	72.0	55.0	35.9
GSI-1100 A	HN2410635-022	72.3	56.8	34.7
GSI-1110 B	HN2410635-023	79.0	63.5	43.3
GSI-1100 C	HN2410635-024	81.5	57.7	56.8
GSI-1500 A	HN2410635-038	69.1	53.3	31.8
GSI-1500 B	HN2410635-039	78.6	54.5	35.0
GSI-1500 C	HN2410635-040	81.5	69.5	46.2

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E **Analysis Lab Lot:** 2836434
Extraction Method: EPA 3510C

Sample Name	Lab Code	4-Terphenyl-d14 44 - 114	Nitrobenzene-d5 33 - 100	Phenol-d6 10 - 48
GSI-1000 A	HN2410635-012	60.4	51.8	23.1
GSI-1000 B	HN2410635-013	63.1	66.5	25.2
GSI-1000 C	HN2410635-014	62.6	56.0	21.2
GSI-600 B	HN2410635-015	70.1	68.7	25.3
GSI-600 C	HN2410635-016	77.9	73.1	24.7
GSI-600 A	HN2410635-017	61.4	72.2	30.7
GSI-1100 D	HN2410635-018	64.5	88.3	24.6
GSI-200 A	HN2410635-019	68.2	73.8	28.5
GSI-200 C	HN2410635-021	54.3	71.1	21.6
GSI-1100 A	HN2410635-022	58.7	58.6	20.3
GSI-1110 B	HN2410635-023	72.4	70.3	25.5
GSI-1100 C	HN2410635-024	71.1	63.4	33.7
GSI-1500 A	HN2410635-038	64.5	53.4	19.3
GSI-1500 B	HN2410635-039	61.0	54.2	23.9
GSI-1500 C	HN2410635-040	75.2	68.8	28.7

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E **Analysis Lab Lot:** 2840761
Extraction Method: EPA 3510C

Sample Name	Lab Code	2,4,6-Tribromophenol 38 - 103	2-Fluorobiphenyl 36 - 96	2-Fluorophenol 20 - 73
GSI-100 A	HN2410635-041	66.0	50.3	50.4
GSI-100 B	HN2410635-042	79.3	66.2	51.5
GSI-100 C	HN2410635-043	88.6	69.6	45.0

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs **Work Order:** HN2410635
Project: 99-059
Sample Matrix: WATER

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E **Analysis Lab Lot:** 2840761
Extraction Method: EPA 3510C

Sample Name	Lab Code	4-Terphenyl-d14 44 - 114	Nitrobenzene-d5 33 - 100	Phenol-d6 10 - 48
GSI-100 A	HN2410635-041	52.8	61.7	24.7
GSI-100 B	HN2410635-042	67.8	71.5	27.9
GSI-100 C	HN2410635-043	71.7	72.4	25.6

QA/QC Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	NA
Sample Matrix:	WATER	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	QC-1810523-001		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
1,2,4,5-Tetrachlorobenzene	ND U	5.00	1	12/17/24 15:48	12/16/24 09:28	
1,4-Dioxane (1,4- Diethyleneoxide)	ND U	5.00	1	12/17/24 15:48	12/16/24 09:28	
1-Methylnaphthalene	ND U	0.100	1	12/17/24 15:48	12/16/24 09:28	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
2,3,4,6-Tetrachlorophenol	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
2,4,5-Trichlorophenol	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
2,4,6-Trichlorophenol	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
2,4-Dichlorophenol	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
2,4-Dimethylphenol	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
2,4-Dinitrophenol	ND U	5.00	1	12/17/24 15:48	12/16/24 09:28	
2,4-Dinitrotoluene (2,4-DNT)	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
2,6-Dinitrotoluene (2,6-DNT)	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
2-Chloronaphthalene	ND U	0.100	1	12/17/24 15:48	12/16/24 09:28	
2-Chlorophenol	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
2-Methylnaphthalene	ND U	0.100	1	12/17/24 15:48	12/16/24 09:28	
2-Methylphenol (o-Cresol)	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
2-Nitroaniline	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
2-Nitrophenol	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
3&4-Methylphenol	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
3,3'-Dichlorobenzidine	ND U	5.00	1	12/17/24 15:48	12/16/24 09:28	
3-Nitroaniline	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
4-Bromophenyl phenyl ether (BDE-3)	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
4-Chloro-3-methylphenol	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
4-Chloroaniline	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
4-Chlorophenyl phenylether	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
4-Nitroaniline	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
4-Nitrophenol	ND U	5.00	1	12/17/24 15:48	12/16/24 09:28	
Acenaphthene	ND U	0.100	1	12/17/24 15:48	12/16/24 09:28	
Acenaphthylene	ND U	0.100	1	12/17/24 15:48	12/16/24 09:28	
Acetophenone	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
Anthracene	ND U	0.100	1	12/17/24 15:48	12/16/24 09:28	
Atrazine	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
Benzaldehyde	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
Benzo(a)anthracene	ND U	0.100	1	12/17/24 15:48	12/16/24 09:28	
Benzo(a)pyrene	ND U	0.100	1	12/17/24 15:48	12/16/24 09:28	
Benzo(b)fluoranthene	ND U	0.100	1	12/17/24 15:48	12/16/24 09:28	
Benzo(g,h,i)perylene	ND U	0.100	1	12/17/24 15:48	12/16/24 09:28	
Benzo(k)fluoranthene	ND U	0.100	1	12/17/24 15:48	12/16/24 09:28	

QA/QC Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	NA
Sample Matrix:	WATER	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	QC-1810523-001		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
bis(2-Chloroethyl) ether	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
Butyl benzyl phthalate	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
Caprolactam	ND U	5.00	1	12/17/24 15:48	12/16/24 09:28	
Carbazole	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
Chrysene	ND U	0.100	1	12/17/24 15:48	12/16/24 09:28	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
Dibenz(a,h) anthracene	ND U	0.100	1	12/17/24 15:48	12/16/24 09:28	
Dibenzofuran	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
Diethyl phthalate	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
Dimethyl phthalate	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
Di-n-butyl phthalate	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
Di-n-octyl phthalate	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
Fluoranthene	ND U	0.100	1	12/17/24 15:48	12/16/24 09:28	
Fluorene	ND U	0.100	1	12/17/24 15:48	12/16/24 09:28	
Hexachlorobenzene	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
Hexachlorobutadiene	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
Hexachlorocyclopentadiene	ND U	5.00	1	12/17/24 15:48	12/16/24 09:28	
Hexachloroethane	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
Indeno(1,2,3-cd) pyrene	ND U	0.100	1	12/17/24 15:48	12/16/24 09:28	
Isophorone	ND U	5.00	1	12/17/24 15:48	12/16/24 09:28	
Methylphenol, Total	ND U	2.00	1	12/17/24 15:48	12/16/24 09:28	
Naphthalene	ND U	0.100	1	12/17/24 15:48	12/16/24 09:28	
Nitrobenzene	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
n-Nitrosodi-n-propylamine	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
N-Nitrosodiphenylamine	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
Pentachlorophenol	ND U	5.00	1	12/17/24 15:48	12/16/24 09:28	
Phenanthrene	ND U	0.100	1	12/17/24 15:48	12/16/24 09:28	
Phenol	ND U	1.00	1	12/17/24 15:48	12/16/24 09:28	
Pyrene	ND U	0.100	1	12/17/24 15:48	12/16/24 09:28	
Pyridine	ND U	10.0	1	12/17/24 15:48	12/16/24 09:28	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	74.6	38 - 103	12/17/24 15:48	
2-Fluorobiphenyl	74.9	36 - 96	12/17/24 15:48	
2-Fluorophenol	36.3	20 - 73	12/17/24 15:48	
4-Terphenyl-d14	82.6	44 - 114	12/17/24 15:48	
Nitrobenzene-d5	67.8	33 - 100	12/17/24 15:48	
Phenol-d6	21.1	10 - 48	12/17/24 15:48	

QA/QC Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	NA
Sample Matrix:	WATER	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	QC-1810527-001		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
1,2,4,5-Tetrachlorobenzene	ND U	5.00	1	12/17/24 14:42	12/16/24 09:29	
1,4-Dioxane (1,4- Diethyleneoxide)	ND U	5.00	1	12/17/24 14:42	12/16/24 09:29	
1-Methylnaphthalene	ND U	0.100	1	12/17/24 14:42	12/16/24 09:29	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
2,3,4,6-Tetrachlorophenol	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
2,4,5-Trichlorophenol	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
2,4,6-Trichlorophenol	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
2,4-Dichlorophenol	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
2,4-Dimethylphenol	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
2,4-Dinitrophenol	ND U	5.00	1	12/17/24 14:42	12/16/24 09:29	
2,4-Dinitrotoluene (2,4-DNT)	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
2,6-Dinitrotoluene (2,6-DNT)	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
2-Chloronaphthalene	ND U	0.100	1	12/17/24 14:42	12/16/24 09:29	
2-Chlorophenol	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
2-Methylnaphthalene	ND U	0.100	1	12/17/24 14:42	12/16/24 09:29	
2-Methylphenol (o-Cresol)	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
2-Nitroaniline	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
2-Nitrophenol	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
3&4-Methylphenol	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
3,3'-Dichlorobenzidine	ND U	5.00	1	12/17/24 14:42	12/16/24 09:29	
3-Nitroaniline	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
4-Bromophenyl phenyl ether (BDE-3)	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
4-Chloro-3-methylphenol	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
4-Chloroaniline	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
4-Chlorophenyl phenylether	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
4-Nitroaniline	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
4-Nitrophenol	ND U	5.00	1	12/17/24 14:42	12/16/24 09:29	
Acenaphthene	ND U	0.100	1	12/17/24 14:42	12/16/24 09:29	
Acenaphthylene	ND U	0.100	1	12/17/24 14:42	12/16/24 09:29	
Acetophenone	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
Anthracene	ND U	0.100	1	12/17/24 14:42	12/16/24 09:29	
Atrazine	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
Benzaldehyde	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
Benzo(a)anthracene	ND U	0.100	1	12/17/24 14:42	12/16/24 09:29	
Benzo(a)pyrene	ND U	0.100	1	12/17/24 14:42	12/16/24 09:29	
Benzo(b)fluoranthene	ND U	0.100	1	12/17/24 14:42	12/16/24 09:29	
Benzo(g,h,i)perylene	ND U	0.100	1	12/17/24 14:42	12/16/24 09:29	
Benzo(k)fluoranthene	ND U	0.100	1	12/17/24 14:42	12/16/24 09:29	

QA/QC Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	NA
Sample Matrix:	WATER	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	QC-1810527-001		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
bis(2-Chloroethyl) ether	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
Butyl benzyl phthalate	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
Caprolactam	ND U	5.00	1	12/17/24 14:42	12/16/24 09:29	
Carbazole	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
Chrysene	ND U	0.100	1	12/17/24 14:42	12/16/24 09:29	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
Dibenz(a,h) anthracene	ND U	0.100	1	12/17/24 14:42	12/16/24 09:29	
Dibenzofuran	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
Diethyl phthalate	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
Dimethyl phthalate	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
Di-n-butyl phthalate	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
Di-n-octyl phthalate	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
Fluoranthene	ND U	0.100	1	12/17/24 14:42	12/16/24 09:29	
Fluorene	ND U	0.100	1	12/17/24 14:42	12/16/24 09:29	
Hexachlorobenzene	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
Hexachlorobutadiene	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
Hexachlorocyclopentadiene	ND U	5.00	1	12/17/24 14:42	12/16/24 09:29	
Hexachloroethane	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
Indeno(1,2,3-cd) pyrene	ND U	0.100	1	12/17/24 14:42	12/16/24 09:29	
Isophorone	ND U	5.00	1	12/17/24 14:42	12/16/24 09:29	
Methylphenol, Total	ND U	2.00	1	12/17/24 14:42	12/16/24 09:29	
Naphthalene	ND U	0.100	1	12/17/24 14:42	12/16/24 09:29	
Nitrobenzene	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
n-Nitrosodi-n-propylamine	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
N-Nitrosodiphenylamine	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
Pentachlorophenol	ND U	5.00	1	12/17/24 14:42	12/16/24 09:29	
Phenanthrene	ND U	0.100	1	12/17/24 14:42	12/16/24 09:29	
Phenol	ND U	1.00	1	12/17/24 14:42	12/16/24 09:29	
Pyrene	ND U	0.100	1	12/17/24 14:42	12/16/24 09:29	
Pyridine	ND U	10.0	1	12/17/24 14:42	12/16/24 09:29	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	54.5	38 - 103	12/17/24 14:42	
2-Fluorobiphenyl	51.9	36 - 96	12/17/24 14:42	
2-Fluorophenol	31.8	20 - 73	12/17/24 14:42	
4-Terphenyl-d14	67.4	44 - 114	12/17/24 14:42	
Nitrobenzene-d5	49.8	33 - 100	12/17/24 14:42	
Phenol-d6	18.5	10 - 48	12/17/24 14:42	

QA/QC Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	NA
Sample Matrix:	WATER	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	QC-1811295-001		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,1'-Biphenyl (BZ-0)	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
1,2,4,5-Tetrachlorobenzene	ND U	5.00	1	12/17/24 18:13	12/16/24 15:49	
1,4-Dioxane (1,4- Diethyleneoxide)	ND U	5.00	1	12/17/24 18:13	12/16/24 15:49	
1-Methylnaphthalene	ND U	0.100	1	12/17/24 18:13	12/16/24 15:49	
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
2,3,4,6-Tetrachlorophenol	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
2,4,5-Trichlorophenol	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
2,4,6-Trichlorophenol	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
2,4-Dichlorophenol	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
2,4-Dimethylphenol	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
2,4-Dinitrophenol	ND U	5.00	1	12/17/24 18:13	12/16/24 15:49	
2,4-Dinitrotoluene (2,4-DNT)	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
2,6-Dinitrotoluene (2,6-DNT)	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
2-Chloronaphthalene	ND U	0.100	1	12/17/24 18:13	12/16/24 15:49	
2-Chlorophenol	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
2-Methylnaphthalene	ND U	0.100	1	12/17/24 18:13	12/16/24 15:49	
2-Methylphenol (o-Cresol)	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
2-Nitroaniline	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
2-Nitrophenol	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
3&4-Methylphenol	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
3,3'-Dichlorobenzidine	ND U	5.00	1	12/17/24 18:13	12/16/24 15:49	
3-Nitroaniline	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
4-Bromophenyl phenyl ether (BDE-3)	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
4-Chloro-3-methylphenol	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
4-Chloroaniline	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
4-Chlorophenyl phenylether	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
4-Nitroaniline	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
4-Nitrophenol	ND U	5.00	1	12/17/24 18:13	12/16/24 15:49	
Acenaphthene	ND U	0.100	1	12/17/24 18:13	12/16/24 15:49	
Acenaphthylene	ND U	0.100	1	12/17/24 18:13	12/16/24 15:49	
Acetophenone	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
Anthracene	ND U	0.100	1	12/17/24 18:13	12/16/24 15:49	
Atrazine	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
Benzaldehyde	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
Benzo(a)anthracene	ND U	0.100	1	12/17/24 18:13	12/16/24 15:49	
Benzo(a)pyrene	ND U	0.100	1	12/17/24 18:13	12/16/24 15:49	
Benzo(b)fluoranthene	ND U	0.100	1	12/17/24 18:13	12/16/24 15:49	
Benzo(g,h,i)perylene	ND U	0.100	1	12/17/24 18:13	12/16/24 15:49	
Benzo(k)fluoranthene	ND U	0.100	1	12/17/24 18:13	12/16/24 15:49	

QA/QC Report

Client:	TriMedia Environmental & Engineering Svcs	**Work Order:**	HN2410635
Project:	99-059	**Date Collected:**	NA
Sample Matrix:	WATER	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	QC-1811295-001		

Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
bis(2-Chloroethoxy)methane	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
bis(2-Chloroethyl) ether	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
Butyl benzyl phthalate	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
Caprolactam	ND U	5.00	1	12/17/24 18:13	12/16/24 15:49	
Carbazole	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
Chrysene	ND U	0.100	1	12/17/24 18:13	12/16/24 15:49	
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
Dibenz(a,h) anthracene	ND U	0.100	1	12/17/24 18:13	12/16/24 15:49	
Dibenzofuran	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
Diethyl phthalate	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
Dimethyl phthalate	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
Di-n-butyl phthalate	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
Di-n-octyl phthalate	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
Fluoranthene	ND U	0.100	1	12/17/24 18:13	12/16/24 15:49	
Fluorene	ND U	0.100	1	12/17/24 18:13	12/16/24 15:49	
Hexachlorobenzene	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
Hexachlorobutadiene	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
Hexachlorocyclopentadiene	ND U	5.00	1	12/17/24 18:13	12/16/24 15:49	
Hexachloroethane	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
Indeno(1,2,3-cd) pyrene	ND U	0.100	1	12/17/24 18:13	12/16/24 15:49	
Isophorone	ND U	5.00	1	12/17/24 18:13	12/16/24 15:49	
Methylphenol, Total	ND U	2.00	1	12/17/24 18:13	12/16/24 15:49	
Naphthalene	ND U	0.100	1	12/17/24 18:13	12/16/24 15:49	
Nitrobenzene	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
n-Nitrosodi-n-propylamine	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
N-Nitrosodiphenylamine	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
Pentachlorophenol	ND U	5.00	1	12/17/24 18:13	12/16/24 15:49	
Phenanthrene	ND U	0.100	1	12/17/24 18:13	12/16/24 15:49	
Phenol	ND U	1.00	1	12/17/24 18:13	12/16/24 15:49	
Pyrene	ND U	0.100	1	12/17/24 18:13	12/16/24 15:49	
Pyridine	ND U	10.0	1	12/17/24 18:13	12/16/24 15:49	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	75.6	38 - 103	12/17/24 18:13	
2-Fluorobiphenyl	74.6	36 - 96	12/17/24 18:13	
2-Fluorophenol	51.1	20 - 73	12/17/24 18:13	
4-Terphenyl-d14	80.7	44 - 114	12/17/24 18:13	
Nitrobenzene-d5	71.8	33 - 100	12/17/24 18:13	
Phenol-d6	30.1	10 - 48	12/17/24 18:13	

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Sample Matrix: WATER

Work Order: HN2410635
Date Analyzed: 12/17/2024
Date Extracted: 12/16/2024

Duplicate Laboratory Control Sample Summary
Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Units: µg/L
Analysis Lab Lot: 2834033

	Laboratory Control Sample QC-1810523-002			Duplicate Laboratory Control Sample QC-1810523-003					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,1'-Biphenyl (BZ-0)	15.6	20	78.0	16.7	20	83.6	24-111	7.05	30
1,2,4,5-Tetrachlorobenzene	14.7	20	73.6	15.5	20	77.7	14-110	5.42	30
1-Methylnaphthalene	15.3	20	76.5	16.6	20	82.8	17-114	7.85	30
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	15.7	20	78.3	17.1	20	85.6	31-104	8.97	30
2,3,4,6-Tetrachlorophenol	13.9	20	69.4	15.0	20	74.8	33-110	7.42	30
2,4,5-Trichlorophenol	15.4	20	77.2	15.8	20	79.2	33-114	2.62	30
2,4,6-Trichlorophenol	15.4	20	76.8	16.8	20	83.8	36-113	8.72	30
2,4-Dichlorophenol	15.0	20	75.0	15.7	20	78.6	30-111	4.68	30
2,4-Dimethylphenol	17.8	20	88.8	17.8	20	89.1	36-109	0.281	30
2,4-Dinitrophenol	13.4	20	66.8	14.4	20	72.0	36-109	7.42	30
2,4-Dinitrotoluene (2,4-DNT)	15.5	20	77.6	17.2	20	85.9	51-107	10.1	30
2,6-Dinitrotoluene (2,6-DNT)	16.3	20	81.4	17.4	20	87.1	51-105	6.83	30
2-Chloronaphthalene	15.4	20	77.0	16.8	20	84.0	22-112	8.70	30
2-Chlorophenol	13.8	20	69.1	15.1	20	75.3	35-108	8.59	30
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	16.7	20	83.4	18.0	20	90.0	28-121	7.61	30
2-Methylnaphthalene	15.6	20	78.2	16.8	20	84.0	12-119	7.16	30
2-Methylphenol (o-Cresol)	13.0	20	65.0	13.6	20	68.1	31-100	4.66	30
2-Nitroaniline	16.5	20	82.5	17.6	20	88.2	46-106	6.68	30
2-Nitrophenol	15.6	20	77.9	16.3	20	81.6	26-111	4.64	30
3&4-Methylphenol	10.6	20	53.2	11.6	20	57.8	24-95	8.11	30
3,3'-Dichlorobenzidine	14.4	20	71.8	16.0	20	79.8	48-101	10.6	30
3-Nitroaniline	14.0	20	70.0	14.7	20	73.4	52-105	4.67	30
4-Bromophenyl phenyl ether (BDE-3)	18.2	20	91.1	18.8	20	93.9	49-107	3.03	30
4-Chloro-3-methylphenol	15.6	20	78.1	16.4	20	81.8	35-105	4.63	30
4-Chloroaniline	13.6	20	68.2	15.4	20	77.2	46-101	12.3	30
4-Chlorophenyl phenylether	15.6	20	78.0	17.0	20	85.0	40-107	8.47	30
4-Nitroaniline	14.8	20	73.8	15.6	20	78.1	49-110	5.73	30
4-Nitrophenol	ND	20	17.8	<5.00	20	16.8	10-64	0.00	30
Acenaphthene	15.7	20	78.4	16.8	20	84.1	32-108	7.08	30
Acenaphthylene	15.8	20	78.8	16.6	20	83.2	34-107	5.44	30
Acetophenone	15.4	20	77.2	16.7	20	83.4	41-102	7.78	30
Anthracene	17.4	20	86.8	17.9	20	89.4	53-105	2.95	30
Atrazine	15.5	20	77.4	16.6	20	83.1	53-112	7.04	30
Benzaldehyde	14.9	20	74.4	16.4	20	82.1	32-111	9.84	30
Benzo(a)anthracene	16.4	20	82.2	17.4	20	87.0	57-106	5.73	30
Benzo(a)pyrene	17.0	20	85.2	18.0	20	90.2	54-107	5.76	30
Benzo(b)fluoranthene	17.4	20	87.2	18.0	20	90.0	53-109	3.16	30
Benzo(g,h,i)perylene	16.8	20	83.8	17.5	20	87.4	50-114	4.32	30

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Sample Matrix: WATER

Work Order: HN2410635
Date Analyzed: 12/17/2024
Date Extracted: 12/16/2024

Duplicate Laboratory Control Sample Summary
Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Units: µg/L
Analysis Lab Lot: 2834033

	Laboratory Control Sample QC-1810523-002			Duplicate Laboratory Control Sample QC-1810523-003					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Benzo(k)fluoranthene	16.1	20	80.3	17.7	20	88.4	53-110	9.55	30
bis(2-Chloroethoxy)methane	15.7	20	78.3	17.1	20	85.6	42-101	8.97	30
bis(2-Chloroethyl) ether	16.5	20	82.6	16.8	20	84.2	39-100	2.04	30
Butyl benzyl phthalate	16.0	20	80.1	17.4	20	87.0	45-112	8.32	30
Carbazole	17.5	20	87.4	18.6	20	93.2	55-106	6.42	30
Chrysene	16.5	20	82.6	17.5	20	87.4	57-108	5.65	30
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	16.7	20	83.4	17.4	20	86.8	53-116	4.00	30
Dibenz(a,h) anthracene	16.7	20	83.5	17.4	20	87.1	51-112	4.22	30
Dibenzofuran	15.8	20	78.8	17.0	20	85.0	37-107	7.69	30
Diethyl phthalate	16.7	20	83.5	17.8	20	88.8	44-114	6.21	30
Dimethyl phthalate	16.2	20	80.8	17.4	20	87.0	40-115	7.45	30
Di-n-butyl phthalate	17.9	20	89.4	18.2	20	91.0	49-112	1.77	30
Di-n-octyl phthalate	17.0	20	85.2	17.9	20	89.4	47-120	4.70	30
Fluoranthene	17.4	20	87.2	18.6	20	93.1	54-107	6.54	30
Fluorene	16.0	20	79.9	17.6	20	88.2	42-107	9.88	30
Hexachlorobenzene	17.6	20	88.0	18.4	20	92.0	50-105	4.39	30
Hexachlorobutadiene	15.0	20	75.2	16.0	20	80.0	10-112	6.18	30
Hexachlorocyclopentadiene	12.8	20	64.2	14.1	20	70.6	10-102	9.35	30
Hexachloroethane	14.9	20	74.3	15.1	20	75.6	10-115	1.73	30
Indeno(1,2,3-cd) pyrene	16.6	20	83.2	17.5	20	87.6	49-113	5.21	30
Isophorone	16.0	20	80.1	17.2	20	85.8	42-103	6.93	30
Methylphenol, Total	23.6	40	59.1	25.2	40	62.9	24-100	6.23	30
Naphthalene	15.4	20	77.1	16.2	20	80.8	18-109	4.62	30
Nitrobenzene	21.3	20	106 S	22.0	20	110 S	38-101	3.28	30
n-Nitrosodi-n-propylamine	16.5	20	82.4	17.8	20	89.2	40-104	7.92	30
N-Nitrosodiphenylamine	17.8	20	89.0	18.8	20	94.1	49-105	5.57	30
Pentachlorophenol	11.8	20	58.8	12.1	20	60.3	22-109	2.60	30
Phenanthrene	17.8	20	88.8	18.9	20	94.4	51-103	6.06	30
Phenol	5.18	20	25.9	5.16	20	25.8	10-63	0.387	30
Pyrene	16.7	20	83.6	17.6	20	88.0	50-105	5.13	30
Pyridine	ND	20	43.6	<10.0	20	42.7	11-77	0.00	30

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Sample Matrix: WATER

Work Order: HN2410635
Date Analyzed: 12/17/2024
Date Extracted: 12/16/2024

Duplicate Laboratory Control Sample Summary
Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Units: µg/L
Analysis Lab Lot: 2833990

	Laboratory Control Sample QC-1810527-002			Duplicate Laboratory Control Sample QC-1810527-003					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,1'-Biphenyl (BZ-0)	12.3	20	61.3	11.4	20	57.2	24-111	6.83	30
1,2,4,5-Tetrachlorobenzene	11.7	20	58.7	11.0	20	55.1	14-110	6.33	30
1-Methylnaphthalene	12.4	20	61.8	11.3	20	56.7	17-114	8.53	30
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	11.9	20	59.4	11.8	20	58.8	31-104	1.10	30
2,3,4,6-Tetrachlorophenol	11.2	20	55.8	11.0	20	55.2	33-110	1.17	30
2,4,5-Trichlorophenol	12.5	20	62.6	11.8	20	59.2	33-114	5.58	30
2,4,6-Trichlorophenol	12.6	20	63.2	11.9	20	59.4	36-113	6.19	30
2,4-Dichlorophenol	12.7	20	63.4	12.2	20	60.9	30-111	4.10	30
2,4-Dimethylphenol	14.3	20	71.4	15.0	20	74.8	36-109	4.72	30
2,4-Dinitrophenol	9.93	20	49.6	10.4	20	52.1	36-109	4.82	30
2,4-Dinitrotoluene (2,4-DNT)	12.3	20	61.4	11.7	20	58.3	51-107	5.26	30
2,6-Dinitrotoluene (2,6-DNT)	13.6	20	67.9	12.3	20	61.4	51-105	10.0	30
2-Chloronaphthalene	11.9	20	59.5	11.8	20	58.8	22-112	1.18	30
2-Chlorophenol	12.5	20	62.3	13.0	20	65.2	35-108	4.47	30
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	13.4	20	67.2	12.8	20	63.8	28-121	5.19	30
2-Methylnaphthalene	12.1	20	60.6	12.0	20	60.0	12-119	1.08	30
2-Methylphenol (o-Cresol)	11.4	20	57.0	11.6	20	58.2	31-100	2.00	30
2-Nitroaniline	13.6	20	67.8	13.0	20	64.9	46-106	4.37	30
2-Nitrophenol	12.5	20	62.4	12.0	20	60.2	26-111	3.42	30
3&4-Methylphenol	9.64	20	48.2	10.2	20	51.0	24-95	5.74	30
3,3'-Dichlorobenzidine	12.2	20	60.8	11.2	20	56.1	48-101	8.04	30
3-Nitroaniline	12.7	20	63.4	13.2	20	65.9	52-105	3.79	30
4-Bromophenyl phenyl ether (BDE-3)	14.1	20	70.4	13.2	20	66.0	49-107	6.45	30
4-Chloro-3-methylphenol	13.4	20	67.0	12.7	20	63.4	35-105	5.52	30
4-Chloroaniline	13.5	20	67.4	13.1	20	65.6	46-101	2.86	30
4-Chlorophenyl phenylether	12.7	20	63.3	11.8	20	58.8	40-107	7.29	30
4-Nitroaniline	13.3	20	66.6	13.4	20	67.2	49-110	0.897	30
4-Nitrophenol	ND	20	12.1	<5.00	20	13.6	10-64	0.00	30
Acenaphthene	12.4	20	62.0	11.4	20	56.8	32-108	8.83	30
Acenaphthylene	12.4	20	62.2	11.9	20	59.6	34-107	4.35	30
Acetophenone	12.5	20	62.4	12.2	20	61.2	41-102	1.94	30
Anthracene	14.4	20	71.8	13.3	20	66.6	53-105	7.59	30
Atrazine	12.2	20	60.8	12.2	20	60.8	53-112	0.0823	30
Benzaldehyde	12.4	20	62.2	12.1	20	60.4	32-111	3.02	30
Benzo(a)anthracene	13.6	20	68.0	12.2	20	60.9	57-106	10.9	30
Benzo(a)pyrene	14.2	20	71.0	12.7	20	63.4	54-107	11.4	30
Benzo(b)fluoranthene	14.2	20	71.2	12.9	20	64.4	53-109	10.0	30
Benzo(g,h,i)perylene	13.8	20	69.1	12.5	20	62.6	50-114	9.79	30

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Sample Matrix: WATER

Work Order: HN2410635
Date Analyzed: 12/17/2024
Date Extracted: 12/16/2024

Duplicate Laboratory Control Sample Summary
Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Units: µg/L
Analysis Lab Lot: 2833990

	Laboratory Control Sample QC-1810527-002			Duplicate Laboratory Control Sample QC-1810527-003					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Benzo(k)fluoranthene	13.2	20	65.8	12.2	20	61.2	53-110	7.09	30
bis(2-Chloroethoxy)methane	12.5	20	62.5	11.8	20	58.8	42-101	6.10	30
bis(2-Chloroethyl) ether	13.6	20	67.9	13.8	20	68.8	39-100	1.32	30
Butyl benzyl phthalate	13.2	20	66.0	12.4	20	62.2	45-112	5.93	30
Carbazole	14.2	20	71.2	13.1	20	65.7	55-106	8.10	30
Chrysene	13.6	20	67.9	12.5	20	62.7	57-108	7.96	30
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	13.4	20	67.1	12.4	20	62.2	53-116	7.66	30
Dibenz(a,h) anthracene	14.0	20	70.2	12.7	20	63.6	51-112	9.94	30
Dibenzofuran	12.4	20	61.8	11.7	20	58.7	37-107	5.23	30
Diethyl phthalate	13.7	20	68.4	12.2	20	60.8	44-114	11.9	30
Dimethyl phthalate	12.8	20	64.1	12.1	20	60.5	40-115	5.78	30
Di-n-butyl phthalate	14.0	20	70.0	13.4	20	67.1	49-112	4.16	30
Di-n-octyl phthalate	13.7	20	68.5	12.8	20	63.9	47-120	6.95	30
Fluoranthene	14.0	20	70.2	13.2	20	65.9	54-107	6.39	30
Fluorene	13.1	20	65.5	11.9	20	59.7	42-107	9.26	30
Hexachlorobenzene	13.7	20	68.7	13.5	20	67.4	50-105	1.84	30
Hexachlorobutadiene	11.6	20	57.8	11.5	20	57.4	10-112	0.608	30
Hexachlorocyclopentadiene	9.85	20	49.2	9.85	20	49.2	10-102	0.00	30
Hexachloroethane	10.6	20	52.8	11.3	20	56.6	10-115	6.95	30
Indeno(1,2,3-cd) pyrene	13.9	20	69.6	12.8	20	64.0	49-113	8.38	30
Isophorone	12.7	20	63.6	12.1	20	60.4	42-103	5.16	30
Methylphenol, Total	21.0	40	52.6	21.8	40	54.6	24-100	3.73	30
Naphthalene	12.2	20	61.2	11.3	20	56.6	18-109	7.81	30
Nitrobenzene	17.1	20	85.6	16.3	20	81.4	38-101	4.91	30
n-Nitrosodi-n-propylamine	12.6	20	63.2	12.9	20	64.6	40-104	2.19	30
N-Nitrosodiphenylamine	14.4	20	71.8	13.3	20	66.4	49-105	7.74	30
Pentachlorophenol	9.01	20	45.0	8.11	20	40.6	22-109	10.5	30
Phenanthrene	14.4	20	72.1	13.0	20	64.8	51-103	10.7	30
Phenol	4.28	20	21.4	4.42	20	22.1	10-63	3.22	30
Pyrene	13.6	20	67.9	12.6	20	63.1	50-105	7.33	30
Pyridine	ND	20	44.2	<10.0	20	39.5	11-77	0.00	30

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Sample Matrix: WATER

Work Order: HN2410635
Date Analyzed: 12/17/2024
Date Extracted: 12/16/2024

Duplicate Laboratory Control Sample Summary
Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Units: µg/L
Analysis Lab Lot: 2835452

	Laboratory Control Sample QC-1811295-002			Duplicate Laboratory Control Sample QC-1811295-003					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,1'-Biphenyl (BZ-0)	15.0	20	75.1	16.2	20	81.2	24-111	7.87	30
1,2,4,5-Tetrachlorobenzene	14.1	20	70.4	15.2	20	75.8	14-110	7.38	30
1-Methylnaphthalene	14.5	20	72.7	15.9	20	79.6	17-114	9.12	30
2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether	15.2	20	75.9	16.1	20	80.6	31-104	6.07	30
2,3,4,6-Tetrachlorophenol	14.2	20	71.2	15.1	20	75.4	33-110	5.66	30
2,4,5-Trichlorophenol	16.4	20	82.0	17.9	20	89.6	33-114	8.74	30
2,4,6-Trichlorophenol	15.7	20	78.5	16.6	20	82.8	36-113	5.39	30
2,4-Dichlorophenol	15.4	20	76.8	16.6	20	83.2	30-111	8.00	30
2,4-Dimethylphenol	17.8	20	88.8	19.0	20	95.0	36-109	6.64	30
2,4-Dinitrophenol	15.1	20	75.5	15.7	20	78.5	36-109	3.90	30
2,4-Dinitrotoluene (2,4-DNT)	15.7	20	78.3	16.8	20	84.2	51-107	7.26	30
2,6-Dinitrotoluene (2,6-DNT)	16.1	20	80.6	17.0	20	85.1	51-105	5.37	30
2-Chloronaphthalene	15.4	20	77.2	16.5	20	82.5	22-112	6.64	30
2-Chlorophenol	14.7	20	73.4	15.6	20	78.0	35-108	6.21	30
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	16.7	20	83.4	18.2	20	90.8	28-121	8.38	30
2-Methylnaphthalene	14.6	20	73.0	16.0	20	80.2	12-119	9.40	30
2-Methylphenol (o-Cresol)	13.3	20	66.4	14.4	20	71.8	31-100	7.67	30
2-Nitroaniline	16.0	20	79.8	17.2	20	86.0	46-106	7.60	30
2-Nitrophenol	15.7	20	78.4	17.0	20	85.2	26-111	8.31	30
3&4-Methylphenol	11.4	20	56.8	12.8	20	63.9	24-95	11.8	30
3,3'-Dichlorobenzidine	15.1	20	75.4	15.3	20	76.3	48-101	1.19	30
3-Nitroaniline	14.7	20	73.6	15.0	20	75.2	52-105	2.22	30
4-Bromophenyl phenyl ether (BDE-3)	17.6	20	88.0	18.6	20	93.0	49-107	5.41	30
4-Chloro-3-methylphenol	15.0	20	75.0	16.3	20	81.5	35-105	8.37	30
4-Chloroaniline	15.6	20	78.1	17.0	20	85.2	46-101	8.64	30
4-Chlorophenyl phenylether	15.6	20	77.8	16.7	20	83.4	40-107	6.82	30
4-Nitroaniline	14.7	20	73.5	15.0	20	74.8	49-110	1.82	30
4-Nitrophenol	6.39	20	32.0	7.44	20	37.2	10-64	15.2	30
Acenaphthene	15.6	20	77.8	16.3	20	81.4	32-108	4.52	30
Acenaphthylene	15.8	20	78.8	16.5	20	82.6	34-107	4.70	30
Acetophenone	15.2	20	76.2	16.0	20	80.2	41-102	5.05	30
Anthracene	17.6	20	87.8	18.9	20	94.3	53-105	7.20	30
Atrazine	15.1	20	75.5	16.3	20	81.6	53-112	7.76	30
Benzaldehyde	14.3	20	71.4	13.9	20	69.4	32-111	2.70	30
Benzo(a)anthracene	16.6	20	82.8	17.6	20	87.8	57-106	5.92	30
Benzo(a)pyrene	16.9	20	84.4	17.5	20	87.4	54-107	3.43	30
Benzo(b)fluoranthene	16.4	20	82.2	17.0	20	84.8	53-109	3.23	30
Benzo(g,h,i)perylene	17.0	20	85.0	17.0	20	85.0	50-114	0.0588	30

