



Semiannual Report

July through December 2023

Penta Wood Products Superfund Site

Wisconsin Department of Natural Resources

February 06, 2024

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Printed date	
Last saved date	February 06, 2024
File name	11222418-RPT-12-Semiannual Report
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Client name	Wisconsin Department of Natural Resources
Project name	Penta Wood Products Superfund Site
Document title	Semiannual Report July through December 2023
Revision version	Rev X
Project number	11222418

Document status

Status Code	Revision	Author	Reviewer		Approved for issue		
			Name	Signature	Name	Signature	Date
S4	0	Thor Solberg	Tim Ree		Shawn Horn		2-6-2024

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1. Introduction

1.1 Purpose of this report

GHD Services Inc. (GHD) prepared this Semiannual Report (Report) for the Penta Wood Products Superfund Site (Site) in Siren, Wisconsin on behalf of Wisconsin Department of Natural Resources (WDNR). The Site location is shown on Figure 1.1, the Site plan is shown on Figure 1.2, and residential well locations are shown on Figure 1.3. This Report presents the results of the activities conducted at the Site during July through December 2023 including:

- Groundwater monitoring and sampling (Section 2)
- Residential well and onsite supply well sampling (Section 3)
- Waste management and disposal (Section 4)
- Continuing obligations and inspections (Section 5)
- Conclusions and recommendations (Section 6)
- Certification (Section 7)

1.2 Scope and limitations

This report has been prepared by GHD for Wisconsin Department of Natural Resources and may only be used and relied on by Wisconsin Department of Natural Resources for the purpose agreed between GHD and Wisconsin Department of Natural Resources.

GHD otherwise disclaims responsibility to any person other than Wisconsin Department of Natural Resources arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

2. Groundwater Monitoring and Sampling

Groundwater monitoring and sampling was conducted at the Site in October 2023 based on the modified scope of work provided in a GHD letter to EPA dated June 30, 2016. Wells MW4 and MW14 were subsequently added to the sampling scope to assess semi confined aquifer (lower portion) groundwater quality southeast of the LNAPL source area. Wells MW2 and MW5 were also added to the sampling scope to assess the groundwater quality in the vicinity of well MW30. A new well (MW32) was installed in May 2019 and added to the sampling scope to assess groundwater quality along the eastern property boundary. A new well (MW33) was installed in August 2023 and added to the sampling scope to assess groundwater quality at the northeast corner property boundary and the extended corrective action management unit (CAMU). In January 2021, USEPA approved modifying the frequency of groundwater monitoring from a quarterly basis to a semiannual basis as recommended in the Semiannual Report – July through December 2020 (GHD; February 10, 2021). The groundwater monitoring and sampling plan is summarized in Table 2.1. Sampling was completed in general accordance with the Quality Assurance Project Plan (QAPP) (GHD, October 2023). The objectives of the groundwater monitoring at the Site include:

- To monitor flow direction and hydraulic gradient through the measurement and assessment of groundwater levels.
- To monitor the natural attenuation of the plume through collection and chemical analysis of groundwater samples from monitoring wells.
- To monitor long term improvement in groundwater quality through the collection and chemical analysis of groundwater samples from monitoring wells.
- To monitor compliance with groundwater cleanup standards for the Site (State of Wisconsin ch. NR 140 Enforcement Standards)
- To monitor potential impact to residential wells through collection and chemical analysis of water samples from targeted residential wells.

2.1 Groundwater and LNAPL level monitoring

Groundwater and Light Non-Aqueous Phase Liquid (LNAPL) levels were measured in thirty-five (35) monitoring wells and twenty-two (22) extraction well casings at the Site on October 23, 2023. The groundwater and LNAPL elevation data along with well survey data are summarized in Table 2.2. Historical LNAPL thickness data are included in Appendix A.

Groundwater elevation contours were inferred from the October 2023 measurement data. Unconfined aquifer (upper portion) contours are shown on Figure 2.1. Semiconfined aquifer (lower portion) groundwater contours are shown on Figure 2.2. The contours indicate that the groundwater gradient is relatively flat at approximately 0.0006 ft/ft (as calculated between wells MW26 and MW27) and represent non pumping conditions following shutdown of the remediation system and groundwater extraction pumps (November 2015). The groundwater flow direction in both aquifers is primarily toward the west/northwest with potential minor radial flow components.

During the October 2023 event, LNAPL was present in monitoring wells MW18, MW19, MW20 and MW29 at measurable thicknesses. LNAPL was present in extraction wells EW03S, EW05S, EW06S, EW07S, EW10S, EW12S, and EW14S with casings screened in the unconfined (upper) aquifer. The general location of LNAPL is consistent with recent monitoring. LNAPL was not detected at any wells in the semiconfined (lower) aquifer during the October 2023 monitoring event. LNAPL thickness measurements are shown on Figure 2.3.

2.1.1 Vertical gradients

Vertical hydraulic gradients were calculated between the semiconfined and unconfined aquifers to evaluate vertical flow between the two aquifers. The vertical gradient was calculated at monitoring wells MW10/MW10S, MW12/MW16, and MW23/MW9 (see Figures 2.1 and 2.2). The vertical gradient was determined by taking the difference in groundwater elevations divided by the difference in mid screen elevations of the wells listed above.

Groundwater at the Site flows from the unconfined aquifer downward to the semiconfined aquifer. The vertical gradients at the site ranged between 0.005 ft/ft (MW10/MW10S) and 0.016 ft/ft (MW12/MW16), which is generally consistent with recent monitoring events and represents non-pumping conditions.

2.2 Groundwater sampling

This semiannual groundwater sampling event was conducted from October 23 through October 27, 2023 and consisted of collecting groundwater samples from twenty (20) monitoring wells (MW1, MW2, MW3, MW4, MW5, MW6S, MW10, MW12, MW13, MW14, MW17, MW21, MW22, MW23, MW25, MW28, MW30, MW31, MW32, and MW33) and three (3) extraction wells (EW11D, EW11S, and EW13S). Wells MW10S, MW20, and MW29 were not sampled due to the presence of LNAPL in the wells. Well MW16 was not sampled due to insufficient water in the well casing to collect a sample. Groundwater samples were collected using low flow purge and sample protocol. As part of the well stabilization process, the groundwater was measured in the field for the following parameters: pH, temperature, specific conductance, dissolved oxygen (DO), and oxidation reduction potential (ORP), iron, and sulfide.

The parameters DO, ORP, iron, and sulfide are used to help evaluate the groundwater geochemical conditions at the well. The groundwater purging and sampling data are summarized in Table 2.3.

The groundwater samples were collected and analyzed for the following compounds: pentachlorophenol (PCP); naphthalene; benzene, toluene, ethylbenzene, and xylene (BTEX); natural attenuation parameters; and select dissolved and total metals. The natural attenuation parameters included alkalinity, chloride, hardness, nitrate, sulfate, total organic carbon, and methane. The results of the natural attenuation parameters were evaluated to confirm the groundwater reduction oxidation conditions at the Site and if the groundwater conditions are favorable for biodegradation. The select dissolved and total metals included arsenic, copper, iron, manganese, and zinc. The dissolved metals samples were filtered in the field through a 0.45-micron filter. The groundwater sample analytical data are summarized in Table 2.4.

All groundwater samples were shipped via commercial courier under standard chain of custody procedures to Eurofins Environment Testing America (Eurofins) in University Park, Illinois for analysis. Copies of laboratory reports are included in Appendix B. The data verification report is provided in Appendix C.

The following sections present a discussion of the groundwater sample analytical data and the Wisconsin Chapter NR140 enforcement standards (ES). Historical data and PCP concentration charts are included in Appendix A.

2.2.1 Naphthalene and BTEX analytical data

The October 2023 naphthalene and BTEX analytical data are summarized in Table 2.4. Naphthalene and BTEX were not detected at concentrations that exceeded the ESs.

2.2.2 PCP analytical data

The October 2023 PCP analytical data are summarized in Table 2.4. PCP was detected in six (6) wells (MW5, MW10, MW12, MW30, EW11D, and EW13S) at concentrations that exceeded the ES (1.0 µg/L). Figure 2.4 shows the PCP concentrations in the unconfined (upper) aquifer wells. Figure 2.5 shows the PCP concentrations in the semiconfined (lower) aquifer wells.

Consistent with monitoring data since prior to shutdown of the remediation system in 2015, elevated PCP concentrations (i.e., greater than 1,000 µg/L) are primarily limited to the immediate vicinity of the LNAPL area in the unconfined aquifer. During October 2023, PCP was detected in well EW11D at a concentration of 900 µg/L, which is greater than concentrations prior to October 2022.

2.2.3 Arsenic analytical data

The October 2023 dissolved and total arsenic analytical data are summarized in Table 2.4. Dissolved arsenic was not detected in any wells at concentrations that exceeded the ES (10 µg/L). Total arsenic was detected in one well (EW13S) at a concentration of 10.4 µg/L, which exceeds the ES (10 µg/L). Figure 2.6 shows the dissolved arsenic concentrations in the unconfined (upper) aquifer wells. Figure 2.7 shows the dissolved arsenic concentrations in the semiconfined (lower) aquifer wells.

Consistent with monitoring data since prior to shutdown of the remediation system in 2015, arsenic concentrations are limited to isolated areas within the Site property boundaries in the unconfined and semiconfined aquifers, which indicates the plume remained stable.

2.2.4 Other metals analytical data

The October 2023 dissolved and total metals analytical data are summarized in Table 2.4. Zinc and copper were not detected at concentrations that exceeded the ESs.

Total iron was detected in nine (9) wells at concentrations exceeding the ES (300 µg/L), with dissolved iron detected at concentrations exceeding the ES in five (5) of those wells. Total manganese was detected in six (6) wells at

concentrations exceeding the ES (50 µg/L), with dissolved manganese detected in concentrations exceeding the ES in four (4) of those wells. The ES for iron and manganese are considered secondary health-based standards that are based on aesthetics (i.e., odor and taste).

2.2.5 Natural attenuation parameters analytical data

The natural attenuation results are provided in Table 2.4. The results generally show elevated levels of nitrate and sulfate and low concentrations of TOC and methane. These results in combination with the field stabilization parameters of DO, ORP, iron, and sulfide (Table 2.3) show that the groundwater beneath the Site is aerobic to slightly anaerobic because DO values are greater than 1 mg/L and ORP values are positive at the majority of wells outside the immediate vicinity of the LNAPL area in both the unconfined and semiconfined aquifers.

3. Residential Well and Onsite Supply Well Sampling

During October 2023, water samples were collected from seven residential wells located near the Site in general accordance with the QAPP. The residential wells include:

- 8713 Daniels 70 (RW1)
- 8627 Daniels 70 (RW2)
- 8454 Daniels 70 (RW3)
- 8526 Daniels 70 (RW4)
- 8783 Daniels 70 (RW5)
- 8542 West Doctor Lake Road (RW6 and RW6 Shop)
- (DW01)

The onsite water supply well (DW01) serves the remediation equipment building. The water was previously used for sanitary facilities in the building and maintaining the remediation equipment but is not ingested by workers. During January 2018, the building heater malfunctioned, and the water supply pipes were damaged due to freezing. The water supply piping was subsequently disconnected at the building. The onsite water supply well no longer provides a water supply to the building. The pump within the supply well was not functioning and a sample could not be collected during October 2023.

The residential well and onsite water supply well locations are shown on Figure 1.3. Residential well water samples were collected on October 3, 2023 and analyzed for PCP, BTEX, and naphthalene.

3.1 Residential well and onsite supply well sample analytical data

PCP, BTEX, and naphthalene were not detected in the residential wells, which is similar with historical data. The residential well sample analytical data are summarized in Table 3.1. Copies of the laboratory reports are included in Appendix B, and the data verification report is included in Appendix C. Historical residential and onsite water supply well PCP data are included in Appendix A. Semiannual sampling will continue at all residential wells to identify and track potential PCP concentration trends.

4. Waste Management and Disposal

No waste was disposed during July through December, 2023. GHD continues to collect and containerize PPE and other waste produced during sampling events onsite. A composite sample of containerized waste was collected on April 28, 2023 and analyzed for total RCRA VOCs, SVOCs, and metals to characterize the material and develop a waste disposal profile. Historical hazardous waste disposal is summarized in Appendix A.

5. Continuing Obligations and Inspections

The WDNR has implemented Institutional Controls (ICs) at the Site in the form of Continuing Obligations (COs). COs are legal requirements designed to protect public health and the environment in regard to contamination that remains on a property, and COs still apply after a property is sold. The Long-Term Response Action Operation and Maintenance Plan (O&M Plan) – Addendum No. 1 (GHD; November 9, 2015) effectively serves as an Institutional Control Implementation and Assurance Plan (ICIAP). This section documents the COs in addition to inspections required by the O&M Plan (GHD; July 22, 2015).

5.1 Continuing obligations

On July 6, 2015, the WDNR provided a letter approving the Remedial Actions with Continuing Obligations (WDNR BRRTS Activity #02 07 000532, FID #: 807050310). That letter approved the remedies which have been implemented at the Site and specified the condition with which any current or future owner of the property must comply to ensure that the Site does not pose a threat. These conditions or COs meet the intent of the ICs required by the ROD for the Site.

CO maintenance consists of periodic monitoring and reporting to confirm that Site security is in place and providing protection as intended and that use of the land is restricted to maintain the integrity and functional effectiveness of the Site remedy.

Maintenance activities consist of periodic review of the property and COs by WDNR, notifications to new landowners or lessees, and continuing education for landowners and property users through annual updates and information.

To facilitate monitoring of the COs, roles and responsibilities, schedules, corrective actions, and reporting requirements were performed as follows:

1. Periodic monitoring was conducted whenever WDNR or its contractors or other representatives were present at the Site.
2. Prohibition of use of the Site real estate is evaluated and updated on an annual basis (minimum frequency). This evaluation determined:
 - The selected remedy (i.e., remediation system shutdown pilot study and associated monitoring) remains in place and remains effective.
 - Site security remains effective and real estate use meets the stated objectives and performance goals and provides protection required by the response.
3. With the exception of work associated with the wetland excavation and surface debris mitigation remedial action, evidence was not observed of the following improper uses:
 - Removal of the existing barrier or cover,
 - Replacement with another barrier or cover,
 - Excavating or grading of the land surface,
 - Filling on covered or paved areas,

- Plowing for agricultural cultivation,
- Construction or placement of a building or other structure, or
- Changing the use or occupancy of the property to a residential exposure setting, which may include certain uses, such as single or multiple family residences, a school, day care, senior center, hospital, or similar residential exposure setting.

An inspection of continuing obligations items was completed on October 27, 2023 and a copy of the continuing obligations inspection form is included in Appendix D.

5.2 Inspections

Additional inspections required by the O&M Plan (GHD; July 22, 2015) were conducted during this monitoring period. The results of the inspections are as follows:

- The CAMU area fence is in satisfactory condition and does not require repairs; the CAMU fence gates remain closed and locked when GHD and/or WDNR are not at the Site. A new CAMU fence was installed around the CAMU extension as part of the remedial action.
- The original CAMU area surface soils were in good condition during this monitoring period and did not require repairs; erosion, subsidence, and ponding water were not observed on the CAMU. Trees and bushes are growing on the CAMU and may require removal. Vegetation establishment and erosion repairs were performed as part of the remedial action over the CAMU extension.

Site well inspections were completed on October 27, 2023 and a copy of the well inspection form is included in Appendix D.

6. Conclusions and Recommendations

Based on the July through December 2023 monitoring and sampling data, the following conclusions are made and represent lines of evidence supporting selection of an alternate remedy:

- LNAPL limits indicate that the LNAPL did not migrate following shutdown of the remediation system in 2015 and indicate overall stability of the LNAPL body.
- NSZD is occurring within the LNAPL body at this Site.
- Dissolved PCP concentrations greater than 1,000 µg/L are primarily limited to the immediate vicinity of the LNAPL area. During October 2023, PCP was detected in well EW11D at a concentration of 900 µg/L, which is greater than concentrations prior to October 2022. Dissolved PCP degrades naturally in the aerobic zone outside of the LNAPL area, which helps stabilize the plume and prevent migration.
- Dissolved PCP degrades in the anaerobic zone (LNAPL source area) at a slow rate.
- The rate that dissolved PCP partitions from the LNAPL is slow enough and the rate of natural degradation is fast enough that migration is limited.

USEPA provided funding to WDNR to complete the wetland excavation and surface debris remedial action as part of a cooperative agreement. WDNR contracted with Rock Leaf Water Environmental to complete the remedial action, and GHD provided oversight services. The remedial action started at the Site during 2022 and was completed in August 2023, with vegetation establishment over disturbed work areas expected to be completed by the summer of 2024. Completion of the work will be documented in a separate report submitted to USEPA.

Following USEPA's review of the Semiannual Report and Alternate Remedy Recommendation (GHD; March 17, 2020), USEPA, WDNR, and GHD held discussions regarding potential future remedial actions at the Site. Additional investigation including drilling and groundwater sampling was conducted in November and December, 2023. Completion of the work will be documented in a separate report submitted to USEPA.

While future potential actions are assessed, WDNR recommends monitoring and sampling at the Site as summarized in Table 2.1 and as follows:

- Semiannual groundwater and LNAPL level monitoring during April and October.
- Semiannual groundwater sampling during April and October.
- Semiannual residential well sampling during April and October.
- Semiannual report preparation and submittal in January and July.

The recommended contingency remedy includes keeping the existing remediation system infrastructure in place for potential future groundwater and/or LNAPL extraction and treatment while potential future remedial actions are assessed.

7. Certification

The current actions at the Site remain protective of human health and the environment based on an evaluation of the current data. Implementation of the contingency remedy discussed above is not necessary at this time.



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Tables

**Groundwater Monitoring and Sampling Plan
Penta Wood Products Superfund Site
Siren, Wisconsin**

Well ID	Semiannual Groundwater/LNAPL Level Monitoring ¹	Semiannual Groundwater Sampling ^{2, 3, 4}
Unconfined (Upper) Aquifer		
MW1	X	X
MW2	X	X
MW5	X	X
MW6S	X	X
MW9	X	
MW10S	X	X
MW13	X	X
MW16	X	X
MW18	X	
MW19	X	
MW20	X	X
MW21	X	X
MW22	X	X
MW24	X	
MW25	X	X
MW26	X	
MW27	X	
MW28	X	X
MW29	X	X
MW30	X	X
MW31	X	X
MW32	X	X
MW33	X	X
EW02S	X	
EW03S	X	
Unconfined (Upper) Aquifer		
EW04S	X	
EW05S	X	
EW06S	X	

**Groundwater Monitoring and Sampling Plan
Penta Wood Products Superfund Site
Siren, Wisconsin**

Well ID	Semiannual Groundwater/LNAPL Level Monitoring ¹	Semiannual Groundwater Sampling ^{2, 3, 4}
EW07S	X	
EW10S	X	
EW11S	X	X
EW12S	X	
EW13S	X	X
EW14S	X	
Semiconfined (Lower) Aquifer		
MW3	X	X
MW4	X	X
MW6	X	
MW7	X	
MW8	X	
MW10	X	X
MW11	X	
MW12	X	X
MW14	X	X
MW15	X	
MW17	X	X
MW23	X	X
EW02D	X	

**Groundwater Monitoring and Sampling Plan
Penta Wood Products Superfund Site
Siren, Wisconsin**

Well ID	Semiannual Groundwater/LNAPL Level Monitoring ¹	Semiannual Groundwater Sampling ^{2, 3, 4}
Semiconfined (Lower) Aquifer		
EW03D	X	
EW04D	X	
EW05D	X	
EW06D	X	
EW07D	X	
EW10D	X	
EW11D	X	X
EW12D	X	
EW13D	X	
EW14D	X	

Notes:

- 1 Groundwater/LNAPL level monitoring conducted on a semiannual basis in April and October.
- 2 Groundwater sampling conducted on an annual basis in April
- 3 Groundwater sample laboratory analyses include the following parameters: Pentachlorophenol (PCP); naphthalene; benzene, toluene, ethylbenzene, and xylenes (BTEX); natural attenuation parameters (alkalinity, chloride, hardness, nitrate, sulfate, total organic carbon, and methane); and select dissolved and total metals (arsenic, copper, iron, manganese, and zinc). Field parameter measurements include the following parameters: pH, temperature, specific conductance, dissolved oxygen (DO), oxidation-reduction potential (ORP), iron, and sulfide.
- 4 Groundwater samples will not be collected if LNAPL is present in the well casing.

Table 2.2

**Groundwater and LNAPL Level Monitoring Data
Penta Wood Products Superfund Site
Siren, Wisconsin**

Well ID	Date	Top of Casing Elevation (feet)	Depth to Groundwater (feet btoc)	Depth to LNAPL (feet btoc)	Groundwater Elevation (feet AMSL)	LNAPL Elevation (feet AMSL)	LNAPL Thickness (feet)
Semiconfined Aquifer (Lower)							
MW3	10/23/2023	1129.44	145.62	ND	983.82	NA	0.00
MW4	10/23/2023	1087.72	104.37	ND	983.35	NA	0.00
MW6	10/23/2023	1109.11	125.52	ND	983.59	NA	0.00
MW7	10/23/2023	1096.25	112.81	ND	983.44	NA	0.00
MW8	10/23/2023	1091.13	107.51	ND	983.62	NA	0.00
MW10	10/23/2023	1089.01	105.32	ND	983.69	NA	0.00
MW11	10/23/2023	1085.48	102.49	ND	982.99	NA	0.00
MW12	10/23/2023	1080.91	97.28	ND	983.63	NA	0.00
MW14	10/23/2023	1078.25	94.88	ND	983.37	NA	0.00
MW15	10/23/2023	1127.09	143.13	ND	983.96	NA	0.00
MW17	10/23/2023	1084.43	100.76	ND	983.67	NA	0.00
MW23	10/23/2023	1026.16	42.80	ND	983.36	NA	0.00
EW02D	10/23/2023	1083.00	99.11	ND	983.89	NA	0.00
EW03D	10/23/2023	1089.48	105.62	ND	983.86	NA	0.00
EW04D	10/23/2023	1101.09	117.05	ND	984.04	NA	0.00
EW05D	10/23/2023	1076.99	93.08	ND	983.91	NA	0.00
EW06D	10/23/2023	1083.39	99.41	ND	983.98	NA	0.00
EW07D	10/23/2023	1087.52	103.41	ND	984.11	NA	0.00
EW10D	10/23/2023	1088.55	104.60	ND	983.95	NA	0.00
EW11D	10/23/2023	1048.19	64.13	ND	984.06	NA	0.00
EW12D	10/23/2023	1086.41	102.47	ND	983.94	NA	0.00
EW13D	10/23/2023	1092.88	108.90	ND	983.98	NA	0.00
EW14D	10/23/2023	1098.28	114.32	ND	983.96	NA	0.00
Unconfined Aquifer (Upper)							
MW1	10/23/2023	1072.27	88.13	ND	984.14	NA	0.00
MW2	10/23/2023	1065.03	80.89	ND	984.14	NA	0.00
MW5	10/23/2023	1071.42	87.60	ND	983.82	NA	0.00
MW6S	10/23/2023	1108.35	124.20	ND	984.15	NA	0.00
MW9	10/23/2023	1028.34	44.16	ND	984.18	NA	0.00
MW10S	10/23/2023	1090.12	106.28	ND	983.84	NA	0.00
MW13	10/23/2023	1005.81	21.71	ND	984.10	NA	0.00
MW16	10/23/2023	1081.95	97.81	ND	984.14	NA	0.00
MW18	10/23/2023	1071.96	88.49	87.87	983.47	984.09	0.62
MW19	10/24/2023	1087.96	104.52	104.18	983.44	983.78	0.34
MW20	10/24/2023	1098.16	114.19	114.09	983.97	984.07	0.10
MW21	10/23/2023	1095.82	111.35	ND	984.47	NA	0.00
MW22	10/23/2023	1084.65	100.54	ND	984.11	NA	0.00

Table 2.2

**Groundwater and LNAPL Level Monitoring Data
Penta Wood Products Superfund Site
Siren, Wisconsin**

Well ID	Date	Top of Casing Elevation (feet)	Depth to Groundwater (feet btoc)	Depth to LNAPL (feet btoc)	Groundwater Elevation (feet AMSL)	LNAPL Elevation (feet AMSL)	LNAPL Thickness (feet)
MW24	10/23/2023	1084.04	100.33	ND	983.71	NA	0.00
Unconfined Aquifer (Upper) continued							
MW25	10/23/2023	1095.25	111.45	ND	983.80	NA	0.00
MW26	10/23/2023	1086.87	103.24	ND	983.63	NA	0.00
MW27	10/23/2023	1110.96	126.72	ND	984.24	NA	0.00
MW28	10/23/2023	1083.52	92.16	ND	991.36	NA	0.00
MW29	10/23/2023	1070.24	86.89	86.09	983.35	984.15	0.80
MW30	10/23/2023	1048.98	64.84	ND	984.14	NA	0.00
MW31	10/23/2023	1076.34	92.24	ND	984.10	NA	0.00
MW32	10/23/2023	1021.02	36.96	ND	984.06	NA	0.00
MW33	10/23/2023	1004.30	20.16	ND	984.14	NA	0.00
EW02S	10/23/2023	1082.25	98.16	ND	984.09	NA	0.00
EW03S	10/24/2023	1088.66	104.93	104.66	983.73	984.00	0.27
EW04S	10/23/2023	1101.01	116.96	ND	984.05	NA	0.00
EW05S	10/23/2023	1077.04	93.89	93.01	983.15	984.03	0.88
EW06S	10/24/2023	1083.61	102.48	99.56	981.13	984.05	2.92
EW07S	10/24/2023	1087.49	103.83	103.49	983.66	984.00	0.34
EW10S	10/24/2023	1088.72	110.22	104.64	978.50	984.08	5.58
EW11S	10/23/2023	1047.23	63.15	ND	984.08	NA	0.00
EW12S	10/24/2023	1086.31	106.38	102.27	979.93	984.04	4.11
EW13S	10/23/2023	1092.88	108.89	ND	983.99	NA	0.00
EW14S	10/24/2023	1098.32	115.04	114.43	983.28	983.89	0.61

Notes:

- feet AMSL - Feet above mean sea level
- feet btoc - Feet below top of well casing
- NA - Not applicable
- ND - LNAPL was not detected in a measurable quantity
- NM - Not measured

Table 2.3

Groundwater Purging and Sampling Data
Penta Wood Products Superfund Site
Siren, Wisconsin

	Location	Date	Sample Identification	Time	Purge Volume (gallons)	pH	Temperature (°C)	Specific Conductance (µS)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)	Total Iron (mg/L)	Total Sulfide (mg/L)
1	EW11D	10/27/2023	GW-231027-TS -33	12:52	0.0	0.00	0.00	0	0.0	0.00	0		
2		10/27/2023	Sample Time 13:43	13:00	0.1	0.00	0.00	0	0.0	0.00	0		
3		10/27/2023		13:08	0.3	0.00	0.00	0	0.0	0.00	0		
4		10/27/2023		13:12	0.4	7.98	8.59	2470	59.7	25.39	-10		
5		10/27/2023		13:19	0.5	9.11	9.46	2750	56.8	22.56	569		
6		10/27/2023		13:24	0.7	8.27	8.52	2710	56.8	19.38	552		
7		10/27/2023		13:31	0.8	8.30	8.80	2600	57.5	17.41	643		
8		10/27/2023		13:37	0.9	8.26	8.79	2580	55.5	17.30	652		
9		10/27/2023		13:42	1.1	8.32	8.78	2550	54.4	18.27	661	2.5	ND
10	EW11S	10/27/2023	GW-231027-TS-28	12:08	0.0	0.00	0.00	0	0.0	0.00	0		
11		10/27/2023	Sample Time 12:37	12:23	0.1	7.99	8.72	2780	13.0	5.94	9		
12		10/27/2023		12:32	0.3	8.02	8.80	2800	0.6	6.41	22		
13		10/27/2023		12:35	0.4	8.02	8.81	2780	0.0	6.25	25	0.4	ND
14	EW13S	10/25/2023	GW-231025-TS-09	10:42	0.0	0.00	0.00	0	0.0	0.00	0		
15		10/25/2023	Sample Time 10:42	10:53	0.1	6.62	11.62	537	702.0	0.30	-123	10+	ND
16	MW1	10/26/2023	GW-231026-TS-25	14:23	0.0	0.00	0.00	0	0.0	0.00	0		
17		10/26/2023	Sample Time 15:01	14:30	0.1	9.21	10.25	400	0.0	9.31	156		
18		10/26/2023		14:39	0.3	9.18	10.28	376	0.0	9.24	153		
19		10/26/2023		14:44	0.4	9.06	10.32	330	0.0	9.23	152		
20		10/26/2023		14:50	0.5	9.12	10.35	345	0.0	9.13	152		
21		10/26/2023		14:53	0.7	9.10	10.37	349	0.0	9.25	151	ND	ND
22	MW2	10/27/2023	GW-231027-TS-29	11:42	0.0	8.17	8.73	1090	90.9	10.83	2	0.7	ND
			Sample Time 11:30										
23	MW3	10/24/2023	GW-231024-TS-05	12:57	0.0	0.00	0.00	0	0.0	0.00	0		
24		10/24/2023	Sample Time 13:30	13:01	0.1	7.18	12.38	541	16.0	0.64	-53		
25		10/24/2023		13:08	0.3	7.00	12.85	528	7.4	2.15	-72		
26		10/24/2023		13:12	0.4	6.93	12.91	517	4.5	2.47	-69		
27		10/24/2023		13:19	0.5	6.88	13.06	502	3.5	2.66	-67		
28		10/24/2023		13:24	0.7	6.87	12.93	492	7.5	2.73	-66		
29		10/24/2023		13:27	0.8	6.86	12.89	487	4.9	2.73	-65	NR	NR

Table 2.3

Groundwater Purging and Sampling Data
Penta Wood Products Superfund Site
Siren, Wisconsin

	Location	Date	Sample Identification	Time	Purge Volume (gallons)	pH	Temperature (°C)	Specific Conductance (µS)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)	Total Iron (mg/L)	Total Sulfide (mg/L)
30	MW4	10/24/2023	GW-231024-TS-03	11:59	0.0	0.00	0.00	0	0.0	0.00	0		
31		10/24/2023	Sample Time 12:54	12:03	0.1	7.84	10.76	383	0.5	0.00	30		
32		10/24/2023	Duplicate GW-231024-TS-04	12:09	0.3	7.74	10.95	264	0.0	0.00	-43		
33		10/24/2023		12:12	0.4	7.69	10.93	319	0.0	0.00	-81		
34		10/24/2023		12:17	0.5	7.68	10.89	321	2.7	0.00	-111		
35		10/24/2023		12:20	0.7	7.69	10.88	333	4.1	0.00	-122		
36		10/24/2023		12:23	0.8	7.72	10.88	345	4.6	0.00	-133		
37		10/24/2023		12:27	0.9	7.74	10.89	368	1.8	0.00	-142		
38		10/24/2023		12:30	1.1	7.75	10.87	376	4.7	0.00	-149		
39		10/24/2023		12:33	1.2	7.76	10.87	379	4.4	0.00	-152	ND	ND
40	MW5	10/27/2023	GW-231027-TS-27	10:08	0.0	0.00	0.00	0	0.0	0.00	0		
41		10/27/2023	Sample Time 10:51	10:17	0.1	8.58	10.76	1490	35.2	0.00	-78		
42		10/27/2023		10:23	0.3	8.53	10.77	1480	18.3	0.00	-86		
43		10/27/2023		10:29	0.4	8.32	10.82	1470	13.4	0.00	-90		
44		10/27/2023		10:39	0.5	8.19	10.81	1460	5.5	0.00	-94		
45		10/27/2023		10:44	0.7	8.13	10.87	1450	3.0	0.00	-94		
46		10/27/2023		10:50	0.8	8.15	10.81	1450	2.1	0.00	-96	10+	0.4
47	MW6S	10/25/2023	GW-231025-TS-07	9:56	0.0	0.00	0.00	0	0.0	0.00	0		
48		10/25/2023	Sample Time 10:17	10:02	0.1	5.99	13.86	565	12.7	2.32	132		
49		10/25/2023	Duplicate GW-231025-TW-08	10:06	0.3	5.97	13.96	557	13.7	2.14	135		
50		10/25/2023		10:14	0.4	5.95	14.00	544	2.1	1.95	139	ND	ND
51	MW10	10/25/2023	GW-231025-TS-10	11:05	0.0	0.00	0.00	0	0.0	0.00	0		
52		10/25/2023	Sample Time 11:54	11:11	0.1	6.99	12.16	367	14.1	0.00	-129		
53		10/25/2023		11:15	0.3	7.03	12.39	352	19.1	0.00	-133		
54		10/25/2023		11:21	0.4	7.05	13.34	345	43.3	0.00	-138		
55		10/25/2023		11:25	0.5	7.09	13.70	338	45.3	0.00	-142		
56		10/25/2023		11:30	0.7	7.11	13.93	337	26.7	0.00	-145		
57		10/25/2023		11:36	0.8	7.13	14.08	339	16.9	0.00	-147		
58		10/25/2023		11:41	0.9	7.15	14.21	337	13.7	0.00	-149		
59		10/25/2023		11:46	1.1	7.16	14.29	336	10.0	0.00	-151		
60		10/25/2023		11:49	1.2	7.17	14.38	334	9.0	0.00	-152		
61		10/25/2023		11:53	1.3	7.18	14.44	334	8.5	0.00	-153	2	ND
62													

Table 2.3

**Groundwater Purging and Sampling Data
Penta Wood Products Superfund Site
Siren, Wisconsin**

	Location	Date	Sample Identification	Time	Purge Volume (gallons)	pH	Temperature (°C)	Specific Conductance (µS)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)	Total Iron (mg/L)	Total Sulfide (mg/L)
63	MW12	10/25/2023	GW-231025-TS-14	12:19	0.0	0.00	0.00	0	0.0	0.00	0		
64		10/25/2023	Sample Time 12:58	12:32	0.1	7.11	12.57	318	13.9	3.49	-24		
65		10/25/2023		12:46	0.3	7.14	11.69	317	2.2	0.93	-8		
66		10/25/2023		12:51	0.4	7.07	11.93	312	0.6	0.00	-19		
67		10/25/2023		12:54	0.5	7.07	11.92	309	0.3	0.00	-23		
68		10/25/2023		12:57	0.7	7.08	11.91	307	0.4	0.00	-27	ND	ND
69	MW13	10/26/2023	GW-231026-TS-17	9:57	0.0	0.00	0.00	0	0.0	0.00	0		
70		10/26/2023	Sample Time 10:46	10:04	0.1	6.34	11.06	160	0.0	7.04	194		
71		10/26/2023	Duplicate GW-231026-TS-18	10:07	0.3	6.40	11.03	189	0.0	6.61	179		
72		10/26/2023		10:11	0.4	6.17	10.99	212	0.0	6.48	175		
73		10/26/2023		10:14	0.5	5.98	10.99	251	0.0	6.38	173		
74		10/26/2023		10:18	0.7	5.92	10.97	289	0.0	6.32	172		
75		10/26/2023		10:22	0.8	5.88	10.96	304	0.0	6.27	172		
76		10/26/2023		10:27	0.9	5.87	10.97	326	0.0	6.19	172		
77		10/26/2023		10:32	1.1	5.87	10.96	327	0.0	6.17	172		
78		10/26/2023		10:35	1.2	5.87	10.97	326	0.0	6.15	172	NR	NR
79	MW14	10/24/2023	GW-231024-TS-01	10:15	0.0	0.00	0.00	0	0.0	0.00	0		
80		10/24/2023	Sample Time 11:07	10:23	0.1	5.99	12.01	329	0.0	8.72	105		
81		10/24/2023		10:34	0.3	6.60	11.84	333	0.9	8.81	104		
82		10/24/2023		10:41	0.4	6.79	11.95	344	1.4	9.37	100		
83		10/24/2023		10:46	0.5	6.88	12.02	341	1.2	9.48	98		
84		10/24/2023		10:55	0.7	6.97	11.94	347	1.7	9.39	96	ND	ND
85													
86	MW17	10/25/2023	GW-231025-TS-11	13:17	0.0	0.00	0.00	0	0.0	0.00	0		
87		10/25/2023	Sample Time 13:55	13:32	0.1	7.49	13.08	326	0.4	7.37	19		
88		10/25/2023		13:37	0.3	7.50	13.51	330	0.4	7.27	22		
89		10/25/2023		13:44	0.4	7.51	13.63	336	0.5	7.25	25	ND	ND
90	MW21	10/27/2023	GW-231027-TS-30	14:06	0.0	8.23	8.14	1600	30.8	32.38	525	0.6	ND
			Sample Time 12:30										
91	MW22	10/27/2023	GW-231027-TS-31	14:17	0.0	8.63	8.14	1370	104.0	25.38	684	3	ND
			Sample Time 13:15										

Table 2.3

Groundwater Purging and Sampling Data
Penta Wood Products Superfund Site
Siren, Wisconsin

	Location	Date	Sample Identification	Time	Purge Volume (gallons)	pH	Temperature (°C)	Specific Conductance (µS)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)	Total Iron (mg/L)	Total Sulfide (mg/L)
92	MW23	10/26/2023	GW-231026-TS-21	12:41	0.0	0.00	0.00	0	0.0	0.00	0		
93		10/26/2023	Sample Time 13:07	12:48	0.1	7.46	9.28	577	0.0	0.77	167		
94		10/26/2023		12:53	0.3	7.75	9.25	623	0.0	5.10	165		
95		10/26/2023		12:57	0.4	7.84	9.24	629	0.0	5.66	163		
96		10/26/2023		13:01	0.5	7.83	9.26	630	0.0	5.90	161	1	ND
97	MW25	10/24/2023	GW-231024-TS-06	13:47	0.0	0.00	0.00	0	0.0	0.00	0		
98		10/24/2023	Sample Time 14:18	13:57	0.1	6.40	12.42	286	18.2	7.18	49		
99		10/24/2023		14:04	0.3	6.29	12.36	307	12.8	7.20	63		
100		10/24/2023		14:08	0.4	6.33	13.76	289	23.4	7.07	66		
101		10/24/2023		14:11	0.5	6.30	14.16	299	10.5	6.59	70		
102		10/24/2023		14:14	0.7	6.26	14.22	313	9.7	6.51	75		
103		10/24/2023		14:17	0.8	6.23	12.94	327	10.1	6.96	79	ND	ND
104	MW28	10/24/2023	GW-231024-TS-02	11:19	0.0	0.00	0.00	0	0.0	0.00	0		
105		10/24/2023	Sample Time 11:40	11:23	0.1	7.41	11.92	359	0.0	9.43	77		
106		10/24/2023		11:28	0.3	7.45	12.26	360	0.0	9.54	77		
107		10/24/2023		11:34	0.4	7.51	12.34	359	0.0	9.59	77	ND	ND
108	MW30	10/27/2023	GW-231027-TS-26	9:03	0.0	0.00	0.00	0	0.0	0.00	0		
109		10/27/2023	Sample Time 9:38	9:13	0.1	7.23	9.89	1710	0.0	0.00	160		
110		10/27/2023		9:19	0.3	7.47	9.85	1710	0.0	0.00	152		
111		10/27/2023		9:27	0.4	7.88	9.85	1680	0.0	0.00	153		
112		10/27/2023		9:31	0.5	7.79	9.84	1670	0.0	0.00	150		
113		10/27/2023		9:36	0.7	7.87	9.85	1700	0.0	0.00	145	1.5	ND
114	MW31	10/26/2023	GW-231026-TS-22	13:26	0.0	0.00	0.00	0	0.0	0.00	0		
115		10/26/2023	Sample Time 13:49	13:36	0.1	7.31	10.64	422	0.0	7.71	166		
116		10/26/2023		13:43	0.3	7.35	10.68	421	0.0	7.69	166		
117		10/26/2023		13:48	0.4	7.25	10.71	421	0.0	7.69	166	ND	ND

Table 2.3

Groundwater Purging and Sampling Data
Penta Wood Products Superfund Site
Siren, Wisconsin

	Location	Date	Sample Identification	Time	Purge Volume (gallons)	pH	Temperature (°C)	Specific Conductance (µS)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)	Total Iron (mg/L)	Total Sulfide (mg/L)
118	MW32	10/25/2023	GW-231025-TS-16	14:21	0.0	0.00	0.00	0	0.0	0.00	0		
119		10/25/2023	Sample Time 14:57	14:25	0.1	7.34	9.61	84	230.0	8.62	39		
120		10/25/2023		14:29	0.3	7.03	9.64	89	117.0	7.74	49		
121		10/25/2023		14:34	0.4	6.80	9.38	91	34.1	8.04	60		
122		10/25/2023		14:38	0.5	6.65	9.20	91	17.9	8.90	71		
123		10/25/2023		14:42	0.7	6.66	9.58	90	10.6	8.96	73		
124		10/25/2023		14:46	0.8	6.55	9.11	91	8.8	8.77	80		
125		10/25/2023		14:49	0.9	6.53	9.14	91	6.7	8.74	83		
126		10/25/2023		14:52	1.1	6.54	9.31	90	6.2	8.79	85		
127		10/25/2023		14:56	1.2	6.52	9.20	90	4.7	8.41	88	ND	ND
128	MW33	10/26/2023	GW-231026-TS-19	11:10	0.0	0.00	0.00	0	0.0	0.00	0		
129		10/26/2023	Sample Time 11:55	11:16	0.1	6.37	11.01	195	1000.0	10.51	166		
130		10/26/2023		11:21	0.3	6.14	10.89	187	1000.0	10.85	167		
131		10/26/2023		11:29	0.4	6.06	10.58	188	1000.0	10.55	179		
132		10/26/2023		11:39	0.5	6.15	10.35	198	685.0	10.35	176		
133		10/26/2023		11:42	0.7	6.20	10.32	199	701.0	8.05	175		
134		10/26/2023		11:45	0.8	6.22	10.30	200	683.0	8.05	174		
135		10/26/2023		11:48	0.9	6.51	10.27	201	692.0	8.04	173		
136		10/26/2023		11:51	1.1	6.61	10.27	202	654.0	8.02	172		
137		10/26/2023		11:54	1.2	6.68	10.24	202	569.0	8.01	172	3.5	ND
138	RW01	10/3/2023	GW-231003-RA-02 Sample Time 10:40	10:40	0.0*	7.52	12.20	66.2	0.0	0.00	0	NR	NR
139	RW02	10/3/2023	GW-231003-RA-01 Sample Time 10:27	10:27	0.0*	7.35	11.70	345	0.0	0.00	0	NR	NR
140	RW03	10/3/2023	GW-231003-RA-07 Sample Time 11:23	11:23	0.0*	8.01	12.90	235	0.0	0.00	0	NR	NR
141	RW04	10/3/2023	GW-231003-RA-06 Sample Time 11:13	11:13	0.0*	7.61	16.00	632	0.0	0.00	0	NR	NR
142	RW05	10/3/2023	GW-231003-RA-03 Sample Time 10:48 Duplicate GW-231003-RA-04	10:48	0.0*	8.07	11.20	352	0.0	0.00	0	NR	NR

Table 2.3

**Groundwater Purging and Sampling Data
Penta Wood Products Superfund Site
Siren, Wisconsin**

	Location	Date	Sample Identification	Time	Purge Volume (gallons)	pH	Temperature (°C)	Specific Conductance (µS)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)	Total Iron (mg/L)	Total Sulfide (mg/L)
143	RW06	10/3/2023	GW-231003-RA-09 Sample Time 11:50	11:50	0.0*	7.67	15.20	190	0.0	0.00	0	NR	NR
144	RW06 SHOP	10/3/2023	GW-231003-RA-08 Sample Time 11:45	11:45	0.0*	7.51	22.20	290	0.0	0.00	0	NR	NR

Notes:

- °C - Degrees Celsius
- µS - Micro-Siemens
- mg/L - Milligrams per liter
- MS/MSD - Matrix Spike Sample & Matrix Spike Duplicate Sample
- mV - Millivolts
- ND - Not Detected
- NM - Not Measured
- NTU - National Turbidity Units
- ORP - Oxidation Reduction Potential (ORP) reported in millivolts (mV)
- Wells MW10S, MW20, and MW29 were not sampled due to the presence of LNAPL
- Well MW16 was not sampled due to insufficient water for sampling
- * - Residential wells are purged for 15-20 minutes at a rate of 6-8 gal/minute prior to sample collection

Table 2.4

Groundwater Analytical Data - Monitoring and Extraction Wells
Penta Wood Products Superfund Site
Siren, Wisconsin

Sample Location	Sample Identification	Sample Date	ES ¹ PAL ²	Hardness, calcium mg/L	Hardness, carbonate mg/L	Chloride ³ mg/L	Nitrate (as N) mg/L	Sulfate ³ mg/L	TOC averages mg/L	Alkalinity, total (as CaCO ₃) mg/L	Methane (dissolved) ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Pentachlorophenol ug/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	
Semiconfined Aquifer (Lower)																												
EW11D	W-231027-TS-33	10/27/2023		138	138	2.6	2.0 J-	8.6	3.0	222	9.9	1.0 U	1.0 U	4.0 U	1.8 U	640	9720	34.5 U	52.7 U	20.0 U	60.9	900	0.83 U	0.50 U	0.50 U	0.50 U	1.0 U	
MW3	W-231024-TS-05	10/24/2023		292	286	23.8	2.5	6.4	0.90 J	415	61	0.39 J	0.42 J	1.4 J	1.1 J	1510	1730	22.1	23.9	20.0 U	20.0 U	0.35	0.91 U	0.50 U	0.50 U	0.50 U	1.0 U	
MW4	W-231024-TS-03	10/24/2023		100	105	46.4	0.61 J	14.4	0.78 J	86.2	29	1.3	1.3	2.0 U	2.0 U	100 U	156	34.0	31.9	20.0 U	20.0 U	0.10 U	0.80 U	0.50 U	0.50 U	0.50 U	1.0 U	
MW4 (Duplicate)	W-231024-TS-04	10/24/2023		103	104	46.9	0.61 J	14.5	0.67 J	86.3	22	1.3	1.3	2.0 U	0.51 J	100 U	88.5 J	33.1	32.4	20.0 U	20.0 U	0.10 U	0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	
MW10	W-231025-TS-10	10/25/2023		120	118	33.4	0.48 J	10.1	26.7	171	420	1.0	1.1	4.1	7.6	851	1260	1110	1140	20.0 U	20.0 U	8000	8.1	0.50 U	1.3	1.1	8.9	
MW12	W-231025-TS-14	10/25/2023		129	122	26.3	0.57 J	23.4	22.4	181	0.83 J	0.69 J	0.75 J	2.9	4.1	100 U	100 U	749	833	20.0 U	20.0 U	1800	6.2	0.50 U	0.80	0.32 J	4.5	
MW14	W-231024-TS-01	10/24/2023		114	110	25.0	1.6	6.0	0.67 J	129	0.21 J	1.1	1.1	1.7 J	0.83 J	100 U	100 U	1.0 J	1.1 J	20.0 U	20.0 U	0.11 U	0.86 U	0.50 U	0.50 U	0.50 U	1.0 U	
MW17	W-231025-TS-11	10/25/2023		163	155	8.1	1.4	81.1	1.1	197	1.0 U	0.55 J	0.53 J	2.0 U	2.0 U	100 U	100 U	2.5 U	2.5 U	20.0 U	20.0 U	0.10 U	0.81 UJ	0.50 U	0.50 U	0.50 U	1.0 U	
MW23	W-231026-TS-21	10/26/2023		174	173	29.8	2.1	8.4	0.74 J	197	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	100 U	93.0 J	2.5 U	2.5 U	20.0 U	20.0 U	0.10 U	0.85 U	0.50 U	0.50 U	0.50 U	1.0 U	
Unconfined Aquifer (Upper)																												
EW11S	W-231027-TS-32	10/27/2023		60.8	60.3	0.98 J	1.6 J-	5.4	1.2	110	1.3	1.0 U	1.0 U	2.0 U	3.4 U	100 U	266	2.5 U	32.1 U	20.0 U	20.0 U	6.9 U	0.90 U	0.50 U	0.50 U	0.50 U	1.0 U	
EW13S	W-231025-TS-09	10/25/2023		173	197	36.7	1.0 U	10.9	28.8	313	6.2	3.0	10.4	2.0 U	47.0	17400	35600	3700	3280	20.0 U	25.3	15000	25	0.50 U	0.94	0.87	14	
MW1	W-231026-TS-25	10/26/2023		89.7	88.3	17.3	1.7 J-	4.0	0.85 J	123	1.0 U	1.0 U	1.0 U	2.8 U	2.0 U	100 U	100 U	2.5 U	2.5 U	20.0 U	20.0 U	0.10 U	0.80 U	0.50 U	0.50 U	0.50 U	1.0 U	
MW2	W-231027-TS-29	10/27/2023		44.1	44.4	0.21 J	1.0 U	1.3	1.0 U	80.0	1.0 U	1.0 U	1.0 U	3.9 U	17.7	100 U	5470	2.5 U	188 U	16.3 J	21.9	0.25 U	0.87 U	0.50 U	0.50 U	0.50 U	1.0 U	
MW5	W-231027-TS-27	10/27/2023		172	170	21.7	R	18.6	24.4	271	10	1.0 U	1.0 U	2.0 U	5.8	13900	16200	7780	7730	20.0 U	20.0 U	4600	12	0.50 U	0.58	0.27 J	5.0	
MW6S	W-231025-TS-07	10/25/2023		146	148	12.0	3.1	13.4	4.2	237	1.0 U	0.24 J	0.28 J	4.7	4.1	100 U	100 U	2.1 J	2.3 J	20.0 U	20.0 U	0.10 U	0.81 U	0.50 U	0.50 U	0.50 U	1.0 U	
MW6S (Duplicate)	W-231025-TS-08	10/25/2023		153	145	12.1	3.1	13.4	4.5	237	1.0 U	0.28 J	0.33 J	3.6	3.8	100 U	100 U	2.0 J	2.2 J	20.0 U	8.0 J	0.10 U	0.88 U	0.50 U	0.50 U	0.50 U	1.0 U	
MW13	W-231026-TS-17	10/26/2023		39.4	30.2	0.63 J	0.74 J	2.2	2.1	69.5	1.0 U	1.0 U	1.0 U	2.0 U	2.9 U	100 U	100 U	3.3 U	2.5 U	20.0 U	20.0 U	0.18 U	0.88 U	0.50 U	0.50 U	0.50 U	1.0 U	
MW13 (Duplicate)	W-231026-TS-18	10/26/2023		39.8	31.2	0.57 J	0.74 J	2.1	1.9	69.5	1.0 U	1.0 U	1.0 U	2.6 U	2.0 U	100 U	100 U	2.5 U	2.5 U	20.0 U	20.0 U	0.11 U	0.85 U	0.50 U	0.50 U	0.50 U	1.0 U	
MW21	W-231027-TS-30	10/27/2023		59.0	59.4	79.8	1.7 J-	4.6	1.0 U	70.9	1.0 U	1.0 U	1.0 U	3.6 U	10.1	100 U	2330	2.5 U	163 U	20.0 U	20.0 U	0.10 U	0.85 U	0.50 U	0.50 U	0.50 U	1.0 U	
MW22	W-231027-TS-31	10/27/2023		53.8	54.6	8.5	0.91 J-	2.8	1.0 U	92.6	1.0 U	1.0 U	1.3 J+	4.0 U	26.1	53.6 J	6000	3.0 U	302	20.0 U	21.2	0.10 U	0.80 U	0.50 U	0.50 U	0.19 J	1.0 U	
MW25	W-231024-TS-06	10/24/2023		90.0	89.7	24.5	1.7	2.6	0.64 J	121	1.0 U	0.27 J	0.35 J	2.4	1.4 J	100 U	99.4 J	0.80 J	2.3 J	20.0 U	8.0 J	0.10 U	0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	

Table 2.4

Groundwater Analytical Data - Monitoring and Extraction Wells
Penta Wood Products Superfund Site
Siren, Wisconsin

Sample Location	Sample Identification	Sample Date	ES ¹ PAL ²	Hardness, calcium mg/L	Hardness, carbonate mg/L	Chloride ³ mg/L	Nitrate (as N) mg/L	Sulfate ³ mg/L	TOC averages mg/L	Alkalinity, total (as CaCO ₃) mg/L	Methane (dissolved) ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Pentachlorophenol ug/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	
Unconfined Aquifer (Upper) Cont.																												
MW28	W-231024-TS-02	10/24/2023		92.4	93.8	20.1	3.0	5.0	0.85 J	129	1.0 U	0.44 J	0.43 J	2.4	1.4 J	100 U	100 U	2.5 U	2.5 U	20.0 U	20.0 U	0.10 U	0.85 U	0.50 U	0.50 U	0.50 U	1.0 U	
MW30	W-231027-TS-26	10/27/2023		94.8	94.8	0.85 J	1.0 U	2.8	3.8	169	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	100 U	51.0 J	4.4 U	6.0 U	20.0 U	20.0 U	660	0.30 J	0.50 U	0.50 U	0.50 U	1.0 U	
MW31	W-231026-TS-22	10/26/2023		103	100	0.48 J	0.57 J-	1.1	0.50 J	169	1.0 U	1.0 U	1.0 U	2.6 U	2.0 U	100 U	109	2.5 U	4.4 U	20.0 U	20.0 U	0.10 U	0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	
MW32	W-231025-TS-16	10/25/2023		22.1	21.1	0.64 J	0.85 J	2.7	1.0	41.9	1.0 U	1.0 U	1.0 U	3.1	2.0 U	100 U	85.3 J	2.5 U	1.6 J	20.0 U	20.0 U	0.099 U	0.95 U	0.50 U	0.50 U	0.50 U	1.0 U	
MW33	W-231026-TS-20	10/26/2023		55.9	49.4	0.38 J	0.59 J	1.1	1.3	91.4	0.67 J	1.0 U	1.0	2.0 U	32.7	100 U	8780	14.4 U	183	20.0 U	20.0 U	0.11 U	0.96 U	0.50 U	0.50 U	0.50 U	1.0 U	

Notes:

- 1 - Enforcement Standard (ES) criteria adapted from Table 1 referred to and incorporated by NR 140.10 with except of Iron, Manganese, Zinc, Chloride, and Sulfate (see note 3 below)
- 2 - Preventive Action Limit (PAL) criteria adapted from Table 1 referred to and incorporated by NR 140.10 with except of Iron, Manganese, Zinc, Chloride, and Sulfate (see note 3 below)
- 3 - Enforcement Standard (ES) and Preventive Action Limit (PAL) criteria adapted from Table 2 referred to and incorporated by NR 140.12
- mg/L - Concentrations listed with units of milligrams per liter
- ug/L - Concentrations listed with units of micrograms per liter
- J - Concentration was between the limit of detection and the limit of quantitation
- J+ - Concentration was between the limit of detection and the limit of quantitation, results may be biased high
- R - Sample was prepped or analyzed beyond the specified holding time and rejected
- U - Compound was not detected

- Concentration exceeds the ES
- Concentration exceeds the PAL

Wells MW10S, MW20, and MW29 were not sampled due to the presence of LNAPL
Wells MW16 was not sampled due to insufficient water for sampling

Table 3.1

**Groundwater Analytical Data - Residential Wells
Penta Wood Products Superfund Site
Siren, Wisconsin**

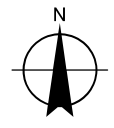
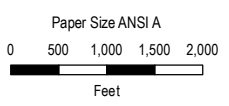
Sample Location	Sample Identification	ES ¹ PAL ² Date	Pentachlorophenol	Naphthalene	Benzene	Ethylbenzene	Toluene	Xylenes (total)
			1 0.1 ug/L	100 10 ug/L	5 0.5 ug/L	700 140 ug/L	800 160 ug/L	2000 400 ug/L
RW01	W-231003-RA-02	10/03/2023	0.10 U	0.82 U	0.50 U	0.50 U	0.50 U	1.0 U
RW02	W-231003-RA-01	10/03/2023	0.096 U	0.77 U	0.50 U	0.50 U	0.50 U	1.0 U
RW03	W-231003-RA-07	10/03/2023	0.097 U	0.75 U	0.50 U	0.50 U	0.50 U	1.0 U
RW04	W-231003-RA-06	10/03/2023	0.097 U	0.83 U	0.50 U	0.50 U	0.50 U	1.0 U
RW05	W-231003-RA-03	10/03/2023	0.098 U	0.79 U	0.50 U	0.50 U	0.50 U	1.0 U
RW05 (Duplicate)	W-231003-RA-04	10/03/2023	0.097 U	0.77 U	0.50 U	0.50 U	0.50 U	1.0 U
RW06	W-231003-RA-09	10/03/2023	0.097 U	0.82 U	0.50 U	0.50 U	0.50 U	1.0 U
RW06 SHOP	W-231003-RA-08	10/03/2023	0.096 U	0.88 U	0.50 U	0.50 U	0.50 U	1.0 U

Notes:

- 1 - Enforcement Standard (ES) criteria adapted from Table 1 referred to and incorporated by NR 140.10
- 2 - Preventive Action Limit (PAL) criteria adapted from Table 1 referred to and incorporated by NR 140.10
- ug/L - Concentrations listed with units of micrograms per liter
- U - Compound was not detected above the limit of detection
- Dup - Duplicate sample
- J - Concentration was between the limit of detection and the limit of quantitation

Figures

LEGEND
 SITE BOUNDARY



**PENTA WOOD PRODUCTS SUPERFUND SITE
 SIREN, WISCONSIN**

Project No. 11222418-05
 Revision No. -
 Date 01/18/2024

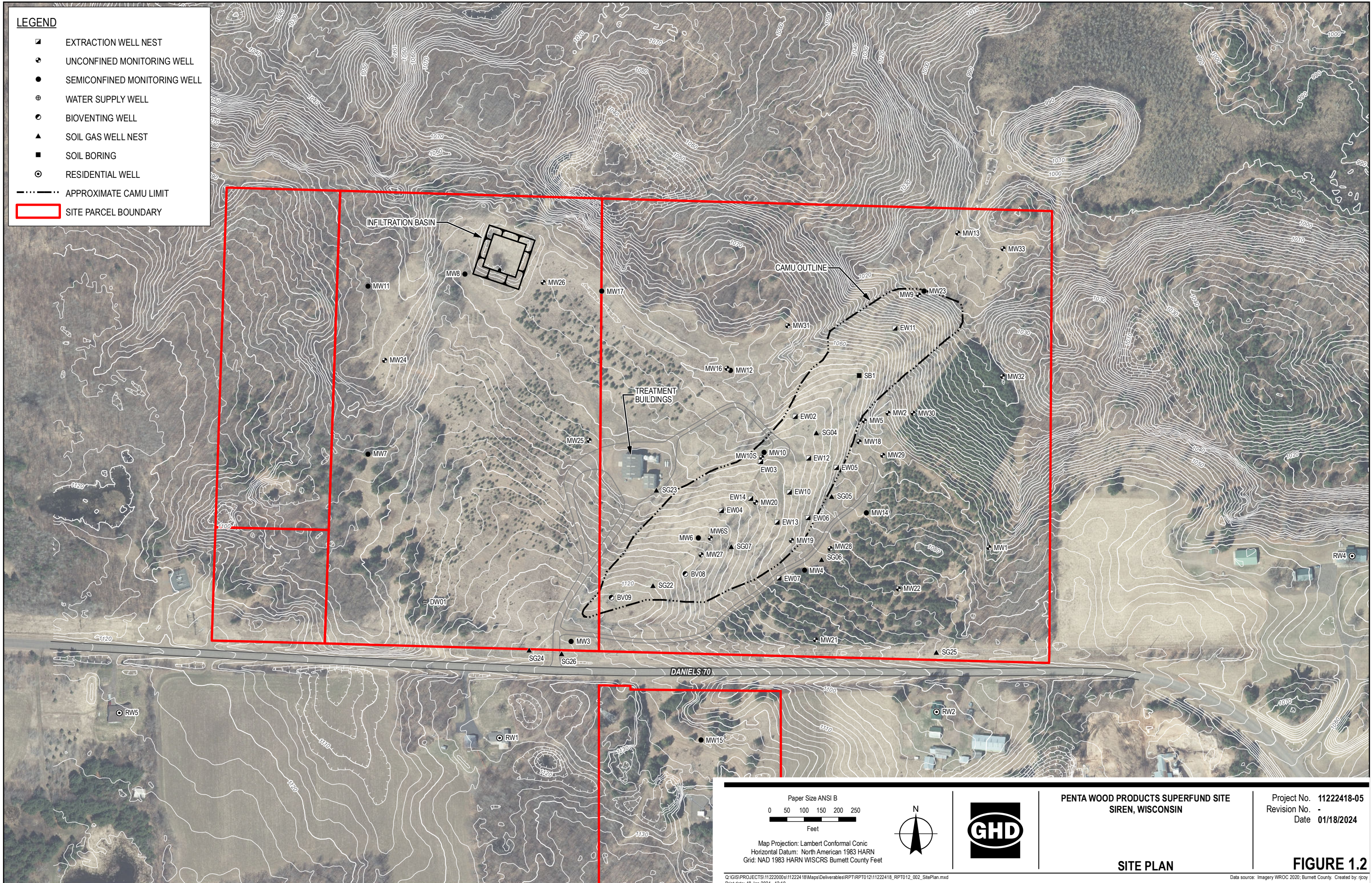
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 Horizontal Datum: North American 1983 HARN
 Grid: NAD 1983 HARN WISCRS Burnett County Feet

SITE LOCATION

FIGURE 1.1

LEGEND

- ▣ EXTRACTION WELL NEST
- ⊕ UNCONFINED MONITORING WELL
- SEMICONFINED MONITORING WELL
- ⊕ WATER SUPPLY WELL
- ⊙ BIOVENTING WELL
- ▲ SOIL GAS WELL NEST
- SOIL BORING
- ⊙ RESIDENTIAL WELL
- APPROXIMATE CAMU LIMIT
- ▭ SITE PARCEL BOUNDARY



Paper Size ANSI B
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 Feet

Map Projection: Lambert Conformal Conic
 Horizontal Datum: North American 1983 HARN
 Grid: NAD 1983 HARN WISCRS Burnett County Feet



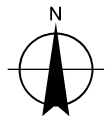
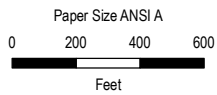
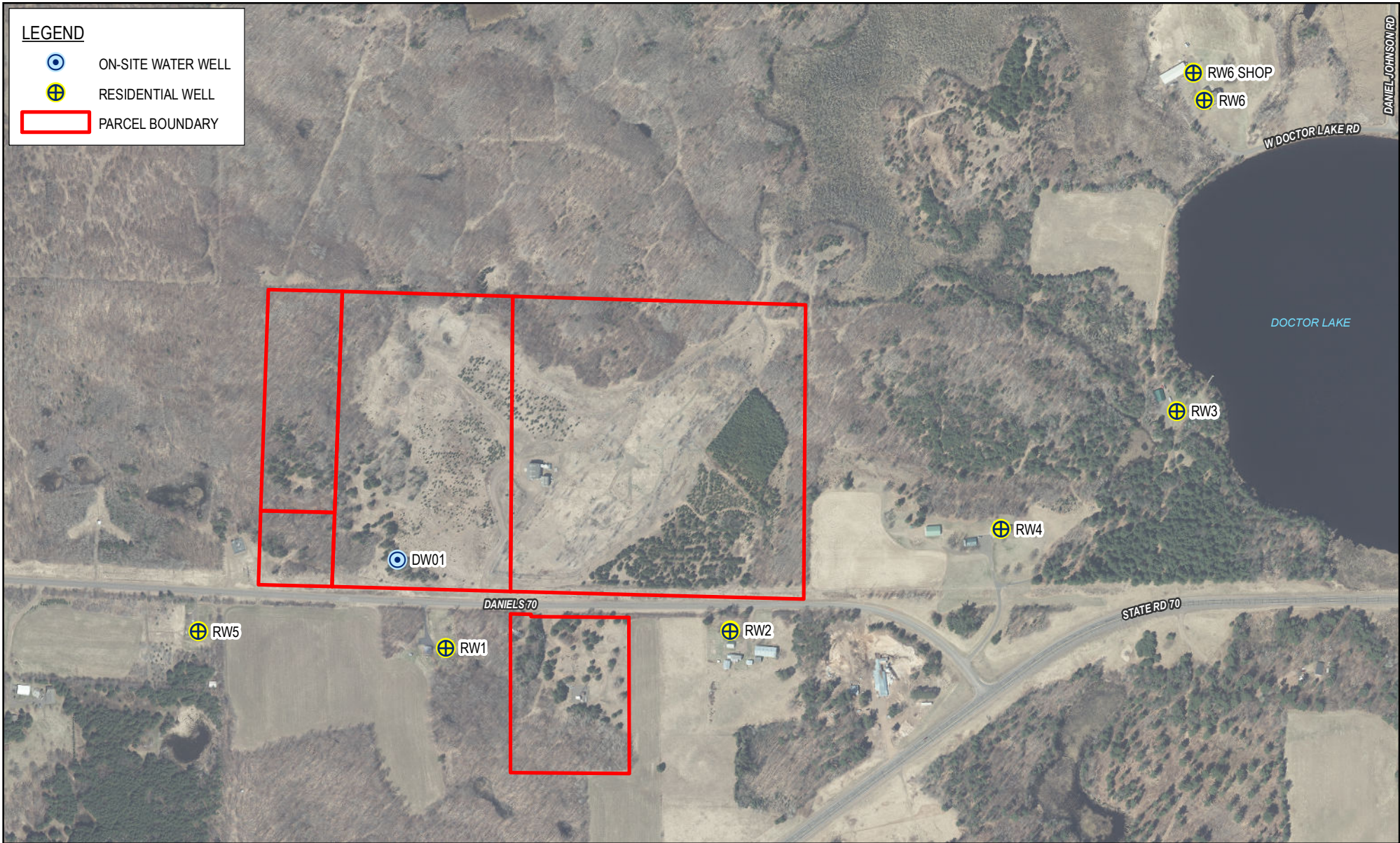
PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

SITE PLAN

Project No. 11222418-05
 Revision No. -
 Date 01/18/2024

FIGURE 1.2

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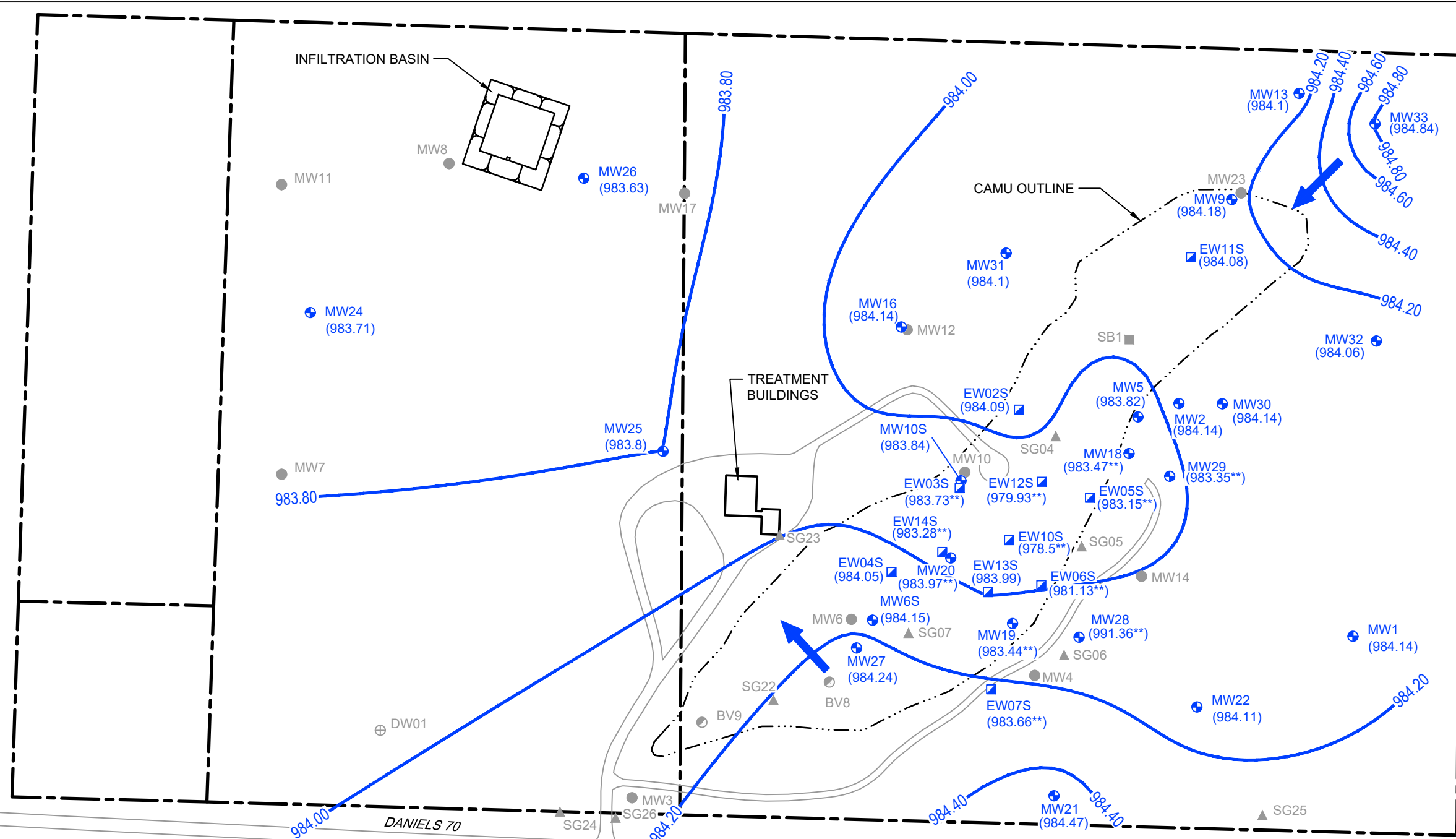
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PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

Project No. 11222418-05
Revision No. -
Date 01/18/2024

RESIDENTIAL WELL LOCATIONS

FIGURE 1.3



- LEGEND**
- PARCEL BOUNDARY
 - EW11 EXTRACTION WELL NEST
 - BV09 BIOVENTING WELL
 - ▲ SG05 SOIL GAS WELL NEST
 - MW27 UNCONFINED MONITORING WELL LOCATION
 - MW7 SEMICONFINED MONITORING WELL LOCATION
 - ⊕ DW01 WATER SUPPLY WELL LOCATION
 - SB1 SOIL BORING LOCATION
 - RW1 RESIDENTIAL WELL
 - (984.01) GROUNDWATER ELEVATION
 - 983.60 GROUNDWATER ELEVATION CONTOUR
 - GROUNDWATER FLOW DIRECTION
 - ** LNAPL PRESENT IN WELL, WELL NOT UTILIZED TO INFER GROUNDWATER ELEVATION CONTOURS

0 100 200 ft

Coordinate System:
WI83-NF

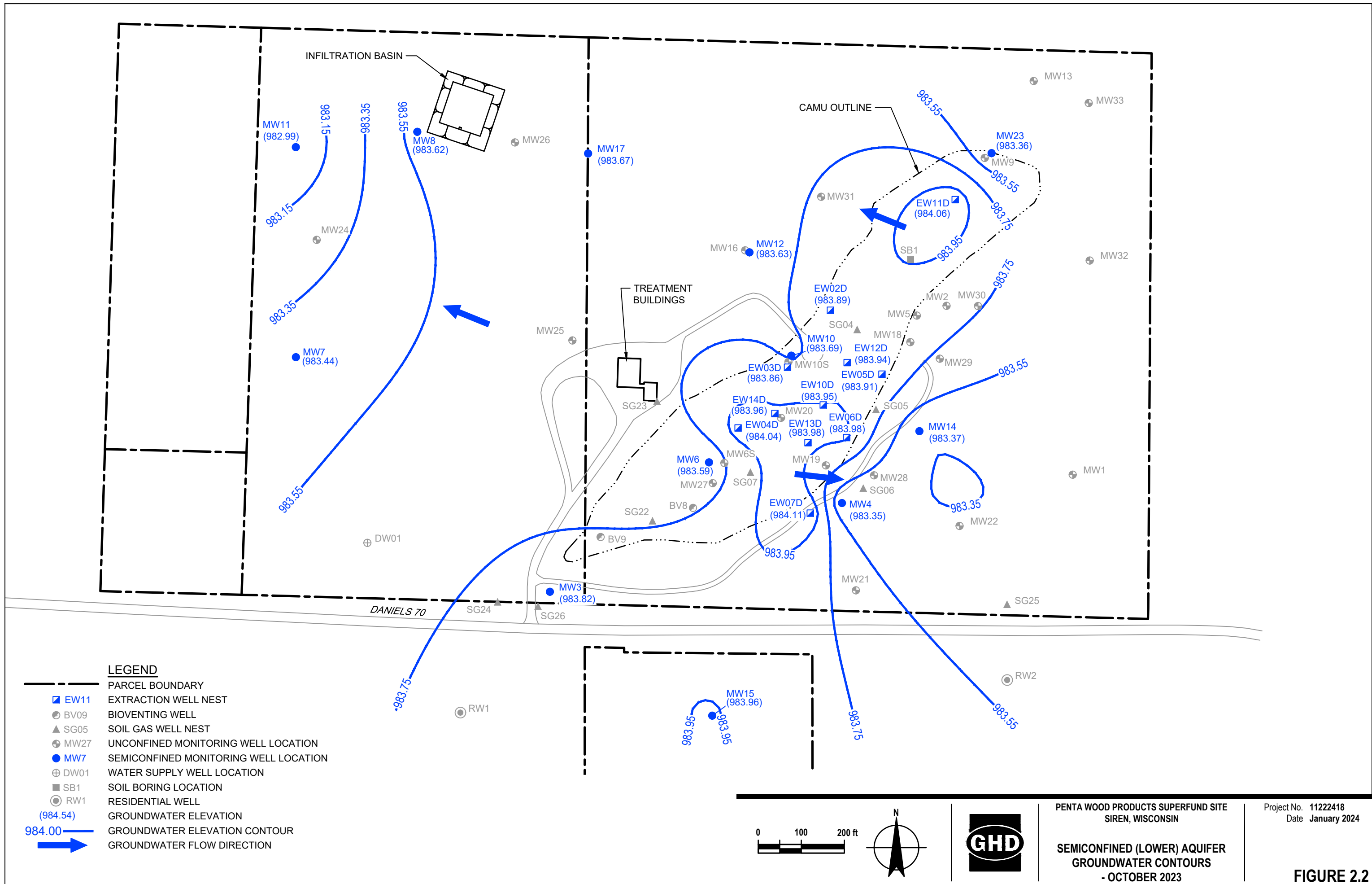
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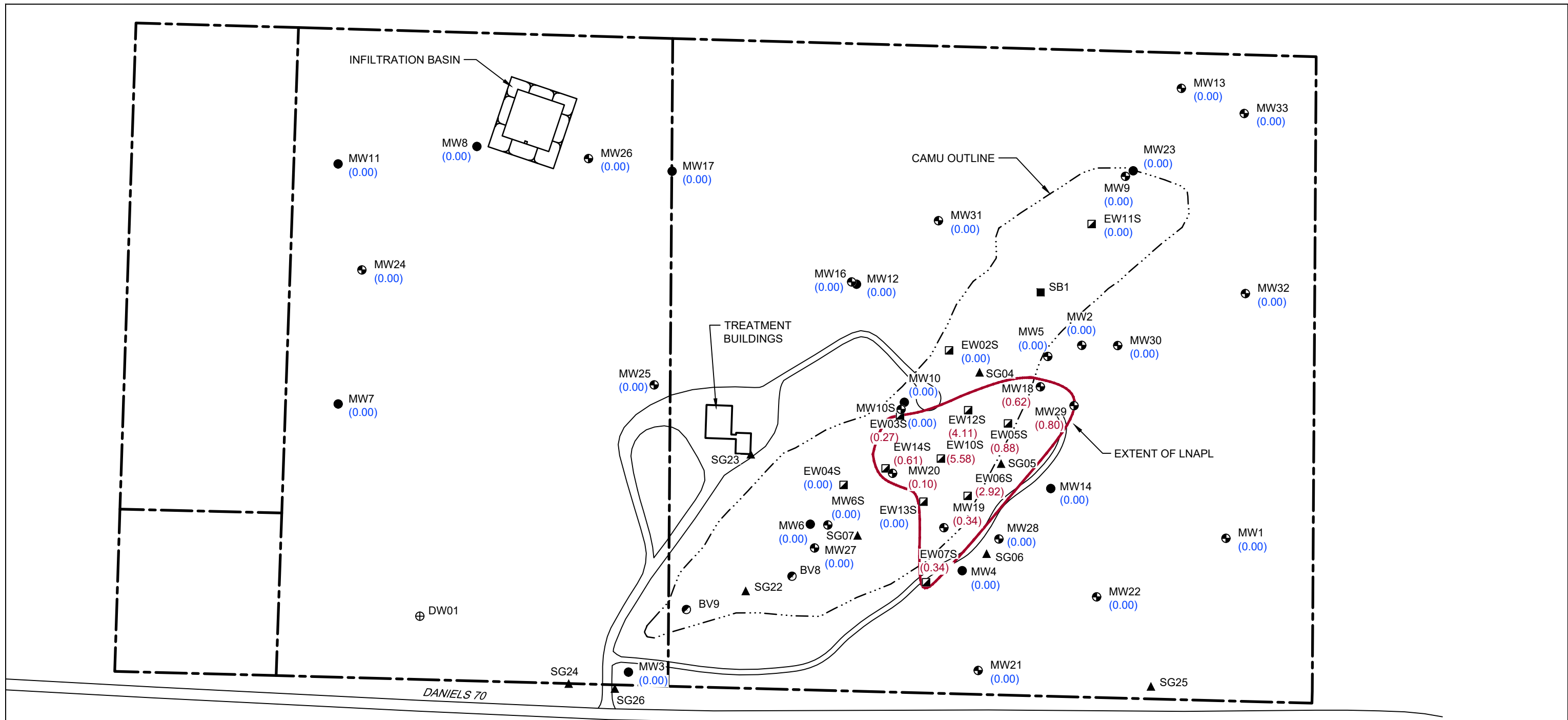
PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

**UNCONFINED (UPPER) AQUIFER
GROUNDWATER CONTOURS
- OCTOBER 2023**

Project No. 11222418
Date January 2024

FIGURE 2.1





LEGEND

---	PARCEL BOUNDARY
■ EW11	EXTRACTION WELL NEST
● BV09	BIOVENTING WELL
▲ SG05	SOIL GAS WELL NEST
⊕ MW27	UNCONFINED MONITORING WELL LOCATION
● MW7	SEMICONFINED MONITORING WELL LOCATION
⊕ DW01	WATER SUPPLY WELL LOCATION
■ SB1	SOIL BORING LOCATION
⊙ RW1	RESIDENTIAL WELL
(0.00)	LNAPL NOT PRESENT
(0.30)	LNAPL THICKNESS (FEET)
—	EXTENT OF LNAPL
*	TRACE LNAPL

RW1

MW15 (0.00)

RW2

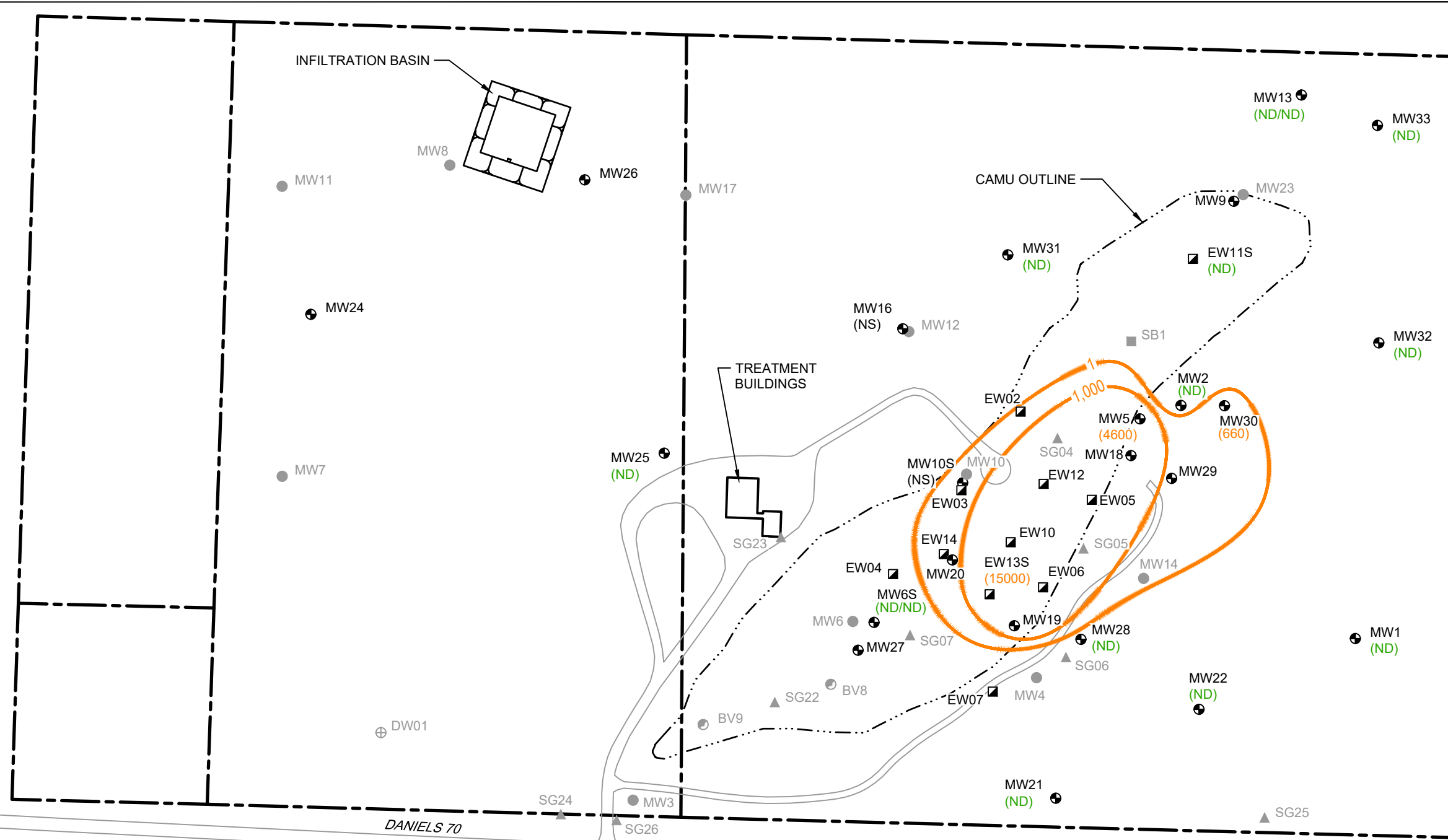
0 100 200 ft

PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

Project No. 11222418
Date January 2024

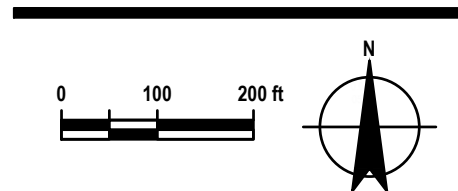
LNAPL THICKNESS - OCTOBER 2023

FIGURE 2.3



LEGEND

- PARCEL BOUNDARY
- EW11 EXTRACTION WELL NEST
- BV09 BIOVENTING WELL
- ▲ SG05 SOIL GAS WELL NEST
- ⊕ MW27 UNCONFINED MONITORING WELL LOCATION
- MW7 SEMICONFINED MONITORING WELL LOCATION
- ⊕ DW01 WATER SUPPLY WELL LOCATION
- SB1 SOIL BORING LOCATION
- RW1 RESIDENTIAL WELL
- 1— PENTACHLOROPHENOL CONCENTRATION CONTOUR (µg/L)
- (NS) NOT SAMPLED DUE TO LNAPL PRESENCE OR INSUFFICIENT WATER
- (ND/ND) NOT DETECTED, PENTACHLOROPHENOL CONCENTRATION (µg/L) MEETS ENFORCEMENT STANDARD OF 1.0 µg/L/DUPLICATE CONCENTRATION
- (0.20/0.21) PENTACHLOROPHENOL CONCENTRATION (µg/L) MEETS ENFORCEMENT STANDARD OF 1.0 µg/L/DUPLICATE CONCENTRATION
- (660) PENTACHLOROPHENOL CONCENTRATION (µg/L) EXCEEDS ENFORCEMENT STANDARD OF 1.0 µg/L

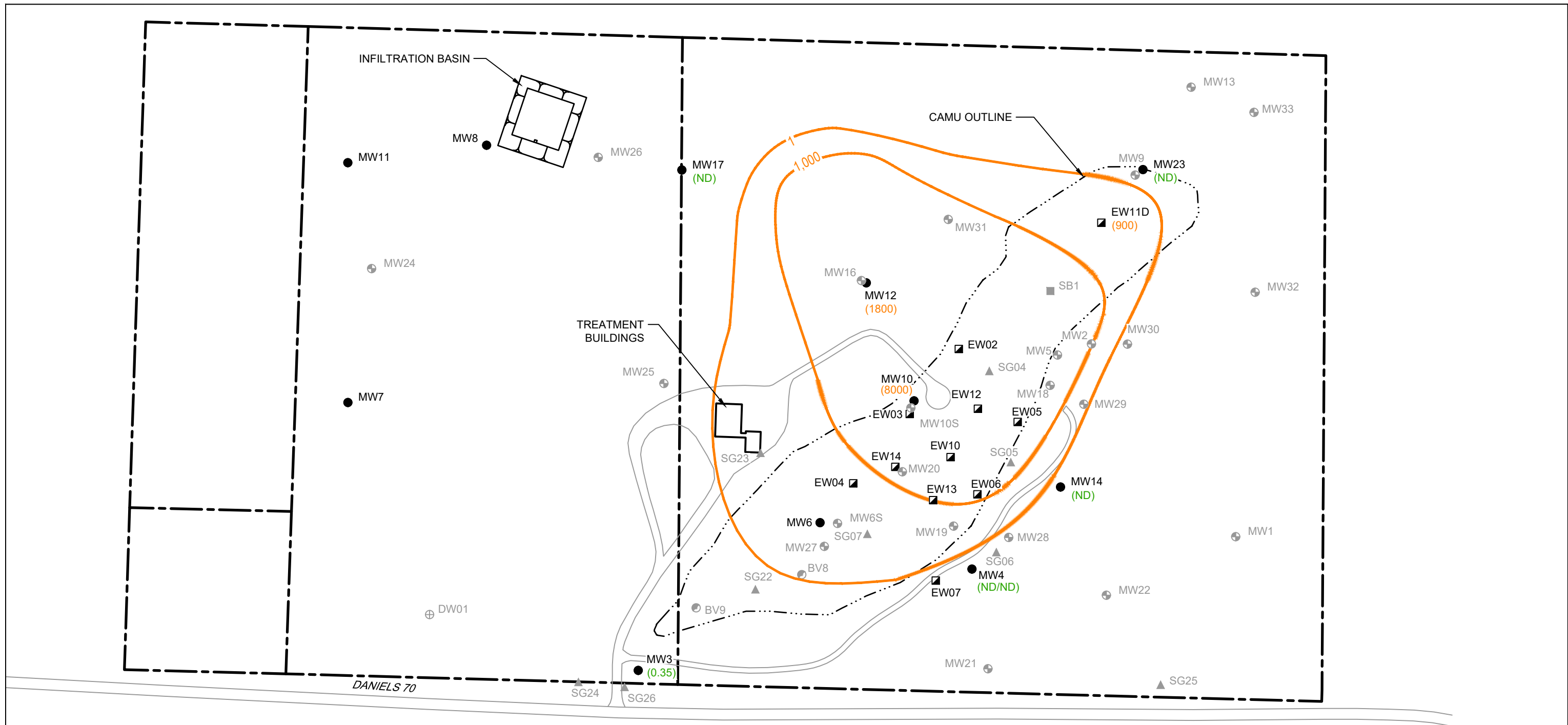


PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

**UNCONFINED (UPPER) AQUIFER
PENTACHLOROPHENOL
CONCENTRATIONS - OCTOBER 2023**

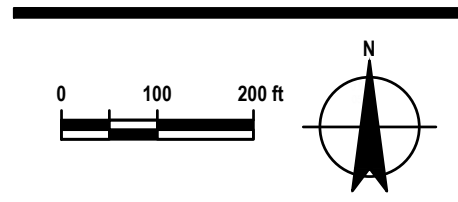
Project No. 11222418
Date February 2024

FIGURE 2.4



LEGEND

- PARCEL BOUNDARY
- EW11 EXTRACTION WELL NEST
- BV09 BIOVENTING WELL
- ▲ SG05 SOIL GAS WELL NEST
- ⊕ MW27 UNCONFINED MONITORING WELL LOCATION
- MW7 SEMICONFINED MONITORING WELL LOCATION
- ⊕ DW01 WATER SUPPLY WELL LOCATION
- SB1 SOIL BORING LOCATION
- RW1 RESIDENTIAL WELL
- 1 — PENTACHLOROPHENOL CONCENTRATION CONTOUR (µg/L)
- (ND/ND) NOT DETECTED / DUPLICATE CONCENTRATION
- (0.22) PENTACHLOROPHENOL CONCENTRATION (µg/L) MEETS ENFORCEMENT STANDARD OF 1.0 µg/L
- (1800) PENTACHLOROPHENOL CONCENTRATION (µg/L) EXCEEDS ENFORCEMENT STANDARD OF 1.0 µg



PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

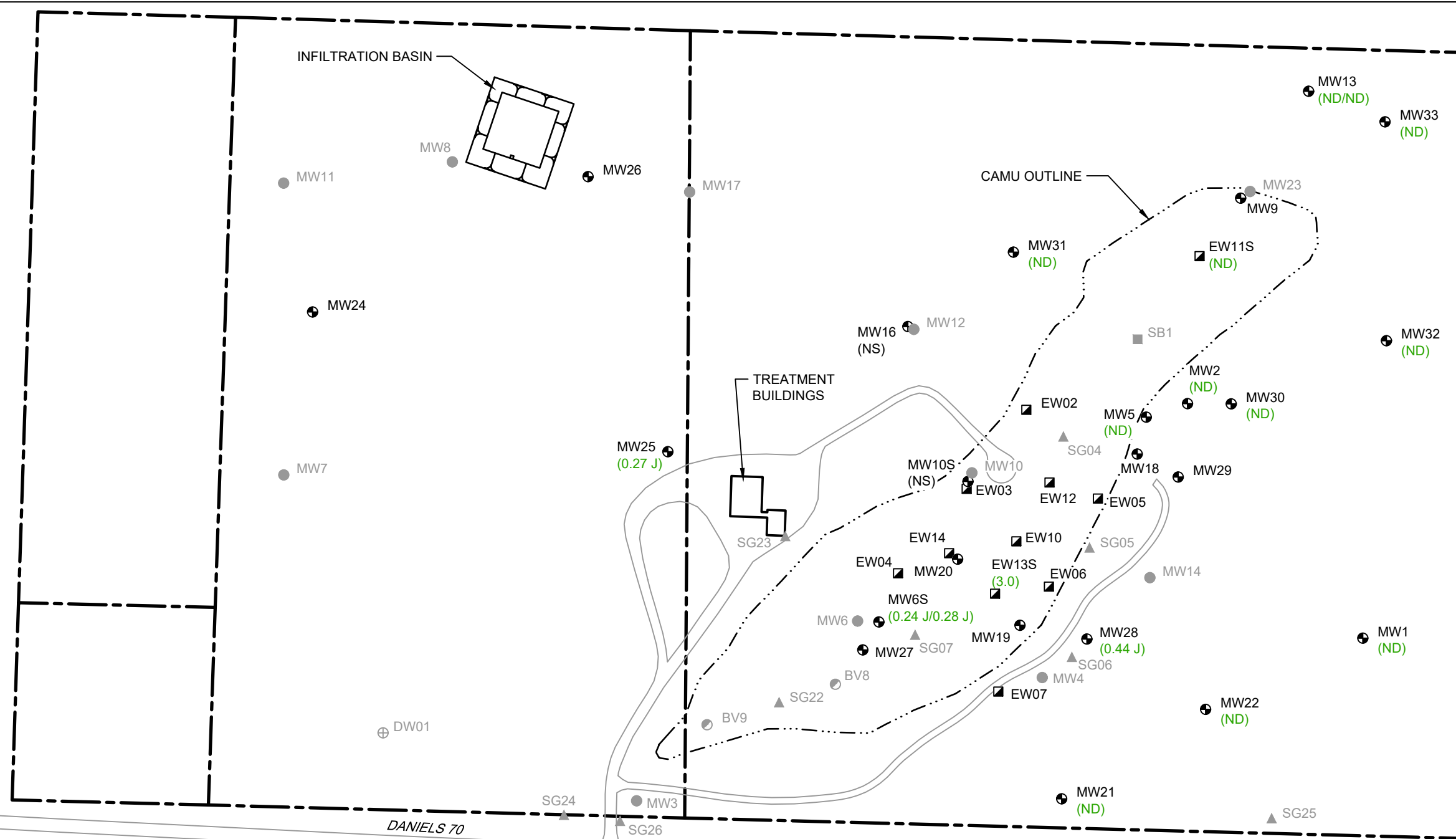
SEMICONFINED (LOWER) AQUIFER
PENTACHLOROPHENOL
CONCENTRATIONS - OCTOBER 2023

Project No. 11222418
Date February 2024

FIGURE 2.5

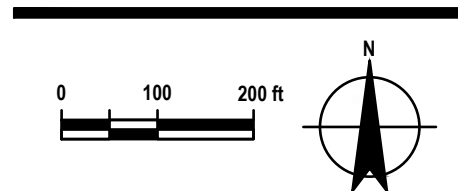
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DATA SOURCE: KEMPER AND ASSOCIATES, INC. SURVEY DATED MAY 2016 (WISCONSIN BURNETT COUNTY COORDINATE SYSTEM NAD83, 1996).



LEGEND

- PARCEL BOUNDARY
- EW11 EXTRACTION WELL NEST
- BV09 BIOVENTING WELL
- ▲ SG05 SOIL GAS WELL NEST
- ⊕ MW27 UNCONFINED MONITORING WELL LOCATION
- MW7 SEMICONFINED MONITORING WELL LOCATION
- ⊕ DW01 WATER SUPPLY WELL LOCATION
- SB1 SOIL BORING LOCATION
- ⊙ RW1 RESIDENTIAL WELL
- (0.31 J) DISSOLVED ARSENIC CONCENTRATION (µg/L) MEETS ENFORCEMENT STANDARD OF 10 µg/L
- (0.24 J/0.28 J) DISSOLVED ARSENIC / DUPLICATE CONCENTRATION (µg/L)
- (ND) NOT DETECTED
- (NS) NOT SAMPLED DUE TO LNAPL PRESENCE OR INSUFFICIENT WATER
- J CONCENTRATION WAS BETWEEN THE LIMIT OF DETECTION AND LIMIT OF QUANTITATION

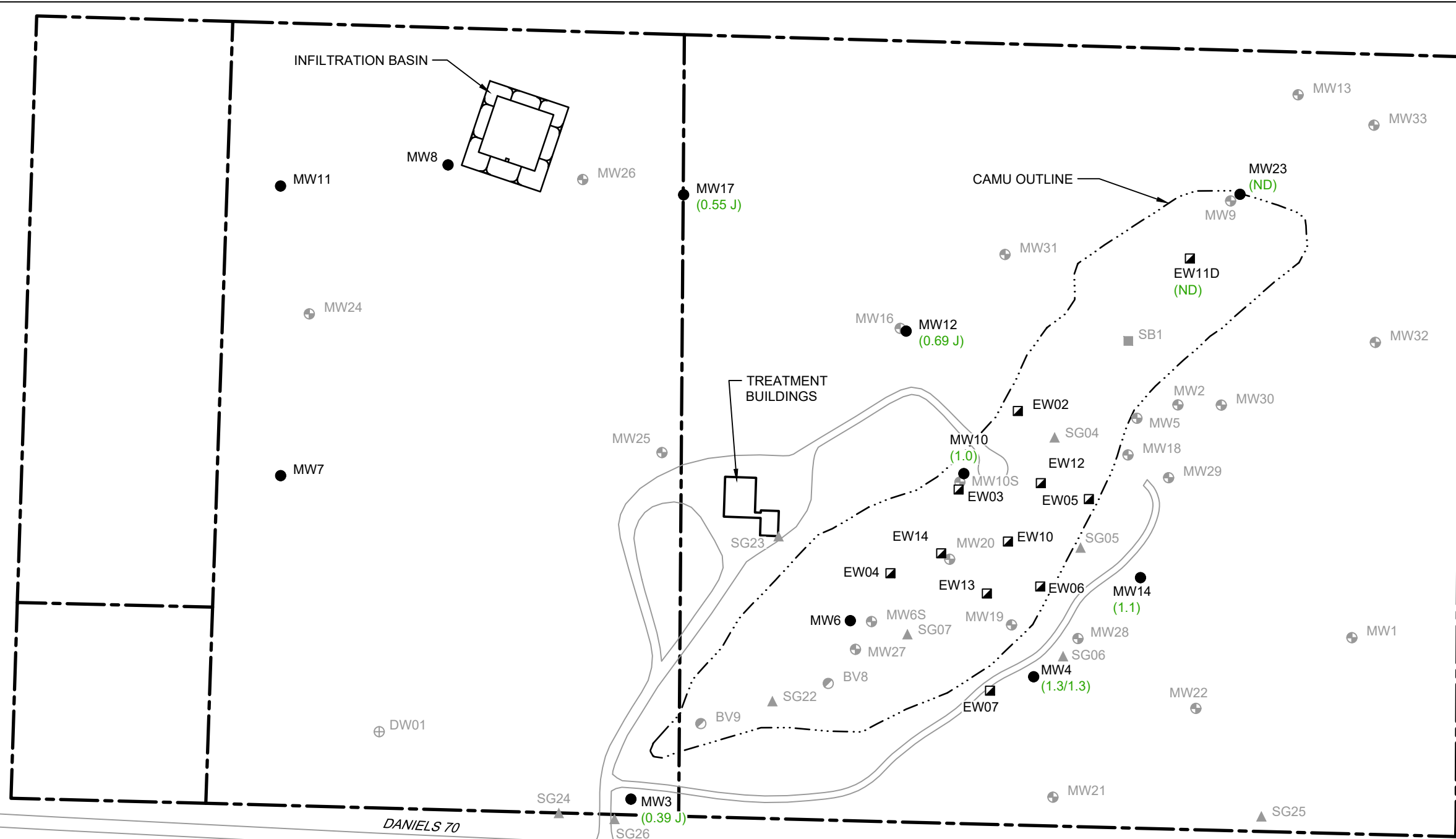


PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

**UNCONFINED (UPPER) AQUIFER
DISSOLVED ARSENIC CONCENTRATIONS
- OCTOBER 2023**

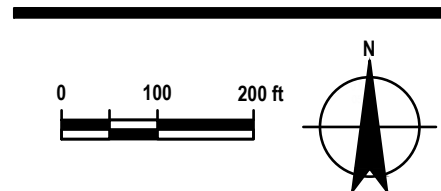
Project No. 11222418
Date January 2024

FIGURE 2.6



LEGEND

- PARCEL BOUNDARY
- EW11 EXTRACTION WELL NEST
- BV09 BIOVENTING WELL
- ▲ SG05 SOIL GAS WELL NEST
- ⊕ MW27 UNCONFINED MONITORING WELL LOCATION
- MW7 SEMICONFINED MONITORING WELL LOCATION
- ⊕ DW01 WATER SUPPLY WELL LOCATION
- SB1 SOIL BORING LOCATION
- ⊙ RW1 RESIDENTIAL WELL
- (ND) NOT DETECTED
- J CONCENTRATION WAS BETWEEN THE LIMIT OF DETECTION AND LIMIT OF QUANTITATION
- (1.3/1.3) DISSOLVED ARSENIC CONCENTRATION (µg/L) MEETS ENFORCEMENT STANDARD OF 10 µg/L/DUPLICATE CONCENTRATION



PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

**SEMICONFINED (LOWER) AQUIFER
DISSOLVED ARSENIC CONCENTRATIONS
- OCTOBER 2023**

Project No. 11222418
Date January 2024

FIGURE 2.7

Filename: N:\US\St Paul\Projects\563\11222418\Digital_Design\ACAD\Figures\RPT012\11222418-GHD-00-00-RPT-EN-D107_WA-012.dwg
Plot Date: 29 January 2024 12:26 PM

DATA SOURCE: KEMPER AND ASSOCIATES, INC. SURVEY DATED MAY 2016 (WISCONSIN BURNETT COUNTY COORDINATE SYSTEM NAD83, 1996).