QA/QC Report

Client: TriMedia Environmental & Engineering Svcs
Project: 99-059
Sample Matrix: WATER

Work Order: HN2410635
Date Analyzed: 12/17/2024
Date Extracted: 12/16/2024

Duplicate Laboratory Control Sample Summary
Semivolatile Organic Compounds by GC-MS

Analysis Method: EPA 8270E
Prep Method: EPA 3510C

Units: µg/L
Analysis Lab Lot: 2835452

	Laboratory Control Sample QC-1811295-002			Duplicate Laboratory Control Sample QC-1811295-003					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Benzo(k)fluoranthene	16.0	20	80.0	17.1	20	85.4	53-110	6.53	30
bis(2-Chloroethoxy)methane	15.2	20	76.0	16.1	20	80.6	42-101	5.94	30
bis(2-Chloroethyl) ether	15.9	20	79.5	16.7	20	83.6	39-100	5.03	30
Butyl benzyl phthalate	15.7	20	78.4	17.0	20	84.8	45-112	7.72	30
Carbazole	17.5	20	87.3	18.5	20	92.4	55-106	5.73	30
Chrysene	16.7	20	83.4	17.4	20	87.2	57-108	4.39	30
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	16.2	20	80.8	17.4	20	86.8	53-116	7.16	30
Dibenz(a,h) anthracene	16.9	20	84.6	17.0	20	84.8	51-112	0.177	30
Dibenzofuran	15.7	20	78.6	16.4	20	82.2	37-107	4.48	30
Diethyl phthalate	15.7	20	78.4	16.7	20	83.4	44-114	6.06	30
Dimethyl phthalate	16.0	20	79.8	16.9	20	84.4	40-115	5.54	30
Di-n-butyl phthalate	17.0	20	84.9	18.5	20	92.7	49-112	8.78	30
Di-n-octyl phthalate	16.0	20	79.8	17.7	20	88.6	47-120	10.5	30
Fluoranthene	17.2	20	85.9	18.6	20	92.8	54-107	7.78	30
Fluorene	15.8	20	79.0	16.8	20	83.8	42-107	5.96	30
Hexachlorobenzene	17.2	20	86.2	17.6	20	88.0	50-105	2.12	30
Hexachlorobutadiene	13.5	20	67.4	15.4	20	76.9	10-112	13.2	30
Hexachlorocyclopentadiene	12.6	20	63.2	14.0	20	70.2	10-102	10.4	30
Hexachloroethane	12.6	20	63.1	15.3	20	76.4	10-115	19.0	30
Indeno(1,2,3-cd) pyrene	16.7	20	83.6	16.7	20	83.6	49-113	0.0598	30
Isophorone	15.4	20	77.1	16.6	20	83.1	42-103	7.49	30
Methylphenol, Total	24.6	40	61.6	27.1	40	67.8	24-100	9.62	30
Naphthalene	14.8	20	74.0	16.2	20	81.0	18-109	9.16	30
Nitrobenzene	20.8	20	104 S	21.9	20	109 S	38-101	5.01	30
n-Nitrosodi-n-propylamine	15.7	20	78.4	16.3	20	81.7	40-104	4.06	30
N-Nitrosodiphenylamine	17.5	20	87.3	18.3	20	91.7	49-105	4.92	30
Pentachlorophenol	16.2	20	81.2	16.8	20	83.9	22-109	3.27	30
Phenanthrene	17.3	20	86.6	18.1	20	90.6	51-103	4.57	30
Phenol	6.37	20	31.8	7.24	20	36.2	10-63	12.8	30
Pyrene	16.3	20	81.3	16.8	20	83.8	50-105	3.03	30
Pyridine	ND	20	41.6	<10.0	20	39.4	11-77	0.00	30



Response Activity Plan
Proposed New Marquette Veterans Home
Marquette, Michigan

Michigan DTMB
Lansing, Michigan

GEI Consultants

LOCATION OF GEI
SOIL BORINGS

Project 2300971 | February 2024 | Fig. 7

B:\Working\PERKINS EASTMAN\2300971 New Marquette Veterans Home\03_Technical Services\CAD\GIS\ResApp_Fig7_GEI_Soil_Borings.mxd

Aerial Photo Source: USDA NAIP 2022
Source: Esri, USDA FSA

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-1**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5) / PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50) / ⊗ STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
					SURFACE ELEVATION (ft.) 609.2		
	1	SS			Fill: Fine to medium sand - trace silt - occasional cinders - brown - loose - moist (SP)		6
	2	SS			2.0 Fill: Fine to coarse sand with wood and cinders - gray - very loose to loose - moist to wet		2
	3	SS					14
	4	SS			7.0 Fine to medium sand - trace silt - gray - dense - wet (SP)		30
600 / 10	5	SS			9.0 Fine to medium sand - trace to some fine to coarse gravel - trace silt - brown - medium dense to dense - wet (SP)		25
	6	SS					48
590 / 20	7	SS					47
	8	SS					31
580 / 30	9	SS			28.0 Fine to medium sand - trace silt and fine to coarse gravel - brown - medium dense to very dense - wet (SP)		9
	10	SS					55
570							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 4.1' Before Casing Installation	BORING STARTED **5/17/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/17/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,818.570** EASTING **26,147,723.950**	RIG/FOREMAN **D-50 Track / DM & JL (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-1**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 609.2

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5) / PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
	11	SS					62
	12	SS					59
560 / 50	13	SS					55
					51.5 End of Boring Boring advanced to 7.5 feet with solid-stem auger. Boring advanced from 7.5 to 50.0 feet with roller bit and drilling fluid. HW casing driven to 8.5 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.		
550 / 60							
540 / 70							
530							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 4.1' Before Casing Installation	BORING STARTED **5/17/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/17/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,818.570** EASTING **26,147,723.950**	RIG/FOREMAN **D-50 Track / DM & JL (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-2**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 610.8

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2 (1 2 3 4 5)

PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%) (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)

UNIT DRY WT. LBS/FT^3

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	STANDARD PENETRATION BLOWS/FT
	610	1	SS			Fill: Fine to medium sand - trace silt, fine to coarse gravel and cinders - brown - medium dense - moist (SP)	24
		2	SS				12
		3	SS			4.0 Fill: Cinders - trace coarse gravel - black - very loose - moist	WOH
		4	SS			7.5 Fine to medium sand - trace silt and fine to coarse gravel - gray - loose to medium dense - wet (SP)	7
10	600	5	SS				16
		6	SS			13.0 Fine to medium sand - trace silt and fine to coarse gravel - dark brown - dense - wet (SP)	45
20	590	7	SS				47
		8	SS				42
30	580	9	SS			28.0 Fine to medium sand - trace silt and fine to coarse gravel - brown - medium dense to dense - wet (SP)	23
		10	SS			***Note: Driller noted gravel from 34.8 to 35.0 feet***	46

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 6.5' Before Casing Installation	BORING STARTED **5/17/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/17/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,701.890** EASTING **26,147,735.920**	RIG/FOREMAN **D-50 Track / DM & JL (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-2**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 610.8

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT^3	UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2 (1 2 3 4 5) / PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
0	570	11	SS					42
		12	SS					39
50	560					***Note: Driller noted gravel from 49.8 to 49.9 feet and roller bit refusal on apparent bedrock at 51.0 feet***		
						51.0 End of Boring Boring advanced to 7.5 feet with solid-stem auger. Boring advanced from 7.5 to 51.0 feet with roller bit and drilling fluid. HW casing driven to 8.5 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.		
60	550							
70	540							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 6.5' Before Casing Installation	BORING STARTED **5/17/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/17/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,701.890** EASTING **26,147,735.920**	RIG/FOREMAN **D-50 Track / DM & JL (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-3**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 610.1

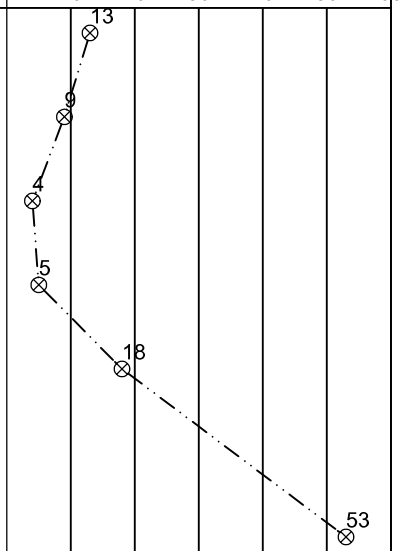
DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
		1	SS			Driller noted topsoil
						0.2
		2	SS			Fill: Fine to medium sand - trace to some silt and fine to coarse gravel - brown - medium dense - moist (SP-SM)
						2.0
		3	SS			Fill: Fine to medium sand and cinders - trace silt - dark brown and black - loose - moist
						5.0
		4	SS			Fill: Fine to medium sand - trace silt and fine to coarse gravel - brown - loose - moist to wet (SP)
						7.0
10	600	5	SS			Peat - trace to some fine to medium sand - trace silt and wood - black - loose - wet (PT)
						10.0
		6	SS			Fine to medium sand - trace silt and fine to coarse gravel - dark brown - medium dense to very dense - wet (SP)
						Note: The spoon and 10.0 feet of drilling rod broke off in hole at 20.0 feet; Boring abandoned.
						Refer to Boring B-3A for additional information
20	590					20.0
						End of Boring
						Boring advanced to 7.5 feet with solid-stem auger.
						Boring advanced from 7.5 to 20.0 feet with roller bit and drilling fluid.
						HW casing driven to 9.5 feet.
						Standard Penetration Tests performed with auto hammer.
						Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.
30	580					

UNIT DRY WT. LBS/FT^3

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2: 1 2 3 4 5

PLASTIC LIMIT (%) | WATER CONTENT (%) | LIQUID LIMIT (%): 10 20 30 40 50

STANDARD PENETRATION BLOWS/FT: 10 20 30 40 50 60



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 5.5' Before Casing Installation	BORING STARTED **5/22/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/22/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,608.170** EASTING **26,147,817.720**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **1**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-3A**
		Offset 2.5 feet
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

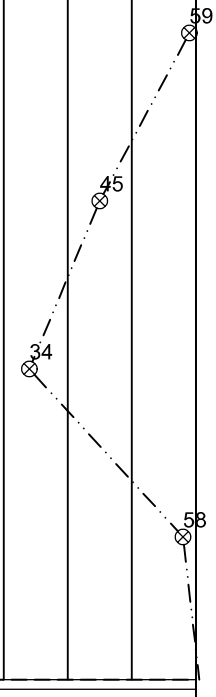
SURFACE ELEVATION (ft.) 610.1

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³
					Blind drilled to 20.0 feet; refer to Boring Log B-3 for additional information	
20 / 590	1	SS			20.0 Fine to coarse sand - trace silt and fine to coarse gravel - brown - dense to extremely dense - wet (SP)	
	2	SS				
30 / 580	3	SS				
	4	SS				

UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5)

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50)

⊗ STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 5.2' Before Casing Installation	BORING STARTED **5/22/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/23/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,608.170** EASTING **26,147,817.720**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-3A** Offset 2.5 feet
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 610.1

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT^3	UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2 (1 2 3 4 5) / PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
		5	SS					61
		6	SS					25
50	560	7	SS			***Note: Driller reported coarse gravel while drilling from 49.8 to 50.0 feet*** ***Note: Driller reported hard drilling at 50.1 feet and roller bit refusal at 51.0 feet. Apparent bedrock surface***		50/.1
						51.0 End of Boring		
60	550					Boring advanced to 10.0 feet with solid-stem auger. Boring advanced from 10.0 to 51.0 feet with roller bit and drilling fluid. HW casing driven to 9.5 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.		
70	540							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 5.2' Before Casing Installation	BORING STARTED **5/22/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/23/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,608.170** EASTING **26,147,817.720**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-4**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

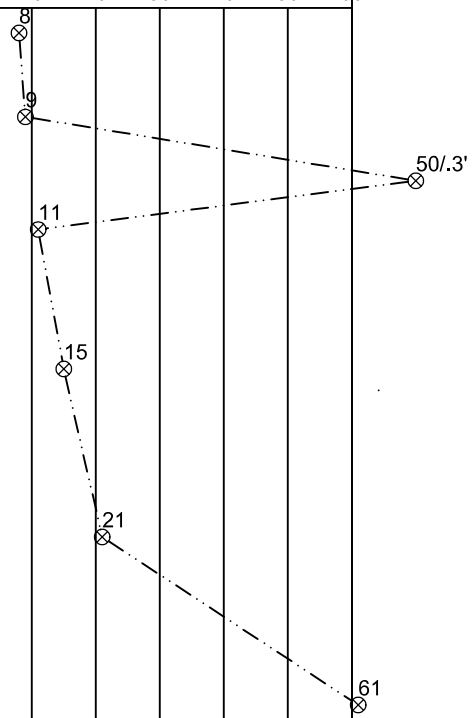
LOCATION: Marquette, MI

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³
					SURFACE ELEVATION (ft.) 612.4	
610	1	SS			Fill: Fine to medium sand - trace cinders, fine to coarse gravel and silt - dark brown - loose - moist (SP)	
	2	SS				
	3	SS			4.0 Fill: Cinders - trace to some fine to medium sand - occasional cobbles - black - loose - moist	
	4	SS				
10 / 600	5	SS			7.5 Fine to medium sand - trace silt and fine gravel - gray - medium dense - wet (SP)	
	6	SS				
20 / 590	7	SS			18.0 Fine to medium sand - trace to some silt - trace fine gravel - dark brown - very dense - wet (SP-SM)	
					Note: Driller reported hard drilling at 24.3 feet and roller bit refusal to 25.0 feet	
					Refer to Boring B-4A for additional information	
30 / 580					25.0 End of Boring	
					Boring advanced to 7.5 feet with solid-stem auger. Boring advanced from 7.5 to 25.0 feet with roller bit and drilling fluid. HW casing driven to 8.0 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5)

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50)

⊗ STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 6.0' Before Casing Installation	BORING STARTED **5/18/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/18/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,324.720** EASTING **26,147,798.270**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **1**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-4A**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 612.4

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2: 1 2 3 4 5

PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%): 10 20 30 40 50

STANDARD PENETRATION BLOWS/FT: 10 20 30 40 50 60

UNIT DRY WT. LBS/FT^3

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
610					Blind drill to 25.0 feet (refer to Boring B-4 for additional information)
10					
600					
20					
590					
	1	SS			25.0 Fine to medium sand - trace silt and fine to coarse gravel - brown - extremely dense - wet (SP) ***Note: Driller reported difficult drilling at 27.3 feet and roller bit refusal at 29.0 feet***
30	Run#1 DB Run#2 DB				29.0 Compeau creek gneiss, salmon pink, hard, fine grained, highly weathered Run # 1, Depth ft. 29.0-29.9, Recovery % 100, RQD % 0, Fracture Frequency 2.3/ft
580					29.9 Compeau creek gneiss, salmon pink, hard, fine grained, highly weathered Run # 2, Depth ft. 29.9-33.5, Recovery % 97, RQD % 14, Fracture Frequency 3.1/ft
					33.5

⊗ 76/.9'

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 6.0' Before Casing Installation	BORING STARTED **5/18/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/18/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,324.720** EASTING **26,147,798.270**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-4A**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 612.4

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5) / PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
570					End of Boring Boring advanced to 8.0 feet with solid-stem auger. Boring advanced from 8.0 to 29.0 feet with roller bit and drilling fluid. Boring advanced from 29.0 to 33.5 feet by diamond bit. HW casing driven to 9.0 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.		
50							
560							
60							
550							
70							
540							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 6.0' Before Casing Installation	BORING STARTED **5/18/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/18/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,324.720** EASTING **26,147,798.270**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants

CLIENT: **Perkins Eastman Architects, P.C.**

PROJECT NAME: **New Marquette Veterans Home**

LOG OF BORING NUMBER **B-5**

ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

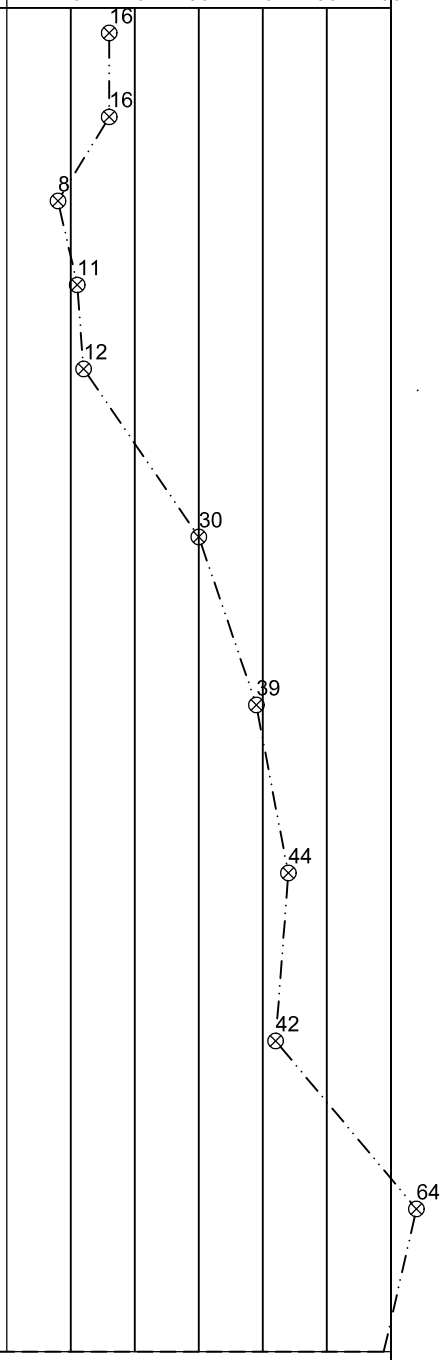
SURFACE ELEVATION (ft.) 612.0

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³
	1	SS			Fill: Fine to medium sand - trace to some silt and fine to coarse gravel - trace cinders - brown - medium dense - moist (SP-SM)	
610	2	SS			2.0 Fill: Cinders with wood - trace fine to medium sand - black - medium dense - moist	
	3	SS			4.0 Amorphic peat - trace fine to medium sand and silt - black - loose - moist (PT)	
	4	SS			7.5 Fine to medium sand - trace silt and cinders - dark brown - medium dense - wet (SP)	
10	5	SS			10.0 Fine to medium sand - trace silt and fine to coarse gravel - brown - medium dense to dense - wet (SP)	
600	6	SS				
20	7	SS				
590	8	SS				
30	9	SS				
580	10	SS			33.0 Fine to medium sand - trace silt and fine to coarse gravel - brown turning gray after 35.0 feet - very dense - wet (SP)	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5)

PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%) (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 4.4' Before Casing Installation	BORING STARTED **5/17/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/18/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,127.540** EASTING **26,147,673.090**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-5**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

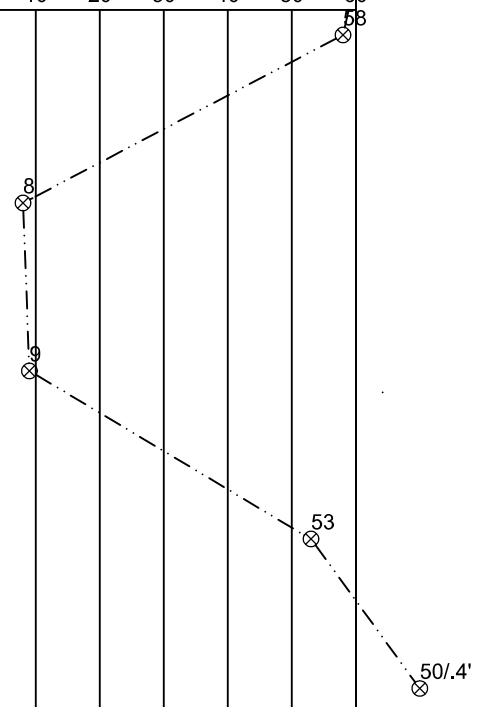
LOCATION: Marquette, MI

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³
					SURFACE ELEVATION (ft.) 612.0	
570	11	SS				
					43.0 Silty fine sand - trace to some fine to coarse gravel - trace clay - brown - loose - wet (SM)	
	12	SS				
50 / 560	13	SS				
					53.0 Silty fine to medium sand - some fine to coarse gravel - brown - very dense - wet (SM)	
	14	SS				
					57.0 Sandy fine to coarse gravel - trace to some silt - brown - extremely dense - wet (GP-GM)	
60	15	SS			***Note: Driller reported hard drilling at 60.5 feet and roller bit refusal at 61.0 feet. Apparent bedrock surface.***	
550					61.0 End of Boring	
					Boring advanced to 7.5 feet with solid-stem auger. Boring advanced from 7.5 to 61.0 feet with roller bit and drilling fluid. HW casing driven to 8.0 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.	
70 / 540						

UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5)

PLASTIC LIMIT (%) — WATER CONTENT (%) — LIQUID LIMIT (%) (10 20 30 40 50)

⊗ STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 4.4' Before Casing Installation	BORING STARTED **5/17/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/18/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,127.540** EASTING **26,147,673.090**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-6**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 611.6

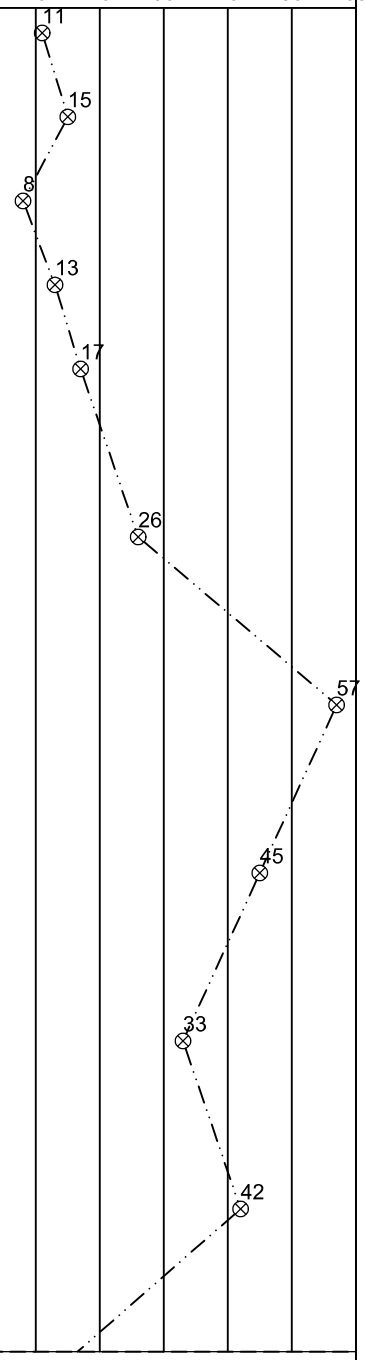
DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
610	1	SS			Fill: Fine to medium sand - trace to some silt - trace fine to coarse gravel - brown - medium dense - moist (SP-SM)
	2	SS			2.0 Fill: Fine to coarse sand and cinders - trace to some silt - brown/black - medium dense - moist (SP-SM)
	3	SS			4.5 Amorphic peat and cinders - black - loose - moist to wet (PT)
	4	SS			7.0 Fine sand - trace to some silt - black - medium dense - wet (SP-SM)
600	5	SS			10.0 Fine sand - trace silt - dark brown to brown - medium dense to very dense - wet (SP)
	6	SS			
590	7	SS			
	8	SS			23.0 Fine sand - trace to some silt - brown - dense - wet (SP-SM)
580	9	SS			
	10	SS			
					38.0 Silty fine to medium sand - trace fine to coarse gravel - brown - medium dense - wet (SM)

UNIT DRY WT. LBS/FT^3

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2 (1 2 3 4 5)

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 6.0' WS 4.0' Before Casing Installation	BORING STARTED **5/9/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/10/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,251.290** EASTING **26,147,802.010**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-6**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 611.6

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5) / PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
570	11	SS					12
					43.0 Silty fine to medium sand - trace to some fine to coarse gravel - brown - very dense - wet (SM)		
	12	SS					50
50					***Note: Driller reported hard drilling at 49.5 feet and roller bit refusal at 50.0 feet; apparent bedrock surface***		
560					50.0 End of Boring		
					Boring advanced to 7.5 feet with solid-stem auger. Boring advanced from 7.5 to 50.0 feet with roller bit and drilling fluid. HW casing driven to 8.5 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.		
60							
550							
70							
540							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 6.0' WS 4.0' Before Casing Installation	BORING STARTED **5/9/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/10/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,251.290** EASTING **26,147,802.010**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-7**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 607.1

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT²	PLASTIC LIMIT (%)	WATER CONTENT (%)	LIQUID LIMIT (%)	STANDARD PENETRATION BLOWS/FT
		1	SS			Driller reported topsoil						4
						0.2						
		2	SS			Fill: Fine to medium sand - trace to some silt, coarse gravel and topsoil - dark brown and black - loose - moist (SP-SM)						10
						2.0						
		3	SS			Fill: Fine to medium sand - trace silt and fine to coarse gravel - gray - loose to medium dense - wet (SP)						8
	600	4	SS									19
10		5	SS			10.0 Fine to coarse sand - trace silt and fine to coarse gravel - brown - medium dense to very dense - wet (SP)						23
		6	SS			***Note: Driller reported occasional cobbles and boulders***						63
	590											
						18.0 Fine to medium sand - trace silt and fine to coarse gravel - brown - medium dense to very dense - wet (SP)						
20		7	SS									27
		8	SS									24
	580											
30		9	SS									27
		10	SS									41
	570											

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 2.0' WD 1.7' Before Casing Installation	BORING STARTED **5/8/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/9/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **651,022.070** EASTING **26,147,644.930**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **3**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-7**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 607.1

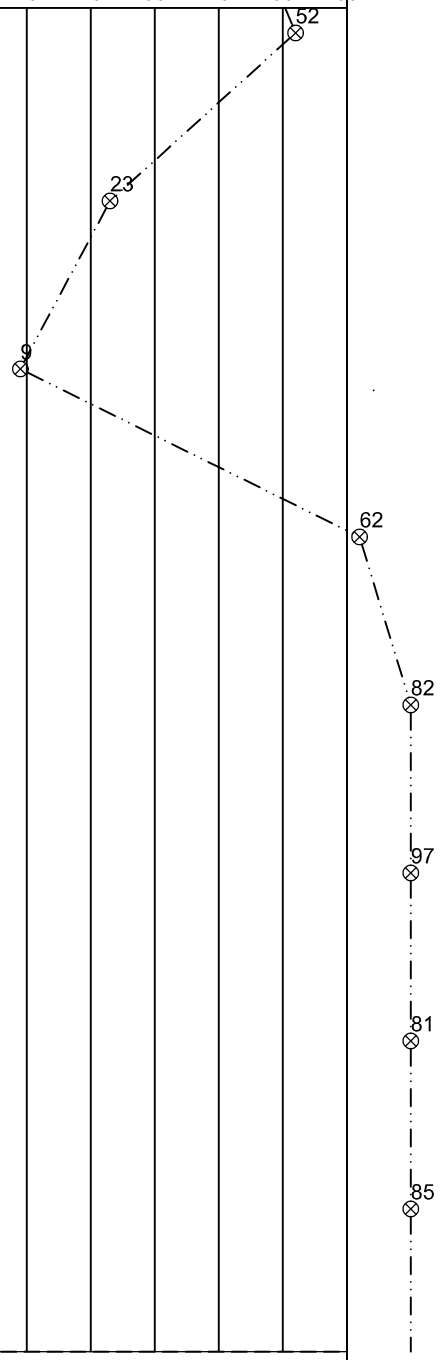
DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
	11	SS			
					43.0 Silty fine to medium sand - trace to some fine to coarse gravel - brown - medium dense to loose - wet (SM)
	12	SS			
560					
50	13	SS			
					53.0 Fine to medium sand - trace silt - brown - very dense to extremely dense - wet (SP)
	14	SS			
550					
60	15	SS			
	16	SS			
540					
70					68.0 Silty fine to medium sand - trace to some fine to coarse gravel - trace clay - brown - extremely dense - wet (SM)
	17	SS			
	18	SS			
530					

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2 (1 2 3 4 5)

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50)

UNIT DRY WT. LBS/FT^3

⊗ STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 2.0' WD 1.7' Before Casing Installation	BORING STARTED **5/8/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/9/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **651,022.070** EASTING **26,147,644.930**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **3**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-7**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 607.1

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5) / PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
	19	SS			***Note: Driller reported hard drilling at 82.5 feet and roller bit refusal at 83.0 feet; apparent bedrock surface***		
520 / 90					83.0 End of Boring Boring advanced to 7.5 feet with solid-stem auger. Boring advanced from 7.5 to 83.0 feet with roller bit and drilling fluid. HW casing driven to 8.5 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.		
510 / 100							
500 / 110							
490							

87/.5'

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 2.0' WD 1.7' Before Casing Installation	BORING STARTED **5/8/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/9/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **651,022.070** EASTING **26,147,644.930**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **3** OF **3**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-8**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 610.7

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT²	PLASTIC LIMIT (%)	WATER CONTENT (%)	LIQUID LIMIT (%)	STANDARD PENETRATION BLOWS/FT
610	1	SS			Driller reported topsoil						15
					0.3 Fill: Fine to medium sand - trace silt, cinders and fine to coarse gravel - brown - medium dense - moist (SP)						
	2	SS									15
	3	SS									16
	3A	SS			5.5 Fine to medium sand - trace silt and fine to coarse gravel - brown - loose to very dense - moist to wet (SP)						9
	4	SS									
10 600	5	SS									19
	6	SS									40
20 590	7	SS									55
	8	SS									34
30 580	9	SS									43
	10	SS									55

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 6.7' Before Casing Installation	BORING STARTED **5/17/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/17/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,916.650** EASTING **26,147,673.620**	RIG/FOREMAN **D-50 Track / DM & JL (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-8**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

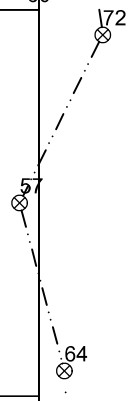
SURFACE ELEVATION (ft.) 610.7

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT^3
	570	11	SS				
		12	SS				
50	560	13	SS				
						51.5 End of Boring Boring advanced to 7.5 feet with solid-stem auger. Boring advanced from 7.5 to 50.0 feet with roller bit and drilling fluid. HW casing driven to 8.5 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.	
60	550						
70	540						

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2: 1 2 3 4 5

PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%): 10 20 30 40 50

STANDARD PENETRATION BLOWS/FT: 10 20 30 40 50 60



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 6.7' Before Casing Installation	BORING STARTED **5/17/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/17/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,916.650** EASTING **26,147,673.620**	RIG/FOREMAN **D-50 Track / DM & JL (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-9**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

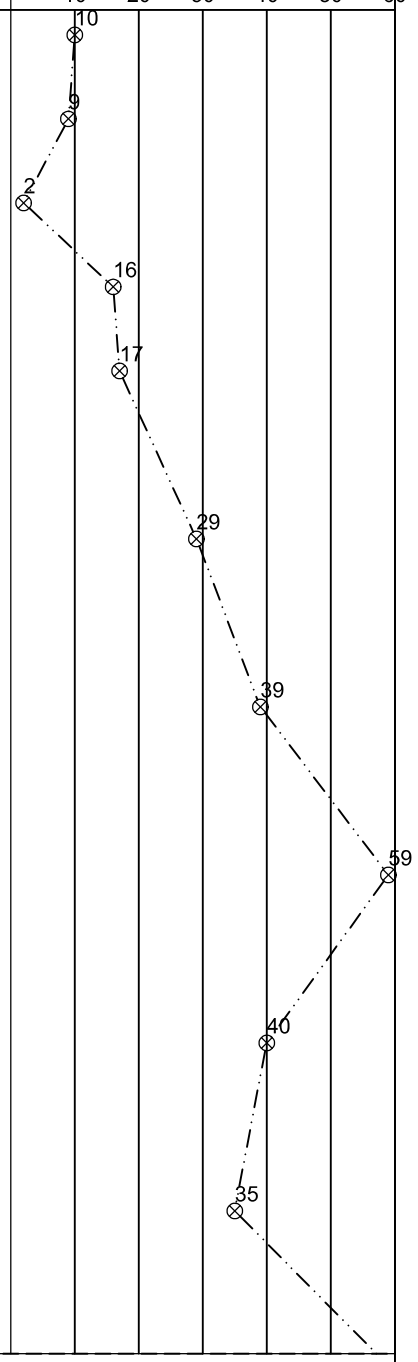
SURFACE ELEVATION (ft.) 613.0

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³
	1	SS			Fill: Fine to medium sand - trace silt, wood and fine to coarse gravel - dark brown - medium dense to very loose - moist to wet (SP)	
610	2	SS				
	3	SS				
	4	SS			7.5 Fine to medium sand - trace silt and fine to coarse gravel - dark brown - medium dense to very dense - wet (SP)	
10 / 600	5	SS				
	6	SS				
20 / 590	7	SS				
	8	SS				
30 / 580	9	SS			28.0 Fine to medium sand - trace to some silt - trace fine to coarse gravel - brown - dense - wet (SP-SM)	
	10	SS				
					38.0 Fine to medium sand - trace silt and fine to coarse gravel - brown - very dense - wet (SP)	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5)

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50)

⊗ STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 5.8' Before Casing Installation	BORING STARTED **5/26/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/26/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,829.750** EASTING **26,147,608.040**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-9**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 613.0

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5) / PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
570	11	SS					61
	12	SS					66
50	13	SS					69
560	14	SS					65
					56.5 End of Boring Boring advanced to 7.5 feet with solid-stem auger. Boring advanced from 7.5 to 55.0 feet with roller bit and drilling fluid. HW casing driven to 9.5 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.		
60							
550							
70							
540							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 5.8' Before Casing Installation	BORING STARTED **5/26/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/26/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,829.750** EASTING **26,147,608.040**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants

CLIENT: **Perkins Eastman Architects, P.C.**

PROJECT NAME: **New Marquette Veterans Home**

LOG OF BORING NUMBER **B-10**

ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 611.1

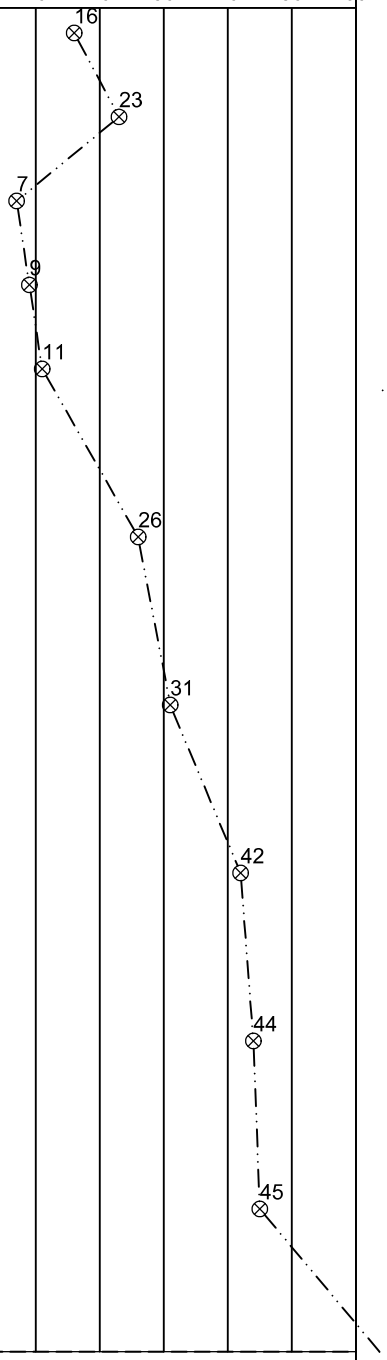
DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
610	1	SS			Fill: Fine to medium sand - trace to some fine to coarse gravel - trace silt and cinders - brown - medium dense - moist (SP)
	2	SS			2.5 Fill: Fine to medium sand - trace to some fine to coarse gravel and cinders - trace silt - brown - medium dense - moist (SP)
	3	SS			5.0 Fill: Peat and cinders - trace to some fine to coarse gravel - black - loose - wet
	4	SS			7.0 Fine to medium sand - trace to some fine to coarse gravel - trace silt - gray - loose to medium dense - wet (SP)
10 / 600	5	SS			
	6	SS			
					18.0 Fine to medium sand - trace to some silt - trace fine to coarse gravel - brown - dense to very dense - wet (SP-SM)
20 / 590	7	SS			
	8	SS			
30 / 580	9	SS			
	10	SS			

UNIT DRY WT. LBS/FT^3

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2 1 2 3 4 5

PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%) 10 20 30 40 50

STANDARD PENETRATION BLOWS/FT 10 20 30 40 50 60



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 4.5' WD 4.5' Before Casing Installation	BORING STARTED **5/10/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/10/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,760.310** EASTING **26,147,674.800**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-10**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 611.1

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT^3	UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2 (1 2 3 4 5) / PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
	570	11	SS					
		12	SS					
50	560	13	SS					
		14	SS			53.0 Clayey fine sand - some silt - trace to some fine to coarse gravel - brown - extremely dense - wet (SC) ***Note: Driller reported hard drilling at 56.8 feet and roller bit refusal at 56.9 feet; Apparent bedrock surface***		67, 63, 33, 81/.7'
60	550					56.9 End of Boring Boring advanced to 7.5 feet with solid-stem auger. Boring advanced from 7.5 to 56.9 feet with roller bit and drilling fluid. HW casing driven to 8.0 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.		
70	540							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 4.5' WD 4.5' Before Casing Installation	BORING STARTED **5/10/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/10/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,760.310** EASTING **26,147,674.800**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-11**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 612.5

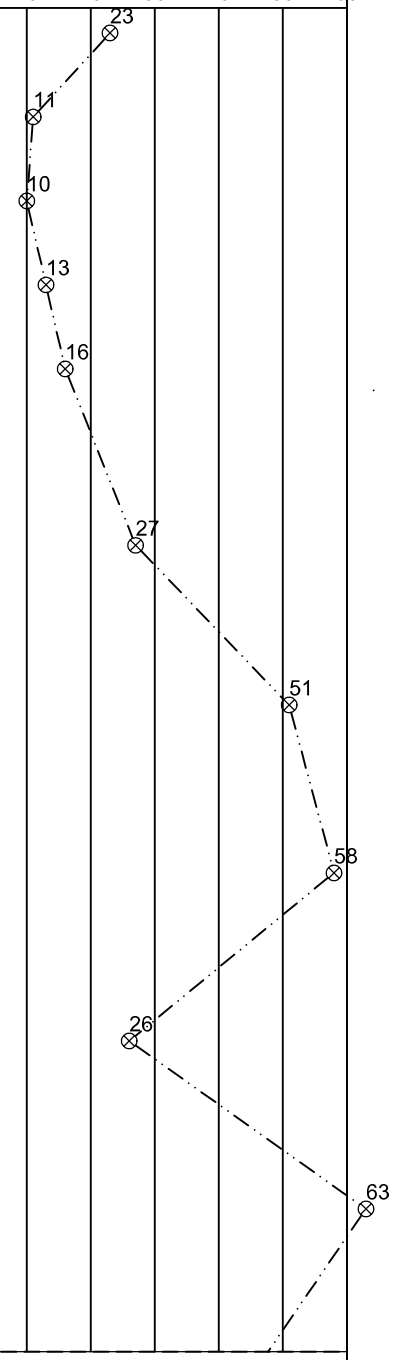
DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
	1	SS			Driller reported gravel fill
610	2	SS			0.5 Fill: Fine to medium sand - trace silt and fine to coarse gravel - brown - medium dense - moist (SP)
	3	SS			4.0 Fill: Wood and cinders - trace fine to coarse gravel - dark brown to black - medium dense - moist to wet
	4	SS			7.5 Fill: Fine to medium sand - trace silt and fine to coarse gravel and cinders - dark gray to brown - medium dense - wet (SP)
10 / 600	5	SS			
	6	SS			15.5 Fine to medium sand - trace silt and fine to coarse gravel - brown - medium dense to very dense - wet (SP)
	6A	SS			
20 / 590	7	SS			
	8	SS			
					28.0 Fine to medium sand - trace silt and fine to coarse gravel - brown - medium dense to very dense - wet (SP)
30 / 580	9	SS			
	10	SS			

UNIT DRY WT. LBS/FT^3

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2 (1 2 3 4 5)

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 5.8' Before Casing Installation	BORING STARTED **5/16/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/16/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,670.090** EASTING **26,147,645.020**	RIG/FOREMAN **D-50 Track / DM & JL (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-11**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 612.5

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2: 1 2 3 4 5

PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%): 10 20 30 40 50

STANDARD PENETRATION BLOWS/FT: 10 20 30 40 50 60

UNIT DRY WT. LBS/FT^3

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	STANDARD PENETRATION BLOWS/FT
		11	SS				45
	570						
		12	SS			***Note: No recovery noted by driller on Sample No. 12***	48
						Note: Driller reported hard drilling at 48.3 feet and roller bit refusal at 49.0 feet; apparent bedrock surface.	
50						49.0 End of Boring	
	560					Boring advanced to 7.5 feet with solid-stem auger. Boring advanced from 7.5 to 49.0 feet with roller bit and drilling fluid. HW casing driven to 8.5 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.	
60							
	550						
70							
	540						

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 5.8' Before Casing Installation	BORING STARTED **5/16/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/16/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,670.090** EASTING **26,147,645.020**	RIG/FOREMAN **D-50 Track / DM & JL (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants

CLIENT: **Perkins Eastman Architects, P.C.**

LOG OF BORING NUMBER **B-12**

PROJECT NAME: **New Marquette Veterans Home**

ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 612.2

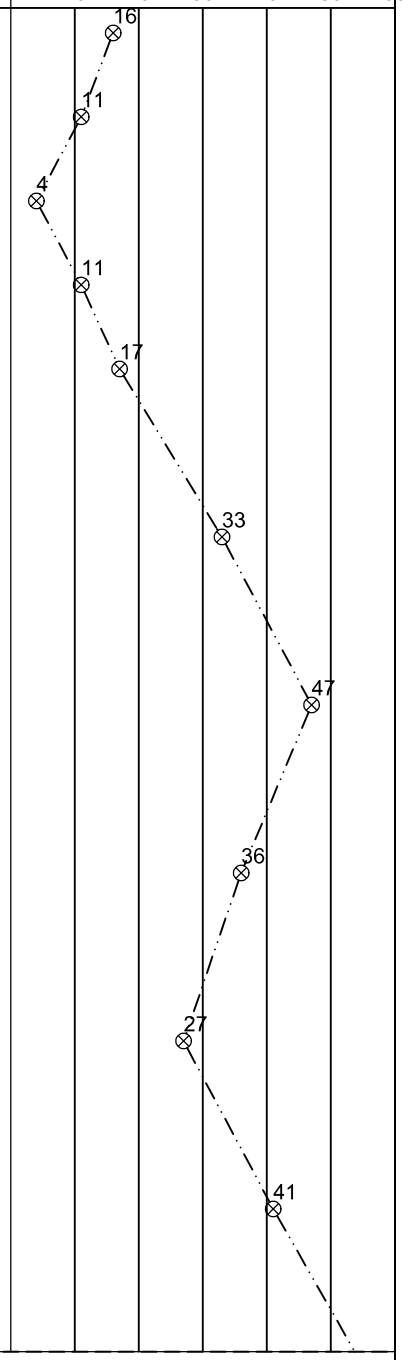
DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
	1	SS			Driller reported gravel fill
610	2	SS			0.3 Fill: Fine to medium sand - trace silt, cinders and wood - black - medium dense - moist (SP)
	3	SS			4.0 Fill: Cinders - trace wood and brick fragments - black - loose - moist to wet
	4	SS			7.5 Fine to medium sand - trace silt - dark gray - medium dense - wet (SP)
10 600	5	SS			
	6	SS			13.0 Fine to medium sand - trace silt and fine to coarse gravel - brown - medium dense to very dense - wet (SP)
20 590	7	SS			
	8	SS			
30 580	9	SS			
	10	SS			

UNIT DRY WT. LBS/FT^3

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2
1 2 3 4 5

PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%)
10 20 30 40 50

STANDARD PENETRATION BLOWS/FT
10 20 30 40 50 60



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 6.0' Before Casing Installation	BORING STARTED **5/18/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/18/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,583.720** EASTING **26,147,708.730**	RIG/FOREMAN **D-50 Track / DM & JL (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants

CLIENT: **Perkins Eastman Architects, P.C.**

PROJECT NAME: **New Marquette Veterans Home**

LOG OF BORING NUMBER **B-12**

ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

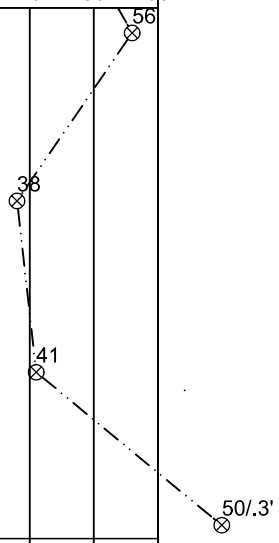
SURFACE ELEVATION (ft.) 612.2

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³
	11	SS				
570						
	12	SS				
50	13	SS				
	13A	SS				
560					50.2 Fine to medium sand - trace silt and fine to coarse gravel - occasional clay seams - brown - dense to extremely dense - wet (SP)	
	14	SS				
					55.8 End of Boring Boring advanced to 7.5 feet with solid-stem auger. Boring advanced from 7.5 to 55.0 feet with roller bit and drilling fluid. HW casing driven to 8.5 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.	
60						
550						
70						
540						

UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5)

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 6.0' Before Casing Installation	BORING STARTED **5/18/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/18/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,583.720** EASTING **26,147,708.730**	RIG/FOREMAN **D-50 Track / DM & JL (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-13**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 613.1

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2 (1 2 3 4 5)

PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%) (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)

UNIT DRY WT. LBS/FT^3

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	STANDARD PENETRATION BLOWS/FT
		1	SS			Fill: Fine to coarse sand - trace to some silt and fine to coarse gravel - brown - medium dense - moist (SP-SM)	18
	610	2	SS				17
		3	SS			5.0 Fill: Fine to medium sand - some cinders - trace silt - black - medium dense - moist to wet (SP)	15
		4	SS			7.5 Fill: Fine to medium sand - trace to some silt and wood - black - medium dense - wet (SP)	16
10		5	SS			10.0 Fine to medium sand - trace silt and fine to coarse gravel - gray to brown - medium dense to dense - wet (SP)	14
	600	6	SS				32
20		7	SS				40
	590					23.0 Fine to medium sand - trace to some silt - trace fine gravel - dark brown - dense to medium dense - wet (SP-SM)	
		8	SS				41
30		9	SS				29
	580						
		10	SS				32
						38.0 Gravelly fine to coarse sand - some silt - brown - medium dense to extremely dense - wet (SM)	

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 6.5' WD 6.1' Before Casing Installation	BORING STARTED **5/15/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/16/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,379.520** EASTING **26,147,705.520**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **3**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-13**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2 (1 2 3 4 5)

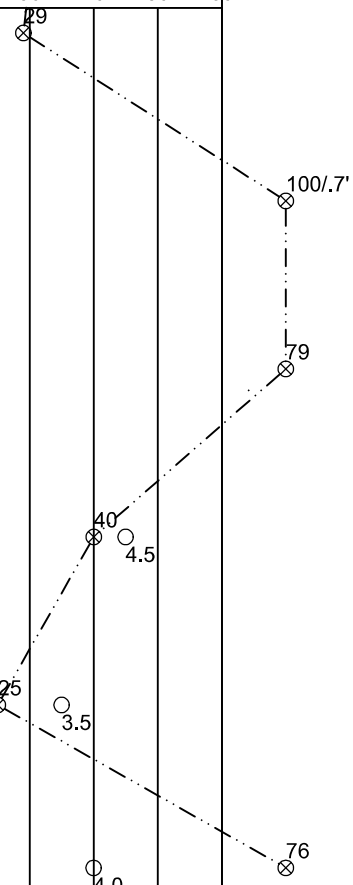
PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT^3
					SURFACE ELEVATION (ft.) 613.1	
570	11	SS				
	12	SS				
50	13	SS			50.0 Fine to medium sand - trace silt and fine to coarse gravel - brown - very dense - wet (SP)	
560					53.0 Sandy clay - some silt - reddish brown - hard to very stiff (CL)	
	14	SS				
60	15	SS				
550					63.0 Silty clay - reddish brown - hard (CL)	
	16	SS				
	16A	SS			66.2 Silty fine to medium sand - trace clay and fine to coarse gravel - reddish brown - extremely dense - wet (SM) ***Note: Driller reported hard drilling at 67.9 feet and roller bit refusal at 68.5 feet***	
70	Run #1	DB			68.5 Compeau creek gneiss, salmon pink, hard, fine grained, highly to moderately weathered	
540					73.5 End of Boring	

Run #	Depth ft.	Recovery %	RQD %	Fracture Frequency
1	68.5-73.5	100	42	2.4/ft

Boring advanced to 7.5 feet with solid-stem auger.
Boring advanced from 7.5 to 68.5 feet with roller bit and drilling fluid.
Boring advanced from 68.5 to 73.5 feet by diamond bit.
HW casing driven to 8.0 feet.



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 6.5' WD 6.1' Before Casing Installation	BORING STARTED **5/15/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/16/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,379.520** EASTING **26,147,705.520**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **3**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-13**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 613.1

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT^3	UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2 (1 2 3 4 5) / PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
					Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.		

530
90
520
100
510
110
500

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 6.5' WD 6.1' Before Casing Installation	BORING STARTED **5/15/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/16/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,379.520** EASTING **26,147,705.520**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **3** OF **3**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-14**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 609.4

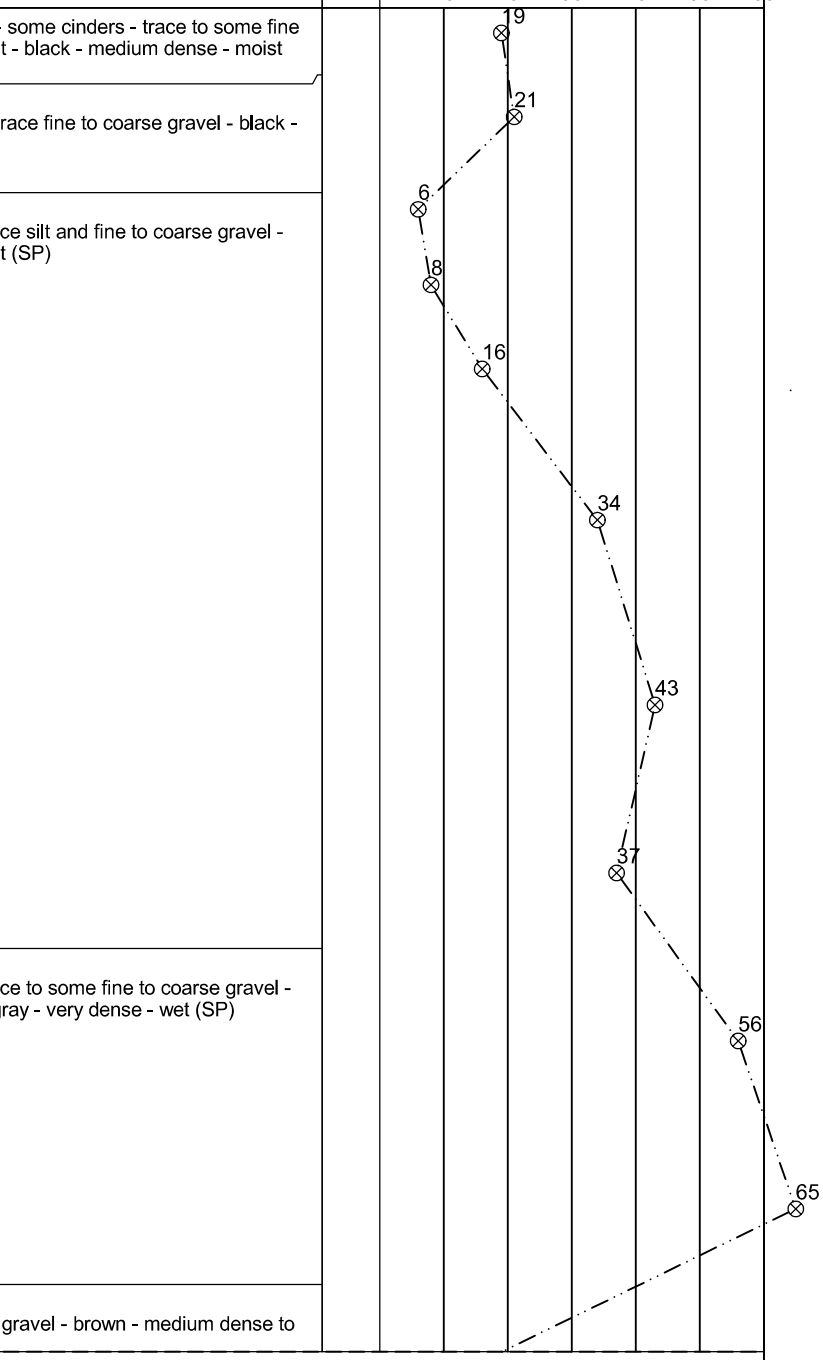
DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
		1	SS			Fill: Fine to coarse sand - some cinders - trace to some fine to coarse gravel - trace silt - black - medium dense - moist (SP)
		2	SS			2.0 Fill: Wood and cinders - trace fine to coarse gravel - black - medium dense - wet
		3	SS			
		3A	SS			5.5 Fine to medium sand - trace silt and fine to coarse gravel - gray - loose to dense - wet (SP)
		4	SS			
10	600	5	SS			
		6	SS			
20	590	7	SS			
		8	SS			
30	580	9	SS			28.0 Fine to medium sand - trace to some fine to coarse gravel - trace silt - dark brown to gray - very dense - wet (SP)
		10	SS			
	570					38.0 Silty fine sand - trace fine gravel - brown - medium dense to very dense - wet (SM)

UNIT DRY WT. LBS/FT^3

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2 (1 2 3 4 5)

PLASTIC LIMIT (%) | WATER CONTENT (%) | LIQUID LIMIT (%) (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 2.0' WD 0.9' Before Casing Installation	BORING STARTED **5/12/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/12/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,299.520** EASTING **26,147,629.410**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-14**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 609.4

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5) / PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
		11	SS					11
		12	SS					71
50	560	13	SS					52
						53.0 Sandy fine to coarse gravel - some silt - brown - extremely dense - wet (GM/Weathered Rock)		
		14	SS					87
60	550					56.5 End of Boring Boring advanced to 7.5 feet with solid-stem auger. Boring advanced from 7.5 to 55.0 feet with roller bit and drilling fluid. HW casing driven to 8.0 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.		
70	540							
	530							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 2.0' WD 0.9' Before Casing Installation	BORING STARTED **5/12/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/12/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,299.520** EASTING **26,147,629.410**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants

CLIENT: **Perkins Eastman Architects, P.C.**

PROJECT NAME: **New Marquette Veterans Home**

LOG OF BORING NUMBER **B-15**

ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 613.2

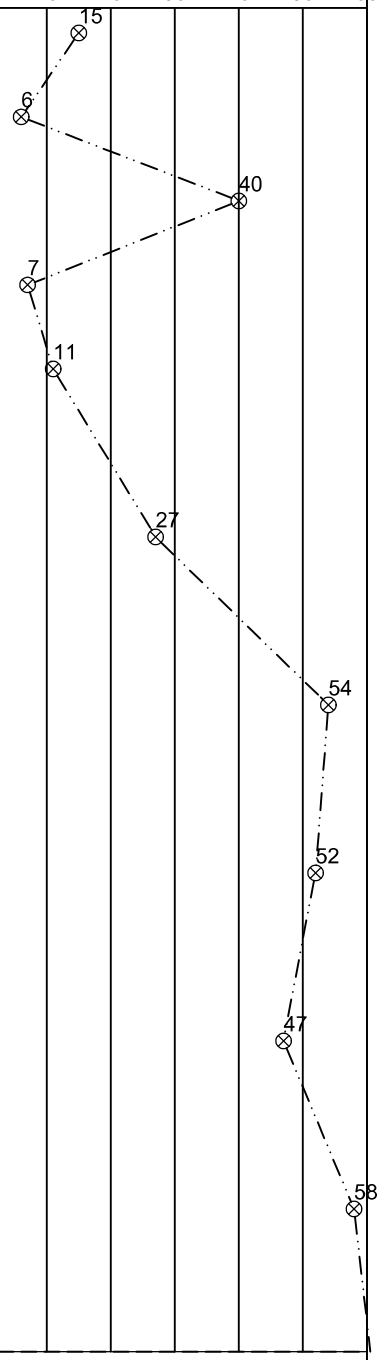
DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
	1	SS			Fill: Fine to medium sand - some fine to coarse gravel - trace silt - brown - medium dene to loose - moist (SP)
610	2	SS			
	3	SS			4.0 Fill: Wood and woody peat - some fine to coarse sand and gravel - trace silt - brown - moist to wet (PT)
	4	SS			7.5 Fill: Fine to medium sand - trace to some fine to coarse gravel - trace silt and wood - dark brown - loose - wet (SP)
10	5	SS			10.0 Fine to medium sand - trace silt and fine to coarse gravel - gray to brown after 20.0 feet - medium dense to very dense - wet (SP)
600	6	SS			
20	7	SS			
590	8	SS			23.0 Fine to medium sand - trace to some silt and fine to coarse gravel - brown - very dense to dense - wet (SP-SM)
30	9	SS			
580	10	SS			33.0 Fine to medium sand - trace silt and fine to coarse gravel - reddish brown - very dense - wet (SP)

UNIT DRY WT. LBS/FT^3

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2
1 2 3 4 5

PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%)
10 20 30 40 50

STANDARD PENETRATION BLOWS/FT
10 20 30 40 50 60



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 5.7' Before Casing Installation	BORING STARTED **5/17/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/17/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,195.580** EASTING **26,147,584.810**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-15**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

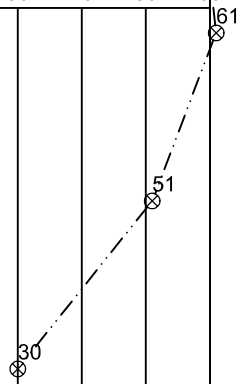
SURFACE ELEVATION (ft.) 613.2

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³
570	11	SS				
	12	SS				
50	13	SS			48.0 Silty fine to medium sand - trace to some fine to coarse gravel - brown - dense - wet (SM)	
560					51.5 End of Boring Boring advanced to 7.5 feet with solid-stem auger. Boring advanced from 7.5 to 50.0 feet with roller bit and drilling fluid. HW casing driven to 8.0 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.	
60						
550						
70						
540						

UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5)

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50)

⊗ STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 5.7' Before Casing Installation	BORING STARTED **5/17/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/17/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,195.580** EASTING **26,147,584.810**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-16**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 610.3

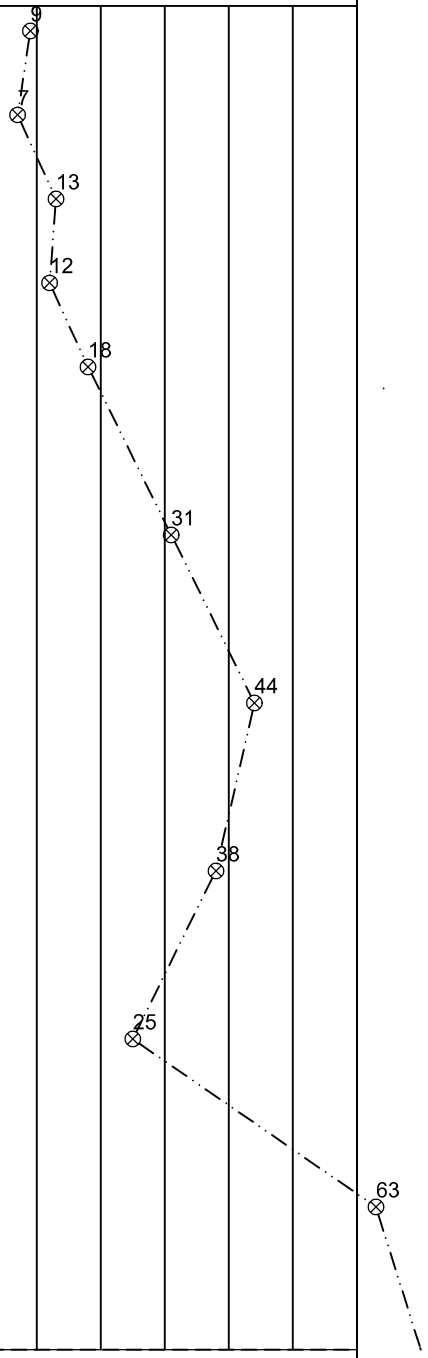
DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
	610	1	SS			Driller reported topsoil
						0.2 Fill: Fine to medium sand - trace silt, cinders and fine to coarse gravel - dark brown - loose - moist (SP)
		2	SS			
		3	SS			4.0 Fill: Amorphic peat with wood and cinders - black - medium dense - moist to wet (PT)
		4	SS			7.5 Fine to medium sand - trace silt and fine to coarse gravel - dark gray - medium dense - wet (SP)
10	600	5	SS			10.0 Fine to medium sand - trace silt and fine to coarse gravel - dark brown turning brown at 15.0 feet - medium dense to very dense - wet (SP)
		6	SS			
20	590	7	SS			
		8	SS			
30	580	9	SS			
		10	SS			

UNIT DRY WT. LBS/FT^3

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2 (1 2 3 4 5)

PLASTIC LIMIT (%) — WATER CONTENT (%) — LIQUID LIMIT (%) (10 20 30 40 50)

⊗ STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 4.9' Before Casing Installation	BORING STARTED **5/31/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/31/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,940.090** EASTING **26,147,548.890**	RIG/FOREMAN **D-50 Track / DM (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-16**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

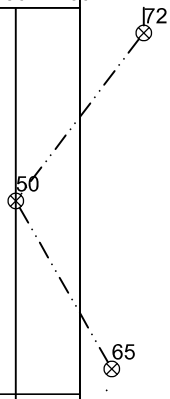
SURFACE ELEVATION (ft.) 610.3

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT^3
	570	11	SS				
		12	SS				
50	560	13	SS				
						51.5 End of Boring Boring advanced to 7.5 feet with solid stem auger. Boring advanced from 7.5 to 50.0 feet with roller bit and drilling fluid. HW casing driven to 9.5 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.	
60	550						
70	540						

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2: 1 2 3 4 5

PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%): 10 20 30 40 50

STANDARD PENETRATION BLOWS/FT: 10 20 30 40 50 60



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 4.9' Before Casing Installation	BORING STARTED **5/31/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/31/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,940.090** EASTING **26,147,548.890**	RIG/FOREMAN **D-50 Track / DM (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-17**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 613.0

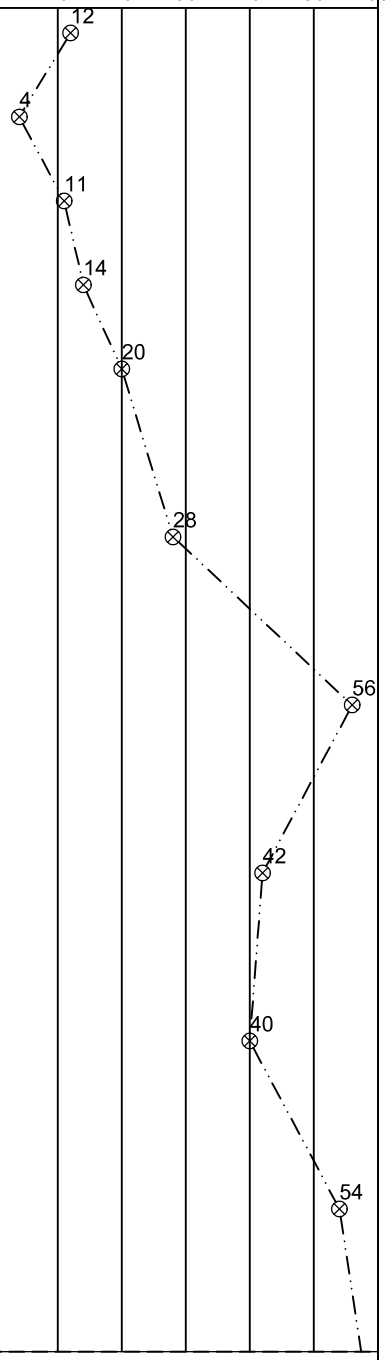
DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
	1	SS			Driller reported topsoil
610	2	SS			0.3 Fill: Fine to medium sand - trace silt and fine to coarse gravel - brown - medium dense to loose - moist (SP)
	3	SS			4.5 Fill: Fine to medium sand and cinders - trace silt, fine to coarse gravel and peat - black - medium dense - moist to wet
	4	SS			
10	5	SS			10.0 Fine to coarse sand - trace silt and fine to coarse gravel - brown - medium dense to very dense - wet (SP)
600	6	SS			
20	7	SS			
590	8	SS			
30	9	SS			
580	10	SS			

UNIT DRY WT. LBS/FT^3

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2 (1 2 3 4 5)

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 7.0' Before Casing Installation	BORING STARTED **5/30/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/30/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,841.980** EASTING **26,147,508.270**	RIG/FOREMAN **D-50 Track / DM (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-17**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 613.0

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5) / PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
570	11	SS					58
	12	SS					58
50	13	SS					55
560					51.5 End of Boring Boring advanced to 7.5 feet with solid-stem auger. Boring advanced from 7.5 to 50.0 feet with roller bit and drilling fluid. HW casing driven to 9.5 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.		
60							
550							
70							
540							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 7.0' Before Casing Installation	BORING STARTED **5/30/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/30/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,841.980** EASTING **26,147,508.270**	RIG/FOREMAN **D-50 Track / DM (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants

CLIENT: **Perkins Eastman Architects, P.C.**

PROJECT NAME: **New Marquette Veterans Home**

LOG OF BORING NUMBER **B-18**

ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 612.6

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³
0 / 610	1	SS			Fill: Fine to medium sand - trace to some fine to coarse gravel - trace silt - frequent cinders - black - loose to medium dense - moist to wet (SP-SM)	
	2	SS				
	3	SS				
7.5	4	SS			Fine to medium sand - trace fine gravel - dark gray turning brown below 15.0 feet - medium dense to dense - wet (SP)	
10 / 600	5	SS				
	6	SS				
18.0	7	SS			Fine to medium sand - trace silt and fine to coarse gravel - brown - dense to very dense - wet (SP)	
20 / 590	8	SS				
30 / 580	9	SS				
	10	SS				

UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5)

PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%) (10 20 30 40 50)

⊗ STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)

8 12 15 13 14 37 43 54 30 45

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 4.5' WD 6.0' Before Casing Installation	BORING STARTED **5/11/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/11/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,759.000** EASTING **26,147,542.170**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-18**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 612.6

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5) / PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
570	11	SS					60
	12	SS					55
50	13	SS					58
560					51.5 End of Boring Boring advanced to 7.5 feet with solid-stem auger. Boring advanced from 7.5 to 50.0 feet with roller bit and drilling fluid. HW casing driven to 8.0 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.		
60							
550							
70							
540							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 4.5' WD 6.0' Before Casing Installation	BORING STARTED **5/11/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/11/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,759.000** EASTING **26,147,542.170**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-19**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

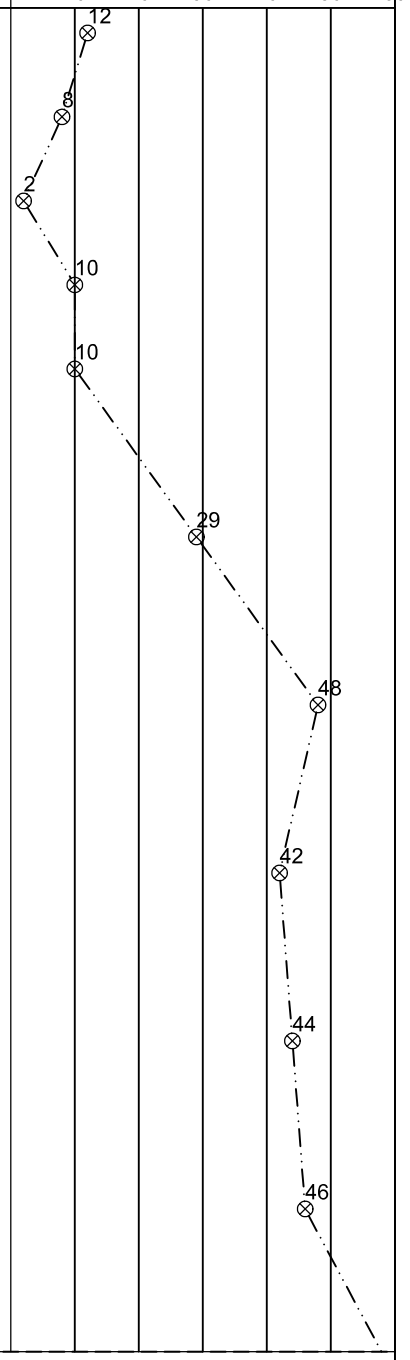
SURFACE ELEVATION (ft.) 613.0

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³
	1	SS			Fill: Fine to medium sand - trace silt, fine to coarse gravel, and cinders - brown - medium dense - moist (SP)	
610	2	SS			2.0 Fill: Cinders with wood - black - loose to very loose - moist to wet	
	3	SS				
	4	SS			8.3 Fine to medium sand - trace silt and fine to coarse gravel - dark brown to brown after 15.0 feet - medium dense to very dense - wet (SP)	
10 / 600	5	SS				
	6	SS				
20 / 590	7	SS				
	8	SS				
30 / 580	9	SS				
	10	SS				

UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5)

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50)

⊗ STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 5.7' Before Casing Installation	BORING STARTED **5/16/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/16/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,707.430** EASTING **26,147,556.540**	RIG/FOREMAN **D-50 Track / DM & JL (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-19**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