Appendices

Appendix A

Historical Site Data

Appendix A.1

**Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin**

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO ₃) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L			
DW01	9/24/2003	N	0.5 U	0.05 J	1 U				2		50 UJ				5 UJ		30			1 U	0.25 U	2.5 U	2.5 U	2.5 U	250	66.9	110.8		1.48		2 U	1.5			
DW01	9/24/2003	N2	0.5 U		1 U				1 U		50 UJ				5 U		40																		
DW01	5/4/2004	N	10.0 U	0.102 UB	0.243 J				61.5 R		194 R			27300	108 R		2710 R			5.00 U	0.109 J	5.00 U	0.153 J	5.00 U	292	49 =	309		1.8 J		7.9 R	1.54 J			
DW01	5/4/2004	N2			0.280 J				49.5 R		29.2 R						2590 R																		
DW01	9/22/2004	N																		5.00 U	0.500 U	5.00 U	5.00 U	5.00 U											
DW01	9/28/2004	N		1.08 =																															
DW01	11/1/2004	N		0.0962 U																															
DW01	5/11/2005	N	2.0 U	0.033 J																0.93 U	0.50 U	5.0 U	5.0 U	5.0 U			260 J								
DW01	9/27/2005	N		0.040 J																0.93 UJ	0.50 U	5.0 U	5.0 U	5.0 U											
DW01	5/31/2006	N	2.0 U	0.039 J	1.0 UJ				140 J		50 UJ				4.0 UJ		1900 J			0.95 U	0.50 U	5.0 U	5.0 U	5.0 U	270 J	29 J	260 J		1.5 J		6.5	1.1 J			
DW01	9/26/2006	N	2.0 UJ	0.11 U	1.0 UJ				100		50 UJ				15 J		1500 J			0.93 U	0.50 U	5.0 U	5.0 U	5.0 U	230 J	21 J	230 J		0.67 J		13 J	2.1			
DW01	5/10/2007	N	2.0 UJ	0.074 J	1.0 UJ				100		100 UJ				10 UB		620 J			0.95 R	1.0 UJ	1.0 UJ	1.0 UJ	2.0 UJ	400 =	29	320		1.8		17 J	1.0 UB			
DW01	9/19/2007	N	2.0 UJ	0.093 UJ	0.63 J				89		100 UJ				2.4 J		1100			0.93 R	1.0 U	1.0 U	1.0 U	2.0 U	250 J	27	330 J		1.5 J		14 J	0.92 J			
DW01	5/20/2008	N		0.094 UJ															0.94 U	1.0 UJ	1.0 U	1.0 U	2.0 UJ												
DW01	10/23/2008	N	2.0 UJ	0.1 U	2 UJ				205 J		642 J			33000 J	4.6 J		81.2 J			1 U	0.5 U	2.0 U	2.0 U	5.0 U	297 J	29.6	423 J		1.79 J		9.07	44.4			
DW01	6/3/2009	N		0.1 U															1.0 UJ	0.5 U	2.0 U	2.0 U	5.0 U												
DW01	10/8/2009	N		0.1 UJ															0.994 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ												
DW01	5/19/2010	N		0.1 U															1.0 U	0.4 U	5 U	5 U	5 U												
DW01	10/7/2010	N		0.1 UJ															0.995 UJ	0.1 U	0.4 U	0.4 U	1 U												
DW01	6/30/2011	N		0.1 U															0.999 U	0.1 U	0.4 U	0.4 U	1 U												
DW01	10/18/2011	N		0.032 J															0.19 U	0.50 U	1.0 U	1.0 U	2.0 U												
DW01	5/23/2012	N		0.028 J															0.19 U	0.50 U	1.0 U	1.0 U	2.0 U												
DW01	10/18/2012	N		0.032 J															0.19 U H	0.50 U	1.0 U	1.0 U	2.0 U												
DW01	5/21/2013	N		0.029 J															0.19 U	0.50 U	1.0 U	1.0 U	2.0 U												
DW01	10/8/2013	N		0.027 J															0.20 U	0.50 U	1.0 U	1.0 U	2.0 U												
DW01	5/13/2014	N		0.057 J																															
DW01	9/25/2014	N		0.54 J																0.19 UJ															
DW01	4/21/2015	N		0.023 J															0.19 U																
DW01	10/15/2015	FD		0.096 U															0.19 U																
DW01	10/15/2015	N		0.095 U															0.19 U																
DW01	4/5/2016	FD		0.097 U															0.20 U	0.50 U	1.0 U	1.0 U	2.0 U												
DW01	4/5/2016	N		0.095 U															0.14 J	0.50 U	1.0 U	1.0 U	2.0 U												
DW01	10/10/2016	FD		0.024 J															0.20 U	0.50 U	1.0 U	1.0 U	2.0 U												
DW01	10/10/2016	N		0.025 J															0.20 U	0.50 U	1.0 U	1.0 U	2.0 U												
DW01	4/18/2017	FD		0.022 J															0.20 U	0.50 U	1.0 U	1.0 U	2.0 U												
DW01	4/18/2017	N		0.020 J															0.20 U	0.50 U	1.0 U	1.0 U	2.0 U												
DW01	10/20/2017	FD		0.10 U															0.88 U	0.50 U	0.50 U	0.50 U	1.0 U												
DW01	10/20/2017	N		0.10 U															0.83 U	0.50 U	0.50 U	0.50 U	1.0 U												
DW01	6/5/2018	N		0.095 U															0.77 U	0.50 U	0.50 U	0.50 U	1.0 U												
DW01	10/16/2018	N		0.095 U															0.82 U	0.50 U	0.50 U	0.50 U	1.0 U												
DW01	4/22/2019	N		0.099 U															0.26 U	0.15 U	0.18 U	0.15 U	0.22 U												
DW01	10/1/2019	N		0.087 U															0.26 U	0.15 U	0.18 U	0.15 U	0.23 J												
EW02D	8/22/2014	N		52															0.28															2.1 J	
EW02D	4/23/2015	N		17																															
EW02D	4/14/2016	N	0.15 J	370	0.49 J				3.8		299				384		46.7			1.7	0.50 U	1.0 U	1.0 U	2.0 U	55.0	12.1	70.6		0.70		8.7	4.8			

Appendix A.1

**Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin**

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L	
EW02S	4/14/2016	N	0.094 J	690	5.0 U				1.4 J		50.2 J									2.5	0.50 U	1.0 U	1.0 U	2.0 U	30.0	10.5	41.2		1.0		7.0	2.7	
EW03D	8/22/2014	N		260															0.87												1.6 J		
EW03D	4/18/2016	N	1.3	3500	2.7 J				9.8		12500				1780		398			2.4	0.50 U	0.33 J	1.0 U	3.6	184	13.4	169		0.10 U		25.6	10	
EW03S	4/18/2016	N	0.15 J	14000	0.53 J				10.8		1050				3530		20.0 U			12	1.0 U	2.0 U	2.0 U	5.2	88.0	73.8	220		0.29		39.1	59.1	
EW04D	8/22/2014	N		150															0.65												4.8 U		
EW04D	2/3/2015	N		200															0.71												4.9 U		
EW04D	4/23/2015	N		430																													
EW04D	4/18/2016	N	0.33 J	24	5.0 U				2.2		3060				316		172			0.16 J	0.50 U	1.0 U	1.0 U	2.0 U	129	16.5	131		1.9		6.0	5.3	
EW04S	4/18/2016	N	0.12 J	210	5.0 U				2.4		567				385		20.0 U			0.25	0.50 U	1.0 U	1.0 U	2.0 U	81.0	9.9	98.0		0.92		8.1	7.2	
EW05D	8/22/2014	N		4400															6.8												6.3		
EW05D	2/3/2015	N		3100															11											2.0 J			
EW05D	4/20/2016	N	0.44 J	7500	2.7 J				8.6		8430				1980		372			19	0.50 U	0.79 J	0.95 J	6.7	145	14.4	171		0.10 U		17.0	36.7	
EW06D	8/22/2014	N		910															1.8												1.9 J		
EW06D	2/3/2015	N		4900															12												1.6 J		
EW06D	1/24/2017	N	0.25 J	840	0.35				0.70 J		398				163		15.4 J			1.7	0.28	0.26	0.23	1.2 J	124	12.3	144		1.0		5.9	6.4	
EW07D	8/22/2014	N		280															0.68												1.3 J		
EW07D	2/3/2015	N		170															0.28											4.9 U			
EW07D	4/23/2015	N		2400																													
EW07D	4/12/2016	N	0.59	0.31	5.0 U				1.1 J		122				210		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	127	23.7	174		6.6		8.4	1.2	
EW10D	8/22/2014	N		7000															11												11		
EW10D	2/3/2015	N		2800															7.7											4.9 U			
EW10D	4/20/2016	FD	1.3	4800	7.6				12.1		3720				2170		114			19	0.50 U	1.3	1.9	12	136	23.9	184		0.060 J		20.3	41.0	
EW10D	4/20/2016	N	1.1	5000	6.5				10.3		3350				2200		81.0			19	0.50 U	1.4	1.8	12	135	25.7	180		0.057 J		21.8	41.8	
EW11D	4/14/2016	FD	0.080 J	2.5	5.0 U				2.0 U		825				27.4		55.9			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	190	12.8	276		2.0		198	1.2	
EW11D	4/14/2016	N	0.50 U	3.4	5.0 U				1.1 J		657				22.6		46.4			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	187	12.7	282		2.0		155	1.0	
EW11D	7/19/2016	N	1.1	7.4	5.0 U				2.7		292				54.5		50.0			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	151	9.1	242		2.2		112	1.9	
EW11D	10/10/2016	N	3.2	8.4	5.0 U				0.67 J		793				23.6		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	190	13.6	272		2.7		159	1.0	
EW11D	1/19/2017	N	8.9	0.15	0.35				0.51 J		897				40.4		10.8 J			0.060	0.28	0.26	0.23	0.24	168	12.2	70.0		3.3		129	1.9	
EW11D	4/19/2017	N	35	0.13	5.0 U				0.58 J		2930				129		19.0 J			0.22 U	0.50 U	1.0 U	1.0 U	2.0 U	152	11.4	238		5.2		97.3	3.2	
EW11D	10/4/2017	N	14	0.18	0.31 J				1.4 J		1290				66.9		11.9 J			0.81 U	0.50 U	0.50 U	0.50 U	1.0 U	159	11.5	220		7.7		79.4	2.5	
EW11D	5/31/2018	FD	2.4	0.12	0.35 J				1.2 J		2690				126		10.2 J			0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	137	8.9	204		13.4		51.7	3.4	
EW11D	5/31/2018	N	2.5	0.10 U	0.36 J				0.87 J		2600				124		10.2 J			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	137	9.0	202		13.0		49.5	3.4	
EW11D	10/19/2018	N	1.0 U	0.096 U	1.0 U				13.1		144				34.5		20.0 U			0.76 U	0.50 U	0.50 U	0.50 U	0.44 J	131	7.2	121		9.9		40.3	4.3	
EW11D	4/24/2019	N	0.17 U	0.20	1.1				7.0		23400				217		282			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	48.2	0.94	95.1		5.7		19.5 B	5.5	
EW11D	10/17/2019	N	0.31 J	2.7	0.24 J				2.1		1260				66.1		15.2 J			0.24 U	0.15 U	0.18 U	0.15 J	0.22 U	149 H	3.9	172		5.4		29.5	6.4	
EW11D	4/13/2020	N	0.22 J	0.86	0.30 JB				4.6		2180				162		27.3			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	44.9	0.46	66.1		3.7		14.2	5.6	

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**Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin**

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L		
EW11D	10/7/2020	N	12	0.091 U	0.55 J				15.0		4880				57.3		12.4 J			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	201	5.2	228		6.8 H		27.6	3.4		
EW11D	4/13/2021	N	1.0 U	3.2	0.50 J				18.9		3470				208		37.8			0.79 U	0.50 U	0.50 U	0.50 U	1.0 U	75.8	1.3	101		2.3	20.8	7.4			
EW11D	10/12/2021	N	550	0.60	0.27 J				1.9 J		23500				692		15.6 J			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	83.7	3.6	90.8		1.6	6.1	6.8			
EW11D	4/12/2022	N	870	0.44	2.3				9.0		49200				157		276			0.75 U	0.50 U	0.50 U	0.50 U	1.0 U	164	2.3	97.6		1.8	8.3	3.7			
EW11D	10/4/2022	N	120	1000	1.0 U	0.28 J			0.88 J	1.9 J	354	11200			59.8	98.7	20.0 U	46.0		0.77 U	0.50 U	0.50 U	0.50 U	0.23 J	174	2.5	100		0.44	5.5	4.2			
EW11D	10/4/2022	FD	110	1000	1.0 U	1.0 U			1.3 J	1.4 J	352	7830			61.3	80.9	20.0 U	35.8		0.81 U	0.50 U	0.50 U	0.50 U	1.0 U	173	2.5	100		0.44	5.6	4.0			
EW11D	4/25/2023	N	91	1600	1.0 U	0.93 J			0.75 J	3.4	2230	27900			165	191	20.0 U	67.9		0.68 U	0.50 U	0.50 U	0.50 U	0.44 J	187	1.7	112	112	0.71 J	7.4	4.7			
EW11D	4/25/2023	FD	97	1900	1.0 U	2.7			3.5	7.6	3770	91100			202	326	20.0 U	222		0.75 U	0.50 U	0.50 U	0.50 U	0.30 J	196	1.8	104	108	0.73 J	6.9	5.3			
EW11D	10/27/2023	N	9.9	900	1.0 U	1.0 U	55400	55300	4.0 U	1.8 U	640	9720	19500	20400	34.5 U	52.7 U	20.0 U	60.9		0.83 U	0.50 U	0.50 U	0.50 U	1.0 U	222	2.6	138	138	2.0 J-	8.6	3.0			
EW11S	4/14/2016	N	0.50 U	0.37	5.0 U				3.4		451				63.5		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	48.6	7.0	100		8.9	45.1	5.2			
EW11S	7/19/2016	N	0.50 U	1.2	5.0 U				2.3		84.2 J				37.3		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	65.7	7.9	106		6.0	36.5	2.7			
EW11S	10/10/2016	N	0.50 U	0.70	0.40 J				3.0		114				97.9		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	64.7	7.9	118		7.9	39.1	4.7			
EW11S	1/19/2017	N	0.20 J	0.96	0.40 J				2.2		211				157		6.2			0.060	0.28	0.26	0.23	0.24	50.5	9.8	108		7.7	36.3	4.3			
EW11S	4/19/2017	N	0.26 J	0.20	5.0 U				1.8 J		445				185		20.0 U			0.23 U	0.50 U	1.0 U	1.0 U	2.0 U	45.9	9.2	122		8.6	36.8	3.5			
EW11S	10/4/2017	N	0.22 J	0.25	0.31 J				2.9		164				65.0		7.9 J			0.80 U	0.50 U	0.50 U	0.50 U	1.0 U	65.2	9.4	129		8.0	39.1	3.9			
EW11S	6/1/2018	N	1.0 U	0.25	0.24 J				2.7		242				74.7		20.0 U			0.76 U	0.50 U	0.50 U	0.50 U	1.0 U	53.5	10.6	127		13.2	36.3	3.3			
EW11S	10/19/2018	N	1.0 U	0.099 U	1.0 U				9.6		213				63.5		12.8 J			0.81 U	0.50 U	0.50 U	0.50 U	0.23 J	56.4	7.4	182		11.9	29.2	2.7			
EW11S	4/24/2019	N	0.17 U	0.16	0.23 U				2.2		94.7 J				10.7		8.2 J			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	53.0	2.7	96.5		6.0	23.7 B	2.5			
EW11S	10/17/2019	N	0.21 J	2.1	0.23 U				2		46.7 U				24.6		6.9 U			0.24 U	0.15 U	0.18 U	0.15 J	0.22 U	93.6 H	3.2	128		7.3	22	3.6			
EW11S	4/13/2020	N	0.17 U	0.98	0.30 JB				9.1		46.7 U				2.2 J		6.9 U			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	72.7	2.2	96		4.5	20.7	2.2			
EW11S	10/7/2020	N	1.9	0.087 U	0.28 J				20.6		241				59.3		6.9 U			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	97.4	5.1	127		5.7 H	24.8	3.1			
EW11S	4/13/2021	N	1.0 U	1.2	1.0 U				20.9		100 U				5.4		12.5 JB			0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	97.3	4.5	134		6.5 H	21	2.5			
EW11S	10/12/2021	N	0.30 J	0.18	1.0 U				15.0		49.7 J				6.1		20.0 U			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	94.7	2.8	128		6.4	15.5	1.5			
EW11S	4/12/2022	N	0.94 J	1.2	1.2				2.8		734				48.6		8.2 J			0.81 U	0.50 U	0.50 U	0.50 U	1.0 U	104	2.2	65.1		4.3	11.0	1.4			
EW11S	10/4/2022	N	1.1	2.3	0.24 J	1.0 U			1.4 J	1.8 J	100 U	422			1.9 J	39.6	20.0 U	20.0 U		0.80 U	0.50 U	0.50 U	0.50 U	1.0 U	101	1.8	60.7		3.6	8.0	1.4			
EW11S	4/26/2023	N	1.0 U	250	0.24 J	0.40 J			3.0	3.2	100 U	153			2.1 J	10.9	20.0 U	20.0 U		0.70 U	0.50 U	0.50 U	0.50 U	1.0 U	73.8	1.2	50.6	47.1	2.4	10.6	3.3			
EW11S	10/27/2023	N	1.3	6.9 U	1.0 U	1.0 U	24100	24300	2.0 U	3.4 U	100 U	266	11400	11500	2.5 U	32.1 U	20.0 U	20.0 U		0.90 U	0.50 U	0.50 U	0.50 U	1.0 U	110	0.98 J	60.8	60.3	1.6 J-	5.4	1.2			
EW12D	8/22/2014	N		4600															5.7												5.1			
EW12D	2/3/2015	N		880															4.1											4.9 U				
EW12D	4/20/2016	N	4.0	2500	2.2 J				1.3 J		3820				1620		20.0 U			12	0.50 U	0.58 J	0.50 J	7.2	90.0	5.4	80.4		0.10 U	6.4	15.7			
EW13D	8/22/2014	N		780															1.2												1.5 J			
EW13D	2/3/2015	N		660															1.6											4.7 U				
EW13D	4/23/2015	N		18000																														
EW13D	4/19/2016	N	1100	2100	1.6 J				2.0 U		7660				956		11.7 J			13	0.50 U	0.27 J	0.32 J	4.8	180	15.1	167		0.093 J	2.0	20.7			
EW13S	4/19/2016	N	4.9	770	23.2				37.7		14100				2340		13.8 J			2.0	0.50 U	0.26 J	1.0 U	4.2	370	20.7	229		0.10 U	9.6	36.6			
EW13S	7/26/2016	N	20	1900	58.9				133		45600				2580		52.2			4.0	0.50 U	0.31 J	0.35 J	4.4	312	21.2	292		0.10 U	7.8	32.6			
EW13S	10/14/2016	N	40	4200	18.5				30.6		15600				2360		8.4 J			6.8	0.50 U	0.53 J	0.54 J	7.1	296	25.1	236		0.10 U	11.8	34.7			
EW13S	1/24/2017	N	48	6400	11.4				3.2		8700				2220		6.2			11	0.28	0.70 J	0.62 J	9.3	297	28.0	304		4.8	12.1	35.8			
EW13S	4/20/2017	N	32	5100	13.7				2.2		10600				2260		20.0 U			20	0.50 U	0.96 J	0.90 J	13	240	29.1	294		0.10 U	16.1	37.2			
EW13S	10/5/2017	N	52	8700	12.4				0.93 J		10400				2010		20.0 U			16	0.50 U	1.0	1.0	14	276	34.5	276		0.075 J	13.6	34.9			
EW13S	6/1/2018	N	24	6000	14.9				3.6		13400				2540		20.0 U			19	0.50 U	0.93	1.0	13	271	34.2	253		0.085 J	13.6	33.8			
EW13S	10/19/2018	FD	17	9800	16.3				17.3		16300				2610		20.0 U			33	0.50 U	1.3	1.3	19	241	32.6	255		0.20 U	17.0	34.7			

Appendix A.1

**Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin**

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L		
EW13S	10/19/2018	N	16	10000	16.0				12.5		16400				2620		11.5 J			34	0.23 J	1.2	1.2	21	242	33.4	251		0.20 U		17.4	35.3		
EW13S	4/23/2019	N	8.4	8900	5.5 B				1.8 JB		18700				3040 B		6.9 U			17	0.15 U	0.83	0.84	15	243	32.2	340		0.068 U		19.9	31.5		
EW13S	10/15/2019	N	6.3	11000	8.9				2.2		19800				3150		6.9 U			20	0.15 U	1.3	0.97	18	265	33.1	268		0.068 U		15.5	36.6		
EW13S	4/8/2020	N	5.5	3700	3.8				8.1		10200				1310		9.0 J			27	0.15 U	0.74	0.81	12	257	32.1	258		0.068 U		13.6	35.8		
EW13S	10/7/2020	FD	4.6	7900	15.5				1.1 J		14800				2590		6.9 U			33	0.15 U	1.5	1.2	21	234	36.7	276		0.076 JH		18.4	29.0		
EW13S	10/7/2020	N	5.2	8300	14.8				1.4 J		14200				2440		6.9 U			33	0.15 U	1.2	0.89	17	233	34.3	270		0.11 JH		16.9	29.1		
EW13S	4/15/2021	N	5.5	9400	3.6				1.2 JB		18900				3410		11.0 J			20	0.50 U	0.99	0.94	16	278	27.1	301		0.088 J		13.5	4.5		
EW13S	10/14/2021	N	4.1	9400	7.7				33.3		25400				3340		12.8 J			21	0.50 U	0.93	0.84	18	290	35.4	305		0.20 U*		12.6	57.1		
EW13S	4/12/2022	N	6.2	19000	7.3				3.0		20700				4190		20.0 U			18	0.50 U	1.1	1.0	18	279	36.8	205		0.20 U		17.7	45.0		
EW13S	4/26/2023	N	6.1	12000	7.8	21.0			3.4	45.6	29000	40100			3670	3580	20.0 U	26.9		13	0.50 U	1.0	0.87	17	281	34.9	189	204	1.0 U		11.5	30.1		
EW13S	10/25/2023	N	6.2	15000	3.0	10.4	78900	69300	2.0 U	47.0	17400	35600	31000 J-	27300 J-	3700	3280	20.0 U	25.3		25	0.50 U	0.94	0.87	14	313	36.7	173	197	1.0 U		10.9	28.8		
EW14D	8/22/2014	N		290															0.99												1.4 J			
EW14D	2/3/2015	N		660															1.5											4.9 U				
EW14D	4/23/2015	N		2100																														
EW14D	4/19/2016	FD	3.5	2700	5.0 U				2.0 U		292				77.8		17.2 J			3.1	0.50 U	1.0 U	1.0 U	2.4	136	11.9	145		0.48		7.1	6.3		
EW14D	4/19/2016	N	4.2	2800	5.0 U				3.4		301				77.4		17.5 J			3.5	0.50 U	1.0 U	1.0 U	2.4	137	12.0	139		0.48		7.2	6.5		
MW1	10/9/1997	FD	10 U	1	2.3				3.5 U		20 J				1180		3.8				0.1 U	1 U	1 U	1 U	190	16			4.5		5.8	43.5		
MW1	10/9/1997	FD2			2 U				70.9								36																	
MW1	10/9/1997	N	10 U	2	2 U				61.6		20 U				1070		32.8				0.1 U	1 U	1 U	1 U	190	18			6.5		6.3	20		
MW1	10/9/1997	N2		2	2 U				2 U								3				0.1 U	1 U	1 U	1 U										
MW1	4/24/2001	N	0.11 U	0.1 U	2.4				33		9830				642		16			5.6 U	0.1 U	1 U	1 U	1 U	140	24	218		6.5 =		13	3.89		
MW1	4/24/2001	N2	0.11 U		1 U				25 U		25 U				15 U		25 U													6.5				
MW1	9/11/2001	N	10 U	0.5	0.7 J				4 J		35 U				0.79 J		3.7 U			0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	130	10	170		2.6		8.2 U	3.9		
MW1	9/11/2001	N2			1.3				25 U		4000				450		20																	
MW1	5/14/2002	N			1.4 U				1.6 J		11.2 U				0.48 J		5.4 J																	
MW1	8/6/2002	N	0.01 U	0.067	1.4 U				7.6 J		1700				180		5.8 J			5 U	1 U	5 U	5 U	5 U	170	7.4	190		0.15 U		7.9	2.6		
MW1	8/6/2002	N2	0.01 U	0.063	1.7 J				0.3 U		11 U				0.95 J		3.9 J			5 U	1 U	5 U	5 U	5 U	160	7.3	190		0.15 U		7.7	3.7		
MW1	8/6/2002	N3			1.8 J				9.5 J		2200				230		6.5 J																	
MW1	8/6/2002	N4			1.4 U				0.3 U		11 U				2.2 J		2.9 J																	
MW1	4/29/2003	N	0.5 U	0.1 U	1 U				14		3160				217		10 U			7.4 U	0.5 U	5 U	5 U	5 U	174	4.3	187		2.6		10	3.2		
MW1	4/29/2003	N2	0.5 U		1 U				1 U		25 U				5 U		10 U																	
MW1	9/24/2003	N	0.5 U	0.13	1 J				21		7000 J				416		20 J			1 U	0.25 U	2.5 U	2.5 U	2.5 U	157	3.3	68.25		2.61		2 U	8.4		
MW1	9/24/2003	N2	0.5 U		1 U				1 J		100 J				36		10 U																	
MW1	5/4/2004	N	0.863 J	1.06 J	0.346 J				5.73 R		790 R			13900	135 R		7.43 R			5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	147	4.3 R	158		2.1 J		2.0 R	6.37 J		
MW1	5/4/2004	N2			0.190 J				0.785 R		29.9 R				15.0 R		2.74 R																	
MW1	9/21/2004	FD	10.0 U	0.442	0.470 J				13.6 J		1210				158		13.4 J			5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	140	2.7 =	1960		1.8 J		4.5 J	7.98		
MW1	9/21/2004	FD2			0.227 J				0.707 J		21.0 J				3.07 J		3.31 J																	
MW1	9/21/2004	N	10.0 U	0.348	0.353 J				8.41 J		838				103		17.1 J			1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	130	2.7 =	776		1.8 J		5.2 J	6.75		
MW1	9/21/2004	N2			0.218 J				0.605 J		18.0 J				2.60 J		4.06 J																	
MW1	5/10/2005	N	2.0 U	0.12	1.0 U				18		3800				360		11 J			0.92 U	0.50 U	5.0 U	5.0 U	5.0 U	110 J	3.6 J	140 J		1.7 J		14 R	3.7 R		
MW1	5/10/2005	N2			1.0 U				10 U		50 U				10 U		20 U																	
MW1	9/29/2005	N	2.0 U	0.12	1.0 J				23 J		4800 J				400 J		14 J			1.0 U	0.50 U	5.0 U	5.0 U	5.0 U	110 J	6.2 J	160 J		1.9 J		16 R	2.4 J		
MW1	9/29/2005	N2			1.0 UJ				10 UJ		50 UJ				3.8 J		20 UJ																	
MW1	5/31/2006	N	2.0 U	0.049 J	1.0 UJ				10 UJ		50 UJ				10 UJ		20 UJ			1.0 U	0.50 U	5.0 U	5.0 U	5.0 U	110 J	2.3 J	100 J		1.6 J		17	1.7 J		

Appendix A.1

**Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin**

Location	Date ²	Compound ¹ Units Type ³	Methane	Pentachlorophenol	Arsenic (dissolved)	Arsenic (total)	Calcium (dissolved)	Calcium (total)	Copper (dissolved)	Copper (total)	Iron (dissolved)	Iron (total)	Magnesium (dissolved)	Magnesium (total)	Manganese (dissolved)	Manganese (total)	Zinc (dissolved)	Zinc (total)	Total Petroleum Hydrocarbons (C10-C28) DRO	Naphthalene	Benzene	Ethylbenzene	Toluene	Xylenes (total)	Alkalinity, total (as CaCO3)	Chloride	Hardness (total)	Hardness (dissolved)	Nitrate (as N)	Oil and grease (HEM), polar	Sulfate	Total organic carbon (TOC)
			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW1	5/8/2007	N	2.0 UJ	0.11 J	1.0 UJ				10 UJ		100 UJ				6.3 J		20 UJ			1.0 R	1.0 U	1.0 U	1.0 U	2.0 U	190 =	2.2 J	130		1.9		15 J	1.9
MW1	9/18/2007	N	2.0 UJ	0.093 UJ	1.0 UJ				10 UJ		100 UJ				10 UJ		20 UJ			0.93 R	1.0 U	1.0 U	1.0 U	2.0 U	110 J	9.4	170 J		3.0 J		12 J	1.1 J
MW1	10/21/2008	N	2.0 UJ	0.42 UJ	2 U				10 UJ		388			21200	10 U		8.60 J			1.00 U	0.50 U	2.0 U	2.0 U	5.0 U	109	3.91	223 J		1.62 J		6.19	3.38 J
MW1	4/12/2016	N	0.50 U	0.15	5.0 U				2.0 U		19.9 J				1.4 J		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	79.9	5.1	102		0.53		5.2	0.73 J
MW1	7/20/2016	N	0.50 U	1.1	5.0 U				2.0 U		100 U				5.0 U		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	82.4	5.6	30.0		0.53		5.2	0.83 J
MW1	10/12/2016	N	0.16 J	0.12	0.46 J				0.67 J		100 U				0.96 J		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	86.2	7.5	92.0		0.45		5.2	0.59 J
MW1	1/19/2017	FD	0.080	0.30	0.51 J				0.73 J		5.7 J				0.25		6.2			0.061	0.28	0.26	0.23	0.24	71.9	6.8	88.0		0.54		4.8	0.73 J
MW1	1/19/2017	N	0.080	0.19	0.77 J				0.76 J		8.1 J				0.25		6.2			0.063	0.28	0.26	0.23	0.24	71.9	6.7	88.0		0.54		4.7	0.65 J
MW1	4/18/2017	N	0.50 U	0.12	0.37 J				2.0 U		100 U				5.0 U		20.0 U			0.22 U	0.50 U	1.0 U	1.0 U	2.0 U	64.4	3.9	84.0		0.39		5.5	0.91 J
MW1	10/4/2017	N	0.15 J	0.17	1.0 U				1.1 J		100 U				2.5 U		20.0 U			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	78.5	8.1	81.3		1.1		5.5	0.63 J
MW1	10/18/2018	N	1.0 U	0.096 U	0.34 J				1.3 J		100 U				2.5 U		8.8 J			0.81 U	0.50 U	0.50 U	0.50 U	1.0 U	85.5	13.1	109		2.9		5.9	1.0
MW1	4/24/2019	FD	0.17 U	0.14	0.45 J				1.5 JB		69.1 J				3.7		7.3 J			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	84.0	10.7	116		3.4		6.0 B	0.89 J
MW1	4/24/2019	N	0.17 U	0.12	0.24 J				1.2 JB		53.2 J				3.5		8.2 J			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	85.1	11.3	116		3.4		5.9 B	0.47 U
MW1	10/14/2019	N	0.17 U	0.085 U	0.37 J				1.5 J		76.5 J				4.7		6.9 U			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	99.1	14.7	116		3.7 H		5.7	0.55 J
MW1	4/9/2020	N	0.17 U	0.086 U	0.47 J				1.6 J		46.7 U				0.79 U		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	72.9	6	83.4		1.4		5.5	0.54 J
MW1	10/6/2020	N	0.17 U	0.17	0.36 J				3.6		46.7 U				0.79 U		6.9 U			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	82.0	9.7	105		3.0		7.1	1.2
MW1	4/12/2021	N	1.0 U	0.41	0.34 J				16.6 B		100 U				1.0 JB		8.0 J			0.88 U	0.50 U	0.50 U	0.50 U	1.0 U	75.5	6.6	87.7		1.3		5	0.87 J
MW1	10/11/2021	N	1.0 U	0.10 U^c	0.52 J				52.6		100 U				2.5 U		20.0 U			0.81 U	0.50 U	0.50 U	0.50 U	1.0 U	93.6	11.4 F1	113		2.9		5.4	0.50 JF1
MW1	4/11/2022	N	1.0 U	0.50	0.33 J				2.4		100 U				2.7		20.0 U			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	116	14.2	82.5		3.9		5.9	1.0
MW1	10/5/2022	N	1.0 U	0.35	0.33 J	0.32 J			1.7 J	1.4 J	100 U	100 U			2.5 U	2.5 U	20.0 U	20.0 U		0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	107	14.3	82.1		3.4		5.9	0.97 J
MW1	4/25/2023	N	1.0 U	0.21	0.25 J	0.23 J	32900	33900	1.2 J	1.1 J	100 U	100 U	12200	12600	2.5 U	1.5 J	20.0 U	20.0 U		0.64 U	0.50 U	0.50 U	0.50 U	1.0 U	111	17.9	84.7	82.3	1.7		4.3	0.86 J
MW1	4/25/2023	FD	1.0 U	0.20	0.29 J	0.25 J	32900	33900	4.7	1.1 J	100 U	100 U	12300	13100	2.5 U	1.5 J	20.0 U	20.0 U		0.63 U	0.50 U	0.50 U	0.50 U	1.0 U	110	17.8	84.6	82.2	1.7		4.3	0.79 J
MW1	10/26/2023	N	1.0 U	0.10 U	1.0 U	1.0 U	35400	34400	2.8 U	2.0 U	100 U	100 U	11700	11900	2.5 U	2.5 U	20.0 U	20.0 U		0.80 U	0.50 U	0.50 U	0.50 U	1.0 U	123	17.3	89.7	88.3	1.7 J-		4.0	0.85 J
MW2	10/9/1997	N	10 U	1 U	2 U				10.2 J		20 J				50.6		10				0.1 U	1 U	1 U	1 U	300	3.5			1.1		17	2.6
MW2	10/9/1997	N2		1 U	2 U				11.4 J								10.7				0.1 U	1 U	1 U	1 U								
MW2	4/5/2000	N		0.5 U																10 U												
MW2	6/18/2001	N	0.14	0.1 U	0.37 J				25 U		24 U				8.3		25 U			5 U	0.1 U	1 U	1 U	1 U	36	5.73	66		38 =		105	5.57
MW2	6/18/2001	N2	0.14		6.7				109		39900				1230		64												38			
MW2	9/12/2001	N	10 U	0.51	3.9				110		29000				1200		69			0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	49	6.2	140		2.3		10	4.2
MW2	9/12/2001	N2			0.29 U				2.2 U		35 U				57		5.2 J															
MW2	8/6/2002	N	0.01 U	0.12	6.4				30		10000				420		26 J			5 U	1 U	5 U	5 U	5 U	66	3	98		0.15 U		10	3.2
MW2	8/6/2002	N2			1.4 U				0.3 U		48				18		9.1 J															
MW2	9/24/2003	N	0.5 U	0.28	8				100		41300 J				1180		80			0.99 U	0.25 U	2.5 U	2.5 U	2.5 U	80	1 J	106.2		2.02		3 J	2.3
MW2	9/24/2003	N2	0.5 U		1 U				16		3030 J				443		20 J															
MW2	9/21/2004	N	10.0 UJ	1.26	4.03 J				87.2 J		25800 J				972 J		64.2 J			5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	110 J	12 J	921 J		1.4 J		4.0 R	5.23 R
MW2	9/21/2004	N2			0.237 J				3.10 J		662				22.2 J		7.73 J															
MW2	9/28/2005	N	2.0 U	2.2 =	6.7				140 J		40000 J				1300 J		82 J			0.98 U	0.50 U	5.0 U	5.0 U	5.0 U	150 J	5.6 J	270 J		0.10 UJ		27 R	2.5 J
MW2	9/28/2005	N2			1.0 UJ				2.5 J		65 J				9.3 J		20 UJ															
MW2	9/26/2006	N	2.0 UJ	2.3	1.0 U				10 UJ		50 U				2.6 UB		20 UJ			1.7 U	0.50 U	5.0 U	5.0 U	5.0 U	160 J	1.6 J	220		0.12 J		20 J	3.1
MW2	9/19/2007	N	2.0 UJ	3.7 J	0.62 J				10 UJ		100 UJ				6.5 J		20 UJ			0.97 R	1.0 U	1.0 U	1.0 U	2.0 U	160 J	3.6	200 J		0.22 J		16 J	2.1 J
MW2	10/21/2008	N	2.0 UJ	1.60 J	2 U				10 UJ		424 J				27900		20 U			1.00 U	0.5 U	2.0 U	2.0 U	5.0 U	138	3.17	276 J		1.10 J		12.90	2.59 J
MW2	10/6/2009	N	0.83 UJ	2.21 J	2 UJ				10 UJ		129 J			19000 J	10 UJ		20 UJ			0.996 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ	122 J	1.97 J	190.6 J		0.81 J		11.6 J	5.33 J
MW2	10/6/2010	N	1.3 U	0.1 U	2 U				8 U		43 J				4680		20 U			1.0 U	0.1 U	0.4 U	0.4 U	1 U	62	0.6 J	52.5		1.01 J		4.2 J	24
MW2	10/19/2011	N	0.50 U	0.097 U	2.0 U				2.2 J+		47 J			9400 B	3.7 J		10 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	63	7.7	93.60		0.50 J		33	1.0 U
MW2	10/16/2012	N	0.50 U	0.33	0.82 J				6.2 J		810			8800 =	25		20 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	54	4.1	91.2		0.90 J		32 J	6.7

Appendix A.1

**Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin**

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L	
MW2	10/9/2013	N	0.50 U	0.94 J	2.0 UJ				10.0 UJ		50 UJ			6900 J	10 UJ		20 UJ			0.21 U	0.50 U	1.0 U	1.0 U	2.0 U *	39 J	2.8			2.9 J		28	4.5 J	
MW2	10/9/2013	N2																												2.9 J			
MW2	9/24/2014	N	0.50 U	0.32	5.0 U				2.0 U		100 U				1.4 J		20 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	62	0.69 J	68		0.73		2.4	1.0 U	
MW2	10/14/2015	N	0.50 U	0.13	5.0 U				0.75 J		56.7 J				2.9 J		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	50.7	0.55 J	60.3		0.63		2.1	1.3	
MW2	4/14/2016	N	0.50 U	0.080 J	1.3 J				20.1		6580				171		19.7 J			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	34.4	0.51 J	49.0		0.38		1.8	3.6	
MW2	10/29/2018	N	1.0 U	0.21	1.0 U				2.8		100 U				1.8 J		10.9 J			0.86 U	0.50 U	0.50 U	0.50 U	1.0 U	66.6	0.42	87.2		0.51		1.6	2.1	
MW2	4/25/2019	N	0.17 U	0.37	0.23 U				1.8 J		230				7.5		9.7 J			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	61.5	0.48	80.5		0.30		1.7 B	1.3	
MW2	10/18/2019	N	0.17 U	0.094 U	0.33 J				5.2		1170				40.9		12.1 J			0.26 U	0.15 U	0.18 U	0.15 U	0.22 U	67.9 H	0.34	75.6		0.3		1.4 B	5.3	
MW2	4/9/2020	N	0.17 U	0.093 U	1.4				28.2		6900				292		30.5			0.26 U	0.15 U	0.18 U	0.15 U	0.22 U	73.3	0.3	160		0.24		1.4	0.70 J	
MW2	10/8/2020	N	0.17 U	0.10 U	0.23 U				0.79 J		46.7 U				3.3		6.9 U			0.32 J	0.15 U	0.18 U	0.15 U	0.22 U	68.2	0.26	87.8		0.27 H		1.3	0.90 J	
MW2	4/13/2021	N	1.0 U	0.10 U	0.39 J				10.5		2540				108		20			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	86.6	0.33	106		0.33		1.4	0.91 J	
MW2	10/14/2021	N	1.0 U	0.12 U	1.0 U				2.3		398				13.9		17.7 J			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	86.0	0.35	92.7		0.31		1.7	0.53 J	
MW2	4/13/2022	N	1.0 U	17	1.9				29.8		9390				336		40.1			0.85 U	0.50 U	0.50 U	0.50 U	1.0 U	79.6	0.30	49.1		0.21		1.2	0.60 J	
MW2	10/6/2022	N	1.0 U	0.26	1.0 U	3.3			9.9	63.1	476	14700			18.8	599	13.4 J	52.2		0.81 U	0.50 U	0.50 U	0.50 U	1.0 U	86.6	0.45	48.3		0.20		1.6	0.75 J	
MW2	4/27/2023	N	1.0 U	0.12	0.36 J	1.3	17600	16800	0.72 J	17.3	100 U	4590	6960	7380	0.87 J	181	6.9 J	23.6		0.63 U	0.50 U	0.50 U	0.50 U	1.0 U	77.4	0.47 J	41.8	44.1	0.35 J		1.5	0.73 J	
MW2	10/27/2023	N	1.0 U	0.25 U	1.0 U	1.0 U	17800	17700	3.9 U	17.7	100 U	5470	7420	8170	2.5 U	188 U	16.3 J	21.9		0.87 U	0.50 U	0.50 U	0.50 U	1.0 U	80.0	0.21 J	44.1	44.4	1.0 U		1.3	1.0 U	
MW3	10/8/1997	N	10 U	1 U	2 U				2 U		257				10.9		2 U				0.1 U	1 U	1 U	1 U	370	42 J			4.4 J		16	1.2	
MW3	10/8/1997	N2		1 U																	0.1 U	1 U	1 U	1 U									
MW3	4/4/2000	N		0.6 U																12 U		1 U	1 U	1 U									
MW3	4/25/2001	N		0.11 U	1 U				25 U		147				7.3		25 U			6.1 U	0.1 U	1 U	0.46	1 U	442	47	544		4.42		11	1 U	
MW3	4/25/2001	N2			1 U				25 U		142				7.9		25 U			6.1 U									4.42 =				
MW3	9/13/2001	N	10 U	0.092 J	0.29 U				2.2 U		930				31		3.7 U			0.26 U	0.44 U	0.5 U	0.4 U	1.2 U	440	58	480		4		14	1.1	
MW3	9/13/2001	N2			0.35 J				2.2 U		2400				31		3.7 U																
MW3	8/7/2002	N	0.01 U	0.11	1.7 J				2.3 J		480				15 J		1.4 J			5 U	1 U	5 U	5 U	5 U	420	69	540		0.15 U		16	1.4	
MW3	8/7/2002	N2			1.9 J				0.58 J		160				12 J		4.8 J																
MW3	9/23/2003	N	2.5	0.31	1 U				1 J		150				5 U		10 U			1.1 U	0.25 U	2.5 U	2.5 U	2.5 U	357	52.4	160		4.43		2 U	1.6	
MW3	9/23/2003	N2	2.5																														
MW3	9/24/2003	N			1 U				1 U		1 U				8 J		10 U																
MW3	9/21/2004	N	5.71 J	0.367	0.189 J				356 J		278 J				6.45 J		273 J			5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	430 J	62 J	3250 J		3.5 J		8.9 R	2.16 R	
MW3	9/21/2004	N2			0.119 J				1.91 J		137 J				4.99 J		4.61 J																
MW3	9/28/2005	FD																															
MW3	9/28/2005	N	2.0 U	0.20 J	1.0 U				4.9 J		23000 J				93 J		20 UJ			0.93 U	0.50 U	5.0 U	5.0 U	5.0 U	370 J	62 J	490 J		3.3 J		24 R	1.4 J	
MW3	9/28/2005	N2			1.0 U				3.0 J		120 J				6.7 J		20 UJ																
MW3	10/21/2008	N	4.90 J	0.10 UJ	2.00 U				10 UJ		2140			58700	15.20 J		20 U			3.13 U	0.50 U	2.0 U	2.0 U	5.0 U	513	60.50	836		2.73 J		15.20	18 J	
MW3	10/7/2009	N	21 J	0.1 UJ	2 U				10 UJ		722 J			46000 J	12.4 J		20 UJ			0.997 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ	482 J	53.8 J	581.46 J		2.55 J		11 J	3.42 J	
MW3	10/5/2010	N	1.6	0.1 U	2 U				10 U		805			69100	12 J		20 U			1.0 U	0.1 U	0.4 U	0.4 U	1 U	510	67.2	906		3.62		19.8 J	2.2 J	
MW3	10/18/2011	N	140	0.58	0.76 J				2 U		510			44000 B	41		10 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	510	64	531.00		3.3		16	2.9	
MW3	10/16/2012	N	13	0.46	0.59 J				10 U		260			41000 =	8.3 J		20 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	460	69	493		3.6 J		17 =	2.4	
MW3	10/8/2013	N	4.3	0.38	0.088 J				10.0 U		50 U			42000 B	8.3 J		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	390	70			3.5 J		16	1.6	
MW3	9/25/2014	N	15	0.35	5.0 U				2.0 U		160				7.6		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	290	72	360		2.1		12	0.91 J	
MW3	10/15/2015	FD	5.7	0.23	5.0 U				1.2 J		56.6 J				7.9		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	258	52.3	312		1.7		11.2	1.2	
MW3	10/15/2015	N	5.1	0.15	5.0 U				0.93 J		58.2 J				7.4		20.0 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	258	52.5	322		1.7		11.1	1.1	
MW3	4/5/2016	FD	4.2	0.40	5.0 U				0.99 J		514				18.6		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	221	48.6	283		1.4		10.0	0.94 J	
MW3	4/5/2016	N	4.4	0.46	5.0 U				1.4 J		716				20.4		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	224	48.2	299		1.4		10.1	0.98 J	
MW3	7/21/2016	N	2.5	0.35	5.0 U				2.0 U		317				16.2		20.0 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	215	45.5	248		1.4		9.2	1.0	

Appendix A.1

**Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin**

Location	Date ²	Compound ¹ Units Type ³	Methane	Pentachlorophenol	Arsenic (dissolved)	Arsenic (total)	Calcium (dissolved)	Calcium (total)	Copper (dissolved)	Copper (total)	Iron (dissolved)	Iron (total)	Magnesium (dissolved)	Magnesium (total)	Manganese (dissolved)	Manganese (total)	Zinc (dissolved)	Zinc (total)	Total Petroleum Hydrocarbons (C10-C28) DRO	Naphthalene	Benzene	Ethylbenzene	Toluene	Xylenes (total)	Alkalinity, total (as CaCO3)	Chloride	Hardness (total)	Hardness (dissolved)	Nitrate (as N)	Oil and grease (HEM), polar	Sulfate	Total organic carbon (TOC)	
			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW3	10/11/2016	N	1.5	0.45	5.0 U				1.7 J		171				14.8		20.0 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	233	46.8	268		1.8		12.7	1.1	
MW3	1/20/2017	N	1.9	0.93	0.35				2.0		812				16.4		6.2			0.060	0.28	0.26	0.23	0.24	230	47.3	284		1.9		14.5	1.6	
MW3	4/20/2017	N	1.3	0.47	5.0 U				1.7 J		83.6 J				23.0		20.0 U			0.22 U	0.50 U	1.0 U	1.0 U	2.0 U	232	45.5	358		1.8		15.0	1.4	
MW3	10/13/2017	N	2.1	0.55	1.0 U				2.0		59.7 J				12.5		20.0 U			0.79 U	0.50 U	0.50 U	0.50 U	1.0 U	272	50.1	298		2.0		13.9	1.4	
MW3	6/1/2018	N	1.0 U	0.25	0.29 J				1.7 J		50.6 J				9.4		20.0 U			0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	698	31.5	246		1.9		10.8	1.2	
MW3	10/18/2018	N	1.0 U	0.50	1.0 U				1.7 J		77.2 J				9.2		20.0 U			0.79 U	0.50 U	0.50 U	0.50 U	1.0 U	227	23.9	231		1.7		10.2	1.3	
MW3	4/25/2019	N	200	0.27	0.23 U				2.0		372				21.7		9.7 J			0.24 U	0.24 J	0.18 U	0.15 U	0.22 U	200	35.4	215		1.5		7.8 B	1.0	
MW3	10/14/2019	N	86	0.091 U	0.23 U				0.73 J		482				52.1		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	209	30.1	235		1.3 H		8.3	0.69 J	
MW3	4/6/2020	FD	21	0.089 U	0.25 J				0.86 J		675				32		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	203	25.4	219		1.4 H		7	0.57 J	
MW3	4/6/2020	N	22	0.090 U	0.23 U				0.91 J		685				31.9		6.9 U			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	199	24.9	213		1.4 H		7	0.58 J	
MW3	10/7/2020	N	6.6	0.49	0.24 J				0.60 J		1770				25.7		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	256	25.2	280		2.3 H		7.7	1.1	
MW3	4/14/2021	N	5.4	0.097 U	0.27 J				1.0 J		731				15.7		20.0 U			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	406	73.8	465		1.9		6.7	1.1	
MW3	4/14/2021	FD	4.4	0.098 U	0.30 J				0.81 J		759				16.3		8.0 JB			0.79 U	0.50 U	0.50 U	0.50 U	1.0 U	412	74.9	456		1.9		6.7	1.1	
MW3	10/13/2021	N	49	0.096 U	0.43 J				1.0 J		1660				25.4		20.0 U			0.74 U	0.50 U	0.50 U	0.50 U	1.0 U	410	50.6	380		1.1		12.5	0.73 J	
MW3	4/14/2022	N	70	0.45	1.0 U				0.91 J		890				15.2		20.0 U			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	354	27.9	225		2.8		5.5	0.90 J	
MW3	10/10/2022	N	80	0.31	0.30 J	0.25 J			0.88 J	0.89 J	1470	1660			22.4	27.0	20.0 U	20.0 U		0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	362	27.6	258		3.1		5.8	0.86 J	
MW3	10/10/2022	FD	78	0.32	0.31 J	0.31 J			0.93 J	0.82 J	1540	1620			23.1	22.9	20.0 U	20.0 U		0.84 U	0.50 U	0.50 U	0.50 U	1.0 U	365	27.2	255		3.1		6.0	0.86 J	
MW3	4/27/2023	N	41	0.22	0.67 J	0.70 J	102000	101000	1.1 J	2.0 U	2030	2450	30500	29500	23.5	23.9	20.0 U	20.0 U		0.69 U	0.50 U	0.50 U	0.50 U	1.0 U	384	18.7	251	255	2.8		5.8	0.90 J	
MW3	10/24/2023	N	61	0.35	0.39 J	0.42 J	114000	117000	1.4 J	1.1 J	1510	1730	31300	31300	22.1	23.9	20.0 U	20.0 U		0.91 U	0.50 U	0.50 U	0.50 U	1.0 U	415	23.8	292	286	2.5		6.4	0.90 J	
MW4	10/9/1997	N	139	1 U	2 J				2 U		35.9 J				55.9		2 U				2	3	1	3	94	7.3			0.1 U		6.3	12.3	
MW4	10/9/1997	N2		1 U	2 U				2.4 U								4.5				2	3	1	3									
MW4	4/4/2000	N		0.5 U																10 U													
MW4	1/20/2017	N	0.92	3.0	1.5 J				0.36		124				37.9		6.2			0.063	0.28	0.26	0.23	0.24	87.9	22.7	132		0.23		11.6	0.53 J	
MW4	4/21/2017	N	10	0.11	1.2 J				2.0 U		85.4 J				39.0		20.0 U			0.22 U	0.50 U	1.0 U	1.0 U	2.0 U	82.8	32.9	170		0.15		13.2	0.60 J	
MW4	10/3/2017	N	7.2	0.097 U	1.2				1.2 J		501				41.8		20.0 U			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	93.7	37.0	134		0.26		30.0	1.0 U	
MW4	5/31/2018	N	300	0.11 U	1.1				2.0 U		149				38.6		20.0 U			0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	76.8	47.9	145		0.096 J		14.1	0.85 J	
MW4	10/17/2018	FD	6.7	0.10 U	1.2				2.0 U		100 U				36.0		6.9 J			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	87.1	40.3	138		0.22		13.1	0.68 J	
MW4	10/17/2018	N	5.9	0.097 U	1.2				2.0 U		100 U				33.8		20.0 U			0.55 U	0.50 U	0.50 U	0.50 U	1.0 U	86.5	40.9	138		0.20		13.0	0.72 J	
MW4	4/24/2019	FD	50	0.089 U	0.97 J				0.50 U		82.6 J				35.7		6.9 U			0.24 U	0.15 U	0.18 U	0.16 J	0.22 U	75.1	49.7	142		0.086 J		12.5 B	0.84 J	
MW4	4/24/2019	N	45	0.085 U	0.89 J				1.3 J		118				33.6		6.9 U			0.24 U	0.15 U	0.18 U	0.16 J	0.22 U	74.7	52.1	144		0.070 J		13.0 B	0.65 J	
MW4	10/16/2019	N	25	5.7	1				0.50 U		214				134		6.9 U			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	80.3 H	50.4	147		0.090 J		13.6 B	0.47 U	
MW4	4/7/2020	N	18	0.87	1.1				0.68 J		67.9 J				36		10 J			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	73.8	49.5	143		0.24		14	0.47 U	
MW4	10/5/2020	N	4.7	0.086 U	1.1				0.50 U		46.7 U				37.4		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	74.1	44.3	151		0.28		13.7	0.81 J	
MW4	4/15/2021	N	18	0.099 U	1.1				2.0 U		138				36.8		18.7 JF3			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	78.4	46.7	146		0.2		13.1	0.67 J	
MW4	10/13/2021	N	20	0.11 U	1.2				2.0 U		62.8 J				38.4		20.0 U			0.80 U	0.50 U	0.50 U	0.50 U	1.0 U	80.7	54.8	148		0.17 J		15.0	1.0 U	
MW4	4/13/2022	N	35	1.0	1.2				2.0 U		74.5 J				33.8		20.0 U			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	79.6	48.3	93.7		0.10 J		13.4	0.51 J	
MW4	4/13/2022	FD	37	0.098 U	1.1				2.0 U		68.6 J				36.6		20.0 U			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	85.9	52.5	99.2		0.10 J		14.5	0.53 J	
MW4	10/10/2022	N	33	0.099 U	1.2	1.2			4.3	2.0 U	100 U	202			37.2	37.9	20.0 U	20.0 U		0.84 U	0.50 U	0.50 U	0.50 U	1.0 U	83.9	48.7	105		0.12 J		14.0	0.97 J	
MW4	4/27/2023	N	28	0.10 U	1.4	1.5	37900	37200	2.0 U	2.0 U	100 U	136	12200	11600	30.8	30.4	20.0 U	20.0 U		0.70 U	0.50 U	0.50 U	0.50 U	1.0 U	84.5	43.7	93	94.6	0.27 J		13.5	0.90 J	
MW4	4/27/2023	FD	23	0.097 U	1.4	1.5	37700	37500	2.0 U	2.0 U	100 U	71.1 J	12300	11700	30.6	30.4	20.0 U	20.0 U		0.68 U	0.50 U	0.50 U	0.50 U	1.0 U	84.7	41.1	93.8	94.1	0.30 J		13.2	0.82 J	
MW4	10/24/2023	N	29	0.10 U	1.3	1.3	42200	40200	2.0 U	2.0 U	100 U	156	12800	11900	34.0	31.9	20.0 U	20.0 U		0.80 U	0.50 U	0.50 U	0.50 U	1.0 U	86.2	46.4	100	105	0.61 J		14.4	0.78 J	
MW4	10/24/2023	FD	22	0.10 U	1.3	1.3	41500	41300	2.0 U	0.51 J	100 U	88.5 J	12400	12400	33.1	32.4	20.0 U	20.0 U		0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	86.3	46.9	103	104	0.61 J		14.5	0.67 J	
MW5	10/10/1997	FD	10 U	31000 J	4.3				26.2 J		5070				15500		2				0.1 U	2	4	18	370	50			0.1 U		16	160	
MW5	10/10/1997	FD2			4.6				4835 J								2.7																

Appendix A.1

**Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin**

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L	
MW5	10/10/1997	N	10 U	28000 J	3.8				48.5 J		4860				12900		3.7				0.1 U	3	5	21	370	50			0.1 U		15	115	
MW5	10/10/1997	N2		28000 E	3.2				24 J								2 J					0.1 U	3	5	21								
MW5	4/7/2000	N		20600 =																76 U													
MW5	4/26/2001	N	0.4	20600	5.6				74		20400				11200		25 U			38	0.22	0.84	1.8	8.1	352	42	349		0.13 U		28	43	
MW5	4/26/2001	N2	0.4		3.9				25 U		7630				11300		25 U																
MW5	9/13/2001	N	10 U	6300	3.7				5.1 J		4100				8500		6.2 J			23	0.44 U	0.54 J	0.78 J	4.3	270	29	240		0.17 J		22	27	
MW5	9/13/2001	N2			8.2				100		26000				8500		4.2 J																
MW5	8/7/2002	N		510 J	4.1				28		34500				8130		104			3.2 J	1 U	5 U	5 U	5 U	220	26	4 U		0.15 U		21	25	
MW5	8/7/2002	N2			2 J				1.5 J		7900				7840		26.9 J																
MW5	9/25/2003	N	0.47 J	1100	4				50		35100				9450		10 U			2.5	0.25 U	2.5 U	2.5 U	2.5 U	228	22.1	78.48		0.05 U		20	6.2	
MW5	9/25/2003	N2	0.47 J		3				7		13400				8320		10 U																
MW5	9/22/2004	N	10.0 UJ	194	0.488 J				17.3 J		30500				7150		13.7 J			5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	250 J	29 J	1490 J		0.01 R		24 R	18.8 R	
MW5	9/22/2004	N2		214 E	0.612 J				1.44 J		7480 J				5650 J		5.91 J																
MW5	9/28/2005	N	2.3	1100 =	1.0 UJ				6.0 J		18000 J				7600 J		20 UJ			1.8	0.50 U	5.0 U	5.0 U	5.0 U	260 J	18 J	480 J		0.10 UJ		35 R	7.4 J	
MW5	9/28/2005	N2			1.0 UJ				10 UJ		19000 J				7600 J		20 UJ																
MW5	9/26/2006	N	8.7 J	460 =	1.0 UJ				10 UJ		23000 J				8000 J		20 UJ			1.4 U	0.50 U	5.0 U	5.0 U	5.0 U	290 J	16 J	370		0.10 J		27 J	6.6	
MW5	9/20/2007	N	9.8	31 J	1.0 UJ				10 UJ		25000				7600		20 UJ			0.74 R	1.0 U	1.0 U	1.0 U	2.0 U	230 J	13	270 J		0.10 U		39 J	4.1 J	
MW5	10/22/2008	N	11 J	206	2 UJ				10 UJ		10500 J			31400 J	9700 J		20 UJ			1 U	0.5 U	2.0 U	2.0 U	5.0 U	267 J	8.68	357 J		0.05 U		24.8	30.5	
MW5	10/7/2009	N	17 J	33.3 J	2 UJ				10 UJ		6000 J			33600 J	11800 J		20 UJ			0.998 UJ	0.1 UJ	0.4 UJ	0.4 UJ	0.14 J	256 J	8.59 J	344.62 J		0.05 UJ		55.1 J	3.5 J	
MW5	10/6/2010	N	4.1	39.8 J	3.36 J				8 U		3030			43600	12600		20 U			1.0 U	0.1 U	0.4 U	0.4 U	1 U	274	11.4 J	437		0.10 UJ		79.4	4.2	
MW5	10/19/2011	N	38 J	0.97	1.0 J				2 U		2600			40000 B	11000		20 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	260	15	397.00		0.10 U		150	2.6	
MW5	10/17/2012	N	17	0.59 J	0.57 J				10 U		2700			29000 =	7000		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	180	11	302		0.10 U H		130 =	1.8	
MW5	10/10/2013	N	19	0.60	0.39 J				10.0 UJ		2200 J			20000 J	4700 J		20 UJ			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	150 B	9.2 J			0.10 UJ		140 J	1.8	
MW5	9/24/2014	FD	10	12	0.42 J				2.0 U		1200				2200		20 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	97	4.3	150		0.12		48	1.0 U	
MW5	9/24/2014	N	12	12	0.41 J				2.0 U		1200				2200		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	100	4.3	150		0.14		48	2.3	
MW5	10/14/2015	N	1.8	64	5.0 U				2.0 U		954				2230		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	98.7	12.7	159		0.053 J		48.9	3.3	
MW5	4/7/2016	FD	4.9	16	5.0 U				2.0 U		940				2070		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	71.3	12.5	113		0.96		37.6	4.5	
MW5	4/7/2016	N	4.3	17	5.0 U				2.0 U		931				1990		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	72.0	12.7	113		0.97		38.0	4.6	
MW5	10/29/2018	N	15	5600	0.71 J				1.5 J		7920				6730		20.0 U			23	0.50 U	0.57	0.53	6.5	249	28.5	292		0.084 J		28.5	39.6	
MW5	4/25/2019	N	96	5100	0.79 J				0.97 J		10200				6250		6.9 U			24	0.15 U	0.47 J	0.52	5.8	262	27.0	305		0.068 U		27.7 B	33.3 F1	
MW5	10/17/2019	FD	32	5500	0.69 J				0.84 J		21900				6870		6.9 U			20	0.15 U	0.62	0.43 J	6.4	265	25.7	283		0.068 U		24.4	38.4	
MW5	10/17/2019	N	34	6000	0.75 J				0.70 J		22300				7140		6.9 U			22	0.15 U	0.62	0.46 J	6.3	452	28.2	273		0.068 U		25.6	38.7	
MW5	4/13/2020	N	13	6200	0.92 JB				1.1 J		17000				7190 B		6.9 U			22	0.15 U	0.72	0.6	7	253	27	286		0.068 U		23.8	42.5	
MW5	10/8/2020	FD	8.9	4800	1.0				1.3 J		14200				7310		6.9 U			26	0.15 U	0.57	0.57	7.7	244	31.6	283		0.076 JH		29.2	45.8	
MW5	10/8/2020	N	9.8	5000	0.93 J				1.5 J		14300				7470		6.9 U			25	0.15 U	0.71	0.62	7.2	242	26.7	296		0.084 JH		24.6	47.0	
MW5	4/13/2021	N	9.7	4700	0.70 J				2.1		16100				8010		10.6 JB			35	0.50 U	0.81	0.85	7.7	258	25.2	310		0.069 J		22.6	63.7	
MW5	10/14/2021	N	9.5	2800	0.98 J				1.8 J		12900				7970		20.0 U			38	0.50 U	1.0	0.89	10	282	24.8	309		0.20 U		21.4	54.6	
MW5	10/14/2021	FD	8.3	6100	0.87 J				1.6 J		12900				8130		20.0 U			36	0.50 U	0.95	0.89	10	286	25.4	310		0.068 J		21.8	55.2	
MW5	4/12/2022	N	51	10000	3.6				6.9		16500				7440		20.0 U			26	0.50 U	0.83	0.79	9.3	288	25.1	179		0.20 U		18.9	37.7	
MW5	10/4/2022	N	21	6300	0.77 J	1.3			2.3	3.4	14400	13900			7400	8490	20.0 U	20.0 U		30	0.50 U	0.90	0.51	7.4	296	20.5	194		0.20 U		15.6	29.4	
MW5	4/26/2023	N	39	3800	0.71 J	0.96 J			0.58 J	3.4	15400	19500			6820	6940	20.0 U	20.0 U		7.3	0.50 U	0.61	0.21 J	5.8	273	19.6	177	178	1.0 U		14.9	22.4	
MW5	10/27/2023	N	10	4600	1.0 U	1.0 U	67900	68700	2.0 U	5.8	13900	16200	29300	30000	7780	7730	20.0 U	20.0 U		12	0.50 U	0.58	0.27 J	5.0	271	21.7	172	170	R		18.6	24.4	
MW6	4/19/2016	FD		0.050 J	5.0 U				2.0 U		100 U				3.2 J		20.0 U			0.21 U	0.50 U	1.0 U	1.0 U	2.0 U									
MW6	4/19/2016	N	0.78	170	5.0 U				5.2		282				5.6		9.0 J			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	183	35.0	245		10.2		26.3	6.2	

Appendix A.1

**Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin**

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO ₃) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L	
MW6S	10/9/1997	N	10 U	1 U	5.1				473		20 U				4720		258				0.1 U	1 U	1 U	1 U	62	72 J			4.5		0.9	1.6	
MW6S	10/9/1997	N2		1 U	2 U				2 U								2.2				0.1 U	1 U	1 U	1 U									
MW6S	4/26/2001	N	0.12 U	2.5	15				202		82800				1950		131			5.4 U	0.1 U	1 U	1 U	1 U	148	14	285		0.87		12	5.29	
MW6S	4/26/2001	N2	0.12 U		0.26				25 U		25 U				347		25 U																
MW6S	9/12/2001	N	10 U	1.1	7.4				190		42000				1900		110			0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	160	12	290		1.1		16	6.3	
MW6S	9/12/2001	N2			0.58 J				3.1 J		35 U				800		5 J																
MW6S	8/7/2002	N	0.27	88 J	5.5				69.1		7570				2210		18.3 J			5 U	1 U	5 U	5 U	5 U	270	17	4 U		0.15 U		18	5.8	
MW6S	8/7/2002	N2			2.7				9.9 J		3330				1790		9.7 J																
MW6S	9/25/2003	N	130	0.33	1 J				22		5900				1190		10 J			1 U	0.25 U	2.5 U	2.5 U	2.5 U	282	23.9	104		1.01		17	8.2	
MW6S	9/25/2003	N2	130		1 J				9		1100				961		10 U																
MW6S	9/27/2006	N	3.5 J	0.21	1.0 U				2.6 J		50 U				590		20 U			1.1 U	0.50 U	5.0 U	5.0 U	5.0 U	320 J	18	350		3.9 =		18	4.1	
MW6S	9/20/2007	FD	2.7	0.14 J	1.0 UJ				10 UJ		390				190		7.0 J			0.93 R	1.0 U	1.0 U	1.0 U	2.0 U	230 J	29	330 J		4.7		36 J	5.2 J	
MW6S	9/20/2007	N	3.0	0.099 J	1.0 UJ				10 UJ		510				200		7.0 J			0.93 R	1.0 U	1.0 U	1.0 U	2.0 U	230 J	30	320 J		4.7		34 J	4.7 J	
MW6S	10/23/2008	N	2.0 UJ	2.65	2 UJ				4.4 J		438 J			6260 J	65.3 J		20 UJ			1 U	0.5 U	2.0 U	2.0 U	5.0 U	4.98 J	28.3	90 J		7.11 J		11	8.3	
MW6S	10/7/2010	N	1.3 U	0.1 UJ	2 U				5 J		531			4780	19.7 J		20 U			1.0 UJ	0.5 UJ	2 U	2 U	5 U	11 UB	21.3	56.9		6.94 J		11 J	6.8	
MW6S	10/19/2011	N	0.50 U	0.10 U	2.0 U				3.7 J		50 U			4400 B	14		10 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	15	17	45.60		5.3		9.8	1.0 U	
MW6S	10/17/2012	N	0.50 U	0.10 U	0.54 J				10 U		50 U			4600 =	3.9 J		20 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	18	16	51.4		5.5 H		11 J	3.2	
MW6S	10/9/2013	N	0.50 U	0.52 J	2.0 UJ				10.0 UJ		1500 J			6000 J	32 J		20 UJ			0.21 U	0.50 U	1.0 U	1.0 U	2.0 U *	5.0 UJ	29			9.0 J		9.5	8.0 J	
MW6S	10/9/2013	N2																															8.9 J
MW6S	9/24/2014	N	0.082 J	0.27	1.3 J				27		6000				110		41			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	22	9.3	100		3.6		7.3	1.0 U	
MW6S	10/14/2015	N	0.50 U	0.17	5.0 U				2.5		16.8 J				1.4 J		20.0 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	12.5	10.8	76.4		3.6		6.7	3.4	
MW6S	4/19/2016	N	0.50 U	0.20	0.51 J				4.7		831				15.4		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	42.0	7.4	70.6		4.8		6.3	18.2	
MW6S	7/25/2016	N	0.50 U	0.19	5.0 U				3.4		118				6.1		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	49.4	13.8	86.0		7.0		8.0	3.7	
MW6S	10/13/2016	N	0.50 U	0.20	0.71 J				19.7		2290				52.7		11.7 J			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	126	14.5	152		6.9		8.1	4.2	
MW6S	1/23/2017	N	0.080	0.059 J	0.35				2.8		5.3				6.0		6.2			0.063	0.28	0.26	0.23	0.24	188	6.6	212		3.1		6.0	3.8	
MW6S	4/24/2017	N	0.089 J	0.13	5.0 U				3.3		8.3 J				7.4		20.0 U			0.23 U	0.50 U	1.0 U	1.0 U	2.0 U	198	6.5	268		3.8		8.1	2.3	
MW6S	10/5/2017	N	0.50 U	0.32	1.0 U				5.5		100 U				4.0		7.2 J			0.86 U	0.50 U	0.50 U	0.50 U	1.0 U	225	18.2	283		6.6		8.0	1.8	
MW6S	6/1/2018	N	1.0 U	0.11 U	0.37 J				3.1		58.6 J				4.7		20.0 U			0.80 U	0.50 U	0.50 U	0.50 U	1.0 U	250	14.1	320		11.6		11.9	2.3	
MW6S	10/19/2018	N	1.0 U	0.097 U	0.28 J				15.7		100 U				5.2		12.4 J			0.76 U	0.50 U	0.50 U	0.50 U	0.24 J	249	13.1	306		5.1		8.0	3.2	
MW6S	4/25/2019	N	0.17 U	0.095 U	0.27 J				2.6		121				4.8		10.3 J			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	275	12.1	336		10		13.2 B	2.0	
MW6S	10/17/2019	N	0.17 U	2.7	0.27 J				3.4		271				11		11.0 J			0.23 U	0.15 U	0.18 U	0.15 J	0.22 U	444 H	8.9	259		3.8		7.4	2.6	
MW6S	4/9/2020	N	0.17 U	0.089 U	0.41 J				3.7		89.8 J				5.1		6.9 U			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	245	11	297		7.3		11.1	2.8	
MW6S	10/7/2020	N	0.17 U	0.095 U	0.71 J				2.8		46.7 U				9.9		6.9 U			0.26 U	0.15 U	0.18 U	0.15 U	0.22 U	196	11.9	207		2.7		6.7	2.8	
MW6S	10/14/2021	N	1.0 U	1.1 U	0.35 J				3.5		100 U				2.9		20.0 U			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	282	17.2	297		7.2		12.2	2.8	
MW6S	4/14/2022	N	1.0 U	0.75	1.0 U				2.8		100 U				1.9 J		20.0 U			0.76 U	0.50 U	0.50 U	0.50 U	1.0 U	250	14.4	166		6.3		9.4	2.0	
MW6S	10/11/2022	N	1.0 U	0.10 U	0.30 J	0.29 J			3.1	3.4	100 U	100 U			1.7 J	1.8 J	20.0 U	20.0 U		0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	213	13.4	147		4.0		11.8	3.3	
MW6S	4/28/2023	N	1.0 U	0.098 U	0.35 J	0.62 J			3.5	13.9	100 U	2020			3.0	38.8	20.0 U	9.4 J		0.68 U	0.50 U	0.50 U	0.50 U	0.24 J	207	12.6	125	126	1.0 U		9.7	3.0	
MW6S	10/25/2023	N	1.0 U	0.10 U	0.24 J	0.28 J	59100	58500	4.7	4.1	100 U	100 U	24000 J-	23700 J-	2.1 J	2.3 J	20.0 U	20.0 U		0.81 U	0.50 U	0.50 U	0.50 U	1.0 U	237	12.0	146	148	3.1		13.4	4.2	
MW6S	10/25/2023	FD	1.0 U	0.10 U	0.28 J	0.33 J	58300	61100	3.6	3.8	100 U	100 U	23900 J-	24900 J-	2.0 J	2.2 J	20.0 U	8.0 J		0.88 U	0.50 U	0.50 U	0.50 U	1.0 U	237	12.1	153	145	3.1		13.4	4.5	
MW7	10/14/1997	N	10 U	1 U	2 U				6.2		622				13.4		11.4				0.1 U	1 U	1 U	1 U	350	7.6			4.9		6	1.6	
MW7	10/14/1997	N2		1 U	2 U				2 U								3.5				0.1 U	1 U	1 U	1 U									
MW7	4/4/2000	FD		0.5 U																10 U													
MW7	4/4/2000	N		0.5 U																10 U													
MW7	4/25/2001	N	4.65	0.1 U	1 U				25 U		352				5.4		25 U			5.2 U	0.1 U	1 U	1 U	1 U	352	8.36	388		3.63		6.54	2.8	
MW7	4/25/2001	N2	4.65		1 U				25 U		154				6.6		25 U			5.2 U										3.63 =			

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L		
MW7	9/11/2001	N	12	0.083 J	0.4 J				2.2 U		560				6.4		3.7 U			0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	340	23	410		3		10	2		
MW7	9/11/2001	N2	10 U	0.13 J	0.29 U				2.2 U		230				4.4		5.2 J			0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	350	24	400		3		10	1.8		
MW7	9/11/2001	N3			0.47 J				2.2 U		560				5.7		4.8 J																	
MW7	9/11/2001	N4			0.29 U				2.2 U		230				4.6		3.9 J																	
MW7	8/7/2002	N	0.01 U	0.03 J	1.5 J				0.3 U		730				6.5 J		2.8 J			5 U	1 U	5 U	5 U	5 U	390	21	450		0.15 U		10	1.5		
MW7	8/7/2002	N2			1.4 U				0.3 U		300				4 J		0.98 U																	
MW7	9/24/2003	N	4.9	0.044 J	1 U				1 U		280 J				6 J		10 UJ			0.96 U	0.25 U	2.5 U	2.5 U	2.5 U	346	12.2	133.3		2.97		2 U	1.2		
MW7	9/24/2003	N2	4.9		1 U				1 U		90 J				5 U		10 UJ																	
MW7	9/22/2004	N	10.0 UJ	9.18 E	1.00 UJ				1.09 J		1640 J				9.86 J		4.06 J			5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	300 J	7.2 J	1560 J		3.4 J		6.8 R	1.98 R		
MW7	9/22/2004	N2		5.75	0.108 J				0.847 J		25.0 UJ				9.75 J		2.96 J																	
MW7	9/27/2005	N	2.0 UJ	0.12 U	1.0 U				10 U		1300				18		20 U			0.91 UJ	0.50 U	5.0 U	5.0 U	5.0 U	260 J	18 J	450		1.8 J		130 J	0.96 J		
MW7	9/27/2005	N2			1.0 U				10 U		880				16 J		20 U																	
MW7	9/26/2006	N	4.3 J	0.087 J	1.0 U				10 U		50 U				68 J		20 U			0.92 U	0.50 U	5.0 U	5.0 U	5.0 U	280 J	15	390		1.8 =		110 =	2.4		
MW7	9/20/2007	N	3.7	0.093 U	1.0 UJ				10 UJ		260				22		5.9 J			0.93 R	1.0 U	1.0 U	1.0 U	2.0 U	270 J	16	370 J		1.5		170 J	1.1 J		
MW7	10/22/2008	N	110 J	0.1 U	2 UJ				4 J		926 J				37700 J	41.6 J	20 UJ			1 U	0.5 U	2.0 U	2.0 U	5 U	277 J	14.1	535 J		1.54 J		98.9	4.16		
MW7	10/22/2008	N2																															4.41	
MW7	10/7/2009	N	2.4 J	0.403 J	2 UJ				10 UJ		687 J				32600 J	109 J	20 UJ			0.999 UJ	0.1 UJ	0.4 UJ	0.4 UJ	0.14 J	245 J	12.2 J	396.43 J		1.91 J		152 J	14.5 J		
MW7	10/6/2010	N	28	0.1 U	2 U				8 U		989				38900	63.2	20 U			1.0 U	0.1 U	0.4 U	0.4 U	1 U	226	13.8 J	482		2.24 J		168	10.4		
MW7	10/19/2011	N	15	0.098 U	0.48 J				2 U		81				21000 B	21	10 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	230	12	249.00		1.9 J		92	1.5 J		
MW7	10/17/2012	N	2.2	0.096 U	2.0 U				10 U		230				21000 =	22	20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	210	11	254		1.5 H		120 =	0.97 J		
MW7	10/9/2013	N	2.2 B	0.094 U	0.34 J				10.0 UJ		10000 J				21000 J	74 J	20 UJ			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U *	200 J	12			1.8 J		120	0.75 J		
MW7	10/9/2013	N2																															1.8 J	
MW7	9/23/2014	N	15	0.034 J	0.28 J				2.0 U		260				33		30			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	200	9.0	240		1.9		110	0.96 J		
MW7	10/12/2015	N	6.5	0.094 U	0.88 J				1.6 J		100 U				423		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	228	8.3	229		1.5		46.2	0.85 J		
MW7	4/6/2016	N	13	0.098 U	5.0 U				1.9 J		5270				117		36.2			0.21 U	0.50 U	1.0 U	1.0 U	2.0 U	212	10.3	237		1.7		25.7	0.58 J		
MW8	10/14/1997	N	36.5	1 U	2 U				2 U		148				17.8		7.4				0.1 U	1 U	1 U	1 U	170	4.2			1.4		4.5	2.3		
MW8	10/14/1997	N2		1 U	2 J				2 U								4.6				0.1 U	1 U	1 U	1 U										
MW8	4/5/2000	N		0.5 U																10 U														
MW8	4/25/2001	N	11.6	0.2	0.99				25 U		829				32		25 U			5 U	0.1 U	1 U	1 U	1 U	154	3.25	181		1.52		7.47	1.46		
MW8	4/25/2001	N2	11.6		0.75				25 U		25 U				27		25 U																	
MW8	4/25/2001	N3			0.57				25 U		25 U				22		25 U																	
MW8	9/11/2001	N	10 U	0.062 J	1				2.2 U		70 J				18		4.3 J			0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	150	3.8	170		1.5		7.6 U	1 J		
MW8	9/11/2001	N2			1.2				2.2 U		350				19		3.7 U																	
MW8	8/8/2002	N	0.01 U	0.04 U	1.4 U				0.3 U		98				6.4 J		12 J			5 U	1 U	5 U	5 U	5 U	180	4.2	310		0.15 U		6	1.1		
MW8	8/8/2002	N2			1.8 J				0.27 U		11 J				5.3 J		2.3 J																	
MW8	9/25/2003	N	8.9	0.047 J	1 U				1 U		140				8 J		10 U			0.95 U	0.25 U	2.5 U	2.5 U	2.5 U	182	11	69.57		2.61		2 U	1.7		
MW8	9/25/2003	N2	9.2	0.11 U	1 U				1 U		50 U				8 J		10 U			1 U	0.25 U	2.5 U	2.5 U	2.5 U	184	11	69.44		2.6		2 U	2.3		
MW8	9/25/2003	N3	9.2		1 U				1 U		240				8 J		10 U																	
MW8	9/25/2003	N4			1 U				1 U		50 U				6 J		10 U																	
MW8	9/23/2004	N	3.75 J	1.94 =	0.127 J				0.465 J		256				15.1		2.25 J			5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	200	15	1160		2.4 J		5.8 J	1.40		
MW8	9/23/2004	N2			0.539 J				0.660 J		11.0 J				12.0 J		2.09 J																	
MW8	9/28/2005	FD	2.0 U	0.12 U	1.0 UJ				2.3 J		4500 J				56 J		20 UJ			0.93 U	0.50 U	5.0 U	5.0 U	5.0 U	160 J	19 J	200 J		2.0 J		19 R	1.0 J		
MW8	9/28/2005	FD2			1.0 UJ				10 UJ		120 J				13 J		20 UJ																	
MW8	9/28/2005	N	2.6	0.031 J	1.0 UJ				3.8 J		4700 J				63 J		20 UJ			0.93 U	0.50 U	5.0 U	5.0 U	5.0 U	160 J	20 J	240 J		2.0 J		19 R	1.2 J		
MW8	9/28/2005	N2			1.0 UJ				10 UJ		130 J				16 J		20 UJ																	

Appendix A.1

**Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin**

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO ₃) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L	
MW8	9/20/2007	N	2.0 UJ	0.093 U	0.61 J				10 UJ		210				13 J		20 UJ			0.93 U	1.0 U	1.0 U	1.0 U	2.0 U	180	21	260 J		1.5		76 J	1.1 J	
MW8	10/22/2008	N	0.78 J	0.1 U	2 UJ				10 UJ		707 J			40400 J	13.1 J		20 UJ			1 U	0.5 U	2.0 U	2.0 U	5 U	178 J	24.3	496 J		1.92 J		73.1	16.1	
MW8	4/11/2016	N	1.5	0.016 J	0.60 J				2.0 U		197				10.9		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	174	18.0	421		1.3		201	0.26 J	
MW9	10/8/1997	N	10 U	1 U	2 U				4.2 U		20 U				19.7		5.6				0.1 U	1 U	1 U	1 U	60	45			4.2		3.4	6.5	
MW9	10/8/1997	N2		1 U																	0.1 U	1 U	1 U	1 U									
MW9	4/5/2000	N		0.6 =																10 U													
MW9	4/23/2001	N	0.12 U	0.12	0.38				25 U		470				46		25 U			5.3 U	0.1 U	1 U	1 U	1 U	60	3.22	59		2.46 =		27	9.94	
MW9	4/23/2001	N2	0.12 U																										2.46				
MW9	4/24/2001	N			0.28				25 U		25 U				34		25 U																
MW9	9/12/2001	N	10 U	0.76	0.43 J				6.1 J		300				27		11 J			0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	62	6.5	64		3.3		6.8 U	5.1	
MW9	9/12/2001	N2			0.34 J				2.2 U		110				16		6.6 J																
MW9	8/6/2002	N	0.01 U	0.54	1.4 U				1.6 J		200				14 J		6.4 J			5 U	1 U	5 U	5 U	5 U	64	11	95		0.15 U		22	8.4	
MW9	8/6/2002	N2			1.4 U				0.3 U		11 U				6.3 J		9.6 J																
MW9	9/25/2003	N	0.5 U	2.3	1 J				20		7400				229		20 J			1 U	0.25 U	2.5 U	2.5 U	2.5 U	59	4.4	32.83		2.36		24	6.5	
MW9	9/25/2003	N2	0.5 U		1 U				1 U		240				16		10 U																
MW9	9/22/2004	N	10.0 UJ	2.92	0.134 J				2.07 J		231 J				16.5 J		4.60 J			5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	58 J	3.2 J	776 J		1.8 J		26 R	6.48 R	
MW9	9/22/2004	N2			0.265 J				2.88 J		125 U				8.51 J		14.9 J																
MW9	9/27/2005	N	2.0 UJ		1.0 UJ				10 U		50 U				6.3 J		20 U			0.93 U	0.50 U	5.0 U	5.0 U	5.0 U	55 J	2.6 J	70		1.9 J		20 J	2.0	
MW9	9/27/2005	N2			1.0 UJ				10 U		50 U				5.4 J		20 U																
MW9	10/18/2005	N		0.57																													
MW9	9/21/2007	N	2.0 U	0.37 J	1.0 UJ				5.9 J		100 UJ				4.1 J		20 UJ			0.97 R	1.0 U	1.0 U	1.0 U	2.0 U	58 J	2.6	86 J		3.8		15 J	3.3 J	
MW9	10/22/2008	N	2.0 UJ	0.1 U	2 UJ				6 J		166 J			11600 J	10 UJ		20 UJ			1 U	0.5 U	2.0 U	2.0 U	5 U	55 J	3.44	113 J		2.48 J		14.9	11.2	
MW9	5/18/2010	N	1.3 U	0.073 J	2 UJ				10 UJ		120. UJ			6230. J	7.1 J		20 UJ			1.0 U	0.5 U	5 U	5 U	5 U	63 UB	2.63	67.9		2.42 J		11	25.7 UB	
MW9	10/6/2010	N	1.3 U	0.1 U	2 U				8 U		109 J			8540	16.7 U		20 U			1.0 U	0.1 U	0.4 U	0.4 U	1 U	27	3.3 J	88.1		3.35		14 J	7.6	
MW9	10/19/2011	N	0.50 U	0.098 U	2.0 U				3.5 J+		50 U			8400 B	2.9 J		10 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	69	1.0 U	82.00		3.1		8.9	1.0 U	
MW9	10/16/2012	N	0.50 U	0.39	0.91 J				10 U		50 U			8400 =	10 U		20 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	63	2.8 J	82		5.9 J		10 J	3.8	
MW9	10/9/2013	N	0.50 U	0.41 J	2.0 UJ				10.0 UJ		50 UJ			6200 J	10 UJ		20 UJ			0.21 U	0.50 U	1.0 U	1.0 U	2.0 U *	47 J	1.2			3.8 J		12	1.6 J	
MW9	10/9/2013	N2																															
MW9	9/24/2014	N	0.50 U	1.6	5.0 U				2.0 U		100 U				5.0 U		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	14	1.1	41		2.4		10	2.5	
MW9	10/13/2015	N	0.50 U	0.17	5.0 U				1.3 J		21.1 J				5.0 U		20.0 U			0.21 U	0.50 U	1.0 U	1.0 U	2.0 U	31.0	0.70 J	40.2		1.5		7.4	4.4	
MW9	4/13/2016	N	0.50 U	0.28	5.0 U				1.4 J		33.6 J				1.5 J		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	26.6	0.99 J	37.2		1.4		7.3	30.2	
MW10	10/15/1997	N	13.5	8200 J	1.4				9.1		2190				2510 J		4.4				0.2	2	3	17	340	35			4.9		13	20	
MW10	10/15/1997	N2		8200 E	2 J				2.8 U								9.2				0.2	2	3	17									
MW10	4/6/2000	N		9530 J																60 =													
MW10	4/6/2000	N2		12900 =																5410 U													
MW10	4/26/2001	N	2.9	22800	3.1				98		25200				2560		44			5.2 U	0.4	3.3	5.3	27	472	48	505		0.18		22	26	
MW10	4/26/2001	N2	2.9		2.4				5.9		5650				2380		25 U																
MW10	9/12/2001	N	10 U	21000	3.9				3.9 J		2400				3200		9.5 J			130	0.44 U	6.3	10	55	540 J	61	630		0.13 J		23	64	
MW10	9/12/2001	N2			4.5				40		20000				3300		13																
MW10	8/7/2002	N	0.011	22000 J	9.5				48.2		24400				2730		2.8 J			120	1 U	7	11	54	400	56	480		0.15 U		20	110	
MW10	8/7/2002	N2			7.3				10.1 J		10700				2540		6.1 J																
MW10	10/1/2003	N	0.62	9000	2 J				30		5470				1960		10 J			18	0.25 U	2.5 U	2.5 U	13.5	287	22	93.58		0.05 U		3 J	25.3	
MW10	10/1/2003	N2	0.62		2 J				8		2590				1850		10 U																
MW10	9/23/2004	N	10.0 U	38000 =	2.66				28.3		3550				2550		5.58 J			173 E	0.296 J	5.58 J	8.09 J	47.1	390	38	1640		0.0018 J		18 =	54.1	

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L			
MW10	9/23/2004	N2			3.01				12.4 J		24.1 J				1810		4.23 J			160															
MW10	9/27/2006	N	2.0 UJ	23000 J	1.0 U				4.3 J		120				2600		20 U			50	0.50 U	2.0 J	1.7 J	16	450 J	14	440			0.10 U		24 =	21		
MW10	9/21/2007	N	2.4 J	1700 J	0.88 J				2.3 J		550				2700		20 UJ			12 J	1.0 U	1.3	1.0 U	7.2	380 J	20	420 J			0.68		25 J	12 J		
MW10	10/23/2008	FD	7 J	1720	2 UJ				10 UJ		1080			48600 J	2190 J		20 UJ			0.82 J	0.5 U	2.0 U	2.0 U	5.0 U	310 J	12.4	500 J			0.05 J		29.5	13.1		
MW10	10/23/2008	N	6 J	1630	2 UJ				10 UJ		1110 J			40000 J	2210 J		20 UJ			0.92 J	0.5 U	2.0 U	2.0 U	5.0 U	305 J	12.4	432 J			0.05 U		28.1	39.2		
MW10	10/7/2009	FD	23 J	214 J	2 UJ				10 UJ		704 J			36900 J	2310 J		20 UJ			0.996 UJ	0.1 UJ	0.094 J	0.083 J	0.49 J	282 J	9.84 J	347.47 J			0.05 UJ		59 J	2.13 J		
MW10	10/7/2009	N	17 J	220 J	2 UJ				8.2 J		1210 J			38800 J	2230 J		20 UJ			0.998 UJ	0.1 UJ	0.072 J	0.073 J	0.41 J	280 J	9.82 J	369.28 J			0.05 UJ		58.7 J	4.68 J		
MW10	10/7/2010	FD	2.3	77.1 J	2 U				8 U		396			37200	1820		20 U			1.0 UJ	0.1 U	0.4 U	0.074 J	1 U	272	7.3 J	346			0.10 UJ		47.7 J	1.8		
MW10	10/7/2010	N	1.8	92.4 J	2 U				8 U		488			41600	1780		20 U			1.0 UJ	0.1 U	0.4 U	0.051 J	1 U	308	7.2 J	390			0.10 UJ		48.2 J	2.2		
MW10	10/20/2011	FD	11 J	21	0.60 J				2 U		180			33000 B	1700		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	260	8.7	303.00			0.22		54	2.1		
MW10	10/20/2011	N	8.8 J	21	2.0 U				2 U		180			33000 B	1700		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	260	8.4	303.00			0.21		53	2.1		
MW10	10/17/2012	FD	12	14	0.50 J				10 U		180			31000 =	1600		20 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	230	8.0	292			0.067 J		69 J	1.7		
MW10	10/17/2012	N	12	8.7	0.55 J				10 U		190			32000 =	1600		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	240	7.8	304			0.075 J		68 J	1.7		
MW10	10/10/2013	FD	140 J	16	0.19 J				10.0 UJ		230 J			31000 J	1600 J		20 UJ			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	230 B	7.9				0.39 J		94	1.7		
MW10	10/10/2013	N	27 J	17	0.19 J				10.0 UJ		260 J			32000 J	1700 J		20 UJ			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	220 B	7.8				0.41 J		93	1.4		
MW10	9/25/2014	N	8.1	37	0.21 J				2.0 U		250				1300		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	180	6.1	270			0.10		77	1.0 U		
MW10	10/15/2015	N	8.2	150	5.0 U				1.0 J		188				861		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	178	6.5	244			0.10 U		71.8	1.8		
MW10	4/7/2016	N	290	1900	5.0 U				2.0 U		1350				719		20.0 U			4.8	0.50 U	0.46 J	0.53 J	2.9	162	9.8	189			0.10 U		46.1	8.6		
MW10	7/25/2016	N	8.6	1700	5.0 U				3.7		826				744		20.0 U			5.2	0.50 U	0.66 J	0.64 J	5.2	160	12.3	188			0.10 U		31.7	11.6		
MW10	10/13/2016	N	5.5	7300	0.46 J				1.7 J		434				777		20.0 U			6.2	0.50 U	0.79 J	0.79 J	5.7	156	14.6	186			0.10 U		24.3	11.1		
MW10	1/24/2017	N	8.5	6200	0.46 J				1.9 J		539				831		6.2			10	0.28	0.96 J	0.91 J	8.1	158	17.4	220			0.035		24.0	19.4		
MW10	4/24/2017	N	3.7	7600	0.76 J				5.9		756				897		20.0 U			20	0.50 U	1.6	1.8	14	142	19.1	234			0.10 U		25.0	27.9		
MW10	10/5/2017	FD	15	5000	0.53 J				3.7		609				898		20.0 U			19	0.50 U	1.3	1.5	9.5	157	25.9	182			0.081 J		20.1	32.0		
MW10	10/5/2017	N	13	4800	0.53 J				3.0		626				903		20.0 U			20	0.50 U	1.2	1.5	9.4	157	26.2	184			0.083 J		20.2	30.8		
MW10	6/1/2018	N	23	2500	1.0				3.6		796				951		20.0 U			24	0.50 U	1.4	1.5	10	470	27.6	197			0.084 J		19.9	2.1		
MW10	10/19/2018	N	40	2500	1.1				13.6		1310				907		20.0 U			21	0.50 U	1.2	1.1	8.6	146	19.9	182			0.20 U		15.3	26.2		
MW10	4/22/2019	N	550	1600 H	1.1 B				2.2 B		769				740 B		6.9 U			9.3	0.15 U	0.80	0.90	6.0	130	24.8	173			0.068 U		12.9	23.3		
MW10	10/16/2019	FD	180	1800	1.1				2.4		1640				937		6.9 U			7	0.15 U	0.18 U	0.98	7.7	144 B	30.3	183			0.068 U		14.4 B	26.6		
MW10	10/16/2019	N	81	1700	1.1				2.7		1800				937		6.9 U			7.5	0.15 U	0.69	0.15 U	7.4	143 B	31.2	186			0.068 U		14.4 B	27.1		
MW10	4/8/2020	N	230	3600	1.3				2.9		1150				1070		6.9 U			26	0.15 U	1.8	1.6	13	136	37.5	196			0.068 U		20	42.1		
MW10	10/6/2020	N	81	3200	1.5				8.6		2340				1180		6.9 U			22	0.15 U	1.7	1.3	13	150	41.6	203			0.068 U		21.2	40.1		
MW10	4/14/2021	N	120	840	0.91 J				1.6 J		1070				882		20.0 U			3.1	0.50 U	0.42 J	0.55	3.4	135	25.2	165			0.20 U		8.8	13.6		
MW10	10/14/2021	N	49	660	0.85 J				4.7		1280				569		20.0 U			1.2	0.50 U	0.36 J	0.34 J	2.6	139	23.7	156			0.20 U		4.8	11.8		
MW10	4/14/2022	N	68	3200	1.2				9.6		2730				989		20.0 U			3.5	0.50 U	0.84	0.71	4.9	152	23.4	113			0.20 U		9.2	15.5		
MW10	10/11/2022	N	18	0.099 U	1.2	1.3			2.0	8.8	760	1140			1140	1110	20.0 U	20.0 U		9.1	0.50 U	1.1	1.1	8.0	155	25.3	129			0.20 U		10.3	21.6		
MW10	5/2/2023	N	41	8600	1.3	1.3	61300	59100	3.1	8.6	782	1060	19100	18300	1460	1420	20.0 U	20.0 U		11	0.50 U	1.9	1.7	14	183	29.7	148	153		1.0 U		12.6	33.1		
MW10	10/25/2023	N	420	8000	1.0	1.1	47400	48000	4.1	7.6	851	1260	15700 J-	16000 J-	1110	1140	20.0 U	20.0 U		8.1	0.50 U	1.3	1.1	8.9	171	33.4	120	118		0.48 J		10.1	26.7		
MW10S	10/15/1997	N	10 U	30000 E	2 U				28.5 J		45.4 J				10700 J		11.6				0.4	0.9 J	1	8	260	38					0.1 U		23	49.7	
MW10S	10/15/1997	N2		30000 J	2 J				10.9 J								8.4				0.4	0.9 J	1	8											
MW10S	4/7/2000	N		56100 J																	512 =														
MW10S	4/7/2000	N2		34800 =																	393 F														
MW10S	12/5/2000	N	0.57	3810 B	0.74 J				13 J		610				6900		25 U			152	0.1 U	5.9	2.9	70	31	15	570			1		11	300		
MW10S	12/5/2000	N2	0.57	3810 J	9.36				160		11000				7100		35			152															
MW10S	4/25/2001	N	0.55	49000	18				409		131000				7990		216			306	1 U	3.5	10 U	44	142	11	425			1.49 =		8.64	503		
MW10S	4/25/2001	N2	0.55		2.3				46		11300				6030		45						10 U	100 U	100 U	100 U					1.49				

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Penta Wood Products Superfund Site
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Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L	
MW10S	9/12/2001	N	10 U	82000	5.1				170		35000				8600		100			75	0.44 U	0.94 J	0.41 J	15	270 J	10	260		4.7		13	19	
MW10S	9/12/2001	N2			0.29 U				3.2 J		48 J				7600		3.7 U																
MW10S	8/7/2002	N	0.01 U	390 J	3.9				53.3		9490				7560		22.4 J			5 U	1 U	1 J	5 U	10	170	10	4 U		0.11 J		14	10	
MW10S	8/7/2002	N2			3.1				2.3 J		67.3				7070		0.98 U																
MW10S	9/25/2003	N	0.5 U	2200	1 U				7		1760				5910		10 U			1 U	0.25 U	2.5 U	2.5 U	3.4 J	135	6.7	52.05		3.41		2 J	6.6	
MW10S	9/25/2003	N2	0.5 U		1 U				1 J		50 U				5900		10 U																
MW10S	9/22/2004	N	10.0 UJ	9490	1.49 J				73.1 J		14500 J				5460 J		49.7 J			51.9	5.00 U	50.0 U	50.0 U	5.42 J	120 J	24 J	1220 J		3.6 J		15 R	7.54 R	
MW10S	9/22/2004	N2			0.190 J				1.79 J		22.7 J				3740 J		6.07 J																
MW10S	9/29/2005	N	2.0 U	0.11 U	1.0 UJ				14 J		3600 J				4000 J		8.0 J			5.6	0.50 U	5.0 U	5.0 U	0.99 J	130 J	16 J	300 J		2.0 J		120 R	3.0 J	
MW10S	9/29/2005	N2			1.0 UJ				10 UJ		50 UJ				3900 J		20 UJ																
MW10S	9/26/2006	N	2.0 UJ	2700 J	1.0 U				2.2 J		50 U				2500		20 U			1.2	0.50 U	5.0 U	5.0 U	2.6 J	180 J	8.6	310		1.2	79 =	6.5		
MW10S	9/21/2007	N	2.0 U	24 J	1.0 UJ				10 UJ		100 UJ				1300		20 UJ			2.4 R	1.0 U	1.0 U	1.0 U	2.0 U	170 J	8.7	240 J		1.3	69 J	2.9 J		
MW10S	10/24/2008	N	2.0 UJ																	3.36	0.5 U	2.0 U	2.0 U	5.0 U									
MW10S	4/18/2016	N	0.50 U	3500	0.59 J				2.6		190				388		20.0 U			4.7	0.50 U	1.0 U	1.0 U	2.7	102	7.8	92.1		0.10 U		9.1	9.5	
MW10S	7/25/2016	N	0.50 U	5200	0.68 J				9.2		183				315		20.0 U			13	0.50 U	0.39 J	1.0 U	5.6	107	7.7	124		0.10 U		11.8	15.6	
MW10S	10/13/2016	N	0.12 J	6600	0.44 J				4.6		124				399		20.0 U			9.6	0.50 U	0.30 J	1.0 U	4.6	83.7	6.1	100		0.10 U		11.9	12.3	
MW10S	1/24/2017	N	0.12 J	9800	0.80 J				2.5		254				624		6.2			10	0.28	0.40 J	0.23	5.7	164	12.3	220		0.035		17.3	23.4	
MW10S	4/24/2017	FD	0.36 J	3300	0.65 J				3.3		406				1380		20.0 U			10	0.50 U	0.40 J	1.0 U	5.8	195	25.7	350		0.082 J		23.1	32.1	
MW10S	4/24/2017	N	0.35 J	4300	0.74 J				3.3		394				1340		20.0 U			11	0.50 U	0.40 J	1.0 U	5.9	195	25.6	332		0.10 U		23.1	33.0	
MW10S	10/5/2017	N	0.29 J	4400	0.50 J				2.9		770				1260		8.1 J			9.9	0.50 U	0.46 J	0.50 U	6.0	314	41.1	378		0.13 J		26.7	29.8	
MW10S	6/1/2018	N	1.0 U	1500	0.91 J				5.2		1010				2880		20.0 U			11	0.50 U	0.42 J	0.22 J	5.2	322	69.8	456		0.083 J		39.7	5.5	
MW10S	10/19/2018	N	1.0 U	1900	0.51 J				8.2		716				2030		20.0 U			5.9 J	0.50 U	0.84	0.34 J	10	311	32.9	388		0.76		23.5	26.1	
MW10S	4/23/2019	FD	0.17 U	1500	2.1 B				6.0 B		886				3470 B		6.9 U			10	0.15 U	0.36 J	0.28 J	5.9	313	63.6	464		0.073 J		42.5	56.3	
MW10S	4/23/2019	N	0.17 U	1400 ^	0.67 JB				8.8 B		861				3450 B		6.9 U			10	0.15 U	0.38 J	0.30 J	6.1	312	64.8	471		0.074 J		43.1	60.9	
MW10S	10/16/2019	N	0.31 J	2500	0.49 J				1.8 J		551				3010		6.9 U			13	0.15 U	0.18 U	0.15 U	14	345 B	20.5	379		0.19 J		18.8	27.7	
MW10S	4/8/2020	FD	0.17 U	2300	0.57 J				2.8		571				3670		6.9 U			16	0.15 U	0.91	0.26 J	12	301	19.4	341		0.068 U		21.1	34.5	
MW10S	4/8/2020	N	0.17 U	2800	0.54 J				2.3		563				3530		6.9 U			17	0.15 U	0.82	0.25 J	11	312	21.7	345		0.068 U		22.6	34	
MW10S	10/7/2020	N	0.17 U	2100	1.1				8.2		819				4880		6.9 U			19	0.15 U	0.80	0.22 J	11	344	20.6	388		0.076 J		22.0	29.7	
MW10S	4/14/2021	N	0.51 J	2000	0.77 J				2.8		980				6360		20.0 U			15	0.50 U	0.69	0.21 J	10	317	42.7	401		0.20 U		34.8	60.8	
MW10S	10/14/2021	N	0.22 J	3100	0.94 J				3.4		1510				6430		20.0 U			17	0.50 U	0.81	0.16 J	11	310	52.3	402		0.085 J		37.6	61.5	
MW11	10/15/1997	N	10 U	1 U	2 U				2 U		10 U				2 U		5.3				0.3	1 JB	0.2 J	0.5 J	190	7.5			5		12	1.3	
MW11	10/15/1997	N2		1 U	2 J				4.2 U								10.3				0.3	1 J	0.2 J	0.5 J									
MW11	4/4/2000	N		0.6 U																11 U													
MW11	4/24/2001	N	0.1 U	0.1 U	1.4				25 U		58				15 U		25			5.3 U	0.1 U	1 U	1 U	1 U	185	6.16	231		3.59 =		4.57	7.9	
MW11	4/24/2001	N2	0.11 U	0.11 U	1.2				25 U		25 U				15 U		20			5.3 U	0.1 U	1 U	1 U	1 U	225	6.25	231		3.59		3.48	4.67	
MW11	4/24/2001	N3	0.11 U		1.4				25 U		151				15 U		126			5.4 U										3.74 =			
MW11	4/24/2001	N4			1.3				25 U		25 U				15 U		25 U			5.4 U										3.74			
MW11	9/10/2001	N	10 U	0.091 J	1.4				2.9 J		66 J				1.9		9.1 J			0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	190	8	220		3.1		7.4 U	4.2	
MW11	9/10/2001	N2			1.1				2.2 U		35 U				0.45 J		3.7 U																
MW11	8/6/2002	N	0.01 U	0.04 U	4.7				0.83 J		46				2.3 J		6.4 J			5 U	1 U	5 U	5 U	5 U	210	7.8	230		0.15 U		7.6	18	
MW11	8/6/2002	N2	0.01 U		1.5 J				0.3 U		11.2 U				1.2 J		8.5 J																
MW11	9/23/2003	N	0.5 U	0.11 U	1 U				2		160				5 U		10 U			0.98 U	0.25 U	2.5 U	2.5 U	2.5 U	187	6.7	72.14		2.94		2 U	2.3	
MW11	9/23/2003	N2	0.5 U		1 U				1 U		50 U				5 U		10 U																
MW11	9/21/2004	N	10.0 U	0.0656 J	0.885 J				0.620 J		15.6 J				2.81 J		6.36 J			1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	210	9.0 =	1020		3.0 J		6.2 J	14.1	
MW11	9/21/2004	N2			0.948 J				0.366 J		6.05 J				1.40 J		4.05 J																

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L	
MW11	9/29/2005	N	2.0 U	740 =	1.0 UJ				10 UJ		50 UJ				1.6 J		20 UJ			0.95 U	0.50 U	5.0 U	5.0 U	5.0 U	200 J	14 J	280 J		2.4 J		9.7 R	1.2 J	
MW11	9/29/2005	N2			1.0 UJ				10 UJ		50 UJ				3.0 J		20 UJ																
MW11	9/27/2006	N	2.0 UJ	0.11 U	1.0 UJ				10 UJ		50 UJ				10 UJ		20 UJ			0.93 U	0.50 U	5.0 U	5.0 U	5.0 U	220 J	16 J	240		0.53 J		8.8 J	2.3	
MW11	9/20/2007	N	2.0 UJ	0.093 U	1.2 J				10 UJ		100 UJ				10 UJ		20 UJ			0.93 U	1.0 U	1.0 U	1.0 U	2.0 U	220	20	260 J		2.4		19 J	1.2 J	
MW11	10/22/2008	N	2.0 UJ	0.27	2 UJ				10 UJ		533			33600 J	10 UJ		20 UJ			1 U	0.5 U	2.0 U	2.0 U	5 U	234 J	19.9	433 J		2.26 J		17.8	20.2	
MW11	4/11/2016	N	0.50 U	0.10 U	0.75 J				2.0 U		32.1 J				1.9 J		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	229	18.0	470		1.6		200	0.32 J	
MW12	10/15/1997	N	10 U	13000 E	2 U				5		267				1660		10.6				1	2	3	14	490	50			0.1 U		15	21.7	
MW12	10/15/1997	N2		13000 J	2 U				6.1 U								16.3				1	2	3	14									
MW12	4/6/2000	FD		10600 J																45 =													
MW12	4/6/2000	FD2		14100 =																5150 U													
MW12	4/6/2000	N		15000 =																5210 U													
MW12	4/6/2000	N2		10300 J																47 =													
MW12	4/26/2001	N	0.99	1500	1				25 U		151				1540		25 U			44	0.34	2.5	4.1	22	564	48	556		0.43		16	23	
MW12	4/26/2001	N2	0.99		0.91				25 U		131				1570		25 U																
MW12	9/13/2001	N	10 U	18000	1.1				5 J		770				1300		9.3 J			40	0.44 U	2.3 U	3.2 U	20	490	47	470		0.53 U		16	25	
MW12	9/13/2001	N2			0.95 U				6.8 J		740				1400		12																
MW12	5/14/2002	FD		4000																													
MW12	5/14/2002	N	10 U	4000	1.4 U				5.3 J		44.5				1670		7.4 J			33	1 U	2 J	2 J	14	490	39	520		0.68 H		16	31	
MW12	5/14/2002	N2		4300	1.5 J				5 J		11.2 U				1670		9.3 J										520						
MW12	5/14/2002	N3			1.4 U				4.9 J		11.2 U				1680		12 J																
MW12	8/8/2002	N	0.01 U	6400 J	2.8				5.6 J		123				1620		7.7 J			28	1 U	2 J	2 J	15	460	37	4 U		0.46		15	28	
MW12	8/8/2002	N2			1.4 U				2.9 J		105				1600		3.3 J																
MW12	4/29/2003	N	0.5 U	3000	1 J				5		230				1640		10 U			17	0.5 U	1.3 J	1.3 J	11	470	31	442		0.8		20	19	
MW12	4/29/2003	N2	0.5 U		1 U				4		25 U				1560		10 U																
MW12	9/23/2003	N	0.49 J	10000	1 U				4		70 J				1420		10 U			14	0.25 U	2.5 U	2.5 U	8.6	443	30.8	151.4		1.17		2 U	15.5	
MW12	9/23/2003	N2	0.49 J		1 U				3		50 U				1530		10 U				0.25 U	2.5 U	2.5 U	9.4	433	29.8	153.3		1.23		2 U	16	
MW12	9/23/2003	N3	0.64		1 U				4		80 J				1490		10 U																
MW12	9/23/2003	N4			1 U				3		50 U				1490		10 U																
MW12	5/4/2004	N	1.34 J	11200 J	0.564 J				5.50 R		52.7 R			45900	1730 R		10.8 R			22.9	0.124 J	1.39 J	1.03 J	11.2	446	29 =	443		1.1 J		14 R	20.2 J	
MW12	5/4/2004	N2			0.600 J				3.95 R		33.6 R				1480 R		8.80 R																
MW12	9/22/2004	N	10.0 UJ	9060 J	1.00 UJ				5.09 J		53.9 J				1540 J		9.53 J			28.2 J	0.113 J	1.22 J	0.866 J	9.83	440 J	26 J	1660 J		1.1 J		12 R	18.2 R	
MW12	9/22/2004	N2		3730 E	0.672 J				3.91 J		22.7 J				1230 J		8.10 J																
MW12	5/10/2005	N	2.0 U	8300 J	1.0 U				4.2 J		50 U				1500		8.9 J			6.1	0.50 U	0.93 J	5.0 U	5.6	390 J	23 J	360 J		1.3 J		16 R	9.9 R	
MW12	5/10/2005	N2			1.0 U				4.8 J		50 U				1400		20 U																
MW12	9/27/2005	N	2.0 UJ	8500 J	1.0 UJ				10 U		50 U				1200		7.8 J			3.3	0.50 U	0.85 J	5.0 U	4.9 J	370 J	20 J	410		1.1 J		26 J	9.2	
MW12	9/27/2005	N2			1.0 UJ				3.9 J		50 U				1300		20 U																
MW12	6/7/2006	N	2.0 U	6100 J	1.0 UJ				2.3 J		50 R				1100 J		20 UJ			0.94 U	0.50 U	0.67 J	5.0 U	3.4 J	400 J	21 J	400 J		2.1 J		32 =	7.2 J	
MW12	9/26/2006	FD	2.0 UJ	2000 =	1.0 UJ				2.5 UJ		46 J				1200 J		20 UJ			1.4	0.50 U	5.0 U	5.0 U	1.7 J	390 J	15 J	370		2.0 J		15 J	10	
MW12	9/26/2006	N	2.0 UJ	3100 =	1.0 UJ				3.2 J		50 UJ				1200 J		16 J			1.5	0.50 U	5.0 U	5.0 U	2.9 J	390 J	14 J	380		1.9 J		15 J	10	
MW12	5/9/2007	N	2.0 UJ	3000 J	1.0 UJ				2.1 J		100 UJ				1100		5.2 J			0.99 J	1.0 UJ	1.0 UJ	1.0 UJ	1.9 J	340 =	13	370		2.4		37 J	7.0 UB	
MW12	9/19/2007	FD	2.0 UJ	1000 J	1.1 J				1.7 J		100 R				790		20 UJ			0.74 J	1.0 U	1.0 U	1.0 U	2.0 U	340	14	350 J		2.2		2.7 J	5.7 J	
MW12	9/19/2007	N	2.0 UJ	1100 J	0.97 J				10 UJ		100 R				820		20 UJ			0.71 J	1.0 U	1.0 U	1.0 U	2.0 U	340	14	330 J		2.8		29 J	5.6 J	
MW12	5/20/2008	FD	2.0 UJ	2200 J	0.61 J				3.8		100 UJ				1000		4.2 J			0.95 U	1.0 UJ	1.0 U	1.0 U	1.6 J	360 =	12	380		2.1		25	4.5 J	
MW12	5/20/2008	N	2.0 UJ	2100 J	0.59 J				3.7		100 UJ				1000		4.6 J			0.96 U	1.0 UJ	1.0 U	1.0 U	1.5 J	360 =	12	350		2.0		25	4.7 J	
MW12	10/21/2008	FD	2.0 UJ	1300.00 J	2.00 U				3.70 J		936			45000	1120		20 U			1.00 U	0.5 U	2.0 U	2.0 U	5.0 U	322	14.50	465 J		2.95 J		31.70	11.80 J	

Appendix A.1
Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L		
MW12	10/21/2008	N	2.0 UJ	1670.00 J	2 U				4 J		927			50200	1140		11 J			1.00 U	0.5 U	2.0 U	2.0 U	5.0 U	323	13.10	519 J		2.96 J		31.80	11.70 J		
MW12	6/2/2009	FD	0.8 UJ	489 J	2 U				10 UJ		292 =			40600 =	1020 =		20 U			1.0 UJ	0.5 U	0.31 J	2.0 U	0.96 J	302 J	12.4	429.3758		2.64 J		62.2	1.7 J		
MW12	6/2/2009	N	0.8 UJ	521 J	2 U				10 UJ		310 =			34400 =	1040 =		20 U			1.0 UJ	0.5 U	0.28 J	2.0 U	0.88 J	294 J	12.3	363.3928		2.65 J		59.9	3.6 J		
MW12	10/6/2009	FD	0.83 UJ	289 J	2 UJ				4 J		294 J			47600 J	982 J		20 UJ			0.997 UJ	0.1 UJ	0.069 J	0.4 UJ	0.28 J	294 J	13.7 J	468.19 J		1.83 J		84.7 J	3.25 J		
MW12	10/6/2009	N	0.83 UJ	295 J	2 UJ				4 J		307 J			51600 J	987 J		20 UJ			0.995 UJ	0.1 UJ	0.073 J	0.4 UJ	0.28 J	297 J	13.7 J	509.63 J		1.84 J		85.4 J	3.83 J		
MW12	5/19/2010	FD	1.3 U	81.9	2 UJ				3.8 J		225. J			41800. J	633. J		8.2 J			1.0 U	0.5 U	5 U	5 U	5 U	308	14.7	432		1.91 J		117	36.1 UB		
MW12	5/19/2010	N	1.3 U	70.3	1.9 J				3.5 J		228. J			47700. J	913. J		11. J			1.0 U	0.5 U	5 U	5 U	5 U	308	14.7	496		1.87 J		116	41.8 UB		
MW12	10/5/2010	FD	1.3 U	42.9	2 U				8 U		332			47500 R	859		20 U			1.0 U	0.1 U	0.4 U	0.4 U	1 U	316	14.4 J	483		1.72		119	22.9 J		
MW12	10/5/2010	N	1.3 U	43.7	2 U				8 U		358			41500 R	834		20 U			1.0 U	0.1 U	0.4 U	0.044	1 U	320	14.4 J	548		1.73		119	53.9 J		
MW12	6/29/2011	FD	0.9 U	35.1	2 UJ				10 U		291			56900	765		20 U			0.998 U	0.1 U	0.4 U	0.4 U	1 U	276	13.3 J	524.00		2.11 J		103 J	1.53 J+		
MW12	6/29/2011	N	0.9 U	37	1.8 J				10 U		314			62600	744		20 U			0.998 U	0.1 U	0.4 U	0.4 U	1 U	295	14.1 J	555.00		2.28		111	1.28 J+		
MW12	10/18/2011	FD	0.50 U	30	1.0 J				2.3 J+		50 U			42000 B	640		10 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	300	14	398.00		2.1		100	2.0		
MW12	10/18/2011	N	0.50 U	37	1.1 J				2.3 J+		50 U			42000 B	660		10 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	300	14	398.00		2.1		98	2.0		
MW12	5/22/2012	FD	0.50 U	16 J	2.0 U				4.3 J		50 U			43000 =	630		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	310	14 =	419.00		1.8		120	1.6		
MW12	5/22/2012	N	0.50 U	21 J	2.0 U				10 U		50 U			44000 =	670		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	300	14 =	431.00		1.8		120	1.5		
MW12	10/16/2012	FD	0.50 U	23	1.2 J				10 U		50 U			43000 =	420		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	290	13	424		2.0 J		130 =	1.3		
MW12	10/16/2012	N	0.50 U	26	0.98 J				10 U		50 U			42000 =	410		20 U			0.21 U	0.50 U	1.0 U	1.0 U	2.0 U	280	14	413		2.0 J		120 =	1.4		
MW12	5/22/2013	FD	0.50 U	24	2.0 U				10 U		50 UJ			39000 B	530 B		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	290	12			2.1 J		150	1.6		
MW12	5/22/2013	N	0.50 U	22	2.0 U				10 U		50 U			36000 B	460 B		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	280	12			2.0 J		150	1.6		
MW12	10/8/2013	FD	0.50 U	22	0.37 J				10.0 U		50 U			42000 B	710 B		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	260	12			2.1 J		120	1.3		
MW12	10/8/2013	N	0.50 U	28	0.37 J				10.0 U		50 U			41000 B	680 B		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	270	12			2.1 J		120	1.4		
MW12	5/14/2014	N		19																														
MW12	9/23/2014	N	0.076 J	24	0.66 J				2.0 U		100 U				450		20 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	240	11	360		1.7		130	1.0 U		
MW12	4/20/2015	N	0.50 U	16	1.1 J				1.4 J		100 U				530		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	220	11	410		1.7		140	0.95 J		
MW12	10/13/2015	N	0.080 J	25	5.0 U				2.0 U		362				27.4		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	279	11.7	74.4		1.6		159	1.2		
MW12	4/6/2016	N	0.12 J	5.2	0.77 J				1.4 J		60.1 J				148		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	236	10.6	358		1.6		135	0.67 J		
MW12	7/19/2016	N	0.50 U	14	0.61 J				1.6 J		100 U				388		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	238	10.1	358		1.4		134	0.96 J		
MW12	10/12/2016	N	0.092 J	14	0.50 J				1.6 J		10 J				439		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	239	10.8	340		1.2		124	0.71 J		
MW12	1/18/2017	N	0.13 J	18	0.87 J				1.4 J		8.5 J				427		6.2			0.060	0.28	0.26	0.23	0.24	203	10.7	326		1.1		122	0.89 J		
MW12	4/19/2017	N	0.13 J	14	0.46 J				1.2 J		10.8 J				362		20.0 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	201	10.1	346		1.0		112	1.0		
MW12	10/2/2017	N	0.48 J	32	0.49 J				1.9 J		100 U				328		20.0 U			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	199	11.7	282		0.90		105	1.1		
MW12	10/16/2018	N	1.0 U	110	0.53 J				1.3 J		100 U				72.2		20.0 U			0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	173	8.1	231		0.61		59.9	2.1		
MW12	4/23/2019	N	0.17 U	290	0.55 JB				1.5 JB		46.7 U				55.0 B		6.9 U			0.24 U	0.15 U	0.18 U	0.15 J	0.22 U	165	9.1	218		0.53		45.5	2.4		
MW12	10/14/2019	N	0.25 J	300	0.89 J				0.85 J		46.7 U				8.4		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	158	8.7	197		0.61 H		43.5	1.2		
MW12	4/7/2020	N	0.17 U	880	0.78 J				1.9 J		46.7 U				70		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.70 J	160	9.3	192		0.31		37.6	4.2		
MW12	10/5/2020	N	0.17 U	0.089 U	0.92 J				1.8 J		46.7 U				81.1		6.9 U			0.45 J	0.15 U	0.19 J	0.15 U	0.82 J	153	8.6	172		0.35		34.2	3.1		
MW12	4/14/2021	N	1.0 U	480	0.65 J				1.5 J		100 U				143		20.0 U			0.31 J	0.50 U	0.50 U	0.50 U	1.2	155	11.3	188		0.31		27.9	5.3		
MW12	10/14/2021	N	0.20 J	1200	0.75 J				1.7 J		100 U				238 F1F2		20.0 U			2.6 F2	0.50 U	0.48 J	0.23 J	3.1	109	8.4 F1	189		0.30		15.2 F1	12.3		
MW12	4/13/2022	N	0.47 J	2700	0.59 J				3.2		94.2 J				294		20.0 U			4.4	0.50 U	0.83	0.30 J	4.6	160	15.9	118		0.20		22.2	17.7		
MW12	10/10/2022	N	0.39 J	0.099 U	0.77 J	0.73 J			2.3	2.9	100 U	100 U			567	575	20.0 U	20.0 U		5.5	0.50 U	0.82	0.35 J	4.6	166	20.2	130		0.24		22.6	18.8		
MW12	4/27/2023	N	0.47 J	2500	1.2	1.2	49300	50800	1.8 J	2.8	100 U	100 U	20400	21100	847	1030	20.0 U	20.0 U		5.8	0.50 U	1.0	0.15 J	5.9	174	22.5	127	123	0.30 J		22.5	20.0		
MW12	10/25/2023	N	0.83 J	1800	0.69 J	0.75 J	49000	51700	2.9	4.1	100 U	100 U	21800 J-	22800 J-	749	833	20.0 U	20.0 U		6.2	0.50 U	0.80	0.32 J	4.5	181	26.3	129	122	0.57 J		23.4	22.4		
MW13	10/8/1997	N	10 U	0.7 J	2 U				3.32 U		6.7 J				27.3		2.7				0.1 U	1 U	1 U	1 U	70	2.7			1.4		1.4	17.9		
MW13	10/8/1997	N2		0.7 J																	0.1 U	1 U	1 U	1 U										
MW13	4/5/2000	N		0.8 =																10 U														

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L		
MW13	12/5/2000	N	0.58 U	114 J	1 U				25 U		230				66		25 U			5.5 U	0.1 U	1 U	1 U	1 U	72	4.2	140		0.45		8.2	7.9		
MW13	12/5/2000	N2	0.58 U						92		26000				870		52			5.5 U	0.1 U	1 U	1 U	1 U			140							
MW13	4/23/2001	N	0.12 U	0.18	14				140		56300				1300		89			5.3 U	0.1 U	1 U	1 U	1 U	70	3.52	146		1.77		35	18		
MW13	4/23/2001	N2	0.12 U		0.24				25 U		25 U				110		25 U																	
MW13	6/19/2001	N	0.12 U	0.11 U	1.1				68		32800				848		45			5.3 U	0.12	1 U	1 U	1 U	68	5.73	112		2.87 =		11	13		
MW13	6/19/2001	N2	0.12 U		9.1				6.1 J		141				26		25 U												2.87					
MW13	9/10/2001	N	10 U	0.69	3.9				49		14000				510		37			0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	75	5.4	100		2.5		7.5 U	9.5		
MW13	9/10/2001	N2			0.54 J				2.8 J		52 J				27		4.7 J																	
MW13	8/5/2002	N	0.01 U	0.64	9.1				55.3		19000				580		39.5			5 U	1 U	5 U	5 U	5 U	86	6.8	110		0.15 U		8.4	6.3		
MW13	8/5/2002	N2			2.2 J				2.5 J		1300				45		9.1 J																	
MW13	9/23/2003	N	0.5 U	2.9	3				55		24600				687		50			1 U	0.25 U	2.5 U	2.5 U	2.5 U	78	5.1	35.04		1.86		7	6		
MW13	9/23/2003	N2	0.5 U		1 U				8		960				182		10 U																	
MW13	9/21/2004	N	10.0 UJ	4.67	1.52				32.4		8770				357		24.3 J			5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	68 J	6.5 J	667 J		2.4 J		6.4 R	6.30 R		
MW13	9/21/2004	N2			0.259 J				1.96 J		125 UJ				3.67 J		5.28 J																	
MW13	9/27/2005	N	2.0 UJ	0.85	1.0 J				18		6200				200		18 J			0.97 U	0.50 U	5.0 U	5.0 U	5.0 U	67 J	3.1 J	68		0.60 J		19 J	4.3		
MW13	9/27/2005	N2			1.0 UJ				2.5 J		50 U				7.1 J		20 U																	
MW13	9/18/2007	N	2.0 UJ	0.53 J	1.0 UJ				10 UJ		100 UJ				6.3 J		5.2 J			0.93 R	1.0 U	1.0 U	1.0 U	2.0 U	71 J	2.9	100 J		0.31 J		29 J	4.1 J		
MW13	10/21/2008	N	2.0 UJ	0.31 UJ	2 U				10 UJ		207			10500 J	10 U		20 U			1.00 U	0.50 U	2.0 U	2.0 U	5.0 U	55	1.90	110 J		0.45 J		10.10	3.44 J		
MW13	10/7/2009	N	0.83 UJ	0.16 J	2 UJ				3.2 J		50 UJ			4430 J	10 UJ		20 UJ			0.996 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ	30 J	2.12 J	45.46 J		0.77 J		9.71 J	13.9 J		
MW13	4/13/2016	N	0.50 U	0.34	5.0 U				3.2		449				13.4		20.0 U			0.21 U	0.50 U	1.0 U	1.0 U	2.0 U	51.0	1.4	54.9		0.70		3.4	4.2		
MW13	7/20/2016	N	0.50 U	1.1	5.0 U				1.5 J		19.4 J				5.0 U		20.0 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	39.5	0.91 J	86.0		1.0		2.2	2.1		
MW13	10/10/2016	N	0.50 U	0.37	0.87 J				2.3		23.2 J				0.94 J		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	49.3	0.98 J	56.0		0.58		3.1	1.9		
MW13	1/19/2017	N	0.080	0.33	0.35 J				3.1		17.1 J				1.1 J		6.2			0.064	0.28	0.26	0.23	0.24	50.8	0.71 J	52.0		0.49		3.6	2.2		
MW13	4/19/2017	N	0.50 U	0.24	5.0 U				1.1 J		100 U				0.28 J		20.0 U			0.21 U	0.50 U	1.0 U	1.0 U	2.0 U	53.7	0.76 J	60.0		0.50		4.4	2.2		
MW13	9/29/2017	N	0.25 J	0.27 J	1.0 U				1.6 J		53.5 J				1.4 J		20.0 U			0.79 U	0.50 U	0.50 U	0.50 U	1.0 U	59.0	1.4	47.6		0.56		3.3	2.0		
MW13	10/16/2018	N	1.0 U	0.35	1.0 U				1.8 J		100 U				3.2		20.0 U			0.79 U	0.50 U	0.50 U	0.15 J	1.0 U	54.9	0.83	47.7		0.41		2.8	2.4		
MW13	4/23/2019	N	0.17 U	0.30 ^	0.28 JB				2.3 B		46.7 U				1.6 JB		11.2 J			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	54.2	0.89	49.8		0.41		3.0	2.3		
MW13	10/14/2019	N	0.17 U	0.086 U	0.28 J				2.3		149				4.3		6.9 J			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	44.7	1.2	40.1		0.29 H		1.8	1.9		
MW13	4/9/2020	N	0.17 U	0.089 U	0.35 J				3.9		46.7 U				1.0 J		6.9 U			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	51.7	0.72	50.3		0.41		2.6	1.7		
MW13	10/6/2020	N	0.17 U	0.20	0.27 J				3.3		46.7 U				0.79 U		6.9 U			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	53.6	0.81	48.9		0.31		2.6	2.1		
MW13	4/12/2021	N	1.0 U	0.25	1.0 U				13.0 B		97.6 J				1.8 JB		20.0 U			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	55.1	0.61	52.5		0.37		2.5	1.8		
MW13	4/12/2021	FD	1.0 U	0.26	1.0 U				10.4 B		58.2 J				1.7 JB		20.0 U			0.83 U	0.50 U	0.50 U	0.50 U	1.0 U	62.3	0.61	52.8		0.37		2.5	1.9		
MW13	10/12/2021	N	1.0 U	0.30	0.23 J				6.7		100 U				2.1 J		20.0 U			0.79 U	0.50 U	0.50 U	0.50 U	1.0 U	66.6	0.51	55.9		0.30		2.5	1.9		
MW13	4/11/2022	N	1.0 U	0.37	0.25 J				7.5		100 U				1.8 J		20.0 U			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	66.0	0.30	37.9		0.33		2.5	2.3		
MW13	10/5/2022	N	1.0 U	0.32	0.24 J	0.23 J			1.7 J	1.9 J	100 U	51.4 J			2.5 U	1.6 J	20.0 U	20.0 U		0.81 U	0.50 U	0.50 U	0.50 U	1.0 U	65.8	0.60	38.8		0.48		2.3	2.1		
MW13	4/25/2023	N	1.0 U	0.32	0.23 J	1.0 U	12500	13000	2.1	2.1	100 U	151	4790	5090	2.5 U	4.4	20.0 U	20.0 U		0.69 U	0.50 U	0.50 U	0.50 U	1.0 U	52.9	0.64	32.5	31.1	0.51		1.9 J	2.1		
MW13	10/26/2023	N	1.0 U	0.18 U	1.0 U	1.0 U	12100	12200	2.0 U	2.9 U	100 U	100 U	5740	5640	3.3 U	2.5 U	20.0 U	20.0 U		0.88 U	0.50 U	0.50 U	0.50 U	1.0 U	69.5	0.63 J	39.4	30.2	0.74 J		2.2	2.1		
MW13	10/26/2023	FD	1.0 U	0.11 U	1.0 U	1.0 U	12500	12200	2.6 U	2.0 U	100 U	100 U	5660	5860	2.5 U	2.5 U	20.0 U	20.0 U		0.85 U	0.50 U	0.50 U	0.50 U	1.0 U	69.5	0.57 J	39.8	31.2	0.74 J		2.1	1.9		
MW14	10/9/1997	N	10 U	1 U	2 U				2 U		20 U				4 J		4				0.1 U	1 U	1 U	1 U	120	8			1.6		2.4	1 U		
MW14	10/9/1997	N2		1 U	2 U				2 U								2 U				0.1 U	1 U	1 U	1 U										
MW14	4/6/2000	N		0.5 U																11 U														
MW14	6/19/2001	N	0.11 U	0.96	1.4				5.4 J		1070				57		25 U			239	0.1 U	1 U	1 U	1 U	104	12	124		2.06		3.48 J	6.41		
MW14	6/19/2001	N2	0.11 U		2				25 U		25 U				4.4		25 U													2.06 =				
MW14	1/23/2017	N	0.080	0.12	1.1 J				0.62 J		5.3				1.6 J		6.2			0.061	0.28	0.26	0.23	0.24	129	15.8	146		1.7		6.6	0.51 J		
MW14	10/3/2017	FD	0.11 J	0.099 U	1.0				0.74 J		100 U				0.93 J		20.0 U			0.80 U	0.50 U	0.50 U	0.50 U	1.0 U	128	17.1	148		1.9		6.7	1.0 U		

Appendix A.1
Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L		
MW14	10/3/2017	N	0.087 J	0.098 U	0.95 J				0.72 J		100 U				1.1 J		20.0 U			0.76 U	0.50 U	0.50 U	0.50 U	1.0 U	129	16.1	166		1.9		6.9	0.47 J		
MW14	5/31/2018	N	1.0 U	0.10 U	1.2				0.79 J		100 U				3.1		20.0 U			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	585	16.4	143		1.7		6.3	0.71 J		
MW14	10/17/2018	N	1.0 U	0.097 U	1.1				2.0 U		100 U				1.3 J		20.0 U			0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	122	15.6	142		1.8		6.4	0.68 J		
MW14	4/25/2019	N	0.17 U	0.14	1.1				0.95 J		46.7 U				6.3		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	122	15.0	140		1.5		6.0 B	0.64 J		
MW14	10/16/2019	N	0.17 U	0.086 U	1.1				0.50 U		46.7 U				9.0 F2		6.9 U			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	123 H	17.5 F1	146		1.7		6.6 B	0.47 U		
MW14	4/8/2020	N	0.17 U	0.096 U	1.1				0.66 J		46.7 U				2.5		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	115	18.1	140		1.4		6	0.60 J		
MW14	10/5/2020	N	0.17 U	0.086 U	1.2				0.55 J		46.7 U				3.4		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	119	22.4	143		1.6		6.6	0.72 J		
MW14	4/15/2021	N	1.0 U	0.095 U	1				0.53 JB		100 U				1.2 J		20.0 U			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	122	20.2	145		1.5		5.6	0.69 J		
MW14	4/15/2021	FD	1.0 U	0.095 U	1				2.0 U		100 U				1.2 J		20.4			0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	121	18.1	143		1.5		6.2	0.68 J		
MW14	10/14/2021	N	1.0 U	0.096 U	1.2				0.50 J		100 U				2.9		20.0 U			0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	123	23.4	152		4.0 *		6.2	1.0 U		
MW14	10/14/2021	FD	1.0 U	0.096 U	1.2				0.64 J		100 U				3.0		20.0 U			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	128	21.3	148		1.4 *		12.4	1.0 U		
MW14	4/13/2022	N	1.0 U	0.098 U	1.1				0.50 J		100 U				1.3 J		20.0 U			0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	115	17.7	101		0.95		6.0	1.0 U		
MW14	10/10/2022	N	1.0 U	0.097 U	1.0	1.2			0.53 J	0.50 J	100 U	49.5 J			2.5 U	2.8	20.0 U	20.0 U		0.83 U	0.50 U	0.50 U	0.50 U	1.0 U	127	28.7	111		1.6		6.6	0.66 J		
MW14	4/27/2023	N	1.0 U	0.096 U	1.3	1.5	42900	42200	2.0 U	2.0 U	100 U	100 U	13000	12600	2.5 U	2.5 U	20.0 U	20.0 U		0.65 U	0.50 U	0.50 U	0.50 U	1.0 U	127	23.1	105	107	1.4		5.9	0.62 J		
MW14	10/24/2023	N	0.21 J	0.11 U	1.1	1.1	44000	45500	1.7 J	0.83 J	100 U	100 U	12700	13200	1.0 J	1.1 J	20.0 U	20.0 U		0.86 U	0.50 U	0.50 U	0.50 U	1.0 U	129	25.0	114	110	1.6		6.0	0.67 J		
MW15	10/16/1997	N	10 U	1 U	2 U				2 U		8.2 J				62.2		2 U				0.1 U	1 U	1 U	1 U	190	6.5			4.1		6.3	1.2		
MW15	10/16/1997	N2		1 U	2 U				3.5 U								13.9				0.1 U	1 U	1 U	1 U										
MW15	4/4/2000	N		0.5 U																11 U														
MW15	4/25/2001	N	0.1 U	0.11 U	0.5				25 U		58				4.8		50			5.3 U	0.1 U	1 U	1 U	1 U	240	15	276		3.97		2.61	5.24		
MW15	4/25/2001	N2	0.1 U	0.11 U	0.31				25 U		25 U				15 U		15			5.6 U	0.1 U	1 U	1 U	1 U	246	16	276		3.97 =		4.05	3.7		
MW15	4/25/2001	N3	0.12 U		0.56				25 U		174				4.1		25 U			5.6 U														
MW15	4/25/2001	N4			0.42				25 U		25 U				15 U		16																	
MW15	9/12/2001	N	10 U	0.077 J	0.95 U				2.9 J		35 U				0.31 J		35			0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	240	17	270		3.7		4.5 U	4.5		
MW15	9/12/2001	N2			0.95 U				5.7 J		63 J				2.7		36																	
MW15	8/6/2002	N	0.01 U	0.04 U	3.7				1.6 J		130				2.8 J		17 J			5 U	1 U	5 U	5 U	5 U	230	16	250		0.15 U		4.7	53		
MW15	8/6/2002	N2			2.6				0.3 U		11 U				0.42 U		11 J																	
MW15	9/23/2003	N	0.5 U	0.1 U	1 U				1 J		280				9 J		10 J			0.99 U	0.25 U	2.5 U	2.5 U	2.5 U	213	17.4	88.57		3.8		2 U	1.8		
MW15	9/23/2003	N2	0.5 U		1 U				1 U		50 U				5 U		10 U																	
MW15	9/21/2004	N	10.0 U	0.279	0.468 J				1.74 J		36.7				3.15 J		20.8 J			1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	230	16 =	1020		3.2 J		3.9 J	12.7		
MW15	9/21/2004	N2			0.482 J				0.648 J		5.57 J				0.976 J		8.97 J																	
MW15	9/29/2005	N	2.0 U	0.11 U	1.0 UJ				2.4 J		420 J				15 J		20 UJ			0.93 U	0.50 U	5.0 U	5.0 U	5.0 U	220 J	17 J	300 J		4.2 J		5.8 R	0.84 J		
MW15	9/29/2005	N2			1.0 UJ				10 UJ		50 UJ				1.6 J		20 UJ																	
MW15	9/27/2006	N	2.0 UJ	0.11 U	1.0 UJ				3.5 J		50 UJ				2.0 UB		13 J			0.91 U	0.50 U	5.0 U	5.0 U	5.0 U	260 J	14 J	250		4.7 J		5.9 J	2.1		
MW15	9/19/2007	N	2.0 UJ	0.10 U	0.68 J				10 UJ		100 UJ				10 UJ		20 UJ			1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	250	15	250 J		5.7		13 J	1.3 J		
MW15	5/20/2008	N	2.0 UJ	0.18 J	0.40 J				1.0 J		100 UJ				0.52 J		20 U			0.93 U	1.0 UJ	1.0 U	1.0 U	2.0 UJ	260 =	14	290		4.7		6.6	0.85 J		
MW15	10/21/2008	N	2.0 UJ	0.10 UJ	2 U				10 UJ		854			45400	10 U		20 U			1.00 U	0.5 U	2.0 U	2.0 U	5.00 U	265	14.60	567 J		6.05 J		6.99	13.60 J		
MW15	6/2/2009	N	0.8 UJ	0.1 UJ	2 U				10 UJ		301 =			30600 =	10 U		20 U			1.0 UJ	0.5 U	0.21 J	2.0 U	5.0 U	279 J	13.5	375.2114		5.33 J		6.42	1.7 UJ		
MW15	10/7/2009	N	0.83 UJ	0.1 UJ	2 UJ				3 J		293 J			25500 J	10 UJ		5.4 J			0.999 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ	260 J	12.9 J	294.28 J		4.74 J		6.52 J	1.49 J		
MW15	5/18/2010	N	1.3 U	0.1 U	2 UJ				10 UJ		194. J			24400. J	10 UJ		20 UJ			1.0 U	0.5 U	5 U	5 U	5 U	300	10.7	342		4.57 J		6.3	26.7 UB		
MW15	10/7/2010	N	1.3 U	2.32 J	2 U				8 U		311			38400	16.7 U		20 U			1.0 UJ	0.5 UJ	2 UJ	2 UJ	5 UJ	252	13.2 J	430		5.49 J		6.9 J	1.0 U		
MW15	6/28/2011	N	0.9 U	0.1 U	2 UJ				10 U		205			23100	10 U		20 U			0.998 U	0.1 U	0.4 U	0.4 U	1 U	239	12.1 J	307.00		5.2 J		6.91	0.77 J		
MW15	10/18/2011	N	0.50 U	0.10 U	0.70 J				2.7 J+		50 U			24000 B	1.7 J		10 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	240	12	261.00		4.8 J		5.3	1.0 J		
MW15	5/22/2012	N	0.50 U	0.024 J	2.0 U				10 U		50 U			24000 =	10 U		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	260	11	266.00		4.6 J		5.1 J	1.2		
MW15	10/16/2012	N	0.50 U	0.094 U	0.97 J				10 U		50 U			24000 =	10 U		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	250	12	271		5.3 J		5.0 U	0.69 J		
MW15	5/21/2013	N	0.50 U	0.025 J	2.0 U				10 U		50 U			26000 B	10 U		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	280	9.8			4.7 J		5.9	0.82 J		

Appendix A.1
Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L	
MW15	10/8/2013	N	0.50 U	0.095 U	0.36 J				10.0 U		50 U			23000 B	10 U		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	220	11			5.2 J		6.5	0.50 J	
MW15	5/13/2014	N		0.095 U																													
MW15	9/23/2014	N	0.50 U	0.054 J	1.1 J				2.0 U		28 J				1.9 J		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	210	11	250		5.3		5.6	0.85 J	
MW15	4/20/2015	N	0.50 U	0.094 U	0.78 J				2.0 U		100 U				1.1 J		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	190	11	270		5.6		5.7	0.44 J	
MW15	10/12/2015	N	0.50 U	0.094 U	0.54 J				1.0 J		100 U				5.0 U		20.0 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	224	12.0	302		6.7		5.8	0.55 J	
MW15	4/5/2016	N	0.50 U	0.078 J	0.70 J				1.7 J		100 U				5.0 U		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	207	12.5	312		0.45		6.3	0.49 J	
MW16	10/14/1997	N	10 U	1 U	17.1				438		15.3 J				10300 J		210				0.1 U	1 U	1 U	1 U	170	6.1			2.6		8.1	3	
MW16	10/14/1997	N2		1 U	2 U				2.7 U								1.9 J				0.1 U	1 U	1 U	1 U									
MW16	4/6/2000	N		0.5 U																10 U													
MW16	4/23/2001	N	0.12 U	0.11 U	6.5				62		22300				1460		136			5.6 U	0.1 U	1 U	1 U	1 U	90	3.57	164		8.69 =		29	4.4	
MW16	4/23/2001	N2	0.12 U		1 U				25 U		26				9.4		23													8.69			
MW16	9/10/2001	N	10 U	0.17	1.8				23 U		5500				520		19			0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	79	1.8	120		5.8		11	0.34 U	
MW16	9/10/2001	N2			0.29 U				2.2 U		35 U				0.82 J		4.5 J																
MW16	8/6/2002	N	0.01 U	0.035 J	3.5				25 J		6800				14		760 J			5 U	1 U	5 U	5 U	5 U	130	2	120		0.15 U		13	1.3	
MW16	8/6/2002	N2			1.4 U				0.3 U		78				9.1 J		13 J																
MW16	9/23/2003	N	0.5 U	0.089 J	2 J				18		7470				532		10 J			1.1 U	0.25 U	2.5 U	2.5 U	2.5 U	82	6.2	37.96		3.49		3 J	2.3	
MW16	9/23/2003	N2	0.5 U		1 U				1 U		50 U				5 U		10 U																
MW16	9/21/2004	N	10.0 U	0.0962 J	0.277 J				4.07 J		570				74.7		8.71 J			1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	82	3.7 =	1220		2.1 J		5.5 J	4.28	
MW16	9/21/2004	N2			0.135 J				0.509 J		25.0 U				0.617 J		2.79 J																
MW16	9/29/2005	N	2.0 U	0.11 U	1.0 UJ				7.6 J		1000 J				130 J		8.1 J			1.0 U	0.50 U	5.0 U	5.0 U	5.0 U	82 J	11 J	190 J		1.5 J		71 R	0.83 J	
MW16	9/29/2005	N2			1.0 UJ				2.9 J		50 UJ				2.1 J		20 UJ																
MW16	9/27/2006	N	2.0 UJ	0.046 J	1.0 UJ				10 UJ		50 UJ				0.59 UB		20 UJ			0.92 U	0.50 U	5.0 U	5.0 U	5.0 U	83 J	4.1 J	100		1.2 J		32 J	1.3	
MW16	9/18/2007	N	2.0 UJ	0.20 J	1.0 UJ				10 UJ		100 UJ				10 UJ		20 UJ			0.99 R	1.0 U	1.0 U	1.0 U	2.0 U	81 J	4.5	120 J		1.2 J		23 J	1.3 J	
MW16	10/22/2008	N	2.0 UJ	0.08 J	2 UJ				10 UJ		318 J			19400 J	20 J		20 UJ			1 U	0.5 U	1.0 U	1.0 U	2.0 U	51 J	7.51	175 J		0.99 J		43.2	92.3	
MW16	10/6/2009	N	0.83 UJ	0.1 UJ	2 UJ				6.6 J		458 J			8360 J	48.6 J		20 UJ			0.998 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ	40 J	6.35 J	81.869 J		1.03 J		36.7 J	1 UJ	
MW16	10/5/2010	N	1.3 U	0.1 U	2 U				8 U		50 U			2910 R	16.7 U		20 U			1.0 U	0.1 U	0.4 U	0.4 U	1 U	39	5.7 J	29.3		0.63 J		6.3 J	15.7	
MW16	10/19/2011	N	0.50 U	0.095 U	0.44 J				2.2 J+		130			3200 B	14		10 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	32	4.2	30.70		0.63 J		12	1.0 U	
MW16	10/16/2012	N	0.50 U	0.099 U	0.66 J				10 U		180			3600 =	17		20 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	37	4.6	39.8		0.52 J		17 J	1.3	
MW16	10/8/2013	N	0.50 U	0.029 J	0.61 J				10.0 U		1500 B			3300 B	100 B		59 J			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	34	6.2			0.57 J		6.3	1.1	
MW16	9/23/2014	N	0.50 U	0.036 J	0.41 J				2.0 U		100 U				5.0 U		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	31	5.4	60		0.54		2.8	1.1	
MW16	10/13/2015	N	0.50 U	0.098 U	5.0 U				1.0 J		45.2 J				2.1 J		20.0 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	48.4	4.3	84.4		0.61		5.9	0.70 J	
MW16	4/6/2016	N	0.50 U	0.096 U	5.0 U				1.9 J		168				14.6		20.0 U			0.11 J	0.50 U	1.0 U	1.0 U	2.0 U	32.6	2.2	31.8		0.41		2.6	2.3	
MW16	7/19/2016	N	0.50 U	0.094 U	5.0 U				2.2		114				11.5		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	32.4	2.2	34.0		0.42		2.6	5.8	
MW16	10/12/2016	N	0.50 U	0.18	0.40 J				1.7 J		61.7 J				5.3		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	33.1	2.4	24.0		0.30		2.2	0.58 J	
MW16	1/18/2017	N	0.080	0.015	0.47 J				1.3 J		11.5 J				1.2 J		6.2			0.060	0.28	0.26	0.23	0.24	31.3	3.2	46.0		0.46		3.6	1.1	
MW16	4/19/2017	N	0.50 U	0.10 U	5.0 U				1.6 J		7.7 J				0.80 J		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	39.0	3.3	60.0		0.57		4.5	2.0	
MW16	10/2/2017	N	0.11 J	0.096 U	1.0 U				2.5		100 U				2.0 J		8.8 J			0.90 U	0.50 U	0.50 U	0.50 U	1.0 U	43.7	4.0	45.7		0.73		6.6	0.82 J	
MW16	10/16/2018	N	1.0 U	0.10 U	0.26 J				3.2		100 U				2.5 U		13.0 J			0.80 U	0.50 U	0.50 U	0.50 U	1.0 U	32.0	4.5	28.6		0.74		3.5	1.8	
MW16	4/24/2019	N	0.17 U	0.24	0.37 J				1.9 J		169				15.7		9.0 J			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	34.1	4.7	39.4		0.63		4.7 B	0.74 J	
MW16	10/14/2019	FD	0.17 U	0.087 U	0.26 J				2.4		105				4.2		6.9 U			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	43.2	3.8	37.9		0.55 H		4.4	0.47 U	
MW16	10/14/2019	N	0.17 U	0.086 U	0.27 J				1.6 J		60.3 J				4		6.9 U			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	42.8	3.9	37.5		0.55 H		4.4	0.47 U	
MW16	4/7/2020	N	0.17 U	0.52	0.34 J				5.3		46.7 U				0.79 U		8.6 J			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	44.1	2.2	35.4		0.56		3.3	0.47 U	
MW16	10/5/2020	N	0.17 U	0.087 U	0.24 J				3.5		46.7 U				0.79 U		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	56.3	2.0	49.9		0.59		3.8	0.94 J	
MW16	4/14/2021	N	1.0 U	0.096 U	0.31 J				3.6		100 U				2.5 U		20.0 U			0.76 U	0.50 U	0.50 U	0.50 U	1.0 U	76.6	0.91	61.5		0.55		2.6	0.84 J	
MW16	10/14/2021	N	1.0 U	0.095 U^c	0.37 J				1.9 J		100 U				2.5 U		20.0 U			0.83 U	0.50 U	0.50 U	0.50 U	1.0 U	106	0.63	77.4		0.48		4.3	1.0 U	

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
MW16	4/13/2022	N	1.0 U	0.45	0.29 J				1.3 J		100 U				2.5 U		20.0 U			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	131	0.52	53.9		0.33		1.6	1.0 U
MW17	10/15/1997	N	10 U	1 U	2 U				2		10 U				2 U		17.6				0.1 U	1 JB	1 U	0.6 J	180	4.8			4.1		10	0.7 J
MW17	10/15/1997	N2		1 U	2 U				2.3 U								2.5				0.1 U	1 J	1 U	0.6 J								
MW17	10/28/1997	N		5																												
MW17	4/6/2000	N		0.5 U																11 U												
MW17	4/26/2001	N	0.12 U	0.72	0.6				25 U		33				15 U		12			54	0.1 U	1 U	1 U	1 U	202	4.12	228		4.98		6.82	1.57
MW17	4/26/2001	N2	0.12 U		0.69				25 U		25 U				15 U		25 U												4.98 =			
MW17	9/11/2001	N	10 U	0.059 U	0.94				2.2 U		330				0.27 U		3.7 U			0.29 U	0.44 U	0.5 U	0.4 U	1.2 U	180	4.8	210		4.4		9.3 U	1 J
MW17	9/11/2001	N2			1				2.2 U		310				0.27 U		3.7 U															
MW17	8/8/2002	N	0.01 U	0.032 J	3				0.47 J		11 U				0.42 U		0.98 U			5 U	1 U	5 U	5 U	5 U	200	4.6	210		0.15 U		7.4	0.73
MW17	8/8/2002	N2			1.9 J				0.3 U		11 U				0.42 U		15 J															
MW17	9/25/2003	N	0.5 U	0.46	1 U				1 U		50 U				18		10 U			0.96 U	0.25 U	2.5 U	2.5 U	2.5 U	184	4.4	71.56		5.1		2 U	2.1
MW17	9/25/2003	N2	0.5 U		1 U				1 U		50 U				5 U		10 U															
MW17	9/22/2004	N	10.0 UJ	2.82	0.0787 J				0.774 J		11.5 UB				0.371 J		2.46 J			5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	190 J	4.1 J	1100 J		4.8 J		8.6 R	1.67 R
MW17	9/22/2004	N2			0.782 J				0.847 J		13.9 J				45.0 J		2.09 J															
MW17	9/27/2005	N	2.0 UJ	0.054 J	1.0 UJ				10 U		50 U				0.44 J		20 U			0.92 U	0.50 U	5.0 U	5.0 U	5.0 U	160 J	3.9 J	180		5.1 J		7.8 J	0.91 J
MW17	9/27/2005	N2			1.0 UJ				10 U		50 U				10 U		20 U															
MW17	9/26/2006	N	2.0 UJ	0.11 U	1.0 UJ				10 UJ		50 UJ				10 UJ		7.5 J			0.91 U	0.50 U	5.0 U	5.0 U	5.0 U	170 J	2.9 J	170		5.5 J		6.5 J	1.1
MW17	9/19/2007	N	2.0 UJ	0.099 U	1.0 J				10 UJ		100 UJ				10 UJ		20 UJ			0.94 U	1.0 U	1.0 U	1.0 U	2.0 U	160	4.7	160 J		5.6		14 J	1.2 J
MW17	10/22/2008	N	2.0 UJ	0.1	2 UJ				10 UJ		374 J				29200 J		10 UJ			1 U	0.5 U	2.0 U	2.0 U	5 U	155 J	7.78	295 J		5.75 J		7.75	20.2
MW17	10/6/2009	N	0.83 UJ	0.1 UJ	2 UJ				10 UJ		160 J				26700 J		10 UJ			0.995 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ	60 J	6.54 J	295.228 J		1.65 J		6.86 J	1 UJ
MW17	10/5/2010	N	1.3 U	0.1 U	2 U				10 U		163				20500		10 U			1.0 U	0.1 U	0.4 U	0.4 U	1 U	160	11.6 J	225		5.18		9.7 J	1.6
MW17	10/18/2011	N	0.50 U	0.095 U	1.1 J				2 U		50 U				17000 B		10 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	140	16	180.00		3.9		24	0.89 J
MW17	10/16/2012	N	0.50 U	0.095 U	1.2 J				10 U		50 U				17000 =		10 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	150	16	187		4.7		23 J	0.59 J
MW17	10/8/2013	N	0.50 U	0.095 U	0.72 J				10.0 U		50 U				18000 B		10 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	140	16			4.5 J		36	0.40 J
MW17	9/24/2014	N	0.50 U	0.097 U	0.83 J				2.0 U		100 U				1.3 J		20 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	150	15	250		4.8		40	0.72 J
MW17	10/13/2015	N	0.50 U	0.095 U	1.1 J				2.0 U		100 U				5.0 U		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	184	14.8	265		4.2		45.3	0.59 J
MW17	4/5/2016	N	0.50 U	0.095 U	0.81 J				1.8 J		100 U				5.0 U		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	173	13.6	289		3.5		85.4	0.46 J
MW17	7/19/2016	N	0.50 U	0.095 U	0.84 J				1.4 J		100 U				5.0 U		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	195	14.7	336		2.8		142	0.52 J
MW17	10/11/2016	N	0.50 U	0.094 U	0.80 J				0.76 J		100 U				0.28 J		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	208	17.0	348		2.7		136	0.36 J
MW17	1/23/2017	FD	0.080	0.015	0.76 J				0.66 J		5.3				0.25		6.2			0.060	0.28	0.26	0.23	0.24	213	17.4	380		2.1		167	0.50 J
MW17	1/23/2017	N	0.13 J	0.099	0.73 J				1.4 J		5.3				0.25		6.2			0.060	0.28	0.26	0.23	0.24	202	17.4	390		2.1		167	0.81 J
MW17	4/20/2017	FD	0.50 U	0.10 U	0.68 J				0.65 J		100 U				0.58 J		20.0 U			0.24 U	0.50 U	1.0 U	1.0 U	2.0 U	223	16.1	470		2.2		165	0.43 J
MW17	4/20/2017	N	0.50 U	0.10 U	0.71 J				0.77 J		100 U				0.45 J		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	201	16.1	460		2.2		164	0.48 J
MW17	10/3/2017	N	0.096 J	0.099 U	0.74 J				1.8 J		100 U				2.5 U		20.0 U			0.85 U	0.50 U	0.50 U	0.50 U	1.0 U	212	17.2	390		3.5		125	1.0 U
MW17	5/31/2018	N	1.0 U	0.096 U	0.79 J				1.7 J		100 U				2.5 U		20.0 U			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	194	14.9	311		3.3		98.2	0.77 J
MW17	10/17/2018	N	1.0 U	0.11 U	0.63 J				1.1 J		100 U				2.5 U		20.0 U			0.81 U	0.50 U	0.50 U	0.15 J	1.0 U	185	13.6	317		2.9		106	0.61 J
MW17	4/22/2019	N	0.17 U	0.087 U	0.80 JB				1.3 JB		46.7 U				1.2 JB		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	187	12.4	335		2.2		140	1.2
MW17	10/15/2019	N	0.17 U	0.087 U	0.55 J				1.0 J		46.7 U				0.79 U		6.9 U			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	193	13.8	338		2		128	0.47 U
MW17	4/7/2020	N	0.17 U	0.085 U	0.88 J				1.3 J		46.7 U				0.79 U		6.9 U			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	181	12.6	310		1.8		131	0.47 U
MW17	10/5/2020	N	0.17 U	0.095 U	0.70 J				1.9 J		46.7 U				0.79 U		6.9 U			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	191	13.1	335		1.8		151	0.68 J
MW17	4/15/2021	N	1.0 U	0.3	0.68 J				1.3 JB		100 U				2.5 U		20.0 U			0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	188	11	317		1.5		113	0.56 J
MW17	10/13/2021	N	1.0 U	0.095 U	0.87 J				1.0 J		100 U				1.2 J		20.0 U			0.76 U	0.50 U	0.50 U	0.50 U	1.0 U	196	7.4	294		1.4 H		108	1.0 U
MW17	4/11/2022	N	1.0 U	0.098 U	0.58 J				0.55 J		100 U				2.5 U		20.0 U			0.80 U	0.50 U	0.50 U	0.50 U	1.0 U	200	11.6	192		1.3		108	1.0 U
MW17	10/10/2022	N	1.0 U																													

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L		
MW17	5/2/2023	N	1.0 U	0.098 U	0.70 J	0.76 J	68600	70100	1.7 J	1.3 J	100 U	100 U	26200	26700	2.5 U	2.5 U	20.0 U	20.0 U		0.66 U	0.50 U	0.50 U	0.50 U	1.0 U	196	8.6	175	171	1.2		82.9	0.56 J		
MW17	10/25/2023	N	1.0 U	0.10 U	0.55 J	0.53 J	62100	65100	2.0 U	2.0 U	100 U	100 U	23900 J-	24800 J-	2.5 U	2.5 U	20.0 U	20.0 U		0.81 UJ	0.50 U	0.50 U	0.50 U	1.0 U	197	8.1	163	155	1.4		81.1	1.1		
MW18	10/10/1997	N	10 U	27000 J	8.2				43.5 J		32000 J				10600		2.6					0.1 U	2	16	19	260	49			0.1 U		11	154	
MW18	10/10/1997	N2		27000 E	8.9				62.5								5.3					0.1 U	2	16	19									
MW18	6/19/2001	N	0.13 U	27400	4.9				21 J		13700				6650		25 U			5 U	1.1	14	10 U	20	168	19	182		0.13 U		33 J	6.63		
MW18	6/19/2001	N2	0.13 U		5				43		15200				6540		25 U																	
MW19	10/16/1997	N	10 U	19000 J	2 U				38 J		10 U				2690 J		46					0.2	1 U	1 U	0.2 J	180	47			3.8		19	32.8	
MW19	10/16/1997	N2		19000 E	2 U				3.4 U								2 U					0.2	1 U	1 U	0.2 J									
MW19	4/7/2000	N		11800 =																5260 U														
MW19	4/7/2000	N2		11000 J																22 =														
MW19	4/26/2001	N	0.5	25600	2.2				38		10000				1840		27				325 =	1 U	10 U	10 U	10	236	39	323		3.37 =		47	33	
MW19	4/26/2001	N2	0.5		1 U				25 U		25 U				1790		25 U				325	10 U	100 U	100 U	100 U					3.37				
MW19	9/12/2001	N	16	400000	0.29 U				6.4 J		71 J				1800		5.8 J				240	0.44 U	1.9 U	1.7 U	28	320 J	19	270		1.3		9.7 U	34	
MW19	9/12/2001	N2			1.7 J				44		5600				2100		53 J																	
MW19	5/13/2002	N		14000	1.4 U				5.1 J		11.2 U				2070		9.4 J				190													
MW19	8/8/2002	N	0.01 U	11000 J	7				30.2		719				3100		290				210	1 U	2 J	1 J	29	130	22	4 U		0.16		16	65	
MW19	8/8/2002	N2			1.4 U				7.1 J		218				3110		5.7 J																	
MW19	4/29/2003	N	2.4	4900	2 J				24		2030				3670		10 U				1200	500 U	5000 U	5000 U	5000 U	118	19.6	162		3		27	53	
MW19	4/29/2003	N2	2.4		1 U				5		25 U				3590		10 U																	
MW19	9/25/2003	N	5.7	15000	1 U				27		950				2210		10 U				3200	1 U	10 U	10 U	46.6	160	17.5 J	71.57		2 J		90 J	129 J	
MW19	9/25/2003	N2	5.7		1 U				9		50 J				4470		10 U													2 J				
MW19	5/4/2004	N	1.13 J	70000 J	0.284 J				22.2 R		892 R				17600	4040 R	11.6 R				201	2.50 U	2.13 J	1.98 J	30.0	144	25 =	176		0.71 J		16 R	43.7 J	
MW19	5/4/2004	N2			0.169 J				5.77 R		31.4				3360 R		6.93 R																	
MW19	9/22/2004	N	10.0 UJ	111000	1.00 UJ				13.5 J		402 J				3160 J		16.7 J				260	0.500 U	3.45 J	2.25 J	50.3	110 J	15 J	1120 J		1.5 J		23 R	31.3 R	
MW19	9/22/2004	N2			0.159 J				6.26 J		125 U				2650		16.0 J																	
MW19	5/10/2005	N	2.0 U	45000 J	1.0 U				6.3 J		50 U				2300		9.8 J				2300 =	100 UJ	1000 UJ	1000 UJ	1000 UJ	97 J	18 J	140 J		0.76 J		29 R	35 R	
MW19	5/10/2005	N2			1.0 U				15		630				2100		8.4 J																	
MW19	9/29/2005	N	2.0 U	13000 =	1.0 UJ				11 J		97 J				2600 J		20 UJ				78	0.50 U	1.2 J	1.1 J	18	140 J	19 J	5 UJ		0.75 J		40 R	32 J	
MW19	9/29/2005	N2			1.0 UJ				5.0 J		50 UJ				2700 J		20 UJ																	
MW19	6/7/2006	N	2.0 U	17000 J	1.0 UJ				4.4 J		50 UJ				2700 J		20 UJ				59	0.50 U	1.5 J	1.3 J	22	120 J	18 J	360 J		0.76 J		36 =	20 J	
MW19	9/27/2006	N	2.0 UJ	8200 J	1.0 U				6.4 J		50 U				3100		20 U				69	0.50 U	1.4 J	1.2 J	19	160 J	14	190		0.66 J		30 =	35	
MW19	5/9/2007	N	2.0 UJ	11000 J	1.0 UJ				3.7 J		100 UJ				2600		20 UJ				54 J	1.0 U	1.4	1.5	17	230 =	15	160		0.29		59 J	33 UB	
MW19	9/21/2007	N		3500 J	1.0 UJ				4.0 J		100 UJ				3100		20 UJ				47 R	1.0 U	1.8	2.0	21	190 J	17	240 J		0.28		42 J	38 J	
MW19	5/20/2008	N	2.0 U	23000 J	1.0 U				3.4		100 UJ				2900		2.3 J				140	1.0 UJ	5.0	4.8	54 J	220 =	16	260		0.44		42	18 J	
MW19	10/24/2008	N	2.1 J	27900	2 UJ				5 J		510 J				28700 J	4850 J	20 UJ				120	0.5 U	5.11	5.08 =	50.3	221 J	15.9	373 J		0.04 J		46.2	29.8	
MW19	6/2/2009	N	3.9 J	18600 J	2 U				10 UJ		222 =				29900 =	4050 =	20 U				110 J	0.5 U	7.93	6.66	74.6	249 J	12.8	317.6445		0.01 UB		44.7	13	
MW19	10/7/2009	N	2 J	31800 J	2 UJ				3.8 J		237 J				27400 J	3190 J	7.2 J				137 J	0.1 UJ	7.62 J	5.77 J	60.7 J	228 J	14.3 J	271.39 J		0.05 UJ		42 J	20.4 J	
MW19	5/20/2010	N	1.4	26000.	2 UJ				3.2 J		92.2 UJ				19900. J	1870. J	20 UJ				123.	0.5 U	7.95	5.65	64.3	136	21.5	199		0.05 UJ		32.4	50.4 UB	
MW19	10/7/2010	N	1.3 U	4470 J	2 U				2.9 J		114				7130	942	20 U				102 J	0.5 UJ	3.21 J	1.7 J	44.7 J	84	13.6 J	77.8		0.10 UJ		18.7 J	17.4	
MW19	6/29/2011	N	0.9 U	8880	2 UJ				14.8 J		131				9550	1300	20 U				42.1	0.1 U	1.12	1.09	22.7	43	16.6 J	90.00		0.26		20.1	85.4	
MW19	10/20/2011	N	0.33 J	13000	2.0 U				12 B		52 J+				8600 B	1700	14 J+				2.8	0.84 U	1.1 J	1.0 J	23	57	19	85.40		0.30		17	92	
MW19	5/22/2012	N	0.71	5300	2.0 U				7.6 J		50 U				7600 =	1300	20 U				50	2.0 U	0.88 J	0.76 J	16	51	15	76.20		1.1		12	38	
MW19	10/17/2012	N	0.50 U	8100	2.0 U				6.9 J		50 U				5800 =	900	20 U				8.4	2.0 U	4.0 U	0.67 J	9.7	36	12	66.3		1.4		11 J	27	
MW19	5/22/2013	N	0.84 J	5800	2.0 U				7.3 J		50 U				8700 B	1100 B	20 U				29 J	0.50 U	0.99 J	1.5	19	54	14		1.1 J		11	45		

Appendix A.1

**Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin**

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO ₃) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L	
MW19	10/10/2013	N	0.50 U	7900	0.26 J				10.0 UJ		50 UJ									3.0	2.5 U	5.0 U	1.1 J	15	36 B	12			1.1 J		11	31	
MW19	5/14/2014	N		18000																													
MW20	10/15/1997	N	10 U	29000 J																	0.1 U	1 U	1 U	0.1 U									
MW20	4/26/2001	N	2.73	36600	8.2				196		33200				3120		126			9970 =	1 U	10 U	10 U	29	198	24	301		0.13 U		67	478	
MW20	4/26/2001	N2	2.73		1.1				14		841				2250		23			9970	10 U	100 U	100 U	71									
MW20	9/12/2001	N	10 U	83000	3.6				81		7900				3200		36			890	0.44 U	3.4 U	4.1 U	37	260 J	16	250		0.15 J		24	65	
MW20	9/12/2001	N2			1.5				15 U		35 U				2800		12 U																
MW20	8/7/2002	N	0.01 U	30000 J	8.9				87.4		4910				3520		16.6 J			1400	1 U	12	9	120	220	22	4 U		0.15 U		25	71	
MW20	8/7/2002	N2			2.6				5.8 J		206				3280		15.4 J																
MW20	9/25/2003	N	5.4	13000	2 J				58		7220				3310		20 J			830	1 U	10 U	10 U	60.9	233	19.4 J	86.67		1.25 U		80 J	150 J	
MW20	9/25/2003	N2	5.4		1 U				11		350				3250		10 J												1.25 U				
MW20	9/22/2004	N	10.0 UJ	133000	1.00 UJ				30.4 J		1320 J				2770 J		18.7 J			282	2.50 U	3.01 J	3.21 J	40.3	190 J	24 J	1320 J		0.29 J		23 R	46.3 R	
MW20	9/22/2004	N2			0.498 J				35.2 J		2070				2320		47.0 J																
MW20	10/25/2005	N	2.0 UJ	63000 =	1.0 U				16 J		780 J				2300 J		20 UJ				0.50 U	5.5	5.4	62	170 J	13 J	190 J		2.1 J		39 R	21 R	
MW20	10/25/2005	N2			1.0 UJ				2.7 UJ		140 J				2400 J		20 UJ																
MW20	9/27/2006	FD	2.0 UJ	44000 J	1.0 UJ				4.8 J		94 J				4200		20 U			180 =	0.50 U	5.1	4.1 J	53	230 J	16	380		0.19		65 =	22	
MW20	9/27/2006	N	2.0 UJ	35000 J	1.0 U				3.8 J		48 J				4200		20 U			160 =	0.50 U	4.8 J	4.1 J	51	220 J	16	240		0.22		71 =	23	
MW20	9/21/2007	N	2.0 U	9500 J	1.0 UJ				10 UJ		100 UJ				4800		20 UJ			71 R	1.0 U	6.4	4.4	62	230 J	18	300 J		0.10 U		98 J	13 J	
MW20	10/23/2008	N	2.0 UJ	41000	2 UJ				17.3 J		462			31700 J	3400 J		20 UJ			1150	0.5 U	2.99 =	2.94 =	38.7	127 J	15.7	332 J		0.13 J		28.9	121	
MW20	4/20/2017	FD	0.50 U	0.10 U	0.99 J				2.0 U		100 U				0.64 J		20.0 U			0.22 U	0.50 U	1.0 U	1.0 U	2.0 U	133	14.7	188		1.7		7.0	0.49 J	
MW20	4/20/2017	N	0.50 U	0.10 U	1.0 J				0.37 J		100 U				0.33 J		20.0 U			0.21 U	0.50 U	1.0 U	1.0 U	2.0 U	131	14.8	186		3.5		7.0	0.47 J	
MW21	2/9/1998	FD	10	1	3.1				83.9		7.3 U				1380		98.9				0.1 U	1 U	1 U	1 U	196	67.3					8.9	0.47 U	
MW21	2/9/1998	FD2			2 U				9.5 U								33.8																
MW21	2/9/1998	N	11	1 U	3				70.1		5.5 U				1210		113				0.1 U	1 U	1 U	1 U	176	70.6					9.1	0.47 U	
MW21	2/9/1998	N2		1 U	2 U				9.5 U								32.6 U				0.1 U	1 U	1 U	1 U									
MW21	5/14/2002	N			1.9 J				1.3 J		130				9.7 J		11 J																
MW21	8/6/2002	N		0.035 J	4.4				50		10000				930		29			5 U	1 U	5 U	5 U	5 U	120	49	150		0.15 U		9.6	8.3	
MW21	8/6/2002	N2			1.6 J				0.3 U		11 U				0.63 J		6.8 J																
MW21	4/29/2003	N	0.5 U	0.15	1 U				12		3440				227		10 U			7.4 U	0.5 U	5 U	5 U	5 U	144	41	169		2.5		12	1.5	
MW21	4/29/2003	N2	0.5 U		1 U				1 U		25 U				5 U		10 U																
MW21	9/24/2003	N	0.5 U	0.063 J	1 U				260		68400				3750		150			1 U	0.25 U	2.5 U	2.5 U	2.5 U	165	48	81.46		2.62		2 U	3.6	
MW21	9/24/2003	N2	0.5 U		1 U				1 U		50 UJ				5 U		10 U																
MW21	5/4/2004	N	10.0 U	0.135 UB	2.31 J				72.5 R		14000 R				19300		1970 R			5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	165	67 =	188		2.3 J		3.6 R	3.12 J	
MW21	5/4/2004	N2			0.122 J				1.28 R		28.6 R				0.718 R		4.48 R																
MW21	9/21/2004	N	10.0 UJ	0.474	1.80 J				48.2 J		10300 J				983 J		32.6 J			5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	150 J	63 J	1030 J		2.4 J		4.8 R	2.76 R	
MW21	9/21/2004	N2			0.130 J				0.955 J		25.0 UJ				0.484 J		3.30 J																
MW21	5/10/2005	N	2.0 U	0.33	1.0 U				10 U		50 U				0.47 J		20 U			0.98 U	0.50 U	5.0 U	5.0 U	5.0 U	130 J	49 J	170 J		2.8 J		12 R	2.2 R	
MW21	5/10/2005	N2			1.0 U				25		6200				480		16 J																
MW21	9/27/2005	N	2.0 UJ	0.046 J	7.1				230		56000				3400		110			0.91 U	0.50 U	5.0 U	5.0 U	5.0 U	130 J	47 J	370		2.4 J		17 J	1.2	
MW21	9/27/2005	N2			1.0 UJ				2.6 J		36 J				9.8 J		20 U																
MW21	6/1/2006	N	2.0 U	0.023 J	1.0 UJ				10 UJ		47 J				17 J		20 UJ			0.99 U	0.50 U	5.0 U	5.0 U	5.0 U	140 J	65 J	140		2.7 J		20	1.5 J	
MW21	5/8/2007	N	2.0 UJ	0.098 UJ	1.0 UJ				10 UJ		100 UJ				10 UJ		4.2 J			1.0 R	1.0 U	1.0 U	1.0 U	2.0 U	210 =	33 J	120		4.2		9.3 J	1.7	
MW21	9/18/2007	N	2.0 UJ	0.13 J	1.0 UJ				10 UJ		100 UJ				10 UJ		20 UJ			0.98 R	1.0 U	1.0 U	1.0 U	2.0 U	110 J	29	120 J		3.7 J		12 J	1.2 J	
MW21	10/21/2008	N	2.0 UJ	0.10 UJ	2 U				10 UJ		294 J				14900 J		10 U			1.00 U	0.50 U	2.00 U	2.0 U	5.00 U	66	68.80	149 J		2.69 J		7.27 U	2.38 J	

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L	
MW21	4/6/2016	N	0.092 J	0.016 J	0.70 J				1.0 J		22.8 J				1.7 J		20.0 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	25.9	101	83.6		1.8		6.8	0.63 J	
MW21	7/20/2016	FD	0.50 U	5.5	5.0 U				0.86 J		23.5 J				5.0 U		20.0 U			0.24 U	0.50 U	1.0 U	1.0 U	2.0 U	29.9	84.9	78.0		1.7		6.6	0.90 J	
MW21	7/20/2016	N	0.11 J	8.5	5.0 U				1.3 J		29.4 J				5.0 U		20.0 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	29.4	84.5	84.0		1.7		6.8	0.93 J	
MW21	10/11/2016	N	0.50 U	5.7	0.38 J				1.8 J		6.2 J				0.44 J		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	30.5	74.4	82.0		1.8		6.6	0.61 J	
MW21	1/18/2017	N	0.080	2.9	0.39 J				2.2		6.8 J				0.25		6.2			0.060	0.28	0.26	0.23	0.24	25.4	86.8	88.0		1.8		7.4	0.75 J	
MW21	4/18/2017	N	0.50 U	0.017 J	5.0 U				0.44 J		100 U				5.0 U		20.0 U			0.22 U	0.50 U	1.0 U	1.0 U	2.0 U	26.7	78.6	92.0		1.8		7.5	0.77 J	
MW21	10/3/2017	N	0.082 J	0.096 U	0.28 J				1.2 J		100 U				2.5 U		20.0 U			0.76 U	0.50 U	0.50 U	0.50 U	1.0 U	35.2	72.6	70.5		1.8		7.1	0.76 J	
MW21	10/17/2018	N	1.0 U	0.099 U	1.0 U				1.2 J		100 U				2.5 U		20.0 U			0.80 U	0.50 U	0.50 U	0.50 U	1.0 U	35.4	66.6	65.6		1.9		6.0	1.1	
MW21	4/24/2019	N	0.17 U	0.086 U	0.23 J				1.5 J		46.7 U				0.79 U		6.9 U			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	32.6	78.4	72.8		1.6		6.4 B	0.94 J	
MW21	10/15/2019	N	0.17 U	0.088 U	0.23 J				0.72 J		46.7 U				0.79 U		7.0 J			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	35.1	87.1	83.1		1.6		5.9	0.47 U	
MW21	4/9/2020	N	0.17 U	0.088 U	0.39 J				1.4 J		488				7.3		8.0 J			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	37.1	77.3	85.4		1.6		5.8	0.47 U	
MW21	10/6/2020	N	0.17 U	0.091 U	0.27 J				0.73 J		46.7 U				0.79 U		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	47.0	81.5	95.4		1.9		6.7	0.99 J	
MW21	4/12/2021	N	1.0 U	0.65	1.0 U				71.0 B		77.7 J				3.8 B		20.0 U			0.90 U	0.27 J	0.50 U	0.50 U	1.0 U	48.5	76.5	89.7		1.8		5.5	0.82 J	
MW21	10/11/2021	N	1.0 U	0.095 U^c	0.43 J				2.1		100 U				4.2		20.0 U			0.75 U	0.50 U	0.50 U	0.50 U	1.0 U	62.3	60.4	76.6		2.2		5.3	0.58 J	
MW21	10/11/2021	FD	1.0 U	0.096 U^c	0.41 J				1.8 J		100 U				4.1		20.0 U			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	63.8	59.8	76.9		2.2		5.4	0.55 J	
MW21	10/6/2022	N	1.0 U	0.10 U	1.0 U	0.77 J			10.2	13.3	47.5 J	2950			3.0	195	20.0 U	8.1 J		0.80 U	0.50 U	0.50 U	0.50 U	1.0 U	76.5	73.9	53.2		2.1		4.7	0.95 J	
MW21	4/27/2023	N	1.0 U	0.62	0.47 J	2.1	20500	19000	5.8	33.7	106	7250	7710	8570	4.6	454	20.0 U	19.0 J		0.70 U	0.50 U	0.50 U	0.50 U	1.0 U	70.7	62.9	47.3	51.2	1.6		4.4	1.6	
MW21	10/27/2023	N	1.0 U	0.10 U	1.0 U	1.0 U	23800	23600	3.6 U	10.1	100 U	2330	9050	9740	2.5 U	163 U	20.0 U	20.0 U		0.85 U	0.50 U	0.50 U	0.50 U	1.0 U	70.9	79.8	59.0	59.4	1.7 J-		4.6	1.0 U	
MW22	2/9/1998	N	13	1 U	4				255		5.5 U				3700		121			0.1 U	1 U	1 U	1 U	1 U	186	56.3					17.9	0.47 U	
MW22	2/9/1998	N2		1 U	2 U				9.5 U								12.6			0.1 U	1 U	1 U	1 U										
MW22	5/14/2002	N			1.4 U				0.3 U		22.9 J				3.5 J		2.7 J																
MW22	8/6/2002	N	0.01 U	0.078	2.2 J				9.8 J		2500				170		7.3 J			5 U	1 U	5 U	5 U	5 U	150	7.2	170		0.15 U		12	1.3	
MW22	8/6/2002	N2			1.4 U				0.3 U		25 J				0.42 U		4.9 J																
MW22	9/24/2003	N	0.5 U	0.34	7				140		56900				2570		120 J			1 U	0.25 U	2.5 U	2.5 U	2.5 U	132	4.9	101.8		2.15		3 J	1.7	
MW22	9/24/2003	N2	0.5 U		1 U				20		2770				542		20 J																
MW22	9/21/2004	N	10.0 UJ	0.220	2.76 J				71.6 J		13600 J				963 J		48.4 J			5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	130 J	11 J	885 J		2.2 J		6.7 R	3.86 R	
MW22	9/21/2004	N2			0.164 J				0.473 J		25.0 UJ				15.0 UJ		2.31 J																
MW22	9/28/2005	N	2.0 U	0.16 J	1.0 UJ				9.8 J		2100 J				130 J		8.0 J			1.0 U	0.50 U	5.0 U	5.0 U	5.0 U	91 J	9.6 J	130 J		1.7 J		18 R	0.94 J	
MW22	9/28/2005	N2			1.0 UJ				10 UJ		50 UJ				1.3 J		20 UJ																
MW22	9/18/2007	N	2.0 UJ	0.13 J	1.0 UJ				10 UJ		100 UJ				10 UJ		20 UJ			0.99 R	1.0 U	1.0 U	1.0 U	2.0 U	110 J	8.2	160 J		2.5 J		10 J	1.0 J	
MW22	5/20/2008	N	2.0 UJ	0.77 J	1.0 U				0.98 J		100 UJ				3.6		5.4 J			0.95 U	1.0 UJ	1.0 U	1.0 U	2.0 UJ	110 =	8.4	200		2.3		12	3.0 J	
MW22	10/21/2008	N	2.0 UJ	0.09 UJ	2.60 J				10 UJ		303 J			11100 J	0.01 U		20 U			1.00 U	0.5 U	2.0 U	2.0 U	5.0 U	90	4.69	111 J		1.48 J		6.95	21.10 J	
MW22	6/2/2009	N	0.8 UJ	0.1 UJ	2 U				10 UJ		83.1 =			10000 J	10 U		20 U			1.0 UJ	0.5 U	0.22 J	2.0 U	5.0 U	70 J	6.92	99.6098		1.97 J		6.73	1.7 UJ	
MW22	10/6/2009	N	0.83 UJ	0.1 UJ	2 UJ				13.1 J		1560 J			11500 J	168 J		6.7 J			0.994 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ	147 J	7 J	106.54 J		5.31 J		7.53 J	8.62 J	
MW22	5/18/2010	N	1.3 U	0.1 U																	0.5 U	5 U	5 U	5 U	66 UB	9.21			1.9 J		6.9	58.8 UB	
MW22	10/6/2010	N	1.3 U	0.13 UB	2 U				4.1 J		74.2 J			3680	16.7 U		20 U			1.0 U	0.1 U	0.4 U	0.4 U	1 U	62	1.8 J	40.9		0.90 J		5.6 J	24.6	
MW22	6/29/2011	N	0.9 U	0.1 U	2 UJ				4.5 J		499			3700	27.6		20 U			0.999 U	0.1 U	0.4 U	0.4 U	1 U	32.	0.78 J+	34.10		0.46 J		3.9 J	11	
MW22	10/18/2011	N	0.50 U	0.098 U	0.45 J				2.1 J+		50 U			3600 B	2.7 J		10 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	43	1.0 U	37.30		0.50 J		3.5 J	1.0 U	
MW22	5/22/2012	N	0.50 U	0.084 J	2.0 U				2.3 J		160			5000 =	13		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	49	3.4	50.60		0.76 J		3.9 J	10	
MW22	10/16/2012	N	0.50 U	0.096 U	0.59 J				10 U		50 U			5000 =	5.7 J		20 U			0.19 U	2.5 UJ	5.0 UJ	5.0 UJ	10 UJ	48	4.1	53.1		0.48 J		5.0 U	36	
MW22	5/22/2013	N	0.50 U	0.11	2.0 U				10 U		50 U			4000 B	10 U		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	41	3.7			1.0 J		3.9	15	
MW22	10/8/2013	N	0.50 U	0.14	0.24 J				10.0 U		50 U			5200 B	2.8 J		20 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	45	7.2			1.4 J		4.7	10	
MW22	5/14/2014	N		0.093 J																													
MW22	9/24/2014	N	0.50 U	0.27	0.22 J				2.0 U		25 J				19		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	51	1.7	60		0.69		3.6	0.71 J	
MW22	4/21/2015	N	0.50 U	0.072 J	0.60 J				2.8		390				23		20 U			0.21 U	0.50 U	1.0 U	1.0 U	2.0 U	42	1.9	57		0.69		3.7	0.57 J	

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L		
MW22	10/13/2015	N	0.50 U	0.041 J	5.0 U				1.2 J		100 U				5.0 U		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	46.3	1.7	52.3		0.65		2.8	0.74 J		
MW22	4/6/2016	N	0.50 U	0.025 J	5.0 U				0.92 J		17.5 J				2.2 J		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	50.8	1.3	57.7		0.61		2.9	5.3		
MW22	7/20/2016	N	0.50 U	0.030 J	5.0 U				3.4		235				10		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	58.6	1.2	64.0		0.60		3.1	1.7		
MW22	10/12/2016	N	0.50 U	0.043 J	0.41 J				1.7 J		85.4 J				5.4		20.0 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	67.2	1.7	70.0		0.53		3.5	0.96 J		
MW22	1/18/2017	N	0.080 J	0.058 J	0.44 J				3.4		186				10.6		6.2			0.060	0.28	0.26	0.23	0.24	58.4	2.1	94.0		0.65		3.8	1.1		
MW22	4/21/2017	N	0.50 U	0.090 J	5.0 U				2.6		100 U				0.31 J		20.0 U			0.23 U	0.50 U	1.0 U	1.0 U	2.0 U	62.9	2.8	110		0.77		4.4	0.93 J		
MW22	10/4/2017	N	0.39 J	0.049 J	1.0 U				2.6		198				11.9		8.5 J			0.89 U	0.50 U	0.50 U	0.50 U	1.0 U	74.1	2.7	77.9		0.71		3.7	0.90 J		
MW22	10/17/2018	N	1.0 U	0.10 U	1.0 U				3.2		100 U				2.5 U		16.3 J			0.81 U	0.50 U	0.50 U	0.50 U	1.0 U	61.7	2.5	70.2		0.71		3.8	0.78 J		
MW22	4/24/2019	N	0.17 U	0.085 U	0.27 J				1.8 J		166				9.6		9.6 J			0.28 U	0.15 U	0.18 U	0.15 U	0.22 U	60.3	4.1	102		0.75		4.1 B	0.84 J		
MW22	10/16/2019	N	0.17 U	0.095 U	0.35 J				3.3		509				99		11.5 J			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	62.6 H	3.6	71.2		0.71		4.5 B	12.4		
MW22	4/9/2020	N	0.17 U	0.092 U	0.53 J				6.1		1160				67.8		11.3 J			0.26 U	0.15 U	0.18 U	0.15 U	0.22 U	72.9	3.9	116		0.61		5.4	1.3		
MW22	10/8/2020	N	0.17 U	0.095 U	0.43 J				2.6		507				32.2		6.9 U			0.27 U	0.15 U	0.18 U	0.15 U	0.22 U	79.6	4.0	91.9		0.62 H		3.6	0.70 J		
MW22	4/13/2021	N	1.0 U	0.10 U	0.23 J				4.8		389				22.9		9.6 JB			0.84 U	0.50 U	0.50 U	0.50 U	1.0 U	74.3	6.5	117		0.68		3.3	0.75 J		
MW22	10/14/2021	N	1.0 U	0.12 U	0.23 J				2.3		307				15.6		11.2 J			0.80 U	0.50 U	0.50 U	0.50 U	1.0 U	74.5	4.0	83.9		0.34		1.7	1.0 U		
MW22	4/12/2022	N	1.0 U	9.4	3.1				32.3		7830				403		36.9			0.91 U	0.50 U	0.50 U	0.50 U	1.0 U	69.8	7.3	46.8		0.57		3.2	0.63 J		
MW22	10/6/2022	N	1.0 U	0.10 U	1.0 U	0.75 J			7.0	11.0	100 U	2380			1.8 J	136	6.9 J	8.2 J		0.81 U	0.50 U	0.50 U	0.50 U	1.0 U	75.0	11.4	51.6		0.87		3.4	0.67 J		
MW22	4/26/2023	N	1.0 U	0.096 U	1.0 U	0.61 J			7.2	9.0	100 U	2070			1.9 J	105	13.8 J	9.0 J		0.62 U	0.50 U	0.50 U	0.50 U	1.0 U	83.1	8.2	54.6	54.4	0.93 J		3.4	0.73 J		
MW22	10/27/2023	N	1.0 U	0.10 U	1.0 U	1.3 J+	21900	21500	4.0 U	26.1	53.6 J	6000	9430	10200	3.0 U	302	20.0 U	21.2		0.80 U	0.50 U	0.50 U	0.19 J	1.0 U	92.6	8.5	53.8	54.6	0.91 J-		2.8	1.0 U		
MW23	2/26/1998	N	57	1 U	2 U				17.6 U		5.5 U				128		43.6				2	1 U	77	2	120	8.7						7.6	0.47 U	
MW23	2/26/1998	N2		1 U	2 U				14.2 U								6.6				2 =	1 U	77 =	2 =										
MW23	9/11/2001	N	10 U	0.49	1.2				6.3 J		630				140		37			0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	110	10	140		0.13 U		8.2 U	5.6		
MW23	9/11/2001	N2			0.62 J				2.2 U		35 U				29		4.7 J																	
MW23	4/13/2016	N	0.50 U	0.095 U	0.58 J				2.0 U		35.1 J				5.0 U		20.0 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	197	29.5	255		1.8		7.1	0.62 J		
MW23	7/20/2016	N	0.50 U	0.31	0.70 J				2.0 U		100 U				5.0 U		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	195	30.6	230		1.8		7.2	0.66 J		
MW23	10/11/2016	N	0.50 U	0.094 U	0.71 J				0.90 J		100 U				0.38 J		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	194	32.3	230		1.9		8.1	0.54 J		
MW23	1/19/2017	N	0.080	0.015	0.75 J				0.64 J		5.3				0.25		6.2			0.061	0.28	0.26	0.23	0.24	177	35.1	238		1.8		8.2	0.81 J		
MW23	4/19/2017	N	0.50 U	0.095 U	0.59 J				2.0 U		100 U				5.0 U		20.0 U			0.22 U	0.50 U	1.0 U	1.0 U	2.0 U	179	34.7	304		1.9		9.1	0.76 J		
MW23	10/2/2017	N	0.50 U	0.098 U	0.66 J				1.5 J		100 U				2.5 U		20.0 U			0.81 U	0.50 U	0.50 U	0.50 U	1.0 U	197	40.3	240		2.0		9.1	0.68 J		
MW23	6/1/2018	N	1.0 U	0.10 U	0.74 J				0.90 J		100 U				2.5 U		20.0 U			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	194	42.3	256		2.0		8.8	0.81 J		
MW23	10/17/2018	N	1.0 U	0.099 U	0.58 J				0.82 J		100 U				2.5 U		20.0 U			0.79 U	0.50 U	0.50 U	0.18 J	1.0 U	191	39.7	239		2.1		8.7	0.90 J		
MW23	4/23/2019	N	0.17 U	0.087 U	0.65 JB				0.99 JB		46.7 U				0.79 U		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	187	44.6	255		2.1		9.0	0.86 J		
MW23	10/14/2019	N	6.4	0.085 U	0.64 J				0.67 J		46.7 U				2.6		6.9 U			0.65 J	0.15 U	0.18 U	0.15 U	0.22 U	195	46.2	250		2.1 H		8.1	0.47 U		
MW23	4/8/2020	N	0.17 U	0.087 U	0.58 J				0.89 J		46.7 U				0.79 U		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	185	46.2	243		2		8.4	1.5		
MW23	10/6/2020	N	0.17 U	0.089 U	0.77 J				0.58 J		46.7 U				1.1 J		7.1 J			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	184	54.1	239		2.3		9.2	0.95 J		
MW23	4/15/2021	N	1.0 U	0.096 U	0.53 J				0.54 JB		100 U				2.5 U		11.6 J			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	190	45.4	255		2.2		8.8	0.76 J		
MW23	10/13/2021	N	1.0 U	0.095 U	0.75 J				2.0 U		100 U				2.5 U		20.0 U			0.75 U	0.50 U	0.50 U	0.50 U	1.0 U	195	61.0	249		1.4 H		5.4	1.0 U		
MW23	4/11/2022	N	1.0 U	0.10 U	0.59 J				2.0 U		100 U				2.5 U		20.0 U			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	185	61.5	174		2.3		8.2	0.76 J		
MW23	10/11/2022	N	1.0 U	0.099 U	0.58 J	0.58 J			5.3	2.0 U	100 U	100 U			2.5 U	2.5 U	20.0 U	20.0 U		0.79 U	0.50 U	0.50 U	0.50 U	1.0 U	190	58.5	170		2.3		8.5	0.72 J		
MW23	4/27/2023	N	1.0 U	0.096 U	0.98 J	1.0	66400	66000	2.0 U	2.0 U	100 U	100 U	22200	22100	2.5 U	2.5 U	20.0 U	20.0 U		0.67 U	0.50 U	0.50 U	0.50 U	1.0 U	194	46.1	165	166	1.9		8.2	0.90 J		
MW23	10/26/2023	N	1.0 U	0.10 U	1.0 U	1.0 U	69300	68500	2.0 U	2.0 U	100 U	93.0 J	21400	21800	2.5 U	2.5 U	20.0 U	20.0 U		0.85 U	0.50 U	0.50 U	0.50 U	1.0 U	197	29.8	174	173	2.1		8.4	0.74 J		
MW24	2/8/1998	N	10 U	4 U	4.3				53		5.5 U				1030		50.7				3 U	2 U	3 U	5 U	253	18.7						5.2	1.8	
MW24	2/8/1998	N2		4 U	2 U				9.5 U								23				3 U	2 U	3 U	5 U										
MW24	12/6/2000	N	0.53 U	123 J	1.6				27		6500				530		11			5.9 U	0.1 U	1 U	0.29	1 U	180	21	310		2.3		7.1	5.5		
MW24	12/6/2000	N2	0.53 U		0.29				25 U		25 U				15 U		25 U			5.9 U	0.1 U	1 U	0.29	1 U										

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L		
MW24	4/24/2001	N	0.1 U	0.11	2.4				30		7310				508		23			5.3 U	0.1 U	1 U	1 U	1 U	256	36	348		3.64 =		12	3.36		
MW24	4/24/2001	N2	0.1 U		0.29				5.2		25 U				2.4		11			5.3 U									3.64					
MW24	4/7/2016	N	0.11 J	0.044 J	5.0 U				3.0		420				28.4		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	168	9.1	135		1.9		17.4	0.79 J		
MW25	2/9/1998	N	17	1	6.6				462		30.2 U				4480		321				0.1 U	1 U	1 U	1 U	455	15.6					9.9	0.47 U		
MW25	2/9/1998	N2		1 =	2 U				9.5 U								16.4				0.1 U	1 U	1 U	1 U										
MW25	4/11/2016	N	0.50 U	0.024 J	1.1 J				17.6		6090				148		12.4 J			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	33.7	37.8	137		2.4		3.8	1.5		
MW25	7/26/2016	N	0.50 U	0.30	5.0 U				1.3 J		28.8 J				1.0 J		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	40.3	49.1	108		3.2		5.0	0.70 J		
MW25	10/10/2016	FD	0.50 U	0.17	5.0 U				0.71 J		100 U				0.27 J		20.0 U			0.21 U	0.50 U	1.0 U	1.0 U	2.0 U	31.1	16.9	54.0		1.6		2.7	0.44 J		
MW25	10/10/2016	N	0.50 U	0.23	5.0 U				0.62 J		5.4 J				0.46 J		20.0 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	31.1	17.5	52.0		1.6		2.8	0.44 J		
MW25	1/18/2017	N	0.080	4.9	0.35				1.2 J		28.2 J				0.70 J		6.2			0.063	0.28	0.26	0.23	0.24	46.0	45.2	112		2.8		4.9	0.78 J		
MW25	4/18/2017	N	0.50 U	0.094 U	5.0 U				1.4 J		100 U				5.0 U		20.0 U			0.21 U	0.50 U	1.0 U	1.0 U	2.0 U	81.3	29.0	108		2.9		7.3	0.82 J		
MW25	10/13/2017	N	1.0 U	0.051 J	1.0 U				1.3 J		100 U				2.5 U		20.0 U			0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	79.5	36.1	125		3.2		7.0	0.84 J		
MW25	10/13/2017	N	1.0 U	0.083 J	1.0 U				1.1 J		100 U				2.5 U		20.0 U			0.80 U	0.50 U	0.50 U	0.50 U	1.0 U	78.7	35.0	122		3.2		7.0	0.81 J		
MW25	5/31/2018	N	1.0 U	0.096 U	0.28 J				1.3 J		100 U				2.5 U		20.0 U			0.84 U	0.50 U	0.50 U	0.50 U	1.0 U	112	12.5	123		2.4		6.0	1.1		
MW25	10/19/2018	N	1.0 U	0.095 U	1.0 U				4.7		100 U				1.3 J		20.0 U			0.80 U	0.50 U	0.50 U	0.50 U	0.41 J	98.2	30.1	138		2.8		5.9	0.95 J		
MW25	4/24/2019	N	5.0	0.091 U	0.27 J				1.3 J		46.7 U				0.79 U		6.9 U			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	92.3	27.2	117		2.6		5.5 B	1.7		
MW25	10/15/2019	N	0.17 U	0.088 U	0.24 J				1.5 J		46.7 U				0.79 U		7.6 J			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	404	20.2	205		2.1		3.9	0.47 U		
MW25	4/7/2020	N	0.17 U	0.090 U	0.47 J				6.2		103				3.4		6.9 U			0.26 U	0.15 U	0.18 U	0.15 U	0.22 U	268	11.7	286		2.3		5.5	0.87 J		
MW25	10/6/2020	N	0.17 U	0.091 U	0.40 J				1.1 J		133				3.2		6.9 U			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	226	21.8	251		2.3		4.5	1.0		
MW25	4/14/2021	N	1.0 U	0.095 U	0.31 J				1.4 J		100 U				2.5 U		9.4 JB			0.79 U	0.50 U	0.50 U	0.50 U	1.0 U	354	4.3	363		1.6		3.5	1.2		
MW25	10/13/2021	N	1.0 U	0.098 U	0.51 J				2.0		61.9 J				1.2 J		20.0 U			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	392	7.1	369		1.4		3.4	0.64 J		
MW25	4/11/2022	N	1.0 U	0.095 U	0.25 J				2.4		504				7.8		20.0 U			0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	138	26.2	103		1.9		3.1	0.78 J		
MW25	10/10/2022	N	1.0 U	0.11 U	1.0 U	0.29 J			1.1 J	2.1	100 U	411			0.98 J	6.6	20.0 U	20.0 U		0.84 U	0.50 U	0.50 U	0.50 U	1.0 U	128	24.7	101		1.9		3.0	0.75 J		
MW25	5/2/2023	N	2.5	0.49	1.0 U	1.0 U	35000	34500	2.5	1.9 J	100 U	281	13700	13700	0.79 J	5.2	20.0 U	20.0 U		0.72 U	0.50 U	0.50 U	0.50 U	1.0 U	109	24.2	86.1	87.4	1.5		2.5	1.0		
MW25	10/24/2023	N	1.0 U	0.10 U	0.27 J	0.35 J	35900	36100	2.4	1.4 J	100 U	99.4 J	13600	13700	0.80 J	2.3 J	20.0 U	8.0 J		0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	121	24.5	90.0	89.7	1.7		2.6	0.64 J		
MW26	12/6/2000	N	0.65 U	118 J	1.1				21		25 U				94		17			5 U	0.1 U	1 U	1 U	1 U	230	29	350		2.8		540	8		
MW26	12/6/2000	N2	0.65 U	115 J	2.8				27		16000				300		35			5 U	0.1 U	1 U	1 U	1 U	270	28	330		2.8		770	6.1		
MW26	12/6/2000	N3	0.7 U		4				25 U		25 U				89		25 U			5 U	0.1 U	1 U	1 U	1 U										
MW26	12/6/2000	N4			1.1				25		16000				290		33																	
MW26	4/24/2001	N	0.1 U	0.1 U	3				13		6980				132		24			5.4 U	0.1 U	1 U	1 U	1 U	240	22	294		5 =		10	2.79		
MW26	4/24/2001	N2	0.1 U		0.24				25 U		36				15 U		19700												5					
MW26	6/18/2001	N	0.1 U	1	1.1				25 U		25 U				15 U		25 U			5 U	0.1 U	1 U	1 U	1 U	230	27	326		30		13	6.67		
MW26	6/18/2001	N2	0.1 U		3.6				18		9140				232		28												30 =					
MW26	9/10/2001	N	10 U	0.16 J	1.5				10 U		2300				94		24			0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	260	30	300		3.2		12	0.34 U		
MW26	9/10/2001	N2	10 U	0.16 J	0.8 J				4 J		100 J				4 U		3.8 J			0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	260	29	310		3.2		12	2.7		
MW26	9/10/2001	N3			0.75 J				2.9 J		55 J				1.5 U		3.7 U																	
MW26	9/10/2001	N4			1.6				13		2500				96		24																	
MW26	5/14/2002	N		0.1	1.4 J				5 J		1530				57.2		9.7 J			5 U	1 U	5 U	5 U	5 U	260	27	300		3 H		15	5		
MW26	5/14/2002	N2			1.4 U				1.2 J		11.2 U				0.73 J		9.3 J																	
MW26	8/5/2002	N	0.01 U	0.03 J	3				2.5 J		385				17.2		16.3 J			5 U	1 U	5 U	5 U	5 U	270	18	310		0.15 U		14	4.5		
MW26	8/5/2002	N2	0.01 U	0.035 J	1.4 U				0.3 U		11.2 U				0.56 J		13.7 J			5 U	1 U	5 U	5 U	5 U	280	19	310		0.15 U		11	24		
MW26	8/5/2002	N3			2.7				3.9 J		728				26		18.7 J																	
MW26	8/5/2002	N4			3.2				0.3 U		11.2 U				0.42 U		7.4 J																	
MW26	4/29/2003	N	0.5 U	0.1 U	1 U				4		1290				46		10 U			7.1 U	0.5 U	5 U	5 U	5 U	248	18	262		3.5		14	7		

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Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L	
MW26	4/29/2003	N2	0.5 U	0.11 U	1 U				2 J		25 U				5 U		10 U			7.1 U	0.5 U	5 U	5 U	5 U	250	18.7	257		3.6		14	12	
MW26	4/29/2003	N3	0.5 U		2 J				5		1690				48		20																
MW26	4/29/2003	N4			1 U				1 U		25 U				5 U		10 U																
MW26	9/23/2003	N	0.5 U	0.11 U	1 U				1 J		740				29		10 U			1 U	0.25 U	2.5 U	2.5 U	2.5 U	250	11	90.28		3.74		2 U	6.4	
MW26	9/23/2003	N2	0.5 U		1 U				1 U		50 U				5 U		10 U																
MW26	5/4/2004	FD	10.0 U	0.219 UB	0.295 J				2.37 R		399 R			27400	15.2 R	7.82 R				5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	242	17 =	291		4.0 J		44 R	4.35 J	
MW26	5/4/2004	FD2			0.323 J				1.19 R		49.3 R			26700	2.07 R	4.15 R																	
MW26	5/4/2004	N	10.0 U	0.242 UB	0.264 J				2.62 R		458 R				17.8 R	10.5 R				5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	242	17 =	284		3.9 J		42 R	3.75 J	
MW26	5/4/2004	N2			0.289 J				1.24 R		39.0 R				1.23 R	4.36 R																	
MW26	9/23/2004	FD	10.0 U	5.97 BE	1.00 U				3.10 J		542				22.2	6.95 J				5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	280	28	1770		1.5 J		170 =	1.95	
MW26	9/23/2004	FD2		4.11 =	0.354 J				2.01 J		6.48 J				4.00 J	3.80 J																	
MW26	9/23/2004	N	10.0 U	0.393 =	1.00 U				3.73 J		620				24.8	7.86 J				5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	280	28	1670		1.5 J		120 =	2.40	
MW26	9/23/2004	N2			0.314 J				1.57 J		8.81 J				19.3	4.70 J																	
MW26	5/10/2005	FD	2.0 U	0.11 U	1.0 U				10 U		50 U				0.59 J	20 U				0.93 U	0.50 U	5.0 U	5.0 U	5.0 U	240 J	26 J	370 J		2.2 J		180 R	1.1 R	
MW26	5/10/2005	FD2			1.0 U				2.2 J		510				14	17 J																	
MW26	5/10/2005	N	2.0 U	0.061 J	1.0 U				10 U		50 U				1.8 J	20 U				0.94 U	0.50 U	5.0 U	5.0 U	5.0 U	250 J	26 J	340 J		2.8 J		200 R	2.1 R	
MW26	5/10/2005	N2			1.0 U				2.4 J		680				18	7.5 J																	
MW26	9/27/2005	FD	2.0 UJ	0.024 J	1.0 UJ				10 U		50 U				1.7 J	20 U				0.92 U					250 J	25 J	380		2.0 J		160 J	0.68 J	
MW26	9/27/2005	FD2			1.0 UJ				2.6 J		50 UJ				10 U	20 U																	
MW26	9/27/2005	N	2.0 UJ	0.027 J	1.0 UJ				10 U		50 U				2.3 J	20 U				0.93 U	0.50 U	5.0 U	5.0 U	5.0 U	240 J	25 J	350		1.9 J		170 =	0.72 J	
MW26	9/27/2005	N2			1.0 UJ				2.2 J		50 U				10 U	20 U																	
MW26	6/7/2006	FD	2.0 U	0.091 J	1.0 UJ				10 UJ		50 UJ				1.0 UJ	20 UJ				0.94 U	0.50 U	5.0 U	5.0 U	5.0 U	250 J	29 J	350 J		1.8 J		150 =	0.94 J	
MW26	6/7/2006	N	2.0 U	0.11 UJ	1.0 UJ				10 UJ		50 UJ				2.5 UJ	20 UJ				0.95 U	0.50 U	5.0 U	5.0 U	5.0 U	260 J	29 J	320 J		1.8 J		140 =	1.4 J	
MW26	9/26/2006	N	2.0 UJ	0.11 U	1.0 UJ				10 UJ		50 UJ				10 UJ	20 UJ				0.91 U	0.50 U	5.0 U	5.0 U	5.0 U	270 J	23 J	350		1.5 J		87 J	2.0	
MW26	5/8/2007	FD	2.0 UJ	0.095 UJ	1.0 UJ				10 UJ		100 UJ				10 UJ	20 UJ				0.92 R	1.0 U	1.0 U	1.0 U	2.0 U	270 =	21 J	360		1.6		250 J	0.76 J	
MW26	5/8/2007	N	2.0 UJ	0.093 UJ	1.0 UJ				10 UJ		100 UJ				10 UJ	20 UJ				0.92 R	1.0 U	1.0 U	1.0 U	2.0 U	260 =	21 J	360		1.5		210 J	0.68 J	
MW26	9/19/2007	N	2.0 UJ	0.095 U	1.0 UJ				10 UJ		100 R				10 UJ	20 UJ				0.93 U	1.0 U	1.0 U	1.0 U	2.0 U	240	25	500 J		1.3		220 J	0.84 J	
MW26	5/20/2008	N	2.0 UJ	0.096 UJ	0.34 J				0.47 J		100 UJ				2.5 U	20 U				0.96 U	1.0 UJ	1.0 U	1.0 U	2.0 UJ	240 =	22	430		1.8		230	0.65 J	
MW26	10/22/2008	N	2.0 UJ	0.1 U	2 UJ				6.2 J		777 J			35100 J	10 UJ	20 UJ				1 U	0.5 U	2.0 U	2.0 U	5.0 U	256 J	21.7	432 J		2.36 J		235	18.6	
MW26	6/2/2009	N	0.8 UJ	0.1 UJ	2 U				10 UJ		341 =			33400 =	10 U	20 U				1.0 UJ	0.5 UB	0.3 J	2.0 UB	5.0 U	229 J	203	414.7082		1.83 J		2360	1.7 UJ	
MW26	10/6/2009	N	0.83 UJ	0.1 UJ	2 UJ				3.8 J		325 J			42900 J	10 UJ	20 UJ				0.997 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ	227 J	20.7 J	491.28 J		1.7 J		212 J	1 UJ	
MW26	5/19/2010	N	1.3 U	0.13 J	1.8 J				10 UJ		236. J			39800. J	10 UJ	15. J				1.0 U	0.5 U	5 U	5 U	5 U	230	20.4	486		2.41 J		279	20.1 J	
MW26	10/5/2010	N	1.3 U	0.1 UJ	2 U				10 U		376			37900	10 U	20 U				1.0 U	0.1 U	0.4 U	0.4 U	1 U	236	20.0 J	478		1.77		232	0.6 J	
MW26	6/29/2011	N	0.9 U	0.1 U	2 UJ				10 U		274			41600	10 U	20 U				0.992 U	0.1 U	0.4 U	0.4 U	1 U	202	18.3 J	463.00		1.83 J		230	1 U	
MW26	10/19/2011	N	0.50 U	0.099 U	0.87 J				2 U		50 U			29000 B	10 U	10 U				0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	230	19	329.00		1.6 J		200	0.88 J	
MW26	5/22/2012	N	0.50 U	0.10 U	2.0 U				10 U		50 U			28000 =	10 U	20 U				0.19 UJ	0.50 U	1.0 U	1.0 U	2.0 U	200	19	325.00		1.7		210	0.43 J	
MW26	10/16/2012	N	0.50 U	0.095 U	0.99 J				10 U		50 U			29000 =	10 U	20 U				0.19 U	0.50 U	1.0 U	1.0 UJ	2.0 U	190	19	344		1.8 J		200 =	0.30 J	
MW26	5/22/2013	N	0.50 U	0.094 U	2.0 U				10 U		50 U			25000 B	10 U	20 U				0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	170	18			1.9 J		230	0.55 J	
MW26	10/8/2013	N	0.50 U	0.095 U	0.37 J				10.0 U		50 U			26000 B	10 U	20 U				0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	160	18			1.5 J		110 J	1.0 U	
MW26	5/14/2014	N		0.095 U																													
MW26	9/24/2014	FD	0.50 U	0.095 U	0.32 J				2.0 U		100 U				5.0 U	20 U				0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	150	17	280		1.2		160	1.0 U	
MW26	9/24/2014	N	0.50 U	0.095 U	0.43 J				2.0 U		100 U				5.0 U	20 U				0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	150	17	290		1.2		160	1.0 U	
MW26	4/21/2015	FD		0.094 U	0.76 J				2.0 U		100 U				5.0 U	20 U				0.19 U													
MW26	4/21/2015	N	0.50 U	0.094 U	0.71 J				2.0 U		100 U				4.4 J	20 U				0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	160	16	240		2.4		82	1.0 U	
MW26	10/13/2015	N	0.50 U	0.096 U	0.76 J				2.0 U		100 U				5.0 U	20.0 U				0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	198	15.3	229		1.9		74.6	0.32 J	
MW26	10/13/2015	N	0.50 U	0.096 U	0.50 J				2.0 U		100 U				5.0 U	20.0 U				0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	194	15.5	235		1.9		75.7	0.33 J	

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
MW26	4/5/2016	N	0.15 J	0.095 U	0.57 J				1.5 J		21.4 J				58.7		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	154	9.4	183		1.4		36.1	0.26 J
MW27	10/20/2011	N	0.10 J	0.17	1.7 J				2.3 J+		50 U			2300 B	10 U		10 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	63	10	28.70		3.1		9.1	1.6
MW27	4/7/2016	FD		0.094 U	5.0 U				2.0 U		29.9 J				2.3 J		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U								
MW27	4/7/2016	N	0.092 J	0.15	0.59 J				1.9 J		21.1 J				5.0 U		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	137	20.0	113		6.5		14.2	1.9
MW28	10/20/2011	N	0.19 J	690	0.55 J				2 U		50 U			12000 B	6.0 J		10 U			0.19 U	0.50 U	1.0 U	1.0 U	0.38 J	130	5.5	132.00		1.3		5.2	2.7
MW28	10/17/2012	N	0.50 U	0.095 U	0.48 J				10 U		50 U			12000 =	10 U		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	120	11	134		1.8		5.0 U	0.81 J
MW28	10/9/2013	N	0.50 U	0.049 J	2.0 UJ				10.0 UJ		50 UJ			12000 J	10 UJ		20 UJ			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U *	120 J	21			2.2 J		6.5	0.49 J
MW28	10/9/2013	N2																											2.2 J			
MW28	9/25/2014	N	0.50 U	0.099	0.31 J				2.0 U		100 U				5.0 U		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	120	18	150		1.3		5.1	0.85 J
MW28	10/14/2015	N	0.50 U	0.32	5.0 U				2.0 U		100 U				5.0 U		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	126	15.5	155		2.0		5.4	0.69 J
MW28	4/6/2016	N	0.20 J	47	5.0 U				0.76 J		29.7 J				2.7 J		20.0 U			0.21 U	0.50 U	1.0 U	1.0 U	2.0 U	122	9.4	125		1.2		4.8	1.6
MW28	7/21/2016	N	0.10 J	100	0.49 J				2.0 U		25.9 J				10.8		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	127	11.4	138		1.9		5.4	1.9
MW28	10/13/2016	FD	0.36 J	1200	0.38 J				0.61 J		100 U				7.9		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	1.4 J	125	11.4	142		1.7		5.6	12.3
MW28	10/13/2016	N	0.28 J	1900	0.39 J				0.76 J		9.8 J				8.5		20.0 U			0.12 J	0.50 U	1.0 U	1.0 U	1.4 J	128	11.4	148		1.7		5.8	12.3
MW28	1/20/2017	N	0.20 J	290	0.47 J				1.0 J		5.3				10.3		6.2			0.063	0.28	0.26	0.23	0.24	113	13.4	138		2.0		6.1	4.9
MW28	4/20/2017	N	0.50 U	22	0.55 J				1.0 J		11.9 J				4.0 J		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	123	22.5	186		3.3		7.1	1.6
MW28	10/3/2017	N	0.18 J	0.16	0.38 J				1.4 J		100 U				2.5 U		20.0 U			0.76 U	0.50 U	0.50 U	0.50 U	1.0 U	116	31.8	171		2.3		6.6	0.83 J
MW28	10/17/2018	N	1.0 U	0.10 U	0.38 J				1.0 J		100 U				2.5 U		7.1 J			0.81 U	0.50 U	0.50 U	0.50 U	1.0 U	106	21.2	126		2.2		5.4	0.97 J
MW28	4/23/2019	N	0.17 U	0.20 ^	0.39 JB				2.0 B		62.7 J				2.1 JB		6.9 U			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	106	19.3 F1	128		2.1		5.4	0.67 J
MW28	10/16/2019	N	0.17 U	0.086 U	0.31 J				0.50 U		46.7 U				0.79 U		6.9 U			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	105 H	22.9	120		2.1		5.3 B	0.51 J
MW28	4/7/2020	N	0.17 U	0.085 U	0.51 J				1.0 J		46.7 U				0.79 U		6.9 U			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	99.3	17	107		2		4.8	0.48 J
MW28	10/6/2020	FD	0.17 U	0.085 U	0.47 J				0.50 U		46.7 U				1.0 J		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	103	24.9	123		18.0		48.9	0.92 J
MW28	10/6/2020	N	0.17 U	0.089 U	0.49 J				0.50 U		46.7 U				1.5 J		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	103	25.4	118		1.9		5.0	0.90 J
MW28	4/15/2021	N	1.0 U	0.098 U	0.30 J				0.90 JB		100 U				2.5 U		12.4 J			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	101	35	128		1.5		3.8	0.89 J
MW28	10/13/2021	N	1.0 U	1600	0.71 J				1.7 J		100 U				239		19.7 J			2.6	0.50 U	0.50 U	0.50 U	1.0 U	165	12.6	188		0.28 H		23.9	1.0 U
MW28	4/14/2022	N	1.0 U	0.84	0.32 J				0.61 J		100 U				2.5 U		20.0 U			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	113	27.9	86.2		1.9		4.0	0.81 J
MW28	4/14/2022	FD	1.0 U	0.10 U	0.28 J				0.77 J		100 U				2.5 U		20.0 U			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	113	28.9	88.5		1.9		4.5	0.77 J
MW28	10/10/2022	N	1.0 U	0.098 U	0.40 J	0.35 J			0.78 J	0.63 J	100 U	100 U			2.5 U	2.5 U	20.0 U	20.0 U		0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	120	28.0	95.3		2.4		4.8	0.75 J
MW28	4/27/2023	N	1.0 U	0.098 U	0.64 J	0.77 J	35800	34600	0.59 J	0.56 J	100 U	100 U	11900	11300	2.5 U	0.82 J	20.0 U	20.0 U		0.66 U	0.50 U	0.50 U	0.50 U	1.0 U	121	21.0	86.4	89.4	2.3		4.6	0.90 J
MW28	10/24/2023	N	1.0 U	0.10 U	0.44 J	0.43 J	37600	37000	2.4	1.4 J	100 U	100 U	12100	11600	2.5 U	2.5 U	20.0 U	20.0 U		0.85 U	0.50 U	0.50 U	0.50 U	1.0 U	129	20.1	92.4	93.8	3.0		5.0	0.85 J
MW29	4/13/2016	N	1.4	14000	5.0 U				6.7		1660				2270		20.0 U			34	0.50 U	0.58 J	0.90 J	7.2	87.0	4.5	120		0.10 U		6.4	70.2
MW29	7/21/2016	FD	0.69	9100	5.0 U				2.1		1250				2740		20.0 U			30	0.50 U	0.83 J	1.2	9.3	83.8	9.2	110		0.10 U		10.5	51.6
MW29	7/21/2016	N	0.67	11000	5.0 U				2.1		1290				2800		20.0 U			35	0.50 U	0.74 J	1.3	9.1	84.0	9.2	110		0.10 U		10.4	50.5
MW29	10/14/2016	N	0.32 J	20000	0.35 J				2.6		1970				3220		20.0 U			32	0.50 U	0.98 J	1.6	11	83.0	15.9	124		0.10 U		16.3	56.9
MW29	1/24/2017	FD	0.37 J	67000	0.35				3.3		1380				3170		6.2			41	0.28	0.90 J	1.3	12	112	4.3	122		0.035		6.9	49.9
MW29	1/24/2017	N	0.40 J	56000	0.35				1.9 J		1400				3290		6.2			40	0.28	0.98 J	1.2	12	113	4.3	120		0.035		6.8	51.4
MW30	4/13/2016	N	0.50 U	0.72	5.0 U				0.81 J		46.1 J				147		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	42.0	3.2	82.3		3.4		32.8	1.2
MW30	7/21/2016	N	0.50 U	1.7	5.0 U				2.0 U		100 U				52.9		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	44.5	2.9	82.0		4.0		29.9	1.4
MW30	10/12/2016	N	0.084 J	3.8	5.0 U				1.1 J		13.8 J				67.3		20.0 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	52.2	3.8	86.0		1.6		30.5	
MW30	1/20/2017	N	0.080	5.5	0.35				1.0 J		9.4 J				52.8		6.2			0.060	0.28	0.26	0.23	0.24	45.9	2.4	60.0		0.80		9.9	1.4
MW30	4/21/2017	N	0.50 U	3.6	5.0 U				0.95 J		8.1 J				37.7		20.0 U			0.21 U	0.50 U	1.0 U	1.0 U	2.0 U	46.2	0.57 J	250		1.1		5.4	0.93 J
MW30	10/5/2017	N	0.11 J	2.1	1.0 U				1.1 J		49.4 J				31.5		20.0 U			0.80 U	0.50 U	0.50 U	0									

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
MW30	5/31/2018	N	1.0 U	630	1.0 U				1.1 J		100 U				23.3		20.0 U			1.7	0.50 U	0.50 U	0.50 U	0.39 J	67.3	0.66	69.1		1.6		3.7	1.7
MW30	10/18/2018	N	1.0 U	640	1.0 U				0.94 J		100 U				15.4		7.9 J			1.3	0.50 U	0.50 U	0.50 U	1.0 U	77.5	1.7	82.9		2.2		3.7	2.6
MW30	4/25/2019	N	0.17 U	800	0.23 U				1.1 J		46.7 U				25.1		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	66.9	1.4	69.9		0.55		3.8 B	5.3
MW30	10/17/2019	N	0.17 U	41	0.23 U				1.2 J		46.7 U				22.6		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.28 J	88.8 H	0.62	92		0.53		2.4	0.85 J
MW30	4/13/2020	N	0.25 J	270	0.29 JB				5.4		46.7 U				24.1		6.9 U			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	97.3	0.98	102		1.5		3.3	1.4
MW30	10/7/2020	N	0.17 U	10	0.23 U				16.8		78.1 J				15.6		6.9 U			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	90.0	0.45	88.5		0.37		2.2	0.89 J
MW30	4/13/2021	N	1.0 U	190	1.0 U				36		59.2 J				22.2		20.0 U			3.1	0.50 U	0.50 U	0.50 U	0.56 J	123	0.74	115		1.1		2.9	2.2
MW30	10/11/2021	N	1.0 U	2100	0.42 J				34.2		149				50.7		20.0 U			1.5	0.50 U	0.50 U	0.50 U	1.0 U	125	3.0	139		0.12 J		5.4	14.9
MW30	4/12/2022	N	3.2	30	0.68 J				13.7		3720				209		12.6 J			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	96.1	0.46	63.4		0.20		1.7	1.3
MW30	10/5/2022	N	1.0 U	2.4	1.0 U	1.0 U			3.4	0.79 J	100 U	100 U			3.8	4	20.0 U	20.0 U		0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	92.4	0.75	54.4		0.28		1.8	0.72 J
MW30	4/26/2023	N	1.0 U	3.1	1.0 U	1.0 U			0.62 J	1.4 J	100 U	100 U			2.2 J	2.1 J	20.0 U	20.0 U		0.70 U	0.50 U	0.50 U	0.50 U	1.0 U	96.5	0.43 J	56.3	57.5	0.41 J		1.5	0.99 J
MW30	10/27/2023	N	1.0 U	660	1.0 U	1.0 U	38000	38000	2.0 U	2.0 U	100 U	51.0 J	15800	16000	4.4 U	6.0 U	20.0 U	20.0 U		0.30 J	0.50 U	0.50 U	0.50 U	1.0 U	169	0.85 J	94.8	94.8	1.0 U		2.8	3.8
MW31	4/12/2016	N	0.50 U	0.030 J	5.0 U				2.0 U		20.9 J				7.7		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	122	0.99 J	125		0.68		4.0	0.59 J
MW31	7/20/2016	N	0.50 U	4.6	5.0 U				0.86 J		100 U				2.2 J		20.0 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	105	0.76 J	100		0.49		1.9	0.68 J
MW31	10/13/2016	N	0.11 J	3.7	5.0 U				0.76 J		100 U				5.0 U		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	110	0.63 J	104		0.46		1.5	0.29 J
MW31	1/17/2017	N	0.20 J	0.69	0.59 J				1.4 J		10.5 J				0.52 J		6.2			0.061	0.28	0.26	0.23	0.24	113	0.53 J	118		0.51		1.7	0.74 J
MW31	4/18/2017	N	0.21 J	0.026 J	5.0 U				0.58 J		100 U				0.63 J		20.0 U			0.22 U	0.50 U	1.0 U	1.0 U	2.0 U	111	0.68 J	136		0.73		2.8	0.72 J
MW31	10/2/2017	N	1.9	0.095 U	0.51 J				5.0		1630				34.5		9.7 J			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	104	1.4	93.9		0.54		1.3	0.50 J
MW31	10/16/2018	N	1.0 U	0.097 U	1.0 U				0.63 J		100 U				1.0 J		20.0 U			0.79 U	0.50 U	0.50 U	0.50 U	0.46 J	187	0.67	181		0.55		1.5	0.70 J
MW31	4/24/2019	N	3.0	0.086 U	0.23 J				1.1 J		46.7 U				1.9 J		6.9 U			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	178	0.61	191		0.63		1.6 B	0.67 J
MW31	10/14/2019	N	0.17 U	0.086 U	0.23 U				1.3 J		46.7 U				0.79 U		6.9 U			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	240	0.52	231		0.33 F1		0.84	0.47 U
MW31	4/13/2020	N	0.21 J	6	0.23 JB				18.7		46.7 U				2.6		6.9 U			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	210	0.33	207		0.42		1.1	1.3
MW31	10/6/2020	N	0.43 J	0.089 U	0.23 U				24.3		46.7 U				1.9 J		6.9 U			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	168	0.39	163		0.37		0.94	0.52 J
MW31	4/12/2021	N	1.0 U	0.19	1.0 U				42.3 B		100 U				2.2 JB		9.4 J			0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	194	0.48	201		0.66		1.8	0.62 J
MW31	10/12/2021	N	1.0 U	0.20	0.24 J				73.8		100 U				1.5 J		20.0 U			0.76 U	0.50 U	0.50 U	0.50 U	1.0 U	154	0.34	148		0.48		1.2	1.0 U
MW31	4/11/2022	N	1.0 U	0.24	1.0 U				4.5		100 U				3.8		20.0 U			0.79 U	0.50 U	0.50 U	0.50 U	1.0 U	145	0.20	90.9		0.55		1.3	0.62 J
MW31	10/5/2022	N	1.0 U	0.44	1.0 U	1.0 U			0.89 J	0.95 J	100 U	100 U			0.99 J	1.5 J	20.0 U	20.0 U		0.79 U	0.50 U	0.50 U	0.50 U	1.0 U	138	0.4	86.4		0.42		1.1	0.59 J
MW31	10/5/2022	FD	1.0 U	0.54	1.0 U	1.0 U			0.65 J	0.72 J	100 U	100 U			1.2 J	1.2 J	20.0 U	20.0 U		0.79 U	0.50 U	0.50 U	0.50 U	1.0 U	138	0.4	86.4		0.42		1	0.50 J
MW31	4/25/2023	N	1.0 U	0.27	1.0 U	1.0 U	37900	38700	6.8	1.1 J	100 U	202	13300	13700	1.1 J	6.1	20.0 U	20.0 U		0.69 U	0.50 U	0.50 U	0.50 U	1.0 U	148	0.28 J	96.5	94.7	0.5		1.3 J	0.57 J
MW31	10/26/2023	N	1.0 U	0.10 U	1.0 U	1.0 U	40200	40700	2.6 U	2.0 U	100 U	109	13600	13600	2.5 U	4.4 U	20.0 U	20.0 U		0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	169	0.48 J	103	100	0.57 J-		1.1	0.50 J
MW32	5/17/2019	N	0.17 U	0.14	0.23 U				1.6 J		46.8 J				135		17.0 J			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	35.9	1.7	40.3		1.3 H		11.3	1.1
MW32	10/14/2019	N	0.17 U	0.088 U	0.23 U				0.77 J		134				14.8		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	33.3	0.74	35.7		0.64 H		3.8	0.69 J
MW32	4/13/2020	N	0.17 U	0.092 U	0.23 JB				2.7		46.7 U				3.9		6.9 U			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	31.5	0.67	30.6		0.69		4.4	0.47 U
MW32	10/8/2020	N	0.17 U	0.091 U	0.23 U				6.7		60.1 J				4.2		6.9 U			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	30.0	0.70	33.9		0.70 H		4.4	0.95 J
MW32	4/12/2021	N	8.9	0.2	1.0 U				10.6 B		62.2 J				2.2 JB		20.0 U			0.76 U	0.50 U	0.50 U	0.50 U	1.0 U	28.2	0.59	34.9		0.57		3.7	0.88 J
MW32	10/12/2021	N	5.9	0.42	1.0 U				16.0		117				4.0		20.0 U			0.81 U	0.50 U	0.50 U	0.50 U	1.0 U	32.6	0.54	33.4		0.53		3.6	1.0 U
MW32	4/11/2022	N	0.67 J	2.0	2.6				49.9		17400				302		32.9			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	36.1	0.46	24.1		0.40		2.8	1.6
MW32	10/6/2022	N	0.62 J	0.10 U	1.0 U				0.62 J		100 U				1.4 J		20.0 U			0.83 U	0.50 U	0.50 U	0.50 U	1.0 U	36.3	0.54			0.38		2.7	1
MW32	4/25/2023	N	1.4	0.3	1.0 U	0.44 J	9920	9210	0.70 J	6.4	291	2660	3750	4200	33	37.5	20.0 U	7.6 J		0.64 U	0.50 U	0.50 U	0.50 U	1.0 U	38.2	0.56	23	24.8	0.35		2.5	1.1
MW32	10/25/2023	N	1.0 U	0.099 U	1.0 U	1.0 U	8460	8830	3.1	2.0 U	100 U	85.3 J	3480 J-	3620 J-	2.5 U	1.6 J	20.0 U	20.0 U		0.95 U	0.50 U	0.50 U	0.50 U	1.0 U	41.9	0.64 J	22.1	21.1	0.85 J		2.7	1.0
MW33	10/26/2023	N	0.67 J	0.11 U	1.0 U	1.0	19800	16500	2.0 U	32.7	100 U	8780	7160	8640	14.4 U	183	20.0 U	20.0 U		0.96 U	0.50 U	0.50 U	0.50 U	1.0 U	91.4	0.38 J	55.9	49.4	0.59 J		1.1	1.3
MW6S	4/15/2021	N	1.0 U	1.1	1.0 U				4.6 B		100 U				3.2		17.3 J			0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	257	10.5	280		4.9 H		7.3	1.4

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L		
RW01	10/9/1997	N		1 U																														
RW01	4/23/2001	N		0.1 U																														
RW01	9/11/2001	N		0.071 J																														
RW01	9/28/2001	N		0.1 U																														
RW01	9/28/2001	N2		0.05 U																														
RW01	5/14/2002	N		0.23																														
RW01	8/6/2002	N		0.04																														
RW01	4/29/2003	N		0.1 J																														
RW01	9/23/2003	N		0.28																														
RW01	11/20/2003	N		0.24																														
RW01	5/4/2004	FD		0.134 UB																														
RW01	5/4/2004	N		0.140 UB																														
RW01	9/22/2004	FD		1.51																														
RW01	9/22/2004	N		0.201																														
RW01	11/1/2004	N		0.0952 U																														
RW01	5/10/2005	FD		0.053 J																														
RW01	5/10/2005	N		0.068 J																														
RW01	7/7/2005	FD		0.035 J																														
RW01	7/7/2005	N		0.043 J																														
RW01	9/27/2005	FD		0.049 J																														
RW01	9/27/2005	N		0.050 J																														
RW01	5/31/2006	FD		0.055 J																														
RW01	5/31/2006	N		0.048 J																														
RW01	9/25/2006	FD		0.023 J																														
RW01	9/25/2006	N		0.11 U																														
RW01	5/9/2007	FD		0.048 J																														
RW01	5/9/2007	N		0.035 J																														
RW01	9/18/2007	FD		0.27 R																														
RW01	9/18/2007	N		0.093 UJ																														
RW01	5/20/2008	FD		0.066 J																														
RW01	5/20/2008	N		0.060 J																														
RW01	10/23/2008	FD																																
RW01	10/23/2008	N																																
RW01	12/11/2008	FD		0.1 U																														
RW01	12/11/2008	N		0.1 UJ																														
RW01	6/2/2009	FD		0.1 UJ																														
RW01	6/2/2009	N		0.1 UJ																														
RW01	7/6/2009	FD																																
RW01	7/6/2009	N																																
RW01	10/7/2009	FD		0.1 UJ																														
RW01	10/7/2009	N		0.1 UJ																														
RW01	5/19/2010	FD		0.1 U																														
RW01	5/19/2010	N		0.1 U																														
RW01	10/5/2010	FD		0.1 U																														
RW01	10/5/2010	N		0.1 U																														
RW01	11/30/2010	N																																

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Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L	
RW01	6/30/2011	FD		0.1 U																1 U	0.1 U	0.4 U	0.4 U	1 U									
RW01	6/30/2011	N		0.1 U																0.997 U	0.1 U	0.4 U	0.4 U	1 U									
RW01	10/20/2011	FD		0.039 J																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW01	10/20/2011	N		0.040 J																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW01	12/16/2011	FD		0.031 R																													
RW01	12/16/2011	N		0.096 UJ																													
RW01	5/23/2012	FD		0.017 J																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW01	5/23/2012	N		0.019 J																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW01	7/11/2012	FD		0.035 J																													
RW01	7/11/2012	FD2		0.033 J																													
RW01	7/11/2012	N		0.027 J																													
RW01	10/17/2012	FD		0.035 J																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW01	10/17/2012	N		0.045 J																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW01	12/3/2012	FD		0.094 UJ																													
RW01	12/3/2012	FD2		0.095 U																													
RW01	12/3/2012	N		0.094 UJ																													
RW01	12/3/2012	N2		0.095 U																													
RW01	5/21/2013	FD		0.029 J																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW01	5/21/2013	N		0.031 J																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW01	10/8/2013	N		0.040 J																0.20 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW01	10/8/2013	N2		0.097 U																0.20 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW01	5/13/2014	N		0.051 J																													
RW01	9/25/2014	N		0.043 J																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW01	4/21/2015	N		0.095 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW01	10/15/2015	N		0.094 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW01	4/5/2016	N		0.095 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW01	10/10/2016	N		0.020 J																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW01	4/19/2017	N		0.015 J																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW01	10/20/2017	N		0.10 U																0.87 U	0.50 U	0.50 U	0.37 J	1.0 U									
RW01	6/5/2018	N		0.095 U																0.75 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW01	10/15/2018	N		0.10 U																0.79 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW01	4/22/2019	N		0.087 U																0.23 U	0.15 U	0.18 U	0.15 U	0.22 U									
RW01	10/1/2019	N		0.093 U																0.24 U	0.15 U	0.18 U	0.15 U	0.22 U									
RW01	4/15/2021	N		0.10 U																0.83 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW01	10/13/2021	N		0.096 U																0.76 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW01	6/20/2022	N		0.14 U																0.23 U	0.15 U	0.15 U	0.18 U	0.22 U									
RW01	10/03/2022	N		0.10 U																0.81 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW01	4/25/2023	N		0.10 U																0.78 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW01	10/03/2023	N	--	0.10 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	--	--	--	--	--	--	--	--	
RW02	10/9/1997	FD		2																													
RW02	10/9/1997	N		0.9 J																													
RW02	10/24/1997	N		1 U																													
RW02	4/8/1998	N		1 U																													
RW02	4/24/2001	N		0.1 U																5.4 U	0.1 U	1 U	1 U	1 U									
RW02	9/11/2001	N		9.5																0.25 U	0.44 U	0.5 U	0.4 U	1.2 U									

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Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L			
RW02	9/28/2001	N		0.1 U																															
RW02	9/28/2001	N2		0.1 U																															
RW02	9/28/2001	N3		0.05 U																															
RW02	9/28/2001	N4		0.05 U																															
RW02	5/14/2002	N		0.1																5 U	1 U	5 U	5 U	5 U											
RW02	8/6/2002	N		0.04 U																5 U	1 U	5 U	5 U	5 U											
RW02	8/6/2002	N2		0.04 U																5 U	1 U	5 U	5 U	5 U											
RW02	4/29/2003	N		0.11 U																6.8 U	0.5 U	5 U	5 U	5 U											
RW02	9/24/2003	N		0.11 U																0.97 U	0.25 U	2.5 U	2.5 U	2.5 U											
RW02	9/24/2003	N2		0.11 U																0.96 U	0.25 U	2.5 U	2.5 U	2.5 U											
RW02	5/4/2004	N		0.0252 UB																5.00 U	0.500 U	5.00 U	5.00 U	5.00 U											
RW02	9/22/2004	N		0.398																5.00 U	0.500 U	5.00 U	5.00 U	5.00 U											
RW02	11/1/2004	N		0.0962 U																															
RW02	5/10/2005	N		0.11 U																0.93 U	0.50 U	5.0 U	5.0 U	5.0 U											
RW02	9/27/2005	N		0.11 U																0.92 UJ	0.50 U	5.0 U	5.0 U	5.0 U											
RW02	5/31/2006	N		0.11 UJ																0.93 U	0.50 U	5.0 U	5.0 U	5.0 U											
RW02	9/25/2006	N		0.11 U																0.93 U	0.50 U	5.0 U	5.0 U	5.0 U											
RW02	5/9/2007	N		0.092 UJ																0.97 R	1.0 U	1.0 U	1.0 U	2.0 U											
RW02	9/18/2007	N		0.093 UJ																0.93 R	1.0 U	1.0 U	1.0 U	2.0 U											
RW02	5/20/2008	N		0.095 UJ																0.95 U	1.0 UJ	1.0 U	1.0 U	2.0 UJ											
RW02	10/23/2008	N																		1.33 U															
RW02	12/10/2008	N		0.1 U																		0.1 U	0.4 U	0.4 U	1.0 U										
RW02	6/2/2009	N		0.1 UJ																1.0 UJ	0.5 U	2.0 U	2.0 U	5.0 U											
RW02	10/7/2009	N		0.1 UJ																0.997 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ											
RW02	5/19/2010	N		0.1 U																1.0 U	0.4 U	5 U	5 U	5 U											
RW02	10/5/2010	N		0.1 U																1.0 U	0.1 U	0.4 U	0.4 U	1 U											
RW02	6/30/2011	N		0.1 U																0.999 U	0.1 U	0.4 U	0.4 U	1 U											
RW02	10/20/2011	N		0.095 U																0.20 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW02	5/23/2012	N		0.097 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW02	10/17/2012	N		0.037 J																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW02	10/17/2012	N2		0.057 J																															
RW02	10/17/2012	N3		0.094 UJ																															
RW02	12/3/2012	N		0.095 U																															
RW02	12/3/2012	N2		0.094 UJ																															
RW02	5/21/2013	N		0.097 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW02	10/8/2013	N		0.094 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW02	5/13/2014	N		0.095 U																															
RW02	9/25/2014	N		0.096 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW02	4/21/2015	N		0.095 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW02	10/15/2015	N		0.096 U																0.20 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW02	4/5/2016	N		0.095 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW02	10/10/2016	N		0.097 U																0.20 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW02	4/17/2017	N		0.095 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW02	10/20/2017	N		0.10 U																0.75 U	0.50 U	0.50 U	0.33 J	1.0 U											
RW02	4/17/2018	N		0.024 U																0.79 U	0.50 U	0.50 U	0.50 U	1.0 U											
RW02	10/16/2018	FD		0.099 U																0.80 U	0.50 U	0.50 U	0.50 U	1.0 U											

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L			
RW02	10/16/2018	N		0.097 U																0.77 U	0.50 U	0.50 U	0.50 U	1.0 U											
RW02	4/22/2019	FD		0.085 U																0.23 U	0.15 U	0.18 U	0.15 U	0.22 U											
RW02	4/22/2019	N		0.085 U																0.23 U	0.15 U	0.18 U	0.15 U	0.22 U											
RW02	10/1/2019	N		0.089 U																0.24 U	0.15 U	0.18 U	0.15 U	0.22 U											
RW02	4/15/2021	N		0.096 U																0.79 U	0.50 U	0.50 U	0.50 U	1.0 U											
RW02	10/13/2021	N		0.097 U																0.76 U	0.50 U	0.50 U	0.50 U	1.0 U											
RW02	10/13/2021	FD		0.095 U																0.81 U	0.50 U	0.50 U	0.50 U	1.0 U											
RW02	4/14/2022	N		0.31 J																0.75 U	0.50 U	0.50 U	0.50 U	1.0 U											
RW02	6/20/2022	N		0.15 U																0.23 U	0.15 U	0.15 U	0.18 U	0.22 U											
RW02	10/03/2022	N		0.10 U																0.76 U	0.50 U	0.50 U	0.50 U	1.0 U											
RW02	4/24/2023	N		0.10 U																0.70 U	0.50 U	0.50 U	0.50 U	0.35 J											
RW02	10/03/2023	N	--	0.096 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	--	--	--	--	--	--	--	--			
RW03	10/9/1997	N		1 U																															
RW03	9/11/2001	N		0.1 J																0.28 U	0.44 U	0.5 U	0.4 U	1.2 U											
RW03	9/28/2001	N		0.1 U																															
RW03	9/28/2001	N2		0.05 U																															
RW03	5/14/2002	N		0.094 J																5 U	1 U	5 U	5 U	5 U											
RW03	8/6/2002	N		0.04 U																5 U	1 U	5 U	5 U	5 U											
RW03	4/29/2003	N		0.11 U																6.8 U	0.5 U	5 U	5 U	5 U											
RW03	9/23/2003	N		0.11 U																0.96 U	0.25 U	2.5 U	2.5 U	2.5 U											
RW03	5/4/2004	N		0.0952 U																5.00 U	0.500 U	5.00 U	5.00 U	5.00 U											
RW03	9/22/2004	N		2.18																5.00 U	0.500 U	5.00 U	5.00 U	5.00 U											
RW03	11/1/2004	N		0.0962 U																															
RW03	5/10/2005	N		0.11 U																0.93 U	0.50 U	5.0 U	5.0 U	5.0 U											
RW03	9/27/2005	N		0.11 U																0.93 UJ	0.50 U	5.0 U	5.0 U	5.0 U											
RW03	5/31/2006	N		0.11 UJ																0.94 U	0.50 U	5.0 U	5.0 U	5.0 U											
RW03	9/25/2006	N		0.11 U																0.93 U	0.50 U	5.0 U	5.0 U	5.0 U											
RW03	5/9/2007	N		0.092 UJ																0.95 R	1.0 U	1.0 U	1.0 U	2.0 U											
RW03	9/18/2007	N		0.093 UJ																0.93 R	1.0 U	1.0 U	1.0 U	2.0 U											
RW03	5/20/2008	N		0.097 UJ																0.96 U	1.0 UJ	1.0 U	1.0 U	2.0 UJ											
RW03	10/23/2008	N																		1 U															
RW03	12/10/2008	N		0.1 U																	0.1 U	0.4 U	0.4 U	1.0 U											
RW03	6/2/2009	N		0.1 UJ																1.0 UJ	0.5 U	2.0 U	2.0 U	5.0 U											
RW03	10/7/2009	N		0.1 UJ																0.997 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ											
RW03	5/19/2010	N		0.1 U																1.0 U	0.4 UJ	5 UJ	5 UJ	5 UJ											
RW03	10/5/2010	N		0.1 U																1.0 U	0.1 U	0.4 U	0.4 U	1 U											
RW03	6/30/2011	N		0.1 U																0.994 U	0.1 U	0.4 U	0.4 U	1 U											
RW03	10/20/2011	N		0.095 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW03	5/23/2012	N		0.097 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW03	10/17/2012	N		0.015 J																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW03	12/3/2012	N		0.095 U																															
RW03	12/3/2012	N2		0.095 UJ																															
RW03	5/21/2013	N		0.053 J																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW03	10/8/2013	N		0.096 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW03	5/13/2014	N		0.095 U																															

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L		
RW03	9/25/2014	FD		0.095 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U										
RW03	9/25/2014	N		0.095 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U										
RW03	4/21/2015	N		0.097 U																0.20 U	0.50 U	1.0 U	1.0 U	2.0 U										
RW03	10/15/2015	N		0.095 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U										
RW03	4/5/2016	N		0.094 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U										
RW03	10/10/2016	N		0.095 U																0.20 U	0.50 U	1.0 U	1.0 U	2.0 U										
RW03	4/17/2017	N		0.095 U																0.20 U	0.50 U	1.0 U	1.0 U	2.0 U										
RW03	10/20/2017	N		0.096 U																0.79 U	0.50 U	0.50 U	0.29 J	1.0 U										
RW03	4/17/2018	N		0.025 U																0.84 U	0.50 U	0.50 U	0.50 U	1.0 U										
RW03	10/16/2018	N		0.098 U																0.77 U	0.50 U	0.50 U	0.50 U	1.0 U										
RW03	4/22/2019	N		0.085 U																0.24 U	0.15 U	0.18 U	0.15 U	0.22 U										
RW03	10/1/2019	N		0.088 U																0.27 U	0.15 U	0.18 U	0.15 U	0.22 U										
RW03	4/14/2021	N		0.10 U																0.78 U	0.50 U	0.50 U	0.50 U	1.0 U										
RW03	4/14/2021	FD		0.098 U																0.85 U	0.50 U	0.50 U	0.50 U	1.0 U										
RW03	10/13/2021	N		0.11 U																0.89 U	0.50 U	0.50 U	0.50 U	1.0 U										
RW03	4/14/2022	N		0.097 U																0.77 U	0.50 U	0.50 U	0.50 U	1.0 U										
RW03	10/03/2022	N		0.10 U																0.77 U	0.50 U	0.50 U	0.50 U	1.0 U										
RW03	10/03/2022	FD		0.10 U																0.77 U	0.50 U	0.50 U	0.50 U	1.0 U										
RW03	4/24/2023	N		0.10 U																0.62 U	0.50 U	0.50 U	0.50 U	1.0 U										
RW03	10/03/2023	N	--	0.097 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.75 U	0.50 U	0.50 U	0.50 U	1.0 U	--	--	--	--	--	--	--	--		
RW04	10/9/1997	N		1 U																														
RW04	4/23/2001	N		0.1 U																5 U	0.5 U	5 U	5 U											
RW04	9/11/2001	N		0.073 J																0.25 U	0.44 U	0.5 U	0.4 U	1.2 U										
RW04	9/28/2001	N		0.1 U																														
RW04	9/28/2001	N2		0.05 U																														
RW04	5/14/2002	N		0.13																5 U	1 U	5 U	5 U	5 U										
RW04	8/6/2002	N		0.04 U																5 U	1 U	5 U	5 U	5 U										
RW04	4/29/2003	N		0.11 U																7.4 U	0.5 U	5 U	5 U	5 U										
RW04	9/23/2003	N		0.11 U																0.99 U	0.25 U	2.5 U	2.5 U	2.5 U										
RW04	5/4/2004	N		0.100 U																5.00 U	0.500 U	5.00 U	5.00 U	5.00 U										
RW04	9/22/2004	N		0.266																5.00 U	0.500 U	5.00 U	5.00 U	5.00 U										
RW04	10/1/2004	N		0.0962 R																														
RW04	5/10/2005	N		0.11 U																0.94 U	0.50 U	5.0 U	5.0 U	5.0 U										
RW04	9/27/2005	N		0.11 U																0.91 UJ	0.50 U	5.0 U	5.0 U	5.0 U										
RW04	5/31/2006	N		0.11 UJ																0.97 U	0.50 U	5.0 U	5.0 U	5.0 U										
RW04	9/25/2006	N		0.11 U																0.93 U	0.50 U	5.0 U	5.0 U	5.0 U										
RW04	5/9/2007	N		0.093 UJ																0.96 R	1.0 U	1.0 U	1.0 U	2.0 U										
RW04	9/18/2007	N		0.093 UJ																0.93 R	1.0 U	1.0 U	1.0 U	2.0 U										
RW04	5/20/2008	N		0.093 UJ																0.96 U	1.0 UJ	1.0 U	1.0 U	2.0 UJ										
RW04	10/23/2008	N																		1 U														
RW04	12/10/2008	N		0.1 U																		0.1 U	0.4 U	0.4 U	1.0 U									
RW04	6/2/2009	N		0.1 UJ																1.0 UJ	0.5 U	2.0 U	2.0 U	5.0 U										
RW04	10/7/2009	N		0.15 J																0.994 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ										
RW04	10/20/2009	N		0.1 UJ																														
RW04	5/19/2010	N		0.1 U																1.0 U	0.4 UJ	5 UJ	5 UJ	5 UJ										

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L	
RW04	10/5/2010	N		0.1 U																1.0 U	0.1 U	0.4 U	0.4 U	1 U									
RW04	6/30/2011	N		0.1 U																0.992 U	0.1 U	0.4 U	0.4 U	1 U									
RW04	10/20/2011	N		0.095 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW04	5/23/2012	N		0.094 U																0.20 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW04	10/17/2012	N		0.071 J																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW04	12/3/2012	N		0.095 U																													
RW04	12/3/2012	N2		0.094 UJ																													
RW04	5/21/2013	N		0.094 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW04	10/8/2013	N		0.095 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW04	5/13/2014	N		0.023 J																													
RW04	9/25/2014	N		0.096 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW04	4/21/2015	N		0.094 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW04	10/15/2015	N		0.094 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW04	4/5/2016	N		0.094 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW04	10/10/2016	N		0.094 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW04	4/17/2017	N		0.094 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW04	10/20/2017	N		0.096 U																0.81 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW04	4/17/2018	N		0.024 U																0.92 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW04	10/15/2018	N		0.11 U																0.90 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW04	4/22/2019	N		0.11 U																0.25 U	0.15 U	0.18 U	0.15 U	0.22 U									
RW04	10/1/2019	N		0.085 U																0.24 U	0.15 U	0.18 U	0.15 U	0.29 J									
RW04	4/14/2021	N		0.096 U																0.75 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW04	10/13/2021	N		0.10 U^c																0.75 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW04	4/14/2022	N		0.11 U																0.76 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW04	10/03/2022	N		0.10 U																0.74 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW04	4/24/2023	N		0.10 U																0.67 U	0.50 U	0.50 U	0.50 U	0.46 J									
RW04	10/03/2023	N	--	0.097 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.83 U	0.50 U	0.50 U	0.50 U	1.0 U	--	--	--	--	--	--	--	--	
RW05	5/4/2004	N		0.0935 U																5.00 U	0.500 U	5.00 U	5.00 U	5.00 U									
RW05	9/22/2004	N		0.293																5.00 U	0.500 U	5.00 U	5.00 U	5.00 U									
RW05	11/1/2004	N		0.0962 U																													
RW05	5/10/2005	N		0.11 U																0.93 U	0.50 U	5.0 U	5.0 U	5.0 U									
RW05	9/27/2005	N		0.11 U																0.92 UJ	0.50 U	5.0 U	5.0 U	5.0 U									
RW05	5/31/2006	N		0.11 UJ																0.94 U	0.50 U	5.0 U	5.0 U	5.0 U									
RW05	9/25/2006	N		0.11 U																0.93 U	0.50 U	5.0 U	5.0 U	5.0 U									
RW05	5/9/2007	N		0.092 UJ																0.93 R	1.0 U	1.0 U	1.0 U	2.0 U									
RW05	9/18/2007	N		0.093 UJ																1.0 R	1.0 U	1.0 U	1.0 U	2.0 U									
RW05	5/20/2008	N		0.095 UJ																0.95 U	1.0 UJ	1.0 U	1.0 U	2.0 UJ									
RW05	10/23/2008	N																		1 U													
RW05	12/10/2008	N		0.1 U																	0.1 U	0.4 U	0.4 U	1.0 U									
RW05	6/2/2009	N		0.1 UJ																1.0 UJ	0.5 U	2.0 U	2.0 U	5.0 U									
RW05	10/7/2009	N		0.1 UJ																0.997 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ									
RW05	5/19/2010	N		0.1 U																1.0 U	0.4 U	5 U	5 U	5 U									
RW05	10/5/2010	N		0.1 U																1.0 U	0.1 U	0.4 U	0.4 U	1 U									
RW05	6/30/2011	N		0.1 U																0.991 U	0.1 U	0.4 U	0.4 U	1 U									
RW05	10/20/2011	N		0.095 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L	
RW05	5/23/2012	N		0.095 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW05	10/17/2012	N		0.030 J																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW05	12/4/2012	N		0.095 UJ																													
RW05	12/4/2012	N2		0.095 U																													
RW05	5/21/2013	N		0.095 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW05	10/8/2013	N		0.098 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW05	5/13/2014	N		0.095 U																													
RW05	9/25/2014	N		0.096 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW05	4/21/2015	N		0.095 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW05	10/15/2015	N		0.10 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW05	4/5/2016	N		0.095 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW05	10/10/2016	N		0.095 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW05	4/17/2017	N		0.097 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW05	10/20/2017	N		0.095 U																0.81 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW05	4/17/2018	FD		0.024 U																0.75 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW05	4/17/2018	N		0.024 U																0.75 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW05	10/15/2018	N		0.16																0.87 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW05	4/22/2019	N		0.085 U																0.25 U	0.15 U	0.18 U	0.15 U	0.22 U									
RW05	10/1/2019	FD		0.091 U																0.26 U	0.15 U	0.18 U	0.15 U	0.22 U									
RW05	10/1/2019	N		0.090 U																0.26 U	0.15 U	0.18 U	0.15 U	0.22 U									
RW05	4/14/2021	N		0.099 U																0.80 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW05	10/13/2021	N		0.099 U																0.77 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW05	4/14/2022	N		0.19 J																0.78 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW05	6/20/2022	N		0.14 U																0.24 U	0.15 U	0.15 U	0.18 U	0.22 U									
RW05	10/03/2022	N		0.096 U																0.79 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW05	4/24/2023	N		0.10 U																0.65 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW05	10/03/2023	N	--	0.098 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.79 U	0.50 U	0.50 U	0.50 U	1.0 U	--	--	--	--	--	--	--	--	
RW05	10/03/2023	FD	--	0.097 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	--	--	--	--	--	--	--	--	
RW06	9/25/2014	N		0.095 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW06	4/21/2015	N		0.095 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW06	10/15/2015	N		0.018 J																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW06	4/5/2016	N		0.095 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW06	10/10/2016	N		0.095 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW06	4/18/2017	N		0.095 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW06	10/20/2017	N		0.095 U																0.75 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW06	4/17/2018	N		0.024 U																0.83 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW06	10/16/2018	N		0.099 U																0.78 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW06	4/22/2019	N		0.086 U																0.24 U	0.15 U	0.18 U	0.15 U	0.22 U									
RW06	10/1/2019	N		0.086 U																0.24 U	0.15 U	0.18 U	0.15 U	0.22 U									
RW06	4/26/2021	N		0.096 U																0.76 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW06	10/13/2021	N		0.10 U^c																0.78 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW06	4/14/2022	N		0.098 U																0.78 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW06	4/14/2022	FD		0.096 U																0.77 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW06	10/03/2022	N		0.097 U																0.75 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW06	4/24/2023	N		0.10 U																0.65 U	0.50 U	0.50 U	0.50 U	1.0 U									

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
RW06	4/24/2023	FD		0.10 U																0.63 U	0.50 U	0.50 U	0.50 U	0.46 J								
RW06	10/03/2023	N	--	0.097 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--		0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	--	--	--	--	--		--	--
RW06 SHC	4/17/2018	N		0.024 U																0.79 U	0.50 U	0.50 U	1.5	1.0 U								
RW06 SHC	10/16/2018	N		0.095 U																0.75 U	0.50 U	0.50 U	1.7	1.0 U								
RW06 SHC	4/22/2019	N		0.095 U																0.23 U	0.15 U	0.18 U	0.50 U	0.22 U								
RW06 SHC	10/1/2019	N		0.086 U																0.25 U	0.15 U	0.18 U	0.15 U	0.22 U								
RW06 SHC	4/26/2021	N		0.097 U																0.77 U	0.50 U	0.50 U	0.50 U	1.0 U								
RW06 SHC	10/13/2021	N		0.097 U																0.81 U	0.50 U	0.50 U	0.50 U	1.0 U								
RW06 SHC	4/14/2022	N		0.10 U																0.78 U	0.50 U	0.50 U	0.50 U	1.0 U								
RW06 SHC	10/03/2022	N		0.11 U																0.84 U	0.50 U	0.50 U	0.17 J	0.33 J								
RW06 SHC	10/03/2023	N	--	0.096 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--		0.88 U	0.50 U	0.50 U	0.50 U	1.0 U	--	--	--	--	--		--	--

Notes:

- ¹ Only compounds currently sampled are included on this table.
- ² Samples collected before September 2014 were not collected by GHD. GHD has no ability to verify data or data qualifiers.
- ³ Sample type is listed for normal samples (N) and field duplicates (FD), numbers differentiate from multiple samples of similar sample type during the same sampling event.
- mg/L Concentrations listed with units of milligrams per liter.
- ug/L Concentrations listed with units of micrograms per liter.
- LCS or LCSD exceeds the control limits.
- B Compound was detected in the method blank.
- F1 MS and/or MSD Recovery exceeds the control limits
- H Analysis was performed after holding time.
- J Concentration was estimated below the reporting limit.
- P The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.
- U Compound was not detected above the reporting limit.
- UU Compound was not detected above the estimated reporting limit.