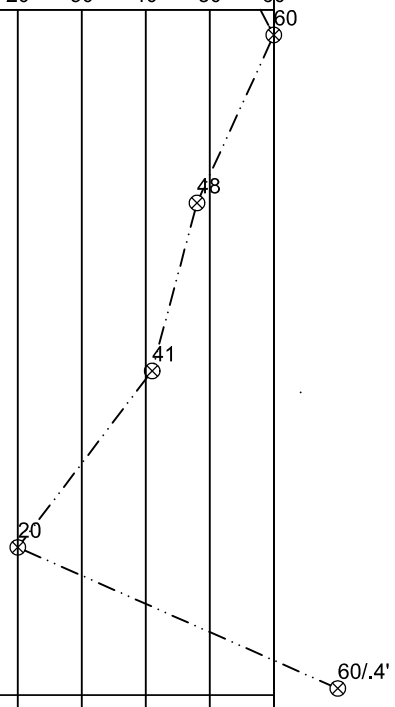
SURFACE ELEVATION (ft.) 613.0

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³
	11	SS				
570						
	12	SS				
50	13	SS				
560						
	14	SS			55.0 Silty fine sand - some fine to coarse gravel - reddish brown - medium dense to extremely dense - wet (SM)	
	14A	SS				
60	15	SS			***Note: Driller reported split spoon refusal at 60.0 feet; Apparent bedrock surface.***	
					60.4 End of Boring	
550					Boring advanced to 7.5 feet with solid-stem auger. Boring advanced from 7.5 to 60.4 feet with roller bit and drilling fluid. HW casing driven to 8.5 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.	
70						
540						

UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5)

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50)

⊗ STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 5.7' Before Casing Installation	BORING STARTED **5/16/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/16/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,707.430** EASTING **26,147,556.540**	RIG/FOREMAN **D-50 Track / DM & JL (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-20**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 612.2

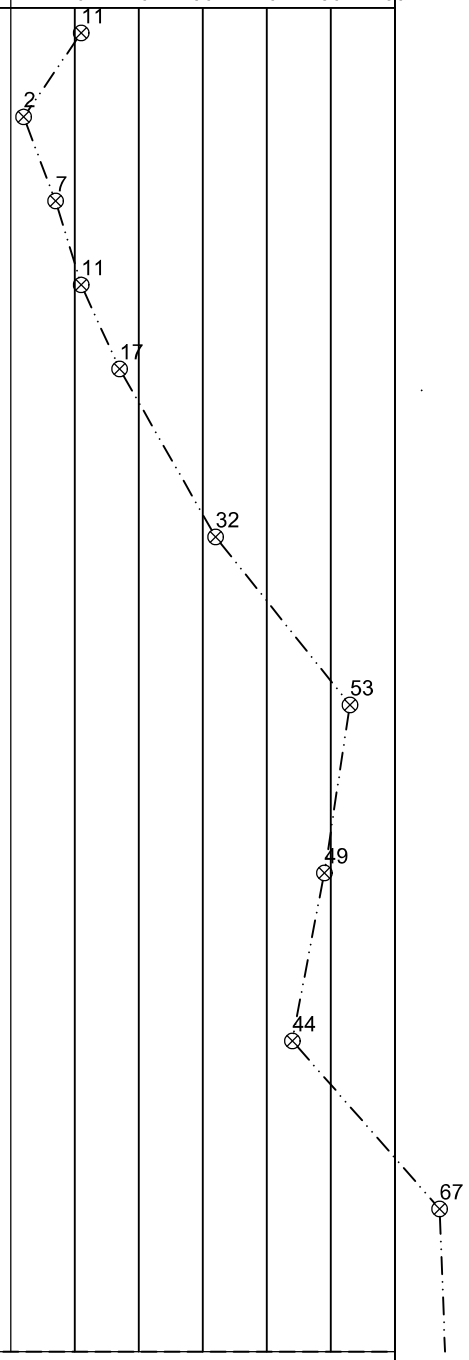
DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
	1	SS			Driller reported gravel fill
610	2	SS			0.5 Fill: Wood and peat - trace to some fine to coarse gravel - black - very loose to loose - moist to wet (PT)
	3	SS			
	4	SS			7.5 Fine to medium sand - trace silt and fine gravel - dark brown turning brown at 15.0 feet - medium dense to very dense - wet (SP)
10	5	SS			
600	6	SS			
20	7	SS			
590	8	SS			
30	9	SS			
580	10	SS			

UNIT DRY WT. LBS/FT^3

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2: 1 2 3 4 5

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%): 10 20 30 40 50

STANDARD PENETRATION BLOWS/FT: 10 20 30 40 50 60



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 3.9' Before Casing Installation	BORING STARTED **5/15/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/16/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,652.180** EASTING **26,147,538.560**	RIG/FOREMAN **D-50 Track / DM & JL (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-20**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

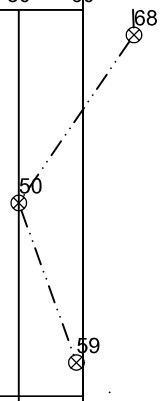
LOCATION: Marquette, MI

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³
					SURFACE ELEVATION (ft.) 612.2	
570	11	SS				
	12	SS				
50					48.0 Silty fine to medium sand - trace fine to coarse gravel - reddish brown - very dense - wet (SM)	
	13	SS				
	13A	SS				
560					51.0 Gravelly fine to coarse sand - trace silt - brown - very dense - wet (SP)	
					51.5 End of Boring	
					Boring advanced to 7.5 feet with solid-stem auger. Boring advanced from 7.5 to 50.0 feet with roller bit and drilling fluid. HW casing driven to 8.5 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.	
60						
550						
70						
540						

UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5)

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50)

⊗ STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 3.9' Before Casing Installation	BORING STARTED **5/15/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/16/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,652.180** EASTING **26,147,538.560**	RIG/FOREMAN **D-50 Track / DM & JL (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants

CLIENT: **Perkins Eastman Architects, P.C.**

PROJECT NAME: **New Marquette Veterans Home**

LOG OF BORING NUMBER **B-21**

ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 613.1

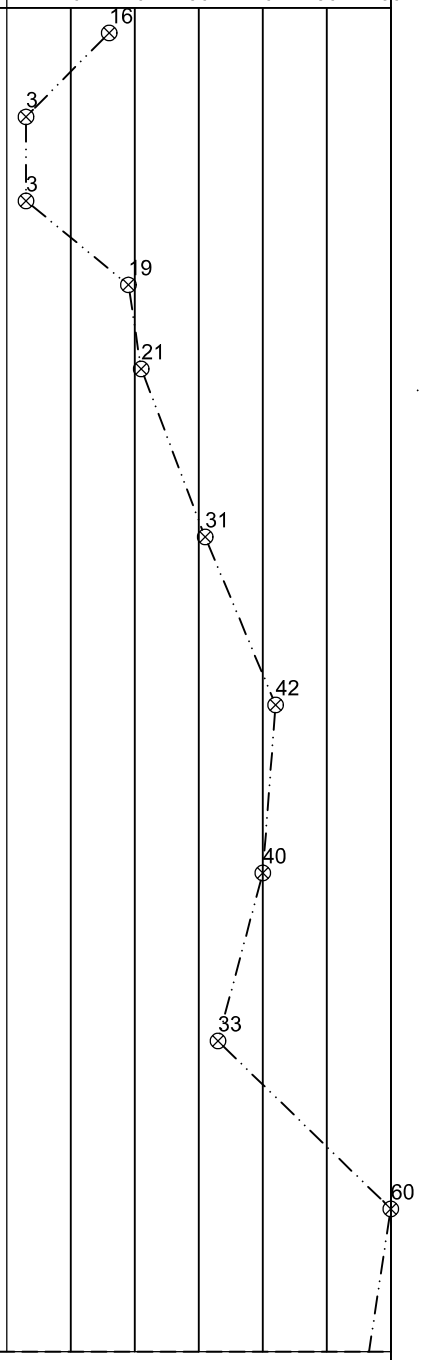
DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
	1	SS			Fill: Fine to medium sand - trace silt and fine to coarse gravel - brown - medium dense to very loose - moist to wet (SP)
610	2	SS			
	3	SS			5.0 Fill: Silty fine sand - trace fine gravel - brown - very loose - wet (SM)
	4	SS			7.5 Fill: Fine to medium sand - trace peat and organics - dark brown - medium dense - wet (SP)
10	5	SS			10.0 Fine to medium sand - trace silt and fine to coarse gravel - dark brown - medium dense to dense - wet (SP)
600	6	SS			
20	7	SS			
590	8	SS			
30	9	SS			28.0 Fine to medium sand - trace to some silt - trace fine to coarse gravel - brown - dense to very dense - wet (SP-SM)
580	10	SS			
					38.0 Fine to medium sand - trace silt and fine to coarse gravel - brown - very dense - wet (SP)

UNIT DRY WT. LBS/FT^3

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2
1 2 3 4 5

PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%)
10 20 30 40 50

STANDARD PENETRATION BLOWS/FT
10 20 30 40 50 60



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 4.4' Before Casing Installation

BORING STARTED **5/24/2023**

BORING COMPLETED **5/24/2023**

GEI OFFICE **Marquette, MI**

ENTERED BY **LJE**

APPROVED BY **CRA**

NORTHING **650,577.670** EASTING **26,147,609.710**

RIG/FOREMAN **D-50 Track / JC (SES)**

GEI PROJECT NO. **2300971**

PAGE NO. **1** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-21**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

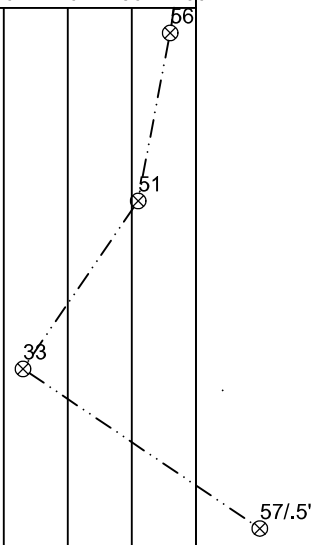
SURFACE ELEVATION (ft.) 613.1

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³
570	11	SS				
	12	SS				
50					48.0 Silty fine to coarse sand - trace to some fine to coarse gravel - reddish brown - dense to extremely dense - wet (SM)	
560	13	SS				
	14	SS			***Note: Driller reported gravel while drilling from 56.0 to 57.0 feet and cobbles from 57.8 to 58.1 feet***	
60					***Note: Driller reported hard drilling at 59.7 feet and roller bit refusal at 60.2 feet; Apparent bedrock surface.***	
550					60.2 End of Boring Boring advanced to 7.5 feet with solid-stem auger. Boring advanced from 7.5 to 60.2 feet with roller bit and drilling fluid. HW casing driven to 9.5 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.	
70						
540						

UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5)

PLASTIC LIMIT (%) — WATER CONTENT (%) — LIQUID LIMIT (%) (10 20 30 40 50)

⊗ STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 4.4' Before Casing Installation	BORING STARTED **5/24/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/24/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,577.670** EASTING **26,147,609.710**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants

CLIENT: **Perkins Eastman Architects, P.C.**

PROJECT NAME: **New Marquette Veterans Home**

LOG OF BORING NUMBER **B-22**

ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 612.4

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT²	PLASTIC LIMIT (%)	WATER CONTENT (%)	LIQUID LIMIT (%)	STANDARD PENETRATION BLOWS/FT
	1	SS			Fill: Fine to medium sand - trace silt and fine to coarse gravel - brown - medium dense - moist (SP)						11
610	2	SS			2.0 Fill: Fine to medium sand - trace silt and cinders - dark brown - medium dense - moist (SP)						20
	3	SS			5.0 Fill: Peat and cinders - black - loose - moist to wet						4
	4	SS			7.5 Fine to medium sand - trace silt - gray - loose - wet (SP)						7
10	5	SS									8
600					13.0 Fine to medium sand - trace silt and fine to coarse gravel - brown - dense to very dense - wet (SP)						
	6	SS									37
20	7	SS									48
590	8	SS									61
					28.0 Fine to medium sand - trace to some silt - trace fine to coarse gravel - brown - dense to very dense - wet (SP-SM)						
30	9	SS									32
580	10	SS									54
					38.0 Fine to medium sand - trace silt and fine to coarse gravel - brown - very dense - wet (SP)						

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 6.5' Before Casing Installation	BORING STARTED **5/15/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/15/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,392.920** EASTING **26,147,610.340**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-22**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

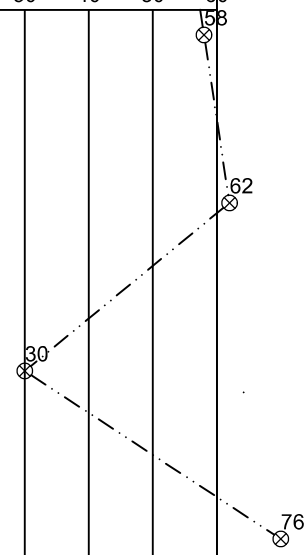
SURFACE ELEVATION (ft.) 612.4

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³
	11	SS				
570	12	SS				
50	13	SS			48.0 Silty clay - trace fine to coarse gravel - reddish brown - stiff (CL)	
560	14	SS			53.0 Clayey sand - some silt - trace fine to coarse gravel - reddish brown - very dense - wet (SC)	
60					56.5 End of Boring Boring advanced to 7.5 feet with solid-stem auger. Boring advanced from 7.5 to 55.0 feet with roller bit and drilling fluid. HW casing driven to 8.0 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.	
550						
70						
540						

UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5)

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50)

⊗ STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 6.5' Before Casing Installation	BORING STARTED **5/15/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/15/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,392.920** EASTING **26,147,610.340**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants

CLIENT: **Perkins Eastman Architects, P.C.**

PROJECT NAME: **New Marquette Veterans Home**

LOG OF BORING NUMBER **B-23**

ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 612.4

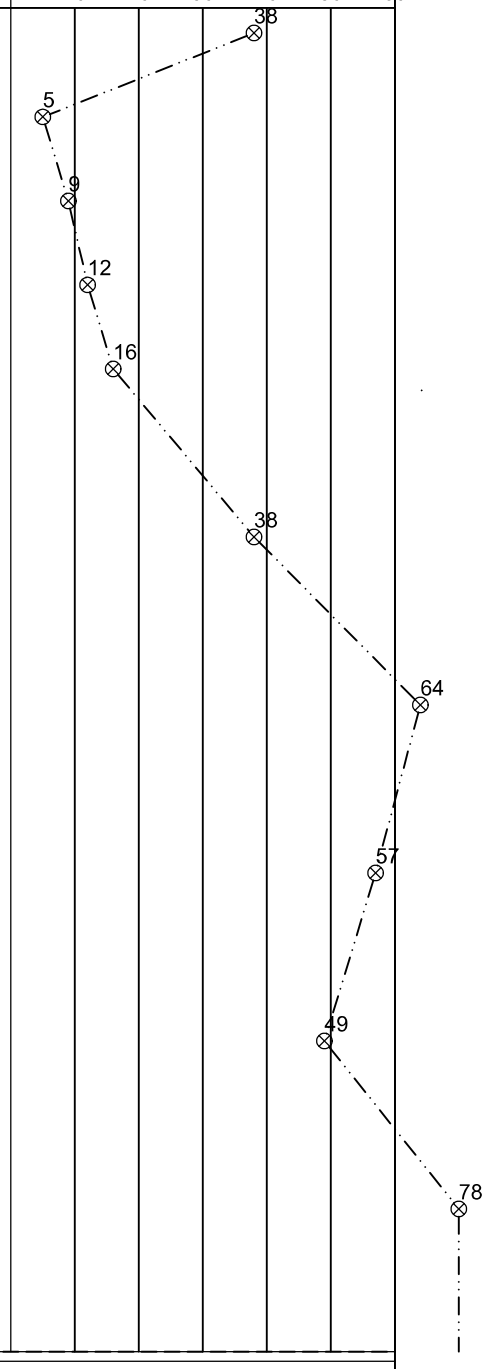
DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE / RECOVERY	DESCRIPTION OF MATERIAL
	1	SS		Fill: Sandy fine to coarse gravel - trace silt - brown - dense - moist (GP)
610	2	SS		2.0 Fill: Fine to medium sand - trace to some silt, fine to coarse gravel and cinders - dark brown - loose - moist to wet (SP-SM)
	3	SS		
	4	SS		7.0 Fill: Fine to medium sand - trace silt and fine gravel - dark gray - medium dense - wet (SP)
10	5	SS		10.0 Fine to medium sand - trace silt and fine gravel - dark brown - medium dense to dense - wet (SP)
600	6	SS		
20	7	SS		18.0 Fine to medium sand - trace silt - brown - very dense to extremely dense - wet (SP)
590	8	SS		
30	9	SS		
580	10	SS		

UNIT DRY WT. LBS/FT^3

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2 (1 2 3 4 5)

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 4.5' Before Casing Installation	BORING STARTED **5/16/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/17/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,270.230** EASTING **26,147,528.420**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-23**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 612.4

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2: 1 2 3 4 5

PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%): 10 20 30 40 50

STANDARD PENETRATION BLOWS/FT: 10 20 30 40 50 60

UNIT DRY WT. LBS/FT^3

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	STANDARD PENETRATION BLOWS/FT
		11	SS				82
	570						
		12	SS				52
						48.0 Silty fine to coarse sand - trace fine to coarse gravel - reddish brown - very dense - wet (SM)	
50		13	SS				56
	560					51.5 End of Boring Boring advanced to 7.5 feet with solid-stem auger. Boring advanced from 7.5 to 50.0 feet with roller bit and drilling fluid. HW casing driven to 8.0 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.	
60							
	550						
70							
	540						

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 4.5' Before Casing Installation	BORING STARTED **5/16/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/17/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,270.230** EASTING **26,147,528.420**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-24**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 608.4

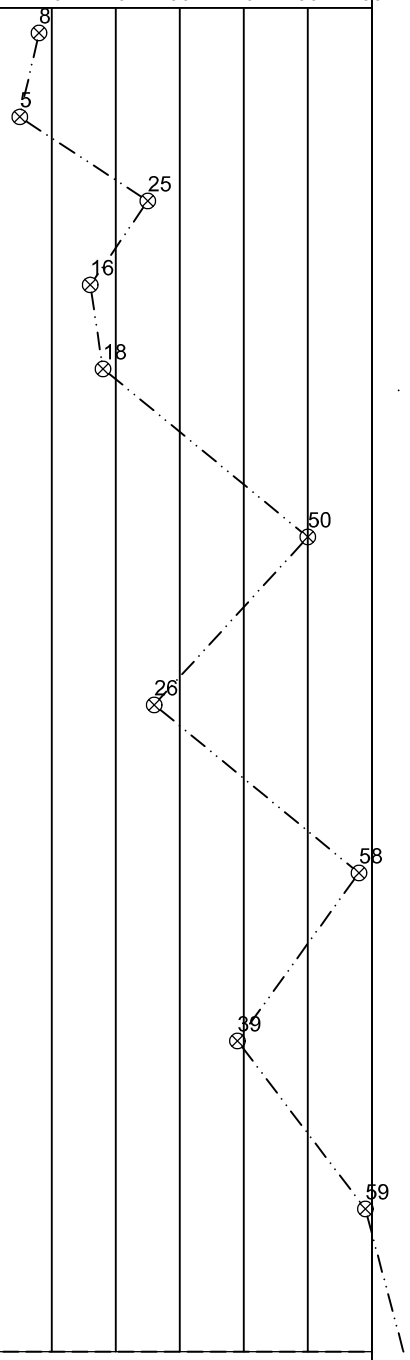
DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
	1	SS			Driller reported topsoil
	2	SS			0.3 Fill: Fine to medium sand - trace to some silt and topsoil - brown - loose - moist to wet (SP-SM)
	3	SS			5.0 Fine to medium sand - trace silt and fine to coarse gravel - gray turning brown at 10.0 feet - medium dense to very dense - wet (SP)
600	4	SS			
10	5	SS			
	6	SS			
590					
20	7	SS			
	8	SS			
580					
30	9	SS			
	10	SS			
570					

UNIT DRY WT. LBS/FT^3

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2: 1 2 3 4 5

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%): 10 20 30 40 50

⊗ STANDARD PENETRATION BLOWS/FT: 10 20 30 40 50 60



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 4.1' Before Casing Installation	BORING STARTED **5/31/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/31/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **651,023.290** EASTING **26,147,467.770**	RIG/FOREMAN **D-50 Track / DM (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-24**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 608.4

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5) / PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
	11	SS					66
	12	SS					52
560 / 50	13	SS					59
					51.5 End of Boring Boring advanced to 7.5 feet with solid stem auger Boring advanced from 7.5 to 50.0 feet with roller bit and drilling fluid. HW casing driven to 9.5 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.		
550 / 60							
540 / 70							
530							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 4.1' Before Casing Installation	BORING STARTED **5/31/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/31/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **651,023.290** EASTING **26,147,467.770**	RIG/FOREMAN **D-50 Track / DM (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-25**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 611.2

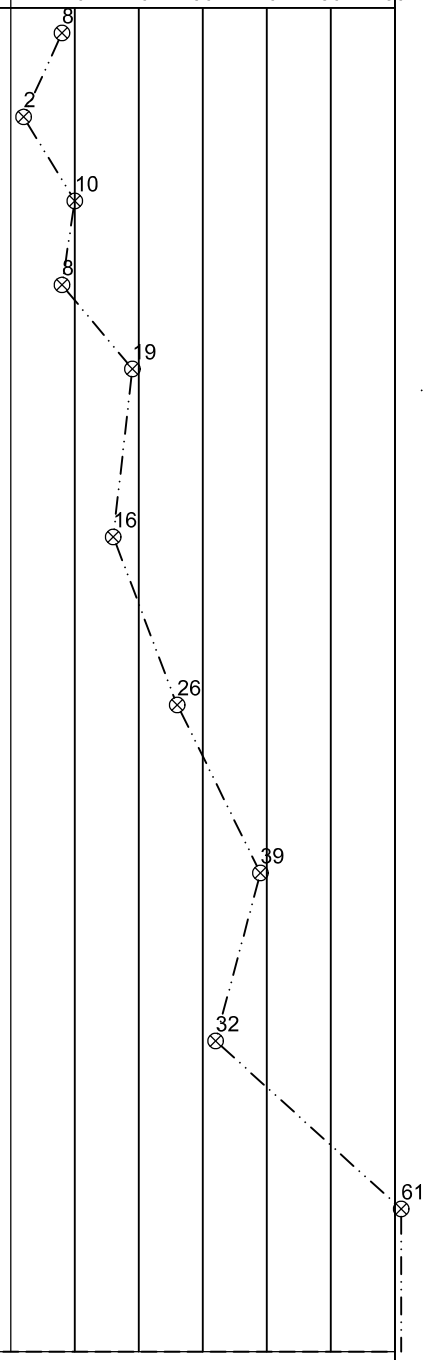
DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
0	610	1	SS			Fill: Fine to medium sand with cinders - trace to some fine to coarse gravel - trace silt - black - loose to very loose - moist
		2	SS			
						4.0 Fine to medium sand - trace silt and fine to coarse gravel - dark brown to brown - loose to medium dense - moist to wet (SP)
		3	SS			
		4	SS			
10	600	5	SS			
		6	SS			
20	590	7	SS			
						23.0 Fine to medium sand - trace silt and fine to coarse gravel - brown - dense to very dense - wet (SP)
		8	SS			
30	580	9	SS			
		10	SS			

UNIT DRY WT. LBS/FT^3

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2 (1 2 3 4 5)

PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%) (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 4.9' Before Casing Installation	BORING STARTED **5/30/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/30/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,923.260** EASTING **26,147,429.230**	RIG/FOREMAN **D-50 Track / DM (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-25**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 611.2

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5) / PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
570	11	SS					61
	12	SS					60
50	13	SS					58
560					51.5 End of Boring Boring advanced to 7.5 feet with solid-stem auger. Boring advanced from 7.5 to 50.0 feet with roller bit and drilling fluid. HW casing driven to 8.5 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.		
60 550							
70 540							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 4.9' Before Casing Installation	BORING STARTED **5/30/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/30/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,923.260** EASTING **26,147,429.230**	RIG/FOREMAN **D-50 Track / DM (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-26**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 611.9

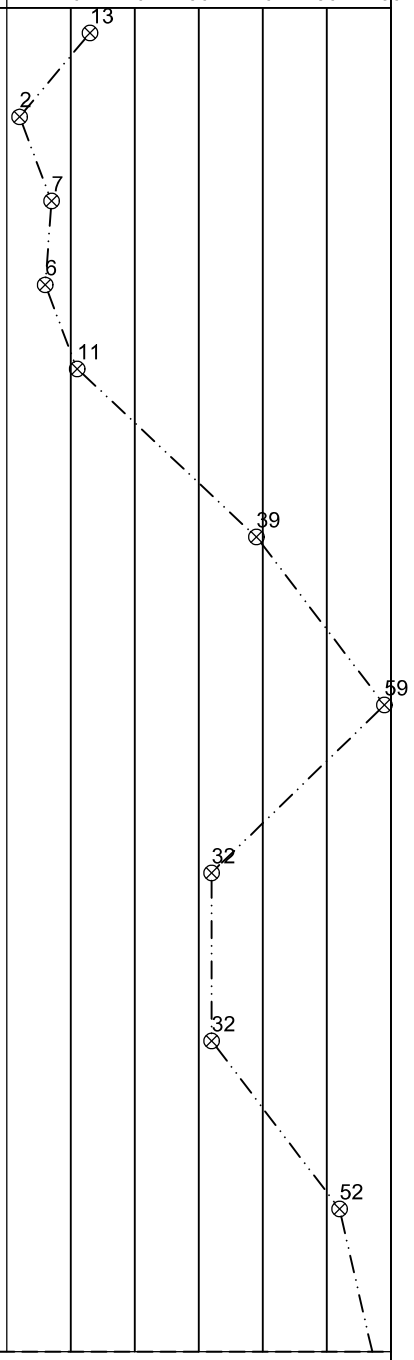
DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
	1	SS			Driller reported topsoil
610					0.4 Fill: Fine to coarse sand - trace to some silt and fine to coarse gravel - light gray - medium dense - moist (SP-SM)
	2	SS			
					1.5 Fill: Silty fine to medium sand - trace fine to coarse gravel - gray - very loose - moist (SM)
	3	SS			5.0 Fill: Fine to medium sand - some peat - trace silt and fine to coarse gravel - gray - loose - moist to wet (SP)
	4	SS			7.5 Fine to medium sand - trace silt and fine to coarse gravel - gray - loose to very dense - wet (SP)
10 600	5	SS			
	6	SS			
20 590	7	SS			
	8	SS			
30 580	9	SS			
	10	SS			

UNIT DRY WT. LBS/FT^3

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2 (1 2 3 4 5)

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50)

⊗ STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 5.8' Before Casing Installation	BORING STARTED **6/1/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **6/1/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,825.790** EASTING **26,147,414.940**	RIG/FOREMAN **D-50 Track / DM (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-26**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 611.9

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5) / PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
	11	SS					58
570							
	12	SS					64
50	13	SS					58
560					51.5 End of Boring Boring advanced to 7.5 feet with solid-stem auger. Boring advanced from 7.5 to 50.0 feet with roller bit and drilling fluid. HW casing driven to 9.5 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.		
60							
550							
70							
540							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 5.8' Before Casing Installation	BORING STARTED **6/1/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **6/1/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,825.790** EASTING **26,147,414.940**	RIG/FOREMAN **D-50 Track / DM (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-27**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 612.5

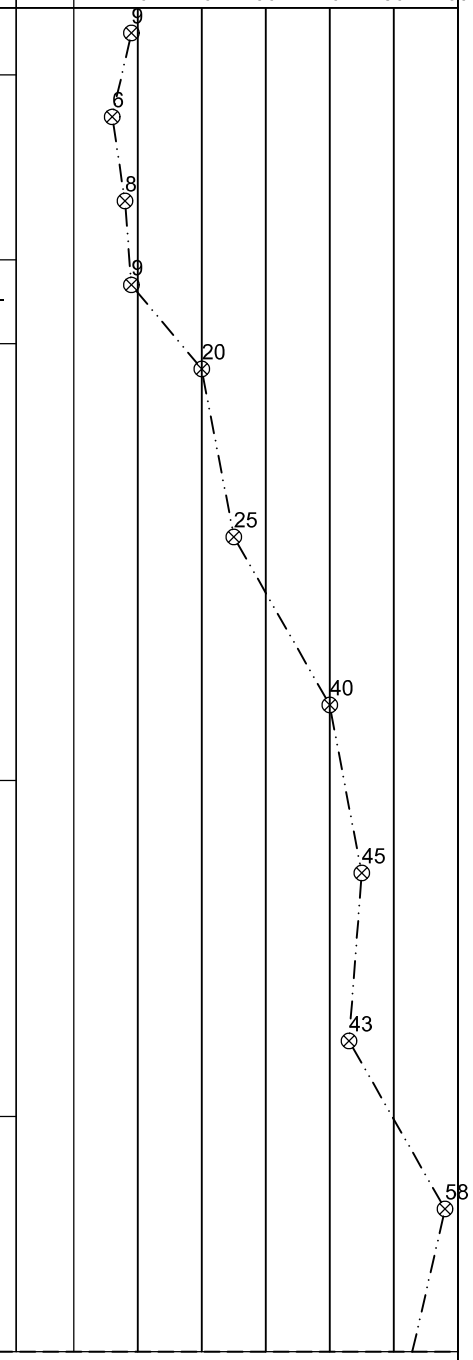
DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
0 / 612.5	1	SS			Fill: Fine to medium sand - trace to some silt and fine to coarse gravel - dark brown - loose - moist (SP-SM)
2.0 / 610.5	2	SS			Fill: Cinders - black - loose - moist to wet
	3	SS			
7.5 / 605	4	SS			Fill: Fine to medium sand - trace to some cinders - trace silt - dark brown - loose - wet (SP)
10.0 / 602.5	5	SS			Fine to medium sand - trace to some fine to coarse gravel - trace silt - dark brown to brown - medium dense to dense - wet (SP)
	6	SS			
	7	SS			
23.0 / 589.5	8	SS			Fine sand - trace silt and fine gravel - brown - dense - wet (SP)
	9	SS			
33.0 / 579.5	10	SS			Fine to medium sand - trace silt - brown - very dense - wet (SP)

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2 (1 2 3 4 5)

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50)

UNIT DRY WT. LBS/FT^3

STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 4.5' WD 4.3' Before Casing Installation	BORING STARTED **5/10/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/11/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,769.860** EASTING **26,147,479.980**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-27**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 612.5

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5) / PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
570	11	SS					52
	12	SS					60
50	13	SS					54
560					51.5 End of Boring Boring advanced to 7.5 feet with solid-stem auger. Boring advanced from 7.5 to 50.0 feet with roller bit and drilling fluid. HW casing driven to 8.0 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.		
60							
550							
70							
540							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 4.5' WD 4.3' Before Casing Installation	BORING STARTED **5/10/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/11/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,769.860** EASTING **26,147,479.980**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-28**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

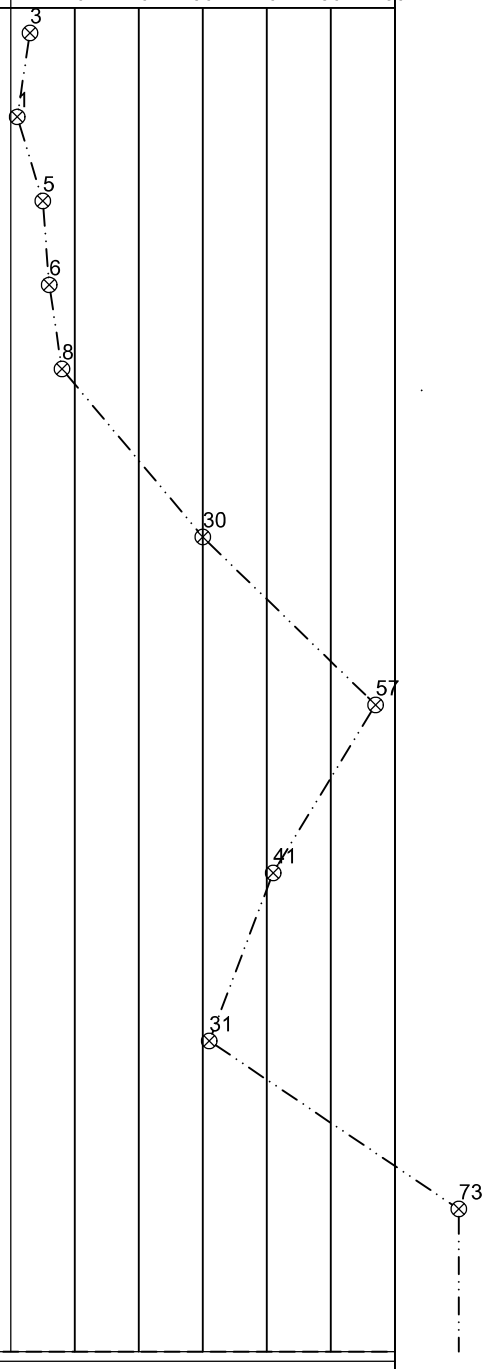
DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
SURFACE ELEVATION (ft.) 613.4					
	1	SS			Driller reported topsoil 0.3 Fill: Fine to medium sand - trace to some silt - trace fine to coarse gravel - dark brown - very loose - moist (SP-SM)
610	2	SS			2.0 Fill: Amorphic peat with cinders - trace to some fine to medium sand - trace silt and fine to coarse gravel - black - very loose to loose - moist to wet (PT)
	3	SS			
	4	SS			7.5 Fine to medium sand - trace silt and fine to coarse gravel - gray - loose - moist to wet (SP)
10	5	SS			
600					13.0 Fine to medium sand - trace silt and fine to coarse gravel - brown - dense to very dense - wet (SP)
	6	SS			
20	7	SS			
590					
	8	SS			
30	9	SS			
580					
	10	SS			

UNIT DRY WT. LBS/FT^3

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2 (1 2 3 4 5)

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 5.2' WS	BORING STARTED **6/1/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **6/1/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,643.520** EASTING **26,147,449.300**	RIG/FOREMAN **D-50 Track / DM (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-28**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

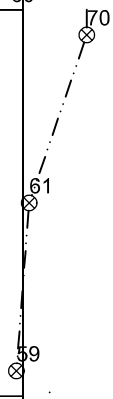
SURFACE ELEVATION (ft.) 613.4

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³
570	11	SS				
	12	SS				
50	13	SS				
560					51.5 End of Boring Boring advanced to 7.5 feet with solid-stem auger. Boring advanced from 7.5 to 50.0 feet with roller bit and drilling fluid. HW casing driven to 9.5 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.	
60						
550						
70						
540						

UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5)

PLASTIC LIMIT (%) — WATER CONTENT (%) — LIQUID LIMIT (%) (10 20 30 40 50)

⊗ STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 5.2' WS	BORING STARTED **6/1/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **6/1/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,643.520** EASTING **26,147,449.300**	RIG/FOREMAN **D-50 Track / DM (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-29**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 611.6

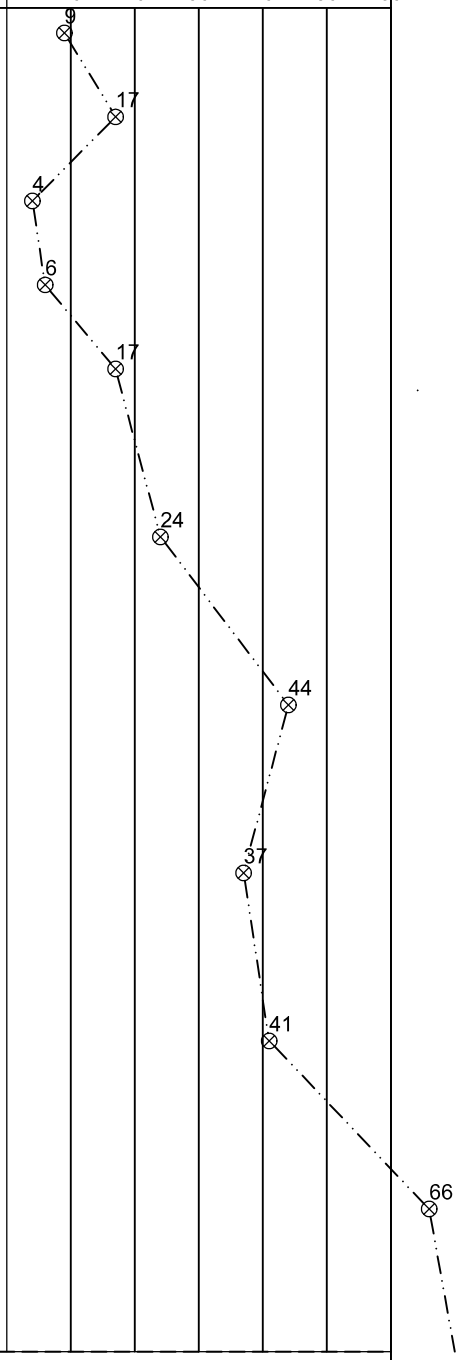
DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
610	1	SS			Fill: Fine to medium sand - trace to some fine to coarse gravel - trace silt and cinders - brown - loose - moist (SP)
	2	SS			2.0 Fill: Wood and cinders - black - medium dense to loose - moist to wet
	3	SS			
	4	SS			7.5 Fine to medium sand - trace silt and fine gravel - dark brown - loose - wet (SP)
10 / 600	5	SS			10.0 Fine to medium sand - trace silt - brown - medium dense to very dense - wet (SP)
	6	SS			
20 / 590	7	SS			
	8	SS			
30 / 580	9	SS			
	10	SS			