Appendix A.2

**Historical LNAPL Thickness - Monitoring Wells
Penta Wood Products Superfund Site
Siren, Wisconsin**

**Monitoring Well
LNAPL Thickness (feet)**

Date	MW10S	MW18	MW19	MW20	MW29
Sep-01	0.01	0.27	0.51	0.11	NA
May-02	0.00	0.29	0.23	0.00	NA
Aug-02	0.00	0.33	0.22	0.00	NA
May-03	0.00	0.00	0.00	0.00	NA
Sep-03	0.00	0.32	0.24	0.04	NA
May-04	0.00	0.45	0.36	0.35	NA
Sep-04	0.21	0.54	0.67	0.52	NA
May-05	0.29	0.48	0.63	0.36	NA
Sep-05	0.87	0.06	0.83	1.15	NA
May-06	0.00	0.00	0.29	0.00	NA
Sep-06	0.00	0.05	0.80	0.69	NA
Apr-07	0.58	0.04	0.74	1.22	NA
May-07	0.58	0.03	0.54	1.20	NA
Sep-07	0.04	0.16	1.07	0.00	NA
May-08	0.40	1.19	0.90	1.71	NA
Oct-08	0.14	0.04	0.00	0.00	NA
Jun-09	0.54	1.58	1.60	1.45	NA
Oct-09	0.63	1.92	1.46	1.02	NA
May-10	0.51	2.01	1.10	0.85	NA
Oct-10	0.00	0.57	0.59	0.00	NA
Jun-11	0.00	0.42	0.79	0.00	NA
Oct-11	0.00	0.53	1.07	0.00	NA
May-12	0.69	0.79	0.80	2.17	NA
Aug-12	0.04	0.43	0.89	0.30	NA
Oct-12	0.00	0.45	0.91	0.88	NA
Dec-12	0.02	0.44	1.06	0.95	NA
May-13	0.17	0.53	0.94	1.08	NA
Oct-13	0.00	0.70	1.25	0.81	NA
May-14	0.00	0.79	0.22	0.22	NA
Sep-14	0.00	0.56	0.30	0.00	NA
2/13/15	0.00	0.56	0.24	0.00	NA
2/20/15	0.00	0.53	0.23	0.00	NA
3/24/15	0.00	0.34	0.52	0.00	NA
4/16/15	0.00	0.58	NM	0.00	NA
5/14/15	0.00	0.57	NM	0.00	NA
10/12/15	0.00	0.42	0.07	0.01	NA
4/4/16	0.00	0.66	0.25	0.01	0.00
7/18/16	0.00	0.52	0.00	0.00	0.00
10/7/16	0.00	0.67	0.01	0.01	0.00
1/11/17	0.00	NM	0.18	0.02	0.00
4/17/17	0.00	0.53	0.27	0.01	0.47
7/13/17	0.00	0.51	0.10	0.01	0.15
9/28/17	0.00	NM	NM	0.01	0.45
1/3/18	0.00	0.45	0.26	0.01	0.70
5/25/18*	0.00	0.53	0.62	0.01	0.88
7/11/18	0.00	0.50	0.19	0.01	0.48
10/15/18	0.00	0.48	0.41	0.01	0.63
1/2/19	0.00	0.51	0.37	0.34	0.76
4/17/19	0.00	0.50	0.20	0.01	0.33
7/22/19	0.00	0.49	0.00	0.03	0.00
10/2/19	0.00	0.51	0.03	0.07	0.00
1/9/20	0.00	0.48	0.00	0.04	0.00
4/6/20	0.00	0.45	0.01	0.30	0.01
10/5/20	0.00	0.43	0.02	0.06	0.01
4/9/21	0.00	0.50	0.41	0.10	0.85
10/8/21	0.00	0.59	0.53	0.77	1.31
4/8/22	1.40	0.54	0.58	0.94	1.56
10/3/22	0.25	0.56	0.63	1.05	2.34
4/24/23	0.33	0.57	0.30	1.33	1.05
10/23/23	0.00	0.62	0.34	0.10	0.80

Notes:

NM - Not Measured

NA - Not Applicable

* - MW10S measured on 6/1/18 and MW29 measured on 5/24/18

Appendix A.3

**Historical Groundwater Extraction Summary
Penta Wood Products Superfund Site
Siren, Wisconsin**

Operation Period	Volume of Groundwater Extracted (gallons)
09/27/00 to 12/18/00	11,712,960
02/02/01 to 02/08/01	691,200
03/16/01 to 06/10/01	9,288,000
06/15/01 to 09/27/01	6,822,720
02/27/04 to 12/31/04	18,548,154
01/01/05 to 12/31/05	21,374,796
01/01/06 to 12/31/06	14,759,392
01/01/07 to 12/31/07	16,551,336
01/01/08 to 12/31/08	18,118,696
01/01/09 to 12/31/09	18,533,648
01/01/10 to 12/31/10	18,561,632
01/01/11 to 12/31/11	17,796,668
01/01/12 to 12/31/12	23,051,892
01/01/13 to 12/31/13	29,793,563
01/01/14 to 12/31/14	18,415,098
01/01/15 to 06/30/15	6,282,127
07/01/15 to 11/23/15	5,125,729
Total Gallons Extracted	255,427,611

Appendix A.4

**Historical Influent Pentachlorophenol Concentrations
Penta Wood Products Superfund Site
Siren, Wisconsin**

Date	Influent PCP Concentration (ug/L)
02/27/2004 to 12/31/2004*	9,227
01/01/2005 to 12/31/2005*	7,300
01/01/2006 to 12/31/2006*	6,425
01/01/2007 to 12/31/2007*	3,557
01/01/2008 to 12/31/2008*	3,255
March 2009	3,560
July 2009	3,140
September 2009	2,800
December 2009	2,030
March 2010	2050 J
June 2010	1,970
September 2010	1,830
December 2010	1,940
March 2011	2,470
June 2011	2,170
August 2011	1,700
October 2011	1,600
February 2012	2,600
May 2012	2,200
July 2012	1,900
October 2012	1,800
February 2013	1,100
May 2013	1,100
July 2013	1,800
October 2013	1,400
February 2014	1,800
May 2014	1,600
August 2014	2,100
September 2014	2,400
October 2014	2,400
November 2014	2,100
December 2014	4,600
January 2015	1,800
February 2015	480
March 2015	390
April 2015*	1,767
May 2015*	355
June 2015	550
July 2015*	1,100
August 2015	370
September 2015	750
October 2015	600
November 2015	1,100

Note:

* Average PCP influent concentration for that time period.

Appendix A.5

**Historical Hazardous Waste Generation Summary
Penta Wood Products Superfund Site
Siren, Wisconsin**

Date	Filter Cake (lb)	Misc. Debris (lb)	Carbon (lb)	LNAPL (lb)	Liquids[‡] (gallons)	Yearly Total (lb)
2000	0	200	6,000	5,009*	0	11,209
2001	0	400	56,100	6,166*	0	62,666
2002	0	1,400	48,000	10,790*	27,756	87,946
2003	0	600	0	3,083*	1,376	5,059
2004	155,960	3,200	102,000	53,522*	0	314,682
2005	178,784	1,290	104,860	23,847*	0	308,924
2006	112,640	1,200	136,520	52,892*	0	303,252
2007	174,020	2,200	245,377	77,615*	0	517,387
2008	211,402	3,176	70,007	28,036	0	312,621
2009	233,840	1,116	49,757	35,659	0	320,372
2010	210,940	0	81,227	34,937	0	327,104
2011	292,903	0	74,247	0	0	367,150
2012	182,280	0	65,420	25,493	0	273,193
2013	156,760	0	46,571	27,252	0	230,582
2014	110,754	13,513	65,995	11,720	0	201,982
2015	0	0	22,248	0	0	22,248
2016	0	15,212 [†]	34,877	14,374	0	49,251
2017	0	0	0	0	2,759	2,759
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
2021	0	0	0	0	0	0
2022	0	0	0	0	0	0
2023	0	0	0	0	0	0

Notes:

* - Volume shows the amount of waste disposed offsite and is estimated to be approximately 50 percent pure LNAPL and 50 percent mixture of water and emulsified LNAPL.

† - Miscellaneous debris includes sludge, filter cake, and drill cuttings from system decommissioning.

‡ - Prior to 2017, all liquids disposed were water. In 2017, liquids disposed were ferric sulfate water treatment chemicals.

lb - pounds

**LNAPL Thickness and Recovery Summary - Extraction Wells
Penta Wood Products Superfund Site
Siren, Wisconsin**

Well ID	Date	Depth to Water (feet) ¹	Depth to LNAPL (feet) ¹	LNAPL Thickness (feet)	Recovered LNAPL Volume (gallons)	Comments	
EW02	2/18/2015	97.51	NP	0.00	NA	Groundwater extraction rate increased to 10 gpm	
EW02	2/20/2015	97.52	NP	0.00	NA		
EW02	2/24/2015	97.59	NP	0.00	NA		
EW02	3/10/2015	97.67	NP	0.00	NA		
EW02	3/24/2015	97.76	NP	0.00	NA		
EW02	4/10/2015	97.79	NP	0.00	NA		
EW02	4/16/2015	97.76	NP	0.00	NA		
EW02	5/8/2015	97.77	NP	0.00	NA		
						Groundwater extraction rate increased to 12 gpm on 4/30/2015	
EW02	5/21/2015	97.89	NP	0.00	NA	Groundwater extraction rate increased to 13.5 gpm	
EW02	6/3/2015	97.92	NP	0.00	NA		
EW02	6/16/2015	97.99	NP	0.00	NA		
EW02	7/8/2015	98.12	NP	0.00	NA		
EW02	7/21/2015	98.11	NP	0.00	NA		
EW02	7/29/2015	98.11	NP	0.00	NA		
EW02	8/5/2015	98.18	NP	0.00	NA		
EW02	8/19/2015	98.11	NP	0.00	NA		
EW02	9/4/2015	97.83	NP	0.00	NA		
EW02	9/21/2015	97.76	NP	0.00	NA		
EW02	10/8/2015	97.72	NP	0.00	NA		
EW02	10/22/2015	97.64	NP	0.00	NA		
EW02	11/2/2015	97.58	NP	0.00	NA		
EW02	11/23/2015	NM	NM	NM	NA		
			Total LNAPL Recovered		0.0		
EW04	11/4/2014	114.30	NP	0.00	NA		Groundwater extraction system shutdown pending carbon change-out Groundwater extraction system remained shutdown pending carbon change-out Groundwater extraction system remained shutdown pending carbon change-out Groundwater extraction system restarted after carbon change-out
EW04	12/11/2014	115.39	NP	0.00	NA		
EW04	12/23/2014	115.34	NP	0.00	NA		
EW04	12/30/2014	115.26	NP	0.00	NA		
EW04	1/8/2015	115.22	NP	0.00	NA		
EW04	1/19/2015	115.23	NP	0.00	NA		
EW04	1/22/2015	115.36	NP	0.00	NA		
EW04	1/30/2015	115.47	NP	0.00	NA		
EW04	2/3/2015	115.48	NP	0.00	NA		
EW04	2/13/2015	115.51	NP	0.00	NA		
EW04	2/17/2015	115.48	NP	0.00	NA		
EW04	2/18/2015	115.51	NP	0.00	NA		
EW04	2/20/2015	115.43	NP	0.00	NA		
EW04	2/24/2015	115.53	NP	0.00	NA		
EW04	3/10/2015	115.58	NP	0.00	NA		
EW04	3/24/2015	115.67	NP	0.00	NA		

**LNAPL Thickness and Recovery Summary - Extraction Wells
Penta Wood Products Superfund Site
Siren, Wisconsin**

Well ID	Date	Depth to Water (feet) ¹	Depth to LNAPL (feet) ¹	LNAPL Thickness (feet)	Recovered LNAPL Volume (gallons)	Comments
EW04	4/10/2015	115.69	NP	0.00	NA	
EW04	4/16/2015	115.69	NP	0.00	NA	
EW04	5/8/2015	115.69	NP	0.00	NA	Groundwater extraction rate increased to 12 gpm on 4/30/2015
EW04	5/21/2015	115.74	NP	0.00	NA	
EW04	6/3/2015	115.75	NP	0.00	NA	
EW04	6/16/2015	115.82	NP	0.00	NA	
EW04	7/8/2015	115.93	NP	0.00	NA	
EW04	7/21/2015	115.92	NP	0.00	NA	
EW04	7/29/2015	115.91	NP	0.00	NA	Groundwater extraction rate increased to 13.5 gpm
EW04	8/5/2015	115.97	NP	0.00	NA	
EW04	8/19/2015	115.95	NP	0.00	NA	
EW04	9/4/2015	115.78	NP	0.00	NA	
EW04	9/21/2015	115.61	NP	0.00	NA	
EW04	10/8/2015	115.58	NP	0.00	NA	
EW04	10/22/2015	115.58	NP	0.00	NA	
EW04	11/2/2015	115.45	NP	0.00	NA	
EW04	11/23/2015	NM	NM	NM	NA	Groundwater extraction pump turned off for pilot study
Total LNAPL Recovered					0.0	
EW05	11/4/2014	83.35	83.25	0.10	NA	
EW05	11/6/2014	NM	NM	NM	<0.1	
EW05	11/7/2014	91.51	91.44	0.07	NA	
EW05	11/11/2014	91.75	91.56	0.19	NA	
EW05	11/12/2014	91.65	91.48	0.17	NA	Temporary system shutdown due to alarm condition
EW05	11/17/2014	91.64	91.51	0.13	NA	
EW05	12/1/2014	91.58	91.46	0.12	NA	
EW05	12/8/2014	91.55	91.51	0.04	NA	
EW05	12/11/2014	91.65	91.52	0.13	NA	
EW05	12/23/2014	91.40	91.39	0.01	NA	Groundwater extraction system shutdown pending carbon change-out
EW05	12/30/2014	91.37	91.36	0.01	NA	Groundwater extraction system remained shutdown pending carbon change-out
EW05	1/8/2015	91.31	NP	0.00	NA	Groundwater extraction system remained shutdown pending carbon change-out
EW05	1/19/2015	91.32	NP	0.00	NA	Groundwater extraction system restarted after carbon change-out
EW05	1/22/2015	91.95	91.45	0.50	NA	
EW05	1/30/2015	92.00	91.49	0.51	0.1	Measurements recorded prior to LNAPL removal
EW05	2/3/2015	92.17	91.54	0.63	NA	
EW05	2/13/2015	92.14	91.54	0.60	NA	Groundwater extraction pump turned off
EW05	2/17/2015	91.72	91.49	0.23	NA	
EW05	2/20/2015	91.96	91.54	0.42	NA	
EW05	2/24/2015	91.91	91.56	0.35	NA	
EW05	2/27/2015	NM	NM	NM	0.3	Measurements recorded prior to LNAPL removal

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Well ID	Date	Depth to Water (feet) ¹	Depth to LNAPL (feet) ¹	LNAPL Thickness (feet)	Recovered LNAPL Volume (gallons)	Comments
EW05	3/10/2015	92.30	91.58	0.72	0.1	Measurements recorded prior to LNAPL removal
EW05	3/26/2015	92.42	91.62	0.80	NA	
EW05	3/31/2015	NM	NM	NM	0.5	
EW05	4/10/2015	92.50	91.71	0.79	NA	
EW05	4/16/2015	92.51	91.69	0.82	NA	
EW05	4/27/2015	NM	NM	NM	1.0	
EW05	5/8/2015	92.03	91.70	0.33	NA	
EW05	5/21/2015	92.34	91.76	0.58	1.0	
EW05	6/3/2015	92.29	91.79	0.50	0.4	
EW05	6/16/2015	92.40	91.86	0.54	0.3	
EW05	7/8/2015	92.34	91.95	0.39	NA	
EW05	7/10/2015	NM	NM	NM	0.5	
EW05	7/21/2015	92.58	91.93	0.65	NA	
EW05	7/23/2015	NM	NM	NM	0.5	
EW05	7/29/2015	92.69	91.96	0.73	NA	
EW05	8/5/2015	92.60	92.04	0.56	NA	
EW05	8/7/2015	NM	NM	NM	0.3	
EW05	8/19/2015	92.45	91.94	0.51	NA	
EW05	8/21/2015	NM	NM	NM	0.3	
EW05	9/4/2015	92.02	91.82	0.20	NA	
EW05	9/11/2015	NM	NM	NM	<0.1	
EW05	9/21/2015	91.67	91.66	0.01	NA	
EW05	10/8/2015	91.87	91.67	0.20	NA	
EW05	10/22/2015	91.66	91.65	0.01	NA	
EW05	11/2/2015	91.51	91.50	0.01	NA	
Total LNAPL Recovered					5.5	
EW06	11/5/2014	111.22	98.06	13.16	12.0	Temporary system shutdown due to alarm condition
EW06	11/12/2014	107.80	98.30	9.50	NA	
EW06	11/17/2014	110.34	98.52	11.82	NA	
EW06	11/24/2014	111.05	98.45	12.60	10.0	
EW06	11/25/2014	105.63	98.55	7.08	NA	
EW06	12/1/2014	108.60	98.53	10.07	NA	
EW06	12/4/2014	109.35	98.48	10.87	NA	
EW06	12/8/2014	101.90	97.89	4.01	NA	
EW06	12/11/2014	111.91	98.01	13.90	NA	
EW06	12/11/2014	100.35	98.40	1.95	12.0	
EW06	12/15/2014	108.40	98.01	10.39	NA	
EW06	12/23/2014	109.35	98.01	11.34	NA	
EW06	12/23/2014	99.50	98.35	1.15	13.0	
EW06	12/30/2014	98.59	97.83	0.76	NA	
						Measurements recorded prior to LNAPL removal
						Measurements recorded immediately after LNAPL removal
						Measurements recorded prior to LNAPL removal
						Measurements recorded immediately after LNAPL removal, groundwater extraction system shutdown pending carbon change-out
						Groundwater extraction system remained shutdown pending carbon change-out

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Well ID	Date	Depth to Water (feet) ¹	Depth to LNAPL (feet) ¹	LNAPL Thickness (feet)	Recovered LNAPL Volume (gallons)	Comments
EW06	1/8/2015	99.00	97.92	1.08	NA	Groundwater extraction system remained shutdown pending carbon change-out
EW06	1/19/2015	99.54	97.80	1.74	NA	Groundwater extraction system restarted after carbon change-out
EW06	1/22/2015	111.10	98.18	12.92	NA	
EW06	1/23/2015	98.90	98.50	0.40	12.0	Measurements recorded immediately after LNAPL removal
EW06	1/30/2015	109.35	98.22	11.13	NA	
EW06	2/3/2015	112.61	98.22	14.39	12.0	Measurements recorded prior to LNAPL removal
EW06	2/13/2015	112.44	98.22	14.22	14.0	Groundwater extraction pump turned off
EW06	2/17/2015	101.95	98.12	3.83	NA	
EW06	2/20/2015	105.20	98.18	7.02	NA	
EW06	2/24/2015	105.37	98.02	7.35	8.0	Measurements recorded prior to LNAPL removal
EW06	3/10/2015	108.36	98.22	10.14	8.0	Measurements recorded prior to LNAPL removal
EW06	3/24/2015	NM	NM	NM	8.0	Not measured due to equipment breakdown
EW06	3/26/2015	105.87	98.21	7.66	NA	
EW06	4/10/2015	105.55	98.39	7.16	10.0	
EW06	4/16/2015	106.02	98.36	7.66	10.0	
EW06	4/30/2015	106.33	98.47	7.86	8.0	Groundwater extraction rate increased to 6 gpm
EW06	5/8/2015	100.72	98.32	2.40	4.0	
EW06	5/21/2015	106.84	98.27	8.57	10.0	
EW06	6/3/2015	106.55	98.41	8.14	NA	
EW06	6/4/2015	NM	NM	NM	10.0	
EW06	6/16/2015	105.85	98.49	7.36	7.0	
EW06	7/8/2015	107.10	98.42	8.68	20.0	
EW06	7/10/2015	107.10	98.60	8.50	17.0	
EW06	7/21/2015	107.90	98.54	9.36	17.0	
EW06	7/29/2015	105.87	98.59	7.28	NA	Groundwater extraction rate decreased to 3 gpm
EW06	8/5/2015	105.98	98.65	7.33	14.0	
EW06	8/7/2015	NM	NM	NM	14.0	
EW06	8/19/2015	103.95	98.51	5.44	10.0	
EW06	9/4/2015	105.31	98.31	7.00	10.0	
EW06	9/21/2015	104.49	98.28	6.21	10.0	
EW06	10/8/2015	100.38	98.25	2.13	5.0	
EW06	10/22/2015	105.54	98.23	7.31	8.0	
EW06	11/2/2015	105.15	98.05	7.10	NA	
EW06	11/5/2015	NM	NM	NM	8.0	
EW06	11/23/2015	NM	NM	NM	NA	Groundwater extraction pump turned off for pilot study
			Total LNAPL Recovered		301.0	
EW10	11/4/2014	108.20	103.92	4.28	NA	
EW10	11/5/2014	108.77	104.70	4.07	4.0	
EW10	11/18/2014	107.60	104.35	3.25	NA	
EW10	11/24/2014	107.45	103.94	3.51	0.0	LNAPL pump inoperable, unable to recover LNAPL
EW10	11/25/2014	107.50	103.91	3.59	NA	

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Well ID	Date	Depth to Water (feet) ¹	Depth to LNAPL (feet) ¹	LNAPL Thickness (feet)	Recovered LNAPL Volume (gallons)	Comments
EW10	12/1/2014	107.30	104.14	3.16	NA	
EW10	12/4/2014	107.33	104.11	3.22	NA	Measurements recorded prior to LNAPL removal
EW10	12/4/2014	105.35	104.05	1.30	2.0	Measurements recorded immediately after LNAPL removal
EW10	12/8/2014	104.29	103.17	1.12	NA	
EW10	12/11/2014	106.95	104.05	2.90	NA	Measurements recorded prior to LNAPL removal
EW10	12/11/2014	105.46	104.12	1.34	2.0	Measurements recorded immediately after LNAPL removal
EW10	12/15/2014	106.68	104.00	2.68	NA	
EW10	12/23/2014	107.25	103.91	3.34	NA	Measurements recorded prior to LNAPL removal
EW10	12/23/2014	104.75	104.06	0.69	4.0	Measurements recorded immediately after LNAPL removal, groundwater extraction system shutdown pending carbon change-out
EW10	12/30/2014	104.59	103.00	1.59	NA	Groundwater extraction system remained shutdown pending carbon change-out
EW10	1/8/2015	104.55	103.10	1.45	NA	Groundwater extraction system remained shutdown pending carbon change-out
EW10	1/19/2015	104.70	103.00	1.70	NA	Groundwater extraction system restarted after carbon change-out
EW10	1/22/2015	106.38	104.31	2.07	NA	
EW10	1/23/2015	104.40	104.38	0.02	2.0	Measurements recorded immediately after LNAPL removal
EW10	1/30/2015	105.76	104.28	1.48	NA	
EW10	2/3/2015	106.00	104.27	1.73	2.0	Measurements recorded prior to LNAPL removal
EW10	2/13/2015	106.82	104.24	2.58	3.0	Groundwater extraction pump turned off
EW10	2/17/2015	105.80	103.65	2.15	NA	
EW10	2/20/2015	106.40	103.81	2.59	NA	
EW10	2/24/2015	106.85	103.79	3.06	2.0	Measurements recorded prior to LNAPL removal
EW10	3/10/2015	107.80	103.81	3.99	2.0	Measurements recorded prior to LNAPL removal
EW10	3/24/2015	108.21	103.84	4.37	2.0	Measurements recorded prior to LNAPL removal
EW10	4/10/2015	108.96	103.86	5.10	3.0	
EW10	4/16/2015	108.18	103.90	4.28	2.0	
EW10	4/30/2015	107.81	103.84	3.97	2.0	
EW10	5/8/2015	106.84	103.46	3.38	2.5	
EW10	5/21/2015	107.46	103.62	3.84	2.5	
EW10	6/3/2015	107.51	103.60	3.91	NA	
EW10	6/4/2015	NM	NM	NM	2.5	
EW10	6/16/2015	108.20	103.85	4.35	2.0	
EW10	7/8/2015	108.53	103.96	4.57	3.0	
EW10	7/10/2015	107.85	103.97	3.88	NA	
EW10	7/21/2015	108.48	103.96	4.52	3.0	
EW10	7/29/2015	108.10	104.00	4.10	NA	
EW10	8/5/2015	108.85	104.00	4.85	2.5	
EW10	8/19/2015	108.57	103.74	4.83	3.0	
EW10	9/4/2015	108.91	103.60	5.31	3.0	

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Well ID	Date	Depth to Water (feet) ¹	Depth to LNAPL (feet) ¹	LNAPL Thickness (feet)	Recovered LNAPL Volume (gallons)	Comments
EW10	9/21/2015	108.35	103.62	4.73	3.0	
EW10	10/8/2015	107.72	103.33	4.39	2.5	
EW10	10/22/2015	109.10	103.56	5.54	3.0	
EW10	11/2/2015	109.50	103.27	6.23	NA	
EW10	11/5/2015	NM	NM	NM	3.0	
			Total LNAPL Recovered		67.5	
EW12	11/4/2014	105.26	105.04	0.22	NA	
EW12	11/6/2014	NM	NM	NM	<0.1	
EW12	11/7/2014	108.26	108.15	0.11	NA	
EW12	11/11/2014	108.39	108.22	0.17	NA	
EW12	11/12/2014	101.16	101.14	0.02	NA	Temporary system shutdown due to alarm condition
EW12	11/17/2014	108.00	107.98	0.02	NA	
EW12	12/8/2014	100.99	NP	0.00	NA	
EW12	12/11/2014	108.98	108.97	0.01	NA	
EW12	12/23/2014	109.75	NP	0.00	NA	Groundwater extraction system shutdown pending carbon change-out
EW12	12/30/2014	101.10	100.88	0.22	NA	Groundwater extraction system remained shutdown pending carbon change-out
EW12	1/8/2015	101.20	100.84	0.36	NA	Groundwater extraction system remained shutdown pending carbon change-out
EW12	1/19/2015	101.35	100.85	0.50	NA	Groundwater extraction system restarted after carbon change-out
EW12	1/22/2015	108.16	108.15	0.01	NA	
EW12	1/30/2015	108.96	108.96	0.00	NA	
EW12	2/3/2015	109.13	109.13	0.00	NA	
EW12	2/13/2015	109.98	NP	0.00	NA	Groundwater extraction pump turned off
EW12	2/17/2015	101.56	101.08	0.48	NA	
EW12	2/20/2015	101.90	101.32	0.58	NA	
EW12	2/24/2015	102.01	101.31	0.70	NA	
EW12	2/27/2015	NM	NM	NM	0.1	Measurements recorded prior to LNAPL removal
EW12	3/10/2015	102.35	101.35	1.00	0.1	Measurements recorded prior to LNAPL removal
EW12	3/24/2015	102.45	101.33	1.12	NA	
EW12	3/31/2015	NM	NM	NM	1.0	
EW12	4/10/2015	102.22	101.36	0.86	NA	
EW12	4/16/2015	102.32	101.36	0.96	NA	
EW12	4/27/2015	NM	NM	NM	1.0	
EW12	5/8/2015	101.99	101.19	0.80	NA	
EW12	5/21/2015	102.39	101.40	0.99	1.0	
EW12	6/3/2015	102.34	101.45	0.89	0.4	
EW12	6/16/2015	102.27	101.50	0.77	0.3	
EW12	7/8/2015	102.26	101.54	0.72	NA	
EW12	7/10/2015	NM	NM	NM	0.5	
EW12	7/21/2015	102.10	101.61	0.49	NA	
EW12	7/23/2015	NM	NM	NM	0.5	

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Well ID	Date	Depth to Water (feet) ¹	Depth to LNAPL (feet) ¹	LNAPL Thickness (feet)	Recovered LNAPL Volume (gallons)	Comments
EW12	7/29/2015	102.11	101.65	0.46	NA	
EW12	8/5/2015	102.39	101.69	0.70	NA	
EW12	8/7/2015	NM	NM	NM	0.3	
EW12	8/19/2015	101.27	100.45	0.82	NA	
EW12	8/21/2015	NM	NM	NM	0.1	
EW12	9/4/2015	101.87	101.47	0.40	NA	
EW12	9/11/2015	NM	NM	NM	0.3	
EW12	9/21/2015	101.60	101.29	0.31	NA	
EW12	10/1/2015	NM	NM	NM	0.2	
EW12	10/8/2015	101.39	101.15	0.24	NA	
EW12	10/22/2015	101.52	101.23	0.29	NA	
EW12	11/2/2015	101.51	101.18	0.33	NA	
Total LNAPL Recovered					5.9	
EW13	11/4/2014	111.48	NP	0.00	NA	
EW13	12/11/2014	114.81	NP	0.00	NA	
EW13	12/23/2014	115.11	NP	0.00	NA	Groundwater extraction system shutdown pending carbon change-out
EW13	12/30/2014	107.34	NP	0.00	NA	Groundwater extraction system remained shutdown pending carbon change-out
EW13	1/8/2015	107.27	NP	0.00	NA	Groundwater extraction system remained shutdown pending carbon change-out
EW13	1/19/2015	107.33	NP	0.00	NA	Groundwater extraction system restarted after carbon change-out
EW13	1/22/2015	115.05	NP	0.00	NA	
EW13	1/30/2015	115.49	NP	0.00	NA	
EW13	2/3/2015	115.28	NP	0.00	NA	
EW13	2/13/2015	115.74	NP	0.00	NA	
EW13	2/17/2015	117.05	NP	0.00	NA	Groundwater extraction rate increased to 10 gpm
EW13	2/18/2015	119.19	NP	0.00	NA	
EW13	2/20/2015	119.37	NP	0.00	NA	
EW13	2/24/2015	119.50	NP	0.00	NA	
EW13	3/10/2015	120.13	NP	0.00	NA	
EW13	3/24/2015	116.72	NP	0.00	NA	
EW13	4/10/2015	118.55	NP	0.00	NA	
EW13	4/16/2015	120.92	NP	0.00	NA	
EW13	5/8/2015	107.18	NP	0.00	NA	Groundwater extraction pump turned off on 4/30/2015
EW13	5/21/2015	104.94	NP	0.00	NA	
EW13	6/3/2015	105.88	NP	0.00	NA	
EW13	6/16/2015	106.44	NP	0.00	NA	
EW13	7/8/2015	107.42	NP	0.00	NA	
EW13	7/21/2015	107.70	NP	0.00	NA	
EW13	7/29/2015	107.91	NP	0.00	NA	
EW13	8/5/2015	107.89	NP	0.00	NA	
EW13	8/19/2015	107.80	NP	0.00	NA	

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Well ID	Date	Depth to Water (feet) ¹	Depth to LNAPL (feet) ¹	LNAPL Thickness (feet)	Recovered LNAPL Volume (gallons)	Comments
EW13	9/4/2015	107.63	NP	0.00	NA	
EW13	9/21/2015	107.63	NP	0.00	NA	
EW13	10/8/2015	107.49	NP	0.00	NA	
EW13	10/22/2015	107.72	NP	0.00	NA	
EW13	11/2/2015	107.48	NP	0.00	NA	
			Total LNAPL Recovered		0.0	
EW14	11/4/2014	112.55	112.45	0.10	NA	
EW14	11/6/2014	NM	NM	NM	<0.1	
EW14	11/7/2014	112.54	112.49	0.05	NA	
EW14	11/11/2014	112.68	112.60	0.08	NA	
EW14	11/12/2014	112.91	112.87	0.04	NA	Temporary system shutdown due to alarm condition
EW14	11/17/2014	111.82	111.55	0.27	NA	
EW14	12/8/2014	112.89	112.85	0.04	NA	
EW14	12/11/2014	113.83	113.75	0.08	NA	
EW14	12/23/2014	113.74	113.65	0.09	NA	Groundwater extraction system shutdown pending carbon change-out
EW14	12/30/2014	112.85	112.76	0.09	NA	Groundwater extraction system remained shutdown pending carbon change-out
EW14	1/8/2015	112.77	112.71	0.06	NA	Groundwater extraction system remained shutdown pending carbon change-out
EW14	1/19/2015	112.92	112.78	0.14	NA	Groundwater extraction system restarted after carbon change-out
EW14	1/22/2015	113.80	113.72	0.08	NA	
EW14	1/30/2015	113.79	113.66	0.13	<0.1	
EW14	2/3/2015	113.74	113.65	0.09	NA	
EW14	2/13/2015	113.90	113.68	0.22	NA	
EW14	2/17/2015	113.85	113.79	0.06	NA	Groundwater extraction rate increased to 10 gpm
EW14	2/18/2015	114.29	114.21	0.08	NA	
EW14	2/20/2015	114.26	114.18	0.08	NA	
EW14	2/24/2015	114.25	114.21	0.04	NA	
EW14	3/10/2015	114.36	114.30	0.06	NA	
EW14	3/24/2015	114.41	114.36	0.05	NA	
EW14	3/31/2015	NM	NM	NM	<0.1	
EW14	4/10/2015	114.43	114.42	0.01	NA	
EW14	4/16/2015	114.47	114.44	0.03	NA	
EW14	5/8/2015	113.30	113.14	0.16	NA	Groundwater extraction pump turned off on 4/30/2015
EW14	5/21/2015	113.71	113.49	0.22	NA	
EW14	6/3/2015	113.72	113.50	0.22	0.2	
EW14	6/16/2015	113.71	113.58	0.13	0.1	
EW14	7/8/2015	113.71	113.62	0.09	NA	
EW14	7/21/2015	113.78	113.68	0.10	NA	
EW14	7/29/2015	113.83	113.72	0.11	NA	
EW14	8/5/2015	113.84	113.72	0.12	NA	
EW14	8/7/2015	NM	NM	NM	<0.1	

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Well ID	Date	Depth to Water (feet) ¹	Depth to LNAPL (feet) ¹	LNAPL Thickness (feet)	Recovered LNAPL Volume (gallons)	Comments
EW14	8/19/2015	113.80	113.70	0.10	NA	
EW14	9/4/2015	113.68	113.59	0.09	NA	
EW14	9/11/2015	NM	NM	NM	<0.1	
EW14	9/21/2015	113.43	113.38	0.05	NA	
EW14	10/8/2015	113.12	113.06	0.06	NA	
EW14	10/22/2015	113.48	113.39	0.09	NA	
EW14	11/2/2015	113.44	113.32	0.12	NA	
Total LNAPL Recovered					0.8	
Total LNAPL Recovered (all wells)					380.7	Since system modification in October 2014; system shutdown and LNAPL recovery terminated in November 2015

Notes:

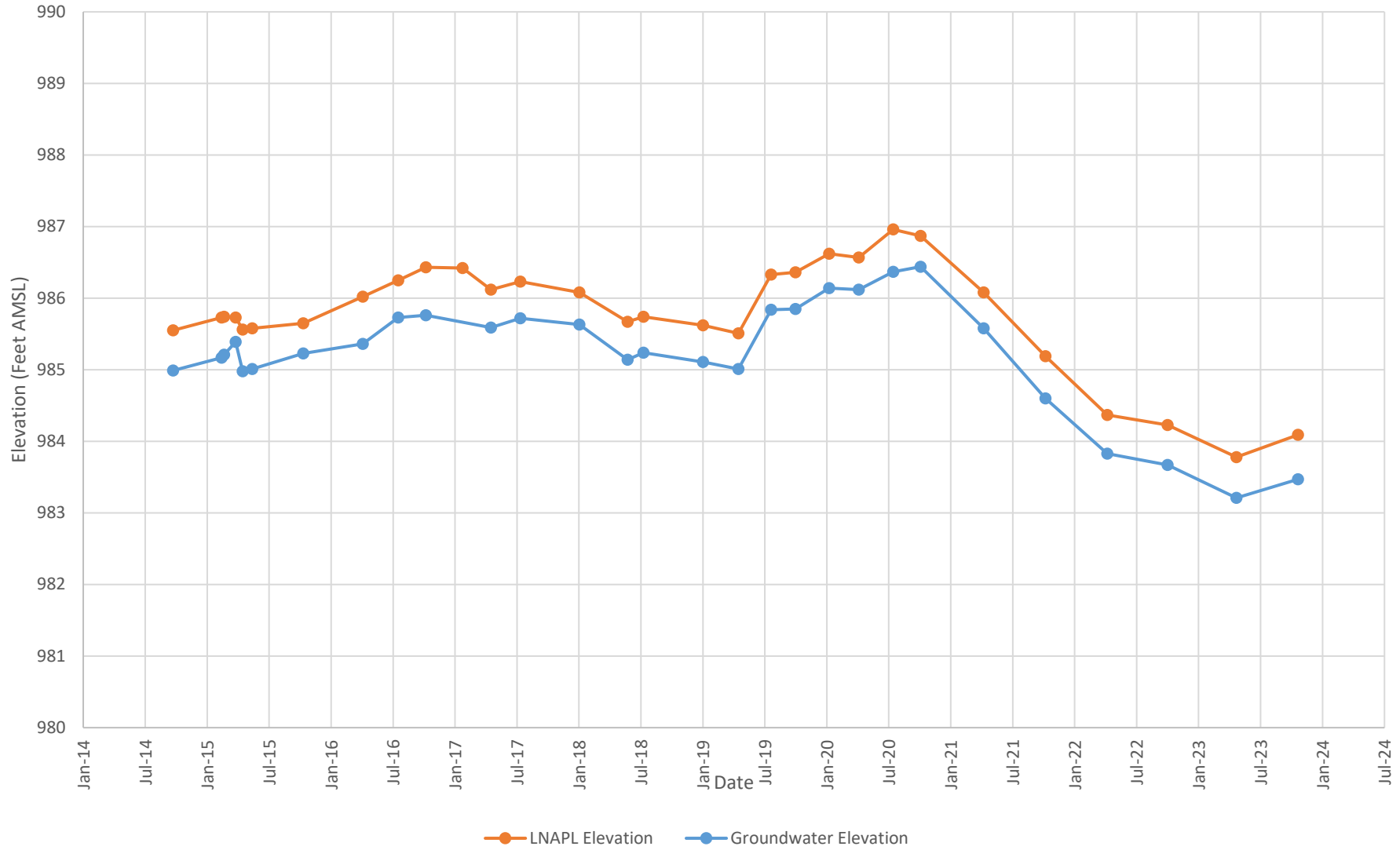
¹ location/elevation. Measurements were consistently recorded from the same benchmark location at the top of the well vault starting in December 2014.

NM - Not measured
 NP - LNAPL was not present in a measurable quantity
 NA - Not applicable

Groundwater and LNAPL Elevation vs Time Chart - MW18

Penta Wood Products Superfund Site

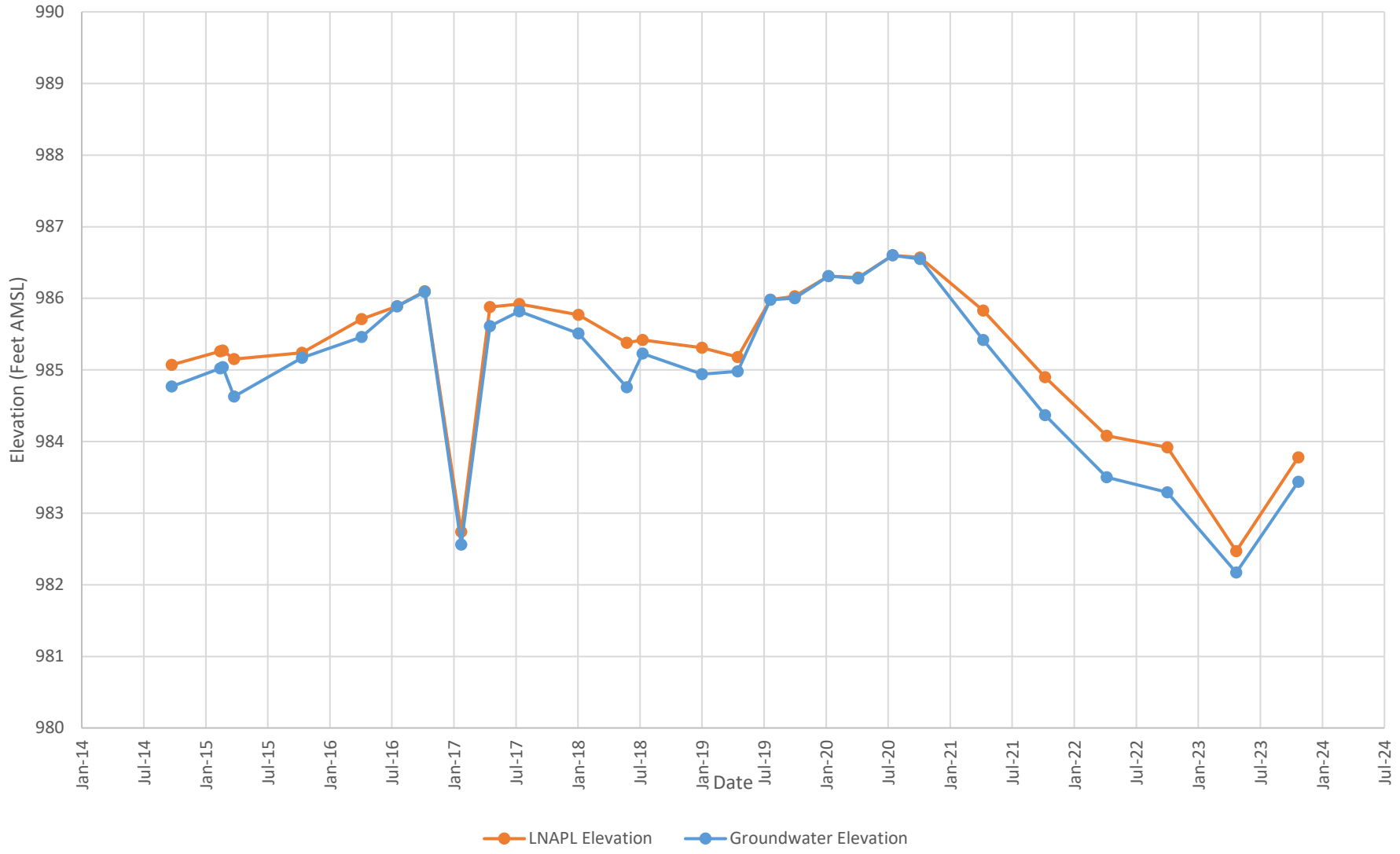
Siren, Wisconsin



Groundwater and LNAPL Elevation vs Time Chart - MW19

Penta Wood Products Superfund Site

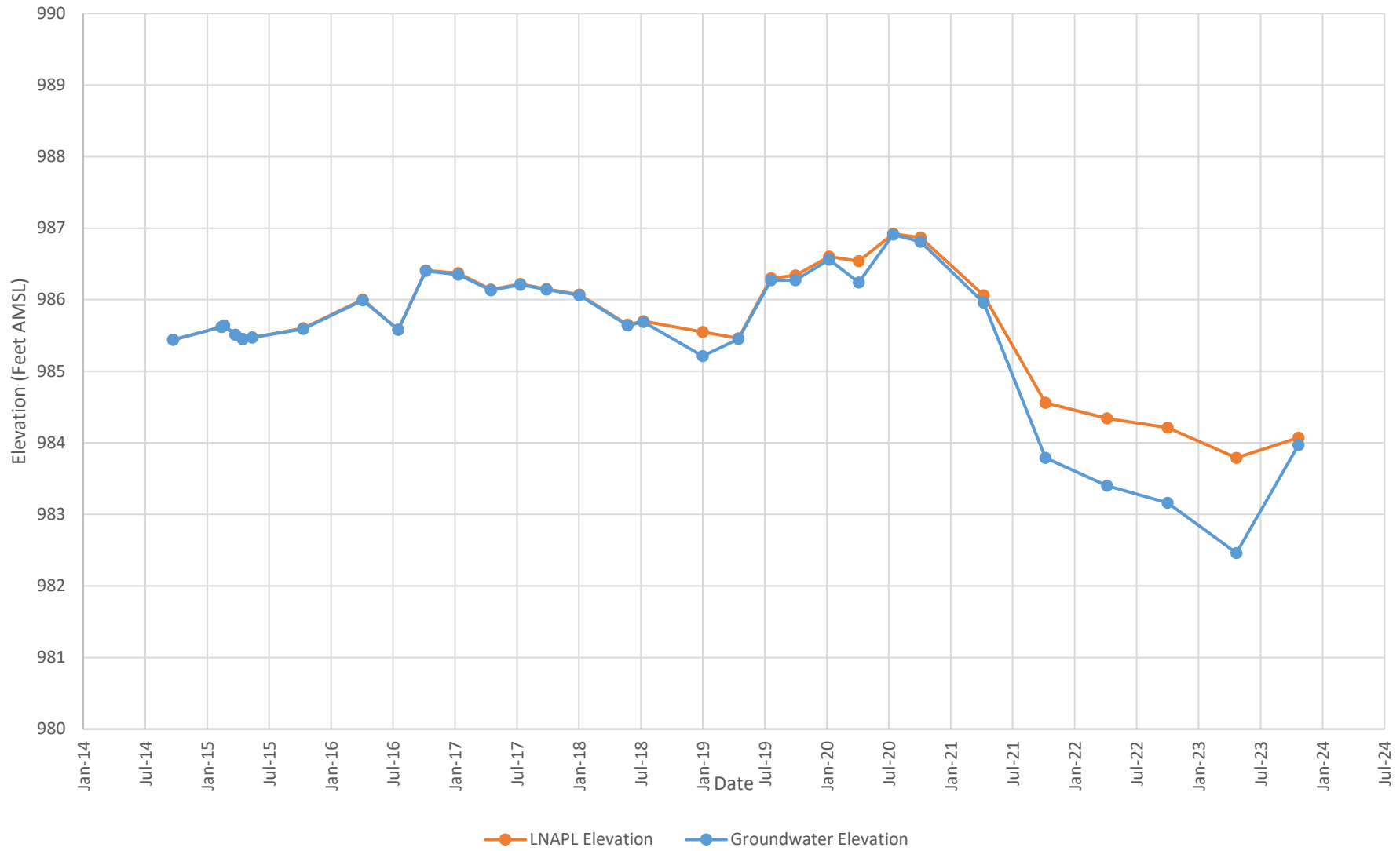
Siren, Wisconsin



Groundwater and LNAPL Elevation vs Time Chart - MW20

Penta Wood Products Superfund Site

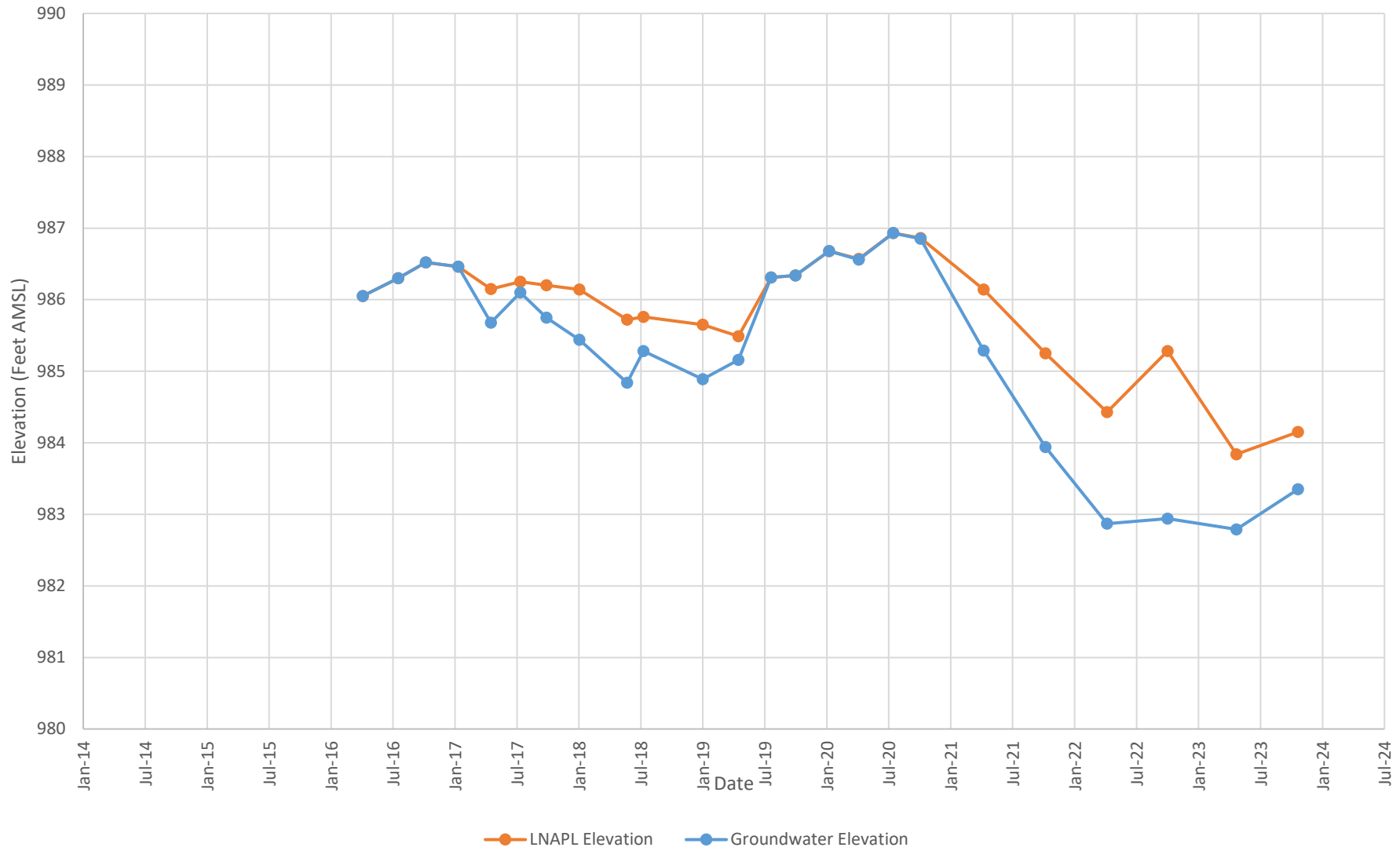
Siren, Wisconsin



Groundwater and LNAPL Elevation vs Time Chart - MW29

Penta Wood Products Superfund Site

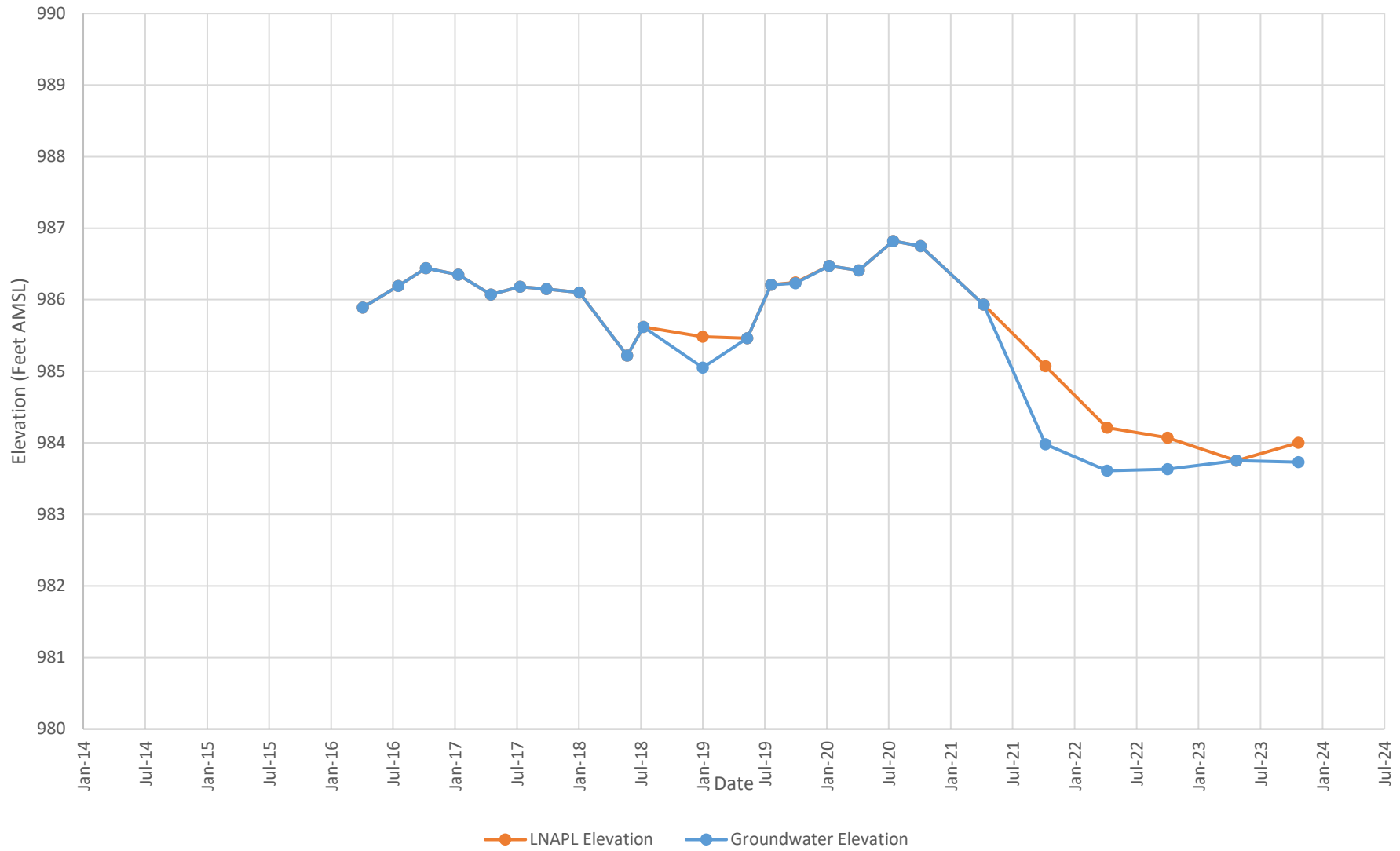
Siren, Wisconsin



Groundwater and LNAPL Elevation vs Time Chart - EW03S

Penta Wood Products Superfund Site

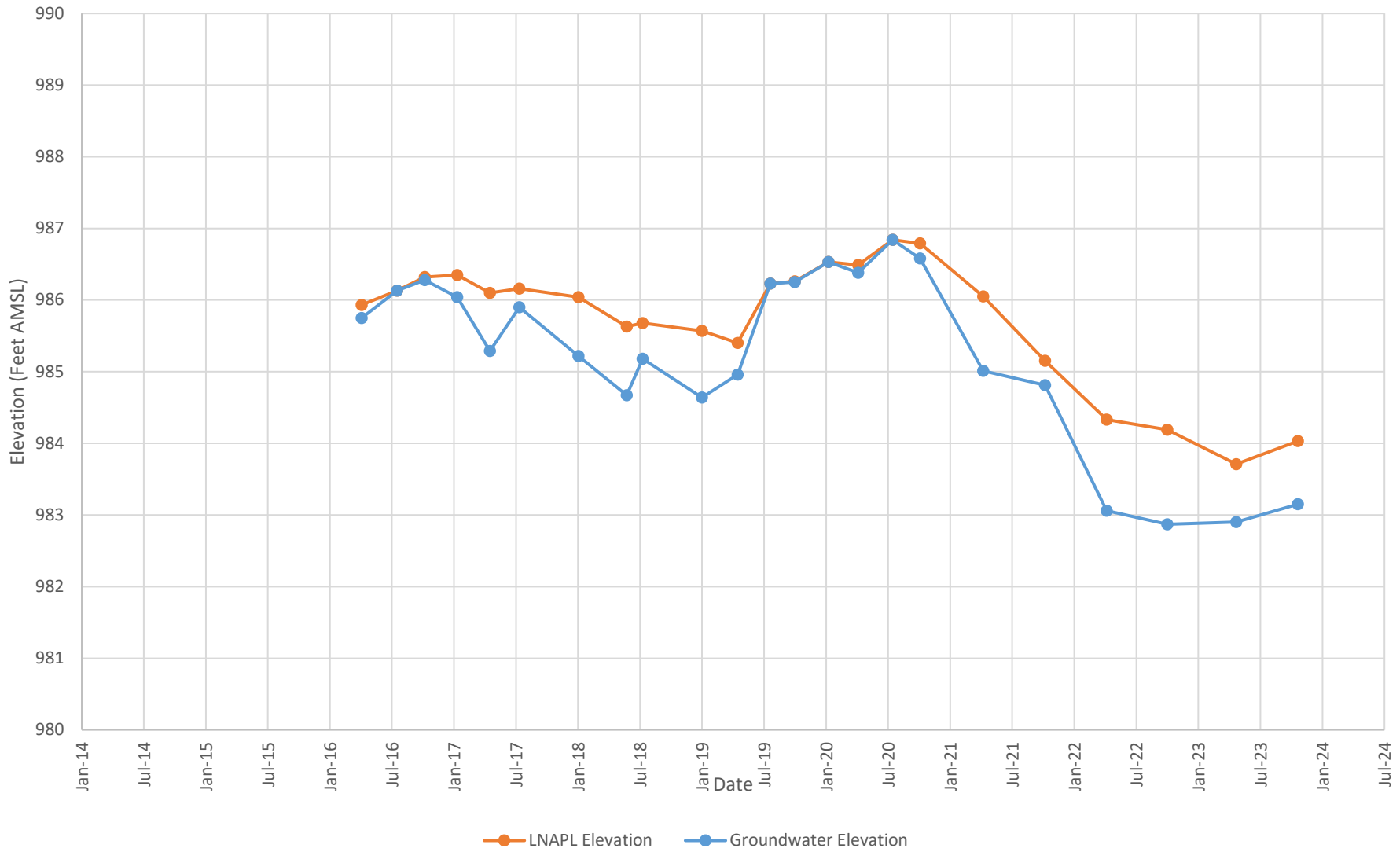
Siren, Wisconsin



Groundwater and LNAPL Elevation vs Time Chart - EW05S

Penta Wood Products Superfund Site

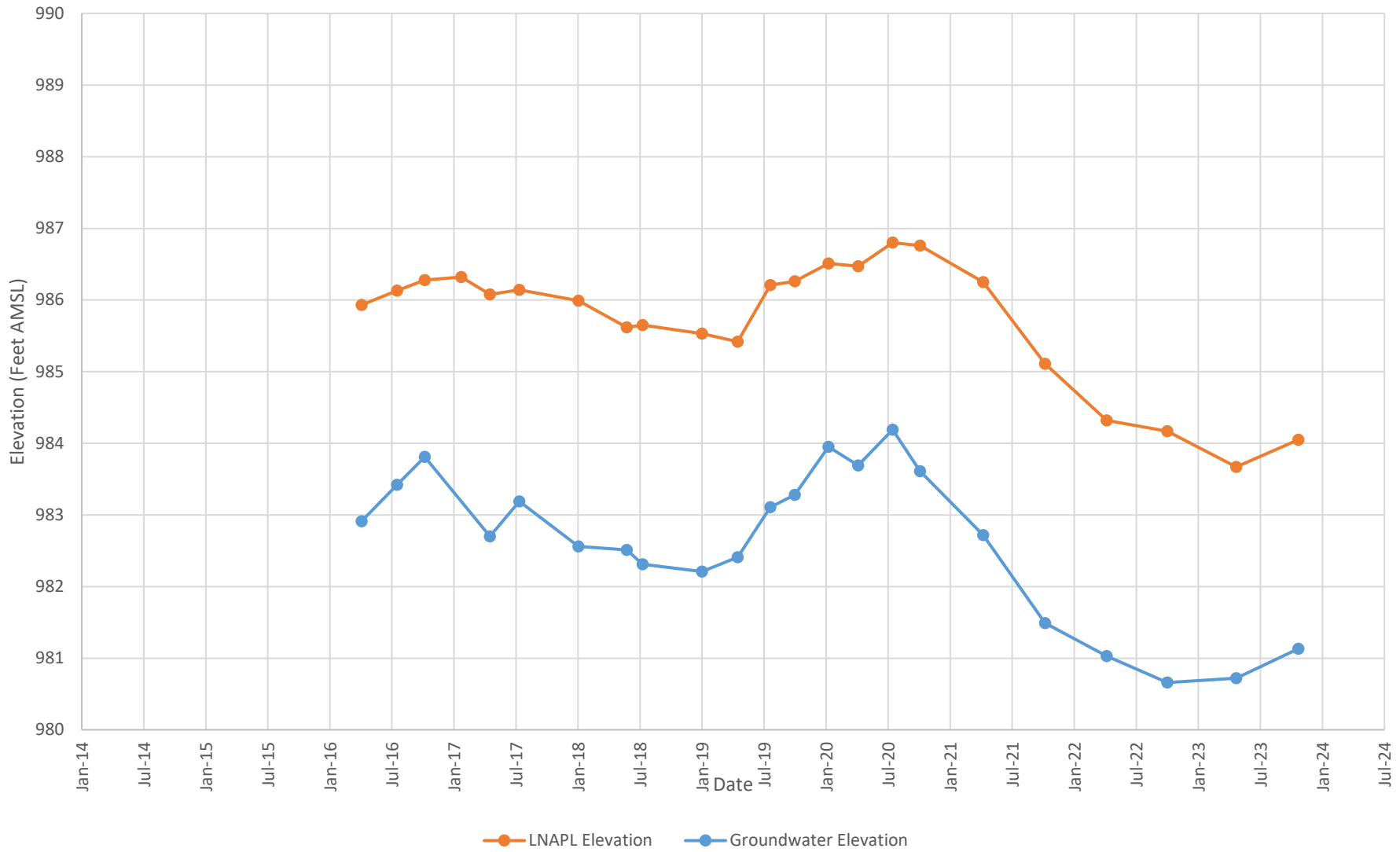
Siren, Wisconsin



Groundwater and LNAPL Elevation vs Time Chart - EW06S

Penta Wood Products Superfund Site

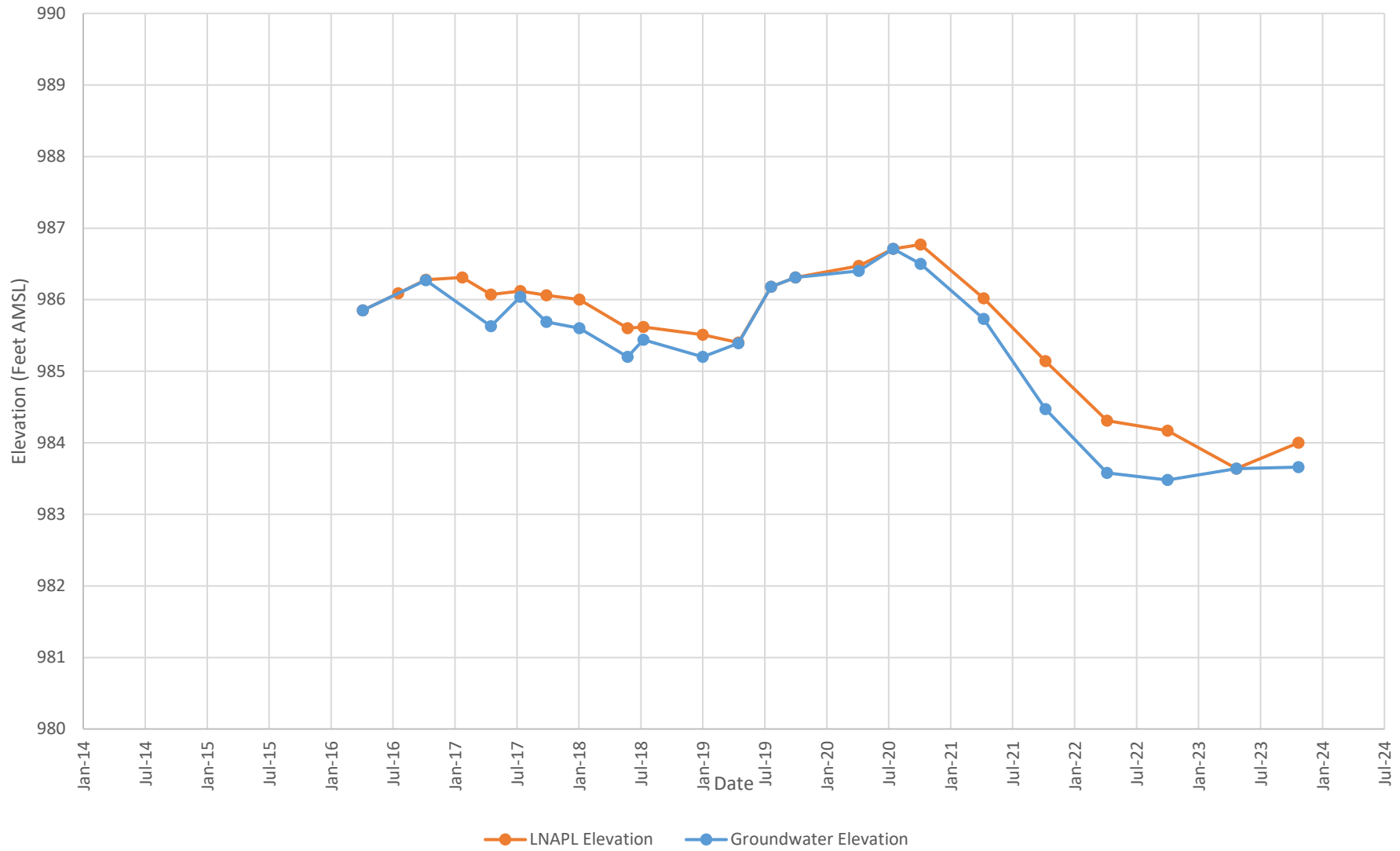
Siren, Wisconsin



Groundwater and LNAPL Elevation vs Time Chart - EW07S

Penta Wood Products Superfund Site

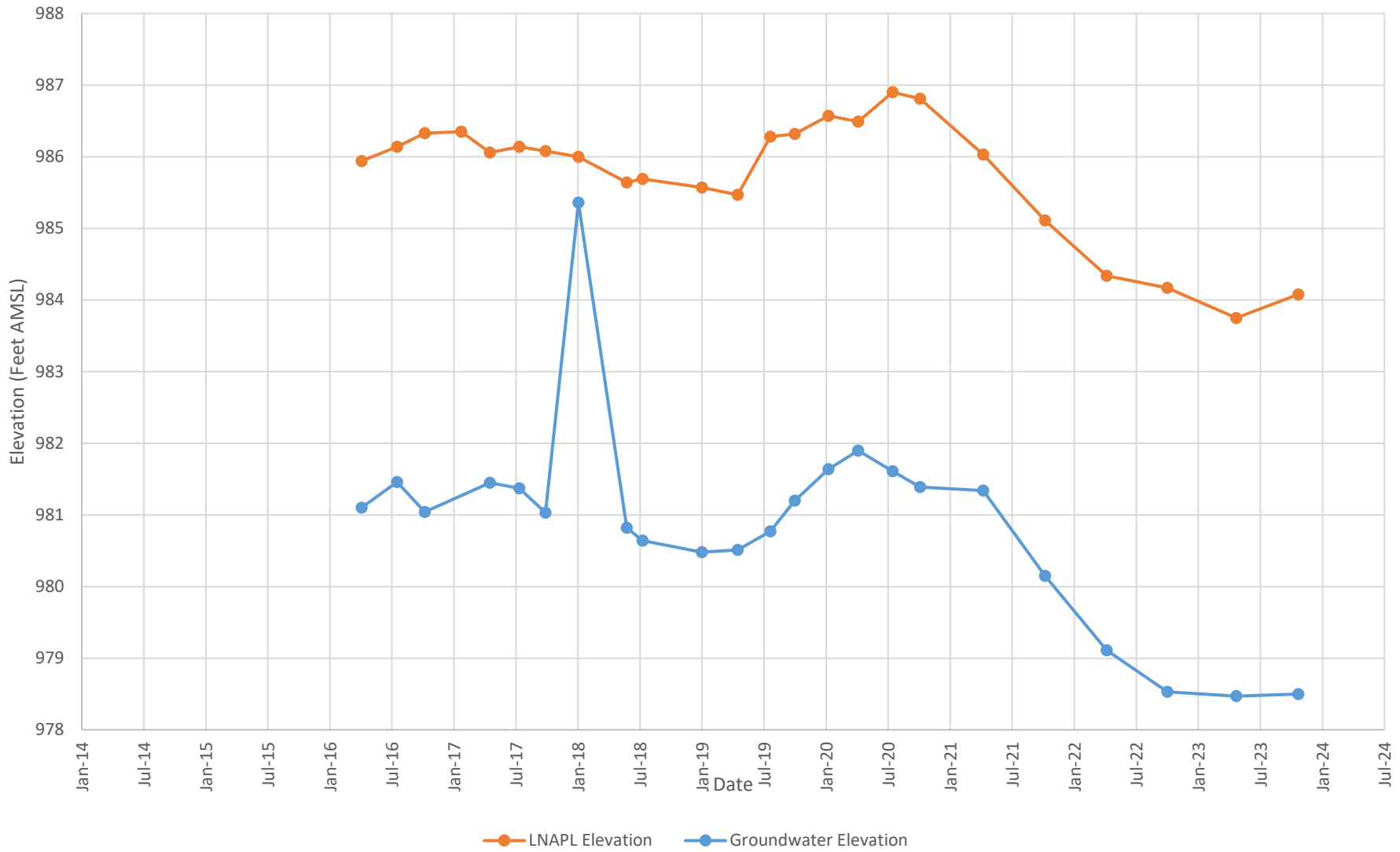
Siren, Wisconsin



Groundwater and LNAPL Elevation vs Time Chart - EW10S

Penta Wood Products Superfund Site

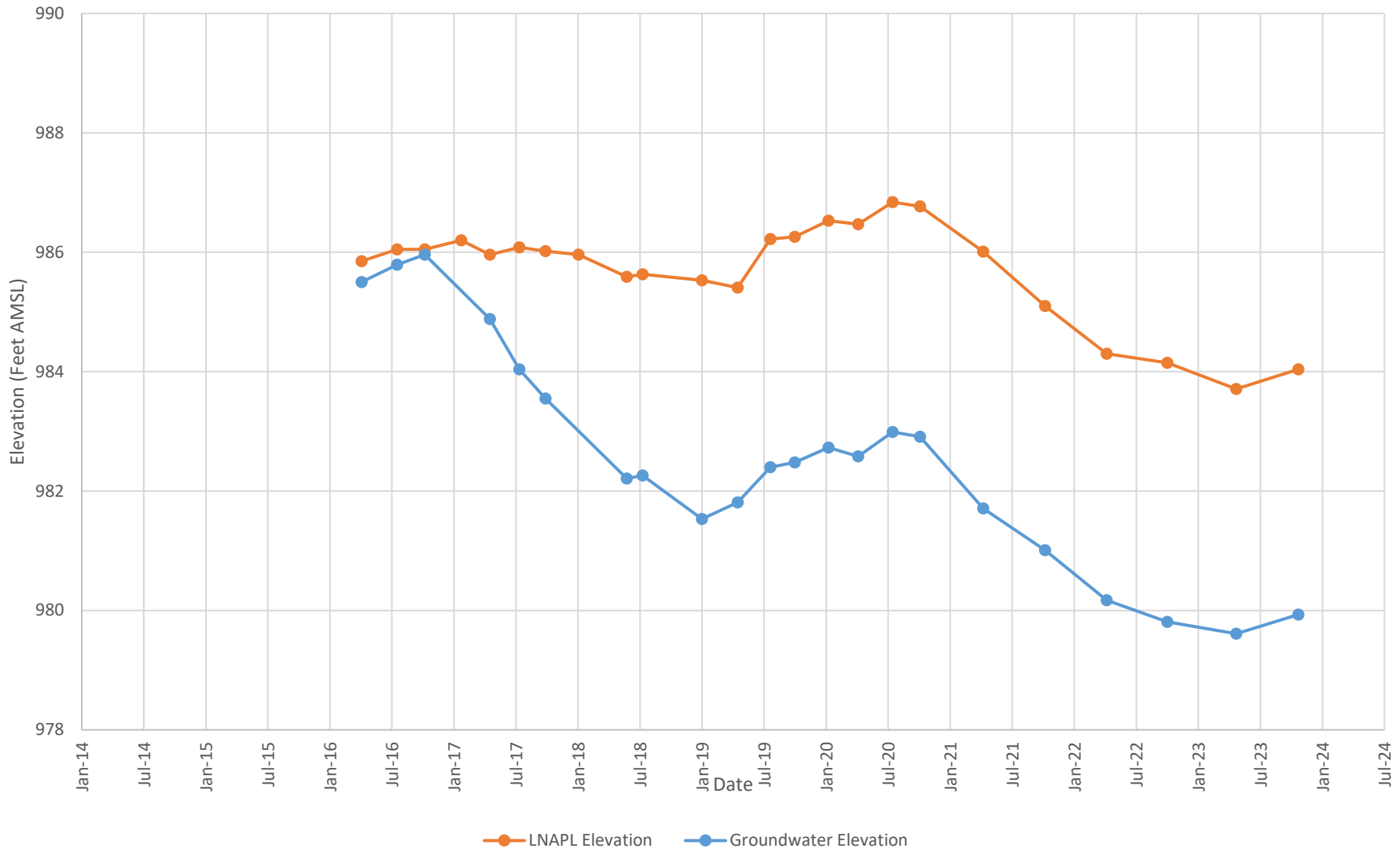
Siren, Wisconsin



Groundwater and LNAPL Elevation vs Time Chart - EW12S

Penta Wood Products Superfund Site

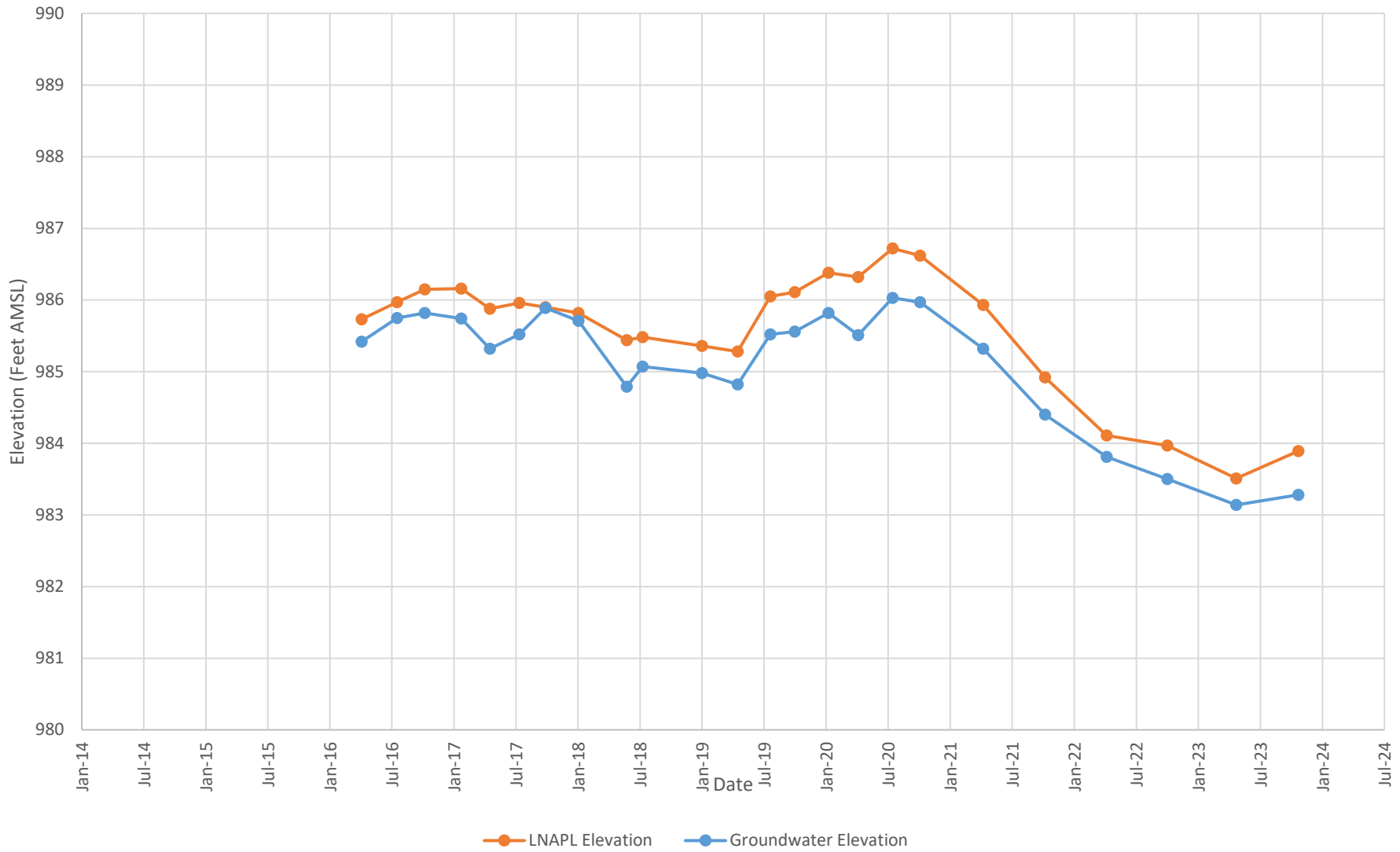
Siren, Wisconsin



Groundwater and LNAPL Elevation vs Time Chart - EW14S

Penta Wood Products Superfund Site

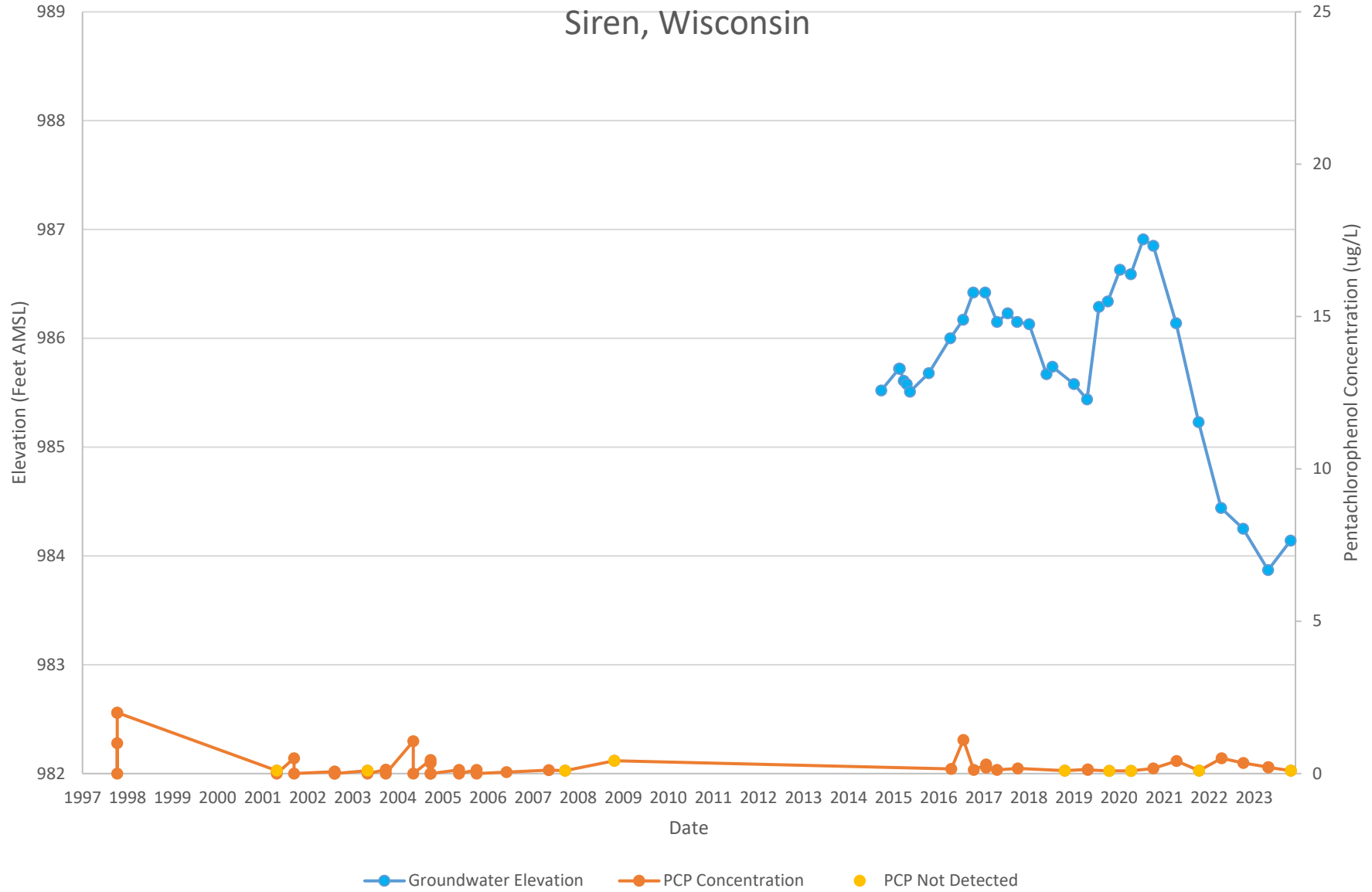
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW1

Penta Wood Products Superfund Site

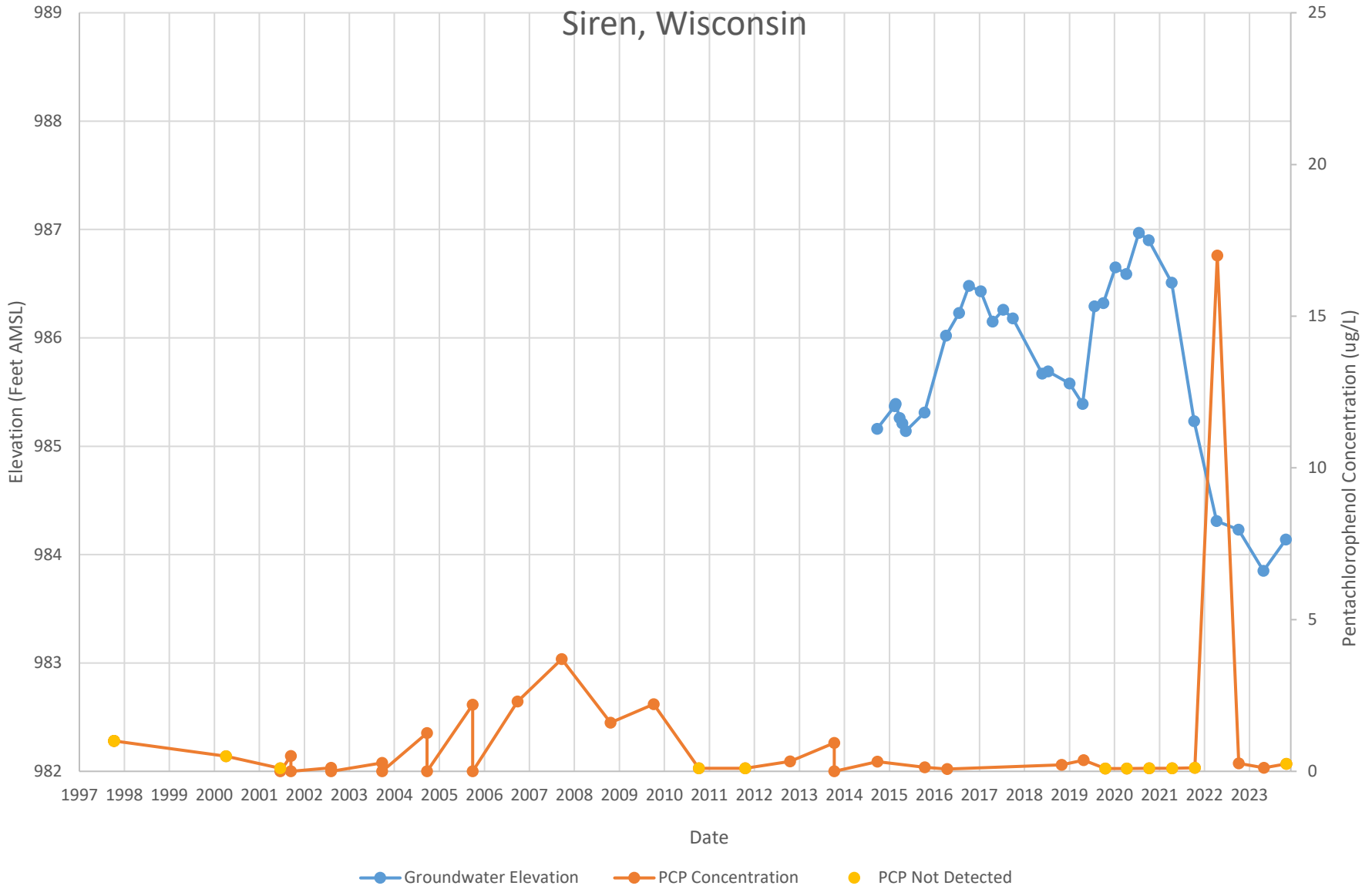
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW2

Penta Wood Products Superfund Site

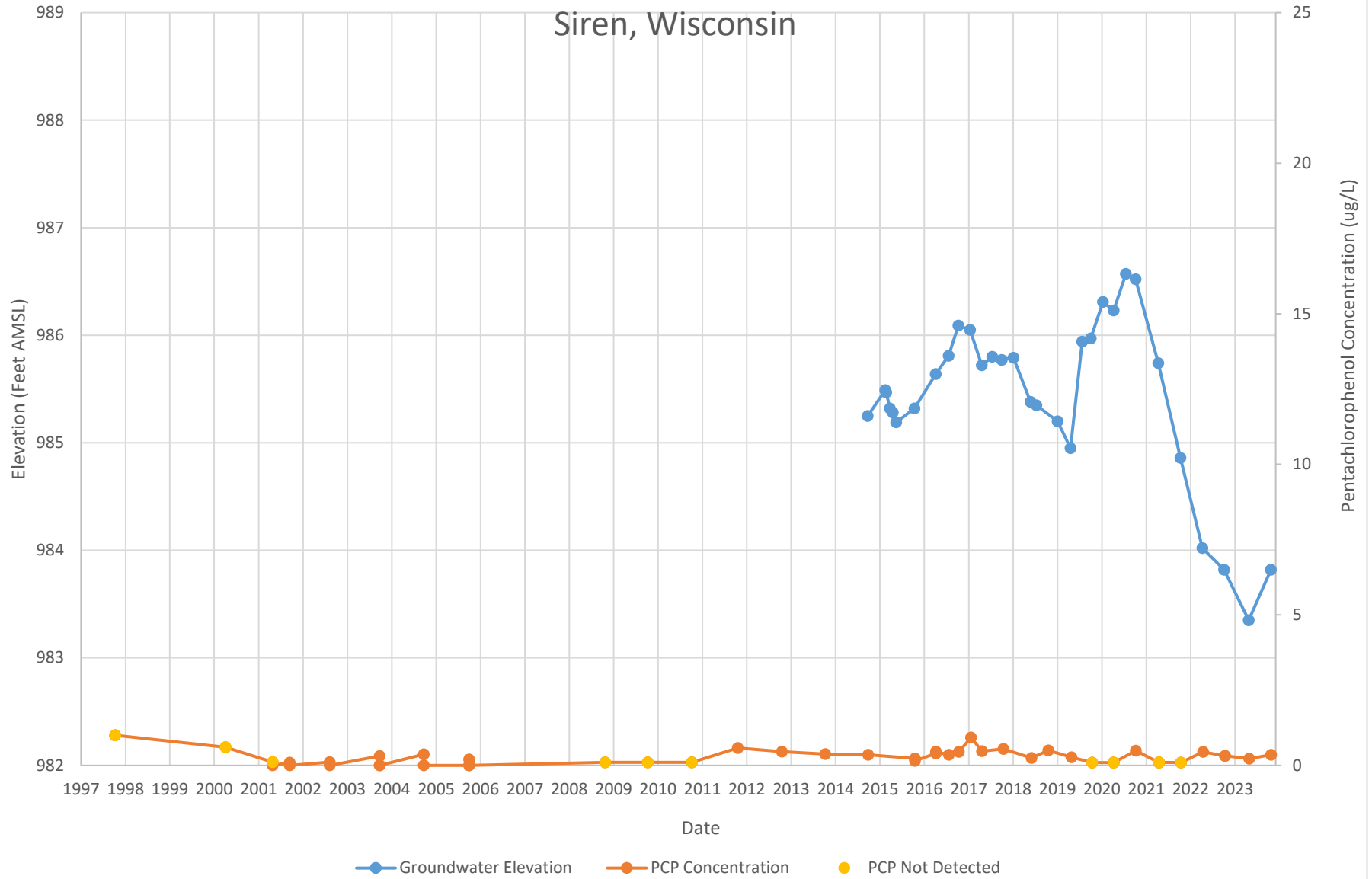
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW3

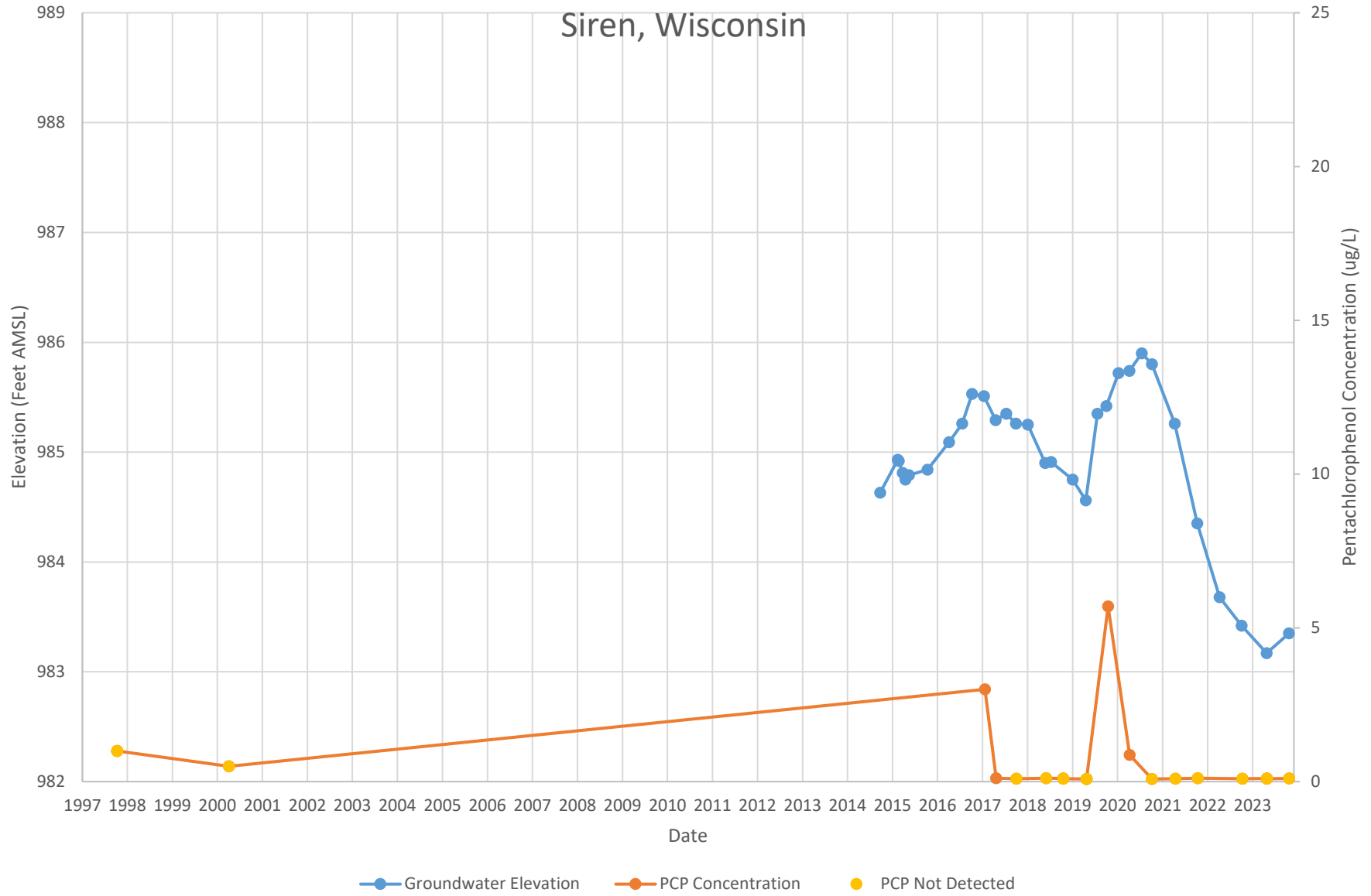
Penta Wood Products Superfund Site

Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW4 Penta Wood Products Superfund Site

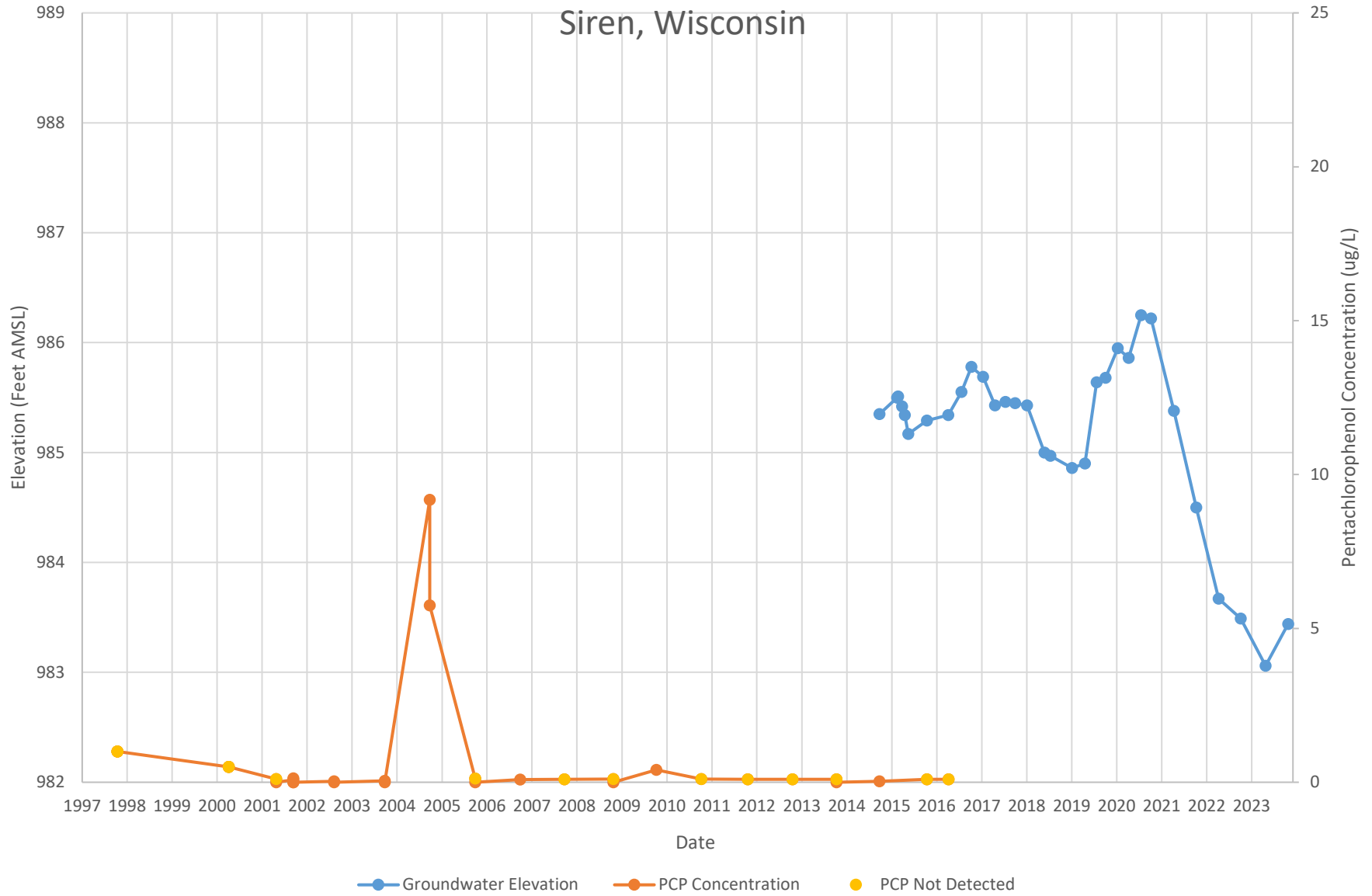
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW7

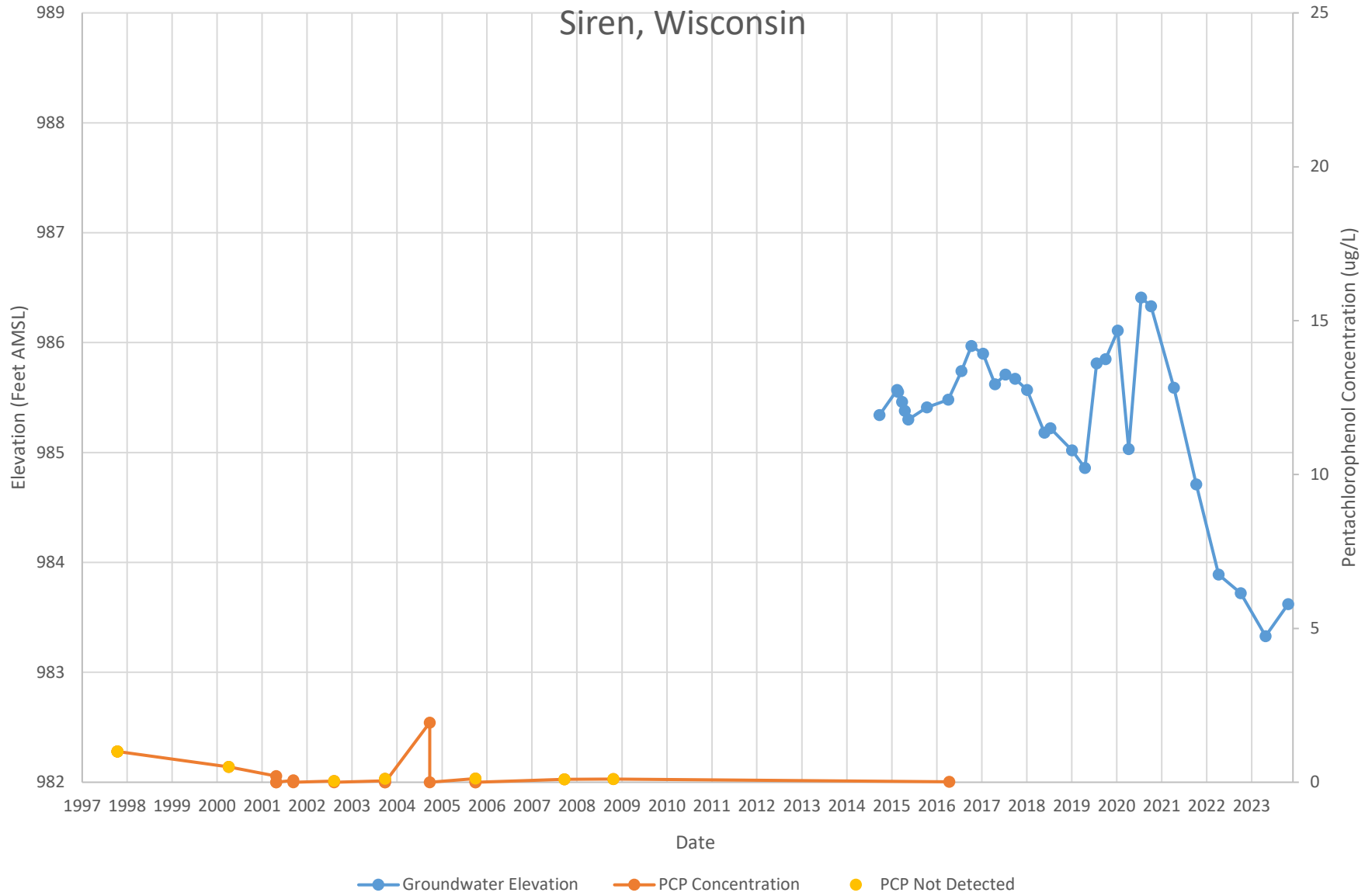
Penta Wood Products Superfund Site

Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW8 Penta Wood Products Superfund Site

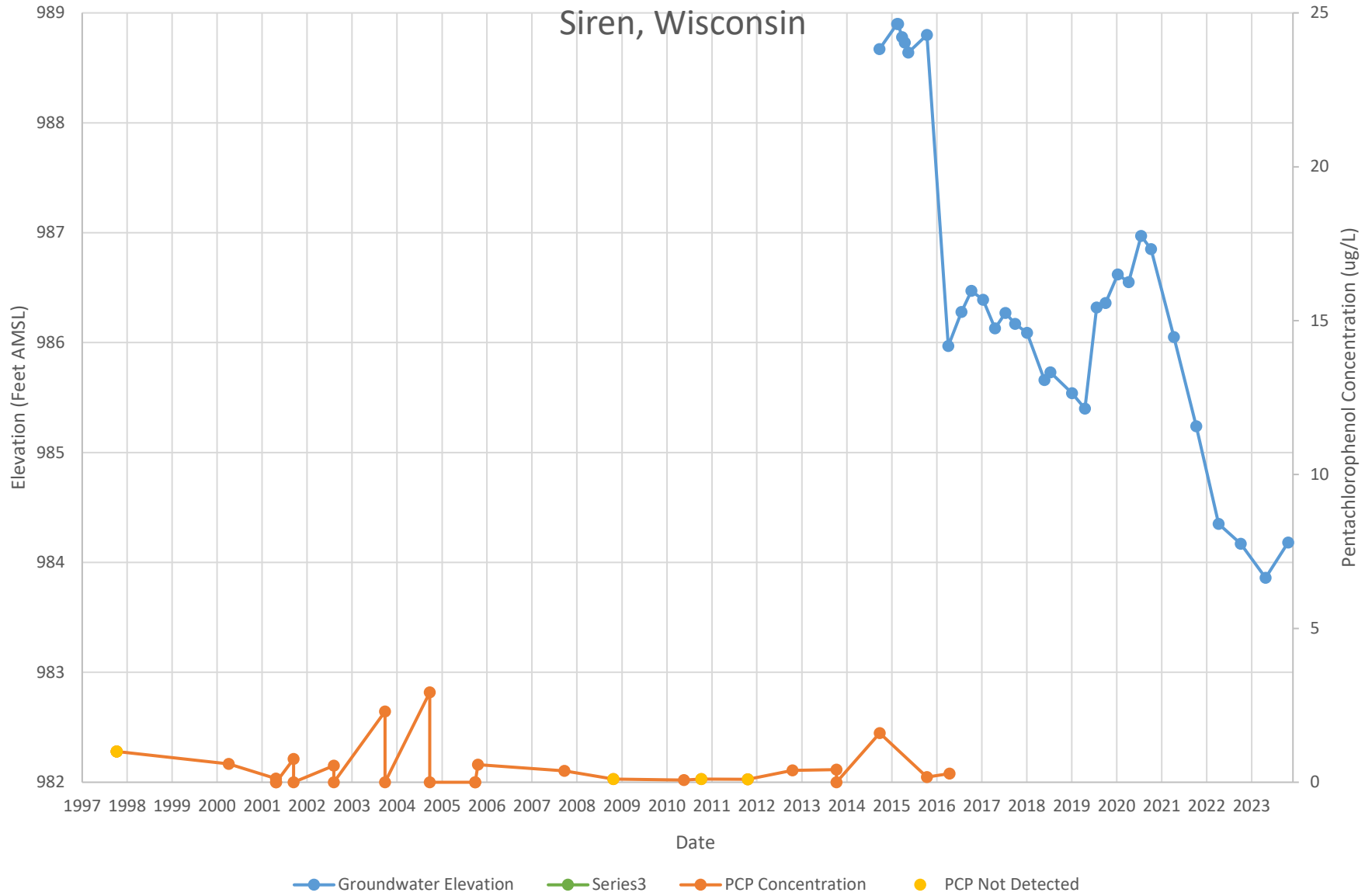
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW9

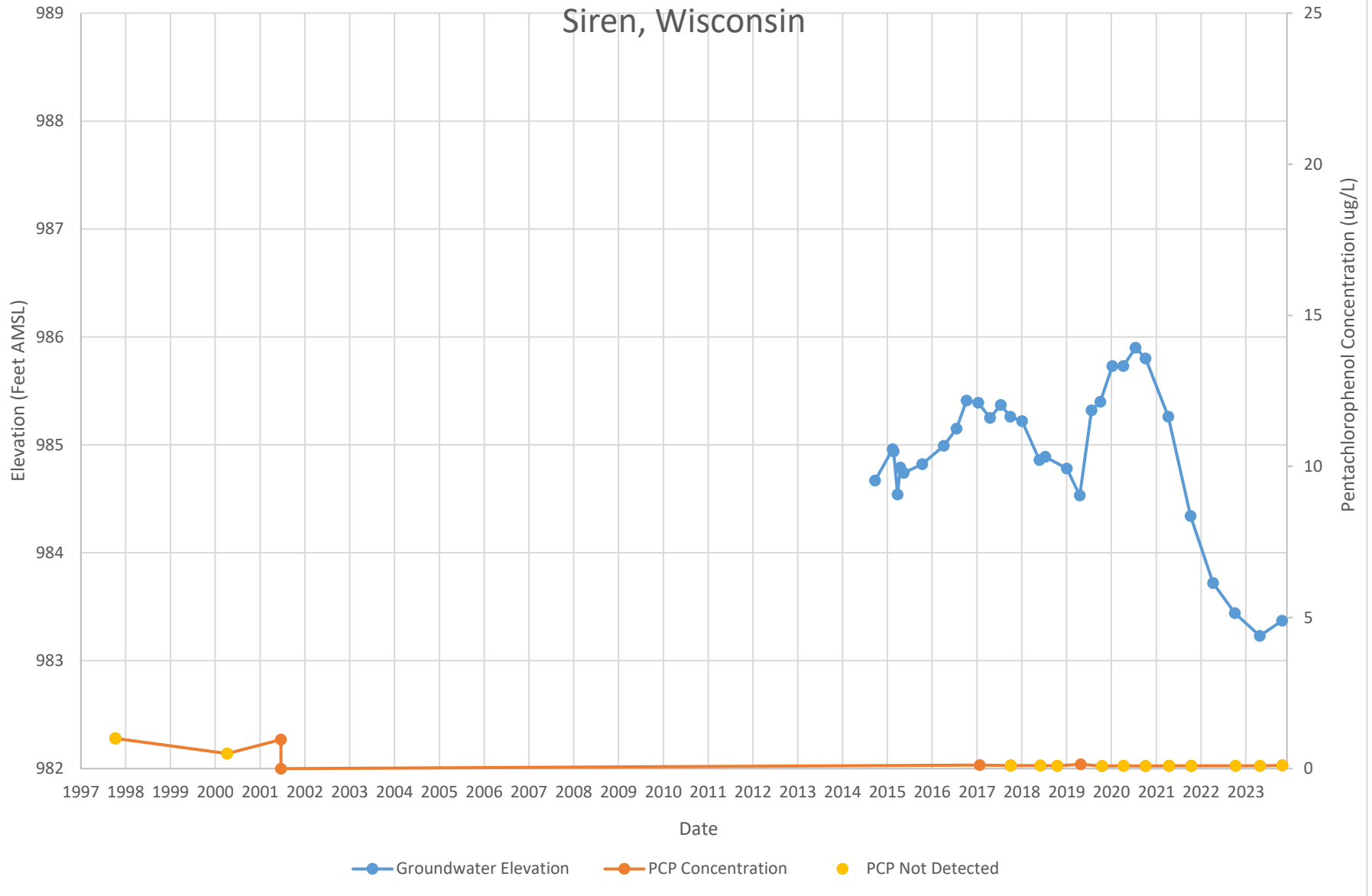
Penta Wood Products Superfund Site

Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW14 Penta Wood Products Superfund Site

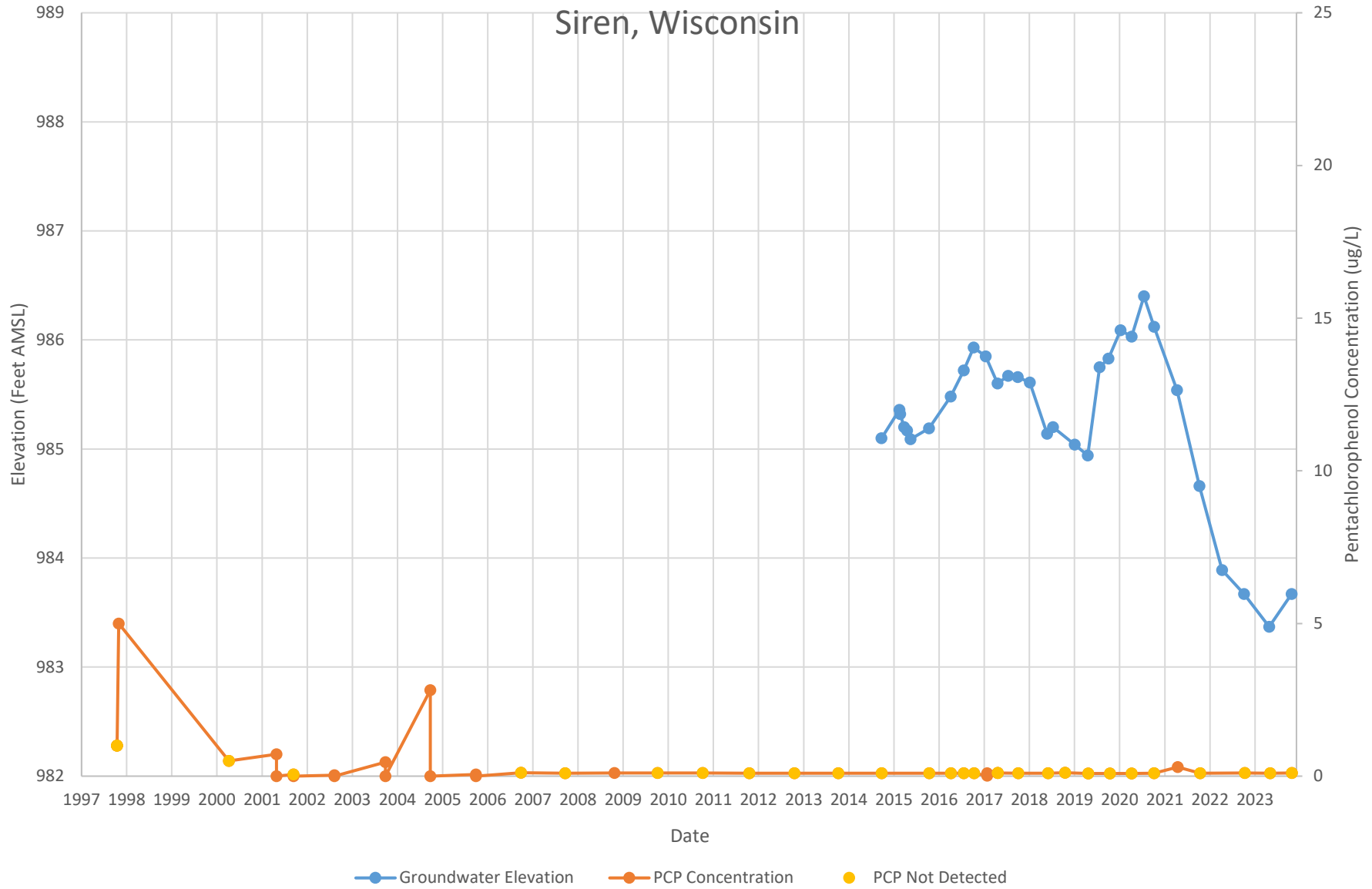
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW17

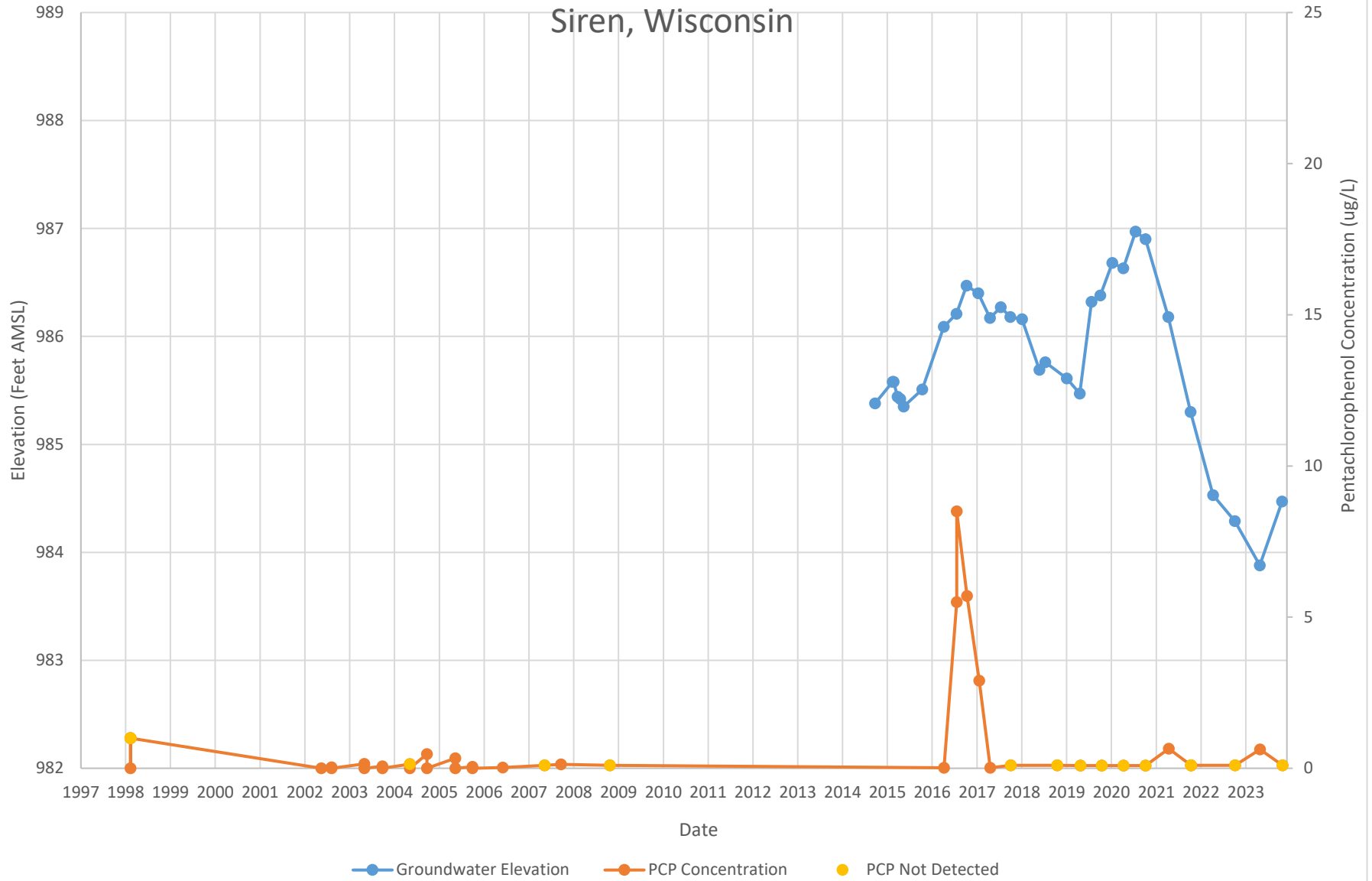
Penta Wood Products Superfund Site

Siren, Wisconsin

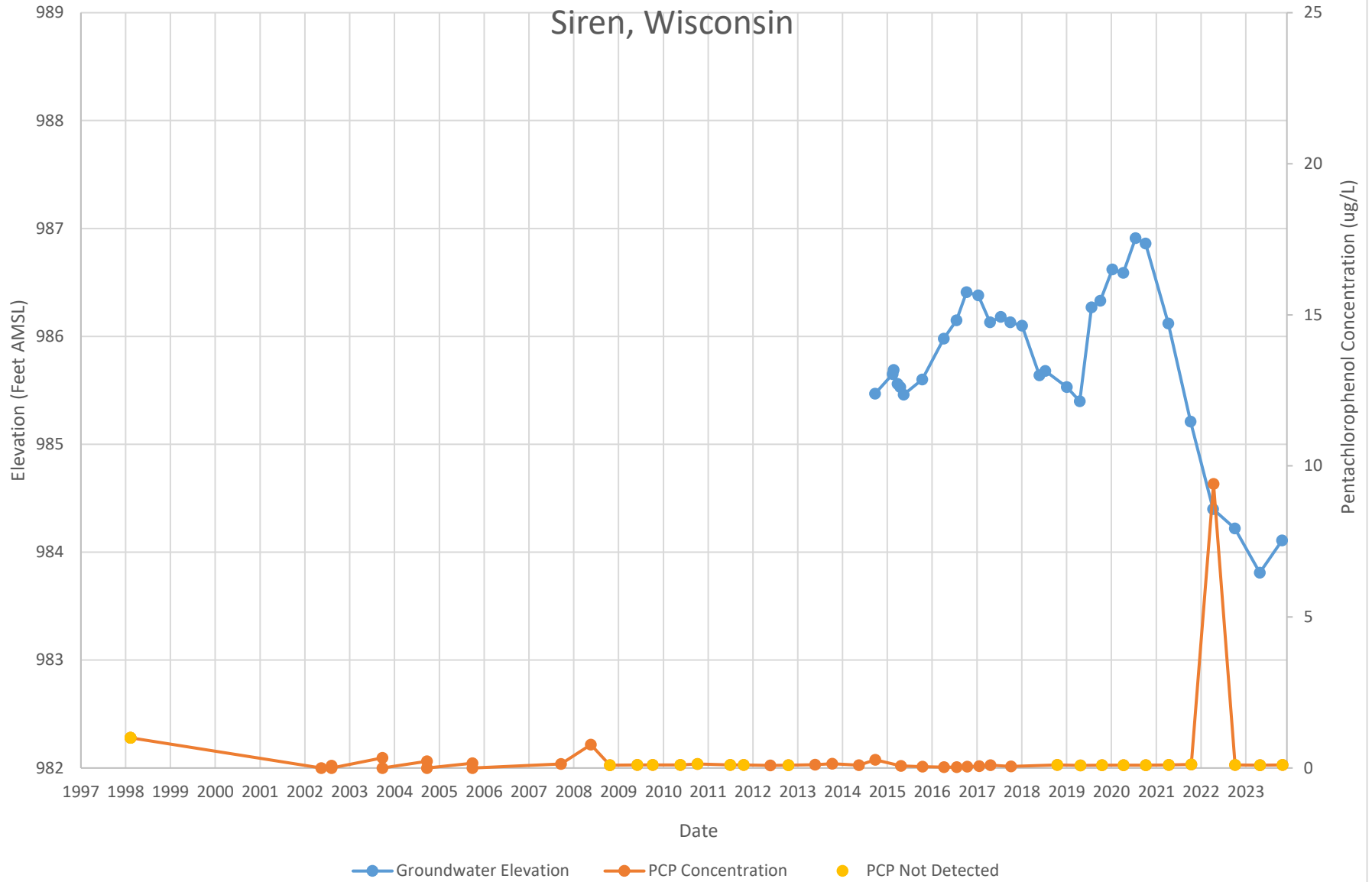


Pentachlorophenol and Groundwater Elevation vs Time Chart - MW21 Penta Wood Products Superfund Site

Siren, Wisconsin



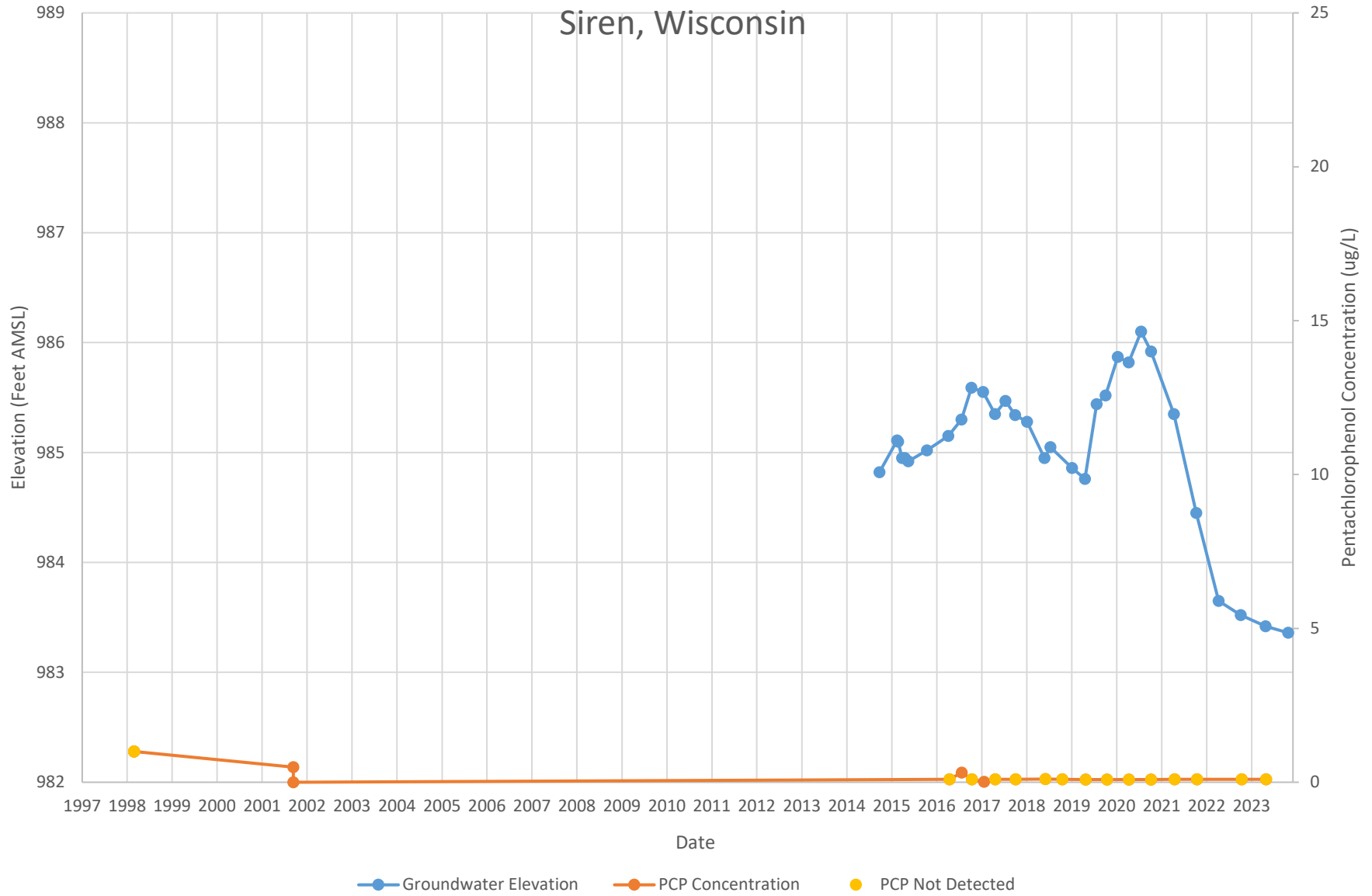
Pentachlorophenol and Groundwater Elevation vs Time Chart - MW22 Penta Wood Products Superfund Site Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW23

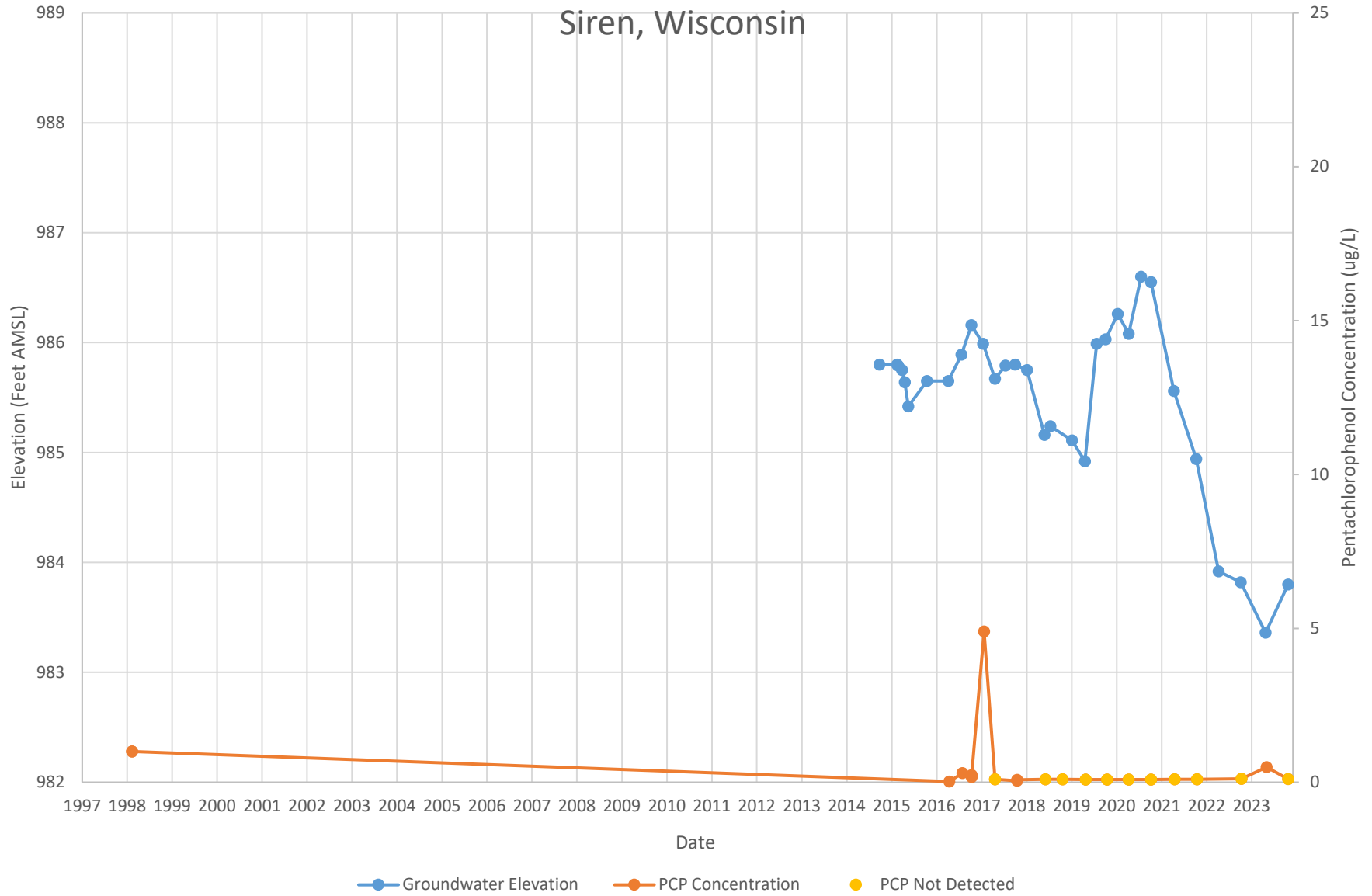
Penta Wood Products Superfund Site

Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW25 Penta Wood Products Superfund Site

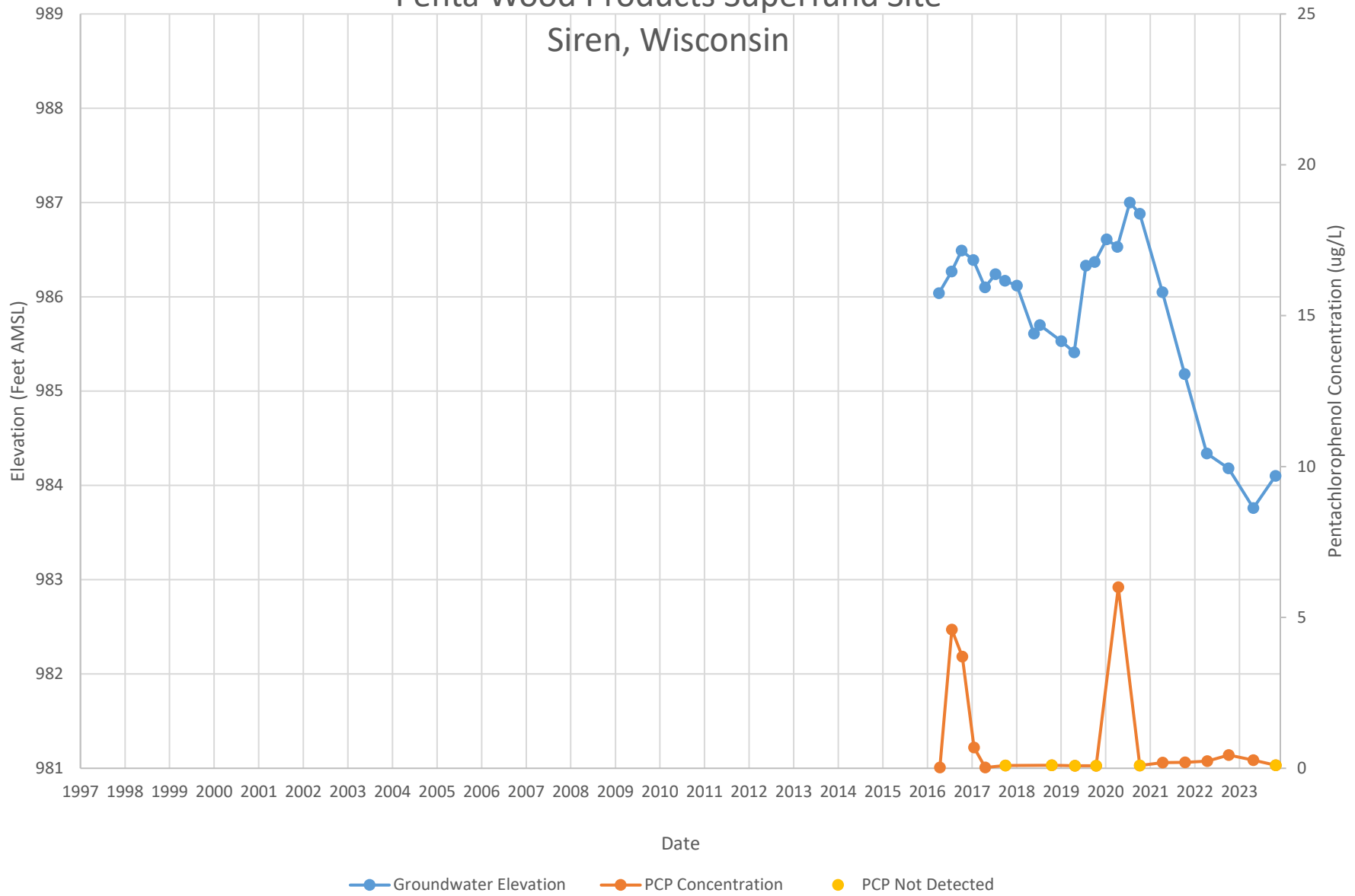
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW31

Penta Wood Products Superfund Site

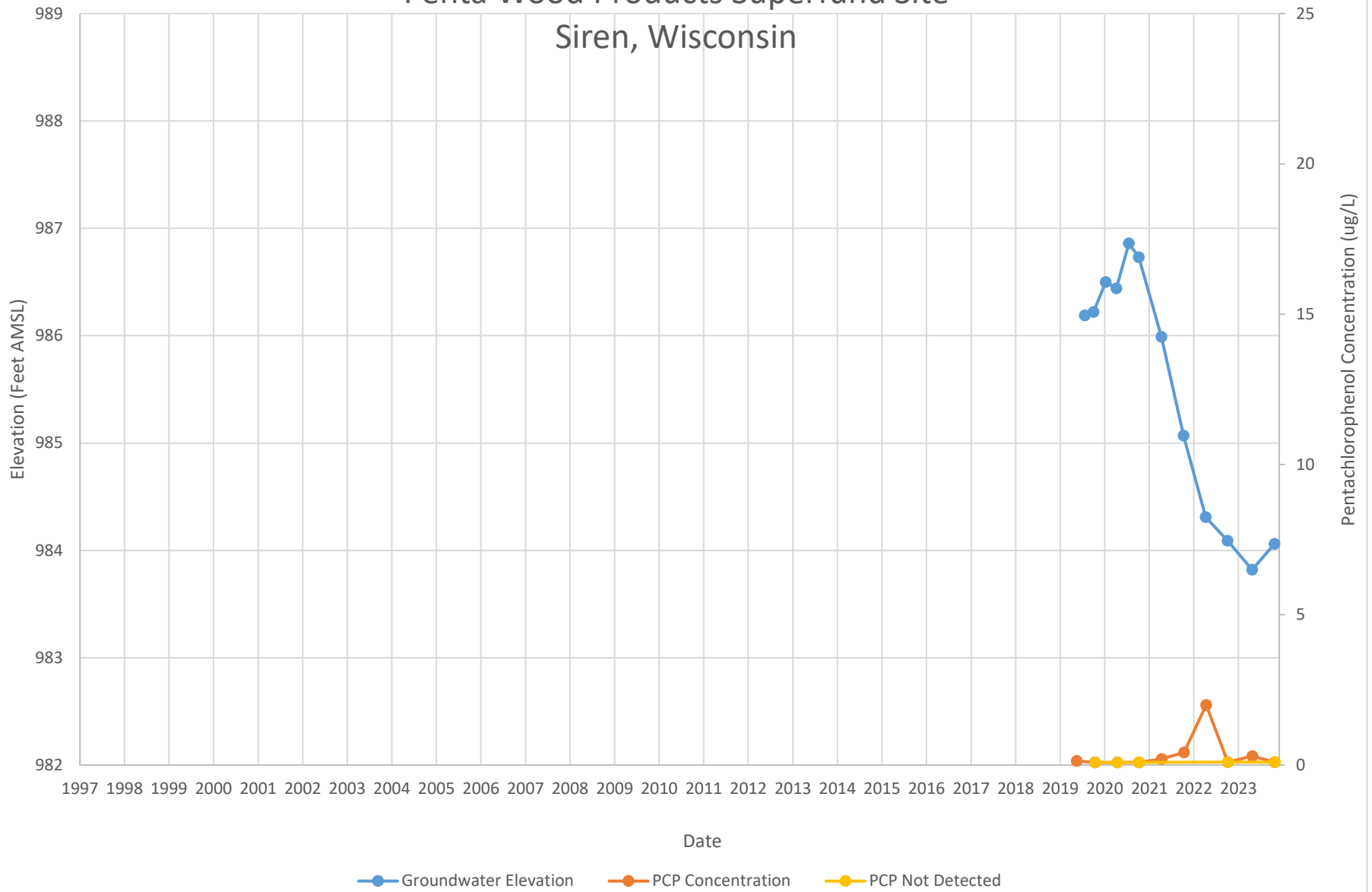
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW32

Penta Wood Products Superfund Site

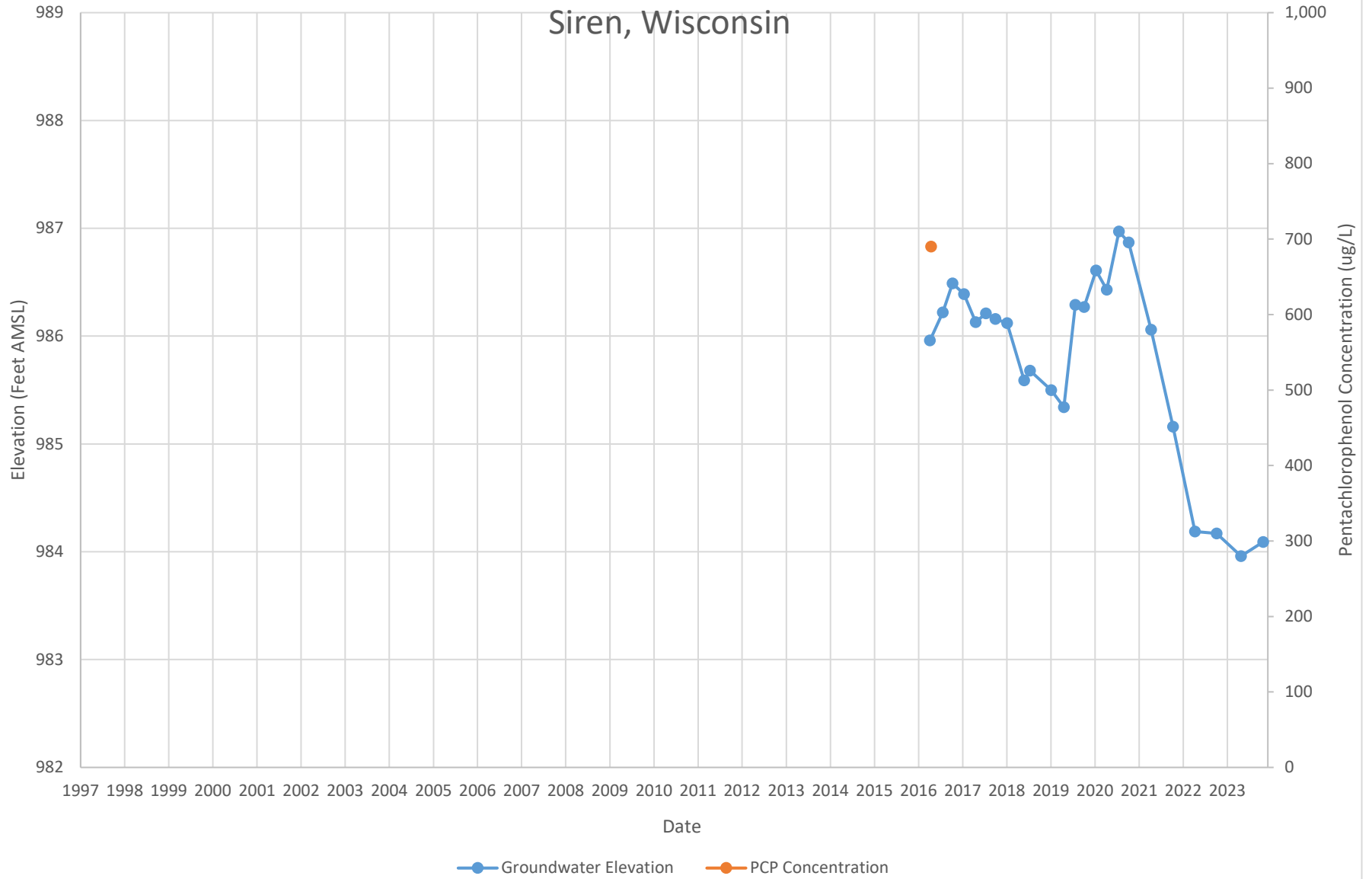
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - EW02S

Penta Wood Products Superfund Site

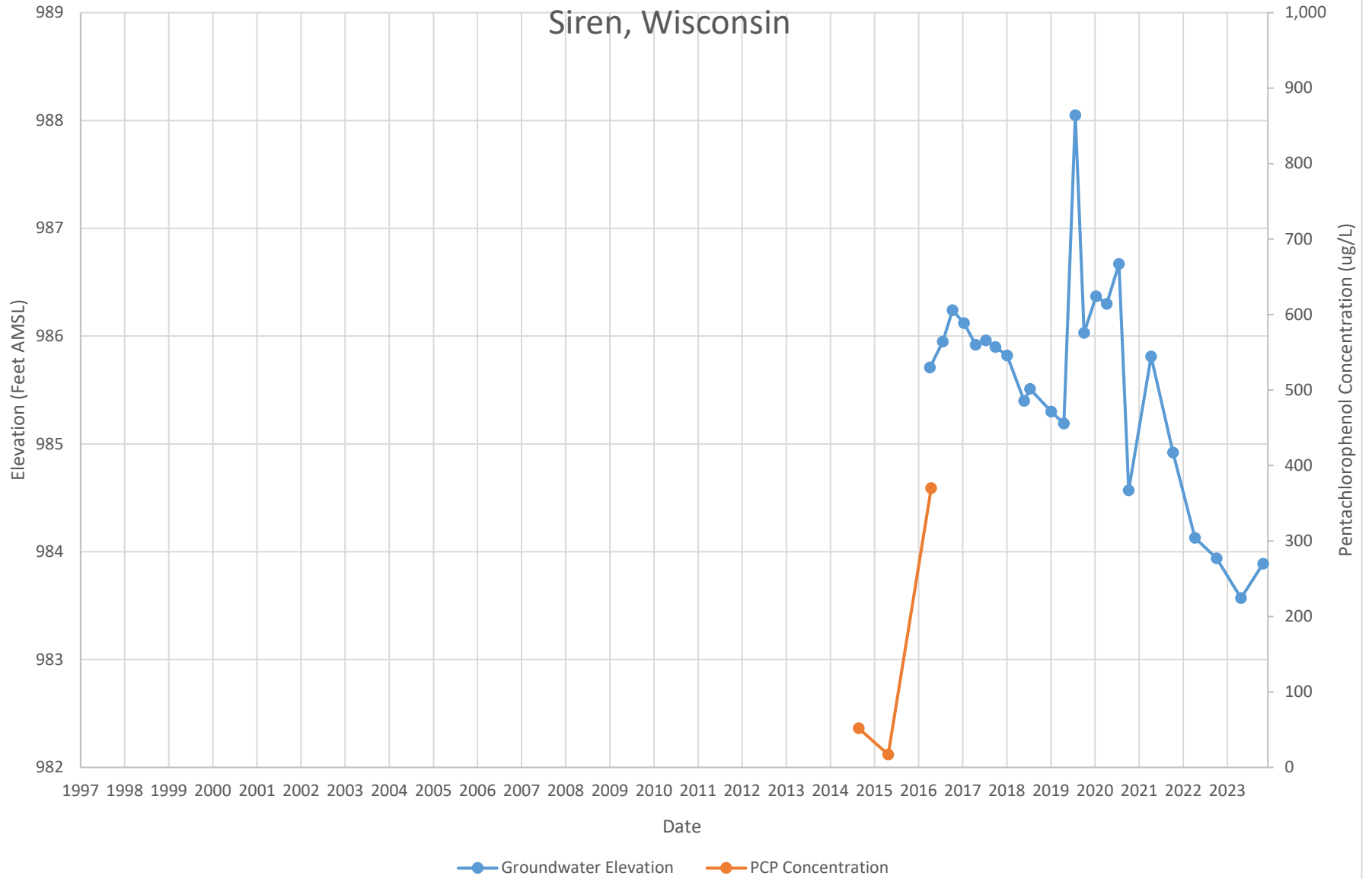
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - EW02D

Penta Wood Products Superfund Site

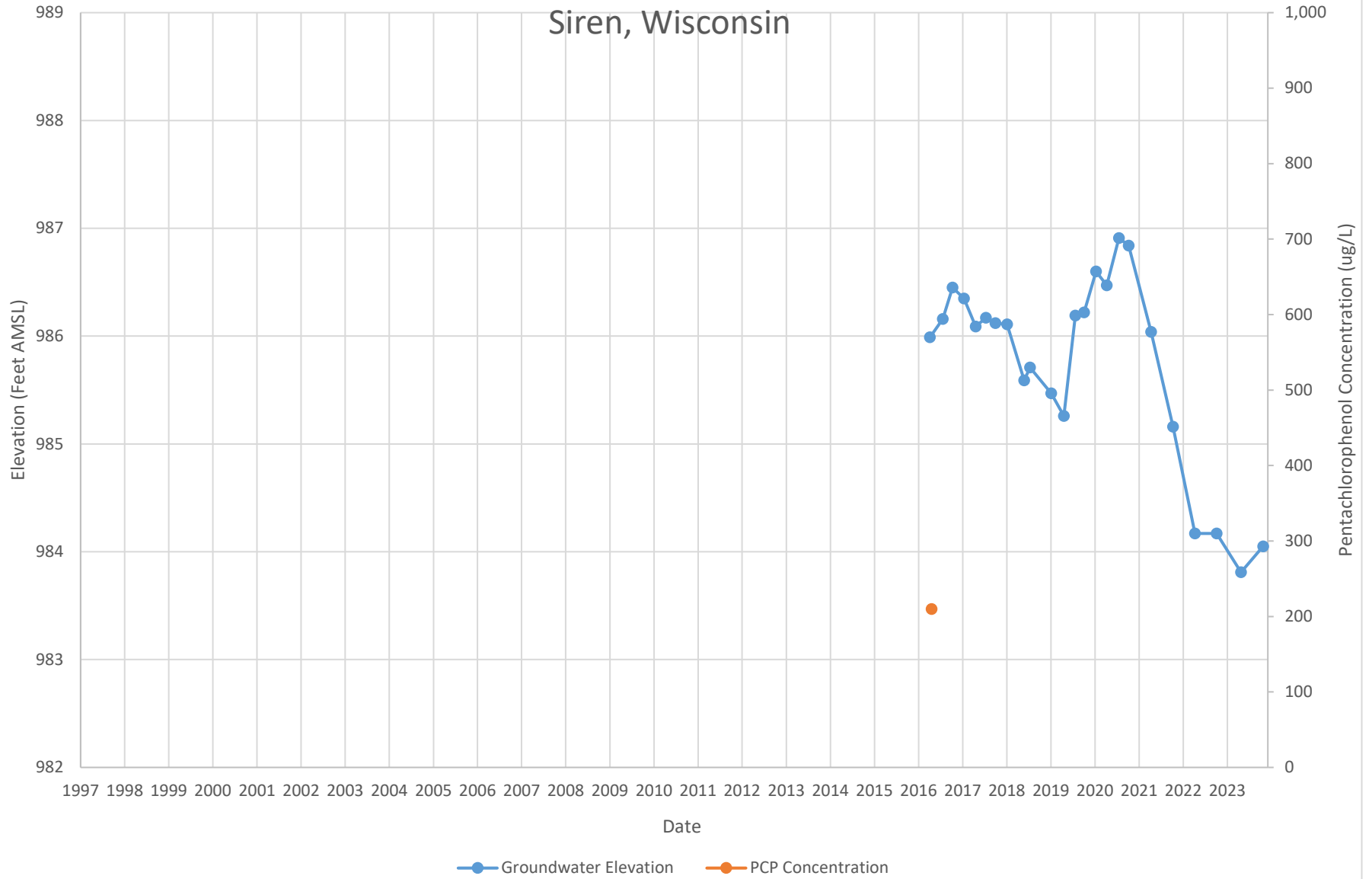
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - EW04S

Penta Wood Products Superfund Site

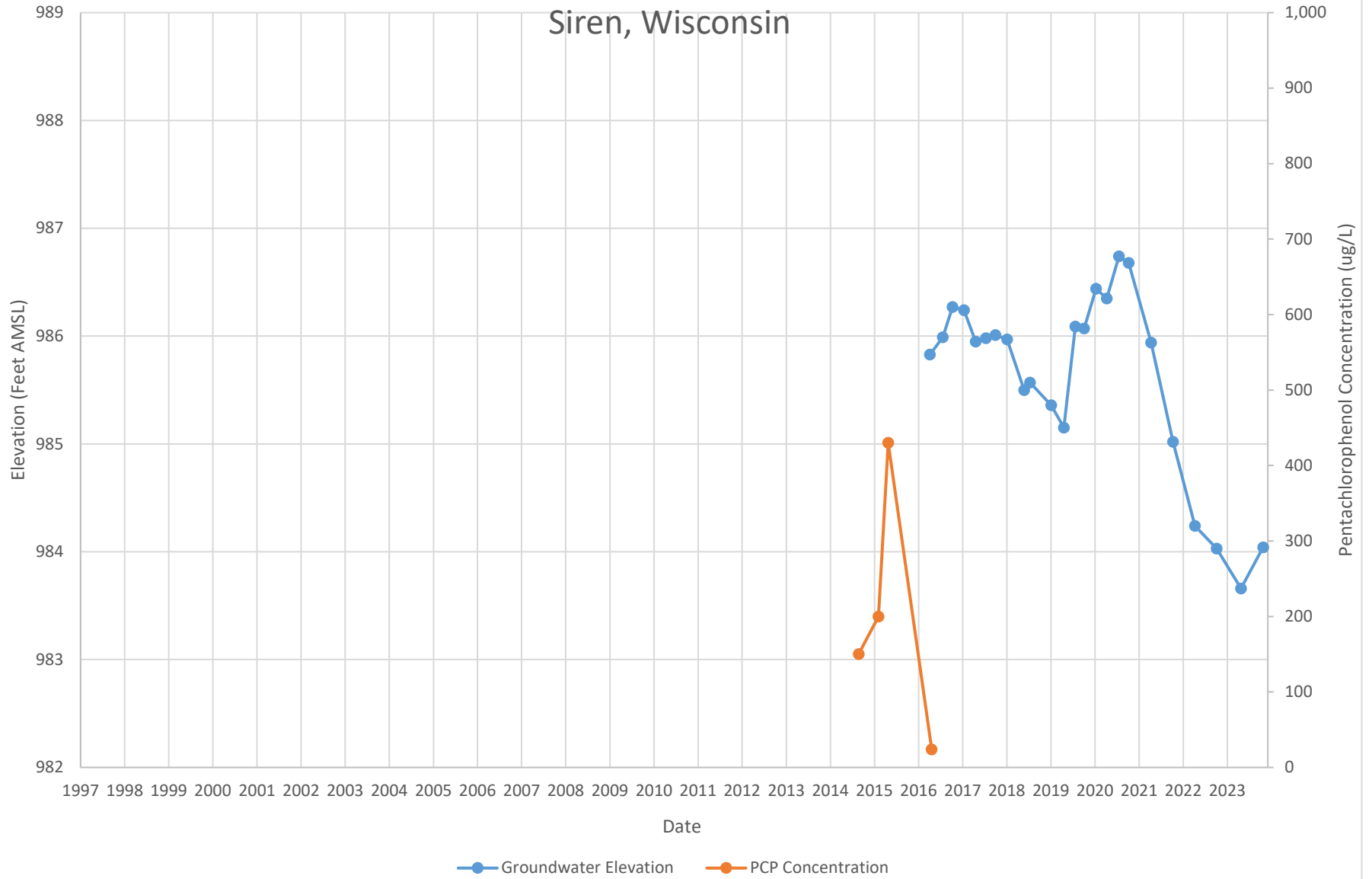
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - EW04D

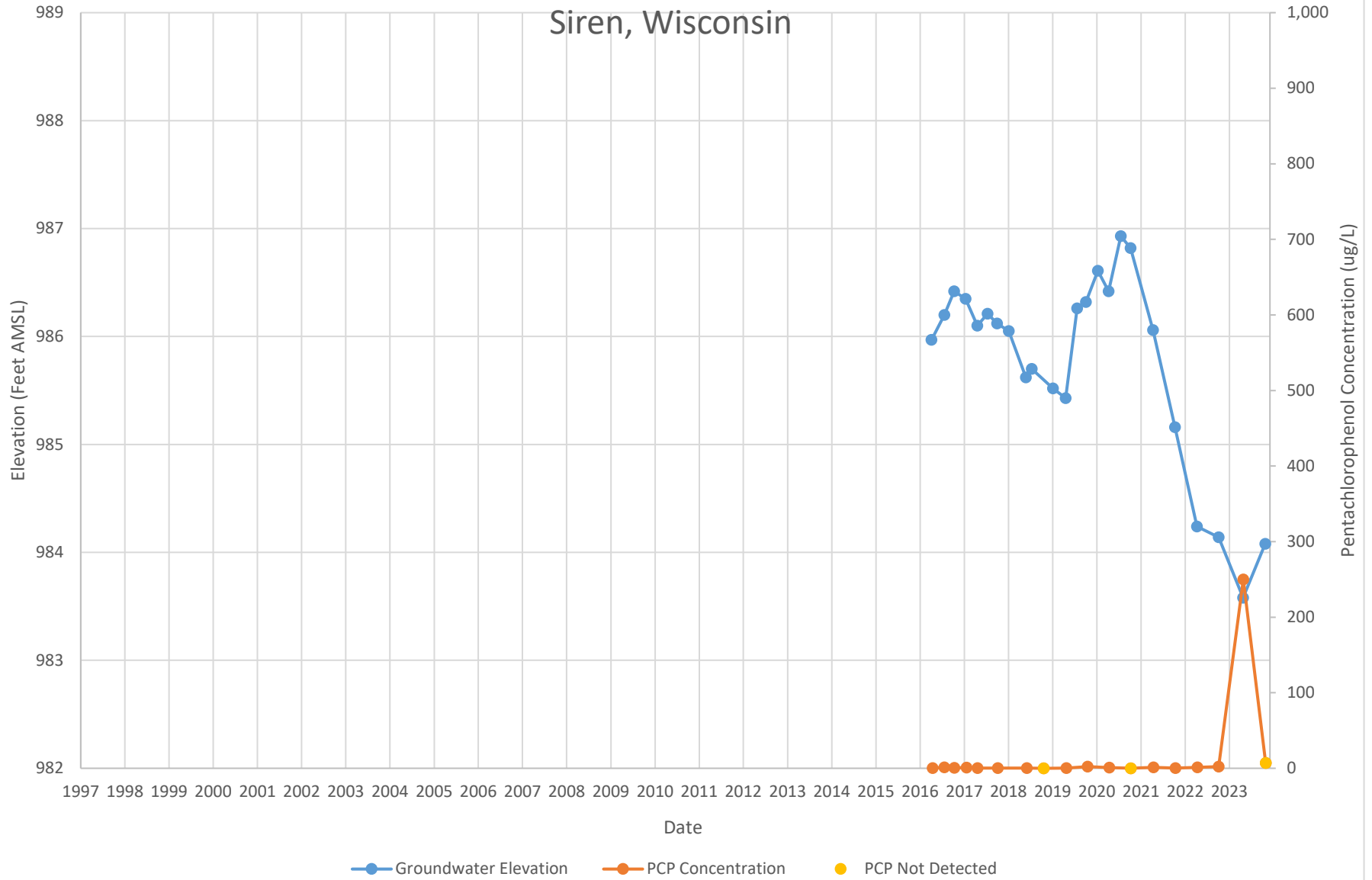
Penta Wood Products Superfund Site

Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - EW11S Penta Wood Products Superfund Site

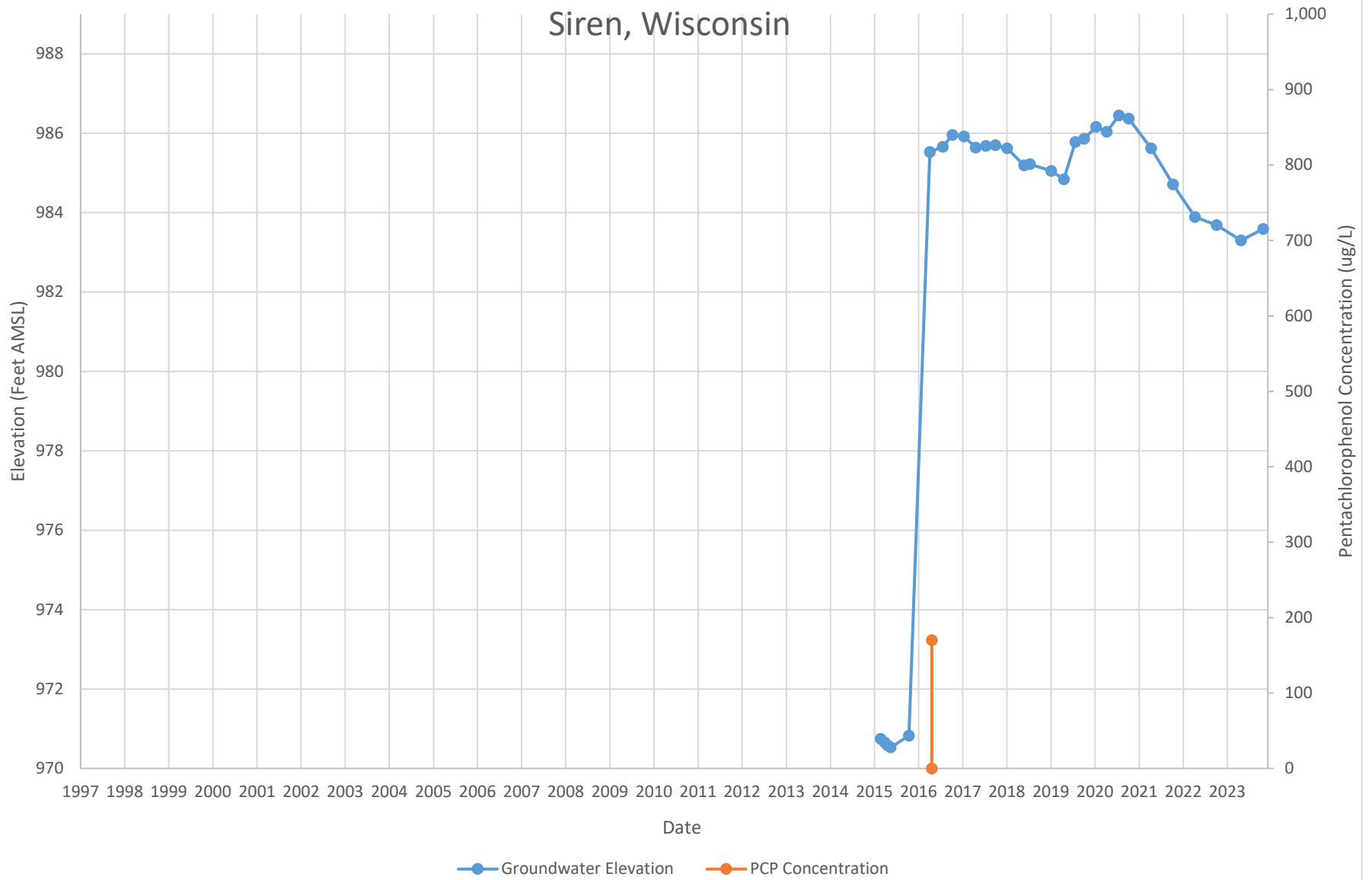
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW6

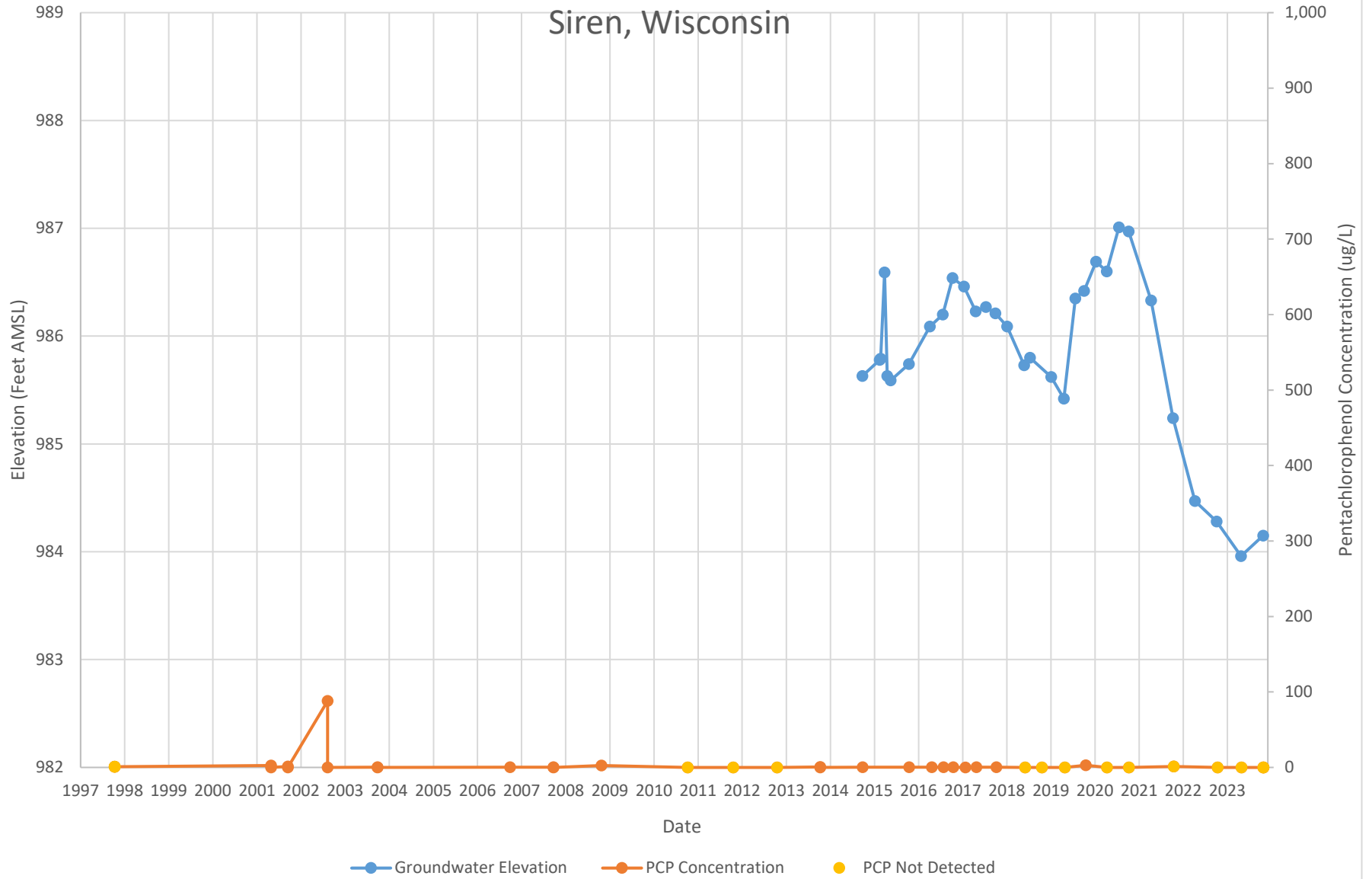
Penta Wood Products Superfund Site

Siren, Wisconsin



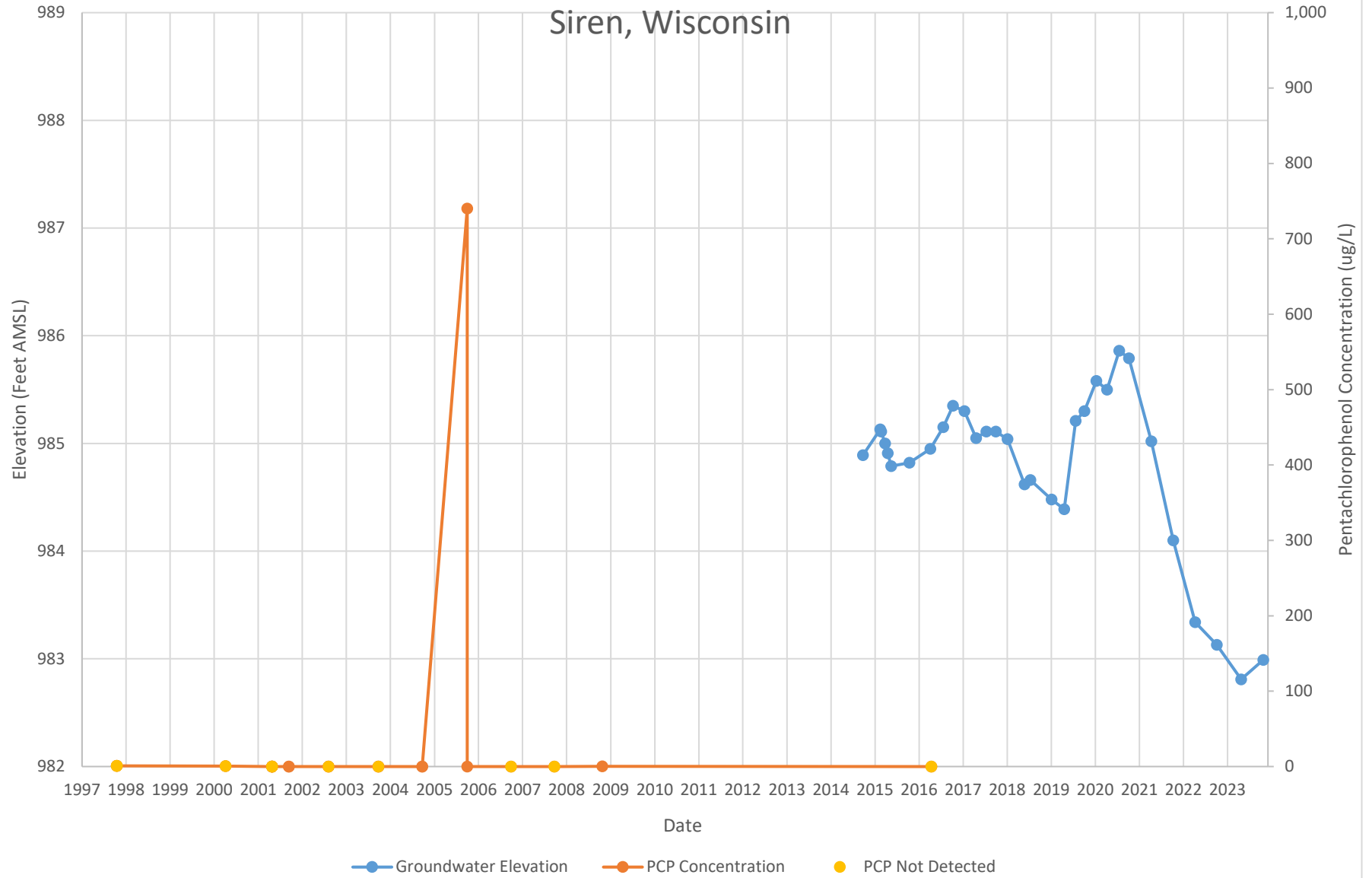
Pentachlorophenol and Groundwater Elevation vs Time Chart - MW6S Penta Wood Products Superfund Site

Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW11 Penta Wood Products Superfund Site

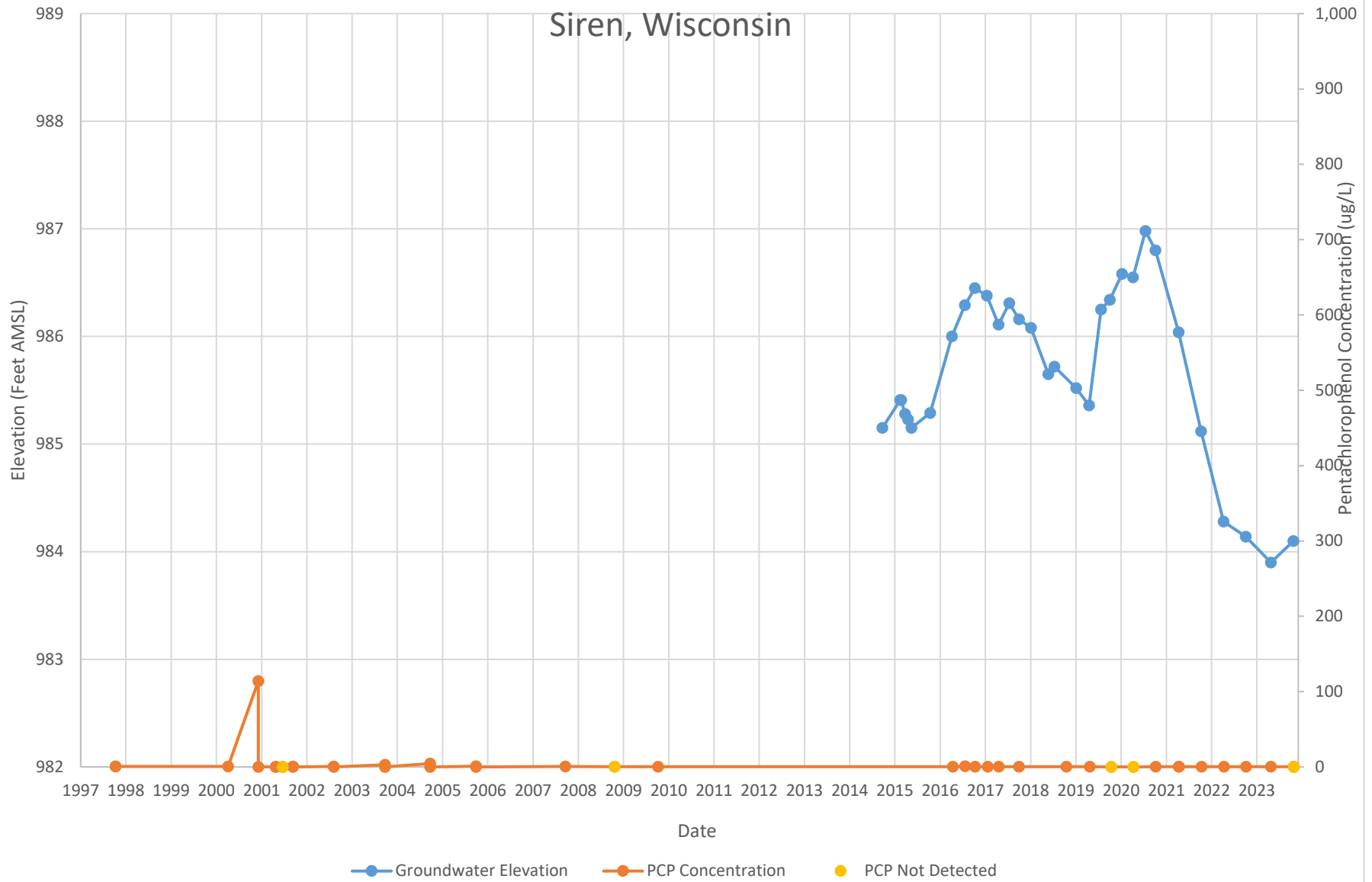
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW13

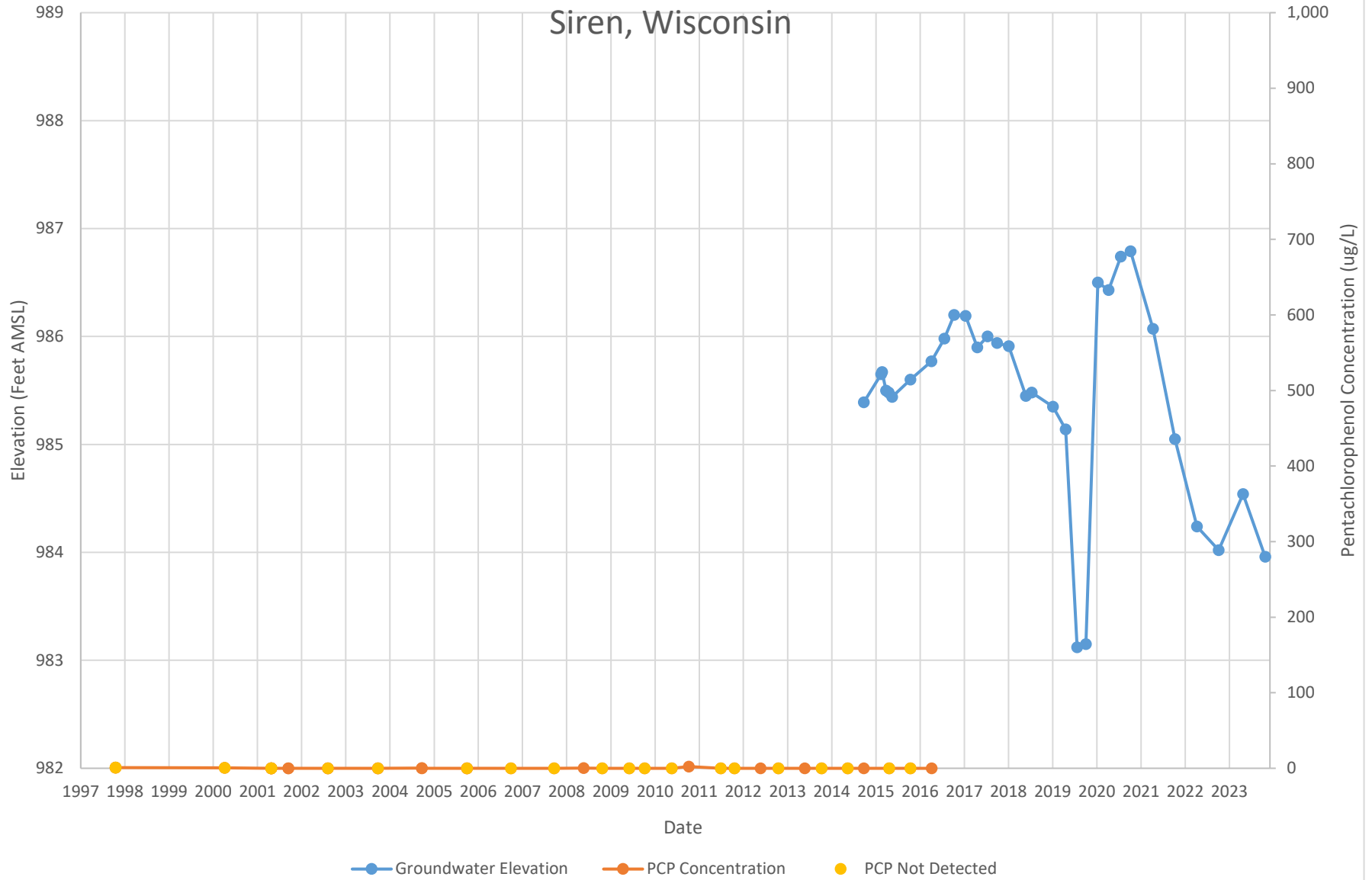
Penta Wood Products Superfund Site

Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW15 Penta Wood Products Superfund Site

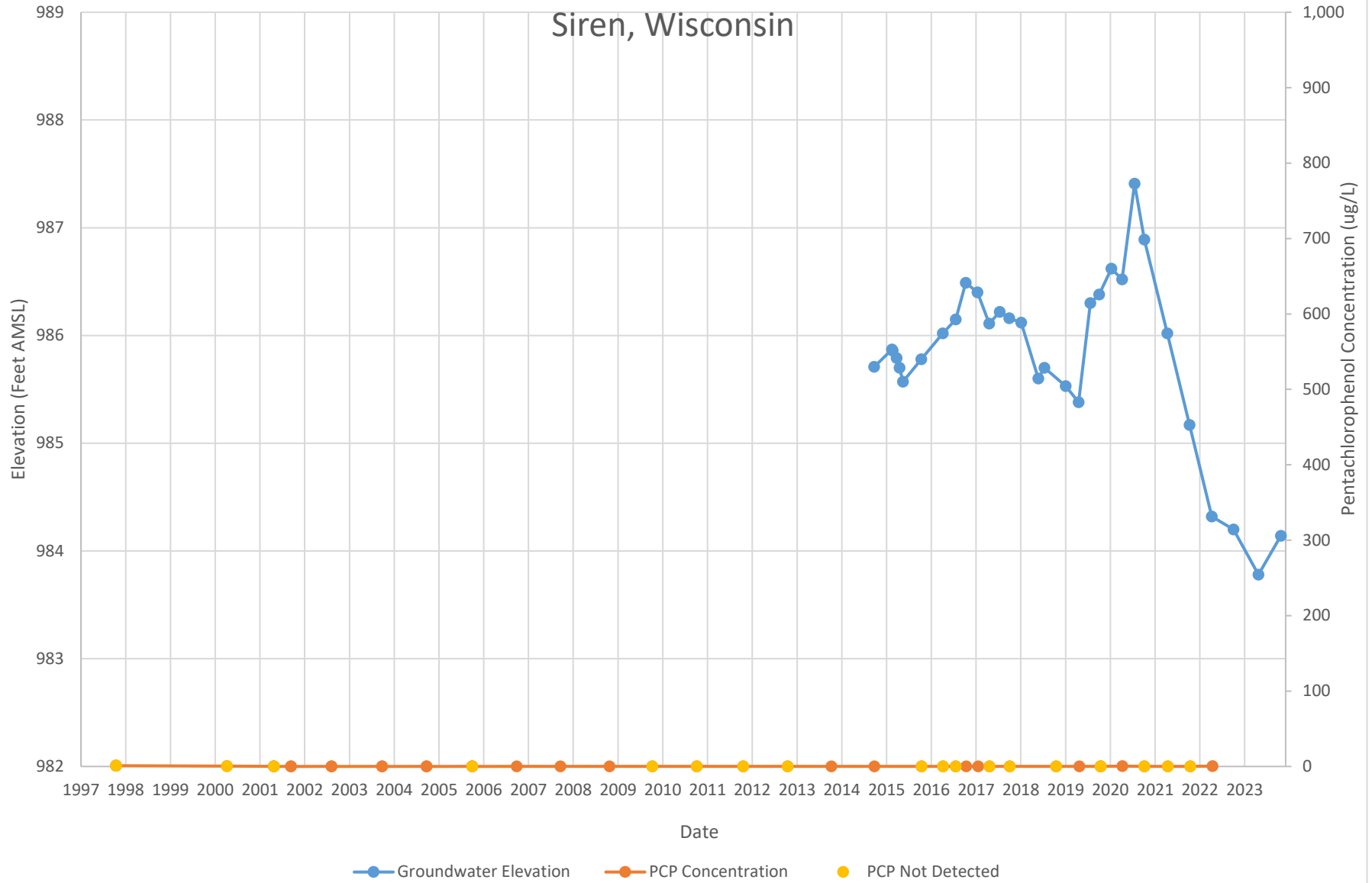
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW16

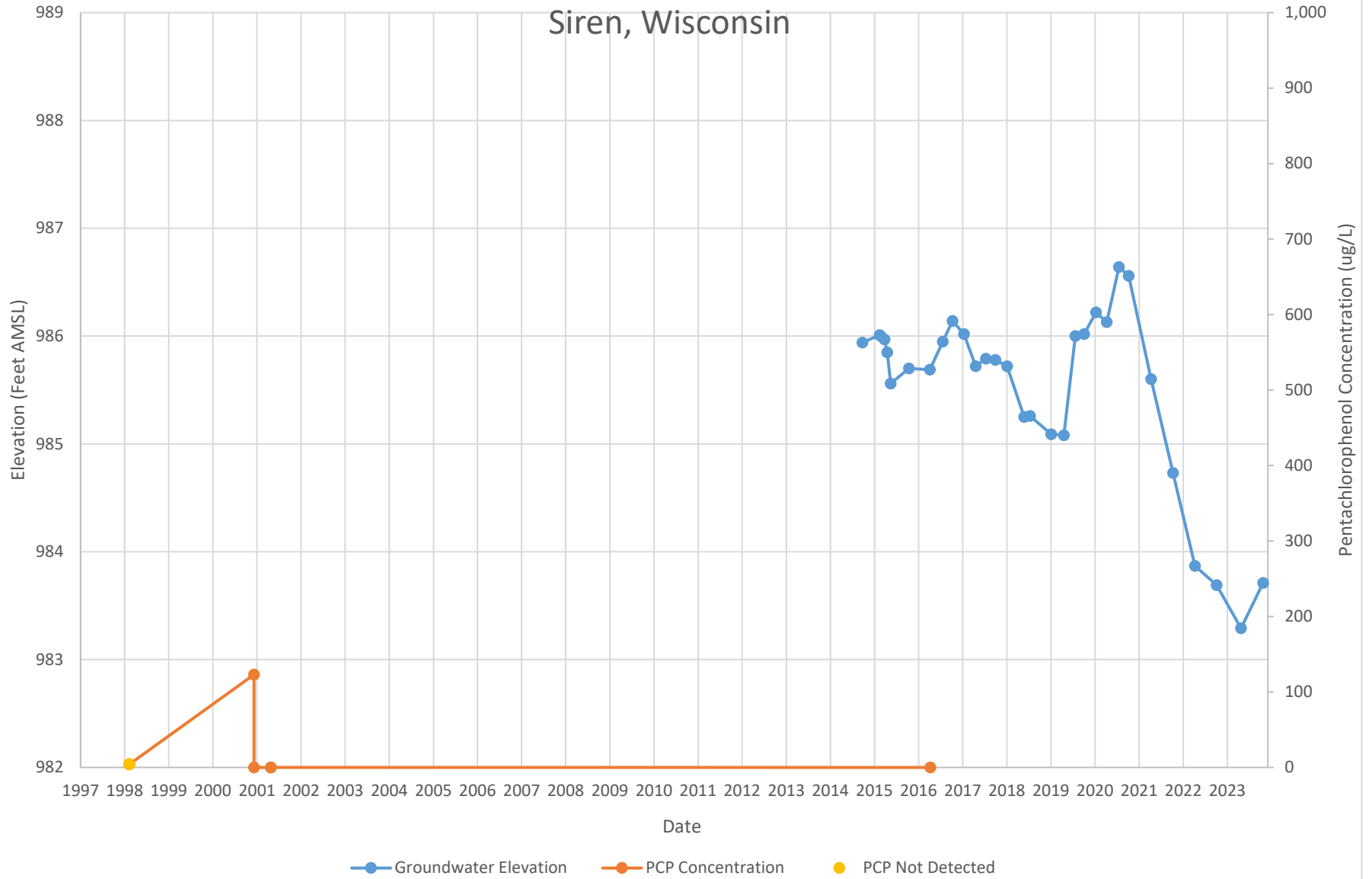
Penta Wood Products Superfund Site

Siren, Wisconsin



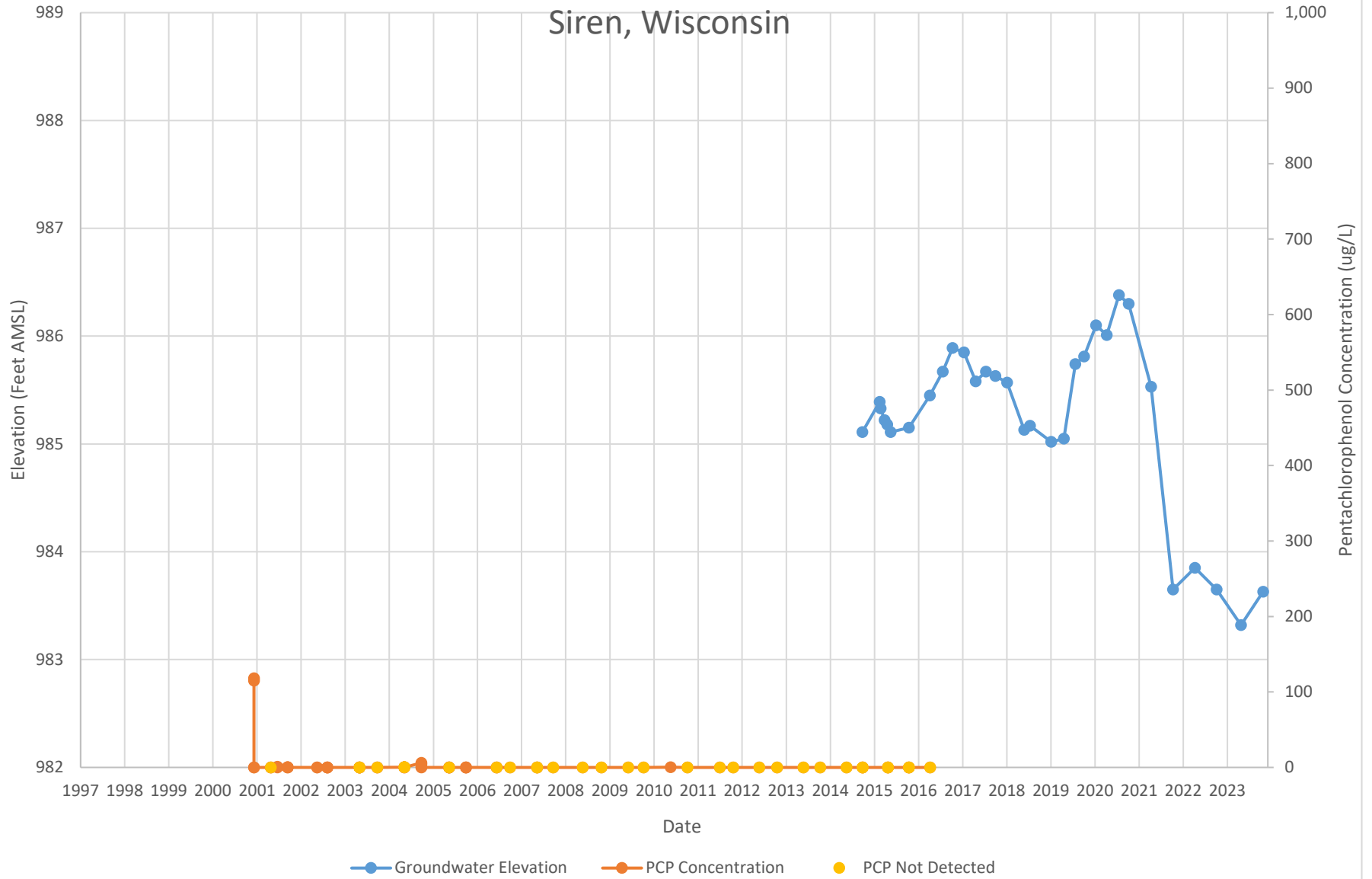
Pentachlorophenol and Groundwater Elevation vs Time Chart - MW24 Penta Wood Products Superfund Site

Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW26 Penta Wood Products Superfund Site

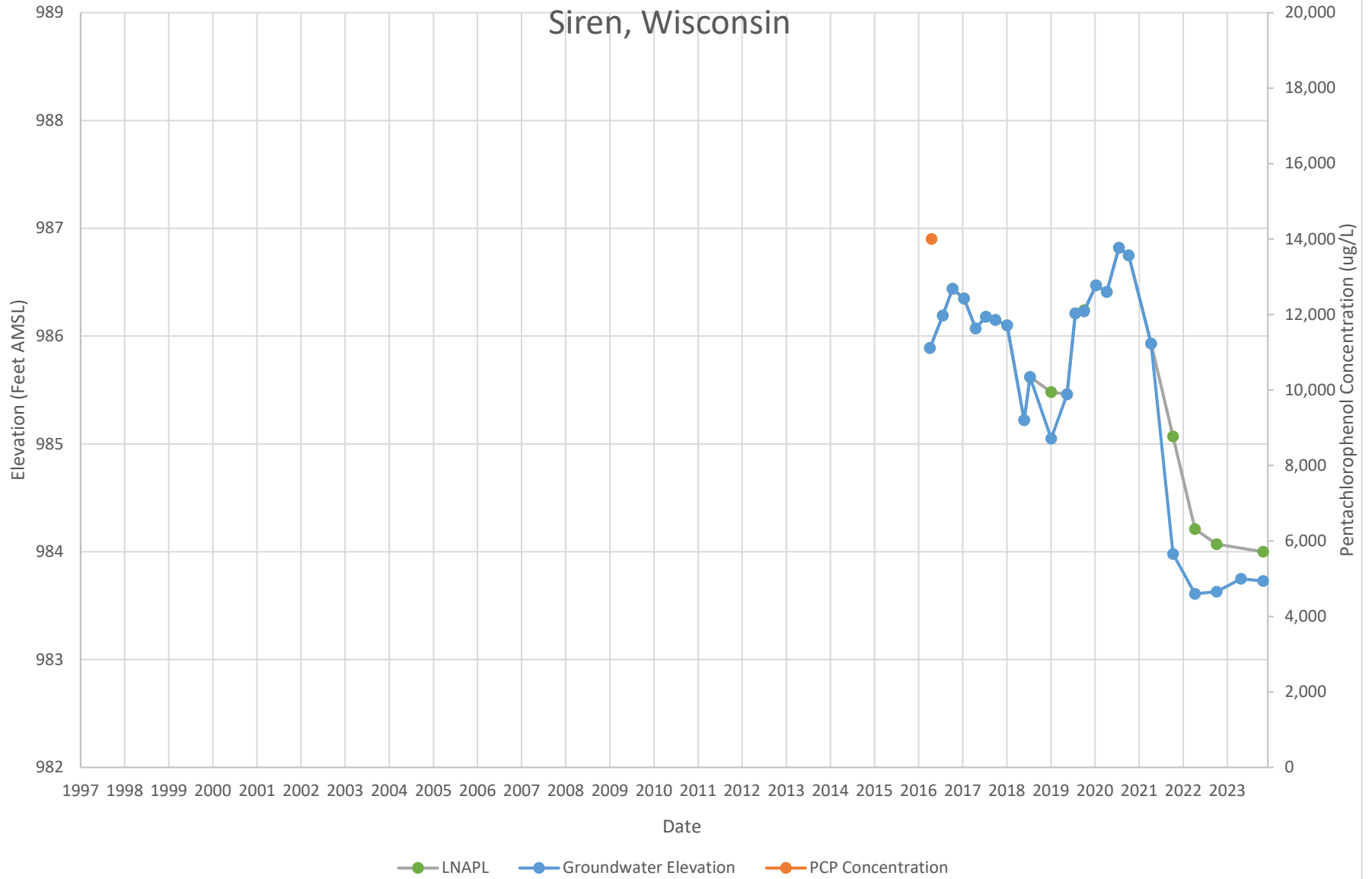
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - EW03S

Penta Wood Products Superfund Site

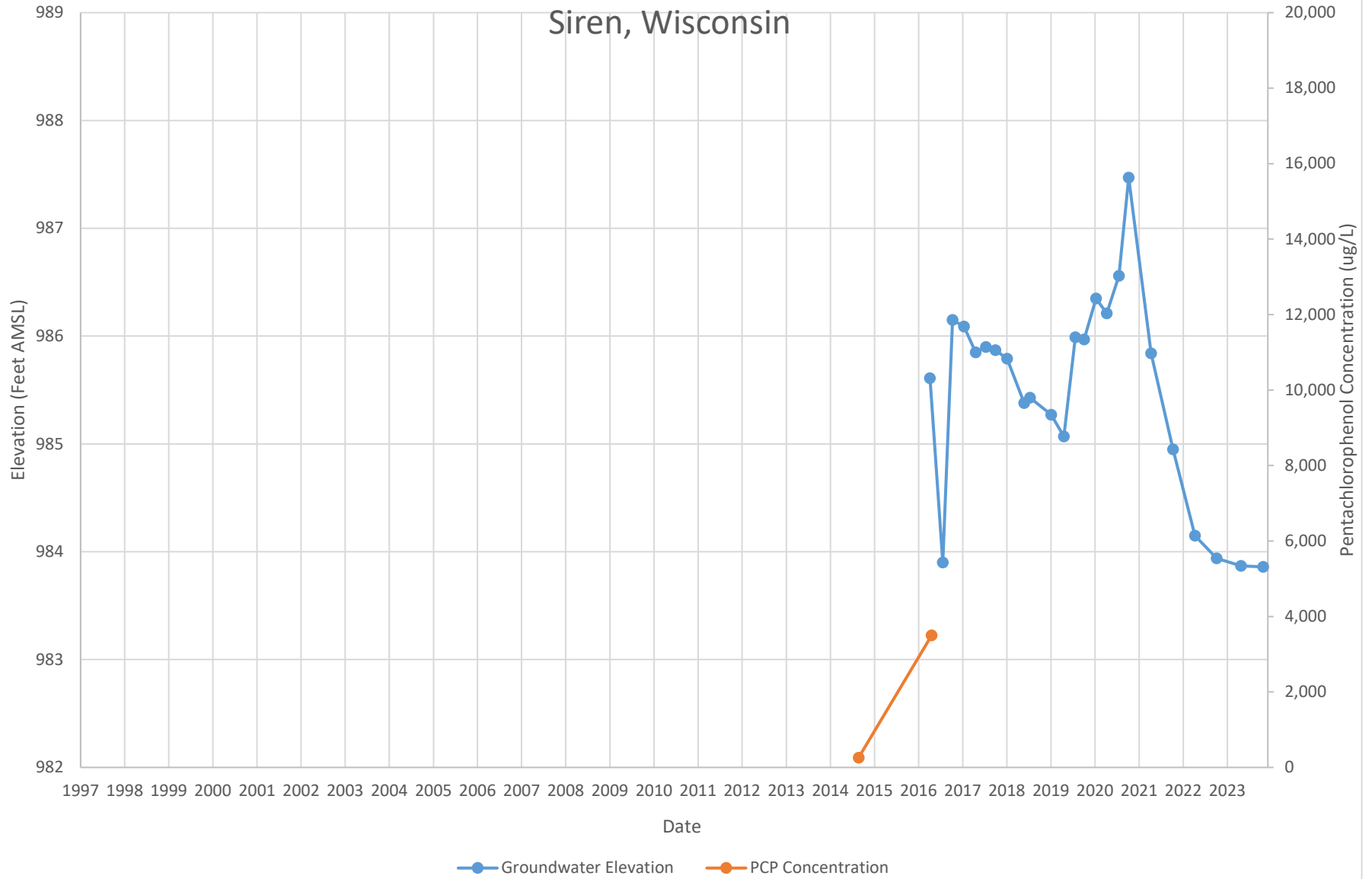
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - EW03D

Penta Wood Products Superfund Site

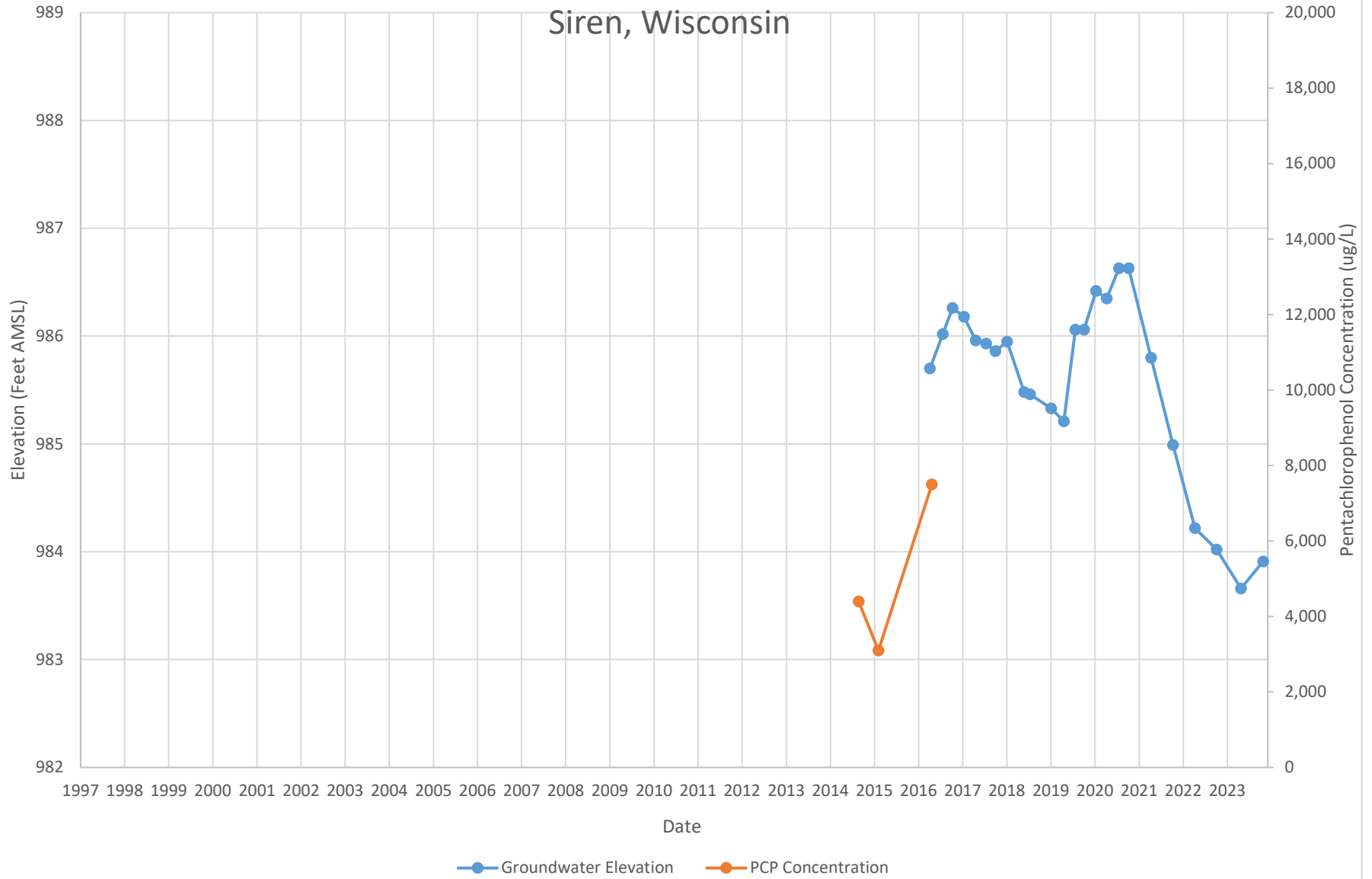
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - EW05D

Penta Wood Products Superfund Site

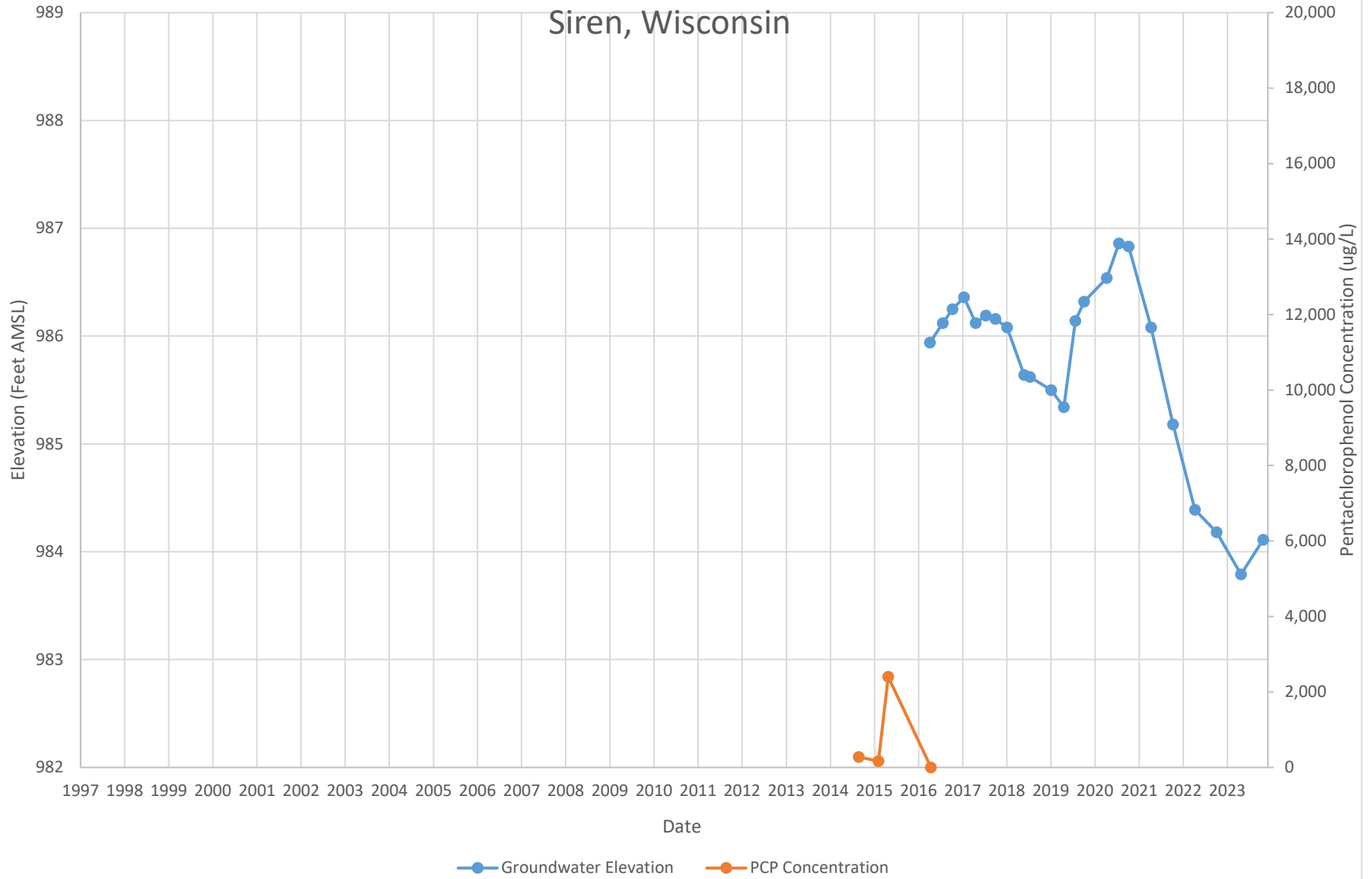
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - EW07D

Penta Wood Products Superfund Site

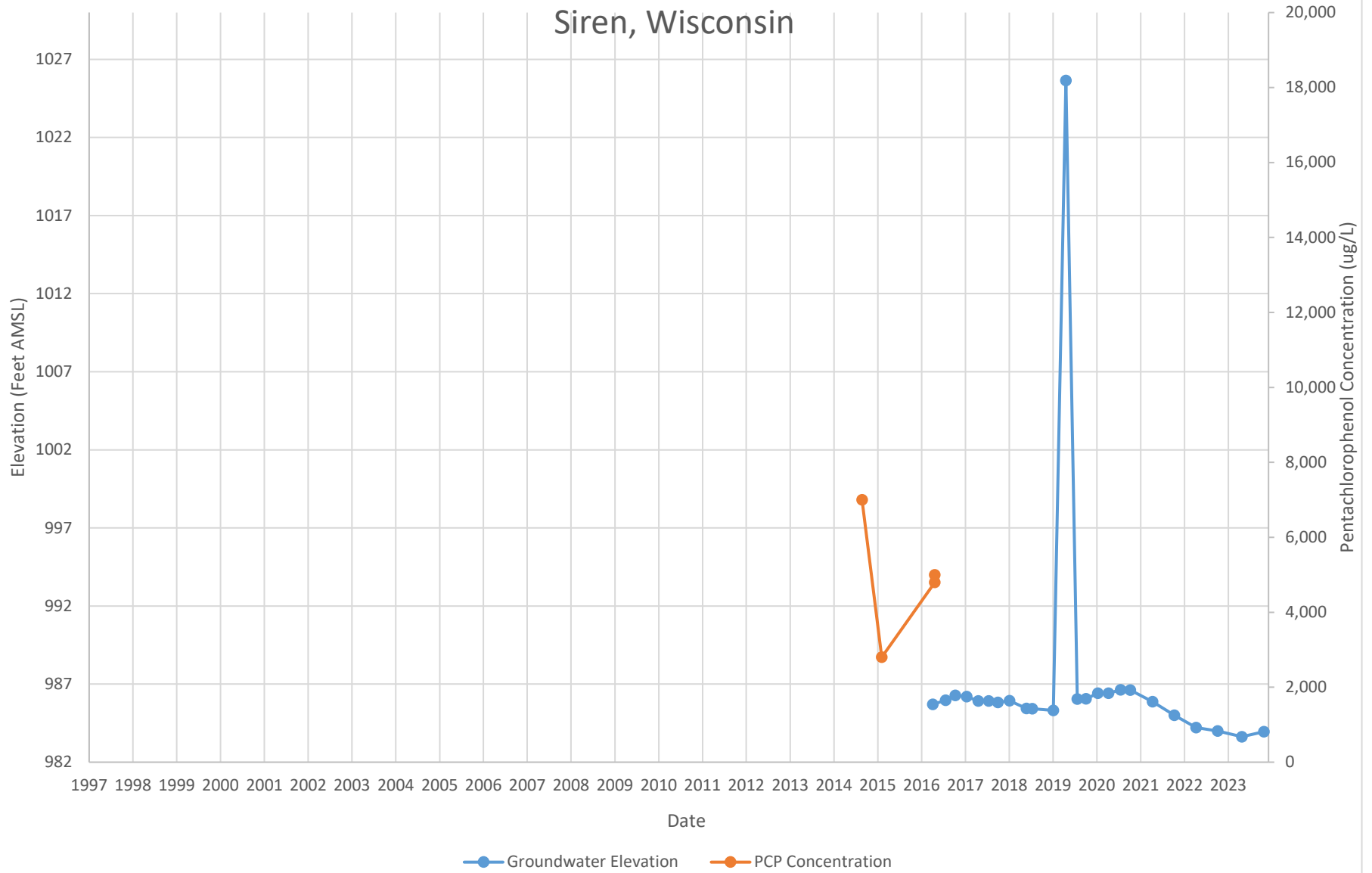
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - EW10D

Penta Wood Products Superfund Site

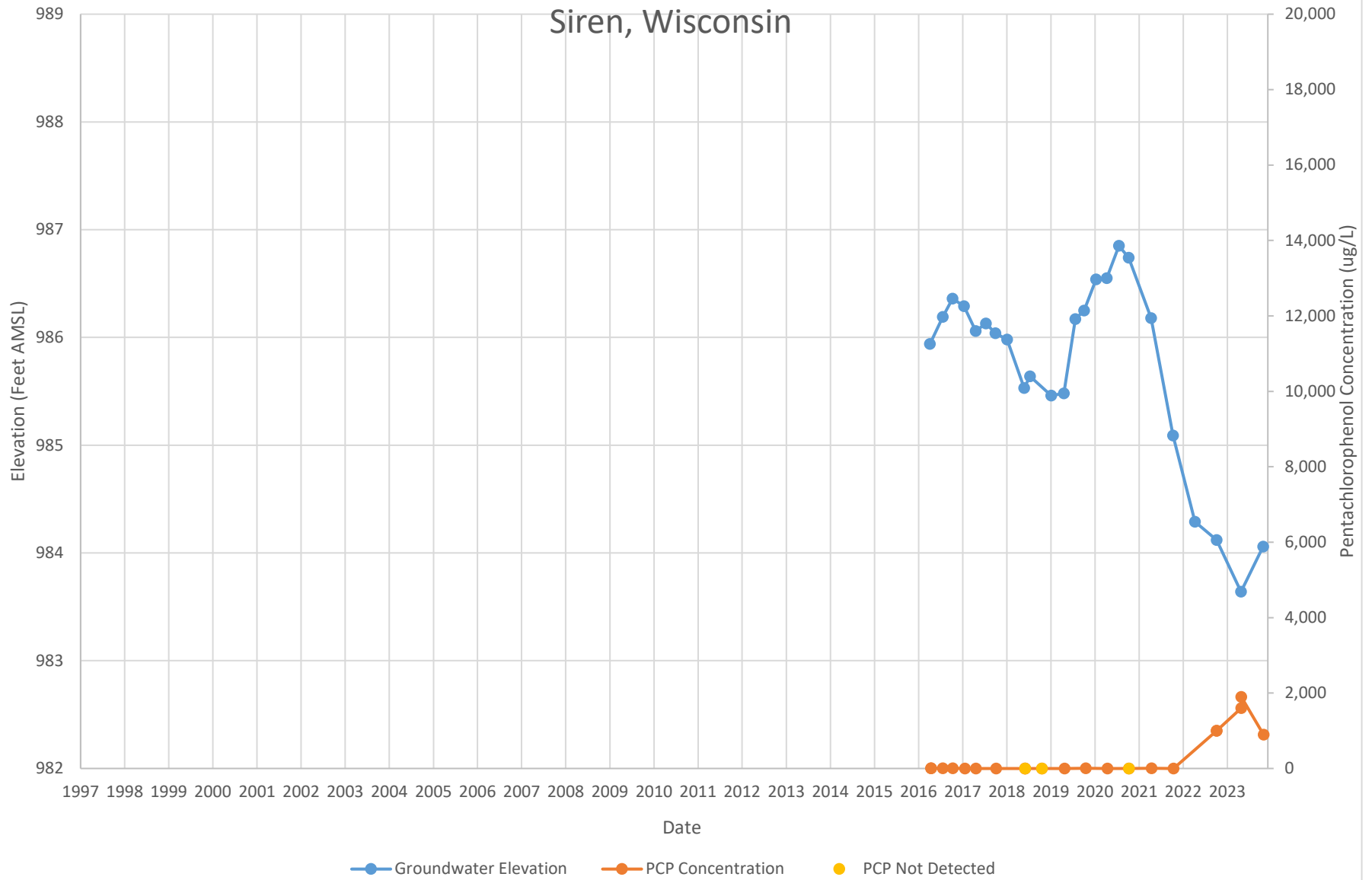
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - EW11D

Penta Wood Products Superfund Site

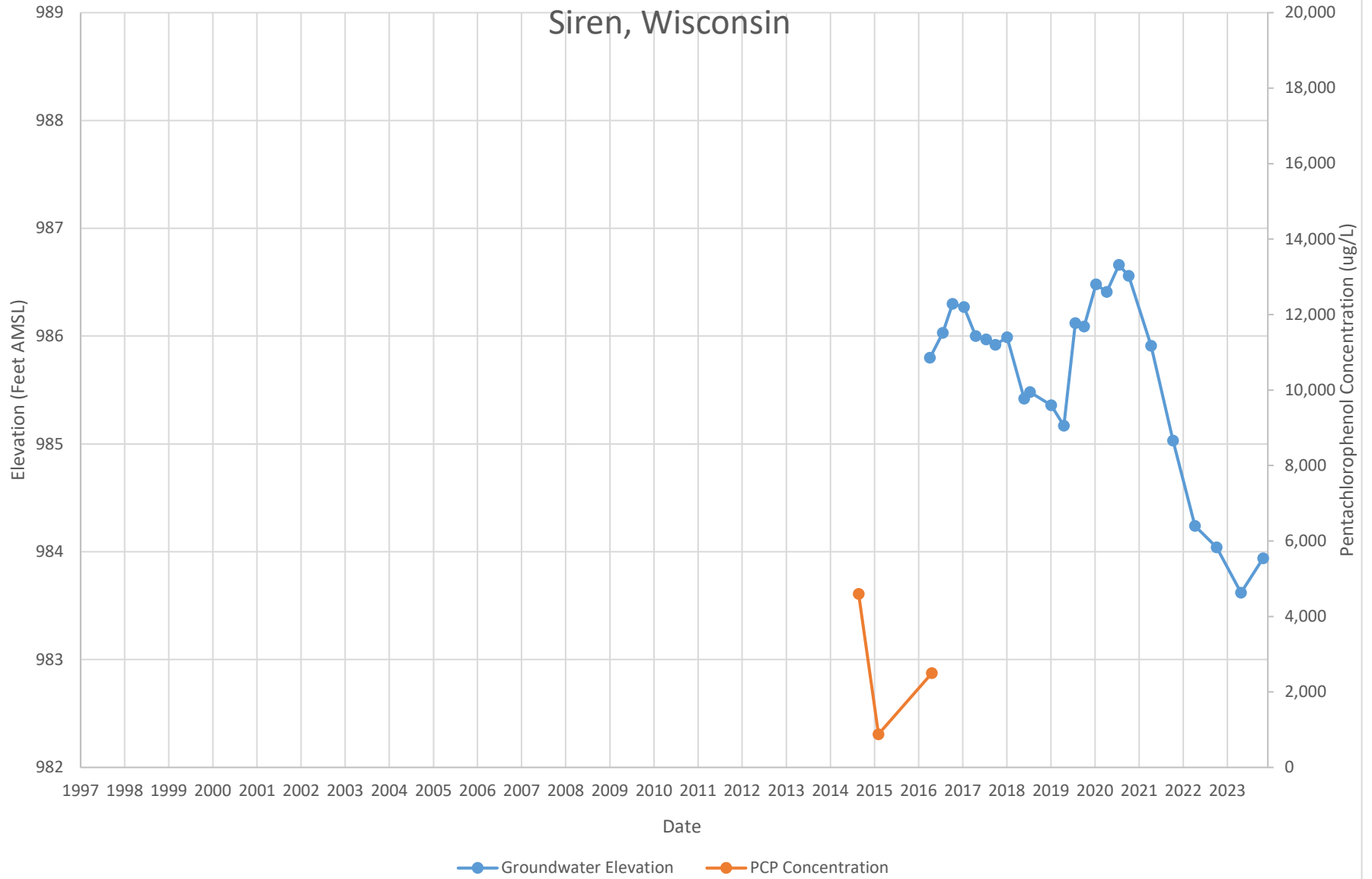
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - EW12D

Penta Wood Products Superfund Site

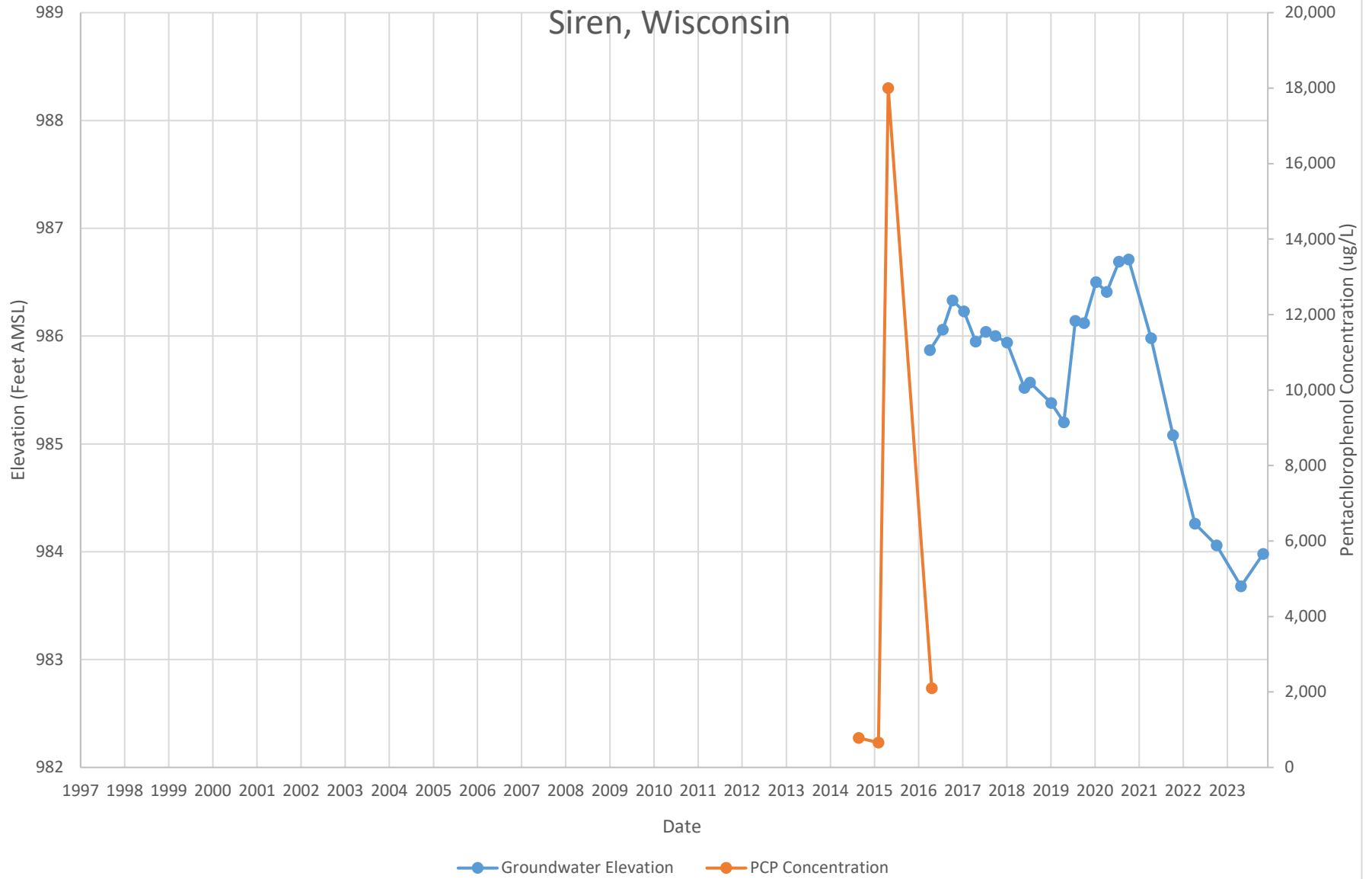
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - EW13D

Penta Wood Products Superfund Site

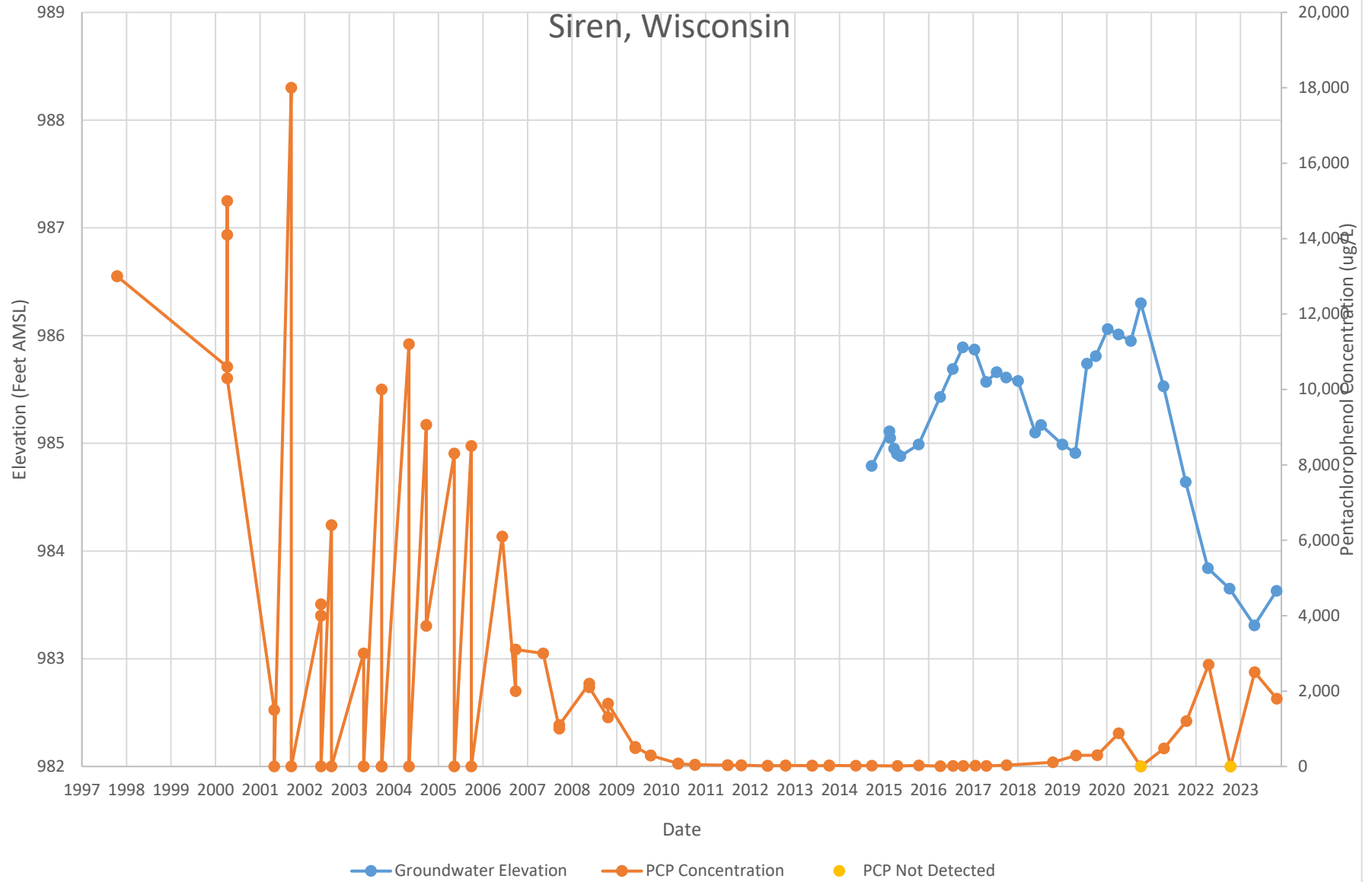
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW12

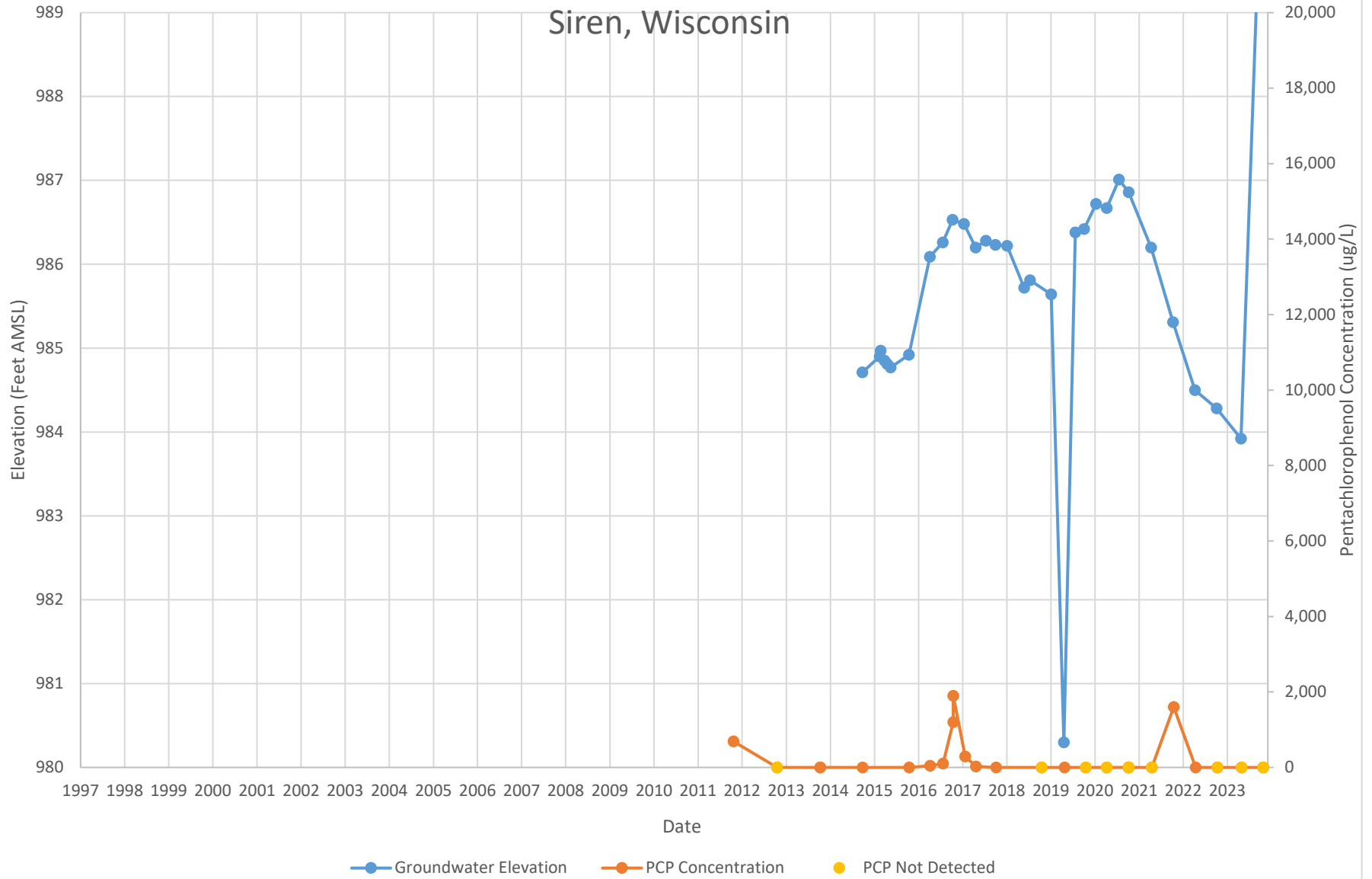
Penta Wood Products Superfund Site

Siren, Wisconsin



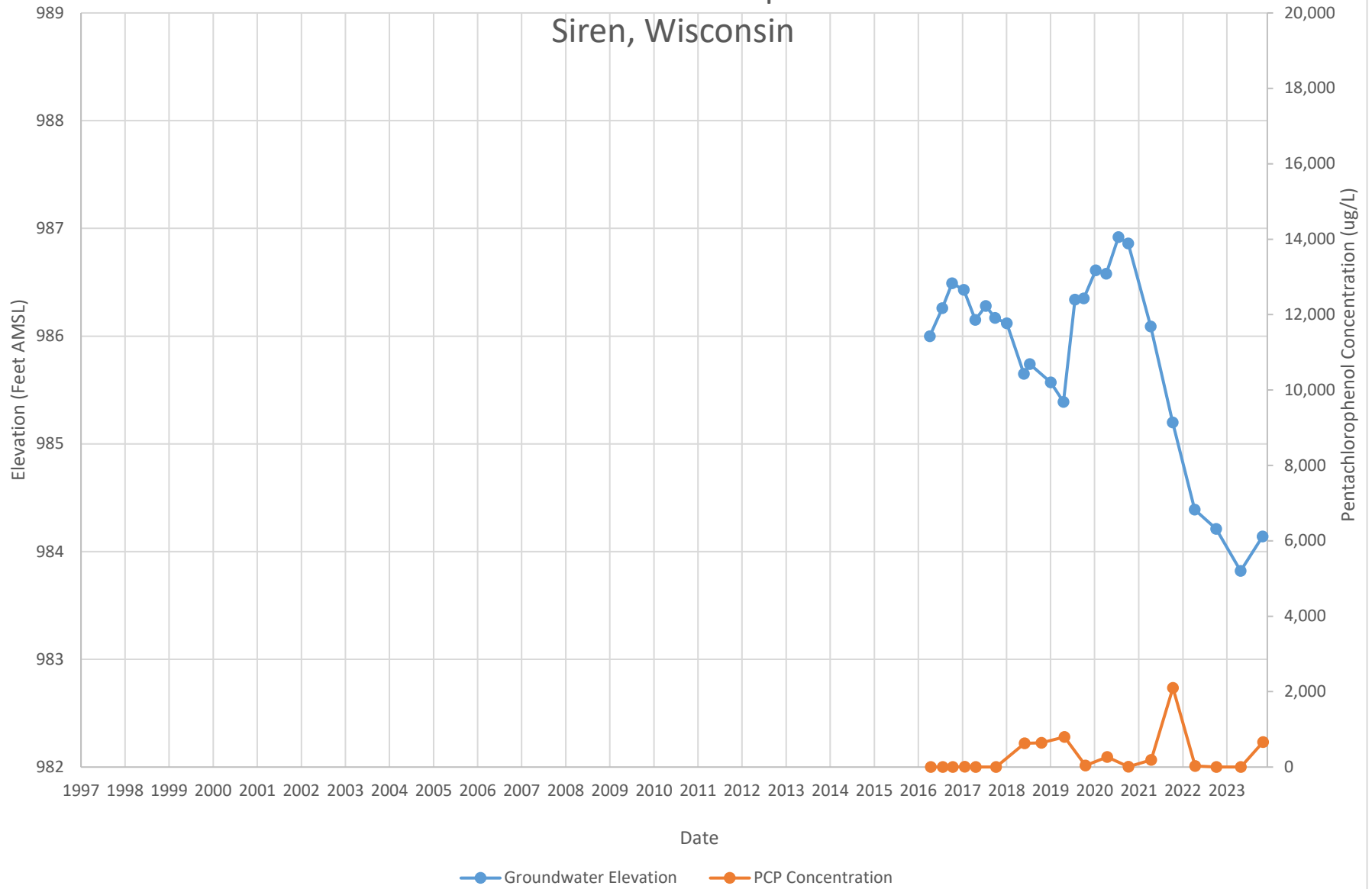
Pentachlorophenol and Groundwater Elevation vs Time Chart - MW28 Penta Wood Products Superfund Site

Siren, Wisconsin



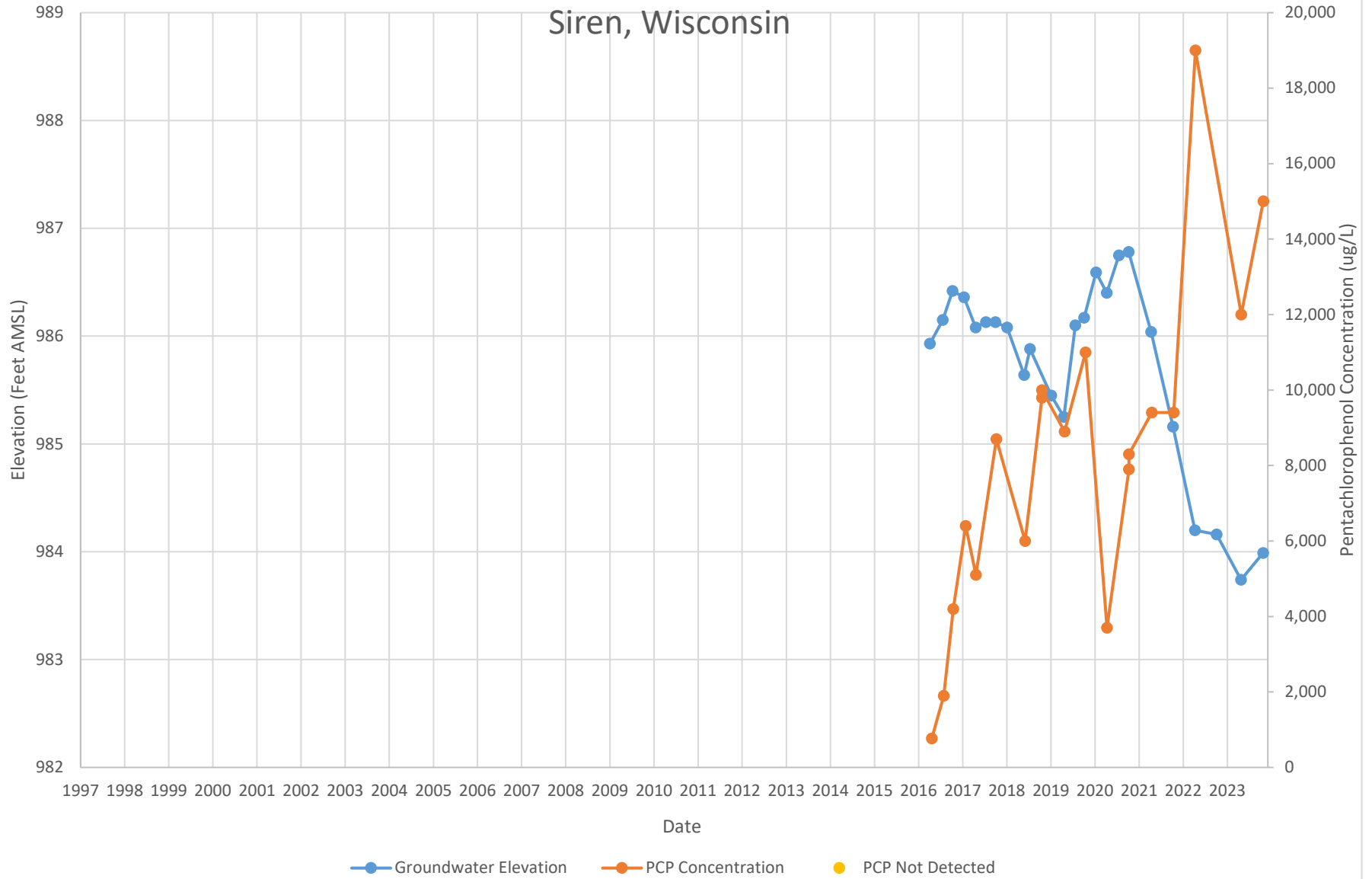
Pentachlorophenol and Groundwater Elevation vs Time Chart - MW30 Penta Wood Products Superfund Site

Siren, Wisconsin



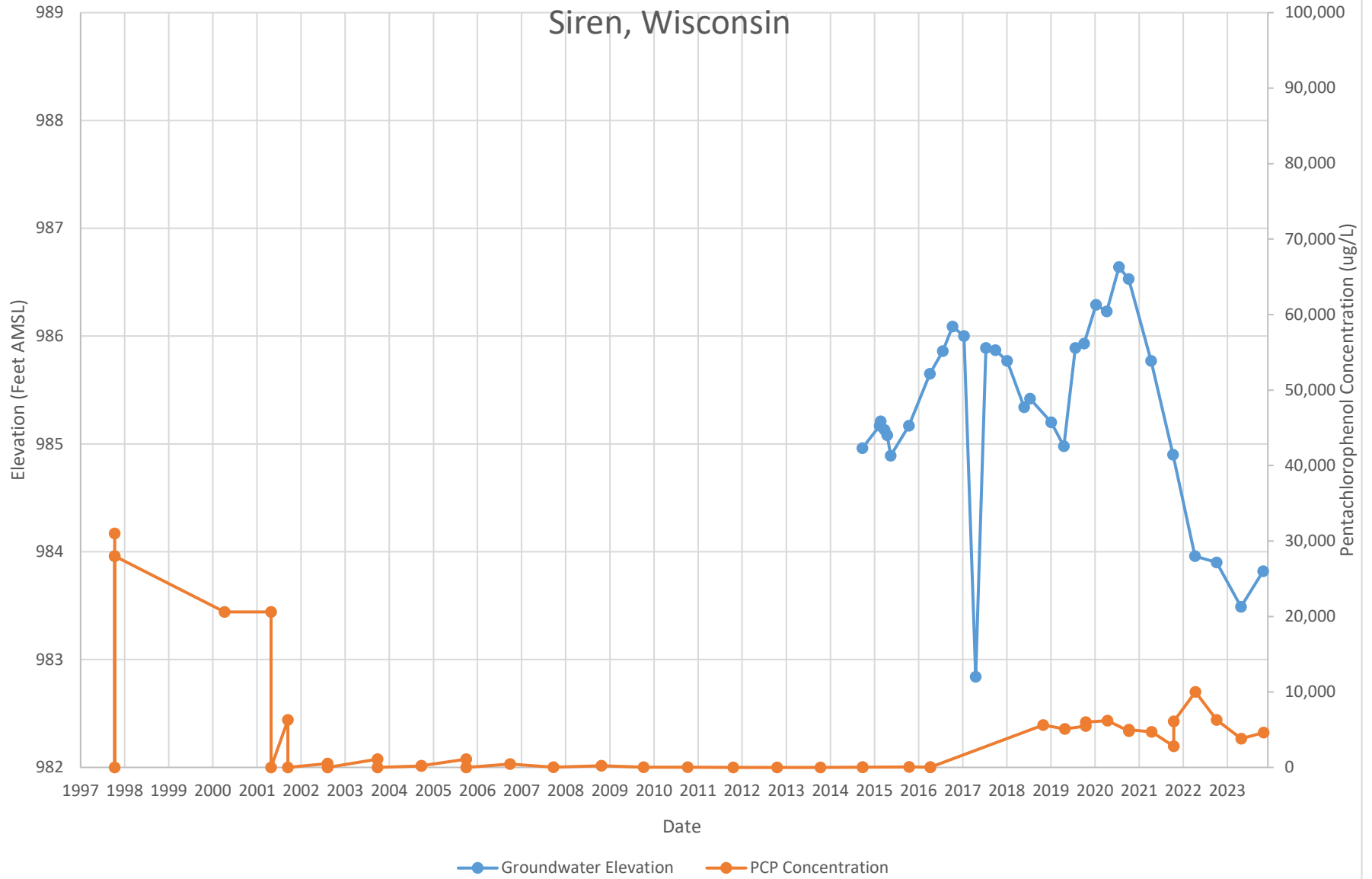
Pentachlorophenol and Groundwater Elevation vs Time Chart - EW13S Penta Wood Products Superfund Site

Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW5 Penta Wood Products Superfund Site

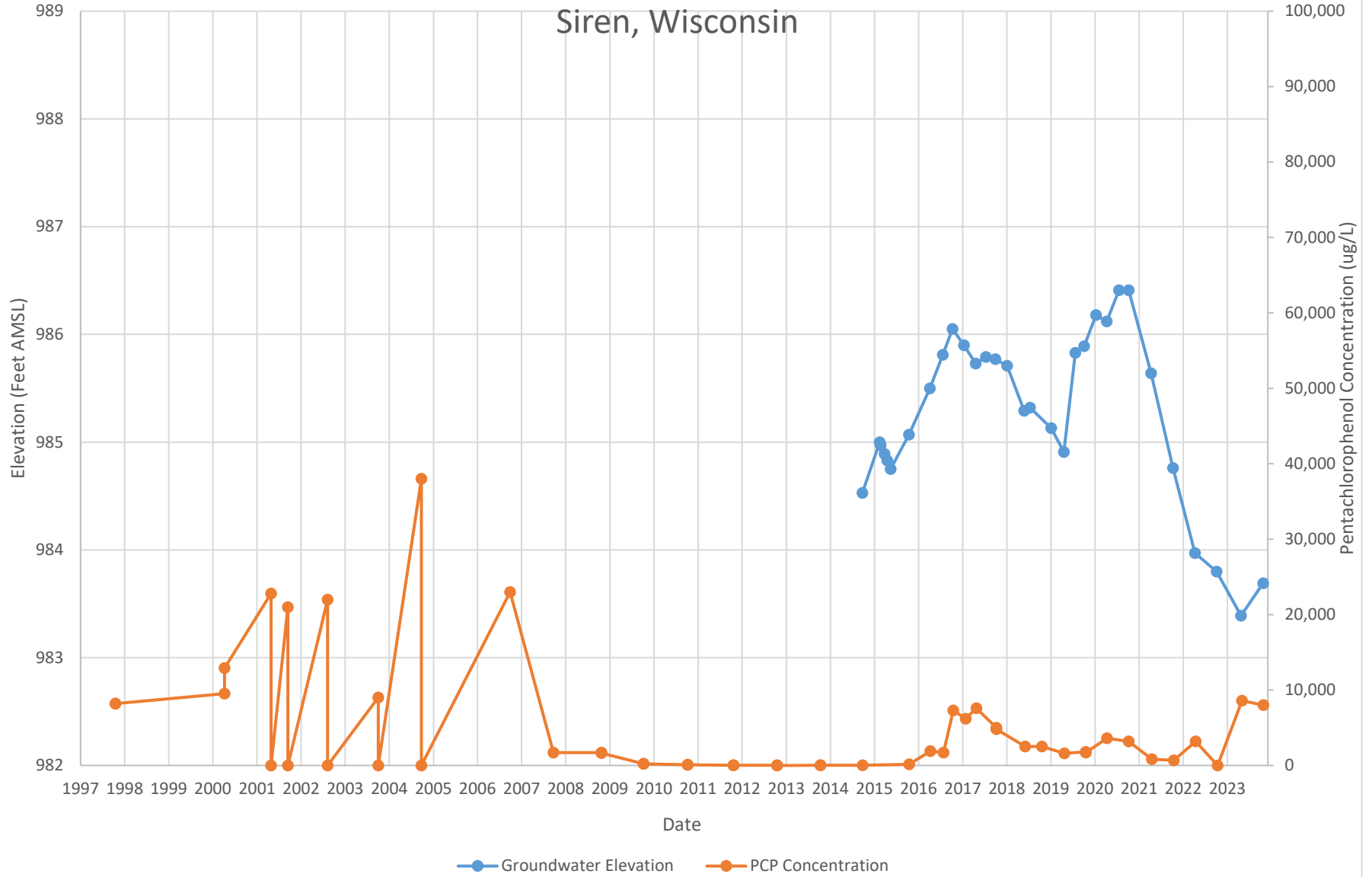
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW10