UNIT DRY WT. LBS/FT^3

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2 (1 2 3 4 5)

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50)

⊗ STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 4.5' Before Casing Installation	BORING STARTED **5/15/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/15/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,449.680** EASTING **26,147,523.230**	RIG/FOREMAN **D-50 Track / DM & JL (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-29**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

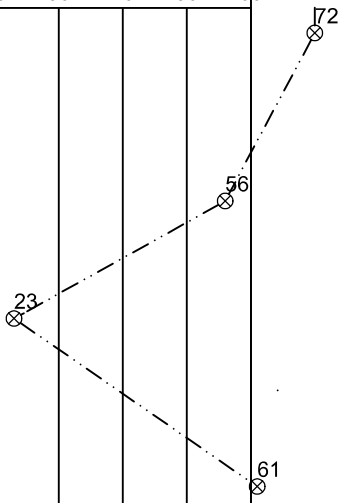
SURFACE ELEVATION (ft.) 611.6

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³
570	11	SS				
	12	SS				
50 / 560	13	SS			47.0 Fine to medium sand - trace to some silt - trace fine gravel - brown to reddish brown at 53.0 feet - medium dense to very dense - wet (SP-SM)	
	14	SS				
60 / 550					55.0 End of Boring Boring advanced to 7.5 feet with solid-stem auger. Boring advanced from 7.5 to 53.5 feet with roller bit and drilling fluid. HW casing driven to 10.5 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.	
70 / 540						

UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5)

PLASTIC LIMIT (%) — WATER CONTENT (%) — LIQUID LIMIT (%) (10 20 30 40 50)

⊗ STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 4.5' Before Casing Installation	BORING STARTED **5/15/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/15/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,449.680** EASTING **26,147,523.230**	RIG/FOREMAN **D-50 Track / DM & JL (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants

CLIENT: **Perkins Eastman Architects, P.C.**

PROJECT NAME: **New Marquette Veterans Home**

LOG OF BORING NUMBER **B-30**

ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 613.8

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT²	PLASTIC LIMIT (%)	WATER CONTENT (%)	LIQUID LIMIT (%)	STANDARD PENETRATION BLOWS/FT
	1	SS			Driller reported topsoil						11
					0.2 Fill: Fine to medium sand - trace fine to coarse gravel and silt - brown - medium dense - moist						
	2	SS									11
610					2.0 Fill: Fine to medium sand and cinders - trace silt, fine to coarse gravel and wood - black - medium dense to loose - moist to wet (SP)						
	3	SS									9
	4	SS									11
10	5	SS			10.0 Fine to medium sand - trace silt and fine to coarse gravel - gray turning dark brown at 12.0 feet - medium dense to dense - wet (SP)						15
600	6	SS									32
20	7	SS			18.0 Fine to medium sand - trace to some silt - trace fine to coarse gravel - brown - dense to very dense - wet (SP-SM)						37
590	8	SS									45
30	9	SS									33
580	10	SS			38.0 Fine to medium sand - trace to some fine to coarse gravel - trace silt - brown - dense to extremely dense - wet (SP)						69

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 5.9' Before Casing Installation	BORING STARTED **5/23/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/23/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,480.360** EASTING **26,147,582.840**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-30**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 613.8

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5) / PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
	11	SS					57
570							
	12	SS					43
50							
	13	SS					42
560							
	14	SS					50
					Note: Driller reported split spoon refusal at 60.3 feet; Possible bedrock surface.		
60	15	SS					50/.3'
					60.3 End of Boring		
550					Boring advanced to 7.5 feet with solid-stem auger. Boring advanced from 7.5 to 60.0 feet with roller bit and drilling fluid. HW casing driven to 9.5 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.		
70							
540							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 5.9' Before Casing Installation	BORING STARTED **5/23/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/23/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,480.360** EASTING **26,147,582.840**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-31**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 611.7

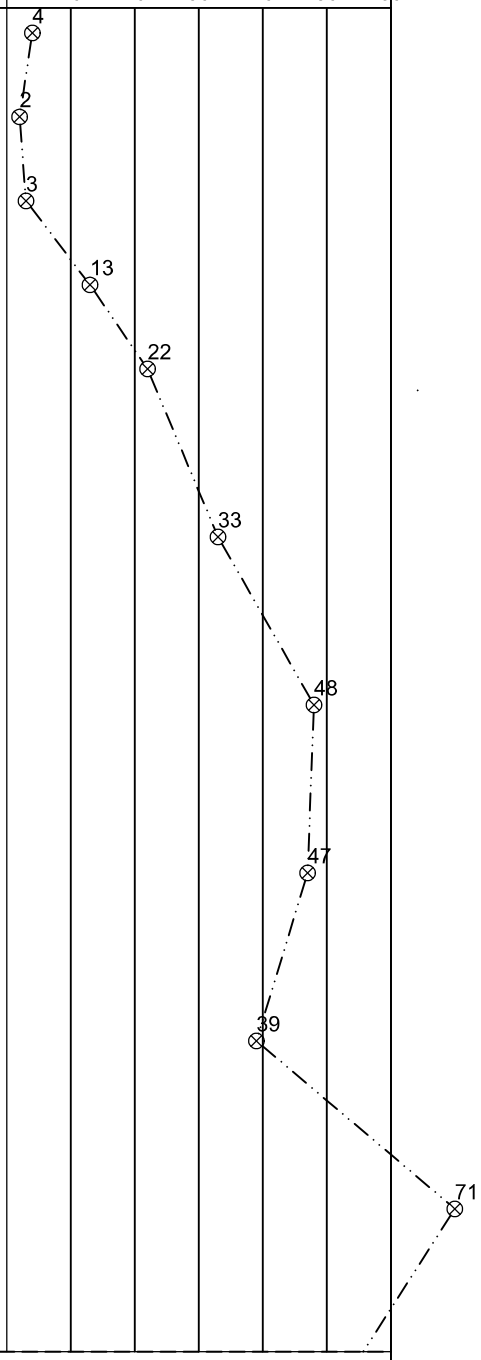
DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE / RECOVERY	DESCRIPTION OF MATERIAL
610	1	SS		Driller reported topsoil
				0.2 Fill: Fine to medium sand - trace silt, gravel, and wood - dark brown to black - loose to very loose - moist (SP)
	2	SS		
	3	SS		4.5 Amorphic Peat - black - very loose - wet (PT)
	4	SS		7.5 Possible Fill: Fine to medium sand - trace silt, fine to coarse gravel and brick pieces - dark brown - medium dense - wet (SP)
10 / 600	5	SS		9.5 Fine to medium sand - trace silt and fine to coarse gravel - brown - medium dense to very dense - wet (SP)
	6	SS		
20 / 590	7	SS		
	8	SS		
30 / 580	9	SS		
	10	SS		

UNIT DRY WT. LBS/FT^3

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2 (1 2 3 4 5)

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 4.0' Before Casing Installation	BORING STARTED **5/24/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/25/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,509.240** EASTING **26,147,460.610**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-31**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 611.7

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2: 1 2 3 4 5

PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%): 10 20 30 40 50

STANDARD PENETRATION BLOWS/FT: 10 20 30 40 50 60

UNIT DRY WT. LBS/FT^3

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
	570	11	SS			
		12	SS			
50	560	13	SS			48.0 Silty fine sand - trace to some fine to coarse gravel - trace clay - reddish brown - dense - wet (SM)
		14	SS			53.0 Fine to medium sand - trace silt and fine gravel - brown - very dense - wet (SP)
60	550	15	SS			58.0 Sandy fine to coarse gravel - some silt - reddish brown - very dense - wet (GM)
		16	SS			63.0 Sandy clay - some silt - trace to some fine to coarse gravel - reddish brown - hard (CL)
70	540					66.5 End of Boring Boring advanced to 7.5 feet with solid-stem auger. Boring advanced from 7.5 to 65.0 feet with roller bit and drilling fluid. HW casing driven to 9.5 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.

Standard penetration blows/ft: 53, 56, 32, 65, 74, 69

Unconfined compressive strength TONS/FT^2: 4.5

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 4.0' Before Casing Installation	BORING STARTED **5/24/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/25/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,509.240** EASTING **26,147,460.610**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-32**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 613.3

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT²	PLASTIC LIMIT (%)	WATER CONTENT (%)	LIQUID LIMIT (%)	STANDARD PENETRATION BLOWS/FT
	1	SS			Driller reported topsoil						2
					0.4 Fill: Fine to medium sand - trace silt, wood and fine to coarse gravel - brown - very loose - moist (SP)						
610	2	SS									5
					2.0 Fill: Fine to coarse sand and cinders - trace to some silt and fine to coarse gravel - black - loose - moist						
	3	SS									5
					5.0 Amorphic Peat - trace silt and fine to coarse sand and gravel - black - loose - moist to wet (PT)						
	4	SS			7.5 Fine to medium sand - trace silt and fine to coarse gravel - dark brown - medium dense to dense - wet (SP)						12
10	5	SS									16
600	6	SS									30
20	7	SS									41
590	8	SS			23.0 Fine to medium sand - trace to some silt - trace fine to coarse gravel - brown - dense - wet (SP-SM)						49
30	9	SS									39
580	10	SS			33.0 Fine to medium sand - trace silt and fine to coarse gravel - brown - very dense - wet (SP)						70

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 6.2' Before Casing Installation	BORING STARTED **5/25/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/25/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,351.310** EASTING **26,147,469.530**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **2**

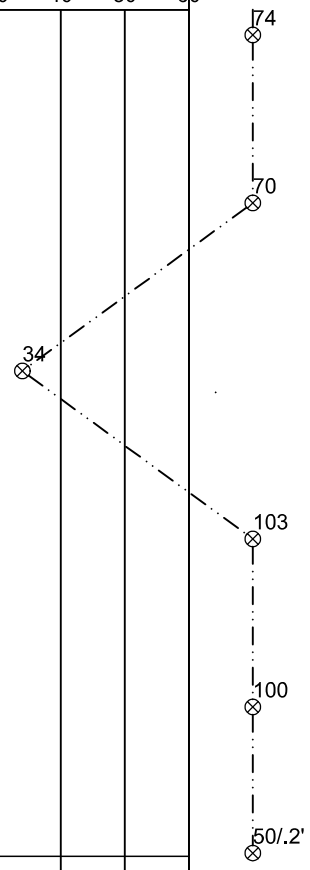
MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-32**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 613.3

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5) / PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
570	11	SS					
	12	SS					
50					48.0 Silty fine to medium sand - trace clay and fine to coarse gravel - reddish brown - dense - wet (SM)		
	13	SS					
560					53.0 Fine to coarse sand - trace silt and fine to coarse gravel - brown - extremely dense - wet (SP)		
	14	SS					
60	15	SS					
550					***Note: Driller reported split spoon refusal at 65.2 feet; Possible bedrock surface.***		
	16	SS			65.2 End of Boring Boring advanced to 7.5 feet with solid-stem auger. Boring advanced from 7.5 to 65.0 feet with roller bit and drilling fluid. HW casing driven to 9.5 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.		
70							
540							



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 6.2' Before Casing Installation	BORING STARTED **5/25/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **5/25/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,351.310** EASTING **26,147,469.530**	RIG/FOREMAN **D-50 Track / JC (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **2** OF **2**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants

CLIENT: **Perkins Eastman Architects, P.C.**

PROJECT NAME: **New Marquette Veterans Home**

LOG OF BORING NUMBER **B-101**

ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 611.2

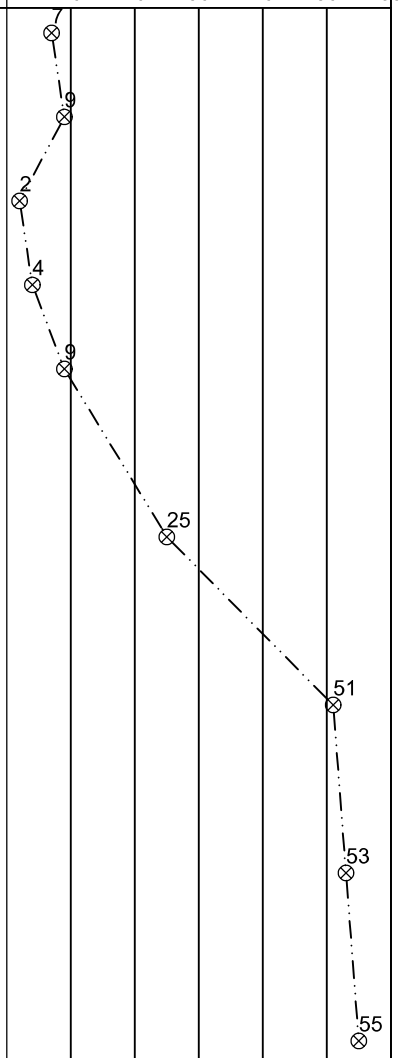
DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE / RECOVERY	DESCRIPTION OF MATERIAL
610	1	SS		Driller reported topsoil
				0.3 Fill: Fine to medium sand - trace silt, cinders and fine to coarse gravel - brown turning dark brown at 2.0 feet - loose - moist to wet (SP)
	2	SS		
				4.0 Peat with wood - black - very loose - moist to wet (PT)
	3	SS		
	4	SS		7.5 Fine to medium sand - trace silt and fine to coarse gravel - gray - loose - wet (SP)
10 / 600	5	SS		
				13.0 Fine to medium sand - trace silt and fine to coarse gravel - brown - medium dense to very dense - wet (SP)
	6	SS		
20 / 590	7	SS		
	8	SS		
30 / 580	9	SS		
				31.5 End of Boring Boring advanced to 7.5 feet with solid-stem auger. Boring advanced from 7.5 to 30.0 feet with roller bit and drilling fluid. HW casing driven to 9.5 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.

UNIT DRY WT. LBS/FT^3

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2 (1 2 3 4 5)

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 3.2' Before Casing Installation	BORING STARTED **6/5/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **6/5/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **649,896.770** EASTING **26,147,599.910**	RIG/FOREMAN **D-50 Track / DM (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **1**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **B-102**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 610.6

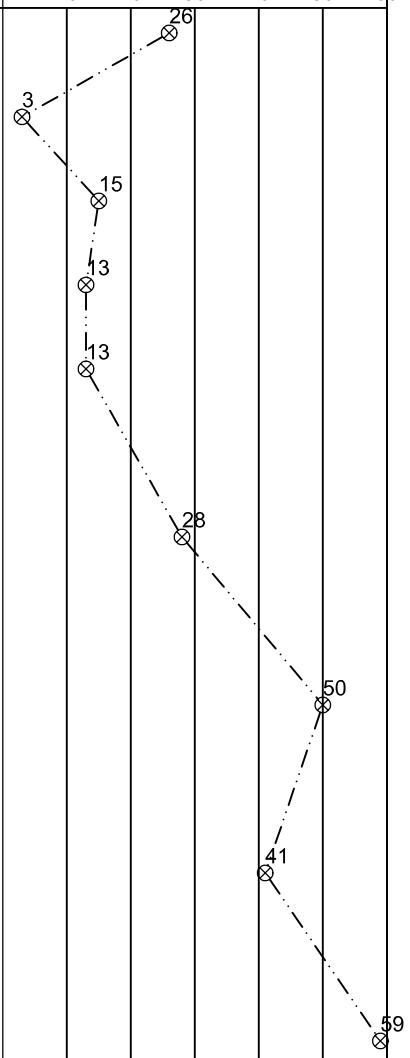
DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
610	1	SS			Driller reported topsoil
					0.4
	2	SS			Fill: Fine to medium sand - trace to some fine to coarse gravel - trace silt and peat - reddish brown - medium dense - moist (SP)
					2.0
	3	SS			Peat with wood - black - very loose - moist to wet (PT)
					5.0
	4	SS			Fine to medium sand - trace silt and fine to coarse gravel - dark gray turning brown at 7.5 feet - medium dense to very dense - wet (SP)
10 / 600	5	SS			
	6	SS			
20 / 590	7	SS			
	8	SS			
30 / 580	9	SS			
					31.5
					End of Boring
					Boring advanced to 7.5 feet with solid-stem auger. Boring advanced from 7.5 to 30.0 feet with roller bit and drilling fluid. HW casing driven to 9.5 feet. Standard Penetration Tests performed with auto hammer. Boring backfilled with bentonite sand slurry and capped with 3/8" chipped bentonite.

UNIT DRY WT. LBS/FT^3

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2 (1 2 3 4 5)

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50)

⊗ STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 2.5' Before Casing Installation	BORING STARTED **6/2/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **6/2/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **649,865.530** EASTING **26,147,510.230**	RIG/FOREMAN **D-50 Track / DM (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **1**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **P-1**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 608.3

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³
	1	SS			Driller reported topsoil	
					0.2 Fill: Fine to medium sand - trace silt, cinders and fine to coarse gravel - dark brown - loose - moist (SP)	
	2	SS			2.0 Fill: Fine to medium sand - trace silt, peat and fine to coarse gravel - brown - medium dense - moist to wet (SP)	
	3	SS			5.0 Fine to medium sand - trace silt and fine to coarse gravel - dark brown - medium dense - wet (SP)	
600	4	SS				
10					10.0 End of Boring Boring advanced to 8.5 feet with solid-stem auger. Standard Penetration Tests performed with auto hammer. Boring backfilled with 3/8" chipped bentonite.	
590						
20						
580						
30						
570						

UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5)

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50)

⊗ STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)

8 16 18 24

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 3.5' WS	BORING STARTED **6/6/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **6/6/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **651,140.750** EASTING **26,147,435.560**	RIG/FOREMAN **D-50 Track / DM (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **1**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **P-2**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 608.7

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
	1	SS			Driller reported topsoil
					0.2
	2	SS			Fill: Fine to medium sand - trace silt and fine to coarse gravel - brown - medium dense - moist (SP)
					2.0
	3	SS			Fill: Fine to medium sand - trace to some fine to coarse gravel - trace silt and cinders - brown - medium dense - moist (SP)
					4.0
600	4	SS			Fill: Fine to medium sand - trace to some peat - trace silt and fine to coarse gravel - gray - medium dense - moist to wet (SP)
10					8.5
					Fine to medium sand - trace silt and fine to coarse gravel - dark brown - dense - wet (SP)
					10.0
					End of Boring

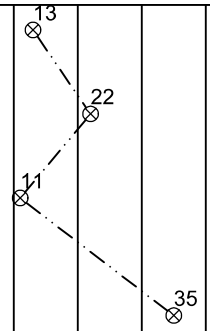
Boring advanced to 8.5 feet with solid-stem auger.
Standard Penetration Tests performed with auto hammer.
Boring backfilled with 3/8" chipped bentonite.

UNIT DRY WT. LBS/FT^3

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2: 1 2 3 4 5

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%): 10 20 30 40 50

STANDARD PENETRATION BLOWS/FT: 10 20 30 40 50 60



590
20
580
30
570

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 4.9' WS	BORING STARTED **6/6/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **6/6/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,848.290** EASTING **26,147,768.980**	RIG/FOREMAN **D-50 Track / DM (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **1**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **P-3**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

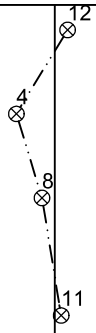
LOCATION: Marquette, MI

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT^3
						SURFACE ELEVATION (ft.) 610.2	
	610	1	SS			Fill: Fine to medium sand - trace silt, cinders and fine to coarse gravel - brown - medium dense - moist (SP)	
		2	SS			2.0 Fill: Peat and cinders - black - loose - moist	
		3	SS			5.0 Fine to medium sand - trace silt and fine to coarse gravel - brown - loose to medium dense - wet (SP)	
		4	SS				
10	600					10.0 End of Boring Boring advanced to 8.5 feet with solid-stem auger. Standard Penetration Tests performed with auto hammer. Boring backfilled with 3/8" chipped bentonite.	
20	590						
30	580						

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2: 1 2 3 4 5

PLASTIC LIMIT (%) — WATER CONTENT (%) — LIQUID LIMIT (%): 10 20 30 40 50

⊗ STANDARD PENETRATION BLOWS/FT: 10 20 30 40 50 60



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 5.0' WS	BORING STARTED **6/6/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **6/6/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,580.280** EASTING **26,147,871.930**	RIG/FOREMAN **D-50 Track / DM (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **1**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **P-4**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 612.9

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5) / PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
	1	SS			Fill: Fine to medium sand - trace silt and fine to coarse gravel - brown - loose - moist (SP)		9
610	2	SS			***Note: Driller noted no recovery from Sample No. 2 due to large gravel***		18
	3	SS			4.0 Fill: Fine to medium sand with cinders - trace silt and fine to coarse gravel - black - very loose - moist to wet		2
	4	SS			8.5 Fine to medium sand - trace silt and fine to coarse gravel - dark gray - loose to medium dense - wet (SP)		4
10	5	SS					19
600					11.5 End of Boring Boring advanced to 10.0 feet with solid-stem auger. Standard Penetration Tests performed with auto hammer. Boring backfilled with 3/8" chipped bentonite.		
20							
590							
30							
580							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 4.9' WS	BORING STARTED **6/6/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **6/6/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,324.970** EASTING **26,147,851.520**	RIG/FOREMAN **D-50 Track / DM (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **1**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **P-5**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 612.6

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5) / PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
610	1	SS			Fill: Fine to medium sand - trace to some fine to coarse gravel - trace silt - brown - medium dense - moist to wet (SP)		17
	2	SS					23
	3	SS					17
					7.0 Fine to medium sand - trace silt and fine to coarse gravel - gray - medium dense - wet (SP)		
	4	SS					11
600					10.0 End of Boring Boring advanced to 8.5 feet with solid-stem auger. Standard Penetration Tests performed with auto hammer. Boring backfilled with 3/8" chipped bentonite.		
590							
580							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 5.2' WS	BORING STARTED **6/6/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **6/6/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,471.580** EASTING **26,147,717.790**	RIG/FOREMAN **D-50 Track / DM (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **1**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **P-6**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 612.3

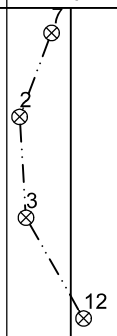
DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
	1	SS			Driller reported topsoil
610					0.3
	2	SS			Fill: Fine to medium sand - trace to some fine to coarse gravel - trace silt and cinders - dark brown - loose to very loose - moist (SP)
	3	SS			5.0
	3A	SS			Fill: Peat and cinders - black - very loose - moist to wet
					6.0
	4	SS			Fine to medium sand - trace silt and fine to coarse gravel - gray - very loose to medium dense - wet (SP)
10					
600					10.0 End of Boring
					Boring advanced to 8.5 feet with solid-stem auger. Standard Penetration Tests performed with auto hammer. Boring backfilled with 3/8" chipped bentonite.
20					
590					
30					
580					

UNIT DRY WT. LBS/FT^3

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2: 1 2 3 4 5

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%): 10 20 30 40 50

STANDARD PENETRATION BLOWS/FT: 10 20 30 40 50 60



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 5.6' WS	BORING STARTED **6/5/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **6/5/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,181.220** EASTING **26,147,462.710**	RIG/FOREMAN **D-50 Track / DM (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **1**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

GEI Consultants	CLIENT: **Perkins Eastman Architects, P.C.**	LOG OF BORING NUMBER **P-7**
	PROJECT NAME: **New Marquette Veterans Home**	ARCHITECT-ENGINEER **GEI Consultants of Michigan, P.C.**

LOCATION: Marquette, MI

SURFACE ELEVATION (ft.) 610.0

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5) / PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
		1	SS			Fill: Fine to medium sand with cinders - trace silt and fine to coarse gravel - black - loose - moist		9
		2	SS			2.0 Peat and wood - black - medium dense - moist to wet (PT)		13
		3	SS			5.0 Fine to medium sand - trace silt and fine to coarse gravel - brown turning gray at 7.5 feet - medium dense - wet (SP)		10
		4	SS					11
10	600	5	SS					16
						11.5 End of Boring Boring advanced to 10.0 feet with solid-stem auger. Standard Penetration Tests performed with auto hammer. Boring backfilled with 3/8" chipped bentonite.		
20	590							
30	580							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 4.9' WS	BORING STARTED **6/5/2023**	GEI OFFICE **Marquette, MI**	
	BORING COMPLETED **6/5/2023**	ENTERED BY **LJE**	APPROVED BY **CRA**
NORTHING **650,020.440** EASTING **26,147,514.950**	RIG/FOREMAN **D-50 Track / DM (SES)**	GEI PROJECT NO. **2300971**	PAGE NO. **1** OF **1**

MIDWEST BORING LOG 2300971-NEW MQT VA SITE-CRA.GPJ GEI DATA TEMPLATE.GDT 6/21/23

Page 1 of 1

Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	SB-1

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Nick K. Trimedia	5/9/2023	5/9/2023	GeoProbe 7822DT

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			4.8 Feet	feet MSL	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

SW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

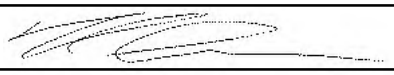
Lat 46° 33' 52.7" Long 87° 23' 23.2"

Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County		Civil Town/City/ or Village
DOW Site	Marquette		Marquette

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	60 36		1	FILL - Black sandy silt topsoil, trace organics, trace wood - moist	Topsoil									
			2	FILL - Black silty fine sand (SP), some fine to coarse gravel - moist	SP			0.0						
			3					0.5						
			4	FILL - Black and gray fine to medium sand and gravel (SW/GW), trace slag - loose - moist										
2 DP	54 36		5	(Wet at 4.8')	SW/GW			0.0						
			6											
			7					0.0						
			8	Brown fine sand (SP) - wet	SP									
			9					0.0						
				End of Boring at 9.5' Borehole converted to temporary groundwater monitoring well TW-1 upon completion of drilling										

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

Signature  Firm GEI Consultants, Inc. Tel: 920-455-8200

Page 1 of 1

Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	SB-2

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Nick K. Trimedia	5/9/2023	5/9/2023	GeoProbe 7822DT

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			7.0 Feet	feet MSL	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

SW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

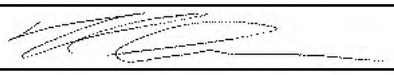
Lat 46° 33' 52.0" Long 87° 23' 34.2"

Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
DOW Site	Marquette	Marquette

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	60 36		1	FILL - Dark brown sandy silt topsoil, trace organics - moist	OH				0.5					
			2	FILL - Black, gray, and brown fine to medium sand and gravel (SW/GW), trace wood at 1.0-1.5', trace slag - moist	SW/GW			0.0						
			3					0.0						
			4											
2 DP	36 30		5					0.0						
			6											
			7					0.0						
			8	Degraded foam at 7.5-8.0'										
				End of boring at 8' Borehole filled with bentonite chips upon completion of drilling										

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

Signature  Firm GEI Consultants, Inc. Tel: 920-455-8200

Page 1 of 1

Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	SB-3

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Nick K. Trimedia	5/9/2023	5/9/2023	GeoProbe 7822DT

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			2.0 Feet	feet MSL	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

SW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

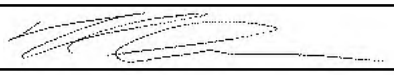
Lat 46° 33' 52.5" Long 87° 23' 38.3"

Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
DOW Site	Marquette	Marquette

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	60 42		1	FILL - Black with brown fine to medium sand and gravel (SW/GW), trace clay, trace slag - moist to wet				0.0						
			2	(Wet at 2')	SW/GW									
			3					1.2						
			4											
2 DP	60 60		5	FILL - Dark gray fine sand (SP) - wet				0.4						
			6		SP									
			7	Light brownish gray fine sand (SP) - wet				0.0						
			8		SP									
			9					0.1						
			10	End of Boring at 10' Borehole converted to temporary groundwater monitoring well TW-3 upon completion of drilling										

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

Signature  Firm GEI Consultants, Inc. Tel: 920-455-8200

Page 1 of 1

Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	SB-4

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Nick K. Trimedia	5/9/2023	5/9/2023	GeoProbe 7822DT

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			4.8 Feet	feet MSL	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

SW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

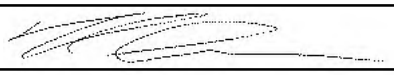
Lat 46° 33' 53.6" Long 87° 23' 38.1"

Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
DOW Site	Marquette	Marquette

Sample Number and Type	Sample 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	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	60 42		1	FILL - Dark brown grading to black at 1' fine to medium sand and gravel (SW/GW), trace slag, trace wood, trace brick - moist to wet				0.0						
			2											
			3		SW/GW			0.0						
			4	Smokey odor at 4.0'										
2 DP	36 30		5	(Wet at 4.8')				5.1						
			6					1.3						
			7	Grayish brown fine sand (SP) - wet	SP			5.3						
			8	End of Boring at 8' Borehole converted to temporary groundwater monitoring well TW-4 and vapor probe VP-4 upon completion of drilling										

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

Signature  Firm GEI Consultants, Inc. Tel: 920-455-8200

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Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	SB-5

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Nick K. Trimedia	5/9/2023	5/9/2023	GeoProbe 7822DT

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			4.8 Feet	feet MSL	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

SW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

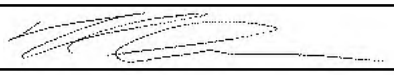
Lat 46° 33' 56.3" Long 87° 23' 38.9"

Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
DOW Site	Marquette	Marquette

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	60 24		1	FILL - Brown, red, and gray fine to coarse sand and gravel (SW/GW), trace slag, trace bricks - moist	SW/GW			0.0						
			2											
			3					0.0						
			4	FILL - Crushed concrete	CONC									
2 DP	48 36		5	FILL - Dark brown fine to coarse silty sand (SM) - wet	SM			0.0						
			6											
			7											
			8	FILL - Gray fine sand (SP) - wet	SP									
			9	End of Boring at 9' Borehole converted to temporary groundwater monitoring well TW-5 upon completion of drilling										

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

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Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	SB-6

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Nick K. Trimedia	5/9/2023	5/9/2023	GeoProbe 7822DT

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			3.0 Feet	feet MSL	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

SW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

Lat 46° 33' 58.4"

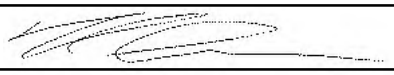
Long 87° 23' 38.9"

Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
DOW Site	Marquette	Marquette

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	60 46		1	FILL - Brown and gray with red fine to coarse sand and gravel (SW/GW), trace slag, trace bricks - moist	SW/GW			0.0						
			2											
			3	FILL - Black fine to coarse sand and gravel (SW/GW) - most to wet (Wet at 3')	SW/GW			0.0						
			4											
2 DP	36 36		5	Black organic peat (PT) - wet (organic odor)	PT			0.0						
			6											
			7	Grayish brown fine sand (SP) - wet	SP			0.0						
			8	End of Boring at 8' Borehole converted to temporary groundwater monitoring well TW-6 upon completion of drilling										

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

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Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	SB-7

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Nick K. Trimedia	5/9/2023	5/9/2023	GeoProbe 7822DT

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			5.0 Feet	feet MSL	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

SW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

Lat 46° 33' 58.5"

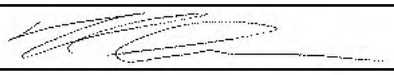
Long 87° 23' 36.0"

Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
DOW Site	Marquette	Marquette

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	60 44		1	FILL - Brown and gray with red fine to medium sand and gravel (SW/GW), trace slag, trace bricks - moist	SW/GW			0.0						
			2											
			3					0.0						
			4	(Cobble at 3.5')										
			5	FILL - Black with brown fine to medium sand and gravel (SW/GW), trace slag - moist to wet	SW/GW									
2 DP	42 40			(Wet at 5')				0.0						
			6	Black organic peat (PT) - wet	PT									
			7	Brownish gray fine sand (SP) - dense - poorly graded - saturated	SP			0.0						
			8											
				End of Boring at 8.5' Borehole converted to temporary groundwater monitoring well TW-7 upon completion of drilling										

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

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Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	SB-8

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Nick K. Trimedia	5/9/2023	5/9/2023	GeoProbe 7822DT

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			4.0 Feet	feet MSL	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

SW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

Lat 46° 34' 0.8"

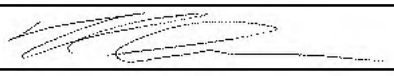
Long 87° 23' 37.4"

Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
DOW Site	Marquette	Marquette

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	60 42		1	FILL - Light gray fine to coarse sand and gravel (SW/GW), trace slag - dry to moist	SW/GW									
			1	FILL - Brownish red fine to medium sand (SW), trace coarse gravel - moist	SW			0.0						
			2											
			3	FILL - Brown with black and red fine sand (SP) - little gravel - trace wood - moist to wet				0.0						
			4	(Wet at 4')	SP									
2 DP	36 36		5					0.0						
			6	FILL - Black fine sand and gravel (SP/GP) - wet	SP/GP									
			7	Black organic peat - wet (organic odor)	PT			0.0						
			8	Brownish gray fine sand (SP) - wet	SP									
				End of Boring at 8' Borehole converted to temporary groundwater monitoring well TW-8 and vapor probe VP-8B upon completion of drilling										

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

Signature  Firm GEI Consultants, Inc. Tel: 920-455-8200

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Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	SB-9

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Nick K. Trimedia	5/9/2023	5/9/2023	GeoProbe 7822DT

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			5.0 Feet	feet MSL	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

SW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

Lat 46° 34' 3.4"

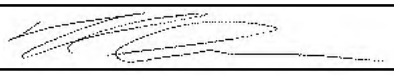
Long 87° 23' 39.1"

Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
DOW Site	Marquette	Marquette

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	60 48		0	Dark brown clayey silt topsoil, trace organics, trace gravel - moist	Topsoil				0.5					
			1	FILL - Brown with black and red fine sand and fine to coarse gravel (SP/GW), trace slag, trace wood - moist	SP/GW			0.0						
			2											
			3					0.0						
			4											
2 DP	60 48		5	FILL - Red and gray fine to coarse and and gravel (SW/GW), trace slag, trace bricks - wet	SW/GW			0.0						
			6											
			7	Black organic peat - wet (organic odor)	PT			0.0						
			8	Brownish gray fine sand (SP) - wet	SP									
			9					0.0						
			10	End of Boring at 10' Borehole converted to temporary groundwater monitoring well TW-9 upon completion of drilling										

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

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Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	SB-10

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Nick K. Trimedia	5/9/2023	5/9/2023	GeoProbe 7822DT

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			3.5 Feet	feet MSL	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

SW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

Lat 46° 34' 3.8"

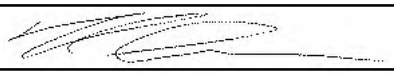
Long 87° 23' 41.1"

Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
DOW Site	Marquette	Marquette

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	60 36		1	FILL - Black, brown, and red fine to coarse sand and gravel (SW/GW), trace slag, trace bricks - moist to wet	SW/GW			0.0						
			2											
			3					0.0						
			4	(Wet at 3.5')										
			5	Black organic peat (Pt) - wet	PT									
2 DP	60 48			Brownish gray fine sand (SP) - wet				0.0						
			6											
			7		SP			0.0						
			8											
			9					0.0						
			10	End of Boring at 10' Borehole converted to temporary groundwater monitoring well TW-10 upon completion of drilling										

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

Signature  Firm GEI Consultants, Inc. Tel: 920-455-8200

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Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	SB-11

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Nick K. Trimedia	5/9/2023	5/9/2023	GeoProbe 7822DT