Penta Wood Products Superfund Site

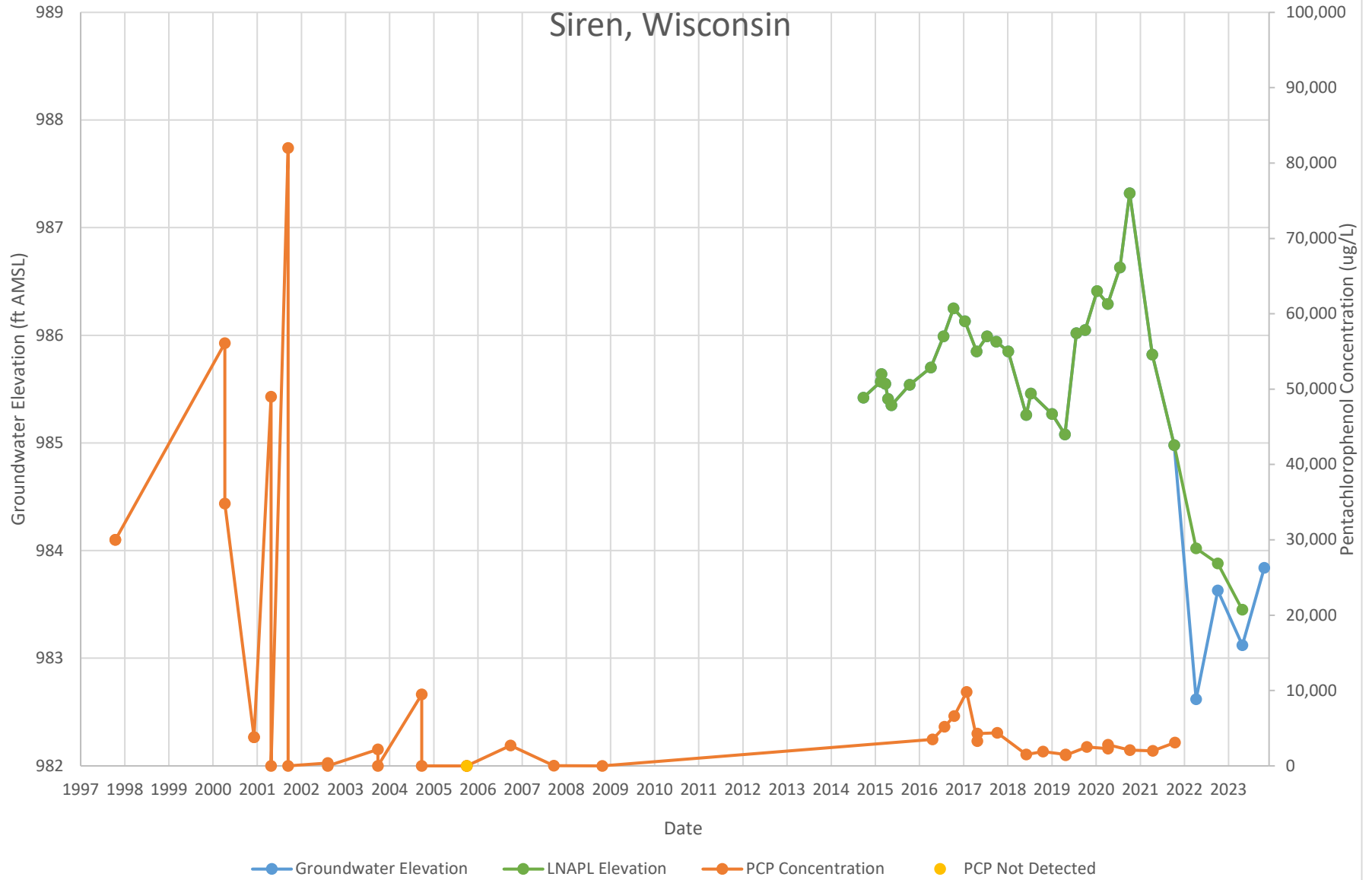
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW10S

Penta Wood Products Superfund Site

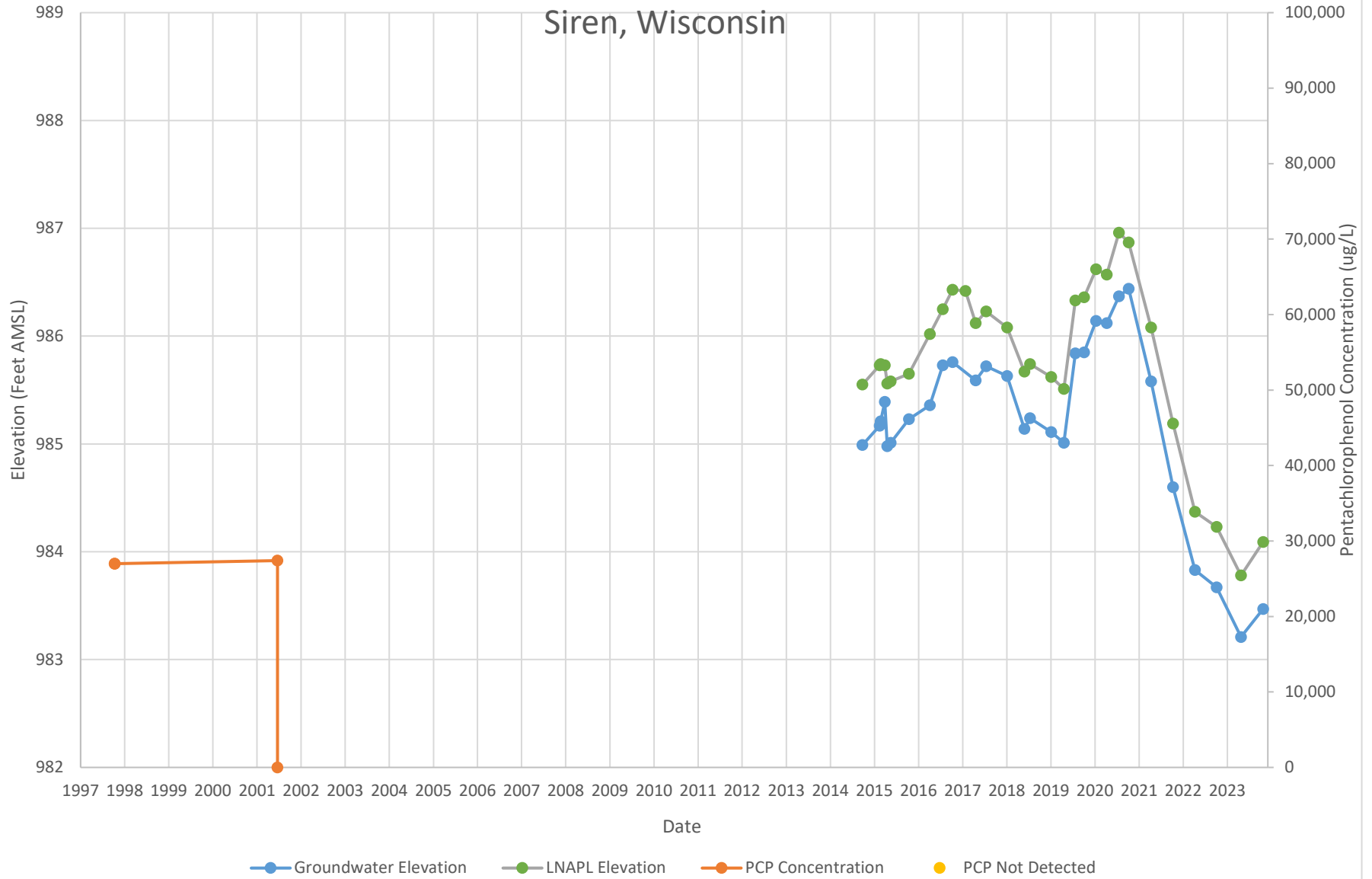
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW18

Penta Wood Products Superfund Site

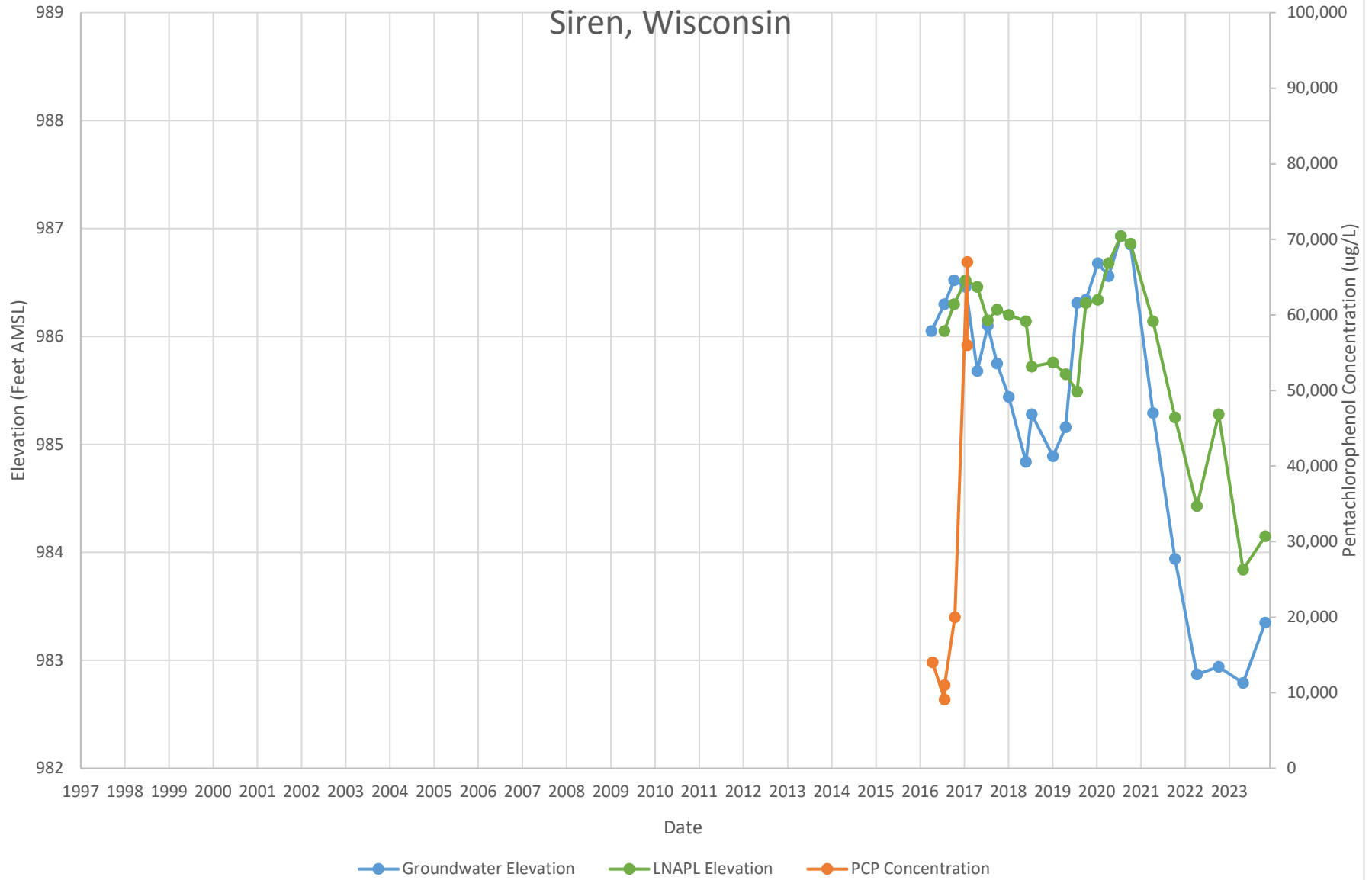
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW29

Penta Wood Products Superfund Site

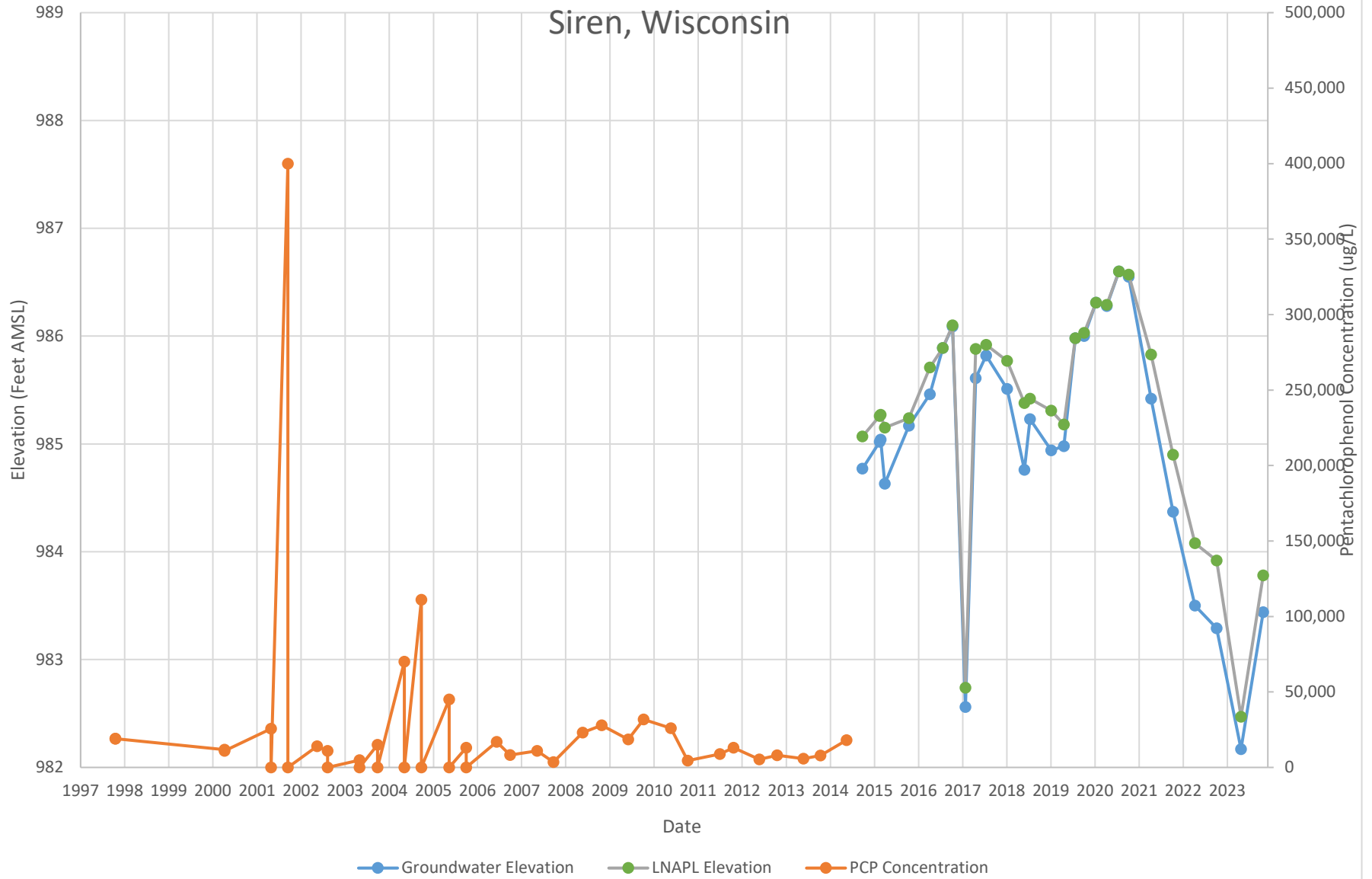
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW19

Penta Wood Products Superfund Site

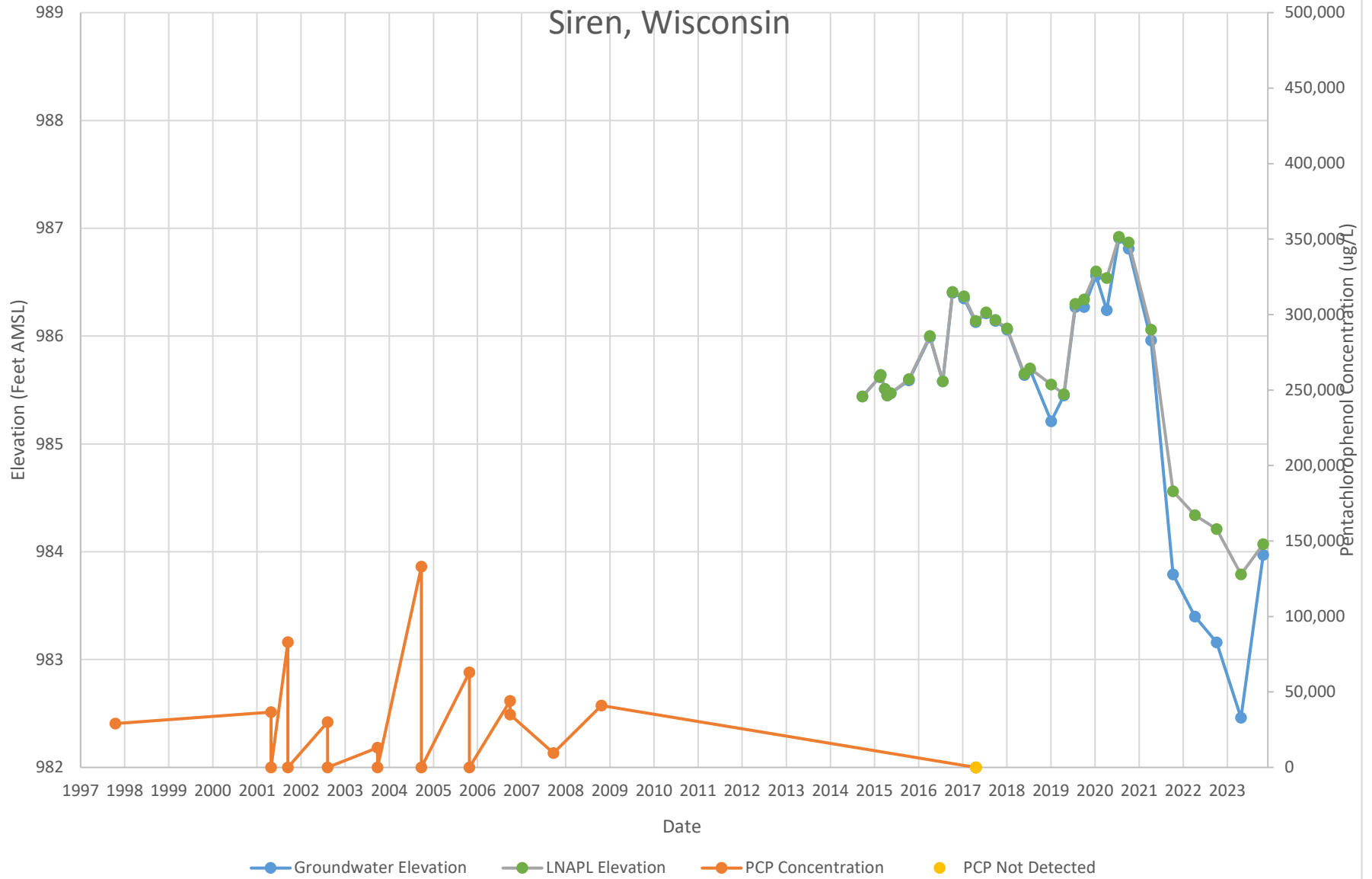
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW20

Penta Wood Products Superfund Site

Siren, Wisconsin



Appendix B

**Groundwater Sample Laboratory
Reports – Monitoring, Extraction,
Residential, and Onsite Supply Wells**



ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Grant Anderson
GHD Services Inc.
900 Long Lake Road
Suite 200
New Brighton, Minnesota 55112

Generated 10/18/2023 11:40:57 PM

JOB DESCRIPTION

Penta Wood 11222418

JOB NUMBER

500-240473-1

Eurofins Chicago

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



Generated
10/18/2023 11:40:57 PM

Authorized for release by
Carlene McCutcheon, Senior Project Manager
Carlene.McCutcheon@et.eurofinsus.com
(708)325-6562



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Case Narrative

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-240473-1

Job ID: 500-240473-1

Laboratory: Eurofins Chicago

Narrative

**Job Narrative
500-240473-1**

Receipt

The samples were received on 10/4/2023 9:20 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 2.2° C, 2.5° C, 5.0° C and 5.2° C.

GC/MS VOA

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

GC/MS Semi VOA

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

GC Semi VOA

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

Organic Prep

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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-240473-1

Client Sample ID: W-231003-RA-01	Lab Sample ID: 500-240473-1
<input type="checkbox"/> No Detections.	
Client Sample ID: W-231003-RA-02	Lab Sample ID: 500-240473-2
<input type="checkbox"/> No Detections.	
Client Sample ID: W-231003-RA-03	Lab Sample ID: 500-240473-3
<input type="checkbox"/> No Detections.	
Client Sample ID: W-231003-RA-04	Lab Sample ID: 500-240473-4
<input type="checkbox"/> No Detections.	
Client Sample ID: W-231003-RA-05	Lab Sample ID: 500-240473-5
<input type="checkbox"/> No Detections.	
Client Sample ID: W-231003-RA-06	Lab Sample ID: 500-240473-6
<input type="checkbox"/> No Detections.	
Client Sample ID: W-231003-RA-07	Lab Sample ID: 500-240473-7
<input type="checkbox"/> No Detections.	
Client Sample ID: W-231003-RA-08	Lab Sample ID: 500-240473-8
<input type="checkbox"/> No Detections.	
Client Sample ID: W-231003-RA-09	Lab Sample ID: 500-240473-9
<input type="checkbox"/> No Detections.	
Client Sample ID: Trip Blank	Lab Sample ID: 500-240473-10
<input type="checkbox"/> No Detections.	

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

Method Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-240473-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	EET CHI
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CHI
8151A	Herbicides (GC)	SW846	EET CHI
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CHI
5030B	Purge and Trap	SW846	EET CHI
8151A	Extraction (Herbicides)	SW846	EET CHI

Protocol References:

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

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200



Sample Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-240473-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-240473-1	W-231003-RA-01	Water	10/03/23 10:27	10/04/23 09:20
500-240473-2	W-231003-RA-02	Water	10/03/23 10:40	10/04/23 09:20
500-240473-3	W-231003-RA-03	Water	10/03/23 10:48	10/04/23 09:20
500-240473-4	W-231003-RA-04	Water	10/03/23 10:48	10/04/23 09:20
500-240473-5	W-231003-RA-05	Water	10/03/23 11:03	10/04/23 09:20
500-240473-6	W-231003-RA-06	Water	10/03/23 11:13	10/04/23 09:20
500-240473-7	W-231003-RA-07	Water	10/03/23 11:23	10/04/23 09:20
500-240473-8	W-231003-RA-08	Water	10/03/23 11:45	10/04/23 09:20
500-240473-9	W-231003-RA-09	Water	10/03/23 11:50	10/04/23 09:20
500-240473-10	Trip Blank	Water	10/03/23 00:00	10/04/23 09:20

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-240473-1

Client Sample ID: W-231003-RA-01

Lab Sample ID: 500-240473-1

Date Collected: 10/03/23 10:27

Matrix: Water

Date Received: 10/04/23 09:20

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			10/05/23 16:59	1
Toluene	<0.15		0.50	0.15	ug/L			10/05/23 16:59	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/05/23 16:59	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/05/23 16:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		75 - 126		10/05/23 16:59	1
Toluene-d8 (Surr)	92		75 - 120		10/05/23 16:59	1
4-Bromofluorobenzene (Surr)	93		72 - 124		10/05/23 16:59	1
Dibromofluoromethane	114		75 - 120		10/05/23 16:59	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.24		0.77	0.24	ug/L		10/06/23 07:23	10/13/23 08:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	73		36 - 120	10/06/23 07:23	10/13/23 08:12	1
2-Fluorobiphenyl (Surr)	76		34 - 110	10/06/23 07:23	10/13/23 08:12	1
Terphenyl-d14 (Surr)	89		40 - 145	10/06/23 07:23	10/13/23 08:12	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.095		0.096	0.095	ug/L		10/06/23 10:42	10/09/23 15:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	70		25 - 130	10/06/23 10:42	10/09/23 15:22	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-240473-1

Client Sample ID: W-231003-RA-02

Lab Sample ID: 500-240473-2

Date Collected: 10/03/23 10:40

Matrix: Water

Date Received: 10/04/23 09:20

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			10/05/23 17:22	1
Toluene	<0.15		0.50	0.15	ug/L			10/05/23 17:22	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/05/23 17:22	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/05/23 17:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		75 - 126		10/05/23 17:22	1
Toluene-d8 (Surr)	94		75 - 120		10/05/23 17:22	1
4-Bromofluorobenzene (Surr)	93		72 - 124		10/05/23 17:22	1
Dibromofluoromethane	115		75 - 120		10/05/23 17:22	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.82	0.25	ug/L		10/06/23 07:23	10/13/23 08:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	76		36 - 120	10/06/23 07:23	10/13/23 08:37	1
2-Fluorobiphenyl (Surr)	80		34 - 110	10/06/23 07:23	10/13/23 08:37	1
Terphenyl-d14 (Surr)	90		40 - 145	10/06/23 07:23	10/13/23 08:37	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.10		0.10	0.10	ug/L		10/06/23 10:42	10/09/23 16:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	67		25 - 130	10/06/23 10:42	10/09/23 16:17	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-240473-1

Client Sample ID: W-231003-RA-03

Lab Sample ID: 500-240473-3

Date Collected: 10/03/23 10:48

Matrix: Water

Date Received: 10/04/23 09:20

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			10/05/23 17:45	1
Toluene	<0.15		0.50	0.15	ug/L			10/05/23 17:45	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/05/23 17:45	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/05/23 17:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		75 - 126		10/05/23 17:45	1
Toluene-d8 (Surr)	92		75 - 120		10/05/23 17:45	1
4-Bromofluorobenzene (Surr)	91		72 - 124		10/05/23 17:45	1
Dibromofluoromethane	117		75 - 120		10/05/23 17:45	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.24		0.79	0.24	ug/L		10/06/23 07:23	10/13/23 09:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	78		36 - 120	10/06/23 07:23	10/13/23 09:02	1
2-Fluorobiphenyl (Surr)	76		34 - 110	10/06/23 07:23	10/13/23 09:02	1
Terphenyl-d14 (Surr)	93		40 - 145	10/06/23 07:23	10/13/23 09:02	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.097		0.098	0.097	ug/L		10/06/23 10:42	10/09/23 16:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	67		25 - 130	10/06/23 10:42	10/09/23 16:36	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-240473-1

Client Sample ID: W-231003-RA-04

Lab Sample ID: 500-240473-4

Date Collected: 10/03/23 10:48

Matrix: Water

Date Received: 10/04/23 09:20

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			10/05/23 18:09	1
Toluene	<0.15		0.50	0.15	ug/L			10/05/23 18:09	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/05/23 18:09	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/05/23 18:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		75 - 126		10/05/23 18:09	1
Toluene-d8 (Surr)	91		75 - 120		10/05/23 18:09	1
4-Bromofluorobenzene (Surr)	92		72 - 124		10/05/23 18:09	1
Dibromofluoromethane	113		75 - 120		10/05/23 18:09	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.24		0.77	0.24	ug/L		10/06/23 07:23	10/13/23 09:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	77		36 - 120	10/06/23 07:23	10/13/23 09:27	1
2-Fluorobiphenyl (Surr)	74		34 - 110	10/06/23 07:23	10/13/23 09:27	1
Terphenyl-d14 (Surr)	86		40 - 145	10/06/23 07:23	10/13/23 09:27	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.096		0.097	0.096	ug/L		10/06/23 10:42	10/09/23 16:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	47		25 - 130	10/06/23 10:42	10/09/23 16:54	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-240473-1

Client Sample ID: W-231003-RA-05

Lab Sample ID: 500-240473-5

Date Collected: 10/03/23 11:03

Matrix: Water

Date Received: 10/04/23 09:20

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			10/05/23 18:32	1
Toluene	<0.15		0.50	0.15	ug/L			10/05/23 18:32	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/05/23 18:32	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/05/23 18:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		75 - 126		10/05/23 18:32	1
Toluene-d8 (Surr)	93		75 - 120		10/05/23 18:32	1
4-Bromofluorobenzene (Surr)	91		72 - 124		10/05/23 18:32	1
Dibromofluoromethane	113		75 - 120		10/05/23 18:32	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.24		0.76	0.24	ug/L		10/06/23 07:23	10/13/23 09:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	75		36 - 120	10/06/23 07:23	10/13/23 09:52	1
2-Fluorobiphenyl (Surr)	74		34 - 110	10/06/23 07:23	10/13/23 09:52	1
Terphenyl-d14 (Surr)	92		40 - 145	10/06/23 07:23	10/13/23 09:52	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.10		0.10	0.10	ug/L		10/06/23 10:42	10/09/23 17:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	71		25 - 130	10/06/23 10:42	10/09/23 17:13	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-240473-1

Client Sample ID: W-231003-RA-06

Lab Sample ID: 500-240473-6

Date Collected: 10/03/23 11:13

Matrix: Water

Date Received: 10/04/23 09:20

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			10/05/23 18:55	1
Toluene	<0.15		0.50	0.15	ug/L			10/05/23 18:55	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/05/23 18:55	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/05/23 18:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		75 - 126		10/05/23 18:55	1
Toluene-d8 (Surr)	94		75 - 120		10/05/23 18:55	1
4-Bromofluorobenzene (Surr)	92		72 - 124		10/05/23 18:55	1
Dibromofluoromethane	118		75 - 120		10/05/23 18:55	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.83	0.25	ug/L		10/06/23 07:23	10/13/23 10:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	73		36 - 120	10/06/23 07:23	10/13/23 10:17	1
2-Fluorobiphenyl (Surr)	73		34 - 110	10/06/23 07:23	10/13/23 10:17	1
Terphenyl-d14 (Surr)	89		40 - 145	10/06/23 07:23	10/13/23 10:17	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.096		0.097	0.096	ug/L		10/06/23 10:42	10/09/23 17:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	64		25 - 130	10/06/23 10:42	10/09/23 17:31	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-240473-1

Client Sample ID: W-231003-RA-07

Lab Sample ID: 500-240473-7

Date Collected: 10/03/23 11:23

Matrix: Water

Date Received: 10/04/23 09:20

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			10/05/23 19:18	1
Toluene	<0.15		0.50	0.15	ug/L			10/05/23 19:18	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/05/23 19:18	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/05/23 19:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		75 - 126		10/05/23 19:18	1
Toluene-d8 (Surr)	93		75 - 120		10/05/23 19:18	1
4-Bromofluorobenzene (Surr)	94		72 - 124		10/05/23 19:18	1
Dibromofluoromethane	117		75 - 120		10/05/23 19:18	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.23		0.75	0.23	ug/L		10/06/23 07:23	10/13/23 10:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	80		36 - 120	10/06/23 07:23	10/13/23 10:42	1
2-Fluorobiphenyl (Surr)	81		34 - 110	10/06/23 07:23	10/13/23 10:42	1
Terphenyl-d14 (Surr)	94		40 - 145	10/06/23 07:23	10/13/23 10:42	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.096		0.097	0.096	ug/L		10/06/23 10:42	10/09/23 18:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	78		25 - 130	10/06/23 10:42	10/09/23 18:08	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-240473-1

Client Sample ID: W-231003-RA-08

Lab Sample ID: 500-240473-8

Date Collected: 10/03/23 11:45

Matrix: Water

Date Received: 10/04/23 09:20

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			10/05/23 19:41	1
Toluene	<0.15		0.50	0.15	ug/L			10/05/23 19:41	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/05/23 19:41	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/05/23 19:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		75 - 126		10/05/23 19:41	1
Toluene-d8 (Surr)	92		75 - 120		10/05/23 19:41	1
4-Bromofluorobenzene (Surr)	92		72 - 124		10/05/23 19:41	1
Dibromofluoromethane	117		75 - 120		10/05/23 19:41	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.27		0.88	0.27	ug/L		10/06/23 07:23	10/13/23 11:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	79		36 - 120	10/06/23 07:23	10/13/23 11:07	1
2-Fluorobiphenyl (Surr)	79		34 - 110	10/06/23 07:23	10/13/23 11:07	1
Terphenyl-d14 (Surr)	93		40 - 145	10/06/23 07:23	10/13/23 11:07	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.095		0.096	0.095	ug/L		10/06/23 10:42	10/09/23 18:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	75		25 - 130	10/06/23 10:42	10/09/23 18:26	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-240473-1

Client Sample ID: W-231003-RA-09

Lab Sample ID: 500-240473-9

Date Collected: 10/03/23 11:50

Matrix: Water

Date Received: 10/04/23 09:20

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			10/05/23 20:05	1
Toluene	<0.15		0.50	0.15	ug/L			10/05/23 20:05	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/05/23 20:05	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/05/23 20:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		75 - 126		10/05/23 20:05	1
Toluene-d8 (Surr)	92		75 - 120		10/05/23 20:05	1
4-Bromofluorobenzene (Surr)	94		72 - 124		10/05/23 20:05	1
Dibromofluoromethane	116		75 - 120		10/05/23 20:05	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.82	0.25	ug/L		10/06/23 07:23	10/13/23 11:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	67		36 - 120	10/06/23 07:23	10/13/23 11:31	1
2-Fluorobiphenyl (Surr)	66		34 - 110	10/06/23 07:23	10/13/23 11:31	1
Terphenyl-d14 (Surr)	85		40 - 145	10/06/23 07:23	10/13/23 11:31	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.096		0.097	0.096	ug/L		10/06/23 10:42	10/09/23 18:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	70		25 - 130	10/06/23 10:42	10/09/23 18:45	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-240473-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-240473-10

Date Collected: 10/03/23 00:00

Matrix: Water

Date Received: 10/04/23 09:20

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			10/05/23 13:08	1
Toluene	<0.15		0.50	0.15	ug/L			10/05/23 13:08	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/05/23 13:08	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/05/23 13:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		75 - 126		10/05/23 13:08	1
Toluene-d8 (Surr)	95		75 - 120		10/05/23 13:08	1
4-Bromofluorobenzene (Surr)	91		72 - 124		10/05/23 13:08	1
Dibromofluoromethane	108		75 - 120		10/05/23 13:08	1

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-240473-1

Glossary

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

QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-240473-1

GC/MS VOA

Analysis Batch: 735484

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-240473-1	W-231003-RA-01	Total/NA	Water	8260B	
500-240473-2	W-231003-RA-02	Total/NA	Water	8260B	
500-240473-3	W-231003-RA-03	Total/NA	Water	8260B	
500-240473-4	W-231003-RA-04	Total/NA	Water	8260B	
500-240473-5	W-231003-RA-05	Total/NA	Water	8260B	
500-240473-6	W-231003-RA-06	Total/NA	Water	8260B	
500-240473-7	W-231003-RA-07	Total/NA	Water	8260B	
500-240473-8	W-231003-RA-08	Total/NA	Water	8260B	
500-240473-9	W-231003-RA-09	Total/NA	Water	8260B	
500-240473-10	Trip Blank	Total/NA	Water	8260B	
MB 500-735484/7	Method Blank	Total/NA	Water	8260B	
LCS 500-735484/4	Lab Control Sample	Total/NA	Water	8260B	
500-240473-1 MS	W-231003-RA-01	Total/NA	Water	8260B	
500-240473-1 MSD	W-231003-RA-01	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 735650

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-240473-1	W-231003-RA-01	Total/NA	Water	3510C	
500-240473-2	W-231003-RA-02	Total/NA	Water	3510C	
500-240473-3	W-231003-RA-03	Total/NA	Water	3510C	
500-240473-4	W-231003-RA-04	Total/NA	Water	3510C	
500-240473-5	W-231003-RA-05	Total/NA	Water	3510C	
500-240473-6	W-231003-RA-06	Total/NA	Water	3510C	
500-240473-7	W-231003-RA-07	Total/NA	Water	3510C	
500-240473-8	W-231003-RA-08	Total/NA	Water	3510C	
500-240473-9	W-231003-RA-09	Total/NA	Water	3510C	
MB 500-735650/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-735650/2-A	Lab Control Sample	Total/NA	Water	3510C	
500-240473-1 MS	W-231003-RA-01	Total/NA	Water	3510C	
500-240473-1 MSD	W-231003-RA-01	Total/NA	Water	3510C	

Analysis Batch: 735713

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-735650/1-A	Method Blank	Total/NA	Water	8270E	735650
LCS 500-735650/2-A	Lab Control Sample	Total/NA	Water	8270E	735650

Analysis Batch: 736805

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-240473-1	W-231003-RA-01	Total/NA	Water	8270E	735650
500-240473-2	W-231003-RA-02	Total/NA	Water	8270E	735650
500-240473-3	W-231003-RA-03	Total/NA	Water	8270E	735650
500-240473-4	W-231003-RA-04	Total/NA	Water	8270E	735650
500-240473-5	W-231003-RA-05	Total/NA	Water	8270E	735650
500-240473-6	W-231003-RA-06	Total/NA	Water	8270E	735650
500-240473-7	W-231003-RA-07	Total/NA	Water	8270E	735650
500-240473-8	W-231003-RA-08	Total/NA	Water	8270E	735650
500-240473-9	W-231003-RA-09	Total/NA	Water	8270E	735650
500-240473-1 MS	W-231003-RA-01	Total/NA	Water	8270E	735650
500-240473-1 MSD	W-231003-RA-01	Total/NA	Water	8270E	735650

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-240473-1

GC Semi VOA

Prep Batch: 735744

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-240473-1	W-231003-RA-01	Total/NA	Water	8151A	
500-240473-2	W-231003-RA-02	Total/NA	Water	8151A	
500-240473-3	W-231003-RA-03	Total/NA	Water	8151A	
500-240473-4	W-231003-RA-04	Total/NA	Water	8151A	
500-240473-5	W-231003-RA-05	Total/NA	Water	8151A	
500-240473-6	W-231003-RA-06	Total/NA	Water	8151A	
500-240473-7	W-231003-RA-07	Total/NA	Water	8151A	
500-240473-8	W-231003-RA-08	Total/NA	Water	8151A	
500-240473-9	W-231003-RA-09	Total/NA	Water	8151A	
MB 500-735744/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-735744/2-A	Lab Control Sample	Total/NA	Water	8151A	
500-240473-1 MS	W-231003-RA-01	Total/NA	Water	8151A	
500-240473-1 MSD	W-231003-RA-01	Total/NA	Water	8151A	

Analysis Batch: 736051

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-240473-1	W-231003-RA-01	Total/NA	Water	8151A	735744
500-240473-2	W-231003-RA-02	Total/NA	Water	8151A	735744
500-240473-3	W-231003-RA-03	Total/NA	Water	8151A	735744
500-240473-4	W-231003-RA-04	Total/NA	Water	8151A	735744
500-240473-5	W-231003-RA-05	Total/NA	Water	8151A	735744
500-240473-6	W-231003-RA-06	Total/NA	Water	8151A	735744
500-240473-7	W-231003-RA-07	Total/NA	Water	8151A	735744
500-240473-8	W-231003-RA-08	Total/NA	Water	8151A	735744
500-240473-9	W-231003-RA-09	Total/NA	Water	8151A	735744
MB 500-735744/1-A	Method Blank	Total/NA	Water	8151A	735744
LCS 500-735744/2-A	Lab Control Sample	Total/NA	Water	8151A	735744
500-240473-1 MS	W-231003-RA-01	Total/NA	Water	8151A	735744
500-240473-1 MSD	W-231003-RA-01	Total/NA	Water	8151A	735744

Surrogate Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-240473-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-126)	TOL (75-120)	BFB (72-124)	DBFM (75-120)
500-240473-1	W-231003-RA-01	98	92	93	114
500-240473-1 MS	W-231003-RA-01	96	94	90	106
500-240473-1 MSD	W-231003-RA-01	94	96	89	105
500-240473-2	W-231003-RA-02	100	94	93	115
500-240473-3	W-231003-RA-03	104	92	91	117
500-240473-4	W-231003-RA-04	103	91	92	113
500-240473-5	W-231003-RA-05	102	93	91	113
500-240473-6	W-231003-RA-06	105	94	92	118
500-240473-7	W-231003-RA-07	104	93	94	117
500-240473-8	W-231003-RA-08	106	92	92	117
500-240473-9	W-231003-RA-09	102	92	94	116
500-240473-10	Trip Blank	96	95	91	108
LCS 500-735484/4	Lab Control Sample	85	100	86	98
MB 500-735484/7	Method Blank	97	96	92	107

Surrogate Legend

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

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		NBZ (36-120)	FBP (34-110)	TPHL (40-145)
500-240473-1	W-231003-RA-01	73	76	89
500-240473-1 MS	W-231003-RA-01	76	69	82
500-240473-1 MSD	W-231003-RA-01	81	79	82
500-240473-2	W-231003-RA-02	76	80	90
500-240473-3	W-231003-RA-03	78	76	93
500-240473-4	W-231003-RA-04	77	74	86
500-240473-5	W-231003-RA-05	75	74	92
500-240473-6	W-231003-RA-06	73	73	89
500-240473-7	W-231003-RA-07	80	81	94
500-240473-8	W-231003-RA-08	79	79	93
500-240473-9	W-231003-RA-09	67	66	85
LCS 500-735650/2-A	Lab Control Sample	68	73	89
MB 500-735650/1-A	Method Blank	71	79	93

Surrogate Legend

NBZ = Nitrobenzene-d5 (Surr)
FBP = 2-Fluorobiphenyl (Surr)
TPHL = Terphenyl-d14 (Surr)

Surrogate Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-240473-1

Method: 8151A - Herbicides (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (25-130)
500-240473-1	W-231003-RA-01	70
500-240473-1 MS	W-231003-RA-01	81
500-240473-1 MSD	W-231003-RA-01	84
500-240473-2	W-231003-RA-02	67
500-240473-3	W-231003-RA-03	67
500-240473-4	W-231003-RA-04	47
500-240473-5	W-231003-RA-05	71
500-240473-6	W-231003-RA-06	64
500-240473-7	W-231003-RA-07	78
500-240473-8	W-231003-RA-08	75
500-240473-9	W-231003-RA-09	70
LCS 500-735744/2-A	Lab Control Sample	87
MB 500-735744/1-A	Method Blank	68

Surrogate Legend

DCPAA = DCAA

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-240473-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-735484/7
Matrix: Water
Analysis Batch: 735484

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

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	<0.15		0.50	0.15	ug/L			10/05/23 12:21	1
Toluene	<0.15		0.50	0.15	ug/L			10/05/23 12:21	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/05/23 12:21	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/05/23 12:21	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	97		75 - 126		10/05/23 12:21	1
Toluene-d8 (Surr)	96		75 - 120		10/05/23 12:21	1
4-Bromofluorobenzene (Surr)	92		72 - 124		10/05/23 12:21	1
Dibromofluoromethane	107		75 - 120		10/05/23 12:21	1

Lab Sample ID: LCS 500-735484/4
Matrix: Water
Analysis Batch: 735484

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

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Benzene	50.0	51.2		ug/L		102	70 - 120
Toluene	50.0	49.4		ug/L		99	70 - 125
Ethylbenzene	50.0	52.9		ug/L		106	70 - 123
Xylenes, Total	100	103		ug/L		103	70 - 125

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	85		75 - 126
Toluene-d8 (Surr)	100		75 - 120
4-Bromofluorobenzene (Surr)	86		72 - 124
Dibromofluoromethane	98		75 - 120

Lab Sample ID: 500-240473-1 MS
Matrix: Water
Analysis Batch: 735484

Client Sample ID: W-231003-RA-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
Benzene	<0.15		50.0	52.5		ug/L		105	70 - 120
Toluene	<0.15		50.0	46.3		ug/L		93	70 - 125
Ethylbenzene	<0.18		50.0	49.5		ug/L		99	70 - 123
Xylenes, Total	<0.22		100	96.6		ug/L		97	70 - 125

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	96		75 - 126
Toluene-d8 (Surr)	94		75 - 120
4-Bromofluorobenzene (Surr)	90		72 - 124
Dibromofluoromethane	106		75 - 120

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-240473-1

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

Lab Sample ID: 500-240473-1 MSD
Matrix: Water
Analysis Batch: 735484

Client Sample ID: W-231003-RA-01
Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Benzene	<0.15		50.0	53.1		ug/L		106	70 - 120	1	20
Toluene	<0.15		50.0	47.6		ug/L		95	70 - 125	3	20
Ethylbenzene	<0.18		50.0	50.5		ug/L		101	70 - 123	2	20
Xylenes, Total	<0.22		100	99.3		ug/L		99	70 - 125	3	20
MSD MSD											
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	94		75 - 126								
Toluene-d8 (Surr)	96		75 - 120								
4-Bromofluorobenzene (Surr)	89		72 - 124								
Dibromofluoromethane	105		75 - 120								

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

Lab Sample ID: MB 500-735650/1-A
Matrix: Water
Analysis Batch: 735713

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 735650

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Naphthalene	<0.25		0.80	0.25	ug/L		10/06/23 07:23	10/06/23 17:15	1
MB MB									
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Nitrobenzene-d5 (Surr)	71		36 - 120	10/06/23 07:23	10/06/23 17:15	1			
2-Fluorobiphenyl (Surr)	79		34 - 110	10/06/23 07:23	10/06/23 17:15	1			
Terphenyl-d14 (Surr)	93		40 - 145	10/06/23 07:23	10/06/23 17:15	1			

Lab Sample ID: LCS 500-735650/2-A
Matrix: Water
Analysis Batch: 735713

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 735650

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec
		Result	Qualifier				Limits
Naphthalene	32.0	20.8		ug/L		65	36 - 110
LCS LCS							
Surrogate	%Recovery	Qualifier	Limits				
Nitrobenzene-d5 (Surr)	68		36 - 120				
2-Fluorobiphenyl (Surr)	73		34 - 110				
Terphenyl-d14 (Surr)	89		40 - 145				

Lab Sample ID: 500-240473-1 MS
Matrix: Water
Analysis Batch: 736805

Client Sample ID: W-231003-RA-01
Prep Type: Total/NA
Prep Batch: 735650

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec
	Result	Qualifier	Added	Result	Qualifier				Limits
Naphthalene	<0.24		31.7	21.9		ug/L		69	36 - 110
MS MS									
Surrogate	%Recovery	Qualifier	Limits						
Nitrobenzene-d5 (Surr)	76		36 - 120						
2-Fluorobiphenyl (Surr)	69		34 - 110						

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-240473-1

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

Lab Sample ID: 500-240473-1 MS
Matrix: Water
Analysis Batch: 736805

Client Sample ID: W-231003-RA-01
Prep Type: Total/NA
Prep Batch: 735650

	<i>MS</i>	<i>MS</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Terphenyl-d14 (Surr)	82		40 - 145

Lab Sample ID: 500-240473-1 MSD
Matrix: Water
Analysis Batch: 736805

Client Sample ID: W-231003-RA-01
Prep Type: Total/NA
Prep Batch: 735650

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec</i>		<i>RPD</i>	<i>Limit</i>
									<i>Limits</i>	<i>RPD</i>		
Naphthalene	<0.24		30.6	20.2		ug/L		66	36 - 110	8		20
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>									
Nitrobenzene-d5 (Surr)	81		36 - 120									
2-Fluorobiphenyl (Surr)	79		34 - 110									
Terphenyl-d14 (Surr)	82		40 - 145									

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 500-735744/1-A
Matrix: Water
Analysis Batch: 736051

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 735744

<i>Analyte</i>	<i>MB Result</i>	<i>MB Qualifier</i>	<i>LOQ</i>	<i>LOD</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>			
										Pentachlorophenol	<0.099	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>						<i>Analyzed</i>		<i>Dil Fac</i>
DCAA	68		25 - 130	10/06/23 10:42						10/09/23 14:45		1

Lab Sample ID: LCS 500-735744/2-A
Matrix: Water
Analysis Batch: 736051

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 735744

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec</i>	
							<i>Limits</i>	
Pentachlorophenol	2.53	1.68		ug/L		67	40 - 122	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>					
DCAA	87		25 - 130					

Lab Sample ID: 500-240473-1 MS
Matrix: Water
Analysis Batch: 736051

Client Sample ID: W-231003-RA-01
Prep Type: Total/NA
Prep Batch: 735744

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MS Result</i>	<i>MS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec</i>	
									<i>Limits</i>	
Pentachlorophenol	<0.095		2.45	1.46		ug/L		60	40 - 122	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>							
DCAA	81		25 - 130							

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-240473-1

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

Lab Sample ID: 500-240473-1 MSD
Matrix: Water
Analysis Batch: 736051

Client Sample ID: W-231003-RA-01
Prep Type: Total/NA
Prep Batch: 735744

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD	
Pentachlorophenol	<0.095		2.46	1.56		ug/L		63	40 - 122	7	20
Surrogate	%Recovery	MSD	MSD	Limits							
DCAA	84			25 - 130							



Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-240473-1

Client Sample ID: W-231003-RA-01

Lab Sample ID: 500-240473-1

Date Collected: 10/03/23 10:27

Matrix: Water

Date Received: 10/04/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	735484	W1T	EET CHI	10/05/23 16:59
Total/NA	Prep	3510C			735650	KL	EET CHI	10/06/23 07:23
Total/NA	Analysis	8270E		1	736805	SS	EET CHI	10/13/23 08:12
Total/NA	Prep	8151A			735744	DAK	EET CHI	10/06/23 10:42
Total/NA	Analysis	8151A		1	736051	SS	EET CHI	10/09/23 15:22

Client Sample ID: W-231003-RA-02

Lab Sample ID: 500-240473-2

Date Collected: 10/03/23 10:40

Matrix: Water

Date Received: 10/04/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	735484	W1T	EET CHI	10/05/23 17:22
Total/NA	Prep	3510C			735650	KL	EET CHI	10/06/23 07:23
Total/NA	Analysis	8270E		1	736805	SS	EET CHI	10/13/23 08:37
Total/NA	Prep	8151A			735744	DAK	EET CHI	10/06/23 10:42
Total/NA	Analysis	8151A		1	736051	SS	EET CHI	10/09/23 16:17

Client Sample ID: W-231003-RA-03

Lab Sample ID: 500-240473-3

Date Collected: 10/03/23 10:48

Matrix: Water

Date Received: 10/04/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	735484	W1T	EET CHI	10/05/23 17:45
Total/NA	Prep	3510C			735650	KL	EET CHI	10/06/23 07:23
Total/NA	Analysis	8270E		1	736805	SS	EET CHI	10/13/23 09:02
Total/NA	Prep	8151A			735744	DAK	EET CHI	10/06/23 10:42
Total/NA	Analysis	8151A		1	736051	SS	EET CHI	10/09/23 16:36

Client Sample ID: W-231003-RA-04

Lab Sample ID: 500-240473-4

Date Collected: 10/03/23 10:48

Matrix: Water

Date Received: 10/04/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	735484	W1T	EET CHI	10/05/23 18:09
Total/NA	Prep	3510C			735650	KL	EET CHI	10/06/23 07:23
Total/NA	Analysis	8270E		1	736805	SS	EET CHI	10/13/23 09:27
Total/NA	Prep	8151A			735744	DAK	EET CHI	10/06/23 10:42
Total/NA	Analysis	8151A		1	736051	SS	EET CHI	10/09/23 16:54

Client Sample ID: W-231003-RA-05

Lab Sample ID: 500-240473-5

Date Collected: 10/03/23 11:03

Matrix: Water

Date Received: 10/04/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	735484	W1T	EET CHI	10/05/23 18:32

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-240473-1

Client Sample ID: W-231003-RA-05

Lab Sample ID: 500-240473-5

Date Collected: 10/03/23 11:03

Matrix: Water

Date Received: 10/04/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			735650	KL	EET CHI	10/06/23 07:23
Total/NA	Analysis	8270E		1	736805	SS	EET CHI	10/13/23 09:52
Total/NA	Prep	8151A			735744	DAK	EET CHI	10/06/23 10:42
Total/NA	Analysis	8151A		1	736051	SS	EET CHI	10/09/23 17:13

Client Sample ID: W-231003-RA-06

Lab Sample ID: 500-240473-6

Date Collected: 10/03/23 11:13

Matrix: Water

Date Received: 10/04/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	735484	W1T	EET CHI	10/05/23 18:55
Total/NA	Prep	3510C			735650	KL	EET CHI	10/06/23 07:23
Total/NA	Analysis	8270E		1	736805	SS	EET CHI	10/13/23 10:17
Total/NA	Prep	8151A			735744	DAK	EET CHI	10/06/23 10:42
Total/NA	Analysis	8151A		1	736051	SS	EET CHI	10/09/23 17:31

Client Sample ID: W-231003-RA-07

Lab Sample ID: 500-240473-7

Date Collected: 10/03/23 11:23

Matrix: Water

Date Received: 10/04/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	735484	W1T	EET CHI	10/05/23 19:18
Total/NA	Prep	3510C			735650	KL	EET CHI	10/06/23 07:23
Total/NA	Analysis	8270E		1	736805	SS	EET CHI	10/13/23 10:42
Total/NA	Prep	8151A			735744	DAK	EET CHI	10/06/23 10:42
Total/NA	Analysis	8151A		1	736051	SS	EET CHI	10/09/23 18:08

Client Sample ID: W-231003-RA-08

Lab Sample ID: 500-240473-8

Date Collected: 10/03/23 11:45

Matrix: Water

Date Received: 10/04/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	735484	W1T	EET CHI	10/05/23 19:41
Total/NA	Prep	3510C			735650	KL	EET CHI	10/06/23 07:23
Total/NA	Analysis	8270E		1	736805	SS	EET CHI	10/13/23 11:07
Total/NA	Prep	8151A			735744	DAK	EET CHI	10/06/23 10:42
Total/NA	Analysis	8151A		1	736051	SS	EET CHI	10/09/23 18:26

Client Sample ID: W-231003-RA-09

Lab Sample ID: 500-240473-9

Date Collected: 10/03/23 11:50

Matrix: Water

Date Received: 10/04/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	735484	W1T	EET CHI	10/05/23 20:05

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-240473-1

Client Sample ID: W-231003-RA-09

Lab Sample ID: 500-240473-9

Date Collected: 10/03/23 11:50

Matrix: Water

Date Received: 10/04/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			735650	KL	EET CHI	10/06/23 07:23
Total/NA	Analysis	8270E		1	736805	SS	EET CHI	10/13/23 11:31
Total/NA	Prep	8151A			735744	DAK	EET CHI	10/06/23 10:42
Total/NA	Analysis	8151A		1	736051	SS	EET CHI	10/09/23 18:45

Client Sample ID: Trip Blank

Lab Sample ID: 500-240473-10

Date Collected: 10/03/23 00:00

Matrix: Water

Date Received: 10/04/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	735484	W1T	EET CHI	10/05/23 13:08

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200



Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-240473-1

Laboratory: Eurofins Chicago

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

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-24

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Chain of Custody Record

667937



Environment Testing America

Address _____



500-240473 COC

Regulatory Program: DW NPDES RCRA Other

TAL-8210

Client Contact		Project Manager: <u>Ree</u>		Site Contact: <u>Ryan Adams</u>		Date: <u>10/3/23</u>		COC No	
Company Name: <u>GHD</u>		Tel/Email		Lab Contact: <u>Grant Anderson</u>		Carrier		____ of ____ COCs	
Address: <u>900 Long Lake #200</u>		Analysis Turnaround Time <input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below _____ <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Filtered Sample (Y/N) Perform MS/MSD (Y/N) <u>BTEX</u> <u>PCP</u> <u>Naphthalene</u>		Sampler		For Lab Use Only	
City/State/Zip: <u>St. Paul MN 55112</u>								Walk-in Client	
Phone: <u>612 524 6855</u>								Job / SDG No	
Project Name: <u>Penta Wood</u>								<u>500-240473</u>	
Site: <u>11222418</u>									
P O #									
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sample Specific Notes		
1	<u>W-231003-RA-01</u>	<u>10/3/23</u>	<u>1027</u>	<u>G</u>	<u>WG</u>	<u>21</u>	<u>Y</u>	<u>X</u>	
2	<u>RA-02</u>		<u>1040</u>			<u>7</u>	<u>Y</u>	<u>Y</u>	
3	<u>RA-03</u>		<u>1048</u>			<u>7</u>	<u>Y</u>	<u>Y</u>	
4	<u>RA-04</u>		<u>108</u>			<u>7</u>	<u>Y</u>	<u>Y</u>	
5	<u>RA-05</u>		<u>112</u>			<u>7</u>	<u>Y</u>	<u>Y</u>	
6	<u>RA-06</u>		<u>1113</u>			<u>7</u>	<u>Y</u>	<u>Y</u>	
7	<u>RA-07</u>		<u>1123</u>			<u>7</u>	<u>Y</u>	<u>Y</u>	
8	<u>RA-08</u>		<u>1145</u>			<u>7</u>	<u>Y</u>	<u>Y</u>	
9	<u>W-231003-RA-09</u>		<u>1150</u>			<u>7</u>	<u>Y</u>	<u>Y</u>	
10	<u>trip blank</u>						<u>Y</u>	<u>Y</u>	
Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other									
Possible Hazard Identification Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample					Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)				
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown					<input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months				
Special Instructions/QC Requirements & Comments									
<u>5.0+5.0, 3.1+2.5, 2.8+2.2, 5.8+5.2</u>									
Custody Seals Intact <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No		Cooler Temp (°C) Obs'd _____		Corr'd _____		Therm ID No _____	
Relinquished by <u>[Signature]</u>		Company <u>GHD</u>		Date/Time <u>10/3/23 1900</u>		Received by		Company	
Relinquished by		Company		Date/Time		Received by		Company	
Relinquished by		Company		Date/Time		Received in Laboratory by <u>Stephanie Hernandez</u>		Company <u>EETA</u>	
								Date/Time <u>10/4/23 0920</u>	

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-240473-1

Login Number: 240473

List Source: Eurofins Chicago

List Number: 1

Creator: Hernandez, Stephanie

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	5.0,2.5,2.2,5.2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	





ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Grant Anderson
GHD Services Inc.
900 Long Lake Road
Suite 200
New Brighton, Minnesota 55112

Generated 11/22/2023 1:59:23 PM

JOB DESCRIPTION

Penta Wood 11222418

JOB NUMBER

500-241555-1

Eurofins Chicago

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



Generated
11/22/2023 1:59:23 PM

Authorized for release by
Shawn Hayes, Senior Project Manager
Shawn.Hayes@et.eurofinsus.com
(708)534-5200



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Case Narrative

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Job ID: 500-241555-1

Laboratory: Eurofins Chicago

Narrative

**Job Narrative
500-241555-1**

Receipt

The samples were received on 10/25/2023 10:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were -0.1° C, 0.4° C and 0.7° C.

GC/MS VOA

Method 8260B: The method requirement for no headspace was not met. The following volatile sample was analyzed with significant headspace in the sample container: TRIP BLANK (500-241555-7). Significant headspace is defined as a bubble greater than 6 mm in diameter.

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

GC/MS Semi VOA

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

GC VOA

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

GC Semi VOA

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

Metals

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

General Chemistry

Method 300.0: The method blank for analytical batch 500-738872 contained Chloride above the method detection limit (MDL). Associated samples were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

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

Organic Prep

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

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Client Sample ID: W-231024-TS-01

Lab Sample ID: 500-241555-1

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methane	0.21	J	1.0	0.17	ug/L	1		RSK-175	Total/NA
Arsenic	1.1		1.0	0.23	ug/L	1		6020A	Total Recoverable
Calcium	45500		200	44.3	ug/L	1		6020A	Total Recoverable
Copper	0.83	J	2.0	0.50	ug/L	1		6020A	Total Recoverable
Magnesium	13200		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	1.1	J	2.5	0.79	ug/L	1		6020A	Total Recoverable
Arsenic	1.1		1.0	0.23	ug/L	1		6020A	Dissolved
Calcium	44000		200	44.3	ug/L	1		6020A	Dissolved
Copper	1.7	J	2.0	0.50	ug/L	1		6020A	Dissolved
Magnesium	12700		200	49.4	ug/L	1		6020A	Dissolved
Manganese	1.0	J	2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	114		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	110		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	25.0	B	1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	1.6		1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	6.0		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Quad	0.67	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	129		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-231024-TS-02

Lab Sample ID: 500-241555-2

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.43	J	1.0	0.23	ug/L	1		6020A	Total Recoverable
Calcium	37000		200	44.3	ug/L	1		6020A	Total Recoverable
Copper	1.4	J	2.0	0.50	ug/L	1		6020A	Total Recoverable
Magnesium	11600		200	49.4	ug/L	1		6020A	Total Recoverable
Arsenic	0.44	J	1.0	0.23	ug/L	1		6020A	Dissolved
Calcium	37600		200	44.3	ug/L	1		6020A	Dissolved
Copper	2.4		2.0	0.50	ug/L	1		6020A	Dissolved
Magnesium	12100		200	49.4	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	92.4		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	93.8		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	20.1	B	1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	3.0		1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	5.0		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Quad	0.85	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	129		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-231024-TS-03

Lab Sample ID: 500-241555-3

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methane	29		1.0	0.17	ug/L	1		RSK-175	Total/NA
Arsenic	1.3		1.0	0.23	ug/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Client Sample ID: W-231024-TS-03 (Continued)

Lab Sample ID: 500-241555-3

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Calcium	40200		200	44.3	ug/L	1		6020A	Total Recoverable
Iron	156		100	46.7	ug/L	1		6020A	Total Recoverable
Magnesium	11900		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	31.9		2.5	0.79	ug/L	1		6020A	Total Recoverable
Arsenic	1.3		1.0	0.23	ug/L	1		6020A	Dissolved
Calcium	42200		200	44.3	ug/L	1		6020A	Dissolved
Magnesium	12800		200	49.4	ug/L	1		6020A	Dissolved
Manganese	34.0		2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	100		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	105		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	46.4	B	1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	0.61	J	1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	14.4		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Quad	0.78	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	86.2		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-231024-TS-04

Lab Sample ID: 500-241555-4

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methane	22		1.0	0.17	ug/L	1		RSK-175	Total/NA
Arsenic	1.3		1.0	0.23	ug/L	1		6020A	Total Recoverable
Calcium	41300		200	44.3	ug/L	1		6020A	Total Recoverable
Copper	0.51	J	2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	88.5	J	100	46.7	ug/L	1		6020A	Total Recoverable
Magnesium	12400		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	32.4		2.5	0.79	ug/L	1		6020A	Total Recoverable
Arsenic	1.3		1.0	0.23	ug/L	1		6020A	Dissolved
Calcium	41500		200	44.3	ug/L	1		6020A	Dissolved
Magnesium	12400		200	49.4	ug/L	1		6020A	Dissolved
Manganese	33.1		2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	103		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	104		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	46.9	B	1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	0.61	J	1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	14.5		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Quad	0.67	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	86.3		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-231024-TS-05

Lab Sample ID: 500-241555-5

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methane	61		1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	0.35		0.10	0.10	ug/L	1		8151A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Client Sample ID: W-231024-TS-05 (Continued)

Lab Sample ID: 500-241555-5

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.42	J	1.0	0.23	ug/L	1		6020A	Total Recoverable
Calcium	117000		200	44.3	ug/L	1		6020A	Total Recoverable
Copper	1.1	J	2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	1730		100	46.7	ug/L	1		6020A	Total Recoverable
Magnesium	31300		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	23.9		2.5	0.79	ug/L	1		6020A	Total Recoverable
Arsenic	0.39	J	1.0	0.23	ug/L	1		6020A	Dissolved
Calcium	114000		200	44.3	ug/L	1		6020A	Dissolved
Copper	1.4	J	2.0	0.50	ug/L	1		6020A	Dissolved
Iron	1510		100	46.7	ug/L	1		6020A	Dissolved
Magnesium	31300		200	49.4	ug/L	1		6020A	Dissolved
Manganese	22.1		2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	292		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	286		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	23.8	B	1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	2.5		1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	6.4		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Quad	0.90	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	415		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-231024-TS-06

Lab Sample ID: 500-241555-6

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.35	J	1.0	0.23	ug/L	1		6020A	Total Recoverable
Calcium	36100		200	44.3	ug/L	1		6020A	Total Recoverable
Copper	1.4	J	2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	99.4	J	100	46.7	ug/L	1		6020A	Total Recoverable
Magnesium	13700		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	2.3	J	2.5	0.79	ug/L	1		6020A	Total Recoverable
Zinc	8.0	J	20.0	6.9	ug/L	1		6020A	Total Recoverable
Arsenic	0.27	J	1.0	0.23	ug/L	1		6020A	Dissolved
Calcium	35900		200	44.3	ug/L	1		6020A	Dissolved
Copper	2.4		2.0	0.50	ug/L	1		6020A	Dissolved
Magnesium	13600		200	49.4	ug/L	1		6020A	Dissolved
Manganese	0.80	J	2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	90.0		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	89.7		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	24.5	B	1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	1.7		1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	2.6		1.0	0.21	mg/L	1		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Client Sample ID: W-231024-TS-06 (Continued)

Lab Sample ID: 500-241555-6

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon - Quad	0.64	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	121		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: TRIP BLANK

Lab Sample ID: 500-241555-7

No Detections.

This Detection Summary does not include radiochemical test results.

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Method Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	EET CHI
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CHI
RSK-175	Dissolved Gases (GC)	RSK	EET CLE
8151A	Herbicides (GC)	SW846	EET CHI
6020A	Metals (ICP/MS)	SW846	EET CHI
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	EET CHI
300.0	Anions, Ion Chromatography	EPA	EET CHI
9060A	Organic Carbon, Total (TOC)	SW846	EET CHI
SM 2320B	Alkalinity	SM	EET CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CHI
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CHI
5030B	Purge and Trap	SW846	EET CHI
8151A	Extraction (Herbicides)	SW846	EET CHI

Protocol References:

EPA = US Environmental Protection Agency

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

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

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

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-241555-1	W-231024-TS-01	Water	10/24/23 11:07	10/25/23 10:30
500-241555-2	W-231024-TS-02	Water	10/24/23 11:40	10/25/23 10:30
500-241555-3	W-231024-TS-03	Water	10/24/23 12:54	10/25/23 10:30
500-241555-4	W-231024-TS-04	Water	10/24/23 12:55	10/25/23 10:30
500-241555-5	W-231024-TS-05	Water	10/24/23 13:30	10/25/23 10:30
500-241555-6	W-231024-TS-06	Water	10/24/23 14:18	10/25/23 10:30
500-241555-7	TRIP BLANK	Water	10/24/23 00:00	10/25/23 10:30

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Client Sample ID: W-231024-TS-01

Lab Sample ID: 500-241555-1

Date Collected: 10/24/23 11:07

Matrix: Water

Date Received: 10/25/23 10:30

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/01/23 21:47	1
Toluene	<0.15		0.50	0.15	ug/L			11/01/23 21:47	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/01/23 21:47	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/01/23 21:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		75 - 126					11/01/23 21:47	1
Toluene-d8 (Surr)	94		75 - 120					11/01/23 21:47	1
4-Bromofluorobenzene (Surr)	85		72 - 124					11/01/23 21:47	1
Dibromofluoromethane	106		75 - 120					11/01/23 21:47	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.26		0.86	0.26	ug/L		10/29/23 09:38	11/03/23 19:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	107		36 - 120				10/29/23 09:38	11/03/23 19:52	1
2-Fluorobiphenyl (Surr)	86		34 - 110				10/29/23 09:38	11/03/23 19:52	1
Terphenyl-d14 (Surr)	120		40 - 145				10/29/23 09:38	11/03/23 19:52	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	0.21	J	1.0	0.17	ug/L			10/27/23 20:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	118		60 - 140					10/27/23 20:43	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.11		0.11	0.11	ug/L		10/26/23 14:33	10/27/23 15:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	89		25 - 130				10/26/23 14:33	10/27/23 15:39	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.1		1.0	0.23	ug/L		11/13/23 18:59	11/14/23 14:22	1
Calcium	45500		200	44.3	ug/L		11/13/23 18:59	11/14/23 14:22	1
Copper	0.83	J	2.0	0.50	ug/L		11/13/23 18:59	11/14/23 14:22	1
Iron	<46.7		100	46.7	ug/L		11/01/23 18:00	11/10/23 06:51	1
Magnesium	13200		200	49.4	ug/L		11/13/23 18:59	11/14/23 14:22	1
Manganese	1.1	J	2.5	0.79	ug/L		11/01/23 18:00	11/10/23 06:51	1
Zinc	<6.9		20.0	6.9	ug/L		11/01/23 18:00	11/10/23 06:51	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.1		1.0	0.23	ug/L		11/13/23 18:59	11/14/23 14:26	1
Calcium	44000		200	44.3	ug/L		11/13/23 18:59	11/14/23 14:26	1
Copper	1.7	J	2.0	0.50	ug/L		11/13/23 18:59	11/14/23 14:26	1
Iron	<46.7		100	46.7	ug/L		11/01/23 18:00	11/10/23 06:55	1
Magnesium	12700		200	49.4	ug/L		11/13/23 18:59	11/14/23 14:26	1
Manganese	1.0	J	2.5	0.79	ug/L		11/01/23 18:00	11/10/23 06:55	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Client Sample ID: W-231024-TS-01

Lab Sample ID: 500-241555-1

Date Collected: 10/24/23 11:07

Matrix: Water

Date Received: 10/25/23 10:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		11/01/23 18:00	11/10/23 06:55	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	114		0.50	0.25	mg/L		11/01/23 18:00	11/07/23 07:22	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	110		0.50	0.25	mg/L		11/01/23 18:00	11/13/23 07:46	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	25.0	B	1.0	0.12	mg/L			10/25/23 21:34	1
Nitrate as N (EPA 300.0)	1.6		1.0	0.043	mg/L			10/25/23 21:34	1
Sulfate (EPA 300.0)	6.0		1.0	0.21	mg/L			10/25/23 21:34	1
Total Organic Carbon - Quad (SW846 9060A)	0.67	J	1.0	0.47	mg/L			11/05/23 18:41	1
Alkalinity (SM 2320B)	129		5.0	3.7	mg/L			11/07/23 12:59	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Client Sample ID: W-231024-TS-02

Lab Sample ID: 500-241555-2

Date Collected: 10/24/23 11:40

Matrix: Water

Date Received: 10/25/23 10:30

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/01/23 22:13	1
Toluene	<0.15		0.50	0.15	ug/L			11/01/23 22:13	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/01/23 22:13	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/01/23 22:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		75 - 126		11/01/23 22:13	1
Toluene-d8 (Surr)	95		75 - 120		11/01/23 22:13	1
4-Bromofluorobenzene (Surr)	85		72 - 124		11/01/23 22:13	1
Dibromofluoromethane	105		75 - 120		11/01/23 22:13	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.26		0.85	0.26	ug/L		10/29/23 09:38	11/03/23 20:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	103		36 - 120	10/29/23 09:38	11/03/23 20:18	1
2-Fluorobiphenyl (Surr)	86		34 - 110	10/29/23 09:38	11/03/23 20:18	1
Terphenyl-d14 (Surr)	125		40 - 145	10/29/23 09:38	11/03/23 20:18	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			10/27/23 21:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	118		60 - 140		10/27/23 21:00	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.10		0.10	0.10	ug/L		10/26/23 14:33	10/27/23 15:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	92		25 - 130	10/26/23 14:33	10/27/23 15:58	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.43	J	1.0	0.23	ug/L		11/13/23 18:59	11/14/23 14:31	1
Calcium	37000		200	44.3	ug/L		11/13/23 18:59	11/14/23 14:31	1
Copper	1.4	J	2.0	0.50	ug/L		11/13/23 18:59	11/14/23 14:31	1
Iron	<46.7		100	46.7	ug/L		11/01/23 18:00	11/10/23 06:59	1
Magnesium	11600		200	49.4	ug/L		11/13/23 18:59	11/14/23 14:31	1
Manganese	<0.79		2.5	0.79	ug/L		11/01/23 18:00	11/10/23 06:59	1
Zinc	<6.9		20.0	6.9	ug/L		11/01/23 18:00	11/10/23 06:59	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.44	J	1.0	0.23	ug/L		11/13/23 18:59	11/14/23 14:35	1
Calcium	37600		200	44.3	ug/L		11/13/23 18:59	11/14/23 14:35	1
Copper	2.4		2.0	0.50	ug/L		11/13/23 18:59	11/14/23 14:35	1
Iron	<46.7		100	46.7	ug/L		11/01/23 18:00	11/10/23 07:11	1
Magnesium	12100		200	49.4	ug/L		11/13/23 18:59	11/14/23 14:35	1
Manganese	<0.79		2.5	0.79	ug/L		11/01/23 18:00	11/10/23 07:11	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Client Sample ID: W-231024-TS-02

Lab Sample ID: 500-241555-2

Date Collected: 10/24/23 11:40

Matrix: Water

Date Received: 10/25/23 10:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		11/01/23 18:00	11/10/23 07:11	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	92.4		0.50	0.25	mg/L		11/01/23 18:00	11/07/23 07:22	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	93.8		0.50	0.25	mg/L		11/01/23 18:00	11/13/23 07:46	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	20.1	B	1.0	0.12	mg/L			10/25/23 21:49	1
Nitrate as N (EPA 300.0)	3.0		1.0	0.043	mg/L			10/25/23 21:49	1
Sulfate (EPA 300.0)	5.0		1.0	0.21	mg/L			10/25/23 21:49	1
Total Organic Carbon - Quad (SW846 9060A)	0.85	J	1.0	0.47	mg/L			11/05/23 19:08	1
Alkalinity (SM 2320B)	129		5.0	3.7	mg/L			11/07/23 13:07	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Client Sample ID: W-231024-TS-03

Lab Sample ID: 500-241555-3

Date Collected: 10/24/23 12:54

Matrix: Water

Date Received: 10/25/23 10:30

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/01/23 22:39	1
Toluene	<0.15		0.50	0.15	ug/L			11/01/23 22:39	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/01/23 22:39	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/01/23 22:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		75 - 126					11/01/23 22:39	1
Toluene-d8 (Surr)	94		75 - 120					11/01/23 22:39	1
4-Bromofluorobenzene (Surr)	86		72 - 124					11/01/23 22:39	1
Dibromofluoromethane	106		75 - 120					11/01/23 22:39	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.80	0.25	ug/L		10/29/23 09:38	11/03/23 20:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	99		36 - 120				10/29/23 09:38	11/03/23 20:44	1
2-Fluorobiphenyl (Surr)	78		34 - 110				10/29/23 09:38	11/03/23 20:44	1
Terphenyl-d14 (Surr)	117		40 - 145				10/29/23 09:38	11/03/23 20:44	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	29		1.0	0.17	ug/L			10/27/23 22:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	119		60 - 140					10/27/23 22:42	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.10		0.10	0.10	ug/L		10/26/23 14:33	10/27/23 16:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	94		25 - 130				10/26/23 14:33	10/27/23 16:16	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.3		1.0	0.23	ug/L		11/13/23 18:59	11/14/23 14:47	1
Calcium	40200		200	44.3	ug/L		11/13/23 18:59	11/14/23 14:47	1
Copper	<0.50		2.0	0.50	ug/L		11/13/23 18:59	11/14/23 14:47	1
Iron	156		100	46.7	ug/L		11/01/23 18:00	11/10/23 07:14	1
Magnesium	11900		200	49.4	ug/L		11/13/23 18:59	11/14/23 14:47	1
Manganese	31.9		2.5	0.79	ug/L		11/01/23 18:00	11/10/23 07:14	1
Zinc	<6.9		20.0	6.9	ug/L		11/01/23 18:00	11/10/23 07:14	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.3		1.0	0.23	ug/L		11/13/23 18:59	11/14/23 14:51	1
Calcium	42200		200	44.3	ug/L		11/13/23 18:59	11/14/23 14:51	1
Copper	<0.50		2.0	0.50	ug/L		11/13/23 18:59	11/14/23 14:51	1
Iron	<46.7		100	46.7	ug/L		11/01/23 18:00	11/10/23 07:18	1
Magnesium	12800		200	49.4	ug/L		11/13/23 18:59	11/14/23 14:51	1
Manganese	34.0		2.5	0.79	ug/L		11/01/23 18:00	11/10/23 07:18	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Client Sample ID: W-231024-TS-03

Lab Sample ID: 500-241555-3

Date Collected: 10/24/23 12:54

Matrix: Water

Date Received: 10/25/23 10:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		11/01/23 18:00	11/10/23 07:18	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	100		0.50	0.25	mg/L		11/01/23 18:00	11/07/23 07:22	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	105		0.50	0.25	mg/L		11/01/23 18:00	11/13/23 07:46	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	46.4	B	1.0	0.12	mg/L			10/25/23 22:05	1
Nitrate as N (EPA 300.0)	0.61	J	1.0	0.043	mg/L			10/25/23 22:05	1
Sulfate (EPA 300.0)	14.4		1.0	0.21	mg/L			10/25/23 22:05	1
Total Organic Carbon - Quad (SW846 9060A)	0.78	J	1.0	0.47	mg/L			11/05/23 19:30	1
Alkalinity (SM 2320B)	86.2		5.0	3.7	mg/L			11/07/23 13:16	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Client Sample ID: W-231024-TS-04

Lab Sample ID: 500-241555-4

Date Collected: 10/24/23 12:55

Matrix: Water

Date Received: 10/25/23 10:30

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/01/23 23:06	1
Toluene	<0.15		0.50	0.15	ug/L			11/01/23 23:06	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/01/23 23:06	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/01/23 23:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		75 - 126					11/01/23 23:06	1
Toluene-d8 (Surr)	93		75 - 120					11/01/23 23:06	1
4-Bromofluorobenzene (Surr)	87		72 - 124					11/01/23 23:06	1
Dibromofluoromethane	108		75 - 120					11/01/23 23:06	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.82	0.25	ug/L		10/29/23 09:38	11/03/23 21:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	105		36 - 120				10/29/23 09:38	11/03/23 21:09	1
2-Fluorobiphenyl (Surr)	86		34 - 110				10/29/23 09:38	11/03/23 21:09	1
Terphenyl-d14 (Surr)	120		40 - 145				10/29/23 09:38	11/03/23 21:09	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	22		1.0	0.17	ug/L			10/27/23 22:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	118		60 - 140					10/27/23 22:59	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.10		0.10	0.10	ug/L		10/26/23 14:33	10/27/23 16:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	95		25 - 130				10/26/23 14:33	10/27/23 16:34	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.3		1.0	0.23	ug/L		11/13/23 18:59	11/14/23 14:55	1
Calcium	41300		200	44.3	ug/L		11/13/23 18:59	11/14/23 14:55	1
Copper	0.51	J	2.0	0.50	ug/L		11/13/23 18:59	11/14/23 14:55	1
Iron	88.5	J	100	46.7	ug/L		11/01/23 18:00	11/10/23 07:22	1
Magnesium	12400		200	49.4	ug/L		11/13/23 18:59	11/14/23 14:55	1
Manganese	32.4		2.5	0.79	ug/L		11/01/23 18:00	11/10/23 07:22	1
Zinc	<6.9		20.0	6.9	ug/L		11/01/23 18:00	11/10/23 07:22	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.3		1.0	0.23	ug/L		11/13/23 18:59	11/14/23 14:59	1
Calcium	41500		200	44.3	ug/L		11/13/23 18:59	11/14/23 14:59	1
Copper	<0.50		2.0	0.50	ug/L		11/13/23 18:59	11/14/23 14:59	1
Iron	<46.7		100	46.7	ug/L		11/01/23 18:00	11/10/23 07:26	1
Magnesium	12400		200	49.4	ug/L		11/13/23 18:59	11/14/23 14:59	1
Manganese	33.1		2.5	0.79	ug/L		11/01/23 18:00	11/10/23 07:26	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Client Sample ID: W-231024-TS-04

Lab Sample ID: 500-241555-4

Date Collected: 10/24/23 12:55

Matrix: Water

Date Received: 10/25/23 10:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		11/01/23 18:00	11/10/23 07:26	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	103		0.50	0.25	mg/L		11/01/23 18:00	11/07/23 07:22	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	104		0.50	0.25	mg/L		11/01/23 18:00	11/13/23 07:46	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	46.9	B	1.0	0.12	mg/L			10/25/23 22:20	1
Nitrate as N (EPA 300.0)	0.61	J	1.0	0.043	mg/L			10/25/23 22:20	1
Sulfate (EPA 300.0)	14.5		1.0	0.21	mg/L			10/25/23 22:20	1
Total Organic Carbon - Quad (SW846 9060A)	0.67	J	1.0	0.47	mg/L			11/05/23 19:57	1
Alkalinity (SM 2320B)	86.3		5.0	3.7	mg/L			11/07/23 13:24	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Client Sample ID: W-231024-TS-05

Lab Sample ID: 500-241555-5

Date Collected: 10/24/23 13:30

Matrix: Water

Date Received: 10/25/23 10:30

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/01/23 23:32	1
Toluene	<0.15		0.50	0.15	ug/L			11/01/23 23:32	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/01/23 23:32	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/01/23 23:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		75 - 126		11/01/23 23:32	1
Toluene-d8 (Surr)	94		75 - 120		11/01/23 23:32	1
4-Bromofluorobenzene (Surr)	86		72 - 124		11/01/23 23:32	1
Dibromofluoromethane	107		75 - 120		11/01/23 23:32	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.28		0.91	0.28	ug/L		10/29/23 09:38	11/03/23 21:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	108		36 - 120	10/29/23 09:38	11/03/23 21:35	1
2-Fluorobiphenyl (Surr)	86		34 - 110	10/29/23 09:38	11/03/23 21:35	1
Terphenyl-d14 (Surr)	122		40 - 145	10/29/23 09:38	11/03/23 21:35	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	61		1.0	0.17	ug/L			10/27/23 23:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	115		60 - 140		10/27/23 23:16	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.35		0.10	0.10	ug/L		10/26/23 14:33	10/27/23 16:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	99		25 - 130	10/26/23 14:33	10/27/23 16:53	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.42	J	1.0	0.23	ug/L		11/13/23 18:59	11/14/23 15:03	1
Calcium	117000		200	44.3	ug/L		11/13/23 18:59	11/14/23 15:03	1
Copper	1.1	J	2.0	0.50	ug/L		11/13/23 18:59	11/14/23 15:03	1
Iron	1730		100	46.7	ug/L		11/01/23 18:00	11/10/23 07:30	1
Magnesium	31300		200	49.4	ug/L		11/13/23 18:59	11/14/23 15:03	1
Manganese	23.9		2.5	0.79	ug/L		11/01/23 18:00	11/10/23 07:30	1
Zinc	<6.9		20.0	6.9	ug/L		11/01/23 18:00	11/10/23 07:30	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.39	J	1.0	0.23	ug/L		11/13/23 18:59	11/14/23 15:08	1
Calcium	114000		200	44.3	ug/L		11/13/23 18:59	11/14/23 15:08	1
Copper	1.4	J	2.0	0.50	ug/L		11/13/23 18:59	11/14/23 15:08	1
Iron	1510		100	46.7	ug/L		11/01/23 18:00	11/10/23 07:33	1
Magnesium	31300		200	49.4	ug/L		11/13/23 18:59	11/14/23 15:08	1
Manganese	22.1		2.5	0.79	ug/L		11/01/23 18:00	11/10/23 07:33	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Client Sample ID: W-231024-TS-05

Lab Sample ID: 500-241555-5

Date Collected: 10/24/23 13:30

Matrix: Water

Date Received: 10/25/23 10:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		11/01/23 18:00	11/10/23 07:33	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	292		0.50	0.25	mg/L		11/01/23 18:00	11/07/23 07:22	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	286		0.50	0.25	mg/L		11/01/23 18:00	11/13/23 07:46	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	23.8	B	1.0	0.12	mg/L			10/25/23 22:35	1
Nitrate as N (EPA 300.0)	2.5		1.0	0.043	mg/L			10/25/23 22:35	1
Sulfate (EPA 300.0)	6.4		1.0	0.21	mg/L			10/25/23 22:35	1
Total Organic Carbon - Quad (SW846 9060A)	0.90	J	1.0	0.47	mg/L			11/05/23 20:24	1
Alkalinity (SM 2320B)	415		5.0	3.7	mg/L			11/07/23 13:33	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Client Sample ID: W-231024-TS-06

Lab Sample ID: 500-241555-6

Date Collected: 10/24/23 14:18

Matrix: Water

Date Received: 10/25/23 10:30

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/01/23 23:58	1
Toluene	<0.15		0.50	0.15	ug/L			11/01/23 23:58	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/01/23 23:58	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/01/23 23:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		75 - 126					11/01/23 23:58	1
Toluene-d8 (Surr)	93		75 - 120					11/01/23 23:58	1
4-Bromofluorobenzene (Surr)	86		72 - 124					11/01/23 23:58	1
Dibromofluoromethane	109		75 - 120					11/01/23 23:58	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.82	0.25	ug/L		10/29/23 09:38	11/03/23 22:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	105		36 - 120				10/29/23 09:38	11/03/23 22:00	1
2-Fluorobiphenyl (Surr)	85		34 - 110				10/29/23 09:38	11/03/23 22:00	1
Terphenyl-d14 (Surr)	124		40 - 145				10/29/23 09:38	11/03/23 22:00	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			10/31/23 17:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	111		60 - 140					10/31/23 17:48	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.10		0.10	0.10	ug/L		10/26/23 14:33	10/27/23 17:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	94		25 - 130				10/26/23 14:33	10/27/23 17:11	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.35	J	1.0	0.23	ug/L		11/13/23 18:59	11/14/23 15:12	1
Calcium	36100		200	44.3	ug/L		11/13/23 18:59	11/14/23 15:12	1
Copper	1.4	J	2.0	0.50	ug/L		11/13/23 18:59	11/14/23 15:12	1
Iron	99.4	J	100	46.7	ug/L		11/01/23 18:00	11/10/23 07:37	1
Magnesium	13700		200	49.4	ug/L		11/13/23 18:59	11/14/23 15:12	1
Manganese	2.3	J	2.5	0.79	ug/L		11/01/23 18:00	11/10/23 07:37	1
Zinc	8.0	J	20.0	6.9	ug/L		11/01/23 18:00	11/10/23 07:37	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.27	J	1.0	0.23	ug/L		11/13/23 18:59	11/14/23 15:19	1
Calcium	35900		200	44.3	ug/L		11/13/23 18:59	11/14/23 15:19	1
Copper	2.4		2.0	0.50	ug/L		11/13/23 18:59	11/14/23 15:19	1
Iron	<46.7		100	46.7	ug/L		11/01/23 18:00	11/10/23 07:41	1
Magnesium	13600		200	49.4	ug/L		11/13/23 18:59	11/14/23 15:19	1
Manganese	0.80	J	2.5	0.79	ug/L		11/01/23 18:00	11/10/23 07:41	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Client Sample ID: W-231024-TS-06

Lab Sample ID: 500-241555-6

Date Collected: 10/24/23 14:18

Matrix: Water

Date Received: 10/25/23 10:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		11/01/23 18:00	11/10/23 07:41	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	90.0		0.50	0.25	mg/L		11/01/23 18:00	11/07/23 07:23	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	89.7		0.50	0.25	mg/L		11/01/23 18:00	11/13/23 07:46	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	24.5	B	1.0	0.12	mg/L			10/25/23 22:50	1
Nitrate as N (EPA 300.0)	1.7		1.0	0.043	mg/L			10/25/23 22:50	1
Sulfate (EPA 300.0)	2.6		1.0	0.21	mg/L			10/25/23 22:50	1
Total Organic Carbon - Quad (SW846 9060A)	0.64	J	1.0	0.47	mg/L			11/05/23 20:46	1
Alkalinity (SM 2320B)	121		5.0	3.7	mg/L			11/07/23 13:42	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 500-241555-7

Date Collected: 10/24/23 00:00

Matrix: Water

Date Received: 10/25/23 10:30

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/01/23 18:18	1
Toluene	<0.15		0.50	0.15	ug/L			11/01/23 18:18	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/01/23 18:18	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/01/23 18:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		75 - 126		11/01/23 18:18	1
Toluene-d8 (Surr)	95		75 - 120		11/01/23 18:18	1
4-Bromofluorobenzene (Surr)	86		72 - 124		11/01/23 18:18	1
Dibromofluoromethane	103		75 - 120		11/01/23 18:18	1

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Qualifiers

GC VOA

Qualifier	Qualifier Description
J	Reported value was between the limit of detection and the limit of quantitation.

Metals

Qualifier	Qualifier Description
J	Reported value was between the limit of detection and the limit of quantitation.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Reported value was between the limit of detection and the limit of quantitation.

Glossary

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

QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

GC/MS VOA

Analysis Batch: 739891

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241555-1	W-231024-TS-01	Total/NA	Water	8260B	
500-241555-2	W-231024-TS-02	Total/NA	Water	8260B	
500-241555-3	W-231024-TS-03	Total/NA	Water	8260B	
500-241555-4	W-231024-TS-04	Total/NA	Water	8260B	
500-241555-5	W-231024-TS-05	Total/NA	Water	8260B	
500-241555-6	W-231024-TS-06	Total/NA	Water	8260B	
500-241555-7	TRIP BLANK	Total/NA	Water	8260B	
MB 500-739891/7	Method Blank	Total/NA	Water	8260B	
LCS 500-739891/4	Lab Control Sample	Total/NA	Water	8260B	
500-241555-6 MS	W-231024-TS-06	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 739418

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241555-1	W-231024-TS-01	Total/NA	Water	3510C	
500-241555-2	W-231024-TS-02	Total/NA	Water	3510C	
500-241555-3	W-231024-TS-03	Total/NA	Water	3510C	
500-241555-4	W-231024-TS-04	Total/NA	Water	3510C	
500-241555-5	W-231024-TS-05	Total/NA	Water	3510C	
500-241555-6	W-231024-TS-06	Total/NA	Water	3510C	
MB 500-739418/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-739418/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-739418/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 740336

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241555-1	W-231024-TS-01	Total/NA	Water	8270E	739418
500-241555-2	W-231024-TS-02	Total/NA	Water	8270E	739418
500-241555-3	W-231024-TS-03	Total/NA	Water	8270E	739418
500-241555-4	W-231024-TS-04	Total/NA	Water	8270E	739418
500-241555-5	W-231024-TS-05	Total/NA	Water	8270E	739418
500-241555-6	W-231024-TS-06	Total/NA	Water	8270E	739418
MB 500-739418/1-A	Method Blank	Total/NA	Water	8270E	739418
LCS 500-739418/2-A	Lab Control Sample	Total/NA	Water	8270E	739418
LCSD 500-739418/3-A	Lab Control Sample Dup	Total/NA	Water	8270E	739418

GC VOA

Analysis Batch: 592571

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241555-1	W-231024-TS-01	Total/NA	Water	RSK-175	
500-241555-2	W-231024-TS-02	Total/NA	Water	RSK-175	
500-241555-3	W-231024-TS-03	Total/NA	Water	RSK-175	
500-241555-4	W-231024-TS-04	Total/NA	Water	RSK-175	
500-241555-5	W-231024-TS-05	Total/NA	Water	RSK-175	
MB 240-592571/3	Method Blank	Total/NA	Water	RSK-175	
LCS 240-592571/4	Lab Control Sample	Total/NA	Water	RSK-175	

Analysis Batch: 592907

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241555-6	W-231024-TS-06	Total/NA	Water	RSK-175	

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

GC VOA (Continued)

Analysis Batch: 592907 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 240-592907/3	Method Blank	Total/NA	Water	RSK-175	
LCS 240-592907/4	Lab Control Sample	Total/NA	Water	RSK-175	

GC Semi VOA

Leach Batch: 739042

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LB 500-739042/1-C	Method Blank	Total/NA	Water	1311	

Prep Batch: 739043

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241555-1	W-231024-TS-01	Total/NA	Water	8151A	
500-241555-2	W-231024-TS-02	Total/NA	Water	8151A	
500-241555-3	W-231024-TS-03	Total/NA	Water	8151A	
500-241555-4	W-231024-TS-04	Total/NA	Water	8151A	
500-241555-5	W-231024-TS-05	Total/NA	Water	8151A	
500-241555-6	W-231024-TS-06	Total/NA	Water	8151A	
LB 500-739042/1-C	Method Blank	Total/NA	Water	8151A	739042
MB 500-739043/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-739043/2-A	Lab Control Sample	Total/NA	Water	8151A	
LCSD 500-739043/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	

Analysis Batch: 739241

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241555-1	W-231024-TS-01	Total/NA	Water	8151A	739043
500-241555-2	W-231024-TS-02	Total/NA	Water	8151A	739043
500-241555-3	W-231024-TS-03	Total/NA	Water	8151A	739043
500-241555-4	W-231024-TS-04	Total/NA	Water	8151A	739043
500-241555-5	W-231024-TS-05	Total/NA	Water	8151A	739043
500-241555-6	W-231024-TS-06	Total/NA	Water	8151A	739043
LB 500-739042/1-C	Method Blank	Total/NA	Water	8151A	739043
MB 500-739043/1-A	Method Blank	Total/NA	Water	8151A	739043
LCS 500-739043/2-A	Lab Control Sample	Total/NA	Water	8151A	739043
LCSD 500-739043/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	739043

Metals

Prep Batch: 740010

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241555-1	W-231024-TS-01	Dissolved	Water	3005A	
500-241555-1	W-231024-TS-01	Total Recoverable	Water	3005A	
500-241555-2	W-231024-TS-02	Dissolved	Water	3005A	
500-241555-2	W-231024-TS-02	Total Recoverable	Water	3005A	
500-241555-3	W-231024-TS-03	Dissolved	Water	3005A	
500-241555-3	W-231024-TS-03	Total Recoverable	Water	3005A	
500-241555-4	W-231024-TS-04	Dissolved	Water	3005A	
500-241555-4	W-231024-TS-04	Total Recoverable	Water	3005A	
500-241555-5	W-231024-TS-05	Dissolved	Water	3005A	
500-241555-5	W-231024-TS-05	Total Recoverable	Water	3005A	
500-241555-6	W-231024-TS-06	Dissolved	Water	3005A	
500-241555-6	W-231024-TS-06	Total Recoverable	Water	3005A	
MB 500-740010/1-A	Method Blank	Total Recoverable	Water	3005A	

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Metals (Continued)

Prep Batch: 740010 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 500-740010/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 740828

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241555-1	W-231024-TS-01	Total Recoverable	Water	SM 2340B	740010
500-241555-2	W-231024-TS-02	Total Recoverable	Water	SM 2340B	740010
500-241555-3	W-231024-TS-03	Total Recoverable	Water	SM 2340B	740010
500-241555-4	W-231024-TS-04	Total Recoverable	Water	SM 2340B	740010
500-241555-5	W-231024-TS-05	Total Recoverable	Water	SM 2340B	740010
500-241555-6	W-231024-TS-06	Total Recoverable	Water	SM 2340B	740010

Analysis Batch: 741642

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241555-1	W-231024-TS-01	Dissolved	Water	SM 2340B	740010
500-241555-2	W-231024-TS-02	Dissolved	Water	SM 2340B	740010
500-241555-3	W-231024-TS-03	Dissolved	Water	SM 2340B	740010
500-241555-4	W-231024-TS-04	Dissolved	Water	SM 2340B	740010
500-241555-5	W-231024-TS-05	Dissolved	Water	SM 2340B	740010
500-241555-6	W-231024-TS-06	Dissolved	Water	SM 2340B	740010

Analysis Batch: 741658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241555-1	W-231024-TS-01	Dissolved	Water	6020A	740010
500-241555-1	W-231024-TS-01	Total Recoverable	Water	6020A	740010
500-241555-2	W-231024-TS-02	Dissolved	Water	6020A	740010
500-241555-2	W-231024-TS-02	Total Recoverable	Water	6020A	740010
500-241555-3	W-231024-TS-03	Dissolved	Water	6020A	740010
500-241555-3	W-231024-TS-03	Total Recoverable	Water	6020A	740010
500-241555-4	W-231024-TS-04	Dissolved	Water	6020A	740010
500-241555-4	W-231024-TS-04	Total Recoverable	Water	6020A	740010
500-241555-5	W-231024-TS-05	Dissolved	Water	6020A	740010
500-241555-5	W-231024-TS-05	Total Recoverable	Water	6020A	740010
500-241555-6	W-231024-TS-06	Dissolved	Water	6020A	740010
500-241555-6	W-231024-TS-06	Total Recoverable	Water	6020A	740010
MB 500-740010/1-A	Method Blank	Total Recoverable	Water	6020A	740010
LCS 500-740010/2-A	Lab Control Sample	Total Recoverable	Water	6020A	740010

Prep Batch: 741963

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241555-1	W-231024-TS-01	Dissolved	Water	3005A	
500-241555-1	W-231024-TS-01	Total Recoverable	Water	3005A	
500-241555-2	W-231024-TS-02	Dissolved	Water	3005A	
500-241555-2	W-231024-TS-02	Total Recoverable	Water	3005A	
500-241555-3	W-231024-TS-03	Dissolved	Water	3005A	
500-241555-3	W-231024-TS-03	Total Recoverable	Water	3005A	
500-241555-4	W-231024-TS-04	Dissolved	Water	3005A	
500-241555-4	W-231024-TS-04	Total Recoverable	Water	3005A	
500-241555-5	W-231024-TS-05	Dissolved	Water	3005A	
500-241555-5	W-231024-TS-05	Total Recoverable	Water	3005A	
500-241555-6	W-231024-TS-06	Dissolved	Water	3005A	
500-241555-6	W-231024-TS-06	Total Recoverable	Water	3005A	

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Metals (Continued)

Prep Batch: 741963 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-741963/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-741963/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 742176

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241555-1	W-231024-TS-01	Dissolved	Water	6020A	741963
500-241555-1	W-231024-TS-01	Total Recoverable	Water	6020A	741963
500-241555-2	W-231024-TS-02	Dissolved	Water	6020A	741963
500-241555-2	W-231024-TS-02	Total Recoverable	Water	6020A	741963
500-241555-3	W-231024-TS-03	Dissolved	Water	6020A	741963
500-241555-3	W-231024-TS-03	Total Recoverable	Water	6020A	741963
500-241555-4	W-231024-TS-04	Dissolved	Water	6020A	741963
500-241555-4	W-231024-TS-04	Total Recoverable	Water	6020A	741963
500-241555-5	W-231024-TS-05	Dissolved	Water	6020A	741963
500-241555-5	W-231024-TS-05	Total Recoverable	Water	6020A	741963
500-241555-6	W-231024-TS-06	Dissolved	Water	6020A	741963
500-241555-6	W-231024-TS-06	Total Recoverable	Water	6020A	741963
MB 500-741963/1-A	Method Blank	Total Recoverable	Water	6020A	741963
LCS 500-741963/2-A	Lab Control Sample	Total Recoverable	Water	6020A	741963

General Chemistry

Analysis Batch: 738872

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241555-1	W-231024-TS-01	Total/NA	Water	300.0	
500-241555-2	W-231024-TS-02	Total/NA	Water	300.0	
500-241555-3	W-231024-TS-03	Total/NA	Water	300.0	
500-241555-4	W-231024-TS-04	Total/NA	Water	300.0	
500-241555-5	W-231024-TS-05	Total/NA	Water	300.0	
500-241555-6	W-231024-TS-06	Total/NA	Water	300.0	
MB 500-738872/3	Method Blank	Total/NA	Water	300.0	
LCS 500-738872/4	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 738873

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241555-1	W-231024-TS-01	Total/NA	Water	300.0	
500-241555-2	W-231024-TS-02	Total/NA	Water	300.0	
500-241555-3	W-231024-TS-03	Total/NA	Water	300.0	
500-241555-4	W-231024-TS-04	Total/NA	Water	300.0	
500-241555-5	W-231024-TS-05	Total/NA	Water	300.0	
500-241555-6	W-231024-TS-06	Total/NA	Water	300.0	
MB 500-738873/3	Method Blank	Total/NA	Water	300.0	
LCS 500-738873/4	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 740678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241555-1	W-231024-TS-01	Total/NA	Water	9060A	
500-241555-2	W-231024-TS-02	Total/NA	Water	9060A	
500-241555-3	W-231024-TS-03	Total/NA	Water	9060A	
500-241555-4	W-231024-TS-04	Total/NA	Water	9060A	
500-241555-5	W-231024-TS-05	Total/NA	Water	9060A	

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

General Chemistry (Continued)

Analysis Batch: 740678 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241555-6	W-231024-TS-06	Total/NA	Water	9060A	
MB 500-740678/6	Method Blank	Total/NA	Water	9060A	
LCS 500-740678/7	Lab Control Sample	Total/NA	Water	9060A	
LCSD 500-740678/8	Lab Control Sample Dup	Total/NA	Water	9060A	

Analysis Batch: 741150

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241555-1	W-231024-TS-01	Total/NA	Water	SM 2320B	
500-241555-2	W-231024-TS-02	Total/NA	Water	SM 2320B	
500-241555-3	W-231024-TS-03	Total/NA	Water	SM 2320B	
500-241555-4	W-231024-TS-04	Total/NA	Water	SM 2320B	
500-241555-5	W-231024-TS-05	Total/NA	Water	SM 2320B	
500-241555-6	W-231024-TS-06	Total/NA	Water	SM 2320B	
MB 500-741150/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-741150/4	Lab Control Sample	Total/NA	Water	SM 2320B	

Surrogate Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-126)	TOL (75-120)	BFB (72-124)	DBFM (75-120)
500-241555-1	W-231024-TS-01	96	94	85	106
500-241555-2	W-231024-TS-02	94	95	85	105
500-241555-3	W-231024-TS-03	99	94	86	106
500-241555-4	W-231024-TS-04	99	93	87	108
500-241555-5	W-231024-TS-05	97	94	86	107
500-241555-6	W-231024-TS-06	99	93	86	109
500-241555-6 MS	W-231024-TS-06	93	94	84	101
500-241555-7	TRIP BLANK	92	95	86	103
LCS 500-739891/4	Lab Control Sample	88	96	86	98
MB 500-739891/7	Method Blank	95	95	87	104

Surrogate Legend

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

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		NBZ (36-120)	FBP (34-110)	TPHL (40-145)
500-241555-1	W-231024-TS-01	107	86	120
500-241555-2	W-231024-TS-02	103	86	125
500-241555-3	W-231024-TS-03	99	78	117
500-241555-4	W-231024-TS-04	105	86	120
500-241555-5	W-231024-TS-05	108	86	122
500-241555-6	W-231024-TS-06	105	85	124
LCS 500-739418/2-A	Lab Control Sample	97	84	122
LCS 500-739418/3-A	Lab Control Sample Dup	93	82	119
MB 500-739418/1-A	Method Blank	105	89	124

Surrogate Legend

NBZ = Nitrobenzene-d5 (Surr)
FBP = 2-Fluorobiphenyl (Surr)
TPHL = Terphenyl-d14 (Surr)

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		TFE1 (60-140)
500-241555-1	W-231024-TS-01	118
500-241555-2	W-231024-TS-02	118
500-241555-3	W-231024-TS-03	119
500-241555-4	W-231024-TS-04	118
500-241555-5	W-231024-TS-05	115
500-241555-6	W-231024-TS-06	111
LCS 240-592571/4	Lab Control Sample	117

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Surrogate Summary

Client: GHD Services Inc.
 Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TFE1 (60-140)
LCS 240-592907/4	Lab Control Sample	115
MB 240-592571/3	Method Blank	118
MB 240-592907/3	Method Blank	114

Surrogate Legend

TFE = 1,1,1-Trifluoroethane

Method: 8151A - Herbicides (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (25-130)
500-241555-1	W-231024-TS-01	89
500-241555-2	W-231024-TS-02	92
500-241555-3	W-231024-TS-03	94
500-241555-4	W-231024-TS-04	95
500-241555-5	W-231024-TS-05	99
500-241555-6	W-231024-TS-06	94
LB 500-739042/1-C	Method Blank	78
LCS 500-739043/2-A	Lab Control Sample	107
LCSD 500-739043/3-A	Lab Control Sample Dup	99
MB 500-739043/1-A	Method Blank	85

Surrogate Legend

DCPAA = DCAA

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-739891/7
Matrix: Water
Analysis Batch: 739891

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/01/23 17:26	1
Toluene	<0.15		0.50	0.15	ug/L			11/01/23 17:26	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/01/23 17:26	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/01/23 17:26	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		75 - 126		11/01/23 17:26	1
Toluene-d8 (Surr)	95		75 - 120		11/01/23 17:26	1
4-Bromofluorobenzene (Surr)	87		72 - 124		11/01/23 17:26	1
Dibromofluoromethane	104		75 - 120		11/01/23 17:26	1

Lab Sample ID: LCS 500-739891/4
Matrix: Water
Analysis Batch: 739891

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	40.0	39.5		ug/L		99	70 - 120
Toluene	40.0	37.9		ug/L		95	70 - 125
Ethylbenzene	40.0	40.6		ug/L		102	70 - 123
Xylenes, Total	80.0	76.2		ug/L		95	70 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	88		75 - 126
Toluene-d8 (Surr)	96		75 - 120
4-Bromofluorobenzene (Surr)	86		72 - 124
Dibromofluoromethane	98		75 - 120

Lab Sample ID: 500-241555-6 MS
Matrix: Water
Analysis Batch: 739891

Client Sample ID: W-231024-TS-06
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.15		40.0	36.3		ug/L		91	70 - 120
Toluene	<0.15		40.0	34.2		ug/L		86	70 - 125
Ethylbenzene	<0.18		40.0	36.9		ug/L		92	70 - 123
Xylenes, Total	<0.22		80.0	68.9		ug/L		86	70 - 125

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	93		75 - 126
Toluene-d8 (Surr)	94		75 - 120
4-Bromofluorobenzene (Surr)	84		72 - 124
Dibromofluoromethane	101		75 - 120

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

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

Lab Sample ID: MB 500-739418/1-A
Matrix: Water
Analysis Batch: 740336

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 739418

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Naphthalene	<0.25		0.80	0.25	ug/L		10/29/23 09:38	11/03/23 13:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	105		36 - 120				10/29/23 09:38	11/03/23 13:56	1
2-Fluorobiphenyl (Surr)	89		34 - 110				10/29/23 09:38	11/03/23 13:56	1
Terphenyl-d14 (Surr)	124		40 - 145				10/29/23 09:38	11/03/23 13:56	1

Lab Sample ID: LCS 500-739418/2-A
Matrix: Water
Analysis Batch: 740336

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 739418

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Surrogate	%Recovery	Qualifier	Limits				
Nitrobenzene-d5 (Surr)	97		36 - 120				
2-Fluorobiphenyl (Surr)	84		34 - 110				
Terphenyl-d14 (Surr)	122		40 - 145				

Lab Sample ID: LCSD 500-739418/3-A
Matrix: Water
Analysis Batch: 740336

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 739418

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Surrogate	%Recovery	Qualifier	Limits						
Nitrobenzene-d5 (Surr)	93		36 - 120						
2-Fluorobiphenyl (Surr)	82		34 - 110						
Terphenyl-d14 (Surr)	119		40 - 145						

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 240-592571/3
Matrix: Water
Analysis Batch: 592571

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

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Methane	<0.17		1.0	0.17	ug/L			10/27/23 15:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	118		60 - 140					10/27/23 15:20	1

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCS 240-592571/4
Matrix: Water
Analysis Batch: 592571

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methane	284	276		ug/L		97	80 - 120
Surrogate	%Recovery	LCS Qualifier	Limits				
1,1,1-Trifluoroethane	117		60 - 140				

Lab Sample ID: MB 240-592907/3
Matrix: Water
Analysis Batch: 592907

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			10/31/23 14:41	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	114		60 - 140					10/31/23 14:41	1

Lab Sample ID: LCS 240-592907/4
Matrix: Water
Analysis Batch: 592907

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methane	284	290		ug/L		102	80 - 120
Surrogate	%Recovery	LCS Qualifier	Limits				
1,1,1-Trifluoroethane	115		60 - 140				

Method: 8151A - Herbicides (GC)

Lab Sample ID: LB 500-739042/1-C
Matrix: Water
Analysis Batch: 739241

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 739043

Analyte	LB Result	LB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<9.9		10	9.9	ug/L		10/26/23 14:33	10/27/23 13:31	1
Surrogate	%Recovery	LB Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	78		25 - 130				10/26/23 14:33	10/27/23 13:31	1

Lab Sample ID: MB 500-739043/1-A
Matrix: Water
Analysis Batch: 739241

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 739043

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.099		0.10	0.099	ug/L		10/26/23 14:33	10/27/23 12:36	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	85		25 - 130				10/26/23 14:33	10/27/23 12:36	1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

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

Lab Sample ID: LCS 500-739043/2-A
Matrix: Water
Analysis Batch: 739241

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 739043

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Pentachlorophenol	2.53	2.24		ug/L		89	40 - 122
Surrogate	%Recovery	LCS Qualifier	Limits				
DCAA	107		25 - 130				

Lab Sample ID: LCSD 500-739043/3-A
Matrix: Water
Analysis Batch: 739241

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 739043

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Pentachlorophenol	2.53	2.15		ug/L		85	40 - 122	4	20
Surrogate	%Recovery	LCSD Qualifier	Limits						
DCAA	99		25 - 130						

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 500-740010/1-A
Matrix: Water
Analysis Batch: 741658

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 740010

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<46.7		100	46.7	ug/L		11/01/23 18:00	11/10/23 06:04	1
Manganese	<0.79		2.5	0.79	ug/L		11/01/23 18:00	11/10/23 06:04	1
Zinc	<6.9		20.0	6.9	ug/L		11/01/23 18:00	11/10/23 06:04	1

Lab Sample ID: LCS 500-740010/2-A
Matrix: Water
Analysis Batch: 741658

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 740010

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Iron	1000	1002		ug/L		100	80 - 120
Manganese	500	480.1		ug/L		96	80 - 120
Zinc	500	491.1		ug/L		98	80 - 120

Lab Sample ID: MB 500-741963/1-A
Matrix: Water
Analysis Batch: 742176

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 741963

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		11/13/23 18:59	11/14/23 14:14	1
Calcium	<44.3		200	44.3	ug/L		11/13/23 18:59	11/14/23 14:14	1
Copper	<0.50		2.0	0.50	ug/L		11/13/23 18:59	11/14/23 14:14	1
Magnesium	<49.4		200	49.4	ug/L		11/13/23 18:59	11/14/23 14:14	1

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

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

Lab Sample ID: LCS 500-741963/2-A
Matrix: Water
Analysis Batch: 742176

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 741963

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	100	95.67		ug/L		96	80 - 120
Calcium	10000	9459		ug/L		95	80 - 120
Copper	250	255.7		ug/L		102	80 - 120
Magnesium	10000	9865		ug/L		99	80 - 120

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 500-738872/3
Matrix: Water
Analysis Batch: 738872

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.133	J	1.0	0.12	mg/L			10/25/23 18:02	1
Sulfate	<0.21		1.0	0.21	mg/L			10/25/23 18:02	1

Lab Sample ID: LCS 500-738872/4
Matrix: Water
Analysis Batch: 738872

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	20.0	21.13		mg/L		106	90 - 110
Sulfate	20.0	21.54		mg/L		108	90 - 110

Lab Sample ID: MB 500-738873/3
Matrix: Water
Analysis Batch: 738873

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.043		1.0	0.043	mg/L			10/25/23 18:02	1

Lab Sample ID: LCS 500-738873/4
Matrix: Water
Analysis Batch: 738873

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	20.0	19.76		mg/L		99	90 - 110

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 500-740678/6
Matrix: Water
Analysis Batch: 740678

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	<0.47		1.0	0.47	mg/L			11/05/23 12:20	1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCS 500-740678/7
Matrix: Water
Analysis Batch: 740678

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon - Quad	50.0	49.47		mg/L		99	86 - 116

Lab Sample ID: LCSD 500-740678/8
Matrix: Water
Analysis Batch: 740678

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon - Quad	50.0	49.22		mg/L		98	86 - 116	1	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-741150/3
Matrix: Water
Analysis Batch: 741150

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	<3.7		5.0	3.7	mg/L			11/07/23 12:45	1

Lab Sample ID: LCS 500-741150/4
Matrix: Water
Analysis Batch: 741150

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	100	101.1		mg/L		101	90 - 110

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Client Sample ID: W-231024-TS-01

Lab Sample ID: 500-241555-1

Date Collected: 10/24/23 11:07

Matrix: Water

Date Received: 10/25/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	739891	W1T	EET CHI	11/01/23 21:47
Total/NA	Prep	3510C			739418	DAK	EET CHI	10/29/23 09:38
Total/NA	Analysis	8270E		1	740336	SS	EET CHI	11/03/23 19:52
Total/NA	Analysis	RSK-175		1	592571	JBN	EET CLE	10/27/23 20:43
Total/NA	Prep	8151A			739043	DAK	EET CHI	10/26/23 14:33
Total/NA	Analysis	8151A		1	739241	SB	EET CHI	10/27/23 15:39
Dissolved	Prep	3005A			740010	MC	EET CHI	11/01/23 18:00 - 11/01/23 23:00 ¹
Dissolved	Analysis	6020A		1	741658	BJH	EET CHI	11/10/23 06:55
Dissolved	Prep	3005A			741963	MC	EET CHI	11/13/23 18:59 - 11/13/23 23:59 ¹
Dissolved	Analysis	6020A		1	742176	BJH	EET CHI	11/14/23 14:26
Total Recoverable	Prep	3005A			740010	MC	EET CHI	11/01/23 18:00 - 11/01/23 23:00 ¹
Total Recoverable	Analysis	6020A		1	741658	BJH	EET CHI	11/10/23 06:51
Total Recoverable	Prep	3005A			741963	MC	EET CHI	11/13/23 18:59 - 11/13/23 23:59 ¹
Total Recoverable	Analysis	6020A		1	742176	BJH	EET CHI	11/14/23 14:22
Dissolved	Prep	3005A			740010	MC	EET CHI	11/01/23 18:00 - 11/01/23 23:00 ¹
Dissolved	Analysis	SM 2340B		1	741642	DAJ	EET CHI	11/13/23 07:46
Total Recoverable	Prep	3005A			740010	MC	EET CHI	11/01/23 18:00 - 11/01/23 23:00 ¹
Total Recoverable	Analysis	SM 2340B		1	740828	DAJ	EET CHI	11/07/23 07:22
Total/NA	Analysis	300.0		1	738872	NMB	EET CHI	10/25/23 21:34
Total/NA	Analysis	300.0		1	738873	NMB	EET CHI	10/25/23 21:34
Total/NA	Analysis	9060A		1	740678	TR	EET CHI	11/05/23 18:41
Total/NA	Analysis	SM 2320B		1	741150	SO	EET CHI	11/07/23 12:59

Client Sample ID: W-231024-TS-02

Lab Sample ID: 500-241555-2

Date Collected: 10/24/23 11:40

Matrix: Water

Date Received: 10/25/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	739891	W1T	EET CHI	11/01/23 22:13
Total/NA	Prep	3510C			739418	DAK	EET CHI	10/29/23 09:38
Total/NA	Analysis	8270E		1	740336	SS	EET CHI	11/03/23 20:18
Total/NA	Analysis	RSK-175		1	592571	JBN	EET CLE	10/27/23 21:00
Total/NA	Prep	8151A			739043	DAK	EET CHI	10/26/23 14:33
Total/NA	Analysis	8151A		1	739241	SB	EET CHI	10/27/23 15:58
Dissolved	Prep	3005A			740010	MC	EET CHI	11/01/23 18:00 - 11/01/23 23:00 ¹
Dissolved	Analysis	6020A		1	741658	BJH	EET CHI	11/10/23 07:11
Dissolved	Prep	3005A			741963	MC	EET CHI	11/13/23 18:59 - 11/13/23 23:59 ¹
Dissolved	Analysis	6020A		1	742176	BJH	EET CHI	11/14/23 14:35
Total Recoverable	Prep	3005A			740010	MC	EET CHI	11/01/23 18:00 - 11/01/23 23:00 ¹
Total Recoverable	Analysis	6020A		1	741658	BJH	EET CHI	11/10/23 06:59
Total Recoverable	Prep	3005A			741963	MC	EET CHI	11/13/23 18:59 - 11/13/23 23:59 ¹
Total Recoverable	Analysis	6020A		1	742176	BJH	EET CHI	11/14/23 14:31
Dissolved	Prep	3005A			740010	MC	EET CHI	11/01/23 18:00 - 11/01/23 23:00 ¹
Dissolved	Analysis	SM 2340B		1	741642	DAJ	EET CHI	11/13/23 07:46

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Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Client Sample ID: W-231024-TS-02

Lab Sample ID: 500-241555-2

Date Collected: 10/24/23 11:40

Matrix: Water

Date Received: 10/25/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			740010	MC	EET CHI	11/01/23 18:00 - 11/01/23 23:00 ¹
Total Recoverable	Analysis	SM 2340B		1	740828	DAJ	EET CHI	11/07/23 07:22
Total/NA	Analysis	300.0		1	738872	NMB	EET CHI	10/25/23 21:49
Total/NA	Analysis	300.0		1	738873	NMB	EET CHI	10/25/23 21:49
Total/NA	Analysis	9060A		1	740678	TR	EET CHI	11/05/23 19:08
Total/NA	Analysis	SM 2320B		1	741150	SO	EET CHI	11/07/23 13:07

Client Sample ID: W-231024-TS-03

Lab Sample ID: 500-241555-3

Date Collected: 10/24/23 12:54

Matrix: Water

Date Received: 10/25/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	739891	W1T	EET CHI	11/01/23 22:39
Total/NA	Prep	3510C			739418	DAK	EET CHI	10/29/23 09:38
Total/NA	Analysis	8270E		1	740336	SS	EET CHI	11/03/23 20:44
Total/NA	Analysis	RSK-175		1	592571	JBN	EET CLE	10/27/23 22:42
Total/NA	Prep	8151A			739043	DAK	EET CHI	10/26/23 14:33
Total/NA	Analysis	8151A		1	739241	SB	EET CHI	10/27/23 16:16
Dissolved	Prep	3005A			740010	MC	EET CHI	11/01/23 18:00 - 11/01/23 23:00 ¹
Dissolved	Analysis	6020A		1	741658	BJH	EET CHI	11/10/23 07:18
Dissolved	Prep	3005A			741963	MC	EET CHI	11/13/23 18:59 - 11/13/23 23:59 ¹
Dissolved	Analysis	6020A		1	742176	BJH	EET CHI	11/14/23 14:51
Total Recoverable	Prep	3005A			740010	MC	EET CHI	11/01/23 18:00 - 11/01/23 23:00 ¹
Total Recoverable	Analysis	6020A		1	741658	BJH	EET CHI	11/10/23 07:14
Total Recoverable	Prep	3005A			741963	MC	EET CHI	11/13/23 18:59 - 11/13/23 23:59 ¹
Total Recoverable	Analysis	6020A		1	742176	BJH	EET CHI	11/14/23 14:47
Dissolved	Prep	3005A			740010	MC	EET CHI	11/01/23 18:00 - 11/01/23 23:00 ¹
Dissolved	Analysis	SM 2340B		1	741642	DAJ	EET CHI	11/13/23 07:46
Total Recoverable	Prep	3005A			740010	MC	EET CHI	11/01/23 18:00 - 11/01/23 23:00 ¹
Total Recoverable	Analysis	SM 2340B		1	740828	DAJ	EET CHI	11/07/23 07:22
Total/NA	Analysis	300.0		1	738872	NMB	EET CHI	10/25/23 22:05
Total/NA	Analysis	300.0		1	738873	NMB	EET CHI	10/25/23 22:05
Total/NA	Analysis	9060A		1	740678	TR	EET CHI	11/05/23 19:30
Total/NA	Analysis	SM 2320B		1	741150	SO	EET CHI	11/07/23 13:16

Client Sample ID: W-231024-TS-04

Lab Sample ID: 500-241555-4

Date Collected: 10/24/23 12:55

Matrix: Water

Date Received: 10/25/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	739891	W1T	EET CHI	11/01/23 23:06
Total/NA	Prep	3510C			739418	DAK	EET CHI	10/29/23 09:38
Total/NA	Analysis	8270E		1	740336	SS	EET CHI	11/03/23 21:09
Total/NA	Analysis	RSK-175		1	592571	JBN	EET CLE	10/27/23 22:59

Eurofins Chicago

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Client Sample ID: W-231024-TS-04

Lab Sample ID: 500-241555-4

Date Collected: 10/24/23 12:55

Matrix: Water

Date Received: 10/25/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	8151A			739043	DAK	EET CHI	10/26/23 14:33
Total/NA	Analysis	8151A		1	739241	SB	EET CHI	10/27/23 16:34
Dissolved	Prep	3005A			740010	MC	EET CHI	11/01/23 18:00 - 11/01/23 23:00 ¹
Dissolved	Analysis	6020A		1	741658	BJH	EET CHI	11/10/23 07:26
Dissolved	Prep	3005A			741963	MC	EET CHI	11/13/23 18:59 - 11/13/23 23:59 ¹
Dissolved	Analysis	6020A		1	742176	BJH	EET CHI	11/14/23 14:59
Total Recoverable	Prep	3005A			740010	MC	EET CHI	11/01/23 18:00 - 11/01/23 23:00 ¹
Total Recoverable	Analysis	6020A		1	741658	BJH	EET CHI	11/10/23 07:22
Total Recoverable	Prep	3005A			741963	MC	EET CHI	11/13/23 18:59 - 11/13/23 23:59 ¹
Total Recoverable	Analysis	6020A		1	742176	BJH	EET CHI	11/14/23 14:55
Dissolved	Prep	3005A			740010	MC	EET CHI	11/01/23 18:00 - 11/01/23 23:00 ¹
Dissolved	Analysis	SM 2340B		1	741642	DAJ	EET CHI	11/13/23 07:46
Total Recoverable	Prep	3005A			740010	MC	EET CHI	11/01/23 18:00 - 11/01/23 23:00 ¹
Total Recoverable	Analysis	SM 2340B		1	740828	DAJ	EET CHI	11/07/23 07:22
Total/NA	Analysis	300.0		1	738872	NMB	EET CHI	10/25/23 22:20
Total/NA	Analysis	300.0		1	738873	NMB	EET CHI	10/25/23 22:20
Total/NA	Analysis	9060A		1	740678	TR	EET CHI	11/05/23 19:57
Total/NA	Analysis	SM 2320B		1	741150	SO	EET CHI	11/07/23 13:24

Client Sample ID: W-231024-TS-05

Lab Sample ID: 500-241555-5

Date Collected: 10/24/23 13:30

Matrix: Water

Date Received: 10/25/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	739891	W1T	EET CHI	11/01/23 23:32
Total/NA	Prep	3510C			739418	DAK	EET CHI	10/29/23 09:38
Total/NA	Analysis	8270E		1	740336	SS	EET CHI	11/03/23 21:35
Total/NA	Analysis	RSK-175		1	592571	JBN	EET CLE	10/27/23 23:16
Total/NA	Prep	8151A			739043	DAK	EET CHI	10/26/23 14:33
Total/NA	Analysis	8151A		1	739241	SB	EET CHI	10/27/23 16:53
Dissolved	Prep	3005A			740010	MC	EET CHI	11/01/23 18:00 - 11/01/23 23:00 ¹
Dissolved	Analysis	6020A		1	741658	BJH	EET CHI	11/10/23 07:33
Dissolved	Prep	3005A			741963	MC	EET CHI	11/13/23 18:59 - 11/13/23 23:59 ¹
Dissolved	Analysis	6020A		1	742176	BJH	EET CHI	11/14/23 15:08
Total Recoverable	Prep	3005A			740010	MC	EET CHI	11/01/23 18:00 - 11/01/23 23:00 ¹
Total Recoverable	Analysis	6020A		1	741658	BJH	EET CHI	11/10/23 07:30
Total Recoverable	Prep	3005A			741963	MC	EET CHI	11/13/23 18:59 - 11/13/23 23:59 ¹
Total Recoverable	Analysis	6020A		1	742176	BJH	EET CHI	11/14/23 15:03
Dissolved	Prep	3005A			740010	MC	EET CHI	11/01/23 18:00 - 11/01/23 23:00 ¹
Dissolved	Analysis	SM 2340B		1	741642	DAJ	EET CHI	11/13/23 07:46
Total Recoverable	Prep	3005A			740010	MC	EET CHI	11/01/23 18:00 - 11/01/23 23:00 ¹
Total Recoverable	Analysis	SM 2340B		1	740828	DAJ	EET CHI	11/07/23 07:22
Total/NA	Analysis	300.0		1	738872	NMB	EET CHI	10/25/23 22:35
Total/NA	Analysis	300.0		1	738873	NMB	EET CHI	10/25/23 22:35

Eurofins Chicago

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Client Sample ID: W-231024-TS-05

Lab Sample ID: 500-241555-5

Date Collected: 10/24/23 13:30

Matrix: Water

Date Received: 10/25/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9060A		1	740678	TR	EET CHI	11/05/23 20:24
Total/NA	Analysis	SM 2320B		1	741150	SO	EET CHI	11/07/23 13:33

Client Sample ID: W-231024-TS-06

Lab Sample ID: 500-241555-6

Date Collected: 10/24/23 14:18

Matrix: Water

Date Received: 10/25/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	739891	W1T	EET CHI	11/01/23 23:58
Total/NA	Prep	3510C			739418	DAK	EET CHI	10/29/23 09:38
Total/NA	Analysis	8270E		1	740336	SS	EET CHI	11/03/23 22:00
Total/NA	Analysis	RSK-175		1	592907	JBN	EET CLE	10/31/23 17:48
Total/NA	Prep	8151A			739043	DAK	EET CHI	10/26/23 14:33
Total/NA	Analysis	8151A		1	739241	SB	EET CHI	10/27/23 17:11
Dissolved	Prep	3005A			740010	MC	EET CHI	11/01/23 18:00 - 11/01/23 23:00 ¹
Dissolved	Analysis	6020A		1	741658	BJH	EET CHI	11/10/23 07:41
Dissolved	Prep	3005A			741963	MC	EET CHI	11/13/23 18:59 - 11/13/23 23:59 ¹
Dissolved	Analysis	6020A		1	742176	BJH	EET CHI	11/14/23 15:19
Total Recoverable	Prep	3005A			740010	MC	EET CHI	11/01/23 18:00 - 11/01/23 23:00 ¹
Total Recoverable	Analysis	6020A		1	741658	BJH	EET CHI	11/10/23 07:37
Total Recoverable	Prep	3005A			741963	MC	EET CHI	11/13/23 18:59 - 11/13/23 23:59 ¹
Total Recoverable	Analysis	6020A		1	742176	BJH	EET CHI	11/14/23 15:12
Dissolved	Prep	3005A			740010	MC	EET CHI	11/01/23 18:00 - 11/01/23 23:00 ¹
Dissolved	Analysis	SM 2340B		1	741642	DAJ	EET CHI	11/13/23 07:46
Total Recoverable	Prep	3005A			740010	MC	EET CHI	11/01/23 18:00 - 11/01/23 23:00 ¹
Total Recoverable	Analysis	SM 2340B		1	740828	DAJ	EET CHI	11/07/23 07:23
Total/NA	Analysis	300.0		1	738872	NMB	EET CHI	10/25/23 22:50
Total/NA	Analysis	300.0		1	738873	NMB	EET CHI	10/25/23 22:50
Total/NA	Analysis	9060A		1	740678	TR	EET CHI	11/05/23 20:46
Total/NA	Analysis	SM 2320B		1	741150	SO	EET CHI	11/07/23 13:42

Client Sample ID: TRIP BLANK

Lab Sample ID: 500-241555-7

Date Collected: 10/24/23 00:00

Matrix: Water

Date Received: 10/25/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	739891	W1T	EET CHI	11/01/23 18:18

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

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200
EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: GHD Services Inc.
 Project/Site: Penta Wood 11222418

Job ID: 500-241555-1

Laboratory: Eurofins Chicago

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

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-24

Laboratory: Eurofins Cleveland

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-24
Georgia	State	4062	02-27-24
Illinois	NELAP	200004	07-31-24
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-28-24
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-24
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23 *
New Jersey	NELAP	OH001	07-01-24
New York	NELAP	10975	04-02-24
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-27-24
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-19	08-31-24
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.