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			4.0 Feet	feet MSL	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

SW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

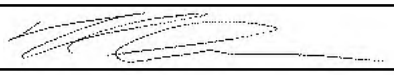
Lat 46° 34' 2.6" Long 87° 23' 40.9"

Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County		Civil Town/City/ or Village
DOW Site	Marquette		Marquette

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	60 36		1	Brown clayey silt topsoil (OH), trace organics - moist	Topsoil									
			2	FILL - Dark reddish brown with yellow fine to coarse sand and gravel (SW/GW), trace slag, trace bricks - moist to wet	SW/GW			0.0						
			3					0.0						
			4	(Wet at 4')										
2 DP	36 33		5					0.0						
			6	Black organic peat (Pt) - wet (organic odor)	PT									
			7	Brownish gray fine sand (SP) - wet	SP			0.0						
			8	End of Boring at 8' Borehole converted to temporary groundwater monitoring well TW-11 upon completion of drilling										

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

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Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	SB-12

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Nick K. Trimedia	5/10/2023	5/10/2023	GeoProbe 7822DT

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			4.0 Feet	feet MSL	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

SW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

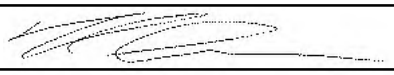
Lat 46° 33' 59.5" Long 87° 23' 40.0"

Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County		Civil Town/City/ or Village
DOW Site	Marquette		Marquette

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	60 36		1	Brown clayey silt topsoil, trace organics - moist	Topsoil				0.5					
			2	FILL - Black and gray fine to coarse sand and gravel (SW/GW), trace clay, trace slag, trace bricks - moist to wet	SW/GW			0.0						
			3					0.0						
			4	(Wet at 4')										
2 DP	36 27		5	FILL - Black fine sand and fine to coarse gravel (SP/GW) - wet	SP/GW			0.2						
			6	Black organic peat (Pt), trace wood - wet (organic odor)	PT			1.4						
			7	Brownish gray fine sand (SP) - wet	SP			0.5						
			8	End of Boring at 8' Borehole converted to temporary groundwater monitoring well TW-12 upon completion of drilling										

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

Signature  Firm GEI Consultants, Inc. Tel: 920-455-8200

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Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	SB-13

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Nick K. Trimedia	5/10/2023	5/10/2023	GeoProbe 7822DT

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			6.5 Feet	feet MSL	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

SW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

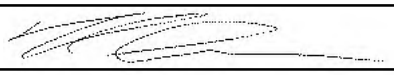
Lat 46° 33' 58.3" Long 87° 23' 37.4"

Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
DOW Site	Marquette	Marquette

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	60 30		1	Brown clayey silt topsoil, trace organics - moist	Topsoil				1.0					
			2	FILL - Reddish brown fine to coarse sand and gravel (SW/GW), trace cobbles, trace slag - moist				0.0						
			3		SW/GW			0.0						
			4	(Brick at 4.0-4.5')										
2 DP	60 36		5					0.0						
			6	FILL - Black fine sand and fine to coarse gravel (SP/GW), trace slag - moist to wet										
			7	(Wet at 6.5')	SP/GW			0.0						
			8	Black and brown organic peat (Pt), trace to little wood - wet	PT									
			9	Brownish gray fine sand (SP) - wet	SP			0.0						
			10	End of Boring at 10' Borehole converted to temporary groundwater monitoring well TW-13 upon completion of drilling										

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

Signature  Firm GEI Consultants, Inc. Tel: 920-455-8200

Page 1 of 1

Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	SB-14

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Nick K. Trimedia	5/10/2023	5/10/2023	GeoProbe 7822DT

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			2.5 Feet	feet MSL	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

SW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

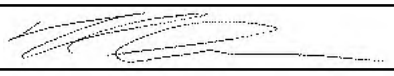
Lat 46° 33' 57.7" Long 87° 23' 39.2"

Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
DOW Site	Marquette	Marquette

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	60 40		0	FILL - Brown clayey silt topsoil, trace organics - moist	Topsoil				0.5					
			1	FILL - Reddish brown fine to medium sand (SP), some gravel, trace slag, trace bricks, trace glass - moist to wet	SP			0.0						
			2											
			3	(Wet at 2.5')										
				FILL - Black and brown fine to coarse sand and gravel (SW/GW) - wet	SW/GW			0.0						
			4											
			5	End of Boring at 5' Borehole converted to temporary vapor probe VP-14 upon completion of drilling										

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

Signature  Firm GEI Consultants, Inc. Tel: 920-455-8200

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Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	SB-15

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Nick K. Trimedia	5/10/2023	5/10/2023	GeoProbe 7822DT

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			4.0 Feet	feet MSL	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

SW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

Lat 46° 33' 59.4"

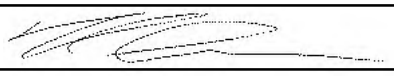
Long 87° 23' 38.5"

Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County		Civil Town/City/ or Village
DOW Site	Marquette		Marquette

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	60 50		1	Dark brown silty sandy topsoil, trace organics - moist	Topsoil				0.5					
			2	FILL - Brown with gray fine sand and fine to coarse gravel (SP/GW), trace slag - moist	SP/GW			0.0						
			3					0.0						
			4	Brown fine sand (SP) - wet	SP									
			5	End of Boring at 5' Borehole converted to temporary vapor probe VP-15 upon completion of drilling										

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

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Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	SB-16

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Nick K. Trimedia	5/10/2023	5/10/2023	GeoProbe 7822DT

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			5.0 Feet	feet MSL	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

SW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

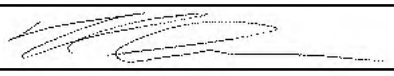
Lat 46° 34' 1.7" Long 87° 23' 39.1"

Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
DOW Site	Marquette	Marquette

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	60 48		1	Asphalt	ASPHALT									
			2	FILL - Dark brown, brown, and red fine to coarse sand and gravel (SW/GW), trace slag, trace bricks, trace wood - moist	SW/GW			0.0						
			3					0.0						
			4	FILL - Reddish brown fine sand (SP) - moist to wet										
2 DP	60 60		5	(Wet at 5')	SP			0.0						
			6											
			7	Black organic peat (Pt) - moist to wet (organic odor)	PT			0.0						
			8	Grayish brown fine sand (SP) - wet										
			9		SP			0.0						
			10	End of Boring at 10' Borehole converted to temporary groundwater monitoring well TW-16 upon completion of drilling										

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Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	MVH-24-01

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Marcus Miller Trimedia	1/25/2024	1/25/2024	GeoProbe 7822DT

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			-- Feet	feet MSL	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

SW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

Lat 46° 33' 51.3" Long 87° 23' 38.9"

Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County		Civil Town/City/ or Village
DOW Site	Marquette		Marquette

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	36 31		1	FILL - Brown fine to coarse sand and gravel (SW/GW), dense, well graded - moist	SW/GW			0						
			2	FILL - Dark brown to black fine to coarse sand (SW), trace fine gravel, medium dense, well graded - moist	SW			0						
			3	FILL - Dark gray fine sand (SP), dense, poorly graded, moist	SP									
				End of Boring at 3.0' Borehole filled with bentonite chips upon completion of drilling										
				Note: Density is approximated based on field observations										

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Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	MVH-24-02

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Marcus Miller Trimedia	1/25/2024	1/25/2024	GeoProbe 7822DT

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			-- Feet	feet MSL	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

SW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

Lat 46° 33' 52.7" Long 87° 23' 40.5"

Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
DOW Site	Marquette	Marquette

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	36 28		0	FILL - Brown fine to coarse sand and gravel (SW/GW), dense, well graded - moist	SW/GW			0.0						
			1	FILL - Black fine sand and coarse gravel (SP/GP), some coarse sand, very dense, poorly graded - moist	SP/GP			0.0						
			2	FILL - Red, light brown, and black fine to coarse sand (SW), crushed brick, trace wood, dense, well graded - moist	SW			0.2						
			3	End of Boring at 3.0' Borehole filled with bentonite chips upon completion of drilling										

Note: Density is approximated based on field observations

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Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	MVH-24-03

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Marcus Miller Trimedia	1/25/2024	1/25/2024	GeoProbe 7822DT

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			-- Feet	feet MSL	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

SW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

Lat 46° 33' 52.4" Long 87° 23' 36.7"

Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
DOW Site	Marquette	Marquette

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	36 24		1	FILL - Dark brown to black fine to coarse sand and gravel (SW/GW), trace brick, trace wood, dense, well graded - moist	SW/GW			0.0 0.2						
			2	FILL - Black fine to coarse sand (SW), trace fine gravel, dense, well graded - moist	SW			0.3						
			3	Wet at 2.75'										
				End of Boring at 3.0' Borehole filled with bentonite chips upon completion of drilling										
				Note: Density is approximated based on field observations										

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Page 1 of 1

Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	MVH-24-04

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Marcus Miller Trimedia	1/25/2024	1/25/2024	GeoProbe 7822DT

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			-- Feet	feet MSL	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

SW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

Lat 46° 33' 52.4"

Long 87° 23' 29.9"

Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
DOW Site	Marquette	Marquette

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	36 32		1	FILL - Brown fine to medium sand and fine to coarse gravel (SW/GW), medium dense, well graded - moist	SW/GW			0.0						
			2	FILL - Black fine to coarse sand (SW), slag, dense, well graded - moist	SW			0.0						
			3	FILL - Dark reddish brown fine sand (SP), trace brick, dense, poorly graded - moist	SP			0.0						
				End of Boring at 3.0' Borehole filled with bentonite chips upon completion of drilling										

Note: Density is approximated based on field observations

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Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	MVH-24-05

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Marcus Miller Trimedia	1/25/2024	1/25/2024	GeoProbe 7822DT

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			-- Feet	feet MSL	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

SW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

Lat 46° 33' 54.1" Long 87° 23' 31.8"

Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
DOW Site	Marquette	Marquette

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	36 25		1	FILL - Brown to dark brown fine to medium sand and fine gravel (SW/GP), trace roots, medium dense, well graded - moist	SW/GW			0.0						
			2	FILL - Black fine to coarse sand (SW), some slag, dense, well graded - moist	SW			0.0						
			3	FILL - Light brownish yellow crushed brick	FILL			0.4						
				End of Boring at 3.0' Borehole filled with bentonite chips upon completion of drilling										
				Note: Density is approximated based on field observations										

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

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Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	MVH-24-06

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Marcus Miller Trimedia	1/25/2024	1/25/2024	GeoProbe 7822DT

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			-- Feet	feet MSL	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

SW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

Lat 46° 33' 54.2" Long 87° 23' 34.4"

Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County		Civil Town/City/ or Village
DOW Site	Marquette		Marquette

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	36 28		1	FILL - Dark brown fine to medium sand (SW), trace fine gravel, trace organics, medium dense - moist	SW			0.0						
			2	FILL - Reddish brown fine sand (SP), trace fine gravel, trace brick, smokey odor, dense, poorly graded - moist	SP			0.0						
			3	FILL - Black fine to medium sand (SW), some slag, smokey odor, dense, well graded - moist	SW			0.0						
				End of Boring at 3.0' Borehole filled with bentonite chips upon completion of drilling										
				Note: Density is approximated based on field observations										

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

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Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	MVH-24-07

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Marcus Miller Trimedia	1/25/2024	1/25/2024	GeoProbe 7822DT

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			-- Feet	feet MSL	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

SW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

Lat 46° 33' 54.9" Long 87° 23' 36.7"

Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
DOW Site	Marquette	Marquette

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	36 30		1	FILL - Dark brown fine to medium sand (SW), trace fine gravel, trace organics, medium dense - moist	SW			0.0						
			2	FILL - Reddish brown fine sand (SP), trace fine gravel, dense, poorly graded - moist	SP			0.0						
			3	FILL - Crushed brick and stone	FILL			0.0						
				End of Boring at 3.0' Borehole filled with bentonite chips upon completion of drilling										
				Note: Density is approximated based on field observations										

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

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Page 1 of 1

Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	MVH-24-08

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Marcus Miller Trimedia	1/25/2024	1/25/2024	GeoProbe 7822DT

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			2.8 Feet	feet MSL	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

SW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

Lat 46° 33' 55.9"

Long 87° 23' 34.5"

Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County		Civil Town/City/ or Village
DOW Site	Marquette		Marquette

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	36 30		0 1 2 3	FILL - Dark brown silty sand topsoil (SM), loose - moist	SM			0.0						
				FILL - Brown fine sand (SP), trace fine gravel, dense, poorly graded, moist	SP			0.1						
				FILL - Black fine to coarse sand (SW), some slag, trace fine gravel, trace brick, smokey odor, very dense, well graded - moist	SW			0.2						
				Wet at 2.8'										
				End of Boring at 3.0' Borehole filled with bentonite chips upon completion of drilling										
				Note: Density is approximated based on field observations										

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

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Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	MVH-24-09

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Marcus Miller Trimedia	1/25/2024	1/25/2024	GeoProbe 7822DT

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			-- Feet	feet MSL	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

SW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

Lat 46° 33' 56.1" Long 87° 23' 32.8"

Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
DOW Site	Marquette	Marquette

Sample Number and Type	Sample 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	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	36 20		1	FILL - Dark brown fine sand (SP), some fine gravel, trace organics, medium dense, poorly graded - moist	SP			0.0						
			2	FILL - Brown with red fine sand (SP), trace fine gravel, dense, poorly graded - moist	SP			0.0						
			3	End of Boring at 3.0' Borehole filled with bentonite chips upon completion of drilling				0.0						

Note: Density is approximated based on field observations

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

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Page 1 of 1

Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	MVH-24-10

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Marcus Miller Trimedia	1/25/2024	1/25/2024	GeoProbe 7822DT

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			-- Feet	feet MSL	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

SW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

Lat 46° 33' 57.8" Long 87° 23' 33.2"

Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County		Civil Town/City/ or Village
DOW Site	Marquette		Marquette

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	36 18		0	FILL - Brown fine to coarse sand (SW), trace fine gravel, medium dense, well graded - moist	SW			0.0						
			1	Crushed rock at 0.8'				0.0						
			2	FILL - Light brown fine sand (SP), dense, poorly graded - moist	SP			0.0						
			3	End of Boring at 3.0' Borehole filled with bentonite chips upon completion of drilling										
				Note: Density is approximated based on field observations										

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

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Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	MVH-24-11

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Marcus Miller Trimedia	1/25/2024	1/25/2024	GeoProbe 7822DT

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			2.7 Feet	feet MSL	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

NW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

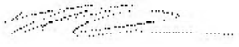
Lat 46° 34' 5.5" Long 87° 23' 37.0"

Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County		Civil Town/City/ or Village
DOW Site	Marquette		Marquette

Sample Number and Type	Sample 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	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	36 24		1	FILL - Brown fine sand (SP), some medium sand, trace fine gravel, trace organics, medium dense - moist	SP			0.0						
			2	FILL - Brown fine to coarse sand (SW), trace fine gravel, trace brick, dense, well graded - moist	SW			0.1						
			3	Wet at 2.7'				0.0						
				Gray 2" fine sand seam at 2.8'										
				End of Boring at 3.0'										
				Borehole filled with bentonite chips upon completion of drilling										
				Note: Density is approximated based on field observations										

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

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Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	MVH-24-12

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Marcus Miller Trimedia	1/25/2024	1/25/2024	GeoProbe 7822DT

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			2.5 Feet	feet MSL	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

NW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

Lat 46° 34' 5.7"

Long 87° 23' 40.9"

Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
DOW Site	Marquette	Marquette

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	36 30		1 2 3	FILL - Dark brown fine sand and fine gravel (SP/GP), trace organics, loose, poorly graded - moist	SP/GP			0.0						
				FILL - Dark brown with red fine to coarse sand and gravel (SW/GW), trace brick, trace slag, trace clay, dense, well graded - moist	SW/GW			0.0						
				FILL - Brown fine sand (SP), dense, poorly graded - moist Wet at 2.5'	SP			0.0						
				End of Boring at 3.0' Borehole filled with bentonite chips upon completion of drilling										
				Note: Density is approximated based on field observations										

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

Signature  Firm GEI Consultants, Inc. Tel: 920-455-8200

Page 1 of 1

Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	MVH-24-13

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Marcus Miller Trimedia	1/25/2024	1/25/2024	GeoProbe 7822DT

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			2.8 Feet	feet MSL	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

NW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

Lat 46° 34' 8.1" Long 87° 23' 41.1"

Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County		Civil Town/City/ or Village
DOW Site	Marquette		Marquette

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	36 24		1	FILL - Dark brown fine silty sand (SM), trace fine gravel, trace organics, loose, poorly graded - moist	SM			0.0						
			2	FILL - Brown fine to coarse sand and gravel (SW/GW), trace slag, trace brick, dense, well graded - moist	SW/GW			0.0						
			3	FILL - Reddish brown fine sand (SP), dense, poorly graded - moist	SP			0.0						
				End of Boring at 3.0' Borehole filled with bentonite chips upon completion of drilling										
				Note: Density is approximated based on field observations										

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

Signature Firm GEI Consultants, Inc. Tel: 920-455-8200

Page 1 of 1

Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	MVH-24-14

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Marcus Miller Trimedia	1/25/2024	1/25/2024	hand auger

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			-- Feet	feet MSL	4.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

NW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

Lat 46° 34' 6.8"

Long 87° 23' 38.9"

Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
DOW Site	Marquette	Marquette

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	36 36		0	FILL - Dark brown fine silty sand (SM), trace organics, loose, poorly graded - moist	SM			0.2						
			1	FILL - Brown fine sand (SP), trace fine gravel, trace silt, dense, poorly graded - moist	SP			0.1						
			2					0.1						
			3	FILL - Black fine silty sand (SM), trace slag, slight odor, dense, poorly graded - moist	SM									
				End of Boring at 3.0' Borehole filled with bentonite chips upon completion of drilling										
				Note: Density is approximated based on field observations										

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

Signature  Firm GEI Consultants, Inc. Tel: 920-455-8200

Page 1 of 1

Facility/Project Name	GEI Project Number	Boring Number
New Marquette Veterans Home Phase II	2300971	MVH-24-15

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Marcus Miller Trimedia	1/25/2024	1/25/2024	hand auger

.Unique Well No.	Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			-- Feet	feet MSL	4.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒ N, E S/C/N

NW 1/4 of SE 1/4 of Section 11, T 48 N, R 25 W

Lat 46° 34' 8.0"

Long 87° 23' 37.3"

Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County		Civil Town/City/ or Village
DOW Site	Marquette		Marquette

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 DP	36 36		1	FILL - Dark brown fine silty sand (SM), trace clay, trace organics, loose, poorly graded - moist	SM			0.0						
			2	FILL - Brown fine sand (SP), some fine to coarse gravel, dense, poorly graded - moist	SP			0.0						
			3	FILL - Brown fine sand and fine gravel (SP/GP), trace cobbles, dense, poorly graded - moist	SP/GP			0.0						
				End of Boring at 3.0' Borehole filled with bentonite chips upon completion of drilling										

Note: Density is approximated based on field observations

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

Signature  Firm GEI Consultants, Inc. Tel: 920-455-8200

ADDENDUM NO. 1

PROJECT: **MQ23-444 - Cliffs-Dow Brownfield Site - In-Situ Remediation Services**

FROM: **City of Marquette**

DATE: **July 21, 2025**

The bidder shall acknowledge receipt of all addenda by listing the addendum number where indicated on the Bid Express solicitation.

Drawings, specifications, and/or proposal are herein clarified, amended, expanded, and/or modified, as hereinafter described, and become a part of the Contract Documents with the same effect as if incorporated, therein, on the original documents. Any contrary provisions contained, or referred to, in Drawings and/or Specifications, shall remain applicable unless overridden by this addendum. Revisions herein shall include all labor, materials, methods, modifications, etc., required for completion of the Work.

---

1) **The attached list of subcontractors must be fully completed and included with the project proposal.**

In-Situ Remediation Services
Cliffs-Dow Brownfield Site
City of Marquette, Michigan

LIST OF SUBCONTRACTORS

No subcontract, whether listed herein or later proposed, may be entered into without the written consent of the OWNER and CONSULTANT.

To OWNER/CONSULTANT:

The Bidder, _____, proposes to subcontract the following work items to the following parties (if no subcontracted work is proposed check NO SUBCONTRACT WORK below):

☐ NO SUBCONTRACT WORK

1) PORTION OF WORK:_____%
Amount of Subcontract: $_____
SUBCONTRACTOR Name:

SUBCONTRACTOR Representative:

Full Address:

2) PORTION OF WORK:_____%
Amount of Subcontract: $_____
SUBCONTRACTOR Name:

SUBCONTRACTOR Representative:

Full Address:

3) PORTION OF WORK:_____%
Amount of Subcontract: $_____
SUBCONTRACTOR Name:

SUBCONTRACTOR Representative:

Full Address:

ADDENDUM NO. 2

PROJECT: **MQ23-444 - Cliffs-Dow Brownfield Site - In-Situ Remediation Services**

FROM: **City of Marquette**

DATE: **August 8th, 2025**

The bidder shall acknowledge receipt of all addenda by listing the addendum number where indicated on the Bid Express solicitation.

Drawings, specifications, and/or proposal are herein clarified, amended, expanded, and/or modified, as hereinafter described, and become a part of the Contract Documents with the same effect as if incorporated, therein, on the original documents. Any contrary provisions contained, or referred to, in Drawings and/or Specifications, shall remain applicable unless overridden by this addendum. Revisions herein shall include all labor, materials, methods, modifications, etc., required for completion of the Work.

---

1) **Contractor Questions and Answers**
2) **Davis Bacon Wage Schedule**

MQ23-444 - Cliffs-Dow Brownfield Site - In-Situ Remediation Services

Addendum 2 Questions and Answers

1. Can we switch the bond to a warranty bond after completion of the project?
   - **The payment and performance bonds terminate once the work is completed, and the City receives full release of liens from all contractors and consent from the surety company.**

2. Can you provide the prevailing wage rate sheet applicable to this site/project?
   - **See attachment to this addendum.**

3. Any restrictions on working hours (i.e., cannot start before 8AM, cannot work beyond 4:30PM, etc.)? Is an alternative schedule such as 10 day shifts possible or is a 5 day work week required?
   - **An exemption from the City's noise ordinance will be granted for this project. There will not be any restrictions on workdays or hours.**

4. Are there active utilities that we will be working near? Overhead utilities or underground utilities?
   - **There are active utilities in the road right of way.**

5. Is this an active work site or open property?
   - **There is an active shoreline resilience project along the far eastern boundary of the site. The remainder of the site is open to the east and west of Lakeshore Boulevard.**

6. Will we have sufficient footprint to establish a laydown area and amendment storage area onsite?
   - **Yes.**

7. Any requirements for the crew to access the site, such as onsite training or badging?
   - **No.**
8. Is the site fenced and considered secure?
   - **West of Lakeshore Boulevard is fenced and gated however east of Lakeshore Boulevard is not and there are public parking lots and paths.**

9. Is there water available onsite?
    - **Water will be available via a fire hydrant adjacent to the site. The contractor is responsible for obtaining a hydrant meter from the City of Marquette Public Works Department.**

10. Subsurface – does it include capping/plugging monitoring wells in the plume area?
    - **Only the proposed remediation approach would create the need for abandonment of existing site monitoring wells.**

11. What is the actual area to be treated, the blue shaded area over the first parking lot in figure #4?
    - **The area to be treated is generally the general contaminant plume. The respondent is responsible for providing the proposed treatment locations.**

12. What is the depth to groundwater?
    - **The groundwater elevation data is included in Appendix C. The depth to groundwater across the site is generally 3-7 feet below grade.**

13. How does bench testing, pilot, and full scale get managed if the methods needs to be changed under the lump sum line item?
    - **This will evaluated upon receipt of the bench and pilot scale results and proposed adjustment to the 'method'.**

14. Are other methods other than direct fluid injection acceptable?
    - **Yes, if the method meets regulatory requirements.**

15. What is the process/method evaluated that the RFP is based on?
    - **The approach to perform the scope of work with the grant budget.**

16. Can excavation of soil take place down to the mixing zone to apply processes?
    - **Yes.**

17. Please confirm that this bid is for Contractors and not Consultants. If for Contractors, please provide a copy of the Professional Services Contract for Contractors – the one provided is for a Consultant.
    - **This is for professional service providers to provide remediation design and implementation. The contract is intended to cover all work.**

18. Please provide historical groundwater levels and saturated soil concentration data.
    - **See response 12. Groundwater elevation fluctuation is between 1-2 feet.**

19. If natural attenuation data (e.g. nitrate, sulfate, carbon dioxide) data is available, please distribute.
    - **Not available.**

20. With regards to the cleanup criteria, should we consider the Mixing Zone-Based GSI Acute or Chronic criteria?
    - **Acute**

21. Should we be considering wells with historic impacts (e.g. 2023 GSI-1300B) or only wells with 2024 impacts?
    - **Only wells with the most recent observed impacts.**

22. Please define wells within the treatment area, if data has not been provided for wells within the area, e.g. UPG-100 or UPG-500, please provide the data/information.
    - **See Appendix C, for the locations within the plume.**

23. Are geologic cross sections available?
    - **No.**

24. If available, please send maps that show pertinent site features, such as lagoons, structures, known subsurface debris, impoundments, etc.
    - **See Appendix C for imagery of the site.**

25. Is shallow soil reagent mixing an option?
    - **Yes.**

26. Will the Performance Bond be tied to remedial performance or does this only pertain to the implementation of the remedial services?
    - **Implementation.**

27. Is a bid submittal an acceptance of the current contract services agreement, terms and conditions? Can the terms and conditions be further negotiated after the successful bid?
    - **No. The contract acceptance will be administered as part of the award to successful bidder**

28. If the attached bid schedule is “Not for Bidding”, what bid schedule should we use?
    - **The attached bid schedule is for reference and should not be submitted as an official bid. The items are identical to those found in the BidExpress Solicitation. Bids must be submitted via BidExpress.**

29. Will there be a scheduled site walk?
    - **Nothing is planned. However, this can be requested.**

30. Is there the ability to work extended days and on weekends?
    - **An exemption from the City’s noise ordinance will be granted for this project. There will not be any restrictions on workdays or hours.**

31. Is there soil boring data in the GSI well network area or east of the road?
    - **Subsurface soil generally consists of fine to medium sand to depths up to 60 feet grade.**

32. Is the contractor responsible for labeling and classifying any generated waste that is to be transported for disposal by another party?
    - **Yes.**

33. Is there a preferred seed variety for site restoration?
    - **Disturbances must be topsoiled, seeded with an MDOT TSM seed mixture mix and covered with a mulch blanket.**

34. Is the contractor responsible for collecting soil or groundwater samples for treatability testing?
    - **Yes.**

35. Is the contractor responsible for post treatment sampling and monitoring following completion of site activities? What is the duration for post treatment monitoring?
    - **No. Post-treatment monitoring to be performed by others.**

36. Is an onsite office trailer required?
    - **No.**

37. Is there sampling and groundwater data for GSI 700 ABC, UPG-100 ABC, and MW-500 ABC?
    - **No recent data. These wells have been eliminated from current groundwater monitoring activities based on the absence of groundwater impacts.**

38. Are we targeting Shallow, Intermedia, Deep, or ALL zones of the GSI wells? Is there any data to show contaminant distribution between Intermediate and Deep intervals?
    - **See Appendix C.**

39. What is defined as the "source area" (whole plume, MW-500, UPG-400R)?
    - **See Appendix C.**
40. Will the corresponding form related to Federal Acquisition Regulations be provided with the bid document?
    - **Contractors are required to follow any applicable FAR's. The EPA will be informing the City regarding forms. These are not part of the bid documents.**
41. Is hand clearing required?
    - **No,**
42. Is there a required grouting method when abandoning borings with neat cement?
    - **No.**
43. What utilities are anticipated to be encountered on the site?
    - **See response 4.**
44. Who's responsible for private and public utility locate?
    - **The successful bidder.**
45. Are full-scale activities anticipated to begin in the spring of 2026?
    - **Yes.**
46. Are bench treatability testing or pilot scale treatment activities required?
    - **Yes.**
47. Is it possible to use the nearest hydrant water supply? Can fire hose be utilized to cross the roadway from the nearest hydrant using ramps and traffic markings?
    - **To be determined based on the proposed source hydrant and period of use.**
48. Can you provide the "applicable Mixing Zone-Based GSI criteria"?
    - **See Appendix C.**

49. Will TriMedia sign the permits?
    - **No.**
50. Can you provide the “minimum wages as determined by the Secretary of Labor” list? Page 3. Prevailing Wages.
    - **See attachment to this addendum.**
51. Does the contractor’s SESC plan need to be stamped by a PE?
    - **No.**
52. Are we required to install a silt fence?
    - **Dependent upon proposed ground disturbance and applicable regulations.**
53. Are we required to install a temporary fence and privacy screen if it is not necessary for the type of work performed?
    - **Yes, see response to 54.**
54. Are soft barriers like caution tape or poly mesh fence acceptable forms of exclusion barriers?
    - **Yes.**
55. Is there a specified distance that injection points must remain from the lake?
    - **To be determined as part of the Part 22 exemption package.**
56. Do we need to decontaminate downhole equipment between borings?
    - **Dependent upon proposed remediation approach.**
57. Can you provide any other geochemical data (metals, nitrates, manganese, iron, sulfate, etc) to better inform water chemistry?
    - **No.**
58. Is there a cause for the effervescence observed in groundwater with elevated DO and low ORP?
    - **Unknown.**
59. Is 240,406 sq ft the correct treatment area?
    - **Bidder to evaluate**
60. Is the average target interval for VOCs and SVOCs mass 20 feet (20-40 ft bgs)?
    - **Bidder to evaluate.**
61. If detailed design increases or decreases cost, how will that be handled?
    - **Upon evaluation of the proposed scope and cost adjustment.**
62. We are recommending an SOD and buffering test for soil to finalize the design. Is the city ok with this and the associated costs?
    - **Yes.**
63. Is the city open to alternative injection remedies other than ISCO?
    - **Yes.**

64. We would recommend a 3D targeted injection plan to finalize target intervals, COC concentrations to optimize reagent dosing in order to finalize the design. Is the city open to this and the associated cost?
    - **Yes.**
65. We would recommend a bench test to determine treatment dosage for SVOCs. Is the city open to this and the associated cost?
    - **Yes.**
66. We would recommend a field pilot test to verify drilling approach and injection pressure. Is the city open to this and the anticipated cost?
    - **Yes.**

"General Decision Number: MI20250048 07/18/2025

Superseded General Decision Number: MI20240048

State: Michigan

Construction Type: Heavy

Counties: Iron and Marquette Counties in Michigan.

Heavy, Includes Water, Sewer Lines and Excavation (Excludes Hazardous Waste Removal; Coal, Oil, Gas, Duct and other similar Pipeline Construction)

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $17.75 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2025.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2025.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at http://www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/03/2025

1	01/24/2025
2	06/06/2025
3	07/04/2025
4	07/18/2025

BRMI0006-002 05/01/2024

	Rates	Fringes
BRICKLAYER	$ 34.19	24.65

CARP1510-002 06/01/2023

	Rates	Fringes
CARPENTER, Includes Form Work	$ 30.16	22.01

ELEC0219-002 06/01/2019

IRON COUNTY

	Rates	Fringes
ELECTRICIAN		
Electrical contracts of $180,000 or less	$ 31.75	21.73
Electrical contracts over $180,000	$ 33.94	21.80

ELEC1070-006 06/01/2016

MARQUETTE COUNTY

	Rates	Fringes
ELECTRICIAN		
Contracts $135,000 and under	$ 31.44	18.59
Contracts over $135,000	$ 33.44	18.67

ENGI0325-021 09/01/2024

POWER EQUIPMENT OPERATORS: Underground Construction (Including Sewer)

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1	$ 43.48	25.25
GROUP 2	$ 38.75	25.25
GROUP 3	$ 38.02	25.25
GROUP 4	$ 37.45	25.25

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Backhoe/ Excavator, Boring Machine, Bulldozer, Crane, Scraper, Loader, Trencher (over 8 ft. digging capacity)

GROUP 2: Trencher (8-ft digging capacity and smaller)

GROUP 3: Boom Truck (non-swinging, non- powered type boom)

GROUP 4: Broom/ Sweeper, Fork Truck, Tractor

ENGI0326-006 05/01/2025

EXCLUDES UNDERGROUND CONSTRUCTION

	Rates	Fringes
OPERATOR: Power Equipment		
Crane, main boom & jib 120' or longer	$ 43.81	25.00
Crane, main boom & jib 140' or longer	$ 44.63	25.00
Crane, main boom & jib 220' or longer	$ 44.92	25.00
GROUP 1 - Backhoe/Excavator; Bulldozer; Crane; Compactor; Scraper; Loader	$ 40.51	25.00
GROUP 2 - Boom truck (non-swing)	$ 37.26	25.00
GROUP 3 - Oiler	$ 35.86	12.50

FOOTNOTES: Premium rate: main boom and jib 300 feet or longer is $1.50 per hour above the 220 ft. boom and jib rate. Main boom and jib 400 feet or longer is $3.00 per hour above the 220 ft. boom and jib rate.

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* IRON0008-009 06/01/2025

	Rates	Fringes
IRONWORKER, REINFORCING AND STRUCTURAL		
Contracts $10,000,000 or greater	$ 41.05	33.67
Contracts less than $10,000,000	$ 41.05	33.67

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day & Christmas Day.

LABO0334-002 09/01/2018

SCOPE OF WORK:
OPEN CUT CONSTRUCTION: Excavation of earth and sewer, utilities, and improvements, including underground piping/conduit (including inspection, cleaning, restoration, and relining)

	Rates	Fringes
LABORER		
(1) Common or General	$ 21.19	12.85
(2) Mason Tender-Cement/Concrete	$ 21.33	12.85
(4) Grade Checker	$ 21.51	12.85
(5) Pipelayer	$ 21.56	12.85

LABO1329-002 05/01/2024

EXCLUDES OPEN CUT CONSTRUCTION

	Rates	Fringes
LABORER		
Common or General; Mason		
Tender - Cement/Concrete	$ 34.74	13.45
Pipelayer	$ 30.09	12.95

PLAS0016-035 04/01/2014

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 20.17	10.13

PLUM0111-009 05/27/2019

	Rates	Fringes
PLUMBER/PIPEFITTER	$ 34.48	25.18

TEAM0007-010 06/01/2025

	Rates	Fringes
TRUCK DRIVER		
Lowboy/Semi-Trailer Truck	$ 33.55	.75 + a+b

FOOTNOTE:
a. $470.70 per week.
b. $68.70 daily.

* SUMI2010-046 11/09/2010

	Rates	Fringes
LABORER: Landscape	$ 10.89 **	1.74
OPERATOR: Bobcat/Skid Steer/Skid Loader	$ 12.98 **	6.12
OPERATOR: Grader/Blade	$ 16.63 **	5.85
OPERATOR: Roller	$ 13.74 **	7.93
TRUCK DRIVER: Dump Truck	$ 12.63 **	1.25

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 ($17.75) or 13658 ($13.30). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this

contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to

reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210.

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END OF GENERAL DECISION"

ADDENDUM NO. 3

PROJECT: **MQ23-444 - Cliffs-Dow Brownfield Site - In-Situ Remediation Services**

FROM: **City of Marquette**

DATE: **August 12th, 2025**

The bidder shall acknowledge receipt of all addenda by listing the addendum number where indicated on the Bid Express solicitation.

Drawings, specifications, and/or proposal are herein clarified, amended, expanded, and/or modified, as hereinafter described, and become a part of the Contract Documents with the same effect as if incorporated, therein, on the original documents. Any contrary provisions contained, or referred to, in Drawings and/or Specifications, shall remain applicable unless overridden by this addendum. Revisions herein shall include all labor, materials, methods, modifications, etc., required for completion of the Work.

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1) **Metered Water**

   Metered water provided by the City of Marquette will be charged to the contractor at a rate of $10.64 per 1,000 gallons along with a fixed meter charge of $167.49 per month for the meter. These rates are subject to annual increases.

   https://www.marquettemi.gov/wp-content/uploads/2024/10/2024-2025-UTILITY-RATES.pdf

U.S. ENVIRONMENTAL PROTECTION AGENCY

Cooperative Agreement

GRANT NUMBER (FAIN): 00E03570 **MODIFICATION NUMBER:** 0 **PROGRAM CODE:** 4B	**DATE OF AWARD** 09/06/2023
TYPE OF ACTION New	**MAILING DATE** 09/11/2023
PAYMENT METHOD: ASAP	**ACH#** 50845

RECIPIENT TYPE:
Municipal

Send Payment Request to:
Contact EPA RTPFC at: rtpfc-grants@epa.gov

RECIPIENT:
City of Marquette
300 West Baraga Ave.
Marquette, MI 49855-4712
EIN: 38-6004521

PAYEE:
City of Marquette
300 West Baraga Ave.
Marquette, MI 49855-4712

PROJECT MANAGER	EPA PROJECT OFFICER	EPA GRANT SPECIALIST
Dennis Stachewicz 1100 Wright Street Marquette, MI 49855-4712 **Email:** dstachewicz@marquettemi.gov **Phone:** 906-225-8377	Ashley Green 77 W Jackson Blvd, LP-17J Chicago, IL 60604-3507 **Email:** Green.Ashley@epa.gov **Phone:** 312-886-6054	Donna Stingley Assistance Section, MA-10J **Email:** Stingley.Donna@epa.gov **Phone:** 312-353-1677

PROJECT TITLE AND DESCRIPTION

FY23 Cleanup Grant for Cliffs-Dow Site in Marquette, MI

See Attachment 1 for project description.

BUDGET PERIOD	PROJECT PERIOD	TOTAL BUDGET PERIOD COST	TOTAL PROJECT PERIOD COST
10/01/2023 - 09/30/2027	10/01/2023 - 09/30/2027	$964,250.00	$964,250.00

NOTICE OF AWARD

Based on your Application dated 07/19/2023 including all modifications and amendments, the United States acting by and through the US Environmental Protection Agency (EPA) hereby awards $964,250.00. EPA agrees to cost-share 100.00% of all approved budget period costs incurred, up to and not exceeding total federal funding of $964,250.00. Recipient's signature is not required on this agreement. The recipient demonstrates its commitment to carry out this award by either: 1) drawing down funds within 21 days after the EPA award or amendment mailing date; or 2) not filing a notice of disagreement with the award terms and conditions within 21 days after the EPA award or amendment mailing date. If the recipient disagrees with the terms and conditions specified in this award, the authorized representative of the recipient must furnish a notice of disagreement to the EPA Award Official within 21 days after the EPA award or amendment mailing date. In case of disagreement, and until the disagreement is resolved, the recipient should not draw down on the funds provided by this award/amendment, and any costs incurred by the recipient are at its own risk. This agreement is subject to applicable EPA regulatory and statutory provisions, all terms and conditions of this agreement and any attachments.

ISSUING OFFICE (GRANTS MANAGEMENT OFFICE)	AWARD APPROVAL OFFICE
ORGANIZATION / ADDRESS	**ORGANIZATION / ADDRESS**
U.S. EPA, Region 5 , U.S. EPA Region 5 Mail Code MCG10J 77 West Jackson Blvd. Chicago, IL 60604-3507	U.S. EPA, Region 5, Land, Chemicals and Redevelopment Division, L-17J R5 - Region 5 77 W Jackson Blvd Chicago, IL 60604-3507

THE UNITED STATES OF AMERICA BY THE U.S. ENVIRONMENTAL PROTECTION AGENCY

Digital signature applied by EPA Award Official William Massie - Manager, Acquisition and Assistance Branch	**DATE** 09/06/2023

EPA Funding Information

FUNDS	FORMER AWARD	THIS ACTION	AMENDED TOTAL
EPA Amount This Action	$0	$964,250	$964,250
EPA In-Kind Amount	$0	$0	$0
Unexpended Prior Year Balance	$0	$0	$0
Other Federal Funds	$0	$0	$0
Recipient Contribution	$0	$0	$0
State Contribution	$0	$0	$0
Local Contribution	$0	$0	$0
Other Contribution	$0	$0	$0
Allowable Project Cost	$0	$964,250	$964,250

Assistance Program (CFDA)	Statutory Authority	Regulatory Authority
66.818 - Brownfields Multipurpose, Assessment, Revolving Loan Fund, and Cleanup Cooperative Agreements	CERCLA: Secs. 104(k)(3) & 104(k)(5)(E) & 104(k)(10)(B)(iii) & Infrastructure Investment and Jobs Act (IIJA) (PL 117-58)	2 CFR 200, 2 CFR 1500 and 40 CFR 33

Fiscal									
Site Name	Req No	FY	Approp. Code	Budget Oganization	PRC	Object Class	Site/Project	Cost Organization	Obligation / Deobligation
-	2305QEX067	23	E4SD	05Q0AG7	000D79X89	4114	-	-	$964,250
									$964,250

Budget Summary Page

Table A - Object Class Category (Non-Construction)	Total Approved Allowable Budget Period Cost
1. Personnel	$17,000
2. Fringe Benefits	$4,250
3. Travel	$0
4. Equipment	$0
5. Supplies	$0
6. Contractual	$163,000
7. Construction	$780,000
8. Other	$0
9. Total Direct Charges	$964,250
10. Indirect Costs: 0.00 % Base	$0
11. Total (Share: Recipient 0.00 % Federal 100.00 %)	$964,250
12. Total Approved Assistance Amount	$964,250
13. Program Income	$0
14. Total EPA Amount Awarded This Action	$964,250
15. Total EPA Amount Awarded To Date	$964,250

Attachment 1 - Project Description

Brownfields are real property, the expansion, development or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. This agreement provides funding under the Infrastructure Investment and Jobs Act (IIJA) for the City of Marquette to conduct remediation activities as authorized by CERLCA 104(k)(3) at the Cliffs Dow property at 100 Wright Street and 2001 Lakeshore Boulevard, Marquette, Michigan. Historical operations at the Site dating back to 1902 included the production of charcoal, pig iron, and production of chemicals from wood. These operations resulted in releases of volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) from the former tar settling and refining process areas in soil that impacted groundwater which is migrating toward Lake Superior. The selected Cleanup approach to address soil and groundwater contamination at the Cliffs-Dow Site is In-Situ Chemical Oxidation (ISCO). Specifically, this Agreement will provide funding to the Recipient to clean up a Brownfield site(s). Additionally, the recipient will competitively procure (as needed) and direct a Qualified Environmental Professional to conduct environmental site activities, will create a community involvement plan and administrative record for the site(s), and will report on interim progress and final accomplishments by completing and submitting relevant portions of the Property Profile Form using EPA's Assessment, Cleanup and Redevelopment Exchange System (ACRES). Further, the Recipient will remediate one Brownfield site and anticipates holding community meetings, preparing an initial cleanup plan, preparing a Site Specific Quality Assurance Project Plan, developing a Response Activity Plan, and submitting 16 quarterly reports. Work conducted under this agreement will benefit the Residents, Business owners, and Stakeholders in and near the Cliffs-Dow Site. No subawards are included in this assistance agreement.

Administrative Conditions

General Terms and Conditions

The recipient agrees to comply with the current EPA general terms and conditions available at: EPA General Terms and Conditions effective October 1, 2022 or later (pdf)These terms and conditions are in addition to the assurances and certifications made as a part of the award and the terms, conditions, or restrictions cited throughout the award.

The EPA repository for the general terms and conditions by year can be found at: https://www.epa.gov/grants/grant-terms-and-conditions#general

A. Correspondence Condition

The terms and conditions of this agreement require the submittal of reports, specific requests for approval, or notifications to EPA. Unless otherwise noted, all such correspondence should be sent to the following email addresses:

Federal Financial Reports (SF-425): rtpfc-grants@epa.gov and **Donna Stingley, Grant Specialist** *at* stingley.donna@epa.gov
MBE/WBE reports (EPA Form 5700-52A): ***Karen Sykes at*** **Sykes.Karen@epa.gov** and region5closeouts@epa.gov
All other forms/certifications/assurances, Indirect Cost Rate Agreements, Requests for Extensions of the Budget and Project Period, Amendment Requests, Requests for other Prior Approvals, updates to recipient information (including email addresses, changes in contact information or changes in authorized representatives) and other notifications: **Donna Stingley**, **Grant Specialist** at **stingley.donna@epa.gov** *and* **Ashley Green, Project Officer** at **Green.Ashley@epa.gov**
Quality Assurance documents, workplan revisions, equipment lists, programmatic reports and deliverables: **Ashley Green, Project Officer** at **Green.Ashley@epa.gov**

Programmatic Conditions

FY23 Brownfields Cleanup Cooperative Agreement Infrastructure Investment and Jobs Act Funds Terms and Conditions

Please note that these Terms and Conditions (T&Cs) apply to Brownfield Cleanup Cooperative Agreements awarded under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) § 104(k) and the Infrastructure Investment and Jobs Act (IIJA).

I. GENERAL FEDERAL REQUIREMENTS

A. Federal Policy and Guidance

1. Cooperative Agreement Recipients: By awarding this cooperative agreement, the Environmental Protection Agency (EPA) has approved the application for the Cooperative Agreement Recipient (CAR) submitted in the Fiscal Year 2023 (FY23) competition for Brownfield Cleanup cooperative agreements. EPA's approval of the FY23 application indicates that the CAR is in compliance with the Site Characterization requirement (as outlined in Section III.B.9. of the FY23 Cleanup Grant Guidelines) and has provided information to EPA that demonstrates that a sufficient level of site characterization from environmental site assessments have been performed for the remediation work to begin on the site subject to this agreement.

2. In implementing this agreement, the CAR shall ensure that work done with cooperative agreement funds complies with the requirements of CERCLA § 104(k). The CAR shall also ensure that cleanup activities supported with cooperative agreement funding comply with all applicable federal and state laws and regulations. The CAR must ensure cleanups are protective of human health and the environment.

3. The CAR must consider whether it is required to conduct cleanups through a State or Tribal response program. If the CAR chooses not to participate in a State or Tribal response program, then the CAR is required to consult with the EPA Project Officer to ensure the proposed cleanup is protective of human health and the environment.

If the State or Tribe does not have a promulgated response program that is applicable to the planned brownfield activity, then the CAR is required to consult with the EPA Project Officer to ensure the protectiveness of human health and the environment.

4. A term and condition or other legally binding provision shall be included in all subawards entered into with the funds awarded under this agreement, or when funds awarded under this agreement are used in combination with non-federal sources of funds, to ensure that the CAR complies with all applicable federal and state laws and requirements. In addition to CERCLA § 104(k), applicable federal laws and requirements include 2 CFR Part 200.

5. The CAR must comply with federal cross-cutting requirements. These requirements include, but are not limited to, DBE requirements found at 40 CFR Part 33; OSHA Worker Health & Safety Standard 29 CFR § 1910.120; Uniform Relocation Act (40 USC § 61); National Historic Preservation Act (16 USC § 470); Endangered Species Act (P.L. 93-205); Permits required by Section 404 of the Clean Water Act; Executive Order 11246, Equal Employment Opportunity, and implementing regulations at 41 CFR § 60-4; Contract Work Hours and Safety Standards Act, as amended (40 USC §§ 327-333); the Anti-Kickback Act (40 USC § 276c); and Section 504 of the Rehabilitation Act of 1973 as implemented by Executive Orders 11914 and 11250. For additional information on cross-cutting requirements visit https://www.epa.gov/grants/epa-subaward-cross-cutter-requirements.

6. The CAR must comply with Davis-Bacon Act prevailing wage requirements and associated U.S. Department of Labor (DOL) regulations for all construction, alteration, and repair contracts and subcontracts awarded with funds provided under this agreement by operation of CERCLA § 104(g). For more detailed information on complying with Davis-Bacon, please see the Davis-Bacon Addendum to these terms and conditions.

7. Refer to the General Term & Conditions for Buy America Sourcing requirements under the Build America, Buy America (BABA) provisions of the Infrastructure Investment and Jobs Act (IIJA; also known as Bipartisan Infrastructure Law or BIL) (P.L. 117-58, §§70911-70917). The CAR can also refer to EPA's Frequently Asked Questions for BABA for more information.

8. The recipient agrees to have financial management and programmatic management systems in place to:

a. Track and report on expenditures of IIJA funds.

b. Track and report outputs and outcomes achieved with IIJA funds.

II. SITE OWNERSHIP/RECIPIENT ELIGIBILITY REQUIREMENTS

A. Site Ownership

1. The CAR may only clean up the site(s) it solely owns that is specified in the workplan for this cooperative agreement. The CAR must retain ownership of the site(s) while Brownfield Cleanup Grant funds are disbursed for the cleanup of the

site(s) and must consult with the EPA Project Officer prior to transferring title or otherwise conveying the real property comprising the site(s). For the purposes of this agreement, the term “owns” means fee simple title unless the EPA previously approved a different ownership arrangement.

B. Continuing Obligations for CARs

1. EPA awarded this cooperative agreement to the CAR based on information indicating that the CAR would not use cooperative agreement funds to pay for a response cost at the site for which the CAR was potentially liable under CERCLA § 107. The CAR must demonstrate that it meets the requirements for one of the Landowner Liability Protections as either a Bona Fide Prospective Purchaser (BFPP), Contiguous Property Owner (CPO), or Innocent Landowner (ILO). These requirements include certain threshold criteria and continuing obligations that must be met in order for the CAR to maintain its eligible status. If the CAR fails to meet these obligations, EPA may disallow the costs incurred under this cooperative agreement for cleaning up the site under CERCLA § 104(k)(8)(C). The Landowner Liability Protection requirements include:

a. Performing “all appropriate inquiries” into the previous ownership and uses of the property before acquiring the property.

b. Not being potentially liable or affiliated with any other person who is potentially liable for response costs at the site through any direct or indirect familial relationship, any contractual, corporate, or financial relationship, or through the result of a reorganized business entity that was potentially liable.

While not necessary to obtain ILO protection, the CAR must still establish by a preponderance of the evidence that the act or omission that caused the release or threat of release of hazardous substances and any resulting damages were caused by a third party with whom the person does not have an employment, agency, or contractual relationship.

c. Demonstrating that no disposal of hazardous substances occurred at the facility after acquisition by the landowner (does not specifically apply for the CPO protection).

d. Taking “reasonable steps” with respect to hazardous substance releases by stopping any continuing releases, preventing any threatened future releases, and preventing or limiting human, environmental, or natural resource exposure to any previously released hazardous substance.

e. Complying with any land use restrictions established or relied on in connection with the response action at the site and not impeding the effectiveness or integrity of institutional controls employed in connection with the response action.

f. Providing full cooperation, assistance, and access to persons that are authorized to conduct response actions or natural resource restoration at the site from which there has been a release or threatened release.

g. Complying with information requests and administrative subpoenas (does not specifically apply for the ILO protection).

h. Providing all legally required notices with respect to the discovery or release of any hazardous substances at the site (does not specifically apply for the ILO protection).

Notwithstanding the CAR’s continuing obligations under this agreement, the CAR is subject to the applicable liability provisions of CERCLA governing its status as a BFPP, CPO, or ILO. CERCLA requires additional obligations to maintain the liability limitations for BFPP, CPO, and ILO; the relevant provisions for these obligations include §§ 101(35), 101(40),

107(b), 107(q) and 107(r).

CARs that are exempt from CERCLA liability or do not have to meet the requirements for asserting an affirmative defense to CERCLA liability must also comply with continuing obligation items c.-h.

C. Site Substitution and Cleanup Method Changes

1. The CAR must use funds provided by this agreement to clean up the brownfield site(s) in the EPA-approved workplan. The CAR shall not substitute a different brownfield site.

2. The CAR shall not make substantial changes to the cleanup method described in the workplan, including changes to the expected cleanup based on public comment or other reasons, without prior EPA approval.

III. GENERAL COOPERATIVE AGREEMENT ADMINISTRATIVE REQUIREMENTS

A. Sufficient Progress

1. This condition supplements the requirements of the Termination and Sufficient Progress Conditions in the General Terms and Conditions.

The EPA Project Officer will assess whether the recipient is making sufficient progress in implementing its cooperative agreement 18 months and 30 months from the date of award. If EPA determines that the CAR has not made sufficient progress in implementing its cooperative agreement, the CAR, if directed to do so, must implement a corrective action plan concurred on by the EPA Project Officer and approved by the Grants Management Officer or Award Official. Alternatively, EPA may terminate this agreement under 2 CFR § 200.340 for material non-compliance with its terms, or with the consent of the CAR as provided at 2 CFR § 200.340, depending on the circumstances.

Sufficient progress at 18 months is indicated when:

an appropriate remediation plan is in place, institutional control development (if necessary) has commenced;

initial community engagement activities have taken place;

relevant state or tribal pre-cleanup requirements are being addressed;

a Qualified Environmental Professional has been procured; and

a solicitation for remediation services has been issued.

Sufficient progress at 30 months is indicated when:

at least 50% of the site-specific activities have been completed and funds have been requested by and disbursed to the CAR;

a Quality Assurance Project Plan has been approved by EPA; and

other documented activities have occurred that demonstrate to EPA’s satisfaction that the CAR will successfully perform the cooperative agreement.

B. Substantial Involvement

1. The EPA Project Officer will be substantially involved in overseeing and monitoring this cooperative agreement.

Substantial involvement, includes, but is not limited to:

a. Close monitoring of the CAR's performance to verify compliance with the EPA-approved workplan and achievement of environmental results.

b. Participation in periodic telephone conference calls to share ideas, project successes and challenges, etc., with EPA.

c. Reviewing and commenting on quarterly and annual reports prepared under the cooperative agreement (the final decision on the content of reports rests with the recipient or subrecipients receiving pass-through awards).

d. Reviewing and approving Quality Assurance Project Plans and related documents or verifying that appropriate Quality Assurance requirements have been met where quality assurance activities are being conducted pursuant to an EPA-approved Quality Assurance Management Plan.

Substantial involvement may also include, depending on the direction of the EPA Project Officer:

e. Collaboration during the performance of the scope of work including participation in project activities, to the extent permissible under EPA policies. Examples of collaboration include:

i. Consultation between EPA staff and the CAR on effective methods of carrying out the scope of work provided the CAR makes the final decision on how to perform authorized activities.

ii. Advice from EPA staff on how to access publicly available information on EPA or other federal agency websites.

iii. With the consent of the CAR, EPA staff may provide technical advice to the CAR's contractors or subrecipients provided the CAR approves any expenditures of funds necessary to follow advice from EPA staff. (The CAR remains accountable for performing contract and subaward management as specified in 2 CFR § 200.318 and 2 CFR § 200.332 as well as the terms of the EPA cooperative agreement.)

iv. EPA staff participation in meetings, webinars, and similar events upon the request of the CAR or in connection with a co-sponsorship agreement.

f. Reviewing and approving that the Analysis of Brownfield Cleanup Alternatives (ABCA), or equivalent state Brownfields program document, meets the Brownfields Program's requirements for an ABCA.

g. Reviewing proposed procurements in accordance with 2 CFR § 200.325, as well as the substantive terms of proposed contracts or subawards as appropriate. This may include reviewing requests for proposals, invitations for bid, scopes of work and/or plans and specifications for contracts over $250,000 prior to advertising for bids.

h. Reviewing the qualifications of key personnel. (EPA does not have the authority to select employees or contractors, including consultants, employed by the CAR or subrecipients receiving pass-through awards.)

i. Reviewing information in performance reports to ensure all costs incurred by the CAR and/or its contractor(s) if needed to ensure appropriate expenditure of grant funds.

EPA may waive any of the provisions in Section III.B.1. The EPA Project Officer will provide waivers to provisions a. – d. in Section III.B.1. in writing.

2. Effects of EPA's substantial involvement include:

a. EPA's review of any project phase, document, or cost incurred under this cooperative agreement will not have any effect upon CERCLA § 128 *Eligible Response Site* determinations or rights, authorities, and actions under CERCLA or any federal statute.

b. The CAR remains responsible for ensuring that all cleanups are protective of human health and the environment and comply with all applicable federal and state laws. If changes to the expected cleanup become necessary based on public comment or other reasons, the CAR must consult with the EPA Project Officer and the State.

c. The CAR and its subrecipients remain responsible for ensuring costs are allowable under 2 CFR Part 200, Subpart E.

C. Cooperative Agreement Recipient Roles and Responsibilities

1. CARs, other than state entities, that procure a contractor(s) (including consultants) where the contract will be more than the micro-purchase threshold in 2 CFR § 200.320(a)(1) ($10,000 for most CARs) must select the contractor(s) in compliance with the fair and open competition requirements in 2 CFR Part 200 and 2 CFR Part 1500. This requirement also applies to procurement processes that were completed before the award of this cooperative agreement. See the *Brownfields Grants: Guidance on Competitively Procuring a Contractor* for additional information.

CARs may procure multiple contractors to ensure the appropriate expertise is in place to perform work under the agreement (e.g., expertise to conduct site remediation activities vs. community engagement) and to allow the ability for work be performed concurrently at multiple sites.

2. The CAR must acquire the services of a Qualified Environmental Professional(s) as defined in 40 CFR § 312.10, if it does not have such a professional on staff to coordinate, direct, and oversee the brownfield site cleanup activities at a given site.

3. Cybersecurity – The recipient agrees that when collecting and managing environmental data under this cooperative agreement, it will protect the data by following all applicable State or Tribal law cybersecurity requirements.

a. EPA must ensure that any connections between the recipient's network or information system and EPA networks used by the recipient to transfer data under this agreement are secure. For purposes of this section, a connection is defined as a dedicated persistent interface between an Agency IT system and an external IT system for the purpose of transferring information. Transitory, user-controlled connections such as website browsing are excluded from this definition.

If the recipient's connections as defined above do not go through the Environmental Information Exchange Network or EPA's Central Data Exchange, the recipient agrees to contact the EPA Project Officer no later than 90 days after the date of this award and work with the designated Regional/Headquarters Information Security Officer to ensure that the connections meet EPA security requirements, including entering into Interconnection Service Agreements as appropriate. This condition does not apply to manual entry of data by the recipient into systems operated and used by EPA's regulatory programs for the submission of reporting and/or compliance data.

b. The recipient agrees that any subawards it makes under this agreement will require the subrecipient to comply with the requirements in Cybersecurity Section a. above if the subrecipient's network or information system is connected to EPA networks to transfer data to the Agency using systems other than the Environmental Information Exchange Network or EPA's Central Data Exchange. The recipient will be in compliance with this condition: by

including this requirement in subaward agreements; and during subrecipient monitoring deemed necessary by the recipient under 2 CFR § 200.332(d), by inquiring whether the subrecipient has contacted the EPA Project Officer. Nothing in this condition requires the recipient to contact the EPA Project Officer on behalf of a subrecipient or to be involved in the negotiation of an Interconnection Service Agreement between the subrecipient and EPA.

4. All geospatial data created must be consistent with Federal Geographic Data Committee (FGDC) endorsed standards. Information on these standards may be found at www.fgdc.gov.

D. Quarterly Performance Reports

1. In accordance with EPA regulations 2 CFR Parts 200 and 1500 (specifically, § 200.329, *Monitoring and Reporting Program Performance*), the CAR agrees to submit quarterly performance reports to the EPA Project Officer within 30 days after each reporting period. The reporting periods are October 1 – December 31 (1st quarter); January 1 – March 31 (2nd quarter); April 1 – June 30 (3rd quarter); and July 1 – September 30 (4th quarter).

These reports shall cover work status, work progress, difficulties encountered, preliminary data results and a statement of activity anticipated during the subsequent reporting period, including a description of equipment, techniques, and materials to be used or evaluated. A discussion of expenditures and financial status for each workplan task, along with a comparison of the percentage of the project completed to the project schedule and an explanation of significant discrepancies from the EPA-approved workplan and budget shall be included in the report. The report shall also include any changes of key personnel concerned with the project that were approved by the EPA Grants Management Officer or Award Official. (Note, as provided at 2 CFR § 200.308, *Revision of budget and program*, the CAR must seek prior approval from the EPA Grants Management Officer or Award Official for a change in a key person.)

The CAR shall refer to and utilize the Quarterly Reporting function within the Assessment, cleanup and Redevelopment Exchange System (ACRES) to submit quarterly reports unless approval is obtained from the EPA Project Officer to use an alternate format for reports.

2. The CAR must submit performance reports on a quarterly basis in ACRES using the Cleaning Quarterly Report function. Quarterly performance reports must include:

a. A summary that clearly differentiates between activities completed with EPA funds provided under the Brownfield Cleanup cooperative agreement and related activities completed with other sources of leveraged funding.

b. A summary and status of approved activities performed during the reporting quarter; a summary of the performance outputs/outcomes achieved during the reporting quarter; and a description of problems encountered during the reporting quarter that may affect the project schedule.

c. A comparison of actual accomplishments to the anticipated outputs/outcomes specified in the EPA-approved workplan and reasons why anticipated outputs/outcomes were not met.

d. An update on the project schedule and milestones, including an explanation of any discrepancies from the EPA-approved workplan.

e. A budget summary table with the following information: current approved project budget; EPA funds drawn down during the reporting quarter; costs drawn down to date (cumulative expenditures); program income generated and used (if applicable); and total remaining funds. The budget summary table must include costs that are charged to the “other” budget object class category (e.g., subawards, etc.).

The CAR shall include an explanation of any discrepancies in the budget from the EPA-approved workplan, cost overruns or high unit costs, and other pertinent information. The CAR shall include a statement on funding transfers [1] among direct budget categories or programs, functions and activities that occurred during the quarter and cumulatively during the period of performance.

f. For local governments that are using cooperative agreement funds for health monitoring, the quarterly report must also include the specific budget, the quarterly expenditure, and cumulative expenditures to demonstrate that 10% of federal funding is not exceeded.

Note: Each property where cleanup activities were performed and/or completed must have its corresponding information updated in ACRES (or via the Property Profile Form with prior approval from the EPA Project Officer) prior to submitting the quarterly performance report (see Section III.E. below).

3. The CAR must maintain records that will enable it to report to EPA on the amount of funds disbursed by the CAR to clean up the specific property(ies) under this cooperative agreement.

4. In accordance with 2 CFR § 200.329(e)(1), the CAR agrees to inform EPA as soon as problems, delays, or adverse conditions become known which will materially impair the ability to meet the outputs/outcomes specified in the EPA-approved workplan.

E. Property Profile Submission

1. The CAR must report on interim progress (e.g., clean up started) and any final accomplishments (e.g., clean up completed, contaminants removed, institutional controls required, engineering controls required) by completing and submitting relevant portions of the electronic Property Profile Form using the Assessment, Cleanup and Redevelopment Exchange System (ACRES). The CAR must enter the data in ACRES as soon as the interim action or final accomplishment has occurred, or within 30 days after the end of each reporting quarter. The CAR must enter any new data into ACRES prior to submitting the quarterly performance report to the EPA Project Officer. The CAR must utilize the electronic version of the Property Profile Form in ACRES unless approval is obtained from the EPA Project Officer to use the hardcopy version of the Property Profile Form or its use is included in the approved workplan.

F. Final Cooperative Agreement Performance Report with Environmental Results

1. In accordance with EPA regulations 2 CFR Parts 200 and 1500 (specifically, § 200.329, *Monitoring and Reporting Program Performance* and 2 CFR § 200.344(a), *Closeout*), the CAR agrees to submit to the EPA Project Officer within 120 days after the expiration or termination of the approved project period a final performance report on the cooperative agreement via email; unless the EPA Project Officer agrees to accept a paper copy of the report. The final performance report shall document and summarize the elements listed in Section III.D.2., as appropriate, for activities that occurred over the entire project period.

IV. FINANCIAL ADMINISTRATION REQUIREMENTS

A. Cost Share Requirement

1. As provided in IIJA, no cost share is required for this agreement.

B. Eligible Uses of the Funds for the Cooperative Agreement Recipient

1. To the extent allowable under the EPA-approved workplan, cooperative agreement funds may be used for eligible

programmatic expenses necessary to clean up sites. Eligible programmatic expenses include activities described in Section V. of these Terms and Conditions. In addition, eligible programmatic expenses may include:

a. Ensuring cleanup activities at a particular site are authorized by CERCLA § 104(k) and the EPA-approved workplan.

b. Ensuring that a cleanup complies with applicable requirements under federal and state laws, as required by CERCLA § 104(k).

c. Preparing and updating an Analysis of Brownfield Cleanup Alternatives (ABCA) which will include information about the site and contamination issues, cleanup standards, applicable laws, alternatives considered, and the proposed cleanup.

d. Using up to $50,0000 of the cooperative agreement funds to conduct unforeseen environmental site assessment activities only when:

i. the state or tribal environmental authority requires additional site characterization in order to move forward with the remediation, as provided at CERCLA § 104(k)(10)(B)(i)(I); or the site is not enrolled in the State or Tribal response program and the Environmental Professional recommends, in writing, additional site characterization in order to move forward with the remediation, as provided at CERCLA § 104(k)(10)(B)(i)(I); and

ii. the CAR has exhausted available resources to conduct the environmental site assessment, including the resources described in the FY23 application.

The CAR must obtain written approval from the EPA Project Officer to use funding from this cooperative agreement to characterize the site.

e. Developing a Quality Assurance Project Plan (QAPP) as required by 2 CFR § 1500.12. The specific requirement for a QAPP is outlined in *Implementation of Quality Assurance Requirements for Organizations Receiving EPA Financial Assistance* available at https://www.epa.gov/grants/implementation-quality-assurance-requirements-organizations-receiving-epa-financial.

f. Performing limited site characterization to confirm the effectiveness of the proposed cleanup design or the effectiveness of a cleanup once an action has been completed.

g. Ensuring that public participation requirements are met. This includes preparing a Community Involvement Plan which will include reasonable notice, opportunity for public involvement and comment on the proposed cleanup, and response to comments.

h. Establishing an Administrative Record.

g. Using a portion of the cooperative agreement funds to purchase environmental insurance for the remediation of the site. [Funds shall not be used to purchase insurance intended to provide coverage for any of the ineligible uses under Section IV., *Ineligible Uses of the Funds for the Cooperative Agreement Recipient*.]

j. Any other eligible programmatic costs, including direct costs incurred by the recipient in reporting to EPA; procuring and managing contracts; awarding, monitoring, and managing subawards to the extent required to comply with 2 CFR § 200.332 and the “Establishing and Managing Subawards” General Term and Condition; and carrying

out community engagement pertaining to the cleanup activities.

2. **Local Governments Only –** If authorized in the EPA-approved workplan and budget narrative, up to 10% of the funds awarded by this agreement may be used by the CAR itself as a programmatic cost for Brownfield Program development and implementation of monitoring health conditions and institutional controls. The health monitoring activities must be associated with brownfield sites at which at least a Phase II environmental site assessment is conducted and is contaminated with hazardous substances. The CAR must maintain records on funds that will be used to carry out this task to ensure compliance with this requirement.

3. Under CERCLA § 104(k)(5)(E), CARs and subrecipients may use up to 5% of the sum of direct EPA funding for this cooperative agreement for administrative costs, including indirect costs under 2 CFR § 200.414. The limit on administrative costs for the CAR under this agreement is **$48,212.50.** The total amount of indirect costs and any direct costs for cooperative agreement administration by the CAR paid for by EPA under the cooperative agreement shall not exceed this amount. Subrecipients may use up to 5% of the amount of Federal funds in their subawards for administrative costs. As required by 2 CFR § 200.403(d), the CAR and subrecipients must classify administrative costs as direct or indirect consistently and shall not classify the same types of costs in both categories. The term “administrative costs” does not include:

a. Investigation and identification of the extent of contamination of a brownfield site;

b. design and performance of a response action; or

c. monitoring of a natural resource.

Eligible cooperative agreement and subaward administrative costs subject to the 5% limitation include direct costs for:

a. Costs incurred to comply with the following provisions of the *Uniform Administrative Requirements for Cost Principles and Audit Requirements for Federal Awards* at 2 CFR Parts 200 and 1500 other than those identified as programmatic.

i. Record-keeping associated with equipment purchases required under 2 CFR § 200.313;

ii. Preparing revisions and changes in the budgets, scopes of work, program plans and other activities required under 2 CFR § 200.308;

iii. Maintaining and operating financial management systems required under 2 CFR § 200.302;

iv. Preparing payment requests and handling payments under 2 CFR § 200.305;

v. Financial reporting under 2 CFR § 200.328;

vi. Non-federal audits required under 2 CFR Part 200, Subpart F; and

vii. Closeout under 2 CFR § 200.344 with the exception of preparing the recipient’s final performance report. Costs for preparing this report are programmatic and are not subject to the 5% limitation on direct administrative costs.

b. Pre-award costs for preparation of the proposal and application for this cooperative agreement (including the final workplan) or applications for subawards are not allowable as direct costs but may be included in the CAR’s or subrecipient’s indirect cost pool to the extent authorized by 2 CFR § 200.460.

C. Ineligible Uses of the Funds for the Cooperative Agreement Recipient

1. Cooperative agreement funds shall not be used by the CAR for any of the following activities:

a. Pre-cleanup Phase I and Phase II environmental site assessment activities with the exception of site monitoring activities that are reasonable and necessary during the cleanup process, including determination of the effectiveness of a cleanup;

b. Monitoring and data collection necessary to apply for, or comply with, environmental permits under other federal and state laws, unless such a permit is required as a component of the cleanup action;

c. Construction, demolition, and site development activities that are not cleanup actions (e.g., marketing of property (activities or products created specifically to attract buyers or investors), construction of a new facility, or addressing public or private drinking water supplies that have deteriorated through ordinary use);

d. Job training activities unrelated to performing a specific cleanup at a site covered by the cooperative agreement;

e. To pay for a penalty or fine;

f. To pay a federal cost share requirement (e.g., a cost share required by another federal grant) unless there is specific statutory authority;

g. To pay for a response cost at a brownfield site for which the CAR or subaward recipient is potentially liable under CERCLA § 107;

h. To pay a cost of compliance with any federal law, excluding the cost of compliance with laws applicable to the cleanup; and

i. Unallowable costs (e.g., lobbying and purchases of alcoholic beverages) under 2 CFR Part 200, Subpart E.

2. Cooperative agreement funds shall not be used for any of the following properties:

a. Facilities listed, or proposed for listing, on the National Priorities List (NPL);

b. Facilities subject to unilateral administrative orders, court orders, and administrative orders on consent or judicial consent decree issued to or entered by parties under CERCLA;

c. Facilities that are subject to the jurisdiction, custody or control of the United States

government except for land held in trust by the United States government for an Indian tribe; or

d. A site excluded from the definition of a brownfield site for which EPA has not made a property-specific funding determination.

V. CLEANUP REQUIREMENTS

A. Authorized Cleanup Activities

1. The CAR shall prepare an Analysis of Brownfield Cleanup Alternatives (ABCA), or equivalent state Brownfields program document, which will include information about the site and contamination issues (i.e., exposure pathways, identification of contaminant sources, etc.); cleanup standards; applicable laws; alternatives considered; and the proposed cleanup. The evaluation of alternatives must include effectiveness, ability to implement, and the cost of the response proposed. The

evaluation of alternatives must also consider the resilience of the remedial options to address potential adverse impacts caused by extreme weather events (e.g., sea level rise, increased frequency and intensity of flooding, etc.). The alternatives may additionally consider the degree to which they reduce greenhouse gas discharges, reduce energy use or employ alternative energy sources, reduce volume of wastewater generated/disposed of, reduce volume of materials taken to landfills, and recycle and re-use materials generated during the cleanup process to the maximum extent practicable. The evaluation will include an analysis of reasonable alternatives including no action. The cleanup method chosen must be based on this analysis and documented in a decision document upon completion of the public comment period. The CAR must consult with the relevant state program (or EPA if there is not a state program that covers the site) to determine if the selected cleanup requires formal modification based on public comments or new information.

2. Prior to conducting or engaging in any on-site activity with the potential to impact historic properties (such as invasive sampling or cleanup), the CAR shall consult with the EPA Project Officer regarding potential applicability of the National Historic Preservation Act (NHPA) (16 USC § 470) and, if applicable, shall assist EPA in complying with any requirements of the NHPA and implementing regulations.

B. Quality Assurance (QA) Requirements

1. When environmental data are collected as part of the brownfield cleanup (e.g., cleanup verification sampling, post-cleanup confirmation sampling), the CAR shall comply with 2 CFR § 1500.12 requirements to develop and implement quality assurance practices sufficient to produce data adequate to meet project objectives and to minimize data loss. State law may impose additional QA requirements.