RYAN AMOT
GHD SERVICES INC.
900 LONG LAKE ROAD
SUITE 200
SAINT PAUL, MN 55112
UNITED STATES US

ACTWGT: 20.00 LB MAN
CAD: 0675905/CAFE3513

Part # 159459-424 NTW EXP 08/24

TO SHIPPING DEPT 2
EUROFINS CHICAGO
2417 BOND ST

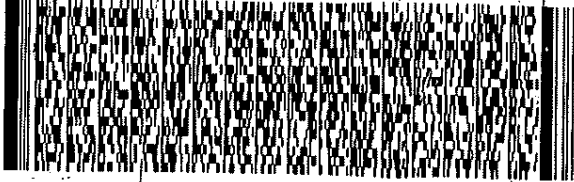
UNIVERSITY PARK IL 60484

(708) 634-6200

REF:

DEPT:

RMA: ||| ||| |||



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Express



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TRK# 7051 7812 2650
0221

RETURNS MON - SAT
PRIORITY OVERNIGHT

60484

FedEx

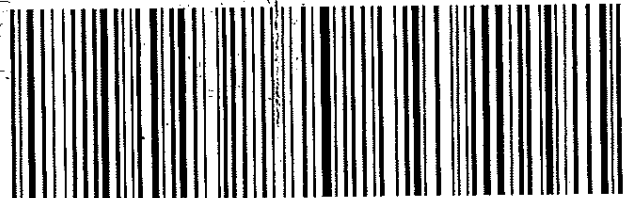
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WED - 25 OCT AA
PRIORITY OVERNIGHT

60484

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AC JOTA



80701 240c12023 JOTA 581G1/BC89/C088

4895

Ref: Date: 17Oct23
Dep: Wgt: 20.00 LBS

SHIPPING: 0.00
SPECIAL: 0.00
HANDLING: 0.00
TOTAL: 0.00

Svc: PRIORITY OVERNIGHT Master 7051 7812 2502
TRK: 7051 7812 2671



500-241555 Waybl

ORIGIN ID: JOTA (651) 639-0913
RYAN AMOT
GHD SERVICES INC.
900 LONG LAKE ROAD
SUITE 200
SAINT PAUL, MN 55112
UNITED STATES US

SHIP DATE: 17OCT23
ACTWGT: 20.00 LB MAN
CAD: 0675905/CAFE3513

Part # 159459-424 NTW EXP 08/24

TO SHIPPING DEPT 2
EUROFINS CHICAGO
2417 BOND ST

UNIVERSITY PARK IL 60484

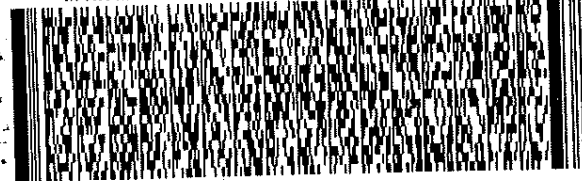
(708) 634-6200

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PRIORITY OVERNIGHT

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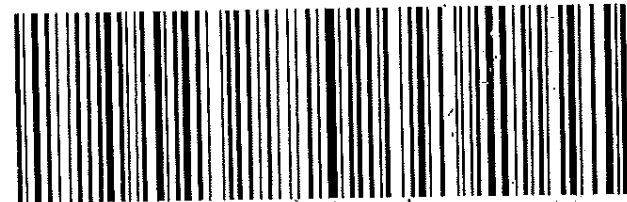
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PRIORITY OVERNIGHT

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TRK# 7051 7812 2671
0221

AC JOTA



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RYAN AAMOT
GHD SERVICES INC
900 LONG LAKE ROAD
SUITE 200
SAINT PAUL, MN 55112
UNITED STATES US

ACTWGT: 20.00 LB MAN
CAD: 0675905/CAFE3513

Part # 13969-34 M/TW EXP 09/24

TO SHIPPING DEPT 2
EUROFINS CHICAGO
2417 BOND ST

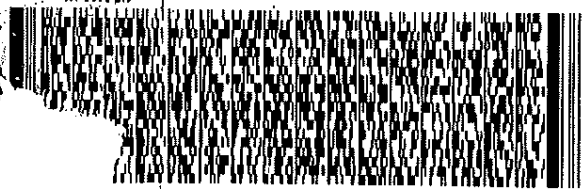
UNIVERSITY PARK IL 60484

(708) 634-5200
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AN 1011210201157

7051 7812 2660

RETURNS MON - SAT
PRIORITY OVERNIGHT

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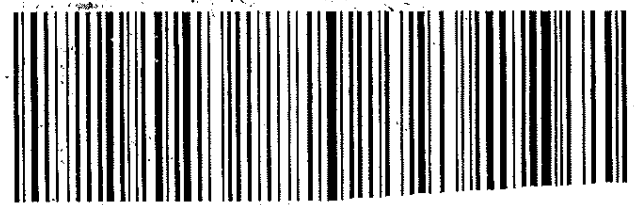
TRK#
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Chain of Custody Record




Client Information (Sub Contract Lab)		Sampler: McCUTCHEON, Carlene	Carrier Tracking No(s):	COC No: 500-180678-1																																																																						
Shipping/Receiving		Phone: Carlene.McCutcheon@et.eurofins.com	State of Origin: Wisconsin	Page 1 of 1																																																																						
Company: Eurofins Environment Testing North Center		Accreditations Required (See note): State Program - Wisconsin	Job # 500-241555-1																																																																							
Address: 180 S. Van Buren Avenue,		Due Date Requested: 11/14/2023																																																																								
City: Barberton	TAT Requested (days):																																																																									
State: OH	PO #:																																																																									
Zip: 44203	WO #:																																																																									
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	Project #:																																																																									
Email:	SSOW#:																																																																									
Project Name: Penta Wood 11222418	Site:																																																																									
<table border="1"> <thead> <tr> <th>Sample Identification - Client ID (Lab ID)</th> <th>Sample Date</th> <th>Sample Time</th> <th>Sample Type (C=Comp, G=grab)</th> <th>Matrix (W=water, S=solid, O=water/oil, BT=Time, AA=Air)</th> <th>Field Filtered Sample (Yes or No)</th> <th>Perform MS/MSD (Yes or No)</th> <th>RSK 175/ (MOD) Methane</th> <th>Total Number of Containers</th> <th>Special Instructions/Note:</th> </tr> </thead> <tbody> <tr> <td>W-231024-TS-01 (500-241555-1)</td> <td>10/24/23</td> <td>11:07 Central</td> <td></td> <td>Water</td> <td>X</td> <td>X</td> <td></td> <td>3</td> <td>RSK</td> </tr> <tr> <td>W-231024-TS-02 (500-241555-2)</td> <td>10/24/23</td> <td>11:40 Central</td> <td></td> <td>Water</td> <td>X</td> <td>X</td> <td></td> <td>3</td> <td></td> </tr> <tr> <td>W-231024-TS-03 (500-241555-3)</td> <td>10/24/23</td> <td>12:54 Central</td> <td></td> <td>Water</td> <td>X</td> <td>X</td> <td></td> <td>3</td> <td></td> </tr> <tr> <td>W-231024-TS-04 (500-241555-4)</td> <td>10/24/23</td> <td>12:55 Central</td> <td></td> <td>Water</td> <td>X</td> <td>X</td> <td></td> <td>3</td> <td></td> </tr> <tr> <td>W-231024-TS-05 (500-241555-5)</td> <td>10/24/23</td> <td>13:30 Central</td> <td></td> <td>Water</td> <td>X</td> <td>X</td> <td></td> <td>3</td> <td></td> </tr> <tr> <td>W-231024-TS-06 (500-241555-6)</td> <td>10/24/23</td> <td>14:15 Central</td> <td></td> <td>Water</td> <td>X</td> <td>X</td> <td></td> <td>3</td> <td></td> </tr> </tbody> </table>					Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=water/oil, BT=Time, AA=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK 175/ (MOD) Methane	Total Number of Containers	Special Instructions/Note:	W-231024-TS-01 (500-241555-1)	10/24/23	11:07 Central		Water	X	X		3	RSK	W-231024-TS-02 (500-241555-2)	10/24/23	11:40 Central		Water	X	X		3		W-231024-TS-03 (500-241555-3)	10/24/23	12:54 Central		Water	X	X		3		W-231024-TS-04 (500-241555-4)	10/24/23	12:55 Central		Water	X	X		3		W-231024-TS-05 (500-241555-5)	10/24/23	13:30 Central		Water	X	X		3		W-231024-TS-06 (500-241555-6)	10/24/23	14:15 Central		Water	X	X		3	
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=water/oil, BT=Time, AA=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK 175/ (MOD) Methane	Total Number of Containers	Special Instructions/Note:																																																																	
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W-231024-TS-06 (500-241555-6)	10/24/23	14:15 Central		Water	X	X		3																																																																		
<p>Note: Since laboratory accreditations are subject to change, Eurofins Chicago places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins Chicago laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Chicago attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Chicago.</p>																																																																										
<p>Possible Hazard Identification</p> <p>Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify) _____ Months Empty Kit Relinquished by: _____ Relinquished by: Pravda Date/Time: 10/25/23 15:30 Company: ELETA Relinquished by: _____ Date/Time: _____ Company: _____ Relinquished by: _____ Date/Time: _____ Company: _____ Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Cooler Temperature(s) °C and Other Remarks: _____</p>																																																																										

11/13/23



Eurofins - Cleveland Sample Receipt Form/Narrative
 Barberton Facility

Client Eurofins - CHI Site Name _____ Login # : _____
 Cooler Received on 10-26-23 Opened on 10-26-23 Cooler unpacked by: One
 FedEx: 1st Grd Exp UPS FAS Waypoint Client Drop Off Eurofins Courier Other _____
 Receipt After-hours: Drop-off Date/Time _____ Storage Location _____
 Eurofins Cooler # EC Foam Box Client Cooler Box Other _____
 Packing material used: Bubble Wrap Foam Plastic Bag None Other _____
 COOLANT: Wet Ice Blue Ice Dry Ice Water None
 1. Cooler temperature upon receipt See Multiple Cooler Form
 IR GUN # 19 (CF +0.4 °C) Observed Cooler Temp. 3.1 °C Corrected Cooler Temp. 3.5 °C
 2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
 -Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
 -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA
 -Were tamper/custody seals intact and uncompromised? Yes No NA
 3. Shippers' packing slip attached to the cooler(s)? Yes No
 4. Did custody papers accompany the sample(s)? Yes No
 5. Were the custody papers relinquished & signed in the appropriate place? Yes No
 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
 7. Did all bottles arrive in good condition (Unbroken)? Yes No
 8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
 9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No
 10. Were correct bottle(s) used for the test(s) indicated? Yes No
 11. Sufficient quantity received to perform indicated analyses? Yes No
 12. Are these work share samples and all listed on the COC? Yes No
 If yes, Questions 13-17 have been checked at the originating laboratory.
 13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC316719
 14. Were VOAs on the COC? Yes No
 15. Were air bubbles >6 mm in any VOA vials? Yes No NA  Larger than this.
 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
 17. Was a LL Hg or Me Hg trip blank present? _____ Yes No
 Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____
 Concerning _____

Tests that are not checked for pH by Receiving:
 VOAs
 Oil and Grease
 TOC

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page Samples processed by: _____

 19. SAMPLE CONDITION
 Sample(s) _____ were received after the recommended holding time had expired.
 Sample(s) _____ were received in a broken container.
 Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)
 20. SAMPLE PRESERVATION
 Sample(s) _____ were further preserved in the laboratory.
 Time preserved: _____ Preservative(s) added/Lot number(s): _____
 VOA Sample Preservation - Date/Time VOAs Frozen: _____

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

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 Environmental Testing
Temperature Controlled
 IF THIS SHIPMENT IS DELAYED IN TRANSIT,
 STORE REFRIGERATED (2° TO 8° C / 36° TO 47° F)
 (911) 0690 1016

ORIGIN ID: JOTA (708) 534-520 FZ
 SHIPPING DEPT
 EUROFINS CHICAGO
 2417 BOND ST

RT **164** ⁶ 10:30 **A**
 5146
 10.26

UNIVERSITY PARK, IL 60484
 UNITED STATES US

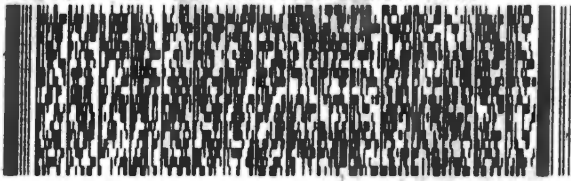
BILL SENDER

TO **SAMPLE RECEIPT**
TESTAMERICA
180 SOUTH VAN BUREN

BARBERTON OH 44203

(800) 487-8988
 REF: 241555 481 563

BY ORDER OF THE SENDER: THIS IS A SAMPLE RECEIPT AND NOT A PROOF OF DELIVERY



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 TestAmerica

2305670

1 of 2

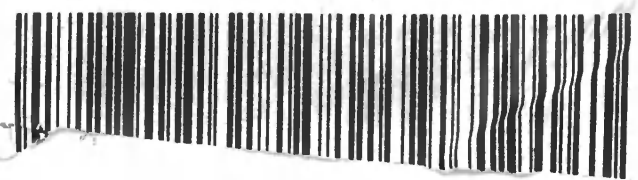
TRK# 7051 7617 5146
 0201

MASTER

NX CAKA

THU - 26 OCT 10:30A
PRIORITY OVERNIGHT

44203
 OH-US CLE



Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-241555-1

Login Number: 241555

List Number: 1

Creator: James, Jeff A

List Source: Eurofins Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is < /= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.4,0.7,-0.1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Grant Anderson
GHD Services Inc.
900 Long Lake Road
Suite 200
New Brighton, Minnesota 55112

Generated 11/29/2023 2:02:44 PM

JOB DESCRIPTION

Penta Wood 11222418

JOB NUMBER

500-241636-1

Eurofins Chicago

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



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Authorized for release by
Shawn Hayes, Senior Project Manager
Shawn.Hayes@et.eurofinsus.com
(708)534-5200



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Case Narrative

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Job ID: 500-241636-1

Laboratory: Eurofins Chicago

Narrative

Job Narrative 500-241636-1

Receipt

The samples were received on 10/26/2023 9:45 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 5 coolers at receipt time were 0.8° C, 1.0° C, 1.6° C, 2.2° C and 5.1° C.

GC/MS VOA

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

GC/MS Semi VOA

Method 8270E: Surrogate recovery for the following sample was outside control limits: W-231025-TS-11 (500-241636-5). Re-extraction was performed outside of holding time to confirm results. Both results have been reported.

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

GC VOA

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

GC Semi VOA

Method 8151A: The following sample required a dilution due to the nature of the sample matrix: W-231025-TS-14 (500-241636-6). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method 8151A: The following samples required a dilution due to the nature of the sample matrix: W-231025-TS-09 (500-241636-3) and W-231025-TS-10 (500-241636-4). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

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

Metals

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

Field Service / Mobile Lab

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

General Chemistry

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

Organic Prep

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

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Client Sample ID: W-231025-TS-07

Lab Sample ID: 500-241636-1

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.28	J	1.0	0.23	ug/L	1		6020A	Total
									Recoverable
Calcium	58500		200	44.3	ug/L	1		6020A	Total
									Recoverable
Copper	4.1		2.0	0.50	ug/L	1		6020A	Total
									Recoverable
Magnesium	23700		200	49.4	ug/L	1		6020A	Total
									Recoverable
Manganese	2.3	J	2.5	0.79	ug/L	1		6020A	Total
									Recoverable
Arsenic	0.24	J	1.0	0.23	ug/L	1		6020A	Dissolved
Calcium	59100		200	44.3	ug/L	1		6020A	Dissolved
Copper	4.7		2.0	0.50	ug/L	1		6020A	Dissolved
Magnesium	24000		200	49.4	ug/L	1		6020A	Dissolved
Manganese	2.1	J	2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	146		0.50	0.25	mg/L	1		SM 2340B	Total
									Recoverable
Calcium hardness as CaCO3	148		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	12.0		1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	3.1		1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	13.4		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Quad	4.2		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	237		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-231025-TS-08

Lab Sample ID: 500-241636-2

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.33	J	1.0	0.23	ug/L	1		6020A	Total
									Recoverable
Calcium	61100		200	44.3	ug/L	1		6020A	Total
									Recoverable
Copper	3.8		2.0	0.50	ug/L	1		6020A	Total
									Recoverable
Magnesium	24900		200	49.4	ug/L	1		6020A	Total
									Recoverable
Manganese	2.2	J	2.5	0.79	ug/L	1		6020A	Total
									Recoverable
Zinc	8.0	J	20.0	6.9	ug/L	1		6020A	Total
									Recoverable
Arsenic	0.28	J	1.0	0.23	ug/L	1		6020A	Dissolved
Calcium	58300		200	44.3	ug/L	1		6020A	Dissolved
Copper	3.6		2.0	0.50	ug/L	1		6020A	Dissolved
Magnesium	23900		200	49.4	ug/L	1		6020A	Dissolved
Manganese	2.0	J	2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	153		0.50	0.25	mg/L	1		SM 2340B	Total
									Recoverable
Calcium hardness as CaCO3	145		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	12.1		1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	3.1		1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	13.4		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Quad	4.5		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	237		5.0	3.7	mg/L	1		SM 2320B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Client Sample ID: W-231025-TS-09

Lab Sample ID: 500-241636-3

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.87		0.50	0.15	ug/L	1		8260B	Total/NA
Ethylbenzene	0.94		0.50	0.18	ug/L	1		8260B	Total/NA
Xylenes, Total	14		1.0	0.22	ug/L	1		8260B	Total/NA
Naphthalene	25		0.77	0.24	ug/L	1		8270E	Total/NA
Methane	6.2		1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	15000		400	390	ug/L	4000		8151A	Total/NA
Arsenic	10.4		1.0	0.23	ug/L	1		6020A	Total Recoverable
Calcium	69300		200	44.3	ug/L	1		6020A	Total Recoverable
Copper	47.0		2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	35600		100	46.7	ug/L	1		6020A	Total Recoverable
Magnesium	27300		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	3280		2.5	0.79	ug/L	1		6020A	Total Recoverable
Zinc	25.3		20.0	6.9	ug/L	1		6020A	Total Recoverable
Arsenic	3.0		1.0	0.23	ug/L	1		6020A	Dissolved
Calcium	78900		200	44.3	ug/L	1		6020A	Dissolved
Copper	0.78	J	2.0	0.50	ug/L	1		6020A	Dissolved
Iron	17400		100	46.7	ug/L	1		6020A	Dissolved
Magnesium	31000		200	49.4	ug/L	1		6020A	Dissolved
Manganese	3700		2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	173		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	197		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	36.7		1.0	0.12	mg/L	1		300.0	Total/NA
Sulfate	10.9		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Quad	28.8		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	313		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-231025-TS-10

Lab Sample ID: 500-241636-4

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Toluene	1.1		0.50	0.15	ug/L	1		8260B	Total/NA
Ethylbenzene	1.3		0.50	0.18	ug/L	1		8260B	Total/NA
Xylenes, Total	8.9		1.0	0.22	ug/L	1		8260B	Total/NA
Naphthalene	8.1		0.82	0.25	ug/L	1		8270E	Total/NA
Methane	420		1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	8000		200	200	ug/L	2000		8151A	Total/NA
Arsenic	1.1		1.0	0.23	ug/L	1		6020A	Total Recoverable
Calcium	48000		200	44.3	ug/L	1		6020A	Total Recoverable
Copper	7.6		2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	1260		100	46.7	ug/L	1		6020A	Total Recoverable
Magnesium	16000		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	1140		2.5	0.79	ug/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Client Sample ID: W-231025-TS-10 (Continued)

Lab Sample ID: 500-241636-4

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.0		1.0	0.23	ug/L	1		6020A	Dissolved
Calcium	47400		200	44.3	ug/L	1		6020A	Dissolved
Copper	4.1		2.0	0.50	ug/L	1		6020A	Dissolved
Iron	851		100	46.7	ug/L	1		6020A	Dissolved
Magnesium	15700		200	49.4	ug/L	1		6020A	Dissolved
Manganese	1110		2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	120		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	118		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	33.4		1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	0.48	J	1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	10.1		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Quad	26.7		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	171		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-231025-TS-11

Lab Sample ID: 500-241636-5

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.53	J	1.0	0.23	ug/L	1		6020A	Total Recoverable
Calcium	65100		200	44.3	ug/L	1		6020A	Total Recoverable
Copper	0.85	J	2.0	0.50	ug/L	1		6020A	Total Recoverable
Magnesium	24800	F1	200	49.4	ug/L	1		6020A	Total Recoverable
Arsenic	0.55	J	1.0	0.23	ug/L	1		6020A	Dissolved
Calcium	62100		200	44.3	ug/L	1		6020A	Dissolved
Copper	1.2	J	2.0	0.50	ug/L	1		6020A	Dissolved
Magnesium	23900		200	49.4	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	163		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	155		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	8.1		1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	1.4		1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	81.1		5.0	1.0	mg/L	5		300.0	Total/NA
Total Organic Carbon - Quad	1.1		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	197		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-231025-TS-14

Lab Sample ID: 500-241636-6

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.32	J	0.50	0.15	ug/L	1		8260B	Total/NA
Ethylbenzene	0.80		0.50	0.18	ug/L	1		8260B	Total/NA
Xylenes, Total	4.5		1.0	0.22	ug/L	1		8260B	Total/NA
Naphthalene	6.2		0.87	0.27	ug/L	1		8270E	Total/NA
Methane	0.83	J	1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	1800		51	50	ug/L	500		8151A	Total/NA
Arsenic	0.75	J	1.0	0.23	ug/L	1		6020A	Total Recoverable
Calcium	51700		200	44.3	ug/L	1		6020A	Total Recoverable
Copper	4.1		2.0	0.50	ug/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Client Sample ID: W-231025-TS-14 (Continued)

Lab Sample ID: 500-241636-6

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Magnesium	22800		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	833		2.5	0.79	ug/L	1		6020A	Total Recoverable
Arsenic	0.69	J	1.0	0.23	ug/L	1		6020A	Dissolved
Calcium	49000		200	44.3	ug/L	1		6020A	Dissolved
Copper	2.9		2.0	0.50	ug/L	1		6020A	Dissolved
Magnesium	21800		200	49.4	ug/L	1		6020A	Dissolved
Manganese	749		2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	129		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	122		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	26.3		1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	0.57	J	1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	23.4		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Quad	22.4		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	181		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-231025-TS-15

Lab Sample ID: 500-241636-7

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Copper	0.52	J	2.0	0.50	ug/L	1		6020A	Dissolved

Client Sample ID: W-231025-TS-16

Lab Sample ID: 500-241636-8

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Calcium	8830		200	44.3	ug/L	1		6020A	Total Recoverable
Copper	0.81	J	2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	85.3	J	100	46.7	ug/L	1		6020A	Total Recoverable
Magnesium	3620		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	1.6	J	2.5	0.79	ug/L	1		6020A	Total Recoverable
Calcium	8460		200	44.3	ug/L	1		6020A	Dissolved
Copper	3.1		2.0	0.50	ug/L	1		6020A	Dissolved
Magnesium	3480		200	49.4	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	22.1		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	21.1		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	0.64	J	1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	0.85	J	1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	2.7		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Quad	1.0		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	41.9		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: TRIP BLANK

Lab Sample ID: 500-241636-9

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

Method Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	EET CHI
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CHI
RSK-175	Dissolved Gases (GC)	RSK	EET CLE
8151A	Herbicides (GC)	SW846	EET CHI
6020A	Metals (ICP/MS)	SW846	EET CHI
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	EET CHI
300.0	Anions, Ion Chromatography	EPA	EET CHI
9060A	Organic Carbon, Total (TOC)	SW846	EET CHI
SM 2320B	Alkalinity	SM	EET CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CHI
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CHI
5030B	Purge and Trap	SW846	EET CHI
8151A	Extraction (Herbicides)	SW846	EET CHI

Protocol References:

EPA = US Environmental Protection Agency

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

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

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

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-241636-1	W-231025-TS-07	Water	10/25/23 10:16	10/26/23 09:45
500-241636-2	W-231025-TS-08	Water	10/25/23 10:17	10/26/23 09:45
500-241636-3	W-231025-TS-09	Water	10/25/23 10:42	10/26/23 09:45
500-241636-4	W-231025-TS-10	Water	10/25/23 11:54	10/26/23 09:45
500-241636-5	W-231025-TS-11	Water	10/25/23 13:55	10/26/23 09:45
500-241636-6	W-231025-TS-14	Water	10/25/23 12:58	10/26/23 09:45
500-241636-7	W-231025-TS-15	Water	10/25/23 13:56	10/26/23 09:45
500-241636-8	W-231025-TS-16	Water	10/25/23 14:57	10/26/23 09:45
500-241636-9	TRIP BLANK	Water	10/25/23 00:00	10/26/23 09:45

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Client Sample ID: W-231025-TS-07

Lab Sample ID: 500-241636-1

Date Collected: 10/25/23 10:16

Matrix: Water

Date Received: 10/26/23 09:45

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/02/23 15:52	1
Toluene	<0.15		0.50	0.15	ug/L			11/02/23 15:52	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/02/23 15:52	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/02/23 15:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		75 - 126		11/02/23 15:52	1
Toluene-d8 (Surr)	94		75 - 120		11/02/23 15:52	1
4-Bromofluorobenzene (Surr)	84		72 - 124		11/02/23 15:52	1
Dibromofluoromethane	103		75 - 120		11/02/23 15:52	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.81	0.25	ug/L		10/30/23 14:30	11/02/23 14:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	95		36 - 120	10/30/23 14:30	11/02/23 14:51	1
2-Fluorobiphenyl (Surr)	83		34 - 110	10/30/23 14:30	11/02/23 14:51	1
Terphenyl-d14 (Surr)	111		40 - 145	10/30/23 14:30	11/02/23 14:51	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			11/02/23 15:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	110		60 - 140		11/02/23 15:16	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.099		0.10	0.099	ug/L		10/31/23 12:53	11/01/23 10:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	76		25 - 130	10/31/23 12:53	11/01/23 10:09	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.28	J	1.0	0.23	ug/L		11/07/23 08:58	11/14/23 05:28	1
Calcium	58500		200	44.3	ug/L		11/07/23 08:58	11/14/23 05:28	1
Copper	4.1		2.0	0.50	ug/L		11/07/23 08:58	11/14/23 05:28	1
Iron	<46.7		100	46.7	ug/L		11/07/23 08:58	11/14/23 05:28	1
Magnesium	23700		200	49.4	ug/L		11/07/23 08:58	11/14/23 05:28	1
Manganese	2.3	J	2.5	0.79	ug/L		11/07/23 08:58	11/14/23 05:28	1
Zinc	<6.9		20.0	6.9	ug/L		11/07/23 08:58	11/14/23 05:28	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.24	J	1.0	0.23	ug/L		11/07/23 08:58	11/14/23 06:25	1
Calcium	59100		200	44.3	ug/L		11/07/23 08:58	11/14/23 06:25	1
Copper	4.7		2.0	0.50	ug/L		11/07/23 08:58	11/14/23 06:25	1
Iron	<46.7		100	46.7	ug/L		11/07/23 08:58	11/14/23 06:25	1
Magnesium	24000		200	49.4	ug/L		11/07/23 08:58	11/14/23 06:25	1
Manganese	2.1	J	2.5	0.79	ug/L		11/07/23 08:58	11/14/23 06:25	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Client Sample ID: W-231025-TS-07

Lab Sample ID: 500-241636-1

Date Collected: 10/25/23 10:16

Matrix: Water

Date Received: 10/26/23 09:45

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		11/07/23 08:58	11/14/23 06:25	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	146		0.50	0.25	mg/L		11/07/23 08:58	11/14/23 09:14	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	148		0.50	0.25	mg/L		11/07/23 08:58	11/14/23 09:14	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	12.0		1.0	0.12	mg/L			10/26/23 21:01	1
Nitrate as N (EPA 300.0)	3.1		1.0	0.043	mg/L			10/26/23 21:01	1
Sulfate (EPA 300.0)	13.4		1.0	0.21	mg/L			10/26/23 21:01	1
Total Organic Carbon - Quad (SW846 9060A)	4.2		1.0	0.47	mg/L			11/06/23 00:15	1
Alkalinity (SM 2320B)	237		5.0	3.7	mg/L			11/07/23 17:23	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Client Sample ID: W-231025-TS-08

Lab Sample ID: 500-241636-2

Date Collected: 10/25/23 10:17

Matrix: Water

Date Received: 10/26/23 09:45

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/02/23 16:18	1
Toluene	<0.15		0.50	0.15	ug/L			11/02/23 16:18	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/02/23 16:18	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/02/23 16:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		75 - 126		11/02/23 16:18	1
Toluene-d8 (Surr)	94		75 - 120		11/02/23 16:18	1
4-Bromofluorobenzene (Surr)	85		72 - 124		11/02/23 16:18	1
Dibromofluoromethane	106		75 - 120		11/02/23 16:18	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.27		0.88	0.27	ug/L		10/30/23 14:30	11/02/23 15:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	100		36 - 120	10/30/23 14:30	11/02/23 15:16	1
2-Fluorobiphenyl (Surr)	86		34 - 110	10/30/23 14:30	11/02/23 15:16	1
Terphenyl-d14 (Surr)	113		40 - 145	10/30/23 14:30	11/02/23 15:16	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			10/31/23 18:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	108		60 - 140		10/31/23 18:22	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.10		0.10	0.10	ug/L		10/31/23 12:53	11/01/23 10:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	77		25 - 130	10/31/23 12:53	11/01/23 10:28	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.33	J	1.0	0.23	ug/L		11/07/23 08:58	11/14/23 05:32	1
Calcium	61100		200	44.3	ug/L		11/07/23 08:58	11/14/23 05:32	1
Copper	3.8		2.0	0.50	ug/L		11/07/23 08:58	11/14/23 05:32	1
Iron	<46.7		100	46.7	ug/L		11/07/23 08:58	11/14/23 05:32	1
Magnesium	24900		200	49.4	ug/L		11/07/23 08:58	11/14/23 05:32	1
Manganese	2.2	J	2.5	0.79	ug/L		11/07/23 08:58	11/14/23 05:32	1
Zinc	8.0	J	20.0	6.9	ug/L		11/07/23 08:58	11/14/23 05:32	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.28	J	1.0	0.23	ug/L		11/07/23 08:58	11/14/23 06:29	1
Calcium	58300		200	44.3	ug/L		11/07/23 08:58	11/14/23 06:29	1
Copper	3.6		2.0	0.50	ug/L		11/07/23 08:58	11/14/23 06:29	1
Iron	<46.7		100	46.7	ug/L		11/07/23 08:58	11/14/23 06:29	1
Magnesium	23900		200	49.4	ug/L		11/07/23 08:58	11/14/23 06:29	1
Manganese	2.0	J	2.5	0.79	ug/L		11/07/23 08:58	11/14/23 06:29	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Client Sample ID: W-231025-TS-08

Lab Sample ID: 500-241636-2

Date Collected: 10/25/23 10:17

Matrix: Water

Date Received: 10/26/23 09:45

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		11/07/23 08:58	11/14/23 06:29	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	153		0.50	0.25	mg/L		11/07/23 08:58	11/14/23 09:14	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	145		0.50	0.25	mg/L		11/07/23 08:58	11/14/23 09:14	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	12.1		1.0	0.12	mg/L			10/26/23 21:16	1
Nitrate as N (EPA 300.0)	3.1		1.0	0.043	mg/L			10/26/23 21:16	1
Sulfate (EPA 300.0)	13.4		1.0	0.21	mg/L			10/26/23 21:16	1
Total Organic Carbon - Quad (SW846 9060A)	4.5		1.0	0.47	mg/L			11/07/23 13:39	1
Alkalinity (SM 2320B)	237		5.0	3.7	mg/L			11/07/23 17:41	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Client Sample ID: W-231025-TS-09

Lab Sample ID: 500-241636-3

Date Collected: 10/25/23 10:42

Matrix: Water

Date Received: 10/26/23 09:45

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/02/23 16:45	1
Toluene	0.87		0.50	0.15	ug/L			11/02/23 16:45	1
Ethylbenzene	0.94		0.50	0.18	ug/L			11/02/23 16:45	1
Xylenes, Total	14		1.0	0.22	ug/L			11/02/23 16:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		75 - 126					11/02/23 16:45	1
Toluene-d8 (Surr)	95		75 - 120					11/02/23 16:45	1
4-Bromofluorobenzene (Surr)	82		72 - 124					11/02/23 16:45	1
Dibromofluoromethane	103		75 - 120					11/02/23 16:45	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	25		0.77	0.24	ug/L		10/30/23 14:30	11/02/23 21:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	90		36 - 120				10/30/23 14:30	11/02/23 21:37	1
2-Fluorobiphenyl (Surr)	88		34 - 110				10/30/23 14:30	11/02/23 21:37	1
Terphenyl-d14 (Surr)	98		40 - 145				10/30/23 14:30	11/02/23 21:37	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	6.2		1.0	0.17	ug/L			10/31/23 18:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	109		60 - 140					10/31/23 18:39	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	15000		400	390	ug/L		10/31/23 12:53	11/03/23 12:43	4000
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	0	X	25 - 130				10/31/23 12:53	11/03/23 12:43	4000

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	10.4		1.0	0.23	ug/L		11/07/23 08:58	11/14/23 05:36	1
Calcium	69300		200	44.3	ug/L		11/07/23 08:58	11/14/23 05:36	1
Copper	47.0		2.0	0.50	ug/L		11/07/23 08:58	11/14/23 05:36	1
Iron	35600		100	46.7	ug/L		11/07/23 08:58	11/14/23 05:36	1
Magnesium	27300		200	49.4	ug/L		11/07/23 08:58	11/14/23 05:36	1
Manganese	3280		2.5	0.79	ug/L		11/07/23 08:58	11/14/23 05:36	1
Zinc	25.3		20.0	6.9	ug/L		11/07/23 08:58	11/14/23 05:36	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	3.0		1.0	0.23	ug/L		11/07/23 08:58	11/14/23 06:33	1
Calcium	78900		200	44.3	ug/L		11/07/23 08:58	11/14/23 06:33	1
Copper	0.78	J	2.0	0.50	ug/L		11/07/23 08:58	11/14/23 06:33	1
Iron	17400		100	46.7	ug/L		11/07/23 08:58	11/14/23 06:33	1
Magnesium	31000		200	49.4	ug/L		11/07/23 08:58	11/14/23 06:33	1
Manganese	3700		2.5	0.79	ug/L		11/07/23 08:58	11/14/23 06:33	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Client Sample ID: W-231025-TS-09

Lab Sample ID: 500-241636-3

Date Collected: 10/25/23 10:42

Matrix: Water

Date Received: 10/26/23 09:45

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		11/07/23 08:58	11/14/23 06:33	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	173		0.50	0.25	mg/L		11/07/23 08:58	11/14/23 09:14	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	197		0.50	0.25	mg/L		11/07/23 08:58	11/14/23 09:14	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	36.7		1.0	0.12	mg/L			10/26/23 21:31	1
Nitrate as N (EPA 300.0)	<0.043		1.0	0.043	mg/L			10/26/23 21:31	1
Sulfate (EPA 300.0)	10.9		1.0	0.21	mg/L			10/26/23 21:31	1
Total Organic Carbon - Quad (SW846 9060A)	28.8		1.0	0.47	mg/L			11/07/23 14:02	1
Alkalinity (SM 2320B)	313		5.0	3.7	mg/L			11/07/23 17:50	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Client Sample ID: W-231025-TS-10

Lab Sample ID: 500-241636-4

Date Collected: 10/25/23 11:54

Matrix: Water

Date Received: 10/26/23 09:45

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/02/23 17:11	1
Toluene	1.1		0.50	0.15	ug/L			11/02/23 17:11	1
Ethylbenzene	1.3		0.50	0.18	ug/L			11/02/23 17:11	1
Xylenes, Total	8.9		1.0	0.22	ug/L			11/02/23 17:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		75 - 126		11/02/23 17:11	1
Toluene-d8 (Surr)	93		75 - 120		11/02/23 17:11	1
4-Bromofluorobenzene (Surr)	82		72 - 124		11/02/23 17:11	1
Dibromofluoromethane	103		75 - 120		11/02/23 17:11	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	8.1		0.82	0.25	ug/L		10/30/23 14:30	11/02/23 22:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	103		36 - 120	10/30/23 14:30	11/02/23 22:03	1
2-Fluorobiphenyl (Surr)	60		34 - 110	10/30/23 14:30	11/02/23 22:03	1
Terphenyl-d14 (Surr)	107		40 - 145	10/30/23 14:30	11/02/23 22:03	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	420		1.0	0.17	ug/L			10/31/23 18:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	112		60 - 140		10/31/23 18:56	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	8000		200	200	ug/L		10/31/23 12:53	11/03/23 13:20	2000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	0	X	25 - 130	10/31/23 12:53	11/03/23 13:20	2000

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.1		1.0	0.23	ug/L		11/07/23 08:58	11/14/23 05:40	1
Calcium	48000		200	44.3	ug/L		11/07/23 08:58	11/14/23 05:40	1
Copper	7.6		2.0	0.50	ug/L		11/07/23 08:58	11/14/23 05:40	1
Iron	1260		100	46.7	ug/L		11/07/23 08:58	11/14/23 05:40	1
Magnesium	16000		200	49.4	ug/L		11/07/23 08:58	11/14/23 05:40	1
Manganese	1140		2.5	0.79	ug/L		11/07/23 08:58	11/14/23 05:40	1
Zinc	<6.9		20.0	6.9	ug/L		11/07/23 08:58	11/14/23 05:40	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.0		1.0	0.23	ug/L		11/07/23 08:58	11/14/23 06:37	1
Calcium	47400		200	44.3	ug/L		11/07/23 08:58	11/14/23 06:37	1
Copper	4.1		2.0	0.50	ug/L		11/07/23 08:58	11/14/23 06:37	1
Iron	851		100	46.7	ug/L		11/07/23 08:58	11/14/23 06:37	1
Magnesium	15700		200	49.4	ug/L		11/07/23 08:58	11/14/23 06:37	1
Manganese	1110		2.5	0.79	ug/L		11/07/23 08:58	11/14/23 06:37	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Client Sample ID: W-231025-TS-10

Lab Sample ID: 500-241636-4

Date Collected: 10/25/23 11:54

Matrix: Water

Date Received: 10/26/23 09:45

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		11/07/23 08:58	11/14/23 06:37	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	120		0.50	0.25	mg/L		11/07/23 08:58	11/14/23 09:14	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	118		0.50	0.25	mg/L		11/07/23 08:58	11/14/23 09:14	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	33.4		1.0	0.12	mg/L			10/26/23 21:46	1
Nitrate as N (EPA 300.0)	0.48	J	1.0	0.043	mg/L			10/26/23 21:46	1
Sulfate (EPA 300.0)	10.1		1.0	0.21	mg/L			10/26/23 21:46	1
Total Organic Carbon - Quad (SW846 9060A)	26.7		1.0	0.47	mg/L			11/07/23 14:31	1
Alkalinity (SM 2320B)	171		5.0	3.7	mg/L			11/07/23 18:00	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Client Sample ID: W-231025-TS-11

Lab Sample ID: 500-241636-5

Date Collected: 10/25/23 13:55

Matrix: Water

Date Received: 10/26/23 09:45

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/02/23 17:37	1
Toluene	<0.15		0.50	0.15	ug/L			11/02/23 17:37	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/02/23 17:37	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/02/23 17:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		75 - 126					11/02/23 17:37	1
Toluene-d8 (Surr)	95		75 - 120					11/02/23 17:37	1
4-Bromofluorobenzene (Surr)	86		72 - 124					11/02/23 17:37	1
Dibromofluoromethane	102		75 - 120					11/02/23 17:37	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.81	0.25	ug/L		10/30/23 14:30	11/02/23 15:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	15	X	36 - 120				10/30/23 14:30	11/02/23 15:42	1
2-Fluorobiphenyl (Surr)	16	X	34 - 110				10/30/23 14:30	11/02/23 15:42	1
Terphenyl-d14 (Surr)	19	X	40 - 145				10/30/23 14:30	11/02/23 15:42	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - RE

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25	H	0.81	0.25	ug/L		11/27/23 07:52	11/27/23 14:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	72		36 - 120				11/27/23 07:52	11/27/23 14:37	1
2-Fluorobiphenyl (Surr)	65		34 - 110				11/27/23 07:52	11/27/23 14:37	1
Terphenyl-d14 (Surr)	87		40 - 145				11/27/23 07:52	11/27/23 14:37	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			10/31/23 19:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	111		60 - 140					10/31/23 19:13	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.10		0.10	0.10	ug/L		10/31/23 12:53	11/01/23 11:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	71		25 - 130				10/31/23 12:53	11/01/23 11:22	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.53	J	1.0	0.23	ug/L		11/07/23 08:58	11/14/23 05:44	1
Calcium	65100		200	44.3	ug/L		11/07/23 08:58	11/14/23 05:44	1
Copper	0.85	J	2.0	0.50	ug/L		11/07/23 08:58	11/14/23 05:44	1
Iron	<46.7		100	46.7	ug/L		11/07/23 08:58	11/14/23 05:44	1
Magnesium	24800	F1	200	49.4	ug/L		11/07/23 08:58	11/14/23 05:44	1
Manganese	<0.79		2.5	0.79	ug/L		11/07/23 08:58	11/14/23 05:44	1
Zinc	<6.9		20.0	6.9	ug/L		11/07/23 08:58	11/14/23 05:44	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Client Sample ID: W-231025-TS-11

Lab Sample ID: 500-241636-5

Date Collected: 10/25/23 13:55

Matrix: Water

Date Received: 10/26/23 09:45

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.55	J	1.0	0.23	ug/L		11/07/23 08:58	11/14/23 06:50	1
Calcium	62100		200	44.3	ug/L		11/07/23 08:58	11/14/23 06:50	1
Copper	1.2	J	2.0	0.50	ug/L		11/07/23 08:58	11/14/23 06:50	1
Iron	<46.7		100	46.7	ug/L		11/07/23 08:58	11/14/23 06:50	1
Magnesium	23900		200	49.4	ug/L		11/07/23 08:58	11/14/23 06:50	1
Manganese	<0.79		2.5	0.79	ug/L		11/07/23 08:58	11/14/23 06:50	1
Zinc	<6.9		20.0	6.9	ug/L		11/07/23 08:58	11/14/23 06:50	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	163		0.50	0.25	mg/L		11/07/23 08:58	11/14/23 09:14	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	155		0.50	0.25	mg/L		11/07/23 08:58	11/14/23 09:14	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	8.1		1.0	0.12	mg/L			10/26/23 22:01	1
Nitrate as N (EPA 300.0)	1.4		1.0	0.043	mg/L			10/26/23 22:01	1
Sulfate (EPA 300.0)	81.1		5.0	1.0	mg/L			10/27/23 12:47	5
Total Organic Carbon - Quad (SW846 9060A)	1.1		1.0	0.47	mg/L			11/07/23 14:58	1
Alkalinity (SM 2320B)	197		5.0	3.7	mg/L			11/07/23 18:09	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Client Sample ID: W-231025-TS-14

Lab Sample ID: 500-241636-6

Date Collected: 10/25/23 12:58

Matrix: Water

Date Received: 10/26/23 09:45

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/02/23 18:03	1
Toluene	0.32	J	0.50	0.15	ug/L			11/02/23 18:03	1
Ethylbenzene	0.80		0.50	0.18	ug/L			11/02/23 18:03	1
Xylenes, Total	4.5		1.0	0.22	ug/L			11/02/23 18:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		75 - 126					11/02/23 18:03	1
Toluene-d8 (Surr)	92		75 - 120					11/02/23 18:03	1
4-Bromofluorobenzene (Surr)	85		72 - 124					11/02/23 18:03	1
Dibromofluoromethane	104		75 - 120					11/02/23 18:03	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	6.2		0.87	0.27	ug/L		10/30/23 14:30	11/02/23 22:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	97		36 - 120				10/30/23 14:30	11/02/23 22:28	1
2-Fluorobiphenyl (Surr)	74		34 - 110				10/30/23 14:30	11/02/23 22:28	1
Terphenyl-d14 (Surr)	112		40 - 145				10/30/23 14:30	11/02/23 22:28	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	0.83	J	1.0	0.17	ug/L			10/31/23 20:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	112		60 - 140					10/31/23 20:04	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	1800		51	50	ug/L		10/31/23 12:53	11/02/23 20:01	500
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	0	X	25 - 130				10/31/23 12:53	11/02/23 20:01	500

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.75	J	1.0	0.23	ug/L		11/07/23 08:58	11/14/23 06:13	1
Calcium	51700		200	44.3	ug/L		11/07/23 08:58	11/14/23 06:13	1
Copper	4.1		2.0	0.50	ug/L		11/07/23 08:58	11/14/23 06:13	1
Iron	<46.7		100	46.7	ug/L		11/07/23 08:58	11/14/23 06:13	1
Magnesium	22800		200	49.4	ug/L		11/07/23 08:58	11/14/23 06:13	1
Manganese	833		2.5	0.79	ug/L		11/07/23 08:58	11/14/23 06:13	1
Zinc	<6.9		20.0	6.9	ug/L		11/07/23 08:58	11/14/23 06:13	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.69	J	1.0	0.23	ug/L		11/07/23 08:58	11/14/23 07:10	1
Calcium	49000		200	44.3	ug/L		11/07/23 08:58	11/14/23 07:10	1
Copper	2.9		2.0	0.50	ug/L		11/07/23 08:58	11/14/23 07:10	1
Iron	<46.7		100	46.7	ug/L		11/07/23 08:58	11/14/23 07:10	1
Magnesium	21800		200	49.4	ug/L		11/07/23 08:58	11/14/23 07:10	1
Manganese	749		2.5	0.79	ug/L		11/07/23 08:58	11/14/23 07:10	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Client Sample ID: W-231025-TS-14

Lab Sample ID: 500-241636-6

Date Collected: 10/25/23 12:58

Matrix: Water

Date Received: 10/26/23 09:45

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		11/07/23 08:58	11/14/23 07:10	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	129		0.50	0.25	mg/L		11/07/23 08:58	11/14/23 09:14	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	122		0.50	0.25	mg/L		11/07/23 08:58	11/14/23 09:14	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	26.3		1.0	0.12	mg/L			10/26/23 22:47	1
Nitrate as N (EPA 300.0)	0.57	J	1.0	0.043	mg/L			10/26/23 22:47	1
Sulfate (EPA 300.0)	23.4		1.0	0.21	mg/L			10/26/23 22:47	1
Total Organic Carbon - Quad (SW846 9060A)	22.4		1.0	0.47	mg/L			11/07/23 16:12	1
Alkalinity (SM 2320B)	181		5.0	3.7	mg/L			11/07/23 18:18	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Client Sample ID: W-231025-TS-15

Lab Sample ID: 500-241636-7

Date Collected: 10/25/23 13:56

Matrix: Water

Date Received: 10/26/23 09:45

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/02/23 18:29	1
Toluene	<0.15		0.50	0.15	ug/L			11/02/23 18:29	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/02/23 18:29	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/02/23 18:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		75 - 126		11/02/23 18:29	1
Toluene-d8 (Surr)	93		75 - 120		11/02/23 18:29	1
4-Bromofluorobenzene (Surr)	86		72 - 124		11/02/23 18:29	1
Dibromofluoromethane	102		75 - 120		11/02/23 18:29	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.27		0.88	0.27	ug/L		10/30/23 14:30	11/02/23 16:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	98		36 - 120	10/30/23 14:30	11/02/23 16:58	1
2-Fluorobiphenyl (Surr)	81		34 - 110	10/30/23 14:30	11/02/23 16:58	1
Terphenyl-d14 (Surr)	113		40 - 145	10/30/23 14:30	11/02/23 16:58	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.099		0.10	0.099	ug/L		10/31/23 12:53	11/01/23 12:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	77		25 - 130	10/31/23 12:53	11/01/23 12:54	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		11/07/23 08:58	11/14/23 06:17	1
Calcium	<44.3		200	44.3	ug/L		11/07/23 08:58	11/14/23 06:17	1
Copper	<0.50		2.0	0.50	ug/L		11/07/23 08:58	11/14/23 06:17	1
Iron	<46.7		100	46.7	ug/L		11/07/23 08:58	11/14/23 06:17	1
Magnesium	<49.4		200	49.4	ug/L		11/07/23 08:58	11/14/23 06:17	1
Manganese	<0.79		2.5	0.79	ug/L		11/07/23 08:58	11/14/23 06:17	1
Zinc	<6.9		20.0	6.9	ug/L		11/07/23 08:58	11/14/23 06:17	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		11/07/23 08:58	11/14/23 07:14	1
Calcium	<44.3		200	44.3	ug/L		11/07/23 08:58	11/14/23 07:14	1
Copper	0.52	J	2.0	0.50	ug/L		11/07/23 08:58	11/14/23 07:14	1
Iron	<46.7		100	46.7	ug/L		11/07/23 08:58	11/14/23 07:14	1
Magnesium	<49.4		200	49.4	ug/L		11/07/23 08:58	11/14/23 07:14	1
Manganese	<0.79		2.5	0.79	ug/L		11/07/23 08:58	11/14/23 07:14	1
Zinc	<6.9		20.0	6.9	ug/L		11/07/23 08:58	11/14/23 07:14	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	<0.25		0.50	0.25	mg/L		11/07/23 08:58	11/14/23 09:14	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Client Sample ID: W-231025-TS-15

Lab Sample ID: 500-241636-7

Date Collected: 10/25/23 13:56

Matrix: Water

Date Received: 10/26/23 09:45

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	<0.25		0.50	0.25	mg/L		11/07/23 08:58	11/14/23 09:14	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Client Sample ID: W-231025-TS-16

Lab Sample ID: 500-241636-8

Date Collected: 10/25/23 14:57

Matrix: Water

Date Received: 10/26/23 09:45

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/02/23 18:55	1
Toluene	<0.15		0.50	0.15	ug/L			11/02/23 18:55	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/02/23 18:55	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/02/23 18:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		75 - 126					11/02/23 18:55	1
Toluene-d8 (Surr)	93		75 - 120					11/02/23 18:55	1
4-Bromofluorobenzene (Surr)	86		72 - 124					11/02/23 18:55	1
Dibromofluoromethane	103		75 - 120					11/02/23 18:55	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.29		0.95	0.29	ug/L		10/30/23 14:30	11/02/23 17:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	96		36 - 120				10/30/23 14:30	11/02/23 17:23	1
2-Fluorobiphenyl (Surr)	79		34 - 110				10/30/23 14:30	11/02/23 17:23	1
Terphenyl-d14 (Surr)	113		40 - 145				10/30/23 14:30	11/02/23 17:23	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			10/31/23 20:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	113		60 - 140					10/31/23 20:21	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.098		0.099	0.098	ug/L		10/31/23 12:53	11/01/23 13:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	67		25 - 130				10/31/23 12:53	11/01/23 13:12	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		11/07/23 08:58	11/14/23 06:21	1
Calcium	8830		200	44.3	ug/L		11/07/23 08:58	11/14/23 06:21	1
Copper	0.81	J	2.0	0.50	ug/L		11/07/23 08:58	11/14/23 06:21	1
Iron	85.3	J	100	46.7	ug/L		11/07/23 08:58	11/14/23 06:21	1
Magnesium	3620		200	49.4	ug/L		11/07/23 08:58	11/14/23 06:21	1
Manganese	1.6	J	2.5	0.79	ug/L		11/07/23 08:58	11/14/23 06:21	1
Zinc	<6.9		20.0	6.9	ug/L		11/07/23 08:58	11/14/23 06:21	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		11/07/23 08:58	11/14/23 07:18	1
Calcium	8460		200	44.3	ug/L		11/07/23 08:58	11/14/23 07:18	1
Copper	3.1		2.0	0.50	ug/L		11/07/23 08:58	11/14/23 07:18	1
Iron	<46.7		100	46.7	ug/L		11/07/23 08:58	11/14/23 07:18	1
Magnesium	3480		200	49.4	ug/L		11/07/23 08:58	11/14/23 07:18	1
Manganese	<0.79		2.5	0.79	ug/L		11/07/23 08:58	11/14/23 07:18	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Client Sample ID: W-231025-TS-16

Lab Sample ID: 500-241636-8

Date Collected: 10/25/23 14:57

Matrix: Water

Date Received: 10/26/23 09:45

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		11/07/23 08:58	11/14/23 07:18	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	22.1		0.50	0.25	mg/L		11/07/23 08:58	11/14/23 09:14	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	21.1		0.50	0.25	mg/L		11/07/23 08:58	11/14/23 09:14	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	0.64	J	1.0	0.12	mg/L			10/26/23 23:02	1
Nitrate as N (EPA 300.0)	0.85	J	1.0	0.043	mg/L			10/26/23 23:02	1
Sulfate (EPA 300.0)	2.7		1.0	0.21	mg/L			10/26/23 23:02	1
Total Organic Carbon - Quad (SW846 9060A)	1.0		1.0	0.47	mg/L			11/07/23 17:32	1
Alkalinity (SM 2320B)	41.9		5.0	3.7	mg/L			11/07/23 18:27	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 500-241636-9

Date Collected: 10/25/23 00:00

Matrix: Water

Date Received: 10/26/23 09:45

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/02/23 15:00	1
Toluene	<0.15		0.50	0.15	ug/L			11/02/23 15:00	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/02/23 15:00	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/02/23 15:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		75 - 126		11/02/23 15:00	1
Toluene-d8 (Surr)	94		75 - 120		11/02/23 15:00	1
4-Bromofluorobenzene (Surr)	84		72 - 124		11/02/23 15:00	1
Dibromofluoromethane	103		75 - 120		11/02/23 15:00	1

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Reported value was between the limit of detection and the limit of quantitation.

GC/MS Semi VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.
X	Surrogate recovery exceeds control limits

GC VOA

Qualifier	Qualifier Description
J	Reported value was between the limit of detection and the limit of quantitation.

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate recovery exceeds control limits

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL, and the absolute difference between results is < the upper reporting limits for both.
J	Reported value was between the limit of detection and the limit of quantitation.

General Chemistry

Qualifier	Qualifier Description
J	Reported value was between the limit of detection and the limit of quantitation.

Glossary

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

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

GC/MS VOA

Analysis Batch: 740154

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241636-1	W-231025-TS-07	Total/NA	Water	8260B	
500-241636-2	W-231025-TS-08	Total/NA	Water	8260B	
500-241636-3	W-231025-TS-09	Total/NA	Water	8260B	
500-241636-4	W-231025-TS-10	Total/NA	Water	8260B	
500-241636-5	W-231025-TS-11	Total/NA	Water	8260B	
500-241636-6	W-231025-TS-14	Total/NA	Water	8260B	
500-241636-7	W-231025-TS-15	Total/NA	Water	8260B	
500-241636-8	W-231025-TS-16	Total/NA	Water	8260B	
500-241636-9	TRIP BLANK	Total/NA	Water	8260B	
MB 500-740154/7	Method Blank	Total/NA	Water	8260B	
LCS 500-740154/4	Lab Control Sample	Total/NA	Water	8260B	
500-241636-5 MS	W-231025-TS-11	Total/NA	Water	8260B	
500-241636-5 MSD	W-231025-TS-11	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 739569

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241636-1	W-231025-TS-07	Total/NA	Water	3510C	
500-241636-2	W-231025-TS-08	Total/NA	Water	3510C	
500-241636-3	W-231025-TS-09	Total/NA	Water	3510C	
500-241636-4	W-231025-TS-10	Total/NA	Water	3510C	
500-241636-5	W-231025-TS-11	Total/NA	Water	3510C	
500-241636-6	W-231025-TS-14	Total/NA	Water	3510C	
500-241636-7	W-231025-TS-15	Total/NA	Water	3510C	
500-241636-8	W-231025-TS-16	Total/NA	Water	3510C	
MB 500-739569/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-739569/2-A	Lab Control Sample	Total/NA	Water	3510C	
500-241636-5 MS	W-231025-TS-11	Total/NA	Water	3510C	
500-241636-5 MSD	W-231025-TS-11	Total/NA	Water	3510C	

Analysis Batch: 740108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241636-1	W-231025-TS-07	Total/NA	Water	8270E	739569
500-241636-2	W-231025-TS-08	Total/NA	Water	8270E	739569
500-241636-3	W-231025-TS-09	Total/NA	Water	8270E	739569
500-241636-4	W-231025-TS-10	Total/NA	Water	8270E	739569
500-241636-5	W-231025-TS-11	Total/NA	Water	8270E	739569
500-241636-6	W-231025-TS-14	Total/NA	Water	8270E	739569
500-241636-7	W-231025-TS-15	Total/NA	Water	8270E	739569
500-241636-8	W-231025-TS-16	Total/NA	Water	8270E	739569
MB 500-739569/1-A	Method Blank	Total/NA	Water	8270E	739569
LCS 500-739569/2-A	Lab Control Sample	Total/NA	Water	8270E	739569
500-241636-5 MS	W-231025-TS-11	Total/NA	Water	8270E	739569
500-241636-5 MSD	W-231025-TS-11	Total/NA	Water	8270E	739569

Analysis Batch: 743746

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241636-5 - RE	W-231025-TS-11	Total/NA	Water	8270E	743760
MB 500-743760/1-A	Method Blank	Total/NA	Water	8270E	743760
LCS 500-743760/2-A	Lab Control Sample	Total/NA	Water	8270E	743760

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

GC/MS Semi VOA

Prep Batch: 743760

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241636-5 - RE	W-231025-TS-11	Total/NA	Water	3510C	
MB 500-743760/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-743760/2-A	Lab Control Sample	Total/NA	Water	3510C	

GC VOA

Analysis Batch: 592907

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241636-2	W-231025-TS-08	Total/NA	Water	RSK-175	
500-241636-3	W-231025-TS-09	Total/NA	Water	RSK-175	
500-241636-4	W-231025-TS-10	Total/NA	Water	RSK-175	
500-241636-5	W-231025-TS-11	Total/NA	Water	RSK-175	
500-241636-6	W-231025-TS-14	Total/NA	Water	RSK-175	
500-241636-8	W-231025-TS-16	Total/NA	Water	RSK-175	
MB 240-592907/3	Method Blank	Total/NA	Water	RSK-175	
LCS 240-592907/4	Lab Control Sample	Total/NA	Water	RSK-175	
500-241636-5 MS	W-231025-TS-11	Total/NA	Water	RSK-175	
500-241636-5 MSD	W-231025-TS-11	Total/NA	Water	RSK-175	

Analysis Batch: 593187

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241636-1	W-231025-TS-07	Total/NA	Water	RSK-175	
MB 240-593187/3	Method Blank	Total/NA	Water	RSK-175	
LCS 240-593187/4	Lab Control Sample	Total/NA	Water	RSK-175	

GC Semi VOA

Prep Batch: 739744

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241636-1	W-231025-TS-07	Total/NA	Water	8151A	
500-241636-2	W-231025-TS-08	Total/NA	Water	8151A	
500-241636-3	W-231025-TS-09	Total/NA	Water	8151A	
500-241636-4	W-231025-TS-10	Total/NA	Water	8151A	
500-241636-5	W-231025-TS-11	Total/NA	Water	8151A	
500-241636-6	W-231025-TS-14	Total/NA	Water	8151A	
500-241636-7	W-231025-TS-15	Total/NA	Water	8151A	
500-241636-8	W-231025-TS-16	Total/NA	Water	8151A	
MB 500-739744/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-739744/2-A	Lab Control Sample	Total/NA	Water	8151A	
500-241636-5 MS	W-231025-TS-11	Total/NA	Water	8151A	
500-241636-5 MSD	W-231025-TS-11	Total/NA	Water	8151A	

Analysis Batch: 739876

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241636-1	W-231025-TS-07	Total/NA	Water	8151A	739744
500-241636-2	W-231025-TS-08	Total/NA	Water	8151A	739744
500-241636-5	W-231025-TS-11	Total/NA	Water	8151A	739744
500-241636-7	W-231025-TS-15	Total/NA	Water	8151A	739744
500-241636-8	W-231025-TS-16	Total/NA	Water	8151A	739744
MB 500-739744/1-A	Method Blank	Total/NA	Water	8151A	739744
LCS 500-739744/2-A	Lab Control Sample	Total/NA	Water	8151A	739744
500-241636-5 MS	W-231025-TS-11	Total/NA	Water	8151A	739744

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

GC Semi VOA (Continued)

Analysis Batch: 739876 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241636-5 MSD	W-231025-TS-11	Total/NA	Water	8151A	739744

Analysis Batch: 740174

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241636-6	W-231025-TS-14	Total/NA	Water	8151A	739744

Analysis Batch: 740405

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241636-3	W-231025-TS-09	Total/NA	Water	8151A	739744
500-241636-4	W-231025-TS-10	Total/NA	Water	8151A	739744

Metals

Prep Batch: 740917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241636-1	W-231025-TS-07	Dissolved	Water	3005A	
500-241636-1	W-231025-TS-07	Total Recoverable	Water	3005A	
500-241636-2	W-231025-TS-08	Dissolved	Water	3005A	
500-241636-2	W-231025-TS-08	Total Recoverable	Water	3005A	
500-241636-3	W-231025-TS-09	Dissolved	Water	3005A	
500-241636-3	W-231025-TS-09	Total Recoverable	Water	3005A	
500-241636-4	W-231025-TS-10	Dissolved	Water	3005A	
500-241636-4	W-231025-TS-10	Total Recoverable	Water	3005A	
500-241636-5	W-231025-TS-11	Dissolved	Water	3005A	
500-241636-5	W-231025-TS-11	Total Recoverable	Water	3005A	
500-241636-6	W-231025-TS-14	Dissolved	Water	3005A	
500-241636-6	W-231025-TS-14	Total Recoverable	Water	3005A	
500-241636-7	W-231025-TS-15	Dissolved	Water	3005A	
500-241636-7	W-231025-TS-15	Total Recoverable	Water	3005A	
500-241636-8	W-231025-TS-16	Dissolved	Water	3005A	
500-241636-8	W-231025-TS-16	Total Recoverable	Water	3005A	
MB 500-740917/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-740917/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
500-241636-5 MS	W-231025-TS-11	Dissolved	Water	3005A	
500-241636-5 MS	W-231025-TS-11	Total Recoverable	Water	3005A	
500-241636-5 MSD	W-231025-TS-11	Dissolved	Water	3005A	
500-241636-5 MSD	W-231025-TS-11	Total Recoverable	Water	3005A	
500-241636-5 DU	W-231025-TS-11	Dissolved	Water	3005A	
500-241636-5 DU	W-231025-TS-11	Total Recoverable	Water	3005A	

Analysis Batch: 742041

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241636-1	W-231025-TS-07	Dissolved	Water	6020A	740917
500-241636-1	W-231025-TS-07	Total Recoverable	Water	6020A	740917
500-241636-2	W-231025-TS-08	Dissolved	Water	6020A	740917
500-241636-2	W-231025-TS-08	Total Recoverable	Water	6020A	740917
500-241636-3	W-231025-TS-09	Dissolved	Water	6020A	740917
500-241636-3	W-231025-TS-09	Total Recoverable	Water	6020A	740917
500-241636-4	W-231025-TS-10	Dissolved	Water	6020A	740917
500-241636-4	W-231025-TS-10	Total Recoverable	Water	6020A	740917
500-241636-5	W-231025-TS-11	Dissolved	Water	6020A	740917

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Metals (Continued)

Analysis Batch: 742041 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241636-5	W-231025-TS-11	Total Recoverable	Water	6020A	740917
500-241636-6	W-231025-TS-14	Dissolved	Water	6020A	740917
500-241636-6	W-231025-TS-14	Total Recoverable	Water	6020A	740917
500-241636-7	W-231025-TS-15	Dissolved	Water	6020A	740917
500-241636-7	W-231025-TS-15	Total Recoverable	Water	6020A	740917
500-241636-8	W-231025-TS-16	Dissolved	Water	6020A	740917
500-241636-8	W-231025-TS-16	Total Recoverable	Water	6020A	740917
MB 500-740917/1-A	Method Blank	Total Recoverable	Water	6020A	740917
LCS 500-740917/2-A	Lab Control Sample	Total Recoverable	Water	6020A	740917
500-241636-5 MS	W-231025-TS-11	Dissolved	Water	6020A	740917
500-241636-5 MS	W-231025-TS-11	Total Recoverable	Water	6020A	740917
500-241636-5 MSD	W-231025-TS-11	Dissolved	Water	6020A	740917
500-241636-5 MSD	W-231025-TS-11	Total Recoverable	Water	6020A	740917
500-241636-5 DU	W-231025-TS-11	Dissolved	Water	6020A	740917
500-241636-5 DU	W-231025-TS-11	Total Recoverable	Water	6020A	740917

Analysis Batch: 742070

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241636-1	W-231025-TS-07	Dissolved	Water	SM 2340B	740917
500-241636-1	W-231025-TS-07	Total Recoverable	Water	SM 2340B	740917
500-241636-2	W-231025-TS-08	Dissolved	Water	SM 2340B	740917
500-241636-2	W-231025-TS-08	Total Recoverable	Water	SM 2340B	740917
500-241636-3	W-231025-TS-09	Dissolved	Water	SM 2340B	740917
500-241636-3	W-231025-TS-09	Total Recoverable	Water	SM 2340B	740917
500-241636-4	W-231025-TS-10	Dissolved	Water	SM 2340B	740917
500-241636-4	W-231025-TS-10	Total Recoverable	Water	SM 2340B	740917
500-241636-5	W-231025-TS-11	Dissolved	Water	SM 2340B	740917
500-241636-5	W-231025-TS-11	Total Recoverable	Water	SM 2340B	740917
500-241636-6	W-231025-TS-14	Dissolved	Water	SM 2340B	740917
500-241636-6	W-231025-TS-14	Total Recoverable	Water	SM 2340B	740917
500-241636-7	W-231025-TS-15	Dissolved	Water	SM 2340B	740917
500-241636-7	W-231025-TS-15	Total Recoverable	Water	SM 2340B	740917
500-241636-8	W-231025-TS-16	Dissolved	Water	SM 2340B	740917
500-241636-8	W-231025-TS-16	Total Recoverable	Water	SM 2340B	740917

General Chemistry

Analysis Batch: 739032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241636-1	W-231025-TS-07	Total/NA	Water	300.0	
500-241636-2	W-231025-TS-08	Total/NA	Water	300.0	
500-241636-3	W-231025-TS-09	Total/NA	Water	300.0	
500-241636-4	W-231025-TS-10	Total/NA	Water	300.0	
500-241636-5	W-231025-TS-11	Total/NA	Water	300.0	
500-241636-6	W-231025-TS-14	Total/NA	Water	300.0	
500-241636-8	W-231025-TS-16	Total/NA	Water	300.0	
MB 500-739032/3	Method Blank	Total/NA	Water	300.0	
LCS 500-739032/4	Lab Control Sample	Total/NA	Water	300.0	
500-241636-5 MS	W-231025-TS-11	Total/NA	Water	300.0	
500-241636-5 MSD	W-231025-TS-11	Total/NA	Water	300.0	

QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

General Chemistry

Analysis Batch: 739033

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241636-1	W-231025-TS-07	Total/NA	Water	300.0	
500-241636-2	W-231025-TS-08	Total/NA	Water	300.0	
500-241636-3	W-231025-TS-09	Total/NA	Water	300.0	
500-241636-4	W-231025-TS-10	Total/NA	Water	300.0	
500-241636-5	W-231025-TS-11	Total/NA	Water	300.0	
500-241636-6	W-231025-TS-14	Total/NA	Water	300.0	
500-241636-8	W-231025-TS-16	Total/NA	Water	300.0	
MB 500-739033/3	Method Blank	Total/NA	Water	300.0	
LCS 500-739033/4	Lab Control Sample	Total/NA	Water	300.0	
500-241636-5 MS	W-231025-TS-11	Total/NA	Water	300.0	
500-241636-5 MSD	W-231025-TS-11	Total/NA	Water	300.0	

Analysis Batch: 739204

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241636-5	W-231025-TS-11	Total/NA	Water	300.0	
MB 500-739204/3	Method Blank	Total/NA	Water	300.0	
LCS 500-739204/4	Lab Control Sample	Total/NA	Water	300.0	
500-241636-5 MS	W-231025-TS-11	Total/NA	Water	300.0	
500-241636-5 MSD	W-231025-TS-11	Total/NA	Water	300.0	

Analysis Batch: 740678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241636-1	W-231025-TS-07	Total/NA	Water	9060A	
MB 500-740678/6	Method Blank	Total/NA	Water	9060A	
LCS 500-740678/7	Lab Control Sample	Total/NA	Water	9060A	
LCSD 500-740678/8	Lab Control Sample Dup	Total/NA	Water	9060A	

Analysis Batch: 741150

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241636-1	W-231025-TS-07	Total/NA	Water	SM 2320B	
500-241636-2	W-231025-TS-08	Total/NA	Water	SM 2320B	
500-241636-3	W-231025-TS-09	Total/NA	Water	SM 2320B	
500-241636-4	W-231025-TS-10	Total/NA	Water	SM 2320B	
500-241636-5	W-231025-TS-11	Total/NA	Water	SM 2320B	
500-241636-6	W-231025-TS-14	Total/NA	Water	SM 2320B	
500-241636-8	W-231025-TS-16	Total/NA	Water	SM 2320B	
MB 500-741150/28	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-741150/29	Lab Control Sample	Total/NA	Water	SM 2320B	
500-241636-1 DU	W-231025-TS-07	Total/NA	Water	SM 2320B	

Analysis Batch: 741156

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241636-2	W-231025-TS-08	Total/NA	Water	9060A	
500-241636-3	W-231025-TS-09	Total/NA	Water	9060A	
500-241636-4	W-231025-TS-10	Total/NA	Water	9060A	
500-241636-5	W-231025-TS-11	Total/NA	Water	9060A	
500-241636-6	W-231025-TS-14	Total/NA	Water	9060A	
500-241636-8	W-231025-TS-16	Total/NA	Water	9060A	
MB 500-741156/6	Method Blank	Total/NA	Water	9060A	
LCS 500-741156/7	Lab Control Sample	Total/NA	Water	9060A	
LCSD 500-741156/8	Lab Control Sample Dup	Total/NA	Water	9060A	

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

General Chemistry (Continued)

Analysis Batch: 741156 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241636-5 MS	W-231025-TS-11	Total/NA	Water	9060A	
500-241636-5 MSD	W-231025-TS-11	Total/NA	Water	9060A	

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Surrogate Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-126)	TOL (75-120)	BFB (72-124)	DBFM (75-120)
500-241636-1	W-231025-TS-07	94	94	84	103
500-241636-2	W-231025-TS-08	97	94	85	106
500-241636-3	W-231025-TS-09	93	95	82	103
500-241636-4	W-231025-TS-10	94	93	82	103
500-241636-5	W-231025-TS-11	92	95	86	102
500-241636-5 MS	W-231025-TS-11	90	95	86	100
500-241636-5 MSD	W-231025-TS-11	89	96	88	99
500-241636-6	W-231025-TS-14	96	92	85	104
500-241636-7	W-231025-TS-15	92	93	86	102
500-241636-8	W-231025-TS-16	93	93	86	103
500-241636-9	TRIP BLANK	94	94	84	103
LCS 500-740154/4	Lab Control Sample	91	95	86	101
MB 500-740154/7	Method Blank	96	94	86	105

Surrogate Legend

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

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		NBZ (36-120)	FBP (34-110)	TPHL (40-145)
500-241636-1	W-231025-TS-07	95	83	111
500-241636-2	W-231025-TS-08	100	86	113
500-241636-3	W-231025-TS-09	90	88	98
500-241636-4	W-231025-TS-10	103	60	107
500-241636-5	W-231025-TS-11	15 X	16 X	19 X
500-241636-5 - RE	W-231025-TS-11	72	65	87
500-241636-5 MS	W-231025-TS-11	106	85	111
500-241636-5 MSD	W-231025-TS-11	92	73	104
500-241636-6	W-231025-TS-14	97	74	112
500-241636-7	W-231025-TS-15	98	81	113
500-241636-8	W-231025-TS-16	96	79	113
LCS 500-739569/2-A	Lab Control Sample	104	88	117
LCS 500-743760/2-A	Lab Control Sample	82	79	94
MB 500-739569/1-A	Method Blank	100	87	109
MB 500-743760/1-A	Method Blank	77	72	90

Surrogate Legend

NBZ = Nitrobenzene-d5 (Surr)

FBP = 2-Fluorobiphenyl (Surr)

TPHL = Terphenyl-d14 (Surr)

Surrogate Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TFE1 (60-140)
500-241636-1	W-231025-TS-07	110
500-241636-2	W-231025-TS-08	108
500-241636-3	W-231025-TS-09	109
500-241636-4	W-231025-TS-10	112
500-241636-5	W-231025-TS-11	111
500-241636-5 MS	W-231025-TS-11	113
500-241636-5 MSD	W-231025-TS-11	112
500-241636-6	W-231025-TS-14	112
500-241636-8	W-231025-TS-16	113
LCS 240-592907/4	Lab Control Sample	115
LCS 240-593187/4	Lab Control Sample	117
MB 240-592907/3	Method Blank	114
MB 240-593187/3	Method Blank	117

Surrogate Legend

TFE = 1,1,1-Trifluoroethane

Method: 8151A - Herbicides (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (25-130)
500-241636-1	W-231025-TS-07	76
500-241636-2	W-231025-TS-08	77
500-241636-3	W-231025-TS-09	0 X
500-241636-4	W-231025-TS-10	0 X
500-241636-5	W-231025-TS-11	71
500-241636-5 MS	W-231025-TS-11	92
500-241636-5 MSD	W-231025-TS-11	94
500-241636-6	W-231025-TS-14	0 X
500-241636-7	W-231025-TS-15	77
500-241636-8	W-231025-TS-16	67
LCS 500-739744/2-A	Lab Control Sample	92
MB 500-739744/1-A	Method Blank	75

Surrogate Legend

DCPAA = DCAA

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-740154/7
Matrix: Water
Analysis Batch: 740154

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

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	<0.15		0.50	0.15	ug/L			11/02/23 14:34	1
Toluene	<0.15		0.50	0.15	ug/L			11/02/23 14:34	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/02/23 14:34	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/02/23 14:34	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	96		75 - 126		11/02/23 14:34	1
Toluene-d8 (Surr)	94		75 - 120		11/02/23 14:34	1
4-Bromofluorobenzene (Surr)	86		72 - 124		11/02/23 14:34	1
Dibromofluoromethane	105		75 - 120		11/02/23 14:34	1

Lab Sample ID: LCS 500-740154/4
Matrix: Water
Analysis Batch: 740154

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

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Benzene	40.0	40.8		ug/L		102	70 - 120
Toluene	40.0	37.9		ug/L		95	70 - 125
Ethylbenzene	40.0	41.2		ug/L		103	70 - 123
Xylenes, Total	80.0	76.7		ug/L		96	70 - 125

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	91		75 - 126
Toluene-d8 (Surr)	95		75 - 120
4-Bromofluorobenzene (Surr)	86		72 - 124
Dibromofluoromethane	101		75 - 120

Lab Sample ID: 500-241636-5 MS
Matrix: Water
Analysis Batch: 740154

Client Sample ID: W-231025-TS-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
Benzene	<0.15		50.0	46.6		ug/L		93	70 - 120
Toluene	<0.15		50.0	44.9		ug/L		90	70 - 125
Ethylbenzene	<0.18		50.0	49.1		ug/L		98	70 - 123
Xylenes, Total	<0.22		100	92.1		ug/L		92	70 - 125

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	90		75 - 126
Toluene-d8 (Surr)	95		75 - 120
4-Bromofluorobenzene (Surr)	86		72 - 124
Dibromofluoromethane	100		75 - 120

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

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

Lab Sample ID: 500-241636-5 MSD
Matrix: Water
Analysis Batch: 740154

Client Sample ID: W-231025-TS-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.15		50.0	46.2		ug/L		92	70 - 120	1	20
Toluene	<0.15		50.0	44.4		ug/L		89	70 - 125	1	20
Ethylbenzene	<0.18		50.0	48.1		ug/L		96	70 - 123	2	20
Xylenes, Total	<0.22		100	91.0		ug/L		91	70 - 125	1	20

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
1,2-Dichloroethane-d4 (Surr)	89		75 - 126
Toluene-d8 (Surr)	96		75 - 120
4-Bromofluorobenzene (Surr)	88		72 - 124
Dibromofluoromethane	99		75 - 120

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

Lab Sample ID: MB 500-739569/1-A
Matrix: Water
Analysis Batch: 740108

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 739569

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.80	0.25	ug/L		10/30/23 14:30	11/02/23 11:20	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	100		36 - 120	10/30/23 14:30	11/02/23 11:20	1
2-Fluorobiphenyl (Surr)	87		34 - 110	10/30/23 14:30	11/02/23 11:20	1
Terphenyl-d14 (Surr)	109		40 - 145	10/30/23 14:30	11/02/23 11:20	1

Lab Sample ID: LCS 500-739569/2-A
Matrix: Water
Analysis Batch: 740108

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 739569

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Naphthalene	32.0	24.8		ug/L		77	36 - 110

Surrogate	LCS %Recovery	LCS Qualifier	LCS Limits
Nitrobenzene-d5 (Surr)	104		36 - 120
2-Fluorobiphenyl (Surr)	88		34 - 110
Terphenyl-d14 (Surr)	117		40 - 145

Lab Sample ID: 500-241636-5 MS
Matrix: Water
Analysis Batch: 740108

Client Sample ID: W-231025-TS-11
Prep Type: Total/NA
Prep Batch: 739569

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Naphthalene	<0.25		33.0	26.1		ug/L		79	36 - 110

Surrogate	MS %Recovery	MS Qualifier	MS Limits
Nitrobenzene-d5 (Surr)	106		36 - 120
2-Fluorobiphenyl (Surr)	85		34 - 110

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

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

Lab Sample ID: 500-241636-5 MS
Matrix: Water
Analysis Batch: 740108

Client Sample ID: W-231025-TS-11
Prep Type: Total/NA
Prep Batch: 739569

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	111		40 - 145

Lab Sample ID: 500-241636-5 MSD
Matrix: Water
Analysis Batch: 740108

Client Sample ID: W-231025-TS-11
Prep Type: Total/NA
Prep Batch: 739569

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier						
Naphthalene	<0.25		31.5	21.6		ug/L		69	36 - 110	19	20

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
Nitrobenzene-d5 (Surr)	92		36 - 120
2-Fluorobiphenyl (Surr)	73		34 - 110
Terphenyl-d14 (Surr)	104		40 - 145

Lab Sample ID: MB 500-743760/1-A
Matrix: Water
Analysis Batch: 743746

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 743760

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Naphthalene	<0.25		0.80	0.25	ug/L		11/27/23 07:52	11/27/23 12:33	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Nitrobenzene-d5 (Surr)	77		36 - 120	11/27/23 07:52	11/27/23 12:33	1
2-Fluorobiphenyl (Surr)	72		34 - 110	11/27/23 07:52	11/27/23 12:33	1
Terphenyl-d14 (Surr)	90		40 - 145	11/27/23 07:52	11/27/23 12:33	1

Lab Sample ID: LCS 500-743760/2-A
Matrix: Water
Analysis Batch: 743746

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 743760

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec	Limits
		Result	Qualifier					
Naphthalene	32.0	22.4		ug/L		70	36 - 110	

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Nitrobenzene-d5 (Surr)	82		36 - 120
2-Fluorobiphenyl (Surr)	79		34 - 110
Terphenyl-d14 (Surr)	94		40 - 145

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 240-592907/3
Matrix: Water
Analysis Batch: 592907

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

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Methane	<0.17		1.0	0.17	ug/L			10/31/23 14:41	1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: MB 240-592907/3
Matrix: Water
Analysis Batch: 592907

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

Surrogate	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
1,1,1-Trifluoroethane	114	MB MB	60 - 140		10/31/23 14:41	1

Lab Sample ID: LCS 240-592907/4
Matrix: Water
Analysis Batch: 592907

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

Analyte	<u>Spike Added</u>	<u>LCS Result</u>	<u>LCS Qualifier</u>	<u>Unit</u>	<u>D</u>	<u>%Rec</u>	<u>%Rec Limits</u>
Methane	284	290		ug/L		102	80 - 120

Surrogate	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
1,1,1-Trifluoroethane	115	LCS LCS	60 - 140

Lab Sample ID: 500-241636-5 MS
Matrix: Water
Analysis Batch: 592907

Client Sample ID: W-231025-TS-11
Prep Type: Total/NA

Analyte	<u>Sample Result</u>	<u>Sample Qualifier</u>	<u>Spike Added</u>	<u>MS Result</u>	<u>MS Qualifier</u>	<u>Unit</u>	<u>D</u>	<u>%Rec</u>	<u>%Rec Limits</u>
Methane	<0.17		284	287		ug/L		101	50 - 150

Surrogate	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
1,1,1-Trifluoroethane	113	MS MS	60 - 140

Lab Sample ID: 500-241636-5 MSD
Matrix: Water
Analysis Batch: 592907

Client Sample ID: W-231025-TS-11
Prep Type: Total/NA

Analyte	<u>Sample Result</u>	<u>Sample Qualifier</u>	<u>Spike Added</u>	<u>MSD Result</u>	<u>MSD Qualifier</u>	<u>Unit</u>	<u>D</u>	<u>%Rec</u>	<u>%Rec Limits</u>	<u>RPD</u>	<u>Limit</u>
Methane	<0.17		284	280		ug/L		99	50 - 150	2	30

Surrogate	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
1,1,1-Trifluoroethane	112	MSD MSD	60 - 140

Lab Sample ID: MB 240-593187/3
Matrix: Water
Analysis Batch: 593187

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

Analyte	<u>Result</u>	<u>Qualifier</u>	<u>LOQ</u>	<u>LOD</u>	<u>Unit</u>	<u>D</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
Methane	<0.17	MB MB	1.0	0.17	ug/L			11/02/23 12:09	1

Surrogate	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
1,1,1-Trifluoroethane	117	MB MB	60 - 140		11/02/23 12:09	1

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCS 240-593187/4
Matrix: Water
Analysis Batch: 593187

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methane	284	300		ug/L		106	80 - 120
Surrogate	%Recovery	LCS Qualifier	Limits				
1,1,1-Trifluoroethane	117		60 - 140				

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 500-739744/1-A
Matrix: Water
Analysis Batch: 739876

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 739744

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.099		0.10	0.099	ug/L		10/31/23 12:53	11/01/23 09:33	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	75		25 - 130				10/31/23 12:53	11/01/23 09:33	1

Lab Sample ID: LCS 500-739744/2-A
Matrix: Water
Analysis Batch: 739876

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 739744

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Pentachlorophenol	2.53	1.96		ug/L		78	40 - 122
Surrogate	%Recovery	LCS Qualifier	Limits				
DCAA	92		25 - 130				

Lab Sample ID: 500-241636-5 MS
Matrix: Water
Analysis Batch: 739876

Client Sample ID: W-231025-TS-11
Prep Type: Total/NA
Prep Batch: 739744

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Pentachlorophenol	<0.10		2.50	1.96		ug/L		78	40 - 122
Surrogate	%Recovery	MS Qualifier	Limits						
DCAA	92		25 - 130						

Lab Sample ID: 500-241636-5 MSD
Matrix: Water
Analysis Batch: 739876

Client Sample ID: W-231025-TS-11
Prep Type: Total/NA
Prep Batch: 739744

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Pentachlorophenol	<0.10		2.54	1.98		ug/L		78	40 - 122	1	20
Surrogate	%Recovery	MSD Qualifier	Limits								
DCAA	94		25 - 130								

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 500-740917/1-A
Matrix: Water
Analysis Batch: 742041

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 740917

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	<0.23		1.0	0.23	ug/L		11/07/23 08:58	11/14/23 05:19	1
Calcium	<44.3		200	44.3	ug/L		11/07/23 08:58	11/14/23 05:19	1
Copper	<0.50		2.0	0.50	ug/L		11/07/23 08:58	11/14/23 05:19	1
Iron	<46.7		100	46.7	ug/L		11/07/23 08:58	11/14/23 05:19	1
Magnesium	<49.4		200	49.4	ug/L		11/07/23 08:58	11/14/23 05:19	1
Manganese	<0.79		2.5	0.79	ug/L		11/07/23 08:58	11/14/23 05:19	1
Zinc	<6.9		20.0	6.9	ug/L		11/07/23 08:58	11/14/23 05:19	1

Lab Sample ID: LCS 500-740917/2-A
Matrix: Water
Analysis Batch: 742041

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 740917

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	10000	9485		ug/L		95	80 - 120
Copper	250	265.1		ug/L		106	80 - 120
Iron	1000	1023		ug/L		102	80 - 120
Magnesium	10000	10040		ug/L		100	80 - 120
Manganese	500	495.8		ug/L		99	80 - 120
Zinc	500	513.6		ug/L		103	80 - 120

Lab Sample ID: 500-241636-5 MS
Matrix: Water
Analysis Batch: 742041

Client Sample ID: W-231025-TS-11
Prep Type: Total Recoverable
Prep Batch: 740917

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
	Arsenic	0.53		J	100				
Calcium	65100		10000	68740	4	ug/L		37	75 - 125
Copper	0.85	J	250	261.6		ug/L		104	75 - 125
Iron	<46.7		1000	948.3		ug/L		95	75 - 125
Magnesium	24800	F1	10000	31890	F1	ug/L		71	75 - 125
Manganese	<0.79		500	457.4		ug/L		91	75 - 125
Zinc	<6.9		500	502.3		ug/L		100	75 - 125

Lab Sample ID: 500-241636-5 MSD
Matrix: Water
Analysis Batch: 742041

Client Sample ID: W-231025-TS-11
Prep Type: Total Recoverable
Prep Batch: 740917

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
	Arsenic	0.53		J	100						
Calcium	65100		10000	68360	4	ug/L		33	75 - 125	1	20
Copper	0.85	J	250	257.8		ug/L		103	75 - 125	1	20
Iron	<46.7		1000	973.0		ug/L		97	75 - 125	3	20
Magnesium	24800	F1	10000	32230	F1	ug/L		74	75 - 125	1	20
Manganese	<0.79		500	462.5		ug/L		93	75 - 125	1	20
Zinc	<6.9		500	504.1		ug/L		101	75 - 125	0	20

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

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

Lab Sample ID: 500-241636-5 DU
Matrix: Water
Analysis Batch: 742041

Client Sample ID: W-231025-TS-11
Prep Type: Total Recoverable
Prep Batch: 740917

Analyte	Sample	Sample	DU		Unit	D	RPD	RPD	
	Result	Qualifier	Result	Qualifier				Limit	Limit
Arsenic	0.53	J	0.596	J	ug/L		12	20	
Calcium	65100		62780		ug/L		4	20	
Copper	0.85	J	1.34	J F5	ug/L		45	20	
Iron	<46.7		<46.7		ug/L		NC	20	
Magnesium	24800	F1	24040		ug/L		3	20	
Manganese	<0.79		<0.79		ug/L		NC	20	
Zinc	<6.9		<6.9		ug/L		NC	20	

Lab Sample ID: 500-241636-5 MS
Matrix: Water
Analysis Batch: 742041

Client Sample ID: W-231025-TS-11
Prep Type: Dissolved
Prep Batch: 740917

Analyte	Sample	Sample	Spike	MS		Unit	D	%Rec	%Rec	Limits	RPD	Limit
	Result	Qualifier		Result	Qualifier							
Arsenic	0.55	J	100	99.09		ug/L		99	99	75 - 125		
Calcium	62100		10000	67360	4	ug/L		53	53	75 - 125		
Copper	1.2	J	250	256.6		ug/L		102	102	75 - 125		
Iron	<46.7		1000	959.3		ug/L		96	96	75 - 125		
Magnesium	23900		10000	31580		ug/L		77	77	75 - 125		
Manganese	<0.79		500	462.8		ug/L		93	93	75 - 125		
Zinc	<6.9		500	495.7		ug/L		99	99	75 - 125		

Lab Sample ID: 500-241636-5 MSD
Matrix: Water
Analysis Batch: 742041

Client Sample ID: W-231025-TS-11
Prep Type: Dissolved
Prep Batch: 740917

Analyte	Sample	Sample	Spike	MSD		Unit	D	%Rec	%Rec	Limits	RPD	Limit
	Result	Qualifier		Result	Qualifier							
Arsenic	0.55	J	100	97.67		ug/L		97	97	75 - 125	1	20
Calcium	62100		10000	66660	4	ug/L		46	46	75 - 125	1	20
Copper	1.2	J	250	255.0		ug/L		102	102	75 - 125	1	20
Iron	<46.7		1000	939.2		ug/L		94	94	75 - 125	2	20
Magnesium	23900		10000	31390		ug/L		75	75	75 - 125	1	20
Manganese	<0.79		500	452.0		ug/L		90	90	75 - 125	2	20
Zinc	<6.9		500	494.9		ug/L		99	99	75 - 125	0	20

Lab Sample ID: 500-241636-5 DU
Matrix: Water
Analysis Batch: 742041

Client Sample ID: W-231025-TS-11
Prep Type: Dissolved
Prep Batch: 740917

Analyte	Sample	Sample	DU		Unit	D	RPD	RPD	
	Result	Qualifier	Result	Qualifier				Limit	Limit
Arsenic	0.55	J	0.570	J	ug/L		3	20	
Calcium	62100		61370		ug/L		1	20	
Copper	1.2	J	1.23	J	ug/L		5	20	
Iron	<46.7		<46.7		ug/L		NC	20	
Magnesium	23900		23470		ug/L		2	20	
Manganese	<0.79		<0.79		ug/L		NC	20	
Zinc	<6.9		<6.9		ug/L		NC	20	

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 500-739032/3
Matrix: Water
Analysis Batch: 739032

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.12		1.0	0.12	mg/L			10/26/23 17:13	1
Sulfate	<0.21		1.0	0.21	mg/L			10/26/23 17:13	1

Lab Sample ID: LCS 500-739032/4
Matrix: Water
Analysis Batch: 739032

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	20.0	21.43		mg/L		107	90 - 110
Sulfate	20.0	21.27		mg/L		106	90 - 110

Lab Sample ID: 500-241636-5 MS
Matrix: Water
Analysis Batch: 739032

Client Sample ID: W-231025-TS-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	8.1		10.0	17.60		mg/L		95	80 - 120

Lab Sample ID: 500-241636-5 MSD
Matrix: Water
Analysis Batch: 739032

Client Sample ID: W-231025-TS-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	8.1		10.0	18.05		mg/L		100	80 - 120	3	20

Lab Sample ID: MB 500-739033/3
Matrix: Water
Analysis Batch: 739033

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.043		1.0	0.043	mg/L			10/26/23 17:13	1

Lab Sample ID: LCS 500-739033/4
Matrix: Water
Analysis Batch: 739033

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	20.0	19.58		mg/L		98	90 - 110

Lab Sample ID: 500-241636-5 MS
Matrix: Water
Analysis Batch: 739033

Client Sample ID: W-231025-TS-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	1.4		10.0	10.11		mg/L		87	80 - 120

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 500-241636-5 MSD
Matrix: Water
Analysis Batch: 739033

Client Sample ID: W-231025-TS-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	1.4		10.0	10.03		mg/L		86	80 - 120	1	20

Lab Sample ID: MB 500-739204/3
Matrix: Water
Analysis Batch: 739204

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<0.21		1.0	0.21	mg/L			10/27/23 08:45	1

Lab Sample ID: LCS 500-739204/4
Matrix: Water
Analysis Batch: 739204

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	20.0	21.55		mg/L		108	90 - 110

Lab Sample ID: 500-241636-5 MS
Matrix: Water
Analysis Batch: 739204

Client Sample ID: W-231025-TS-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	81.1		50.0	129.2		mg/L		96	80 - 120

Lab Sample ID: 500-241636-5 MSD
Matrix: Water
Analysis Batch: 739204

Client Sample ID: W-231025-TS-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	81.1		50.0	128.9		mg/L		96	80 - 120	0	20

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 500-740678/6
Matrix: Water
Analysis Batch: 740678

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	<0.47		1.0	0.47	mg/L			11/05/23 12:20	1

Lab Sample ID: LCS 500-740678/7
Matrix: Water
Analysis Batch: 740678

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon - Quad	50.0	49.47		mg/L		99	86 - 116

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCSD 500-740678/8
Matrix: Water
Analysis Batch: 740678

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon - Quad	50.0	49.22		mg/L		98	86 - 116	1	20

Lab Sample ID: MB 500-741156/6
Matrix: Water
Analysis Batch: 741156

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	<0.47		1.0	0.47	mg/L			11/07/23 12:27	1

Lab Sample ID: LCS 500-741156/7
Matrix: Water
Analysis Batch: 741156

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon - Quad	50.0	49.58		mg/L		99	86 - 116

Lab Sample ID: LCSD 500-741156/8
Matrix: Water
Analysis Batch: 741156

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon - Quad	50.0	49.79		mg/L		100	86 - 116	0	20

Lab Sample ID: 500-241636-5 MS
Matrix: Water
Analysis Batch: 741156

Client Sample ID: W-231025-TS-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon - Quad	1.1		50.0	50.88		mg/L		100	75 - 125

Lab Sample ID: 500-241636-5 MSD
Matrix: Water
Analysis Batch: 741156

Client Sample ID: W-231025-TS-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon - Quad	1.1		50.0	50.48		mg/L		99	75 - 125	1	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-741150/28
Matrix: Water
Analysis Batch: 741150

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	<3.7		5.0	3.7	mg/L			11/07/23 15:53	1

QC Sample Results

Client: GHD Services Inc.
 Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCS 500-741150/29
Matrix: Water
Analysis Batch: 741150

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	100	102.5		mg/L		103	90 - 110

Lab Sample ID: 500-241636-1 DU
Matrix: Water
Analysis Batch: 741150

Client Sample ID: W-231025-TS-07
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	237		235.3		mg/L		0.7	20

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Client Sample ID: W-231025-TS-07

Lab Sample ID: 500-241636-1

Date Collected: 10/25/23 10:16

Matrix: Water

Date Received: 10/26/23 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	740154	W1T	EET CHI	11/02/23 15:52
Total/NA	Prep	3510C			739569	DAK	EET CHI	10/30/23 14:30
Total/NA	Analysis	8270E		1	740108	JSB	EET CHI	11/02/23 14:51
Total/NA	Analysis	RSK-175		1	593187	JBN	EET CLE	11/02/23 15:16
Total/NA	Prep	8151A			739744	DAK	EET CHI	10/31/23 12:53
Total/NA	Analysis	8151A		1	739876	JAB	EET CHI	11/01/23 10:09
Dissolved	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Dissolved	Analysis	6020A		1	742041	BJH	EET CHI	11/14/23 06:25
Total Recoverable	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Total Recoverable	Analysis	6020A		1	742041	BJH	EET CHI	11/14/23 05:28
Dissolved	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Dissolved	Analysis	SM 2340B		1	742070	DAJ	EET CHI	11/14/23 09:14
Total Recoverable	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Total Recoverable	Analysis	SM 2340B		1	742070	DAJ	EET CHI	11/14/23 09:14
Total/NA	Analysis	300.0		1	739032	NMB	EET CHI	10/26/23 21:01
Total/NA	Analysis	300.0		1	739033	NMB	EET CHI	10/26/23 21:01
Total/NA	Analysis	9060A		1	740678	TR	EET CHI	11/06/23 00:15
Total/NA	Analysis	SM 2320B		1	741150	SO	EET CHI	11/07/23 17:23

Client Sample ID: W-231025-TS-08

Lab Sample ID: 500-241636-2

Date Collected: 10/25/23 10:17

Matrix: Water

Date Received: 10/26/23 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	740154	W1T	EET CHI	11/02/23 16:18
Total/NA	Prep	3510C			739569	DAK	EET CHI	10/30/23 14:30
Total/NA	Analysis	8270E		1	740108	JSB	EET CHI	11/02/23 15:16
Total/NA	Analysis	RSK-175		1	592907	JBN	EET CLE	10/31/23 18:22
Total/NA	Prep	8151A			739744	DAK	EET CHI	10/31/23 12:53
Total/NA	Analysis	8151A		1	739876	JAB	EET CHI	11/01/23 10:28
Dissolved	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Dissolved	Analysis	6020A		1	742041	BJH	EET CHI	11/14/23 06:29
Total Recoverable	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Total Recoverable	Analysis	6020A		1	742041	BJH	EET CHI	11/14/23 05:32
Dissolved	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Dissolved	Analysis	SM 2340B		1	742070	DAJ	EET CHI	11/14/23 09:14
Total Recoverable	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Total Recoverable	Analysis	SM 2340B		1	742070	DAJ	EET CHI	11/14/23 09:14
Total/NA	Analysis	300.0		1	739032	NMB	EET CHI	10/26/23 21:16
Total/NA	Analysis	300.0		1	739033	NMB	EET CHI	10/26/23 21:16
Total/NA	Analysis	9060A		1	741156	TR	EET CHI	11/07/23 13:39
Total/NA	Analysis	SM 2320B		1	741150	SO	EET CHI	11/07/23 17:41

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Client Sample ID: W-231025-TS-09
Date Collected: 10/25/23 10:42
Date Received: 10/26/23 09:45

Lab Sample ID: 500-241636-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	740154	W1T	EET CHI	11/02/23 16:45
Total/NA	Prep	3510C			739569	DAK	EET CHI	10/30/23 14:30
Total/NA	Analysis	8270E		1	740108	JSB	EET CHI	11/02/23 21:37
Total/NA	Analysis	RSK-175		1	592907	JBN	EET CLE	10/31/23 18:39
Total/NA	Prep	8151A			739744	DAK	EET CHI	10/31/23 12:53
Total/NA	Analysis	8151A		4000	740405	SS	EET CHI	11/03/23 12:43
Dissolved	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Dissolved	Analysis	6020A		1	742041	BJH	EET CHI	11/14/23 06:33
Total Recoverable	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Total Recoverable	Analysis	6020A		1	742041	BJH	EET CHI	11/14/23 05:36
Dissolved	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Dissolved	Analysis	SM 2340B		1	742070	DAJ	EET CHI	11/14/23 09:14
Total Recoverable	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Total Recoverable	Analysis	SM 2340B		1	742070	DAJ	EET CHI	11/14/23 09:14
Total/NA	Analysis	300.0		1	739032	NMB	EET CHI	10/26/23 21:31
Total/NA	Analysis	300.0		1	739033	NMB	EET CHI	10/26/23 21:31
Total/NA	Analysis	9060A		1	741156	TR	EET CHI	11/07/23 14:02
Total/NA	Analysis	SM 2320B		1	741150	SO	EET CHI	11/07/23 17:50

Client Sample ID: W-231025-TS-10
Date Collected: 10/25/23 11:54
Date Received: 10/26/23 09:45

Lab Sample ID: 500-241636-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	740154	W1T	EET CHI	11/02/23 17:11
Total/NA	Prep	3510C			739569	DAK	EET CHI	10/30/23 14:30
Total/NA	Analysis	8270E		1	740108	JSB	EET CHI	11/02/23 22:03
Total/NA	Analysis	RSK-175		1	592907	JBN	EET CLE	10/31/23 18:56
Total/NA	Prep	8151A			739744	DAK	EET CHI	10/31/23 12:53
Total/NA	Analysis	8151A		2000	740405	SS	EET CHI	11/03/23 13:20
Dissolved	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Dissolved	Analysis	6020A		1	742041	BJH	EET CHI	11/14/23 06:37
Total Recoverable	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Total Recoverable	Analysis	6020A		1	742041	BJH	EET CHI	11/14/23 05:40
Dissolved	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Dissolved	Analysis	SM 2340B		1	742070	DAJ	EET CHI	11/14/23 09:14
Total Recoverable	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Total Recoverable	Analysis	SM 2340B		1	742070	DAJ	EET CHI	11/14/23 09:14
Total/NA	Analysis	300.0		1	739032	NMB	EET CHI	10/26/23 21:46
Total/NA	Analysis	300.0		1	739033	NMB	EET CHI	10/26/23 21:46
Total/NA	Analysis	9060A		1	741156	TR	EET CHI	11/07/23 14:31
Total/NA	Analysis	SM 2320B		1	741150	SO	EET CHI	11/07/23 18:00

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Client Sample ID: W-231025-TS-11

Lab Sample ID: 500-241636-5

Date Collected: 10/25/23 13:55

Matrix: Water

Date Received: 10/26/23 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	740154	W1T	EET CHI	11/02/23 17:37
Total/NA	Prep	3510C	RE		743760	DAK	EET CHI	11/27/23 07:52
Total/NA	Analysis	8270E	RE	1	743746	SS	EET CHI	11/27/23 14:37
Total/NA	Prep	3510C			739569	DAK	EET CHI	10/30/23 14:30
Total/NA	Analysis	8270E		1	740108	JSB	EET CHI	11/02/23 15:42
Total/NA	Analysis	RSK-175		1	592907	JBN	EET CLE	10/31/23 19:13
Total/NA	Prep	8151A			739744	DAK	EET CHI	10/31/23 12:53
Total/NA	Analysis	8151A		1	739876	JAB	EET CHI	11/01/23 11:22
Dissolved	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Dissolved	Analysis	6020A		1	742041	BJH	EET CHI	11/14/23 06:50
Total Recoverable	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Total Recoverable	Analysis	6020A		1	742041	BJH	EET CHI	11/14/23 05:44
Dissolved	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Dissolved	Analysis	SM 2340B		1	742070	DAJ	EET CHI	11/14/23 09:14
Total Recoverable	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Total Recoverable	Analysis	SM 2340B		1	742070	DAJ	EET CHI	11/14/23 09:14
Total/NA	Analysis	300.0		1	739032	NMB	EET CHI	10/26/23 22:01
Total/NA	Analysis	300.0		1	739033	NMB	EET CHI	10/26/23 22:01
Total/NA	Analysis	300.0		5	739204	NMB	EET CHI	10/27/23 12:47
Total/NA	Analysis	9060A		1	741156	TR	EET CHI	11/07/23 14:58
Total/NA	Analysis	SM 2320B		1	741150	SO	EET CHI	11/07/23 18:09

Client Sample ID: W-231025-TS-14

Lab Sample ID: 500-241636-6

Date Collected: 10/25/23 12:58

Matrix: Water

Date Received: 10/26/23 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	740154	W1T	EET CHI	11/02/23 18:03
Total/NA	Prep	3510C			739569	DAK	EET CHI	10/30/23 14:30
Total/NA	Analysis	8270E		1	740108	JSB	EET CHI	11/02/23 22:28
Total/NA	Analysis	RSK-175		1	592907	JBN	EET CLE	10/31/23 20:04
Total/NA	Prep	8151A			739744	DAK	EET CHI	10/31/23 12:53
Total/NA	Analysis	8151A		500	740174	SB	EET CHI	11/02/23 20:01
Dissolved	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Dissolved	Analysis	6020A		1	742041	BJH	EET CHI	11/14/23 07:10
Total Recoverable	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Total Recoverable	Analysis	6020A		1	742041	BJH	EET CHI	11/14/23 06:13
Dissolved	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Dissolved	Analysis	SM 2340B		1	742070	DAJ	EET CHI	11/14/23 09:14
Total Recoverable	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Total Recoverable	Analysis	SM 2340B		1	742070	DAJ	EET CHI	11/14/23 09:14
Total/NA	Analysis	300.0		1	739032	NMB	EET CHI	10/26/23 22:47
Total/NA	Analysis	300.0		1	739033	NMB	EET CHI	10/26/23 22:47

Eurofins Chicago

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Client Sample ID: W-231025-TS-14

Lab Sample ID: 500-241636-6

Date Collected: 10/25/23 12:58

Matrix: Water

Date Received: 10/26/23 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9060A		1	741156	TR	EET CHI	11/07/23 16:12
Total/NA	Analysis	SM 2320B		1	741150	SO	EET CHI	11/07/23 18:18

Client Sample ID: W-231025-TS-15

Lab Sample ID: 500-241636-7

Date Collected: 10/25/23 13:56

Matrix: Water

Date Received: 10/26/23 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	740154	W1T	EET CHI	11/02/23 18:29
Total/NA	Prep	3510C			739569	DAK	EET CHI	10/30/23 14:30
Total/NA	Analysis	8270E		1	740108	JSB	EET CHI	11/02/23 16:58
Total/NA	Prep	8151A			739744	DAK	EET CHI	10/31/23 12:53
Total/NA	Analysis	8151A		1	739876	JAB	EET CHI	11/01/23 12:54
Dissolved	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Dissolved	Analysis	6020A		1	742041	BJH	EET CHI	11/14/23 07:14
Total Recoverable	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Total Recoverable	Analysis	6020A		1	742041	BJH	EET CHI	11/14/23 06:17
Dissolved	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Dissolved	Analysis	SM 2340B		1	742070	DAJ	EET CHI	11/14/23 09:14
Total Recoverable	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Total Recoverable	Analysis	SM 2340B		1	742070	DAJ	EET CHI	11/14/23 09:14

Client Sample ID: W-231025-TS-16

Lab Sample ID: 500-241636-8

Date Collected: 10/25/23 14:57

Matrix: Water

Date Received: 10/26/23 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	740154	W1T	EET CHI	11/02/23 18:55
Total/NA	Prep	3510C			739569	DAK	EET CHI	10/30/23 14:30
Total/NA	Analysis	8270E		1	740108	JSB	EET CHI	11/02/23 17:23
Total/NA	Analysis	RSK-175		1	592907	JBN	EET CLE	10/31/23 20:21
Total/NA	Prep	8151A			739744	DAK	EET CHI	10/31/23 12:53
Total/NA	Analysis	8151A		1	739876	JAB	EET CHI	11/01/23 13:12
Dissolved	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Dissolved	Analysis	6020A		1	742041	BJH	EET CHI	11/14/23 07:18
Total Recoverable	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Total Recoverable	Analysis	6020A		1	742041	BJH	EET CHI	11/14/23 06:21
Dissolved	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Dissolved	Analysis	SM 2340B		1	742070	DAJ	EET CHI	11/14/23 09:14
Total Recoverable	Prep	3005A			740917	BDE	EET CHI	11/07/23 08:58 - 11/07/23 09:28 ¹
Total Recoverable	Analysis	SM 2340B		1	742070	DAJ	EET CHI	11/14/23 09:14
Total/NA	Analysis	300.0		1	739032	NMB	EET CHI	10/26/23 23:02
Total/NA	Analysis	300.0		1	739033	NMB	EET CHI	10/26/23 23:02
Total/NA	Analysis	9060A		1	741156	TR	EET CHI	11/07/23 17:32

Eurofins Chicago

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Client Sample ID: W-231025-TS-16

Lab Sample ID: 500-241636-8

Date Collected: 10/25/23 14:57

Matrix: Water

Date Received: 10/26/23 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	SM 2320B		1	741150	SO	EET CHI	11/07/23 18:27

Client Sample ID: TRIP BLANK

Lab Sample ID: 500-241636-9

Date Collected: 10/25/23 00:00

Matrix: Water

Date Received: 10/26/23 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	740154	W1T	EET CHI	11/02/23 15:00

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

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241636-1

Laboratory: Eurofins Chicago

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

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-24

Laboratory: Eurofins Cleveland

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-24
Georgia	State	4062	02-27-24
Illinois	NELAP	200004	07-31-24
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-28-24
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-24
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23 *
New Jersey	NELAP	OH001	07-01-24
New York	NELAP	10975	04-02-24
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	11-27-23
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-19	08-31-24
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Chain of Custody Record 718951



Environment Testing
America

Address _____

Regulatory Program: DW NPDES RCRA Other

TAL-8210

Client Contact		Project Manager: <u>Tim REE</u>		Site Contact		Date <u>10/25/2023</u>		COC No								
Company Name <u>GHTD</u>		Tel/Email: <u>Tim. REE @ GHTD.com</u>		Lab Contact:		Carrier: <u>Fed Ex</u>		____ of ____ COCs								
Address <u>900 Lower Lake Mazette</u>		Analysis Turnaround Time <input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS		Filtered Sample (Y/N)		Perform MS /MSD (Y/N)		 500-241636 COC								
City/State/Zip <u>St Paul, MN / 55112</u>																
Phone <u>612 213 7452</u>		TAT if different from Below _____		ALKALINITY, AMMONIA		RCP		BTEX								
Fax _____		<input type="checkbox"/> 2 weeks		MARH/HALENG		DISS METALS, HARDNESS		TOTAL METALS, HARDNESS								
Project Name <u>ZENITH WOOD</u>		<input type="checkbox"/> 1 week		TOC		METHANE		Sample Specific Notes								
Site <u>1122 418</u>		<input type="checkbox"/> 2 days						Job / SDG No								
P O # _____		<input type="checkbox"/> 1 day						<u>500-241636</u>								
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS /MSD (Y/N)	ALKALINITY, AMMONIA	RCP	BTEX	MARH/HALENG	DISS METALS, HARDNESS	TOTAL METALS, HARDNESS	TOC	METHANE
1	W-231025-TS-07	10/25	1016	G	GW	15	N	N	X	X	X	X	X	X	X	X
2	W-231025-TS-08		1017			15	N	N	X	X	X	X	X	X	X	X
3	W-231025-TS-09		1042			15	N	N	X	X	X	X	X	X	X	X
4	W-231025-TS-10		1154			15	N	N	X	X	X	X	X	X	X	X
5	W-231025-TS-11		1355			45	Y	X	X	X	X	X	X	X	X	X
6	W-231025-TS-14		1258			15	N	N	X	X	X	X	X	X	X	X
7	W-231025-TS-15		1356			9	N	N	X	X	X	X	X	X	X	X
8	W-231025-TS-16		1457			15	N	N	X	X	X	X	X	X	X	X
9	TRIP 3, AMM															
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other _____							Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)									
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample							<input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months									
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown																
Special Instructions/QC Requirements & Comments																
Custody Seals Intact <input type="checkbox"/> Yes <input type="checkbox"/> No					Custody Seal No		Cooler Temp (°C) Obs'd _____ Corr'd _____		Therm ID No _____							
Relinquished by: <u>[Signature]</u>		Company: <u>GHTD</u>		Date/Time: <u>10/25/2023</u>		Received by:		Company:		Date/Time:						
Relinquished by:		Company:		Date/Time:		Received by:		Company:		Date/Time:						
Relinquished by:		Company:		Date/Time:		Received in Laboratory by: <u>Stephanie Hernandez</u>		Company: <u>EETA</u>		Date/Time: <u>10/26/23 0945</u>						

Ref: Date: 17Oct23
Dep: Wg: 20.00 LBS

IPPING
ICIAL
YLING
100 BL

Svcs: PRIORITY OVERNIGHT Master 7051 7812 2602
TRACK 7051 7812 2616

ORIGIN ID: JOTA (651) 639-0913
RYAN AMOT
GHD SERVICES INC.
900 LONG LAKE ROAD
SUITE 200
SAINT PAUL, MN 55112
UNITED STATES US

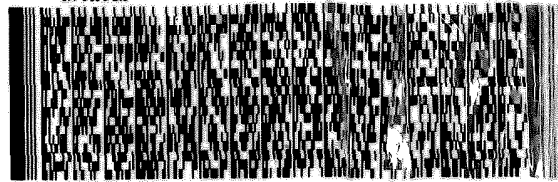
MAN 3513

TO SHIPPING DEPT 2
EUROFINS CHICAGO
2417 BOND ST -

UNIVERSITY PARK IL 60484

(708) 634-6200 REF:
JHU: DEPT:
PO:

RMA: ||| ||| |||



J211020121101UV

TRK# 7051 7812 2616
0221

RETURNS MON - SAT
PRIORITY OVERNIGHT

60484

IL-US

THU - 26 OCT AA
PRIORITY OVERNIGHT

60484
IL-US
ORD

FedEx

TRK# 7051 7812 2616
0221

AC JOTA

48gt

Ref: Date: 17Oct23
Dep: Wgt: 20.00 LBS

SHIPPING: 0.00
SPECIAL: 0.00
HANDLING: 0.00
TOTAL: 0.00

Svcs: PRIORITY OVERNIGHT Master 7051 7812 2502
TRACK 7051 7812 2605

ORIGIN ID: JOTA (651) 639-0913
RYAN AMOT
GHD SERVICES INC.
900 LONG LAKE ROAD
SUITE 200
SAINT PAUL, MN 55112
UNITED STATES US

SHIP DATE: 17OCT23
ACTWGT: 20.00 LB MAN
CAD: 0675905/CAFE3513

TO SHIPPING DEPT 2
EUROFINS CHICAGO
2417 BOND ST

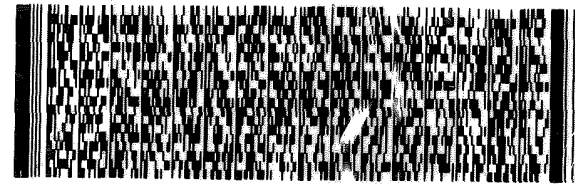


UNIVERSITY PARK IL 60484

500-241636 Waybi

(708) 634-6200 REF:
JHU: DEPT:
PO:

RMA: ||| ||| |||



J211020121101UV

TRK# 7051 7812 2605
0221

RETURNS MON - SAT
PRIORITY OVERNIGHT

60484

FedEx

TRK# 7051 7812 2605
0221

THU - 26 OCT AA
PRIORITY OVERNIGHT

AC JOTA

60484
IL-US
ORD



80701 25012001

48gt

RYAN AAMOT
GHD SERVICES INC.
900 LONG LAKE ROAD
SUITE 200
SAINT PAUL, MN 55112
UNITED STATES US

639-0913

SHIP DATE: 17OCT23
ACTWGT: 20.00 LB MAN
CAD: 0675905/CAFE3513

TO SHIPPING DEPT 2
EUROFINS CHICAGO
2417 BOND ST

5700L/UCBB/6F4D

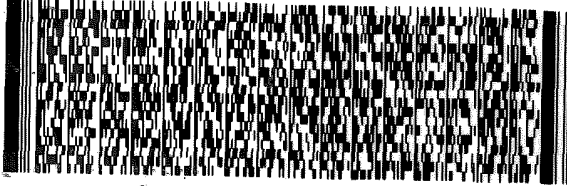
UNIVERSITY PARK IL 60484

(708) 634-6200

REF:

DEPT:

RMA: ||| ||| |||



FedEx
Express



J211020121101UV

TRK# 7051 7812 2638
0221

RETURNS MON-SAT
PRIORITY OVERNIGHT

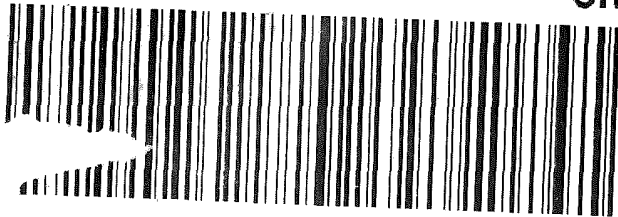
FedEx

TRK# 7051 7812 2638
0221

THU - 26 OCT AA
PRIORITY OVERNIGHT

AC JOTA

60484
IL-US
ORD



48qt

Ref: Date 17Oct23
Dep: Wgt: 20.00 LBS

SHIPPING: 0.00
SPECIAL: 0.00
HANDLING: 0.00
TOTAL: 0.00

DV:

Svc: PRIORITY OVERNIGHT Master 7051 7812 2602
TRK 7051 7812 2627

ORIGIN ID JOTA (651) 639-0913
RYAN AAMOT
GHD SERVICES INC.
900 LONG LAKE ROAD
SUITE 200
SAINT PAUL, MN 55112
UNITED STATES US

SHIP DATE: 17OCT23
ACTWGT: 20.00 LB MAN
CAD: 0675905/CAFE3513

TO SHIPPING DEPT 2
EUROFINS CHICAGO
2417 BOND ST

5700L/UCBB/6F4D

UNIVERSITY PARK IL 60484

(708) 634-6200

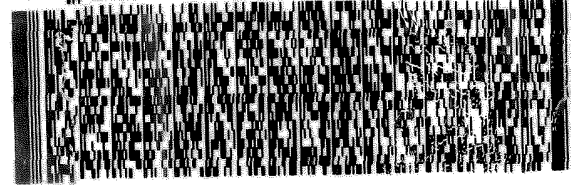
REF:

DEPT:

INV:

PO:

RMA: ||| ||| |||



FedEx
Express



J211020121101UV

TRK# 7051 7812 2627
0221

RETURNS MON-SAT
PRIORITY OVERNIGHT

60484

48qt

Ref: Date: 17Oct23 SHIPPING: 0 00
Dep: Wgt: 20.00 LBS SPECIAL: 0.00
DV: 0.00 HANDLING: 0 00
TOTAL: 0 00

Sves PRIORITY OVERNIGHT Master 7051 7812 2502
TRCK 7051 7812 2649

ORIGIN TO: JOTA (651) 639-0913
RYAN AAMOT
GHD SERVICES INC.
900 LONG LAKE ROAD
SUITE 200
SAINT PAUL, MN 55112
UNITED STATES US

SHIP DATE: 17OCT23
ACTWGT: 20.00 LB MAN
CAD: 0675905/CAFE3513

570C1/RCEB/6F 4D

TO SHIPPING DEPT 2
EUROFINS CHICAGO
2417 BOND ST

UNIVERSITY PARK IL 60484

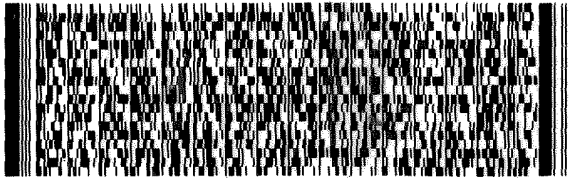
(708) 534-5200

REF:

YNU:

DEPT:

RMA



FedEx
Express



J2110201211010V

TRK# 7051 7812 2649
0221

RETURNS MON-SAT
PRIORITY OVERNIGHT

FedEx

TRK# 7051 7812 2649
0221

60484
THU - 26 OCT AA
PRIORITY OVERNIGHT

AC JOTA

60484
IL-US
ORD



80701 250ct2023 * 581CL/PC

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Chain of Custody Record



Client Information (Sub Contract Lab)		Lab PM McCUTCHEON, Carlene	Carrier Tracking No(s) 500-180741.1
Client Contact Shipping/Receiving		E-Mail Carlene.McCutcheon@et.eurofins.com	Page Page 1 of 1
Company Eurofins Environment Testing North Cent		Accreditations Required (See note) State Program - Wisconsin	Job # 500-241636-1
Address 180 S. Van Buren Avenue,		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)	
City: Barberton		Analysis Requested Total Number of Containers Perform MS/MSD (Yes or No) Field Filtered Sample (Yes or No) RSK, 175/ (MOD) Methane Special Instructions/Note: <div style="font-size: 2em; text-align: center;">RSK</div>	
State/Zip OH, 44203			
Phone: 330-497-9396(Tel) 330-497-0772(Fax)			
Email:			
Project Name: Penta Wood 11222418			
Site 50013796		Project # 50013796	
SSOW#		SSOW#	
Due Date Requested: 11/15/2023		TAT Requested (days):	
Sample Date		Sample Time	Sample Type (C=Comp, G=grab)
Sample ID (Lab ID)		Sample Time	Matrix (W=water, S=solid, O=water, G=grab)
W-231025-TS-07 (500-241636-1)		10:16 Central	Water
W-231025-TS-08 (500-241636-2)		10:17 Central	Water
W-231025-TS-09 (500-241636-3)		10:42 Central	Water
W-231025-TS-10 (500-241636-4)		11:54 Central	Water
W-231025-TS-11 (500-241636-5)		13:55 Central	Water
W-231025-TS-11 (500-241636-5MS)		13:55 Central	MS
W-231025-TS-11 (500-241636-5MSD)		13:55 Central	MSD
W-231025-TS-14 (500-241636-6)		12:58 Central	Water
W-231025-TS-16 (500-241636-8)		14:57 Central	Water
<p>Note: Since laboratory accreditations are subject to change, Eurofins Chicago places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins Chicago laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Chicago attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Chicago</p>			
Possible Hazard Identification			
Unconfirmed			
Deliverable Requested: I, II, III, IV, Other (specify)			
Primary Deliverable Rank: 2		Special Instructions/QC Requirements:	
Date:		Method of Shipment:	
Date/Time 10/26/23 1530		Date/Time 10-27-23 0920	
Reinquired by <i>Shirley</i>		Reinquired by <i>Shirley</i>	
Date/Time		Date/Time	
Date/Time		Date/Time	
Custody Seals Intact: Δ Yes Δ No		Cooler Temperature(s) °C and Other Remarks:	
Custody Seal No.:		Company EBCR	



Eurofins - Cleveland Sample Receipt Form/Narrative

Login # : _____

Barberton Facility

Client Eurofins - CHI

Site Name _____

Cooler unpacked by: [Signature]

Cooler Received on 10-27-23

Opened on 10-27-23

FedEx: 1st Grd Exp UPS FAS Waypoint Client Drop Off Eurofins Courier Other

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

Eurofins Cooler # EC Foam Box Client Cooler Box Other _____

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

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt See Multiple Cooler Form

IR GUN # 19 (CF +0.4 °C) Observed Cooler Temp. 2.5 °C Corrected Cooler Temp. 2.9 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No

-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA

-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA

-Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes No

4. Did custody papers accompany the sample(s)? Yes No

5. Were the custody papers relinquished & signed in the appropriate place? Yes No

6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No

7. Did all bottles arrive in good condition (Unbroken)? Yes No

8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No

9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No

10. Were correct bottle(s) used for the test(s) indicated? Yes No

11. Sufficient quantity received to perform indicated analyses? Yes No

12. Are these work share samples and all listed on the COC? Yes No

If yes, Questions 13-17 have been checked at the originating laboratory.