2. Recipients implementing environmental programs within the scope of the assistance agreement must submit to the EPA Project Officer an approvable Quality Assurance Project Plan (QAPP) at least 60 days prior to the initiating of data collection or data compilation. The Quality Assurance Project Plan (QAPP) is the document that provides comprehensive details about the quality assurance, quality control, and technical activities that must be implemented to ensure that project objectives are met. Environmental programs include direct measurements or data generation, environmental modeling, compilation of data from literature or electronic media, and data supporting the design, construction, and operation of environmental technology.

The QAPP should be prepared in accordance with EPA QA/R-5: EPA Requirements for Quality Assurance Project Plans. No environmental data collection or data compilation may occur until the QAPP is approved by the EPA Project Officer and Quality Assurance Regional Manager. Additional information on the requirements can be found at the EPA Office of Grants and Debarment website at https://www.epa.gov/grants/implementation-quality-assurance-requirements-organizations-receiving-epa-financial.

3. The recipient shall notify the EPA Project Officer and the EPA Quality Assurance Manager or designee (hereafter referred to as QAM) when substantive changes are needed to the QAPP. EPA may require the QAPP be updated and re-submitted for approval.

4. The recipient must review their approved QAPP at least annually. The results of the QAPP review and any revisions must be submitted to the EPA Project Officer and the QAM at least annually and may also be submitted when changes occur (the QAM or EPA Project Officer may add additional specifications).

5. The recipient must submit a QAPP Checklist with the QAPP. The checklist will be provided by the Project Officer to the recipient.

6. **Competency of Organizations Generating Environmental Measurement Data:** In accordance with Agency Policy

Directive Number FEM-2012-02, Policy to Assure the Competency of Organizations Generating Environmental Measurement Data under Agency-Funded Assistance Agreements, the CAR agrees, by entering into this agreement, that it has demonstrated competency prior to award, or alternatively, where a pre-award demonstration of competency is not practicable, the CAR agrees to demonstrate competency prior to carrying out any activities under the award involving the generation or use of environmental data. The CAR shall maintain competency for the duration of the project period of this agreement and this will be documented during the annual reporting process. A copy of the Policy is available online at http://www.epa.gov/fem/lab_comp.htm or a copy may also be requested by contacting the EPA Project Officer for this award.

C. Public Involvement and Community Outreach

1. All cleanup activities require a site-specific Community Involvement Plan. The plan must include providing reasonable notice to the community and opportunity for public involvement and comment on the proposed cleanup options under consideration for the site. All information, including responses to public comments and administrative records, may be made available to the public to the extent consistent with 2 CFR § 200.338 and applicable state, tribal, or local law.

D. Public Awareness

1. The CAR agrees to clearly reference EPA investments in the project during all phases of community outreach outlined in the EPA-approved workplan, which may include the development of any post-project summary or success materials that highlight achievements to which this project contributed.

a. If any documents, fact sheets, and/or web materials are developed as part of this cooperative agreement, then they shall comply with the *Acknowledgement Requirements for Non-ORD Assistance Agreements* in the General Terms and Conditions of this agreement.

b. If the EPA logo is displayed along with logos from other participating entities on websites, outreach materials, or reports, it must **not** be prominently displayed to imply that any of the recipient or subrecipient's activities are being conducted by the EPA. Instead, the EPA logo should be accompanied with a statement indicating that the City of Marquette received financial support from the EPA under an Assistance Agreement per the term and condition described in Section V.D.1.a. above. More information is available at https://www.epa.gov/stylebook/using-epa-seal-and-logo.

c. Investing in America Emblem: The recipient will ensure that a sign is placed at construction sites supported in whole or in part by this award displaying the official Investing in America emblem and must identify the project as a "project funded by President Biden's Bipartisan Infrastructure Law." The sign must be placed at construction sites in an easily visible location that can be directly linked to the work taking place and must be maintained in good condition throughout the construction period.

The recipient will ensure compliance with the guidelines and design specifications provided by EPA for using the official Investing in America emblem available at https://www.epa.gov/invest/investing-america-signage.

d. Procuring Signs: Consistent with section 6002 of RCRA, 42 U.S.C. 6962, and 2 CFR 200.323, recipients are encouraged to use recycled or recovered materials when procuring signs. Signage costs are considered an allowable cost under this assistance agreement provided that the costs associated with signage are reasonable.

Additionally, to increase public awareness of projects serving communities where English is not the predominant language, recipients are encouraged to translate the language on signs (excluding the official Investing in America

emblem or EPA logo or seal) into the appropriate non-English language(s). The costs of such translation are allowable, provided the costs are reasonable.

2. The CAR agrees to notify the EPA Project Officer listed in this award document of public or media events publicizing the accomplishment of significant events related to construction and/or site reuse projects as a result of this agreement, and provide the opportunity for attendance and participation by federal representatives with at least ten (10) working days' notice.

3. To increase public awareness of projects serving communities where English is not the predominant language, CARs are encouraged to include in their outreach strategies communication in non-English languages. Translation costs for this purpose are allowable, provided the costs are reasonable.

4. All public awareness activities conducted with EPA funding are subject to the provisions in the General Terms and Conditions on compliance with section 504 of the Americans with Disabilities Act.

E. Administrative Record

1. The CAR shall establish an Administrative Record that contains the documents that form the basis for the selection of a cleanup plan. Documents in the Administrative Record shall include the ABCA; site investigation reports; the cleanup plan; cleanup standards used; responses to public comments; and verification that shows that cleanup is complete. The CAR shall keep the Administrative Record available at a location convenient to the public and make it available for inspection. The Administrative Record must be retained for three (3) years after the termination of the cooperative agreement subject to any requirements for maintaining records of site cleanups ongoing at the time of termination.

F. Implementation of Cleanup Activities

1. The CAR shall ensure the adequacy of each cleanup in protecting human health and the environment as it is implemented.

2. If the CAR is unable or unwilling to complete the cleanup, the CAR shall ensure that the site is secure. The CAR shall notify the appropriate state agency and EPA to ensure an orderly transition should additional activities become necessary.

G. Completion of Cleanup Activities

1. The CAR shall ensure that the successful completion of a cleanup is properly documented. This must be done through a final report or letter from a Qualified Environmental Professional, or other documentation provided by a State or Tribe that shows cleanup is complete (including No Further Action letters, institutional controls, etc.). This documentation must be included as part of the Administrative Record.

H. Inclusion of Additional Terms and Conditions

1. In accordance with 2 CFR § 200.334, the CAR shall maintain records pertaining to the cooperative agreement for a minimum of three (3) years following submission of the final financial report unless one or more of the conditions described in the regulation applies. The CAR shall provide access to records relating to cleanups supported with Cleanup cooperative agreement funds to authorized representatives of the Federal government as required by 2 CFR § 200.337.

2. The CAR has an ongoing obligation to advise EPA if it assessed any penalties resulting from environmental noncompliance at the site(s) subject to this agreement.

VI. PAYMENT AND CLOSEOUT

For the purposes of these Terms and Conditions, the following definitions apply: “payment” is EPA’s transfer of funds to the CAR; “closeout” refers to the process EPA follows to ensure that all administrative actions and work required under the cooperative agreement have been completed.

A. Payment Schedule

1. The CAR may request advance payment from EPA pursuant to 2 CFR § 200.305(b)(1) and the prompt disbursement requirements of the General Terms and Conditions of this agreement.

This requirement does not apply to states which are subject to 2 CFR § 200.305(a).

B. Schedule for Closeout

1. Closeout will be conducted in accordance with 2 CFR § 200.344. EPA will close out the award when it determines that all applicable administrative actions and all required work under the cooperative agreement have been completed.

2. The CAR, within 120 days after the expiration or termination of the cooperative agreement, must submit all financial, performance, and other reports required as a condition of the cooperative agreement.

a. The CAR must submit the following documentation:

i. The Final Cooperative Agreement Performance Report as described in Section III.F. of these Terms and Conditions.

ii. Administrative and Financial Reports as described in the General Terms and Conditions of this agreement.

b. The CAR must ensure that all appropriate data have been entered into ACRES or all hardcopy Property Profile Forms are submitted to the EPA Project Officer.

c. As required by 2 CFR § 200.344, the CAR must immediately refund to EPA any balance of unobligated (unencumbered) advanced cash or accrued program income that is not authorized to be retained for use on other cooperative agreements.

[1] Per EPA’s General Term and Condition, the CAR must obtain prior approval from the EPA Grants Management Officer or Award Official for cumulative transfers of funds in excess of 10% of the total budget.

Davis-Bacon Addendum

Davis-Bacon Terms and Conditions For Cooperative Agreements to Governmental Entities

DAVIS-BACON PREVAILING WAGE TERM AND CONDITION

The following terms and conditions specify how Cooperative Agreement Recipients (CARs) will assist EPA in meeting its Davis-Bacon (DB) responsibilities when DB applies to EPA awards of financial assistance under CERCLA 104(g) and any other statute which makes DB applicable to EPA financial assistance. If a CAR has questions regarding when DB applies,

obtaining the correct DB wage determinations, DB contract provisions, or DB compliance monitoring, they should contact the regional Brownfields Coordinator or Project Officer for guidance.

1. Applicability of the Davis-Bacon Prevailing Wage Requirements

After consultation with DOL, EPA has determined that for Brownfields Grants for remediation of sites contaminated with hazardous substances and petroleum, DB prevailing wage requirements apply when the project includes the following activities.

Hazardous substances contamination:

(a) All construction, alteration and repair activity involving the remediation of hazardous substances, including excavation and removal of hazardous substances, construction of caps, barriers, structures which house treatment equipment, and abatement of contamination in buildings.

Petroleum contamination:

(a) Installing piping to connect households or businesses to public water systems or replacing public water system supply well(s) and associated piping due to groundwater contamination,

(b) Soil excavation/replacement when undertaken in conjunction with the installation of public water lines/wells described above, or

(c) Soil excavation/replacement, tank removal, and restoring the area by paving or pouring concrete when the soil excavation/replacement occurs in conjunction with both tank removal and paving or concrete replacement.

In the above circumstances, all the laborers and mechanics employed by contractors and subcontractors will be covered by the DB requirements for all construction work performed on the site. Other petroleum site cleanup activities such as in situ remediation, and soil excavation/replacement and tank removal when not in conjunction with paving or concrete replacement, will not normally trigger DB requirements.

If the CAR encounters a unique situation at a site (e.g., unusually extensive excavation, construction of permanent facilities

to house in situ remediation systems, reconstruction of roadways) that presents uncertainties regarding DB applicability, the CAR must discuss the situation with EPA before authorizing work on that site.

2. Obtaining Wage Determinations

(a) Unless otherwise instructed by EPA on a project specific basis, the CAR shall use the following DOL General Wage Classifications for the locality in which the construction activity subject to DB will take place. CARs must obtain proposed wage determinations for specific localities at https://sam.gov/.

(i) When soliciting competitive contracts, awarding new contracts or issuing task orders, work assignments or similar instruments to existing contractors (ordering instruments), the CAR shall use the "Heavy Construction" classification for the following activities:

Hazardous substances contamination: excavation and removal of hazardous substances, construction of caps, barriers, and similar activities that do not involve construction of buildings.

Petroleum contamination: installing piping to connect households or businesses to public water systems or replacing public water system supply well(s) and associated piping, including soil excavation/replacement.

(ii) When soliciting competitive contracts, awarding new contracts, or issuing ordering instruments, the CAR shall use the "Building Construction" classification for the following activities:

Hazardous substances contamination: construction of structures which house treatment equipment, and abatement of contamination in buildings (other than residential structures less than 4 stories in height).

Petroleum contamination: soil excavation/replacement, tank removal, and restoring the area by paving or pouring concrete when the soil excavation/replacement occurs in conjunction with both tank removal and paving or concrete replacement at current or former service station sites, hospitals, fire stations, industrial or freight terminal facilities, or other sites that are associated with a facility that is not used solely for the underground storage of fuel or other contaminant.

(iii) When soliciting competitive contracts, awarding new contracts or issuing ordering instruments for soil excavation/replacement, tank removal, and restoring the area by paving or pouring concrete when the soil excavation/replacement occurs in conjunction with both tank removal and paving or concrete

replacement at a facility that is used solely for the underground storage of fuel or other contaminant the CAR shall use the “Heavy Construction” classification. (Only applies to petroleum contamination.)

(iv) When soliciting competitive contracts, awarding new contracts or issuing ordering instruments for the abatement of contamination in residential structures less than 4 stories in height the CAR shall use “Residential Construction” classification. (Only applies to hazardous substances contamination.)

Note: CARs must discuss unique situations that may not be covered by the General Wage Classifications described above with EPA. If, based on discussions with a CAR, EPA determines that DB applies to a unique situation (e.g., unusually extensive excavation), the Agency will advise the CAR which General Wage Classification to use based on the nature of the construction activity at the site.

(b) CARs shall obtain the wage determination for the locality in which a Brownfields cleanup activity subject to DB will take place *prior* to issuing requests for bids, proposals, quotes or other methods for soliciting contracts (solicitation) for activities subject to DB. These wage determinations shall be incorporated into solicitations and any subsequent contracts. Prime contracts must contain a provision requiring that subcontractors follow the wage determination incorporated into the prime contract.

(i) While the solicitation remains open, the CAR shall monitor https://sam.gov/ on a weekly basis to ensure that the wage determination contained in the solicitation remains current. The CAR shall amend the solicitation if DOL issues a modification more than 10 days prior to the closing date (i.e., bid opening) for the solicitation. If DOL modifies or supersedes the applicable wage determination less than 10 days prior to the closing date, the CAR may request a finding from EPA that there is not reasonable time to notify interested contractors of the modification of the wage determination. EPA will provide a report of the Agency’s finding to the CAR.

(ii) If the CAR does not award the contract within 90 days of the closure of the solicitation, any modifications or supersedes DOL makes to the wage determination contained in the solicitation shall be effective unless EPA, at the request of the CAR, obtains an extension of the 90-day period from DOL pursuant to 29 CFR 1.6(c)(3)(iv). The CAR shall monitor https://sam.gov/ on a weekly basis if it does not award the contract within 90 days of closure of the solicitation to ensure that wage determinations contained in the solicitation remain current.

(iii) If the CAR carries out Brownfields cleanup activity subject to DB by issuing a task order, work assignment or similar instrument to an existing contractor (ordering instrument) rather than by publishing a solicitation, the CAR shall insert the appropriate DOL wage determination from https://sam.gov/ into the ordering instrument.

(c) CARs shall review all subcontracts subject to DB entered into by prime contractors to verify that the prime contractor has required its subcontractors to include the applicable wage determinations.

(d) As provided in 29 CFR 1.6(f), DOL may issue a revised wage determination applicable to a CAR's contract after the award of a contract or the issuance of an ordering instrument if DOL determines that the CAR has failed to incorporate a wage determination or has used a wage determination that clearly does not apply to the contract or ordering instrument. If this occurs, the CAR shall either terminate the contract or ordering instrument and issue a revised solicitation or ordering instrument or incorporate DOL's wage determination retroactive to the beginning of the contract or ordering instrument by change order. The CAR's contractor must be compensated for any increases in wages resulting from the use of DOL's revised wage determination.

3. Contract and Subcontract Provisions

(a) The CAR shall insert in full in any contract in excess of $2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a public building or public work, or building or work financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to DB, the following labor standards provisions.

(1) Minimum wages.

(i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the applicable wage determination of the Secretary of Labor which the CAR obtained under the procedures specified in Item 2, above, and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during

such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. CARs shall require that the contractor and subcontractors include the name of the CAR employee or official responsible for monitoring compliance with DB on the poster.

(ii)(A) The CAR, on behalf of EPA, shall require that contracts and subcontracts entered into under this agreement provide that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The EPA Award Official shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(ii)(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the CAR agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the CAR to the EPA Award Official. The Award Official will transmit the report to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the Award Official or will notify the Award Official within the 30-day period that additional time is necessary.

(ii)(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the CAR do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the Award Official shall refer the questions, including the views of all interested parties and the recommendation of the award official, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the Award Official within the 30-day period

that additional time is necessary.

(ii)(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(2) Withholding.

The CAR, upon written request of the Award Official or an authorized representative of the Department of Labor, shall withhold or cause to withhold from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, EPA may, after written notice to the contractor, or CAR take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for

bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the CAR who will maintain the records on behalf of EPA. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division website at https://www.dol.gov/whd/forms/wh347.pdf or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the CAR for transmission to the EPA, if requested by EPA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the CAR.

(ii)(B) Each payroll submitted to the CAR shall be accompanied by a “Statement of Compliance,” signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under § 5.5 (a)(3)(ii) of Regulations, 29 CFR Part 5, the appropriate information is being maintained under § 5.5 (a)(3)(i) of Regulations, 29 CFR Part 5, and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full

wages earned, other than permissible deductions as set forth in Regulations, 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(ii)(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the “Statement of Compliance” required by paragraph (a)(3)(ii)(B) of this section.

(ii)(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the EPA or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, EPA may, after written notice to the contractor, CAR, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and Trainees.

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under

the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

(5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR Part 3, which are incorporated by reference in this contract.

(6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the EPA may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this term and condition.

(7) Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors), the CAR, borrower or subrecipient and EPA, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of eligibility.

(i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

4. Contract Provisions for Contracts in Excess of $100,000

(a) Contract Work Hours and Safety Standards Act. The ***CAR*** shall insert the following clauses set forth in paragraphs

(a)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by Item 3, above or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (a)(1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (a)(1) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (a)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The ***CAR,*** upon written request of the Award Official or an authorized representative of the Department of Labor, shall withhold or cause to withhold from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (a)(2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (a)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (a)(1) through (4) of this section.

(b) In addition to the clauses contained in Item 3, above, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the CAR shall insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each

such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the CAR shall insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the (write the name of agency) and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

5. Compliance Verification

(a) The CAR shall periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that contractors or subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(3), all interviews must be conducted in confidence. The CAR must use Standard Form 1445 or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are available from EPA on request.

(b) The CAR shall establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, the CAR must conduct interviews with a representative group of covered employees within two weeks of each contractor or subcontractor's submission of its initial weekly payroll data and two weeks prior to the estimated completion date for the contract or subcontract. CARs must conduct more frequent interviews if the initial interviews or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. CARs shall immediately conduct necessary interviews in response to an alleged violation of the prevailing wage requirements. All interviews shall be conducted in confidence.

(c) The CAR shall periodically conduct spot checks of a representative sample of weekly payroll data to verify that contractors or subcontractors are paying the appropriate wage rates. The CAR shall establish and follow a spot check schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, the CAR must spot check payroll data within two weeks of each contractor or subcontractor's submission of its initial payroll data and two weeks prior to the completion date the contract or subcontract. CARs must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. In addition, during the examinations the CAR shall verify evidence of fringe benefit plans and payments thereunder by contractors and subcontractors who claim credit for fringe benefit contributions.

(d) The CAR shall periodically review contractors and subcontractors use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S Department of Labor or a state, as appropriate, and that contractors and subcontractors are not using disproportionate numbers of, laborers, trainees and apprentices. These reviews shall be conducted in accordance with the schedules for spot checks and interviews described in Item 5(b) and (c) above.

(e) CARs must immediately report potential violations of the DB prevailing wage requirements to the EPA DB contact listed above and to the appropriate DOL Wage and Hour District Office listed at https://www.dol.gov/whd/america2.htm .

PROFESSIONAL SERVICES CONTRACT AWARD RECOMMENDATION

TO: Marquette City Commission
FROM: Ryan Whaley, Manager, Environmental Consulting Services
TriMedia Environmental & Engineering
DATE: September 4, 2025
RE: Cliffs-Dow EPA Cleanup Grant - Professional Services Contract Award

EXECUTIVE SUMMARY

Following comprehensive evaluation of bid proposals from three qualified bidders for the Cliffs-Dow Site EPA Cleanup Grant services, TriMedia Environmental & Engineering Services, LLC (TriMedia) recommends awarding a Professional Services Contract to **ORIN Technologies, LLC**. This recommendation is based on technical merit, cost-effectiveness, regulatory compliance, and alignment with project objectives.

BIDDER COMPARISON OVERVIEW

Three companies submitted bids for the environmental remediation scope of the project:

- **Taplin Group LLC:** Highest bid, exceeds budget parameters
- **REGENESIS:** Lowest bid, technical approach concerns
- **ORIN Technologies, LLC:** Middle bid, just below available budget

RECOMMENDATION FOR AWARD: ORIN TECHNOLOGIES, LLC

Primary Justification Factors

1. BALANCED COST-EFFECTIVENESS ORIN Technologies (ORIN) submitted the middle bid that approaches the budget limitations while delivering comprehensive technical solutions. ORIN provides reasonable pricing that maximizes value for EPA Cleanup Grant funding.

2. SUPERIOR TECHNICAL APPROACH ORIN's methodology demonstrates technical rigor through multiple validation phases:

- Comprehensive bench testing of soil and water samples with treatment optimization
- Pilot testing program using 18 planned injection sites to validate drilling and injection methods
- Flexible approach allowing method refinement based on field conditions
- Total oxygen demand (TOD) testing with persulfate to guide treatment loading rates

3. COMPREHENSIVE TREATMENT COVERAGE ORIN's proposal covers significantly more area than competitors:

- 143 barrier wall injection sites across four strategic lines

- 74 hotspot treatment sites across two targeted grids
- Dual and single elevation injection strategies based on actual monitoring data
- Treatment depths ranging from 4-47 feet below ground level, customized by location
- Treatment of the source areas

4. PROVEN TREATMENT CHEMISTRY The proposed Bioavailable Absorbent Media (BAM) system offers environmental advantages:

- Contains >80% fixed carbon for contaminant absorption
- Utilizes hydrogen or calcium peroxide as oxidizing agents
- Includes beneficial microbe enhancement options
- Generates no concerning chemical byproducts (unlike nitrates/sulfates from other bidders)

5. REGULATORY COMPLIANCE ADVANTAGE ORIN's treatment chemicals present minimal regulatory concerns for Michigan's Environment, Great Lakes, and Energy (EGLE) department, avoiding potential permit exemption complications associated with chemicals and/or byproducts proposed for use in the other bid proposals.

6. DOCUMENTED SUCCESS RECORD Technical review indicates ORIN demonstrates strong performance in reference projects with similar remediation challenges.

CONCERNS WITH ALTERNATIVE BIDDERS

Taplin Group LLC

- Bid price significantly exceeds available budget parameters
- While technically comprehensive, the cost-prohibitive approach limits feasibility
- Standard grid injection may be over-engineered for site conditions

REGENESIS

- Lowest cost but employs stabilization rather than active remediation
- No preliminary bench testing proposed, relying solely on field monitoring
- Limited treatment area coverage (66 total injection points vs. ORIN's 217)
- Approach may not achieve regulatory cleanup standards within required timeframes

BUDGET CONSIDERATIONS

While ORIN Technologies' bid approaches budget limits, the comprehensive technical approach and superior coverage area justify the investment. If unforeseen circumstances arise, ORIN will ensure full budget compliance while maintaining technical integrity.

CONCLUSION

ORIN Technologies, LLC presents the optimal balance of technical competence, comprehensive coverage, path to regulatory compliance, and cost-effectiveness. Their systematic approach through bench testing, pilot studies, and proven treatment chemistry positions this project for success.

RECOMMENDED ACTION: Award Professional Services Contract to ORIN Technologies, LLC, subject to final budget reconciliation and contract negotiations.

This recommendation is based on technical evaluation by TriMedia and the project team and supports the City of Marquette's commitment to effective environmental stewardship and responsible use of EPA Cleanup Grant funding.

PROFESSIONAL SERVICES CONTRACT

THIS AGREEMENT, made this _____ between the City of Marquette, hereinafter called the "City" and ORIN Technologies LLC a limited liability company, hereinafter called "Consultant".

WITNESSETH: That for and in consideration of the payments and Agreements hereinafter mentioned the parties hereby agree as follows:

Article 1

Project Name

The name of the Project shall be Dow Site EPA Grant Cleanup Project.

Article 2

Scope of the Work

Consultant shall furnish all the material, services, supplies, tools, equipment, labor and other engineering services necessary to perform work as described in the Consultant's proposal to the City of Marquette dated (attached as Exhibit A).

Article 3

Time of Completion

The completion date of this project is December 31, 2026

Article 4

Terms and Conditions

Consultant shall perform the services outlined in this Agreement for the stated fee arrangement.

ACCESS TO SITE:
City will arrange and provide access to each site upon which it will be necessary for Consultant to perform its work unless otherwise stated in the proposal. In the event work is required on any site not owned by the City, City represents and warrants to Consultant that City has obtained all necessary permission and authority, in writing, for Consultant to enter upon the site and conduct its work. City shall, upon request, provide Consultant with evidence of such permission as well as acceptance of the other terms and conditions set forth herein by the owner(s) and tenant(s), if applicable, of such site(s) in a form acceptable to Consultant, which Consultant also agrees to abide by. Any work performed by Consultant with respect to obtaining permission to enter upon and do work on the lands of others, as well as any work performed by Consultant pursuant to this Agreement, shall be deemed as being done on

behalf of City. Consultant shall take reasonable measures and precautions to minimize damage to each site and any improvements located thereon as the result of its work and the use of its equipment and shall reasonably restore the site to its prior condition.

FEE:
Services and reimbursable costs will be billed on a monthly basis as per the proposal requirements, but the total amount to be paid by City for such services and costs shall not exceed $802,148.00

BILLINGS/PAYMENTS:
Consultant shall invoice for services rendered and reimbursable costs incurred on a monthly basis. Each invoice shall be due and payable within sixty (60) days of the date of the invoice. Invoices over sixty (60) days past due may be charged interest on the unpaid balance at the highest lawful rate as allowed under Michigan Law. Consultant may, after ten (10) days' written notice to the City, suspend performance of services until all past due amounts are paid.

INDEMNITY:
Consultant agrees, to the fullest extent permitted by law, to indemnify and hold the City harmless from any damage, liability or cost (including reasonable attorney fees and costs of defense) to the extent caused, in whole or in part, by Consultant's negligent acts, errors or omissions in the performance of professional services under this Agreement and those of consultants, sub-consultants, contractors, sub-contractors, agents, employees or others that contract with the Consultant regarding this contract or anyone for whom Consultant is legally liable.

FORCE MAJEURE:
No failure or delay in performance of this Contract, by either party, shall be deemed to be a breach thereof when such failure or delay is caused by a force majeure event including, but not limited to, any Act of God, strikes, lockouts, wars, acts of terrorism, riots, epidemics, explosions, sabotage, breakage or accident to equipment, the binding order of any court or governmental authority, or any other cause, whether of the kind herein enumerated or otherwise, not within the control of a party. In the event of a dispute between the parties with regard to what constitutes a force majeure event, the City's reasonable determination shall be controlling.

INSURANCE:
Without limiting any of its obligations and liabilities, Consultant, at its own expense, shall purchase and maintain the minimum insurance specified below with companies duly licensed or otherwise approved by the State of Michigan, and with forms reasonably satisfactory to the City. Each insurer shall have a current A.M. Best Company, Inc. rating of not less than A-VII. Use of alternative insurers requires prior approval from the City.

A. General Clauses

1. **Additional Insured.** The insurance coverage, except Workers' Compensation and Professional Liability, required by this Contract, shall name the City, its agents, representatives, directors, officials, and employees, as additional insured, and shall specify that insurance afforded the Consultant shall be primary insurance, and that any self insured retention and/or insurance coverage carried by the City or its employees shall be excess coverage, and not contributory coverage to that provided by the Consultant.

2. **Coverage Term.** All insurance required herein shall be maintained in full force and effect until Services required to be performed under the terms of this Contract are satisfactorily completed and formally accepted; failure to do so may constitute a material breach of this Contract, at the sole discretion of the City.

3. **Primary Coverage.** The Consultant's insurance shall be primary insurance as respects City and any insurance or self insurance maintained by City shall be excess of the Consultant's insurance and shall not contribute to it.

4. **Claim Reporting.** Consultant shall not fail to comply with the claim reporting provisions of the policies or cause any breach of a policy warranty that would affect coverage afforded under the policy to protect City.

5. **Waiver.** The policies for Workers' Compensation and General Liability, shall contain a waiver of transfer rights of recovery (subrogation) against City, its agents, representatives, directors, officers, and employees for any claims arising out of the work of the Consultant.

6. **Deductible/Retention.** The policies may provide coverage which contains deductibles or self-insured retentions. Such deductible or self-insured retentions shall not be applicable with respect to the coverage provided to City under such policies. The Consultant shall be solely responsible for deductible or self-insured retentions and the City may require the Consultant to secure the payment of such deductible or self-insured retentions by a surety bond or an irrevocable and unconditional letter of credit.

7. **Policies and Endorsements.** City reserves the right to request and to receive, within ten (10) working days, information on any or all of the above policies or endorsements.

8. **Certificates of Insurance.** Prior to commencing services under this Contract, Consultant shall furnish City with Certificates of Insurance, or formal endorsements as required by the Contract, issued by Consultant's insurer(s), as evidence that policies providing the required coverages, conditions, and limits required by this Contract are in full force and effect. Such certificate shall identify this Contract by referencing the project name and/or project number and shall provide for not less than thirty (30) days advance written notice by Certified Mail of Cancellation or Termination.

9. **Sub-Consultants/Contractors.** Consultant shall include all sub-consultants and sub-contractors as insured under its policies or shall furnish separate certificates and endorsements for each sub-consultant and sub-contractor.

B. Workers' Compensation

The Consultant shall carry Workers' Compensation and Employer's Liability insurance coverage as required by law and deemed necessary for its own protection.

In case services are subcontracted, the Consultant will require the sub-consultant to provide Workers' Compensation and Employer's Liability to at least the same extent as provided by Consultant.

C. Automobile Liability
Commercial/Business Automobile Liability insurance with a combined single limit for bodily injury and property damages of not less than $1,000,000 each occurrence regarding any owned, hired, and non-owned vehicles assigned to or used in performance of the Consultant services.

D. Commercial General Liability
Commercial General Liability insurance with a combined single limit of not less than $1,000,000. The policy shall be primary and include coverage for bodily injury, property damage, personal injury, products, completed operations, and blanket contractual covering, but not limited to, the liability assumed under the indemnification provisions of this Contract.

In the event the general liability insurance policy is written on a "claims made" basis, coverage shall extend for two (2) years past completion and acceptance of the Services as evidenced by annual Certificates of Insurance.

E. Professional Liability
The Consultant retained by the City, to provide the engineering services required by the Contract will maintain Professional Liability insurance covering errors and omissions arising out of the services performed by the Consultant or any person employed by him, with an unimpaired limit of not less than $1,000,000 each claim. In the event the insurance policy is written on a "Claims made" basis, coverage shall extend for two (2) years past completion and acceptance of Services as evidence by annual Certificates of Insurance.

F. Property Coverage - Valuable Papers
Property coverage on all-risk, replacement cost, agreed amount form with Valuable Papers insurance sufficient to assure the restoration of any documents, memoranda, reports, or other similar data relating to the services of the Consultant used in the completion of this Contract.

INDEPENDENT CONSULTANT:
The relationship between the City and Consultant created under this Agreement is that of principal and independent contractor. Neither the terms of this Agreement nor the performance thereof is intended to directly or indirectly benefit any person or entity not a party hereto and/or such person or entity is not intended to be or shall be construed as being a third-party beneficiary of this Agreement unless specified by name herein or in an Amendment hereto, executed by a Consultant authorized representative.

SEVERABILITY/SECTION HEADINGS/SURVIVAL/WAIVER:
In the event that any provision herein shall be deemed invalid or unenforceable, the other provisions shall remain in full force and effect, and binding upon the parties hereto. The heading or title of a section is provided for convenience and information and shall not serve to alter or affect the provisions included herein. All obligations arising prior to the termination of this Agreement and all provisions of this Agreement allocating responsibility or liability between the City and Consultant shall survive the completion of services and the termination of this Agreement. No waiver, discharge, or renunciation of any claim or right of Consultant arising out of breach of this Agreement by City shall be effective unless in writing signed by Consultant and supported by separate consideration.

OWNERSHIP OF DOCUMENTS:
All documents produced by the Consultant under this Agreement shall remain the property of the City and may be used by the City for any other endeavor without the written consent of the Consultant.

APPLICABLE LAWS:
Unless otherwise specified, the Agreement shall be governed by the laws of the State of Michigan.

PURCHASING AGENT DESIGNATION AND AUTHORITY:
Mikael H. Kilpela is designated as Purchasing Agent of City and is authorized to order minor changes in the work not involving adjustment in the Contract Sum or Time of Completion and not inconsistent with the intent of the Contract Documents. Such changes will be affected by written order signed by the Purchasing Agent and shall be binding on the City and Consultant.

IN WITNESS WHEREOF, the parties have made and executed this Agreement the day and year first above written.

Signed this 3rd day of September, 2025

OWNER
CITY OF MARQUETTE, OWNER

_____
Witness

_____
Jessica Hanley, Mayor

_____
Witness

_____
Kyle L. Whitney, Clerk

CONSULTANT
ORIN Technologies, LLC

Tyler Emerson
_____
_____
Witness

Larry Kinsman,

By: _____

Its: Principal Manager

Address: 405 Investment Ct. Verona, WI 53593

Telephone #: 608-838-6699

APPROVED AS TO SUBSTANCE:

Karen M. Kovacs
City Manager

APPROVED AS TO FORM:

Suzanne C. Larsen
City Attorney

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 9/3/2025

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Marsh & McLennan Agency LLC 1751 Pinnacle Drive Suite 1800 Mc Lean VA 22102	**CONTACT NAME:** **PHONE (A/C, No, Ext):** 703-354-1616 **FAX (A/C, No):** **E-MAIL ADDRESS:** macertificates@MarshMMA.com
	INSURER(S) AFFORDING COVERAGE / **NAIC #** **INSURER A :** Zurich American Ins Co of Illinois — 27855 **INSURER B :** At-Bay Specialty Insurance Company — 19607 **INSURER C :** **INSURER D :** **INSURER E :** **INSURER F :**
INSURED POLLUREMED Orin Technologies, LLC 405 Investment Court Verona WI 53593	

COVERAGES **CERTIFICATE NUMBER:** 812991437 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X **COMMERCIAL GENERAL LIABILITY** CLAIMS-MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: POLICY X PRO-JECT X LOC OTHER:	Y	Y	GPL3468414	6/1/2025	6/1/2026	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG $	$ 2,000,000 $ 100,000 $ 5,000 $ 1,000,000 $ 4,000,000 $ 1,000,000 $
A	**AUTOMOBILE LIABILITY** X ANY AUTO OWNED AUTOS ONLY SCHEDULED AUTOS X HIRED AUTOS ONLY X NON-OWNED AUTOS ONLY	Y	Y	BAP3468416	6/1/2025	6/1/2026	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) $	$ 2,000,000 $ $ $ $
A	**UMBRELLA LIAB** X OCCUR X **EXCESS LIAB** CLAIMS-MADE DED RETENTION $			SXS3468420	6/1/2025	6/1/2026	EACH OCCURRENCE AGGREGATE $	$ 9,000,000 $ 9,000,000 $
A	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** Y / N ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? N **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below	N / A	Y	WC3469967	6/1/2025	6/1/2026	X PER STATUTE OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ 1,000,000 $ 1,000,000 $ 1,000,000
A B	Pollution and Professional Liab Cyber Liability			GPL3468414 AB675755701	6/1/2025 5/9/2025	6/1/2026 5/9/2026	4,000,000 Limit 2,000,000	50,000 Deductible Cyber Limit

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Project: Dow Site EPA Grant Cleanup Project

City of Marquette, its agents, representatives, directors, officials, and employees as Additional Insureds under the General Liability and Automobile Liability as per written contract. The General Liability and Automobile Liability is on a Primary and Non-contributory basis as per written contract. A Waiver of Subrogation applies in favor of the Additional Insureds under the General Liability and Workers Compensation as per written contract.

CERTIFICATE HOLDER

City of Marquette
300 W. Baraga Ave.
Marquette MI 49855

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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