13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC316719

14. Were VOAs on the COC? Yes No

15. Were air bubbles >6 mm in any VOA vials? Yes No NA Larger than this.

16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No

17. Was a LL Hg or Me Hg trip blank present? _____ Yes No

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

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page

Samples processed by: _____

19. SAMPLE CONDITION

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

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

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

20. SAMPLE PRESERVATION

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

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

VOA Sample Preservation - Date/Time VOAs Frozen: _____

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-241636-1

Login Number: 241636

List Source: Eurofins Chicago

List Number: 1

Creator: Hernandez, Stephanie

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	5.1,0.8,1.0,2.2,1.6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	False	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	False	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Mr. Grant Anderson
GHD Services Inc.
900 Long Lake Road
Suite 200
New Brighton, Minnesota 55112

Generated 11/27/2023 11:21:39 AM

JOB DESCRIPTION

Penta Wood 11222418

JOB NUMBER

500-241697-1

Eurofins Chicago

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



Generated
11/27/2023 11:21:39 AM

Authorized for release by
Shawn Hayes, Senior Project Manager
Shawn.Hayes@et.eurofinsus.com
(708)534-5200



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Case Narrative

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Job ID: 500-241697-1

Laboratory: Eurofins Chicago

Narrative

Job Narrative 500-241697-1

Receipt

The samples were received on 10/27/2023 8:55 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 5 coolers at receipt time were 1.3°C, 1.9°C, 2.0°C, 2.6°C and 4.7°C

GC/MS VOA

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

GC/MS Semi VOA

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

GC VOA

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

Herbicides

Method 8151A: The matrix spike duplicate (MSD) precision for preparation batch 500-740191 and analytical batch 500-740405 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS) precision was within acceptance limits.

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

Metals

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

General Chemistry

Method 300_48HR: The following samples were analyzed outside of analytical holding time due to instrument issues: W-231026-TS-22 (500-241697-6), W-231026-TS-22 (500-241697-6[MS]), W-231026-TS-22 (500-241697-6[MSD]) and W-231026-TS-25 (500-241697-7).

Method 9060A: CCV dropped below limit in the second injection however the average is still in range and the other three injection were in range therefore results are being reported. W-231026-TS-25 (500-241697-7), (CCB 500-741466/29), (CCV 500-741466/28).

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

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Client Sample ID: W-231026-TS-17

Lab Sample ID: 500-241697-1

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.18		0.10	0.10	ug/L	1		8151A	Total/NA
Calcium	12200	B	200	44.3	ug/L	1		6020A	Total Recoverable
Copper	2.9		2.0	0.50	ug/L	1		6020A	Total Recoverable
Magnesium	5640		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	1.6	J B	2.5	0.79	ug/L	1		6020A	Total Recoverable
Calcium	12100	B	200	44.3	ug/L	1		6020A	Dissolved
Copper	1.9	J	2.0	0.50	ug/L	1		6020A	Dissolved
Magnesium	5740		200	49.4	ug/L	1		6020A	Dissolved
Manganese	3.3	B	2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	39.4		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	30.2		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	0.63	J	1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	0.74	J	1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	2.2		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Quad	2.1		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	69.5		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-231026-TS-18

Lab Sample ID: 500-241697-2

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.11		0.095	0.094	ug/L	1		8151A	Total/NA
Calcium	12200	B	200	44.3	ug/L	1		6020A	Total Recoverable
Copper	1.9	J	2.0	0.50	ug/L	1		6020A	Total Recoverable
Magnesium	5860		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	1.7	J B	2.5	0.79	ug/L	1		6020A	Total Recoverable
Calcium	12500	B	200	44.3	ug/L	1		6020A	Dissolved
Copper	2.6		2.0	0.50	ug/L	1		6020A	Dissolved
Magnesium	5660		200	49.4	ug/L	1		6020A	Dissolved
Manganese	1.6	J B	2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	39.8		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	31.2		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	0.57	J	1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	0.74	J	1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	2.1		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Quad	1.9		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	69.5		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-231026-TS-19

Lab Sample ID: 500-241697-3

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.24		0.098	0.096	ug/L	1		8151A	Total/NA
Calcium	830	B	200	44.3	ug/L	1		6020A	Total Recoverable
Copper	4.3		2.0	0.50	ug/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Client Sample ID: W-231026-TS-19 (Continued)

Lab Sample ID: 500-241697-3

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Iron	1000		100	46.7	ug/L	1		6020A	Total Recoverable
Magnesium	506		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	22.4	B	2.5	0.79	ug/L	1		6020A	Total Recoverable
Zinc	18.0	J	20.0	6.9	ug/L	1		6020A	Total Recoverable
Arsenic	0.31	J	1.0	0.23	ug/L	1		6020A	Dissolved
Calcium	1510	B	200	44.3	ug/L	1		6020A	Dissolved
Copper	6.0		2.0	0.50	ug/L	1		6020A	Dissolved
Iron	1250		100	46.7	ug/L	1		6020A	Dissolved
Magnesium	882		200	49.4	ug/L	1		6020A	Dissolved
Manganese	25.4	B	2.5	0.79	ug/L	1		6020A	Dissolved
Zinc	15.8	J	20.0	6.9	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	2.3		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	3.8		0.50	0.25	mg/L	1		SM 2340B	Dissolved

Client Sample ID: W-231026-TS-20

Lab Sample ID: 500-241697-4

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methane	0.67	J	1.0	0.17	ug/L	1		RSK-175	Total/NA
Arsenic	1.0		1.0	0.23	ug/L	1		6020A	Total Recoverable
Calcium	16500	B	200	44.3	ug/L	1		6020A	Total Recoverable
Copper	32.7		2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	8780		100	46.7	ug/L	1		6020A	Total Recoverable
Magnesium	8640		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	183	B	2.5	0.79	ug/L	1		6020A	Total Recoverable
Zinc	17.7	J	20.0	6.9	ug/L	1		6020A	Total Recoverable
Calcium	19800	B	200	44.3	ug/L	1		6020A	Dissolved
Copper	1.3	J	2.0	0.50	ug/L	1		6020A	Dissolved
Magnesium	7160		200	49.4	ug/L	1		6020A	Dissolved
Manganese	14.4	B	2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	55.9		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	49.4		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	0.38	J	1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	0.59	J	1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	1.1		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Quad	1.3		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	91.4		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-231026-TS-21

Lab Sample ID: 500-241697-5

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.65	J	1.0	0.23	ug/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Client Sample ID: W-231026-TS-21 (Continued)

Lab Sample ID: 500-241697-5

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Calcium	68500	B	200	44.3	ug/L	1		6020A	Total Recoverable
Copper	0.75	J	2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	93.0	J	100	46.7	ug/L	1		6020A	Total Recoverable
Magnesium	21800		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	2.1	J B	2.5	0.79	ug/L	1		6020A	Total Recoverable
Arsenic	0.65	J	1.0	0.23	ug/L	1		6020A	Dissolved
Calcium	69300	B	200	44.3	ug/L	1		6020A	Dissolved
Copper	1.0	J	2.0	0.50	ug/L	1		6020A	Dissolved
Magnesium	21400		200	49.4	ug/L	1		6020A	Dissolved
Manganese	1.2	J B	2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	174		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	173		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	29.8		1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	2.1		1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	8.4		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Quad	0.74	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	197		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-231026-TS-22

Lab Sample ID: 500-241697-6

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.24	J	1.0	0.23	ug/L	1		6020A	Total Recoverable
Calcium	40700	B	200	44.3	ug/L	1		6020A	Total Recoverable
Copper	0.94	J	2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	109		100	46.7	ug/L	1		6020A	Total Recoverable
Magnesium	13600		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	4.4	B	2.5	0.79	ug/L	1		6020A	Total Recoverable
Calcium	40200	B	200	44.3	ug/L	1		6020A	Dissolved
Copper	2.6	B	2.0	0.50	ug/L	1		6020A	Dissolved
Magnesium	13600		200	49.4	ug/L	1		6020A	Dissolved
Manganese	1.4	J B	2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	103		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	100		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	0.48	J	1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	0.57	J H	1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	1.1		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Quad	0.50	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	169		5.0	3.7	mg/L	1		SM 2320B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

Detection Summary

Client: GHD Services Inc.
 Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Client Sample ID: W-231026-TS-25

Lab Sample ID: 500-241697-7

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.34	J	1.0	0.23	ug/L	1		6020A	Total
Calcium	34400	B	200	44.3	ug/L	1		6020A	Total Recoverable
Copper	1.1	J	2.0	0.50	ug/L	1		6020A	Total Recoverable
Magnesium	11900		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	1.7	J B	2.5	0.79	ug/L	1		6020A	Total Recoverable
Arsenic	0.28	J	1.0	0.23	ug/L	1		6020A	Dissolved
Calcium	35400	B	200	44.3	ug/L	1		6020A	Dissolved
Copper	2.8		2.0	0.50	ug/L	1		6020A	Dissolved
Magnesium	11700		200	49.4	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	89.7		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	88.3		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	17.3		1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	1.7	H	1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	4.0		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Quad	0.85	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	123		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: TRIP BLANK

Lab Sample ID: 500-241697-8

No Detections.

This Detection Summary does not include radiochemical test results.

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Method Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	EET CHI
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CHI
RSK-175	Dissolved Gases (GC)	RSK	EET CLE
8151A	Herbicides (GC)	SW846	EET CHI
6020A	Metals (ICP/MS)	SW846	EET CHI
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	EET CHI
300.0	Anions, Ion Chromatography	EPA	EET CHI
9060A	Organic Carbon, Total (TOC)	SW846	EET CHI
SM 2320B	Alkalinity	SM	EET CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CHI
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CHI
5030B	Purge and Trap	SW846	EET CHI
8151A	Extraction (Herbicides)	SW846	EET CHI

Protocol References:

EPA = US Environmental Protection Agency

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

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

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

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-241697-1	W-231026-TS-17	Water	10/26/23 10:46	10/27/23 08:55
500-241697-2	W-231026-TS-18	Water	10/26/23 10:46	10/27/23 08:55
500-241697-3	W-231026-TS-19	Water	10/26/23 11:01	10/27/23 08:55
500-241697-4	W-231026-TS-20	Water	10/26/23 11:55	10/27/23 08:55
500-241697-5	W-231026-TS-21	Water	10/26/23 13:07	10/27/23 08:55
500-241697-6	W-231026-TS-22	Water	10/26/23 13:49	10/27/23 08:55
500-241697-7	W-231026-TS-25	Water	10/26/23 15:01	10/27/23 08:55
500-241697-8	TRIP BLANK	Water	10/26/23 00:00	10/27/23 08:55

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Client Sample ID: W-231026-TS-17

Lab Sample ID: 500-241697-1

Date Collected: 10/26/23 10:46

Matrix: Water

Date Received: 10/27/23 08:55

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/06/23 17:04	1
Toluene	<0.15		0.50	0.15	ug/L			11/06/23 17:04	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/06/23 17:04	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/06/23 17:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		75 - 126		11/06/23 17:04	1
Toluene-d8 (Surr)	92		75 - 120		11/06/23 17:04	1
4-Bromofluorobenzene (Surr)	108		72 - 124		11/06/23 17:04	1
Dibromofluoromethane	104		75 - 120		11/06/23 17:04	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.27		0.88	0.27	ug/L		11/01/23 07:45	11/03/23 14:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	75		36 - 120	11/01/23 07:45	11/03/23 14:36	1
2-Fluorobiphenyl (Surr)	67		34 - 110	11/01/23 07:45	11/03/23 14:36	1
Terphenyl-d14 (Surr)	86		40 - 145	11/01/23 07:45	11/03/23 14:36	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			10/31/23 20:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	109		60 - 140		10/31/23 20:38	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.18		0.10	0.10	ug/L		11/02/23 10:32	11/03/23 14:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	80		25 - 130	11/02/23 10:32	11/03/23 14:15	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		11/08/23 09:02	11/10/23 00:05	1
Calcium	12200	B	200	44.3	ug/L		11/08/23 09:02	11/10/23 00:05	1
Copper	2.9		2.0	0.50	ug/L		11/13/23 19:06	11/15/23 22:36	1
Iron	<46.7		100	46.7	ug/L		11/08/23 09:02	11/10/23 00:05	1
Magnesium	5640		200	49.4	ug/L		11/08/23 09:02	11/10/23 00:05	1
Manganese	1.6	J B	2.5	0.79	ug/L		11/08/23 09:02	11/10/23 00:05	1
Zinc	<6.9		20.0	6.9	ug/L		11/08/23 09:02	11/10/23 00:05	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		11/08/23 09:02	11/10/23 00:09	1
Calcium	12100	B	200	44.3	ug/L		11/08/23 09:02	11/10/23 00:09	1
Copper	1.9	J	2.0	0.50	ug/L		11/13/23 19:06	11/15/23 22:40	1
Iron	<46.7		100	46.7	ug/L		11/08/23 09:02	11/10/23 00:09	1
Magnesium	5740		200	49.4	ug/L		11/08/23 09:02	11/10/23 00:09	1
Manganese	3.3	B	2.5	0.79	ug/L		11/08/23 09:02	11/10/23 00:09	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Client Sample ID: W-231026-TS-17

Lab Sample ID: 500-241697-1

Date Collected: 10/26/23 10:46

Matrix: Water

Date Received: 10/27/23 08:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		11/08/23 09:02	11/10/23 00:09	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	39.4		0.50	0.25	mg/L		11/08/23 09:02	11/13/23 08:00	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	30.2		0.50	0.25	mg/L		11/08/23 09:02	11/13/23 08:00	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	0.63	J	1.0	0.12	mg/L			10/27/23 16:05	1
Nitrate as N (EPA 300.0)	0.74	J	1.0	0.043	mg/L			10/27/23 16:05	1
Sulfate (EPA 300.0)	2.2		1.0	0.21	mg/L			10/27/23 16:05	1
Total Organic Carbon - Quad (SW846 9060A)	2.1		1.0	0.47	mg/L			11/07/23 20:43	1
Alkalinity (SM 2320B)	69.5		5.0	3.7	mg/L			11/08/23 00:47	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Client Sample ID: W-231026-TS-18

Lab Sample ID: 500-241697-2

Date Collected: 10/26/23 10:46

Matrix: Water

Date Received: 10/27/23 08:55

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/06/23 17:28	1
Toluene	<0.15		0.50	0.15	ug/L			11/06/23 17:28	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/06/23 17:28	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/06/23 17:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		75 - 126					11/06/23 17:28	1
Toluene-d8 (Surr)	92		75 - 120					11/06/23 17:28	1
4-Bromofluorobenzene (Surr)	107		72 - 124					11/06/23 17:28	1
Dibromofluoromethane	103		75 - 120					11/06/23 17:28	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.26		0.85	0.26	ug/L		11/01/23 07:45	11/03/23 16:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	70		36 - 120				11/01/23 07:45	11/03/23 16:15	1
2-Fluorobiphenyl (Surr)	59		34 - 110				11/01/23 07:45	11/03/23 16:15	1
Terphenyl-d14 (Surr)	84		40 - 145				11/01/23 07:45	11/03/23 16:15	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			10/31/23 20:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	112		60 - 140					10/31/23 20:55	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.11		0.095	0.094	ug/L		11/02/23 10:32	11/03/23 14:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	45		25 - 130				11/02/23 10:32	11/03/23 14:33	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		11/08/23 09:02	11/10/23 00:14	1
Calcium	12200	B	200	44.3	ug/L		11/08/23 09:02	11/10/23 00:14	1
Copper	1.9	J	2.0	0.50	ug/L		11/13/23 19:06	11/15/23 22:43	1
Iron	<46.7		100	46.7	ug/L		11/08/23 09:02	11/10/23 00:14	1
Magnesium	5860		200	49.4	ug/L		11/08/23 09:02	11/10/23 00:14	1
Manganese	1.7	J B	2.5	0.79	ug/L		11/08/23 09:02	11/10/23 00:14	1
Zinc	<6.9		20.0	6.9	ug/L		11/08/23 09:02	11/10/23 00:14	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		11/08/23 09:02	11/10/23 00:18	1
Calcium	12500	B	200	44.3	ug/L		11/08/23 09:02	11/10/23 00:18	1
Copper	2.6		2.0	0.50	ug/L		11/13/23 19:06	11/15/23 22:47	1
Iron	<46.7		100	46.7	ug/L		11/08/23 09:02	11/10/23 00:18	1
Magnesium	5660		200	49.4	ug/L		11/08/23 09:02	11/10/23 00:18	1
Manganese	1.6	J B	2.5	0.79	ug/L		11/08/23 09:02	11/10/23 00:18	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Client Sample ID: W-231026-TS-18

Lab Sample ID: 500-241697-2

Date Collected: 10/26/23 10:46

Matrix: Water

Date Received: 10/27/23 08:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		11/08/23 09:02	11/10/23 00:18	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	39.8		0.50	0.25	mg/L		11/08/23 09:02	11/13/23 08:00	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	31.2		0.50	0.25	mg/L		11/08/23 09:02	11/13/23 08:00	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	0.57	J	1.0	0.12	mg/L			10/27/23 16:20	1
Nitrate as N (EPA 300.0)	0.74	J	1.0	0.043	mg/L			10/27/23 16:20	1
Sulfate (EPA 300.0)	2.1		1.0	0.21	mg/L			10/27/23 16:20	1
Total Organic Carbon - Quad (SW846 9060A)	1.9		1.0	0.47	mg/L			11/07/23 21:10	1
Alkalinity (SM 2320B)	69.5		5.0	3.7	mg/L			11/08/23 00:55	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Client Sample ID: W-231026-TS-19

Lab Sample ID: 500-241697-3

Date Collected: 10/26/23 11:01

Matrix: Water

Date Received: 10/27/23 08:55

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/06/23 17:52	1
Toluene	<0.15		0.50	0.15	ug/L			11/06/23 17:52	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/06/23 17:52	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/06/23 17:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		75 - 126		11/06/23 17:52	1
Toluene-d8 (Surr)	93		75 - 120		11/06/23 17:52	1
4-Bromofluorobenzene (Surr)	108		72 - 124		11/06/23 17:52	1
Dibromofluoromethane	104		75 - 120		11/06/23 17:52	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.80	0.25	ug/L		11/01/23 07:45	11/03/23 16:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	61		36 - 120	11/01/23 07:45	11/03/23 16:40	1
2-Fluorobiphenyl (Surr)	54		34 - 110	11/01/23 07:45	11/03/23 16:40	1
Terphenyl-d14 (Surr)	79		40 - 145	11/01/23 07:45	11/03/23 16:40	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.24		0.098	0.096	ug/L		11/02/23 10:32	11/03/23 14:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	73		25 - 130	11/02/23 10:32	11/03/23 14:52	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		11/08/23 09:02	11/10/23 00:22	1
Calcium	830	B	200	44.3	ug/L		11/08/23 09:02	11/10/23 00:22	1
Copper	4.3		2.0	0.50	ug/L		11/13/23 19:06	11/15/23 22:57	1
Iron	1000		100	46.7	ug/L		11/08/23 09:02	11/10/23 00:22	1
Magnesium	506		200	49.4	ug/L		11/08/23 09:02	11/10/23 00:22	1
Manganese	22.4	B	2.5	0.79	ug/L		11/08/23 09:02	11/10/23 00:22	1
Zinc	18.0	J	20.0	6.9	ug/L		11/08/23 09:02	11/10/23 00:22	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.31	J	1.0	0.23	ug/L		11/08/23 09:02	11/10/23 00:27	1
Calcium	1510	B	200	44.3	ug/L		11/08/23 09:02	11/10/23 00:27	1
Copper	6.0		2.0	0.50	ug/L		11/13/23 19:06	11/15/23 23:00	1
Iron	1250		100	46.7	ug/L		11/08/23 09:02	11/10/23 00:27	1
Magnesium	882		200	49.4	ug/L		11/08/23 09:02	11/10/23 00:27	1
Manganese	25.4	B	2.5	0.79	ug/L		11/08/23 09:02	11/10/23 00:27	1
Zinc	15.8	J	20.0	6.9	ug/L		11/08/23 09:02	11/10/23 00:27	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	2.3		0.50	0.25	mg/L		11/08/23 09:02	11/13/23 08:00	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Client Sample ID: W-231026-TS-19

Lab Sample ID: 500-241697-3

Date Collected: 10/26/23 11:01

Matrix: Water

Date Received: 10/27/23 08:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	3.8		0.50	0.25	mg/L		11/08/23 09:02	11/13/23 08:00	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Client Sample ID: W-231026-TS-20

Lab Sample ID: 500-241697-4

Date Collected: 10/26/23 11:55

Matrix: Water

Date Received: 10/27/23 08:55

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/06/23 18:15	1
Toluene	<0.15		0.50	0.15	ug/L			11/06/23 18:15	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/06/23 18:15	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/06/23 18:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		75 - 126					11/06/23 18:15	1
Toluene-d8 (Surr)	91		75 - 120					11/06/23 18:15	1
4-Bromofluorobenzene (Surr)	109		72 - 124					11/06/23 18:15	1
Dibromofluoromethane	107		75 - 120					11/06/23 18:15	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.30		0.96	0.30	ug/L		11/01/23 07:45	11/03/23 17:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	74		36 - 120				11/01/23 07:45	11/03/23 17:05	1
2-Fluorobiphenyl (Surr)	61		34 - 110				11/01/23 07:45	11/03/23 17:05	1
Terphenyl-d14 (Surr)	74		40 - 145				11/01/23 07:45	11/03/23 17:05	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	0.67	J	1.0	0.17	ug/L			11/02/23 15:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	113		60 - 140					11/02/23 15:50	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.11		0.11	0.11	ug/L		11/02/23 10:32	11/03/23 15:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	42		25 - 130				11/02/23 10:32	11/03/23 15:10	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.0		1.0	0.23	ug/L		11/08/23 09:02	11/10/23 00:31	1
Calcium	16500	B	200	44.3	ug/L		11/13/23 19:06	11/15/23 23:04	1
Copper	32.7		2.0	0.50	ug/L		11/13/23 19:06	11/15/23 23:04	1
Iron	8780		100	46.7	ug/L		11/08/23 09:02	11/10/23 00:31	1
Magnesium	8640		200	49.4	ug/L		11/08/23 09:02	11/10/23 00:31	1
Manganese	183	B	2.5	0.79	ug/L		11/08/23 09:02	11/10/23 00:31	1
Zinc	17.7	J	20.0	6.9	ug/L		11/08/23 09:02	11/10/23 00:31	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		11/08/23 09:02	11/10/23 00:43	1
Calcium	19800	B	200	44.3	ug/L		11/08/23 09:02	11/10/23 00:43	1
Copper	1.3	J	2.0	0.50	ug/L		11/13/23 19:06	11/15/23 23:07	1
Iron	<46.7		100	46.7	ug/L		11/08/23 09:02	11/10/23 00:43	1
Magnesium	7160		200	49.4	ug/L		11/08/23 09:02	11/10/23 00:43	1
Manganese	14.4	B	2.5	0.79	ug/L		11/08/23 09:02	11/10/23 00:43	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Client Sample ID: W-231026-TS-20

Lab Sample ID: 500-241697-4

Date Collected: 10/26/23 11:55

Matrix: Water

Date Received: 10/27/23 08:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		11/08/23 09:02	11/10/23 00:43	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	55.9		0.50	0.25	mg/L		11/08/23 09:02	11/13/23 08:00	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	49.4		0.50	0.25	mg/L		11/08/23 09:02	11/13/23 08:00	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	0.38	J	1.0	0.12	mg/L			10/27/23 16:35	1
Nitrate as N (EPA 300.0)	0.59	J	1.0	0.043	mg/L			10/27/23 16:35	1
Sulfate (EPA 300.0)	1.1		1.0	0.21	mg/L			10/27/23 16:35	1
Total Organic Carbon - Quad (SW846 9060A)	1.3		1.0	0.47	mg/L			11/07/23 23:20	1
Alkalinity (SM 2320B)	91.4		5.0	3.7	mg/L			11/08/23 01:03	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Client Sample ID: W-231026-TS-21

Lab Sample ID: 500-241697-5

Date Collected: 10/26/23 13:07

Matrix: Water

Date Received: 10/27/23 08:55

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/07/23 00:36	1
Toluene	<0.15		0.50	0.15	ug/L			11/07/23 00:36	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/07/23 00:36	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/07/23 00:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		75 - 126					11/07/23 00:36	1
Toluene-d8 (Surr)	94		75 - 120					11/07/23 00:36	1
4-Bromofluorobenzene (Surr)	97		72 - 124					11/07/23 00:36	1
Dibromofluoromethane	93		75 - 120					11/07/23 00:36	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.26		0.85	0.26	ug/L		11/01/23 07:45	11/03/23 17:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	68		36 - 120				11/01/23 07:45	11/03/23 17:30	1
2-Fluorobiphenyl (Surr)	56		34 - 110				11/01/23 07:45	11/03/23 17:30	1
Terphenyl-d14 (Surr)	84		40 - 145				11/01/23 07:45	11/03/23 17:30	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			11/02/23 16:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	113		60 - 140					11/02/23 16:07	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.10		0.10	0.10	ug/L		11/02/23 10:32	11/03/23 15:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	49		25 - 130				11/02/23 10:32	11/03/23 15:28	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.65	J	1.0	0.23	ug/L		11/08/23 09:02	11/10/23 00:48	1
Calcium	68500	B	200	44.3	ug/L		11/08/23 09:02	11/10/23 00:48	1
Copper	0.75	J	2.0	0.50	ug/L		11/13/23 19:06	11/15/23 23:11	1
Iron	93.0	J	100	46.7	ug/L		11/08/23 09:02	11/10/23 00:48	1
Magnesium	21800		200	49.4	ug/L		11/08/23 09:02	11/10/23 00:48	1
Manganese	2.1	J B	2.5	0.79	ug/L		11/08/23 09:02	11/10/23 00:48	1
Zinc	<6.9		20.0	6.9	ug/L		11/08/23 09:02	11/10/23 00:48	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.65	J	1.0	0.23	ug/L		11/08/23 09:02	11/10/23 00:52	1
Calcium	69300	B	200	44.3	ug/L		11/08/23 09:02	11/10/23 00:52	1
Copper	1.0	J	2.0	0.50	ug/L		11/13/23 19:06	11/15/23 23:14	1
Iron	<46.7		100	46.7	ug/L		11/08/23 09:02	11/10/23 00:52	1
Magnesium	21400		200	49.4	ug/L		11/08/23 09:02	11/10/23 00:52	1
Manganese	1.2	J B	2.5	0.79	ug/L		11/08/23 09:02	11/10/23 00:52	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Client Sample ID: W-231026-TS-21

Lab Sample ID: 500-241697-5

Date Collected: 10/26/23 13:07

Matrix: Water

Date Received: 10/27/23 08:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		11/08/23 09:02	11/10/23 00:52	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	174		0.50	0.25	mg/L		11/08/23 09:02	11/13/23 08:00	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	173		0.50	0.25	mg/L		11/08/23 09:02	11/13/23 08:00	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	29.8		1.0	0.12	mg/L			11/01/23 18:56	1
Nitrate as N (EPA 300.0)	2.1		1.0	0.043	mg/L			10/27/23 16:50	1
Sulfate (EPA 300.0)	8.4		1.0	0.21	mg/L			10/27/23 16:50	1
Total Organic Carbon - Quad (SW846 9060A)	0.74	J	1.0	0.47	mg/L			11/07/23 23:47	1
Alkalinity (SM 2320B)	197		5.0	3.7	mg/L			11/08/23 01:12	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Client Sample ID: W-231026-TS-22

Lab Sample ID: 500-241697-6

Date Collected: 10/26/23 13:49

Matrix: Water

Date Received: 10/27/23 08:55

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/06/23 18:39	1
Toluene	<0.15		0.50	0.15	ug/L			11/06/23 18:39	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/06/23 18:39	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/06/23 18:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		75 - 126		11/06/23 18:39	1
Toluene-d8 (Surr)	91		75 - 120		11/06/23 18:39	1
4-Bromofluorobenzene (Surr)	106		72 - 124		11/06/23 18:39	1
Dibromofluoromethane	103		75 - 120		11/06/23 18:39	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.24	F2	0.78	0.24	ug/L		11/01/23 07:45	11/03/23 17:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	73		36 - 120	11/01/23 07:45	11/03/23 17:55	1
2-Fluorobiphenyl (Surr)	63		34 - 110	11/01/23 07:45	11/03/23 17:55	1
Terphenyl-d14 (Surr)	83		40 - 145	11/01/23 07:45	11/03/23 17:55	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			11/02/23 16:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	112		60 - 140		11/02/23 16:24	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.10	F2	0.10	0.10	ug/L		11/02/23 10:32	11/03/23 15:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	35		25 - 130	11/02/23 10:32	11/03/23 15:47	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.24	J	1.0	0.23	ug/L		11/08/23 09:02	11/10/23 00:56	1
Calcium	40700	B	200	44.3	ug/L		11/08/23 09:02	11/10/23 00:56	1
Copper	0.94	J	2.0	0.50	ug/L		11/16/23 20:33	11/21/23 15:02	1
Iron	109		100	46.7	ug/L		11/08/23 09:02	11/10/23 00:56	1
Magnesium	13600		200	49.4	ug/L		11/08/23 09:02	11/10/23 00:56	1
Manganese	4.4	B	2.5	0.79	ug/L		11/08/23 09:02	11/10/23 00:56	1
Zinc	<6.9		20.0	6.9	ug/L		11/08/23 09:02	11/10/23 00:56	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		11/08/23 09:02	11/10/23 01:17	1
Calcium	40200	B	200	44.3	ug/L		11/08/23 09:02	11/10/23 01:17	1
Copper	2.6	B	2.0	0.50	ug/L		11/08/23 19:41	11/13/23 19:48	1
Iron	<46.7		100	46.7	ug/L		11/08/23 09:02	11/10/23 01:17	1
Magnesium	13600		200	49.4	ug/L		11/08/23 09:02	11/10/23 01:17	1
Manganese	1.4	J B	2.5	0.79	ug/L		11/08/23 09:02	11/10/23 01:17	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Client Sample ID: W-231026-TS-22

Lab Sample ID: 500-241697-6

Date Collected: 10/26/23 13:49

Matrix: Water

Date Received: 10/27/23 08:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		11/08/23 09:02	11/10/23 01:17	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	103		0.50	0.25	mg/L		11/08/23 09:02	11/13/23 08:00	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	100		0.50	0.25	mg/L		11/08/23 09:02	11/13/23 08:00	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	0.48	J	1.0	0.12	mg/L			10/31/23 18:36	1
Nitrate as N (EPA 300.0)	0.57	J H	1.0	0.043	mg/L			10/31/23 18:36	1
Sulfate (EPA 300.0)	1.1		1.0	0.21	mg/L			10/31/23 18:36	1
Total Organic Carbon - Quad (SW846 9060A)	0.50	J	1.0	0.47	mg/L			11/08/23 00:14	1
Alkalinity (SM 2320B)	169		5.0	3.7	mg/L			11/08/23 01:21	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Client Sample ID: W-231026-TS-25

Lab Sample ID: 500-241697-7

Date Collected: 10/26/23 15:01

Matrix: Water

Date Received: 10/27/23 08:55

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/07/23 00:59	1
Toluene	<0.15		0.50	0.15	ug/L			11/07/23 00:59	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/07/23 00:59	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/07/23 00:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		75 - 126		11/07/23 00:59	1
Toluene-d8 (Surr)	91		75 - 120		11/07/23 00:59	1
4-Bromofluorobenzene (Surr)	102		72 - 124		11/07/23 00:59	1
Dibromofluoromethane	89		75 - 120		11/07/23 00:59	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.80	0.25	ug/L		11/01/23 07:45	11/03/23 19:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	82		36 - 120	11/01/23 07:45	11/03/23 19:09	1
2-Fluorobiphenyl (Surr)	73		34 - 110	11/01/23 07:45	11/03/23 19:09	1
Terphenyl-d14 (Surr)	91		40 - 145	11/01/23 07:45	11/03/23 19:09	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			11/02/23 17:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	113		60 - 140		11/02/23 17:15	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.10		0.10	0.10	ug/L		11/02/23 10:32	11/03/23 16:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	74		25 - 130	11/02/23 10:32	11/03/23 16:42	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.34	J	1.0	0.23	ug/L		11/08/23 09:02	11/10/23 01:47	1
Calcium	34400	B	200	44.3	ug/L		11/08/23 09:02	11/10/23 01:47	1
Copper	1.1	J	2.0	0.50	ug/L		11/16/23 20:33	11/21/23 15:23	1
Iron	<46.7		100	46.7	ug/L		11/08/23 09:02	11/10/23 01:47	1
Magnesium	11900		200	49.4	ug/L		11/08/23 09:02	11/10/23 01:47	1
Manganese	1.7	J B	2.5	0.79	ug/L		11/08/23 09:02	11/10/23 01:47	1
Zinc	<6.9		20.0	6.9	ug/L		11/08/23 09:02	11/10/23 01:47	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.28	J	1.0	0.23	ug/L		11/08/23 09:02	11/10/23 01:51	1
Calcium	35400	B	200	44.3	ug/L		11/08/23 09:02	11/10/23 01:51	1
Copper	2.8		2.0	0.50	ug/L		11/16/23 20:33	11/21/23 15:19	1
Iron	<46.7		100	46.7	ug/L		11/08/23 09:02	11/10/23 01:51	1
Magnesium	11700		200	49.4	ug/L		11/08/23 09:02	11/10/23 01:51	1
Manganese	<0.79		2.5	0.79	ug/L		11/08/23 09:02	11/10/23 01:51	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Client Sample ID: W-231026-TS-25

Lab Sample ID: 500-241697-7

Date Collected: 10/26/23 15:01

Matrix: Water

Date Received: 10/27/23 08:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		11/08/23 09:02	11/10/23 01:51	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	89.7		0.50	0.25	mg/L		11/08/23 09:02	11/13/23 08:00	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	88.3		0.50	0.25	mg/L		11/08/23 09:02	11/13/23 08:00	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	17.3		1.0	0.12	mg/L			10/31/23 19:22	1
Nitrate as N (EPA 300.0)	1.7	H	1.0	0.043	mg/L			10/31/23 19:22	1
Sulfate (EPA 300.0)	4.0		1.0	0.21	mg/L			10/31/23 19:22	1
Total Organic Carbon - Quad (SW846 9060A)	0.85	J	1.0	0.47	mg/L			11/08/23 23:42	1
Alkalinity (SM 2320B)	123		5.0	3.7	mg/L			11/08/23 01:30	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 500-241697-8

Date Collected: 10/26/23 00:00

Matrix: Water

Date Received: 10/27/23 08:55

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/06/23 12:14	1
Toluene	<0.15		0.50	0.15	ug/L			11/06/23 12:14	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/06/23 12:14	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/06/23 12:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		75 - 126		11/06/23 12:14	1
Toluene-d8 (Surr)	91		75 - 120		11/06/23 12:14	1
4-Bromofluorobenzene (Surr)	105		72 - 124		11/06/23 12:14	1
Dibromofluoromethane	103		75 - 120		11/06/23 12:14	1

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
F2	MS/MSD RPD exceeds control limits

GC VOA

Qualifier	Qualifier Description
J	Reported value was between the limit of detection and the limit of quantitation.

GC Semi VOA

Qualifier	Qualifier Description
F2	MS/MSD RPD exceeds control limits

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	Compound was found in the blank and sample.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL, and the absolute difference between results is < the upper reporting limits for both.
J	Reported value was between the limit of detection and the limit of quantitation.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.
J	Reported value was between the limit of detection and the limit of quantitation.

Glossary

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

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

GC/MS VOA

Analysis Batch: 740626

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241697-1	W-231026-TS-17	Total/NA	Water	8260B	
500-241697-2	W-231026-TS-18	Total/NA	Water	8260B	
500-241697-3	W-231026-TS-19	Total/NA	Water	8260B	
500-241697-4	W-231026-TS-20	Total/NA	Water	8260B	
500-241697-6	W-231026-TS-22	Total/NA	Water	8260B	
500-241697-8	TRIP BLANK	Total/NA	Water	8260B	
MB 500-740626/6	Method Blank	Total/NA	Water	8260B	
LCS 500-740626/4	Lab Control Sample	Total/NA	Water	8260B	
500-241697-6 MS	W-231026-TS-22	Total/NA	Water	8260B	
500-241697-6 MSD	W-231026-TS-22	Total/NA	Water	8260B	

Analysis Batch: 740806

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241697-5	W-231026-TS-21	Total/NA	Water	8260B	
500-241697-7	W-231026-TS-25	Total/NA	Water	8260B	
MB 500-740806/7	Method Blank	Total/NA	Water	8260B	
LCS 500-740806/4	Lab Control Sample	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 739845

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241697-1	W-231026-TS-17	Total/NA	Water	3510C	
500-241697-2	W-231026-TS-18	Total/NA	Water	3510C	
500-241697-3	W-231026-TS-19	Total/NA	Water	3510C	
500-241697-4	W-231026-TS-20	Total/NA	Water	3510C	
500-241697-5	W-231026-TS-21	Total/NA	Water	3510C	
500-241697-6	W-231026-TS-22	Total/NA	Water	3510C	
500-241697-7	W-231026-TS-25	Total/NA	Water	3510C	
MB 500-739845/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-739845/2-A	Lab Control Sample	Total/NA	Water	3510C	
500-241697-6 MS	W-231026-TS-22	Total/NA	Water	3510C	
500-241697-6 MSD	W-231026-TS-22	Total/NA	Water	3510C	

Analysis Batch: 740334

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241697-1	W-231026-TS-17	Total/NA	Water	8270E	739845
500-241697-2	W-231026-TS-18	Total/NA	Water	8270E	739845
500-241697-3	W-231026-TS-19	Total/NA	Water	8270E	739845
500-241697-4	W-231026-TS-20	Total/NA	Water	8270E	739845
500-241697-5	W-231026-TS-21	Total/NA	Water	8270E	739845
500-241697-6	W-231026-TS-22	Total/NA	Water	8270E	739845
500-241697-7	W-231026-TS-25	Total/NA	Water	8270E	739845
MB 500-739845/1-A	Method Blank	Total/NA	Water	8270E	739845
LCS 500-739845/2-A	Lab Control Sample	Total/NA	Water	8270E	739845
500-241697-6 MS	W-231026-TS-22	Total/NA	Water	8270E	739845
500-241697-6 MSD	W-231026-TS-22	Total/NA	Water	8270E	739845

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

GC VOA

Analysis Batch: 592907

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241697-1	W-231026-TS-17	Total/NA	Water	RSK-175	
500-241697-2	W-231026-TS-18	Total/NA	Water	RSK-175	
MB 240-592907/3	Method Blank	Total/NA	Water	RSK-175	
LCS 240-592907/4	Lab Control Sample	Total/NA	Water	RSK-175	

Analysis Batch: 593187

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241697-4	W-231026-TS-20	Total/NA	Water	RSK-175	
500-241697-5	W-231026-TS-21	Total/NA	Water	RSK-175	
500-241697-6	W-231026-TS-22	Total/NA	Water	RSK-175	
500-241697-7	W-231026-TS-25	Total/NA	Water	RSK-175	
MB 240-593187/3	Method Blank	Total/NA	Water	RSK-175	
LCS 240-593187/4	Lab Control Sample	Total/NA	Water	RSK-175	
500-241697-6 MS	W-231026-TS-22	Total/NA	Water	RSK-175	
500-241697-6 MSD	W-231026-TS-22	Total/NA	Water	RSK-175	

GC Semi VOA

Prep Batch: 740191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241697-1	W-231026-TS-17	Total/NA	Water	8151A	
500-241697-2	W-231026-TS-18	Total/NA	Water	8151A	
500-241697-3	W-231026-TS-19	Total/NA	Water	8151A	
500-241697-4	W-231026-TS-20	Total/NA	Water	8151A	
500-241697-5	W-231026-TS-21	Total/NA	Water	8151A	
500-241697-6	W-231026-TS-22	Total/NA	Water	8151A	
500-241697-7	W-231026-TS-25	Total/NA	Water	8151A	
MB 500-740191/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-740191/2-A	Lab Control Sample	Total/NA	Water	8151A	
500-241697-6 MS	W-231026-TS-22	Total/NA	Water	8151A	
500-241697-6 MSD	W-231026-TS-22	Total/NA	Water	8151A	

Analysis Batch: 740405

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241697-1	W-231026-TS-17	Total/NA	Water	8151A	740191
500-241697-2	W-231026-TS-18	Total/NA	Water	8151A	740191
500-241697-3	W-231026-TS-19	Total/NA	Water	8151A	740191
500-241697-4	W-231026-TS-20	Total/NA	Water	8151A	740191
500-241697-5	W-231026-TS-21	Total/NA	Water	8151A	740191
500-241697-6	W-231026-TS-22	Total/NA	Water	8151A	740191
500-241697-7	W-231026-TS-25	Total/NA	Water	8151A	740191
MB 500-740191/1-A	Method Blank	Total/NA	Water	8151A	740191
LCS 500-740191/2-A	Lab Control Sample	Total/NA	Water	8151A	740191
500-241697-6 MS	W-231026-TS-22	Total/NA	Water	8151A	740191
500-241697-6 MSD	W-231026-TS-22	Total/NA	Water	8151A	740191

Metals

Prep Batch: 741169

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241697-1	W-231026-TS-17	Dissolved	Water	3005A	
500-241697-1	W-231026-TS-17	Total Recoverable	Water	3005A	

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Metals (Continued)

Prep Batch: 741169 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241697-2	W-231026-TS-18	Dissolved	Water	3005A	
500-241697-2	W-231026-TS-18	Total Recoverable	Water	3005A	
500-241697-3	W-231026-TS-19	Dissolved	Water	3005A	
500-241697-3	W-231026-TS-19	Total Recoverable	Water	3005A	
500-241697-4	W-231026-TS-20	Dissolved	Water	3005A	
500-241697-4	W-231026-TS-20	Total Recoverable	Water	3005A	
500-241697-5	W-231026-TS-21	Dissolved	Water	3005A	
500-241697-5	W-231026-TS-21	Total Recoverable	Water	3005A	
500-241697-6	W-231026-TS-22	Dissolved	Water	3005A	
500-241697-6	W-231026-TS-22	Total Recoverable	Water	3005A	
500-241697-7	W-231026-TS-25	Dissolved	Water	3005A	
500-241697-7	W-231026-TS-25	Total Recoverable	Water	3005A	
MB 500-741169/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-741169/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
500-241697-6 MS	W-231026-TS-22	Dissolved	Water	3005A	
500-241697-6 MS	W-231026-TS-22	Total Recoverable	Water	3005A	
500-241697-6 MSD	W-231026-TS-22	Dissolved	Water	3005A	
500-241697-6 MSD	W-231026-TS-22	Total Recoverable	Water	3005A	
500-241697-6 DU	W-231026-TS-22	Dissolved	Water	3005A	
500-241697-6 DU	W-231026-TS-22	Total Recoverable	Water	3005A	

Prep Batch: 741282

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241697-6	W-231026-TS-22	Dissolved	Water	3005A	
MB 500-741282/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-741282/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
500-241697-6 MS	W-231026-TS-22	Dissolved	Water	3005A	
500-241697-6 MSD	W-231026-TS-22	Dissolved	Water	3005A	
500-241697-6 DU	W-231026-TS-22	Dissolved	Water	3005A	

Analysis Batch: 741658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241697-1	W-231026-TS-17	Dissolved	Water	6020A	741169
500-241697-1	W-231026-TS-17	Total Recoverable	Water	6020A	741169
500-241697-2	W-231026-TS-18	Dissolved	Water	6020A	741169
500-241697-2	W-231026-TS-18	Total Recoverable	Water	6020A	741169
500-241697-3	W-231026-TS-19	Dissolved	Water	6020A	741169
500-241697-3	W-231026-TS-19	Total Recoverable	Water	6020A	741169
500-241697-4	W-231026-TS-20	Dissolved	Water	6020A	741169
500-241697-4	W-231026-TS-20	Total Recoverable	Water	6020A	741169
500-241697-5	W-231026-TS-21	Dissolved	Water	6020A	741169
500-241697-5	W-231026-TS-21	Total Recoverable	Water	6020A	741169
500-241697-6	W-231026-TS-22	Dissolved	Water	6020A	741169
500-241697-6	W-231026-TS-22	Total Recoverable	Water	6020A	741169
500-241697-7	W-231026-TS-25	Dissolved	Water	6020A	741169
500-241697-7	W-231026-TS-25	Total Recoverable	Water	6020A	741169
MB 500-741169/1-A	Method Blank	Total Recoverable	Water	6020A	741169
LCS 500-741169/2-A	Lab Control Sample	Total Recoverable	Water	6020A	741169
500-241697-6 MS	W-231026-TS-22	Dissolved	Water	6020A	741169
500-241697-6 MS	W-231026-TS-22	Total Recoverable	Water	6020A	741169
500-241697-6 MSD	W-231026-TS-22	Dissolved	Water	6020A	741169

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Metals (Continued)

Analysis Batch: 741658 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241697-6 MSD	W-231026-TS-22	Total Recoverable	Water	6020A	741169
500-241697-6 DU	W-231026-TS-22	Dissolved	Water	6020A	741169
500-241697-6 DU	W-231026-TS-22	Total Recoverable	Water	6020A	741169

Analysis Batch: 741832

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241697-1	W-231026-TS-17	Dissolved	Water	SM 2340B	741169
500-241697-1	W-231026-TS-17	Total Recoverable	Water	SM 2340B	741169
500-241697-2	W-231026-TS-18	Dissolved	Water	SM 2340B	741169
500-241697-2	W-231026-TS-18	Total Recoverable	Water	SM 2340B	741169
500-241697-3	W-231026-TS-19	Dissolved	Water	SM 2340B	741169
500-241697-3	W-231026-TS-19	Total Recoverable	Water	SM 2340B	741169
500-241697-4	W-231026-TS-20	Dissolved	Water	SM 2340B	741169
500-241697-4	W-231026-TS-20	Total Recoverable	Water	SM 2340B	741169
500-241697-5	W-231026-TS-21	Dissolved	Water	SM 2340B	741169
500-241697-5	W-231026-TS-21	Total Recoverable	Water	SM 2340B	741169
500-241697-6	W-231026-TS-22	Dissolved	Water	SM 2340B	741169
500-241697-6	W-231026-TS-22	Total Recoverable	Water	SM 2340B	741169
500-241697-7	W-231026-TS-25	Dissolved	Water	SM 2340B	741169
500-241697-7	W-231026-TS-25	Total Recoverable	Water	SM 2340B	741169

Prep Batch: 741964

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241697-1	W-231026-TS-17	Dissolved	Water	3005A	
500-241697-1	W-231026-TS-17	Total Recoverable	Water	3005A	
500-241697-2	W-231026-TS-18	Dissolved	Water	3005A	
500-241697-2	W-231026-TS-18	Total Recoverable	Water	3005A	
500-241697-3	W-231026-TS-19	Dissolved	Water	3005A	
500-241697-3	W-231026-TS-19	Total Recoverable	Water	3005A	
500-241697-4	W-231026-TS-20	Dissolved	Water	3005A	
500-241697-4	W-231026-TS-20	Total Recoverable	Water	3005A	
500-241697-5	W-231026-TS-21	Dissolved	Water	3005A	
500-241697-5	W-231026-TS-21	Total Recoverable	Water	3005A	
MB 500-741964/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-741964/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 742038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241697-6	W-231026-TS-22	Dissolved	Water	6020A	741282
MB 500-741282/1-A	Method Blank	Total Recoverable	Water	6020A	741282
LCS 500-741282/2-A	Lab Control Sample	Total Recoverable	Water	6020A	741282
500-241697-6 MS	W-231026-TS-22	Dissolved	Water	6020A	741282
500-241697-6 MSD	W-231026-TS-22	Dissolved	Water	6020A	741282
500-241697-6 DU	W-231026-TS-22	Dissolved	Water	6020A	741282

Analysis Batch: 742504

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241697-1	W-231026-TS-17	Dissolved	Water	6020A	741964
500-241697-1	W-231026-TS-17	Total Recoverable	Water	6020A	741964
500-241697-2	W-231026-TS-18	Dissolved	Water	6020A	741964
500-241697-2	W-231026-TS-18	Total Recoverable	Water	6020A	741964

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Metals (Continued)

Analysis Batch: 742504 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241697-3	W-231026-TS-19	Dissolved	Water	6020A	741964
500-241697-3	W-231026-TS-19	Total Recoverable	Water	6020A	741964
500-241697-4	W-231026-TS-20	Dissolved	Water	6020A	741964
500-241697-4	W-231026-TS-20	Total Recoverable	Water	6020A	741964
500-241697-5	W-231026-TS-21	Dissolved	Water	6020A	741964
500-241697-5	W-231026-TS-21	Total Recoverable	Water	6020A	741964
MB 500-741964/1-A	Method Blank	Total Recoverable	Water	6020A	741964
LCS 500-741964/2-A	Lab Control Sample	Total Recoverable	Water	6020A	741964

Prep Batch: 742684

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241697-6	W-231026-TS-22	Total Recoverable	Water	3005A	
500-241697-7	W-231026-TS-25	Dissolved	Water	3005A	
500-241697-7	W-231026-TS-25	Total Recoverable	Water	3005A	
MB 500-742684/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-742684/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
500-241697-6 MS	W-231026-TS-22	Total Recoverable	Water	3005A	
500-241697-6 MSD	W-231026-TS-22	Total Recoverable	Water	3005A	
500-241697-6 DU	W-231026-TS-22	Total Recoverable	Water	3005A	

Analysis Batch: 743511

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241697-6	W-231026-TS-22	Total Recoverable	Water	6020A	742684
500-241697-7	W-231026-TS-25	Dissolved	Water	6020A	742684
500-241697-7	W-231026-TS-25	Total Recoverable	Water	6020A	742684
MB 500-742684/1-A	Method Blank	Total Recoverable	Water	6020A	742684
LCS 500-742684/2-A	Lab Control Sample	Total Recoverable	Water	6020A	742684
500-241697-6 MS	W-231026-TS-22	Total Recoverable	Water	6020A	742684
500-241697-6 MSD	W-231026-TS-22	Total Recoverable	Water	6020A	742684
500-241697-6 DU	W-231026-TS-22	Total Recoverable	Water	6020A	742684

General Chemistry

Analysis Batch: 739204

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241697-1	W-231026-TS-17	Total/NA	Water	300.0	
500-241697-2	W-231026-TS-18	Total/NA	Water	300.0	
500-241697-4	W-231026-TS-20	Total/NA	Water	300.0	
500-241697-5	W-231026-TS-21	Total/NA	Water	300.0	
MB 500-739204/3	Method Blank	Total/NA	Water	300.0	
LCS 500-739204/4	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 739240

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241697-1	W-231026-TS-17	Total/NA	Water	300.0	
500-241697-2	W-231026-TS-18	Total/NA	Water	300.0	
500-241697-4	W-231026-TS-20	Total/NA	Water	300.0	
500-241697-5	W-231026-TS-21	Total/NA	Water	300.0	
MB 500-739240/3	Method Blank	Total/NA	Water	300.0	
LCS 500-739240/4	Lab Control Sample	Total/NA	Water	300.0	

QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

General Chemistry

Analysis Batch: 739774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241697-6	W-231026-TS-22	Total/NA	Water	300.0	
500-241697-7	W-231026-TS-25	Total/NA	Water	300.0	
MB 500-739774/11	Method Blank	Total/NA	Water	300.0	
LCS 500-739774/12	Lab Control Sample	Total/NA	Water	300.0	
500-241697-6 MS	W-231026-TS-22	Total/NA	Water	300.0	
500-241697-6 MSD	W-231026-TS-22	Total/NA	Water	300.0	

Analysis Batch: 739775

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241697-6	W-231026-TS-22	Total/NA	Water	300.0	
500-241697-7	W-231026-TS-25	Total/NA	Water	300.0	
MB 500-739775/11	Method Blank	Total/NA	Water	300.0	
LCS 500-739775/12	Lab Control Sample	Total/NA	Water	300.0	
500-241697-6 MS	W-231026-TS-22	Total/NA	Water	300.0	
500-241697-6 MSD	W-231026-TS-22	Total/NA	Water	300.0	

Analysis Batch: 739972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241697-5	W-231026-TS-21	Total/NA	Water	300.0	
MB 500-739972/11	Method Blank	Total/NA	Water	300.0	
LCS 500-739972/12	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 741150

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241697-1	W-231026-TS-17	Total/NA	Water	SM 2320B	
500-241697-2	W-231026-TS-18	Total/NA	Water	SM 2320B	
500-241697-4	W-231026-TS-20	Total/NA	Water	SM 2320B	
500-241697-5	W-231026-TS-21	Total/NA	Water	SM 2320B	
500-241697-6	W-231026-TS-22	Total/NA	Water	SM 2320B	
500-241697-7	W-231026-TS-25	Total/NA	Water	SM 2320B	
MB 500-741150/53	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-741150/81	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 741156

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241697-1	W-231026-TS-17	Total/NA	Water	9060A	
500-241697-2	W-231026-TS-18	Total/NA	Water	9060A	
500-241697-4	W-231026-TS-20	Total/NA	Water	9060A	
500-241697-5	W-231026-TS-21	Total/NA	Water	9060A	
500-241697-6	W-231026-TS-22	Total/NA	Water	9060A	
MB 500-741156/30	Method Blank	Total/NA	Water	9060A	
MB 500-741156/6	Method Blank	Total/NA	Water	9060A	
LCS 500-741156/31	Lab Control Sample	Total/NA	Water	9060A	
LCS 500-741156/7	Lab Control Sample	Total/NA	Water	9060A	
LCSD 500-741156/8	Lab Control Sample Dup	Total/NA	Water	9060A	
500-241697-6 MS	W-231026-TS-22	Total/NA	Water	9060A	
500-241697-6 MSD	W-231026-TS-22	Total/NA	Water	9060A	

Analysis Batch: 741466

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241697-7	W-231026-TS-25	Total/NA	Water	9060A	

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

General Chemistry (Continued)

Analysis Batch: 741466 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-741466/6	Method Blank	Total/NA	Water	9060A	
LCS 500-741466/7	Lab Control Sample	Total/NA	Water	9060A	

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Surrogate Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-126)	TOL (75-120)	BFB (72-124)	DBFM (75-120)
500-241697-1	W-231026-TS-17	99	92	108	104
500-241697-2	W-231026-TS-18	98	92	107	103
500-241697-3	W-231026-TS-19	99	93	108	104
500-241697-4	W-231026-TS-20	101	91	109	107
500-241697-5	W-231026-TS-21	89	94	97	93
500-241697-6	W-231026-TS-22	100	91	106	103
500-241697-6 MS	W-231026-TS-22	92	94	104	98
500-241697-6 MSD	W-231026-TS-22	95	94	105	100
500-241697-7	W-231026-TS-25	92	91	102	89
500-241697-8	TRIP BLANK	97	91	105	103
LCS 500-740626/4	Lab Control Sample	89	94	103	94
LCS 500-740806/4	Lab Control Sample	91	94	97	94
MB 500-740626/6	Method Blank	96	91	101	101
MB 500-740806/7	Method Blank	94	93	97	95

Surrogate Legend

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

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		NBZ (36-120)	FBP (34-110)	TPHL (40-145)
500-241697-1	W-231026-TS-17	75	67	86
500-241697-2	W-231026-TS-18	70	59	84
500-241697-3	W-231026-TS-19	61	54	79
500-241697-4	W-231026-TS-20	74	61	74
500-241697-5	W-231026-TS-21	68	56	84
500-241697-6	W-231026-TS-22	73	63	83
500-241697-6 MS	W-231026-TS-22	62	58	83
500-241697-6 MSD	W-231026-TS-22	65	56	84
500-241697-7	W-231026-TS-25	82	73	91
LCS 500-739845/2-A	Lab Control Sample	73	61	86
MB 500-739845/1-A	Method Blank	56	48	73

Surrogate Legend

NBZ = Nitrobenzene-d5 (Surr)
FBP = 2-Fluorobiphenyl (Surr)
TPHL = Terphenyl-d14 (Surr)

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		TFE1 (60-140)
500-241697-1	W-231026-TS-17	109

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Surrogate Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TFE1 (60-140)
500-241697-2	W-231026-TS-18	112
500-241697-4	W-231026-TS-20	113
500-241697-5	W-231026-TS-21	113
500-241697-6	W-231026-TS-22	112
500-241697-6 MS	W-231026-TS-22	113
500-241697-6 MSD	W-231026-TS-22	112
500-241697-7	W-231026-TS-25	113
LCS 240-592907/4	Lab Control Sample	115
LCS 240-593187/4	Lab Control Sample	117
MB 240-592907/3	Method Blank	114
MB 240-593187/3	Method Blank	117

Surrogate Legend

TFE = 1,1,1-Trifluoroethane

Method: 8151A - Herbicides (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (25-130)
500-241697-1	W-231026-TS-17	80
500-241697-2	W-231026-TS-18	45
500-241697-3	W-231026-TS-19	73
500-241697-4	W-231026-TS-20	42
500-241697-5	W-231026-TS-21	49
500-241697-6	W-231026-TS-22	35
500-241697-6 MS	W-231026-TS-22	80
500-241697-6 MSD	W-231026-TS-22	60
500-241697-7	W-231026-TS-25	74
LCS 500-740191/2-A	Lab Control Sample	70
MB 500-740191/1-A	Method Blank	60

Surrogate Legend

DCPAA = DCAA

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-740626/6
Matrix: Water
Analysis Batch: 740626

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

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	<0.15		0.50	0.15	ug/L			11/06/23 11:02	1
Toluene	<0.15		0.50	0.15	ug/L			11/06/23 11:02	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/06/23 11:02	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/06/23 11:02	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	96		75 - 126		11/06/23 11:02	1
Toluene-d8 (Surr)	91		75 - 120		11/06/23 11:02	1
4-Bromofluorobenzene (Surr)	101		72 - 124		11/06/23 11:02	1
Dibromofluoromethane	101		75 - 120		11/06/23 11:02	1

Lab Sample ID: LCS 500-740626/4
Matrix: Water
Analysis Batch: 740626

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

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Benzene	50.0	46.5		ug/L		93	70 - 120
Toluene	50.0	49.6		ug/L		99	70 - 125
Ethylbenzene	50.0	48.2		ug/L		96	70 - 123
Xylenes, Total	100	97.5		ug/L		98	70 - 125

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	89		75 - 126
Toluene-d8 (Surr)	94		75 - 120
4-Bromofluorobenzene (Surr)	103		72 - 124
Dibromofluoromethane	94		75 - 120

Lab Sample ID: 500-241697-6 MS
Matrix: Water
Analysis Batch: 740626

Client Sample ID: W-231026-TS-22
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
Benzene	<0.15		50.0	48.6		ug/L		97	70 - 120
Toluene	<0.15		50.0	50.3		ug/L		101	70 - 125
Ethylbenzene	<0.18		50.0	49.0		ug/L		98	70 - 123
Xylenes, Total	<0.22		100	101		ug/L		101	70 - 125

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	92		75 - 126
Toluene-d8 (Surr)	94		75 - 120
4-Bromofluorobenzene (Surr)	104		72 - 124
Dibromofluoromethane	98		75 - 120

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

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

Lab Sample ID: 500-241697-6 MSD
Matrix: Water
Analysis Batch: 740626

Client Sample ID: W-231026-TS-22
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.15		50.0	48.4		ug/L		97	70 - 120	1	20
Toluene	<0.15		50.0	49.9		ug/L		100	70 - 125	1	20
Ethylbenzene	<0.18		50.0	48.2		ug/L		96	70 - 123	2	20
Xylenes, Total	<0.22		100	98.7		ug/L		99	70 - 125	2	20

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
1,2-Dichloroethane-d4 (Surr)	95		75 - 126
Toluene-d8 (Surr)	94		75 - 120
4-Bromofluorobenzene (Surr)	105		72 - 124
Dibromofluoromethane	100		75 - 120

Lab Sample ID: MB 500-740806/7
Matrix: Water
Analysis Batch: 740806

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/06/23 23:05	1
Toluene	<0.15		0.50	0.15	ug/L			11/06/23 23:05	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/06/23 23:05	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/06/23 23:05	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		75 - 126		11/06/23 23:05	1
Toluene-d8 (Surr)	93		75 - 120		11/06/23 23:05	1
4-Bromofluorobenzene (Surr)	97		72 - 124		11/06/23 23:05	1
Dibromofluoromethane	95		75 - 120		11/06/23 23:05	1

Lab Sample ID: LCS 500-740806/4
Matrix: Water
Analysis Batch: 740806

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	50.0	42.5		ug/L		85	70 - 120
Toluene	50.0	42.4		ug/L		85	70 - 125
Ethylbenzene	50.0	44.6		ug/L		89	70 - 123
Xylenes, Total	100	94.5		ug/L		95	70 - 125

Surrogate	LCS %Recovery	LCS Qualifier	LCS Limits
1,2-Dichloroethane-d4 (Surr)	91		75 - 126
Toluene-d8 (Surr)	94		75 - 120
4-Bromofluorobenzene (Surr)	97		72 - 124
Dibromofluoromethane	94		75 - 120

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

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

Lab Sample ID: MB 500-739845/1-A
Matrix: Water
Analysis Batch: 740334

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 739845

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Naphthalene	<0.25		0.80	0.25	ug/L		11/01/23 07:45	11/03/23 12:32	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
Nitrobenzene-d5 (Surr)	56		36 - 120			11/01/23 07:45	11/03/23 12:32	1	
2-Fluorobiphenyl (Surr)	48		34 - 110			11/01/23 07:45	11/03/23 12:32	1	
Terphenyl-d14 (Surr)	73		40 - 145			11/01/23 07:45	11/03/23 12:32	1	

Lab Sample ID: LCS 500-739845/2-A
Matrix: Water
Analysis Batch: 740334

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 739845

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Naphthalene	32.0	17.6		ug/L		55	36 - 110
Surrogate	%Recovery	Qualifier	Limits				
Nitrobenzene-d5 (Surr)	73		36 - 120				
2-Fluorobiphenyl (Surr)	61		34 - 110				
Terphenyl-d14 (Surr)	86		40 - 145				

Lab Sample ID: 500-241697-6 MS
Matrix: Water
Analysis Batch: 740334

Client Sample ID: W-231026-TS-22
Prep Type: Total/NA
Prep Batch: 739845

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier		Result	Qualifier				
Naphthalene	<0.24	F2	33.0	12.7		ug/L		38	36 - 110
Surrogate	%Recovery	Qualifier	Limits						
Nitrobenzene-d5 (Surr)	62		36 - 120						
2-Fluorobiphenyl (Surr)	58		34 - 110						
Terphenyl-d14 (Surr)	83		40 - 145						

Lab Sample ID: 500-241697-6 MSD
Matrix: Water
Analysis Batch: 740334

Client Sample ID: W-231026-TS-22
Prep Type: Total/NA
Prep Batch: 739845

Analyte	Sample	Sample	Spike Added	MSD	MSD	Unit	D	%Rec	%Rec Limits	RPD	RPD
	Result	Qualifier		Result	Qualifier					Limit	
Naphthalene	<0.24	F2	35.7	17.1	F2	ug/L		48	36 - 110	30	20
Surrogate	%Recovery	Qualifier	Limits								
Nitrobenzene-d5 (Surr)	65		36 - 120								
2-Fluorobiphenyl (Surr)	56		34 - 110								
Terphenyl-d14 (Surr)	84		40 - 145								

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 240-592907/3
Matrix: Water
Analysis Batch: 592907

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			10/31/23 14:41	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	114		60 - 140					10/31/23 14:41	1

Lab Sample ID: LCS 240-592907/4
Matrix: Water
Analysis Batch: 592907

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methane	284	290		ug/L		102	80 - 120
Surrogate	%Recovery	LCS Qualifier	Limits				
1,1,1-Trifluoroethane	115		60 - 140				

Lab Sample ID: MB 240-593187/3
Matrix: Water
Analysis Batch: 593187

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			11/02/23 12:09	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	117		60 - 140					11/02/23 12:09	1

Lab Sample ID: LCS 240-593187/4
Matrix: Water
Analysis Batch: 593187

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methane	284	300		ug/L		106	80 - 120
Surrogate	%Recovery	LCS Qualifier	Limits				
1,1,1-Trifluoroethane	117		60 - 140				

Lab Sample ID: 500-241697-6 MS
Matrix: Water
Analysis Batch: 593187

Client Sample ID: W-231026-TS-22
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Methane	<0.17		284	288		ug/L		101	50 - 150
Surrogate	%Recovery	MS Qualifier	Limits						
1,1,1-Trifluoroethane	113		60 - 140						

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: 500-241697-6 MSD
Matrix: Water
Analysis Batch: 593187

Client Sample ID: W-231026-TS-22
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methane	<0.17		284	285		ug/L		100	50 - 150	1	30
Surrogate	%Recovery	MSD Qualifier	MSD Limits								
1,1,1-Trifluoroethane	112		60 - 140								

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 500-740191/1-A
Matrix: Water
Analysis Batch: 740405

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 740191

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac		
Pentachlorophenol	<0.099		0.10	0.099	ug/L		11/02/23 10:32	11/03/23 11:48	1		
Surrogate	%Recovery	MB Qualifier	MB Limits								
DCAA	60		25 - 130								
				Prepared	Analyzed	Dil Fac					
				11/02/23 10:32	11/03/23 11:48	1					

Lab Sample ID: LCS 500-740191/2-A
Matrix: Water
Analysis Batch: 740405

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 740191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Pentachlorophenol	2.53	1.52		ug/L		60	40 - 122
Surrogate	LCS %Recovery	LCS Qualifier	LCS Limits				
DCAA	70		25 - 130				

Lab Sample ID: 500-241697-6 MS
Matrix: Water
Analysis Batch: 740405

Client Sample ID: W-231026-TS-22
Prep Type: Total/NA
Prep Batch: 740191

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Pentachlorophenol	<0.10	F2	2.59	1.60		ug/L		62	40 - 122
Surrogate	MS %Recovery	MS Qualifier	MS Limits						
DCAA	80		25 - 130						

Lab Sample ID: 500-241697-6 MSD
Matrix: Water
Analysis Batch: 740405

Client Sample ID: W-231026-TS-22
Prep Type: Total/NA
Prep Batch: 740191

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Pentachlorophenol	<0.10	F2	2.62	1.24	F2	ug/L		47	40 - 122	25	20
Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits								
DCAA	60		25 - 130								

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 500-741169/1-A
Matrix: Water
Analysis Batch: 741658

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 741169

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	<0.23		1.0	0.23	ug/L		11/08/23 09:02	11/09/23 23:52	1
Calcium	55.23	J	200	44.3	ug/L		11/08/23 09:02	11/09/23 23:52	1
Iron	<46.7		100	46.7	ug/L		11/08/23 09:02	11/09/23 23:52	1
Magnesium	<49.4		200	49.4	ug/L		11/08/23 09:02	11/09/23 23:52	1
Manganese	2.01	J	2.5	0.79	ug/L		11/08/23 09:02	11/09/23 23:52	1
Zinc	<6.9		20.0	6.9	ug/L		11/08/23 09:02	11/09/23 23:52	1

Lab Sample ID: LCS 500-741169/2-A
Matrix: Water
Analysis Batch: 741658

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 741169

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	10000	9956		ug/L		100	80 - 120
Iron	1000	988.7		ug/L		99	80 - 120
Magnesium	10000	9654		ug/L		97	80 - 120
Manganese	500	488.0		ug/L		98	80 - 120
Zinc	500	493.6		ug/L		99	80 - 120

Lab Sample ID: 500-241697-6 MS
Matrix: Water
Analysis Batch: 741658

Client Sample ID: W-231026-TS-22
Prep Type: Total Recoverable
Prep Batch: 741169

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	40700	B	10000	47440	4	ug/L		68	75 - 125
Iron	109		1000	947.4		ug/L		84	75 - 125
Magnesium	13600		10000	21950		ug/L		84	75 - 125
Manganese	4.4	B	500	458.4		ug/L		91	75 - 125
Zinc	<6.9		500	464.4		ug/L		93	75 - 125

Lab Sample ID: 500-241697-6 MSD
Matrix: Water
Analysis Batch: 741658

Client Sample ID: W-231026-TS-22
Prep Type: Total Recoverable
Prep Batch: 741169

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	40700	B	10000	48430	4	ug/L		78	75 - 125	2	20
Iron	109		1000	928.2		ug/L		82	75 - 125	2	20
Magnesium	13600		10000	21560		ug/L		80	75 - 125	2	20
Manganese	4.4	B	500	451.7		ug/L		89	75 - 125	1	20
Zinc	<6.9		500	466.6		ug/L		93	75 - 125	0	20

Lab Sample ID: 500-241697-6 DU
Matrix: Water
Analysis Batch: 741658

Client Sample ID: W-231026-TS-22
Prep Type: Total Recoverable
Prep Batch: 741169

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

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

Lab Sample ID: 500-241697-6 DU
Matrix: Water
Analysis Batch: 741658

Client Sample ID: W-231026-TS-22
Prep Type: Total Recoverable
Prep Batch: 741169

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Calcium	40700	B	39790		ug/L		2	20
Iron	109		79.46	J F5	ug/L		32	20
Magnesium	13600		13430		ug/L		0.9	20
Manganese	4.4	B	5.95	F5	ug/L		31	20
Zinc	<6.9		<6.9		ug/L		NC	20

Lab Sample ID: MB 500-741282/1-A
Matrix: Water
Analysis Batch: 742038

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 741282

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Copper	1.45	J	2.0	0.50	ug/L		11/08/23 19:41	11/13/23 19:41	1

Lab Sample ID: LCS 500-741282/2-A
Matrix: Water
Analysis Batch: 742038

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 741282

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Copper	250	253.9		ug/L		102	80 - 120

Lab Sample ID: MB 500-741964/1-A
Matrix: Water
Analysis Batch: 742504

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 741964

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Calcium	88.17	J	200	44.3	ug/L		11/13/23 19:06	11/15/23 22:29	1
Copper	<0.50		2.0	0.50	ug/L		11/13/23 19:06	11/15/23 22:29	1

Lab Sample ID: LCS 500-741964/2-A
Matrix: Water
Analysis Batch: 742504

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 741964

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Calcium	10000	9310		ug/L		93	80 - 120
Copper	250	252.5		ug/L		101	80 - 120

Lab Sample ID: MB 500-742684/1-A
Matrix: Water
Analysis Batch: 743511

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 742684

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Copper	<0.50		2.0	0.50	ug/L		11/16/23 20:33	11/21/23 14:31	1

Lab Sample ID: LCS 500-742684/2-A
Matrix: Water
Analysis Batch: 743511

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 742684

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Copper	250	245.0		ug/L		98	80 - 120

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

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

Lab Sample ID: 500-241697-6 MS
Matrix: Water
Analysis Batch: 743511

Client Sample ID: W-231026-TS-22
Prep Type: Total Recoverable
Prep Batch: 742684

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Copper	0.94	J	250	250.3		ug/L		100	75 - 125

Lab Sample ID: 500-241697-6 MSD
Matrix: Water
Analysis Batch: 743511

Client Sample ID: W-231026-TS-22
Prep Type: Total Recoverable
Prep Batch: 742684

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Copper	0.94	J	250	251.5		ug/L		100	75 - 125	0	20

Lab Sample ID: 500-241697-6 DU
Matrix: Water
Analysis Batch: 743511

Client Sample ID: W-231026-TS-22
Prep Type: Total Recoverable
Prep Batch: 742684

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Copper	0.94	J	0.587	J F5	ug/L		46	20

Lab Sample ID: 500-241697-6 MS
Matrix: Water
Analysis Batch: 741658

Client Sample ID: W-231026-TS-22
Prep Type: Dissolved
Prep Batch: 741169

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	<0.23		100	91.79		ug/L		92	75 - 125
Calcium	40200	B	10000	49400	4	ug/L		92	75 - 125
Iron	<46.7		1000	956.1		ug/L		96	75 - 125
Magnesium	13600		10000	22280		ug/L		87	75 - 125
Manganese	1.4	J B	500	471.1		ug/L		94	75 - 125
Zinc	<6.9		500	469.1		ug/L		94	75 - 125

Lab Sample ID: 500-241697-6 MSD
Matrix: Water
Analysis Batch: 741658

Client Sample ID: W-231026-TS-22
Prep Type: Dissolved
Prep Batch: 741169

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Arsenic	<0.23		100	91.36		ug/L		91	75 - 125	0	20
Calcium	40200	B	10000	49510	4	ug/L		93	75 - 125	0	20
Iron	<46.7		1000	940.6		ug/L		94	75 - 125	2	20
Magnesium	13600		10000	22110		ug/L		85	75 - 125	1	20
Manganese	1.4	J B	500	464.6		ug/L		93	75 - 125	1	20
Zinc	<6.9		500	462.7		ug/L		93	75 - 125	1	20

Lab Sample ID: 500-241697-6 DU
Matrix: Water
Analysis Batch: 741658

Client Sample ID: W-231026-TS-22
Prep Type: Dissolved
Prep Batch: 741169

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Arsenic	<0.23		<0.23		ug/L		NC	20
Calcium	40200	B	39800		ug/L		1	20
Iron	<46.7		<46.7		ug/L		NC	20
Magnesium	13600		13220		ug/L		3	20
Manganese	1.4	J B	1.34	J	ug/L		8	20

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

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

Lab Sample ID: 500-241697-6 DU
Matrix: Water
Analysis Batch: 741658

Client Sample ID: W-231026-TS-22
Prep Type: Dissolved
Prep Batch: 741169

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Zinc	<6.9		<6.9		ug/L		NC	20

Lab Sample ID: 500-241697-6 MS
Matrix: Water
Analysis Batch: 742038

Client Sample ID: W-231026-TS-22
Prep Type: Dissolved
Prep Batch: 741282

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Copper	2.6	B	250	222.6		ug/L		88	75 - 125

Lab Sample ID: 500-241697-6 MSD
Matrix: Water
Analysis Batch: 742038

Client Sample ID: W-231026-TS-22
Prep Type: Dissolved
Prep Batch: 741282

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Copper	2.6	B	250	223.0		ug/L		88	75 - 125	0	20

Lab Sample ID: 500-241697-6 DU
Matrix: Water
Analysis Batch: 742038

Client Sample ID: W-231026-TS-22
Prep Type: Dissolved
Prep Batch: 741282

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Copper	2.6	B	1.29	J F5	ug/L		68	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 500-739204/3
Matrix: Water
Analysis Batch: 739204

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.12		1.0	0.12	mg/L			10/27/23 08:45	1
Sulfate	<0.21		1.0	0.21	mg/L			10/27/23 08:45	1

Lab Sample ID: LCS 500-739204/4
Matrix: Water
Analysis Batch: 739204

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Chloride	20.0	21.15		mg/L		106	90 - 110
Sulfate	20.0	21.55		mg/L		108	90 - 110

Lab Sample ID: MB 500-739240/3
Matrix: Water
Analysis Batch: 739240

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.043		1.0	0.043	mg/L			10/27/23 08:45	1

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 500-739240/4
Matrix: Water
Analysis Batch: 739240

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	20.0	19.15		mg/L		96	90 - 110

Lab Sample ID: MB 500-739774/11
Matrix: Water
Analysis Batch: 739774

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.043		1.0	0.043	mg/L			10/31/23 18:05	1

Lab Sample ID: LCS 500-739774/12
Matrix: Water
Analysis Batch: 739774

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	20.0	20.68		mg/L		103	90 - 110

Lab Sample ID: 500-241697-6 MS
Matrix: Water
Analysis Batch: 739774

Client Sample ID: W-231026-TS-22
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	0.57	J H	10.0	9.61	H	mg/L		90	80 - 120

Lab Sample ID: 500-241697-6 MSD
Matrix: Water
Analysis Batch: 739774

Client Sample ID: W-231026-TS-22
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	0.57	J H	10.0	9.59	H	mg/L		90	80 - 120	0	20

Lab Sample ID: MB 500-739775/11
Matrix: Water
Analysis Batch: 739775

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.12		1.0	0.12	mg/L			10/31/23 18:05	1
Sulfate	<0.21		1.0	0.21	mg/L			10/31/23 18:05	1

Lab Sample ID: LCS 500-739775/12
Matrix: Water
Analysis Batch: 739775

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	20.0	19.55		mg/L		98	90 - 110
Sulfate	20.0	19.28		mg/L		96	90 - 110

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 500-241697-6 MS
Matrix: Water
Analysis Batch: 739775

Client Sample ID: W-231026-TS-22
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	0.48	J	10.0	9.32		mg/L		88	80 - 120
Sulfate	1.1		10.0	10.29		mg/L		92	80 - 120

Lab Sample ID: 500-241697-6 MSD
Matrix: Water
Analysis Batch: 739775

Client Sample ID: W-231026-TS-22
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	0.48	J	10.0	9.30		mg/L		88	80 - 120	0	20
Sulfate	1.1		10.0	10.40		mg/L		93	80 - 120	1	20

Lab Sample ID: MB 500-739972/11
Matrix: Water
Analysis Batch: 739972

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.12		1.0	0.12	mg/L			11/01/23 14:54	1

Lab Sample ID: LCS 500-739972/12
Matrix: Water
Analysis Batch: 739972

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	20.0	18.50		mg/L		92	90 - 110

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 500-741156/30
Matrix: Water
Analysis Batch: 741156

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	<0.47		1.0	0.47	mg/L			11/07/23 22:33	1

Lab Sample ID: MB 500-741156/6
Matrix: Water
Analysis Batch: 741156

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	<0.47		1.0	0.47	mg/L			11/07/23 12:27	1

Lab Sample ID: LCS 500-741156/31
Matrix: Water
Analysis Batch: 741156

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon - Quad	50.0	49.96		mg/L		100	86 - 116

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCS 500-741156/7
Matrix: Water
Analysis Batch: 741156

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon - Quad	50.0	49.58		mg/L		99	86 - 116

Lab Sample ID: LCSD 500-741156/8
Matrix: Water
Analysis Batch: 741156

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon - Quad	50.0	49.79		mg/L		100	86 - 116	0	20

Lab Sample ID: 500-241697-6 MS
Matrix: Water
Analysis Batch: 741156

Client Sample ID: W-231026-TS-22
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon - Quad	0.50	J	50.0	50.34		mg/L		100	75 - 125

Lab Sample ID: 500-241697-6 MSD
Matrix: Water
Analysis Batch: 741156

Client Sample ID: W-231026-TS-22
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon - Quad	0.50	J	50.0	50.44		mg/L		100	75 - 125	0	20

Lab Sample ID: MB 500-741466/6
Matrix: Water
Analysis Batch: 741466

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	<0.47		1.0	0.47	mg/L			11/08/23 14:36	1

Lab Sample ID: LCS 500-741466/7
Matrix: Water
Analysis Batch: 741466

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon - Quad	50.0	48.65		mg/L		97	86 - 116

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-741150/53
Matrix: Water
Analysis Batch: 741150

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	<3.7		5.0	3.7	mg/L			11/07/23 19:36	1

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCS 500-741150/81
Matrix: Water
Analysis Batch: 741150

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	100	102.8		mg/L		103	90 - 110

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Client Sample ID: W-231026-TS-17

Lab Sample ID: 500-241697-1

Date Collected: 10/26/23 10:46

Matrix: Water

Date Received: 10/27/23 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	740626	W1T	EET CHI	11/06/23 17:04
Total/NA	Prep	3510C			739845	KL	EET CHI	11/01/23 07:45
Total/NA	Analysis	8270E		1	740334	JSB	EET CHI	11/03/23 14:36
Total/NA	Analysis	RSK-175		1	592907	JBN	EET CLE	10/31/23 20:38
Total/NA	Prep	8151A			740191	DAK	EET CHI	11/02/23 10:32
Total/NA	Analysis	8151A		1	740405	SS	EET CHI	11/03/23 14:15
Dissolved	Prep	3005A			741169	BDE	EET CHI	11/08/23 09:02 - 11/08/23 09:32 ¹
Dissolved	Analysis	6020A		1	741658	BJH	EET CHI	11/10/23 00:09
Dissolved	Prep	3005A			741964	MC	EET CHI	11/13/23 19:06 - 11/14/23 00:06 ¹
Dissolved	Analysis	6020A		1	742504	BJH	EET CHI	11/15/23 22:40
Total Recoverable	Prep	3005A			741169	BDE	EET CHI	11/08/23 09:02 - 11/08/23 09:32 ¹
Total Recoverable	Analysis	6020A		1	741658	BJH	EET CHI	11/10/23 00:05
Total Recoverable	Prep	3005A			741964	MC	EET CHI	11/13/23 19:06 - 11/14/23 00:06 ¹
Total Recoverable	Analysis	6020A		1	742504	BJH	EET CHI	11/15/23 22:36
Dissolved	Prep	3005A			741169	BDE	EET CHI	11/08/23 09:02 - 11/08/23 09:32 ¹
Dissolved	Analysis	SM 2340B		1	741832	DAJ	EET CHI	11/13/23 08:00
Total Recoverable	Prep	3005A			741169	BDE	EET CHI	11/08/23 09:02 - 11/08/23 09:32 ¹
Total Recoverable	Analysis	SM 2340B		1	741832	DAJ	EET CHI	11/13/23 08:00
Total/NA	Analysis	300.0		1	739204	NMB	EET CHI	10/27/23 16:05
Total/NA	Analysis	300.0		1	739240	NMB	EET CHI	10/27/23 16:05
Total/NA	Analysis	9060A		1	741156	TR	EET CHI	11/07/23 20:43
Total/NA	Analysis	SM 2320B		1	741150	SO	EET CHI	11/08/23 00:47

Client Sample ID: W-231026-TS-18

Lab Sample ID: 500-241697-2

Date Collected: 10/26/23 10:46

Matrix: Water

Date Received: 10/27/23 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	740626	W1T	EET CHI	11/06/23 17:28
Total/NA	Prep	3510C			739845	KL	EET CHI	11/01/23 07:45
Total/NA	Analysis	8270E		1	740334	JSB	EET CHI	11/03/23 16:15
Total/NA	Analysis	RSK-175		1	592907	JBN	EET CLE	10/31/23 20:55
Total/NA	Prep	8151A			740191	DAK	EET CHI	11/02/23 10:32
Total/NA	Analysis	8151A		1	740405	SS	EET CHI	11/03/23 14:33
Dissolved	Prep	3005A			741169	BDE	EET CHI	11/08/23 09:02 - 11/08/23 09:32 ¹
Dissolved	Analysis	6020A		1	741658	BJH	EET CHI	11/10/23 00:18
Dissolved	Prep	3005A			741964	MC	EET CHI	11/13/23 19:06 - 11/14/23 00:06 ¹
Dissolved	Analysis	6020A		1	742504	BJH	EET CHI	11/15/23 22:47
Total Recoverable	Prep	3005A			741169	BDE	EET CHI	11/08/23 09:02 - 11/08/23 09:32 ¹
Total Recoverable	Analysis	6020A		1	741658	BJH	EET CHI	11/10/23 00:14
Total Recoverable	Prep	3005A			741964	MC	EET CHI	11/13/23 19:06 - 11/14/23 00:06 ¹
Total Recoverable	Analysis	6020A		1	742504	BJH	EET CHI	11/15/23 22:43
Dissolved	Prep	3005A			741169	BDE	EET CHI	11/08/23 09:02 - 11/08/23 09:32 ¹
Dissolved	Analysis	SM 2340B		1	741832	DAJ	EET CHI	11/13/23 08:00

Eurofins Chicago

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Client Sample ID: W-231026-TS-18

Lab Sample ID: 500-241697-2

Date Collected: 10/26/23 10:46

Matrix: Water

Date Received: 10/27/23 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			741169	BDE	EET CHI	11/08/23 09:02 - 11/08/23 09:32 ¹
Total Recoverable	Analysis	SM 2340B		1	741832	DAJ	EET CHI	11/13/23 08:00
Total/NA	Analysis	300.0		1	739204	NMB	EET CHI	10/27/23 16:20
Total/NA	Analysis	300.0		1	739240	NMB	EET CHI	10/27/23 16:20
Total/NA	Analysis	9060A		1	741156	TR	EET CHI	11/07/23 21:10
Total/NA	Analysis	SM 2320B		1	741150	SO	EET CHI	11/08/23 00:55

Client Sample ID: W-231026-TS-19

Lab Sample ID: 500-241697-3

Date Collected: 10/26/23 11:01

Matrix: Water

Date Received: 10/27/23 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	740626	W1T	EET CHI	11/06/23 17:52
Total/NA	Prep	3510C			739845	KL	EET CHI	11/01/23 07:45
Total/NA	Analysis	8270E		1	740334	JSB	EET CHI	11/03/23 16:40
Total/NA	Prep	8151A			740191	DAK	EET CHI	11/02/23 10:32
Total/NA	Analysis	8151A		1	740405	SS	EET CHI	11/03/23 14:52
Dissolved	Prep	3005A			741169	BDE	EET CHI	11/08/23 09:02 - 11/08/23 09:32 ¹
Dissolved	Analysis	6020A		1	741658	BJH	EET CHI	11/10/23 00:27
Dissolved	Prep	3005A			741964	MC	EET CHI	11/13/23 19:06 - 11/14/23 00:06 ¹
Dissolved	Analysis	6020A		1	742504	BJH	EET CHI	11/15/23 23:00
Total Recoverable	Prep	3005A			741169	BDE	EET CHI	11/08/23 09:02 - 11/08/23 09:32 ¹
Total Recoverable	Analysis	6020A		1	741658	BJH	EET CHI	11/10/23 00:22
Total Recoverable	Prep	3005A			741964	MC	EET CHI	11/13/23 19:06 - 11/14/23 00:06 ¹
Total Recoverable	Analysis	6020A		1	742504	BJH	EET CHI	11/15/23 22:57
Dissolved	Prep	3005A			741169	BDE	EET CHI	11/08/23 09:02 - 11/08/23 09:32 ¹
Dissolved	Analysis	SM 2340B		1	741832	DAJ	EET CHI	11/13/23 08:00
Total Recoverable	Prep	3005A			741169	BDE	EET CHI	11/08/23 09:02 - 11/08/23 09:32 ¹
Total Recoverable	Analysis	SM 2340B		1	741832	DAJ	EET CHI	11/13/23 08:00

Client Sample ID: W-231026-TS-20

Lab Sample ID: 500-241697-4

Date Collected: 10/26/23 11:55

Matrix: Water

Date Received: 10/27/23 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	740626	W1T	EET CHI	11/06/23 18:15
Total/NA	Prep	3510C			739845	KL	EET CHI	11/01/23 07:45
Total/NA	Analysis	8270E		1	740334	JSB	EET CHI	11/03/23 17:05
Total/NA	Analysis	RSK-175		1	593187	JBN	EET CLE	11/02/23 15:50
Total/NA	Prep	8151A			740191	DAK	EET CHI	11/02/23 10:32
Total/NA	Analysis	8151A		1	740405	SS	EET CHI	11/03/23 15:10
Dissolved	Prep	3005A			741169	BDE	EET CHI	11/08/23 09:02 - 11/08/23 09:32 ¹
Dissolved	Analysis	6020A		1	741658	BJH	EET CHI	11/10/23 00:43

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Client Sample ID: W-231026-TS-20

Lab Sample ID: 500-241697-4

Date Collected: 10/26/23 11:55

Matrix: Water

Date Received: 10/27/23 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			741964	MC	EET CHI	11/13/23 19:06 - 11/14/23 00:06 ¹
Dissolved	Analysis	6020A		1	742504	BJH	EET CHI	11/15/23 23:07
Total Recoverable	Prep	3005A			741169	BDE	EET CHI	11/08/23 09:02 - 11/08/23 09:32 ¹
Total Recoverable	Analysis	6020A		1	741658	BJH	EET CHI	11/10/23 00:31
Total Recoverable	Prep	3005A			741964	MC	EET CHI	11/13/23 19:06 - 11/14/23 00:06 ¹
Total Recoverable	Analysis	6020A		1	742504	BJH	EET CHI	11/15/23 23:04
Dissolved	Prep	3005A			741169	BDE	EET CHI	11/08/23 09:02 - 11/08/23 09:32 ¹
Dissolved	Analysis	SM 2340B		1	741832	DAJ	EET CHI	11/13/23 08:00
Total Recoverable	Prep	3005A			741169	BDE	EET CHI	11/08/23 09:02 - 11/08/23 09:32 ¹
Total Recoverable	Analysis	SM 2340B		1	741832	DAJ	EET CHI	11/13/23 08:00
Total/NA	Analysis	300.0		1	739204	NMB	EET CHI	10/27/23 16:35
Total/NA	Analysis	300.0		1	739240	NMB	EET CHI	10/27/23 16:35
Total/NA	Analysis	9060A		1	741156	TR	EET CHI	11/07/23 23:20
Total/NA	Analysis	SM 2320B		1	741150	SO	EET CHI	11/08/23 01:03

Client Sample ID: W-231026-TS-21

Lab Sample ID: 500-241697-5

Date Collected: 10/26/23 13:07

Matrix: Water

Date Received: 10/27/23 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	740806	W1T	EET CHI	11/07/23 00:36
Total/NA	Prep	3510C			739845	KL	EET CHI	11/01/23 07:45
Total/NA	Analysis	8270E		1	740334	JSB	EET CHI	11/03/23 17:30
Total/NA	Analysis	RSK-175		1	593187	JBN	EET CLE	11/02/23 16:07
Total/NA	Prep	8151A			740191	DAK	EET CHI	11/02/23 10:32
Total/NA	Analysis	8151A		1	740405	SS	EET CHI	11/03/23 15:28
Dissolved	Prep	3005A			741169	BDE	EET CHI	11/08/23 09:02 - 11/08/23 09:32 ¹
Dissolved	Analysis	6020A		1	741658	BJH	EET CHI	11/10/23 00:52
Dissolved	Prep	3005A			741964	MC	EET CHI	11/13/23 19:06 - 11/14/23 00:06 ¹
Dissolved	Analysis	6020A		1	742504	BJH	EET CHI	11/15/23 23:14
Total Recoverable	Prep	3005A			741169	BDE	EET CHI	11/08/23 09:02 - 11/08/23 09:32 ¹
Total Recoverable	Analysis	6020A		1	741658	BJH	EET CHI	11/10/23 00:48
Total Recoverable	Prep	3005A			741964	MC	EET CHI	11/13/23 19:06 - 11/14/23 00:06 ¹
Total Recoverable	Analysis	6020A		1	742504	BJH	EET CHI	11/15/23 23:11
Dissolved	Prep	3005A			741169	BDE	EET CHI	11/08/23 09:02 - 11/08/23 09:32 ¹
Dissolved	Analysis	SM 2340B		1	741832	DAJ	EET CHI	11/13/23 08:00
Total Recoverable	Prep	3005A			741169	BDE	EET CHI	11/08/23 09:02 - 11/08/23 09:32 ¹
Total Recoverable	Analysis	SM 2340B		1	741832	DAJ	EET CHI	11/13/23 08:00
Total/NA	Analysis	300.0		1	739204	NMB	EET CHI	10/27/23 16:50
Total/NA	Analysis	300.0		1	739240	NMB	EET CHI	10/27/23 16:50
Total/NA	Analysis	300.0		1	739972	NMB	EET CHI	11/01/23 18:56
Total/NA	Analysis	9060A		1	741156	TR	EET CHI	11/07/23 23:47
Total/NA	Analysis	SM 2320B		1	741150	SO	EET CHI	11/08/23 01:12

Eurofins Chicago

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Client Sample ID: W-231026-TS-22

Lab Sample ID: 500-241697-6

Date Collected: 10/26/23 13:49

Matrix: Water

Date Received: 10/27/23 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	740626	W1T	EET CHI	11/06/23 18:39
Total/NA	Prep	3510C			739845	KL	EET CHI	11/01/23 07:45
Total/NA	Analysis	8270E		1	740334	JSB	EET CHI	11/03/23 17:55
Total/NA	Analysis	RSK-175		1	593187	JBN	EET CLE	11/02/23 16:24
Total/NA	Prep	8151A			740191	DAK	EET CHI	11/02/23 10:32
Total/NA	Analysis	8151A		1	740405	SS	EET CHI	11/03/23 15:47
Dissolved	Prep	3005A			741169	BDE	EET CHI	11/08/23 09:02 - 11/08/23 09:32 ¹
Dissolved	Analysis	6020A		1	741658	BJH	EET CHI	11/10/23 01:17
Dissolved	Prep	3005A			741282	MC	EET CHI	11/08/23 19:41 - 11/09/23 00:41 ¹
Dissolved	Analysis	6020A		1	742038	BJH	EET CHI	11/13/23 19:48
Total Recoverable	Prep	3005A			741169	BDE	EET CHI	11/08/23 09:02 - 11/08/23 09:32 ¹
Total Recoverable	Analysis	6020A		1	741658	BJH	EET CHI	11/10/23 00:56
Total Recoverable	Prep	3005A			742684	MC	EET CHI	11/16/23 20:33 - 11/17/23 01:33 ¹
Total Recoverable	Analysis	6020A		1	743511	BJH	EET CHI	11/21/23 15:02
Dissolved	Prep	3005A			741169	BDE	EET CHI	11/08/23 09:02 - 11/08/23 09:32 ¹
Dissolved	Analysis	SM 2340B		1	741832	DAJ	EET CHI	11/13/23 08:00
Total Recoverable	Prep	3005A			741169	BDE	EET CHI	11/08/23 09:02 - 11/08/23 09:32 ¹
Total Recoverable	Analysis	SM 2340B		1	741832	DAJ	EET CHI	11/13/23 08:00
Total/NA	Analysis	300.0		1	739774	NMB	EET CHI	10/31/23 18:36
Total/NA	Analysis	300.0		1	739775	NMB	EET CHI	10/31/23 18:36
Total/NA	Analysis	9060A		1	741156	TR	EET CHI	11/08/23 00:14
Total/NA	Analysis	SM 2320B		1	741150	SO	EET CHI	11/08/23 01:21

Client Sample ID: W-231026-TS-25

Lab Sample ID: 500-241697-7

Date Collected: 10/26/23 15:01

Matrix: Water

Date Received: 10/27/23 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	740806	W1T	EET CHI	11/07/23 00:59
Total/NA	Prep	3510C			739845	KL	EET CHI	11/01/23 07:45
Total/NA	Analysis	8270E		1	740334	JSB	EET CHI	11/03/23 19:09
Total/NA	Analysis	RSK-175		1	593187	JBN	EET CLE	11/02/23 17:15
Total/NA	Prep	8151A			740191	DAK	EET CHI	11/02/23 10:32
Total/NA	Analysis	8151A		1	740405	SS	EET CHI	11/03/23 16:42
Dissolved	Prep	3005A			741169	BDE	EET CHI	11/08/23 09:02 - 11/08/23 09:32 ¹
Dissolved	Analysis	6020A		1	741658	BJH	EET CHI	11/10/23 01:51
Dissolved	Prep	3005A			742684	MC	EET CHI	11/16/23 20:33 - 11/17/23 01:33 ¹
Dissolved	Analysis	6020A		1	743511	BJH	EET CHI	11/21/23 15:19
Total Recoverable	Prep	3005A			741169	BDE	EET CHI	11/08/23 09:02 - 11/08/23 09:32 ¹
Total Recoverable	Analysis	6020A		1	741658	BJH	EET CHI	11/10/23 01:47
Total Recoverable	Prep	3005A			742684	MC	EET CHI	11/16/23 20:33 - 11/17/23 01:33 ¹
Total Recoverable	Analysis	6020A		1	743511	BJH	EET CHI	11/21/23 15:23
Dissolved	Prep	3005A			741169	BDE	EET CHI	11/08/23 09:02 - 11/08/23 09:32 ¹
Dissolved	Analysis	SM 2340B		1	741832	DAJ	EET CHI	11/13/23 08:00

Eurofins Chicago

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Client Sample ID: W-231026-TS-25

Lab Sample ID: 500-241697-7

Date Collected: 10/26/23 15:01

Matrix: Water

Date Received: 10/27/23 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			741169	BDE	EET CHI	11/08/23 09:02 - 11/08/23 09:32 ¹
Total Recoverable	Analysis	SM 2340B		1	741832	DAJ	EET CHI	11/13/23 08:00
Total/NA	Analysis	300.0		1	739774	NMB	EET CHI	10/31/23 19:22
Total/NA	Analysis	300.0		1	739775	NMB	EET CHI	10/31/23 19:22
Total/NA	Analysis	9060A		1	741466	TR	EET CHI	11/08/23 23:42
Total/NA	Analysis	SM 2320B		1	741150	SO	EET CHI	11/08/23 01:30

Client Sample ID: TRIP BLANK

Lab Sample ID: 500-241697-8

Date Collected: 10/26/23 00:00

Matrix: Water

Date Received: 10/27/23 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	740626	W1T	EET CHI	11/06/23 12:14

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

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: GHD Services Inc.
 Project/Site: Penta Wood 11222418

Job ID: 500-241697-1

Laboratory: Eurofins Chicago

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

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-24

Laboratory: Eurofins Cleveland

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-24
Georgia	State	4062	02-27-24
Illinois	NELAP	200004	07-31-24
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-28-24
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-24
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23 *
New Jersey	NELAP	OH001	07-01-24
New York	NELAP	10975	04-02-24
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-27-24
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-19	08-31-24
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.



Chain of Custody Record 718952

Address _____



Environment Testing
America

Regulatory Program: DW NPDES RCRA Other

500-241697 COC

TAL-8210

Client Contact		Project Manager Tim AEE		Site Contact		Date 10/26/23	
Company Name GHD		Tel/Email Tim.AEE@GHD.com		Lab Contact		Carrier FEDEX	
Address 900 LOUIX LANE ROAD SUITE 200		Analysis Turnaround Time		Filtered Sample (Y/N) Perform MS/MSD (Y/N) ALKALINITY, ANIONS PCP BTEX NAPOTHALENE DISS METALS, HARDNESS TOTAL METALS, HARDNESS TOC METHANE		1 of 1 COCs	
City/State/Zip ST. PAUL / MN 55112		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS				Sampler THOM STUBBINS	
Phone 612 213 7452		TAT if different from Below _____				For Lab Use Only.	
Fax _____		<input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day				Walk-in Client _____	
Project Name PENTA WOOD						Lab Sampling _____	
Site 11222418				Job / SDG No			
P O # _____				500-241697			
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp G=Grab)	Matrix	# of Cont.	Sample Specific Notes
1	W-231026-TS-17	10/26	1046	G	GW	15	
2	W-231026-TS-18		1046			15	
3	W-231026-TS-19		1101			9	
4	W-231026-TS-20		1155			15	
5	W-231026-TS-21		1307			15	
6	W-231026-TS-22		1349			45	
7	W-231026-TS-25		1501			15	
8	TLR BLANK						
Preservation Used: 1=Ice; 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Other _____							
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown				Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months			
Special Instructions/QC Requirements & Comments <div style="text-align: right;"> (2.6-2.0)(2.8-2.0)(1.9-1.9) (5.3-4.7)(14-1.3) </div>							
Custody Seals Intact <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No _____		Cooler Temp (°C) Obs'd _____		Therm ID No _____	
Relinquished by:		Company GHD		Date/Time 10/26/23 16:00		Received by: _____	
Relinquished by: _____		Company _____		Date/Time _____		Received by: _____	
Relinquished by: _____		Company _____		Date/Time _____		Received in Laboratory by:	
						Date/Time 10/27/23 0855	



500-241697 Waybi

JOTA (651) 639-0913
RYAN AAMOT
GHD SERVICES INC.
900 LONG LAKE ROAD
SUITE 200
SAINT PAUL, MN 55112
UNITED STATES US

SHIP DATE: 17OCT23
ACTWGT: 20.00 LB MAN
CAD: 0675905/CAFE3513

Part # 15946-434 VTM/EXP 08/24

TO SHIPPING DEPT 2
EUROFINS CHICAGO
2417 BOND ST

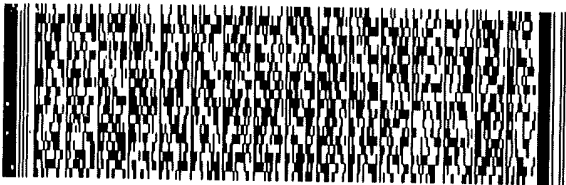
UNIVERSITY PARK IL 60484

(700) 634-6200

REF:

DEPT:

RMA: 01111111



FedEx
Express



RETURNS MON-SAT
PRIORITY OVERNIGHT

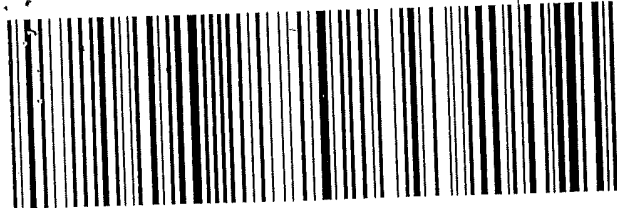
FRI - 27 OCT AA
PRIORITY OVERNIGHT

60484
IL-US
ORD

FedEx

TRK# 7051 7812 2546
0221

AC JOTA



80701 260ct2023 JOTA 581G1/BC8D/C0B8

Ref:
Dep:

Date: 17Oct23
Wgt: 20.00 LBS
DV:

SHIPPING: 0.00
SPECIAL: 0.00
HANDLING: 0.00
TOTAL: 0.00

8vbs PRIORITY OVERNIGHT Master 7051 7812 2502
TRCK 7051 7812 2535

ORIGIN ID: JOTA (651) 639-0913
RYAN AAMOT
GHD SERVICES INC.
900 LONG LAKE ROAD
SUITE 200
SAINT PAUL, MN 55112
UNITED STATES US

SHIP DATE: 17OCT23
ACTWGT: 20.00 LB MAN
CAD: 0675905/CAFE3513

Part # 15946-434 VTM/EXP 08/24

TO SHIPPING DEPT 2
EUROFINS CHICAGO
2417 BOND ST

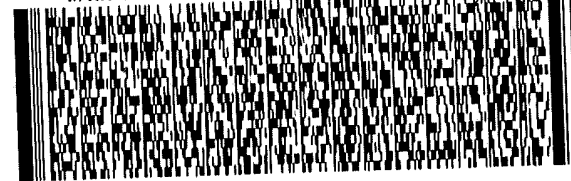
UNIVERSITY PARK IL 60484

(708) 634-6200

REF:

DEPT:

RMA: 01111111



FedEx
Express



RETURNS MON-SAT
PRIORITY OVERNIGHT

60484
FRI - 27 OCT AA
PRIORITY OVERNIGHT

TRK# 7051 7812 2535
0221

FedEx

TRK# 7051 7812 2535
0221

AC JOTA

Ref: Date: 17Oct23 SHIPPING: 0.00
Dep: Wgt: 20.00 LBS SPECIAL: 0.00
0.00 HANDLING: 0.00
TOTAL: 0.00

Syos PRIORITY OVERNIGHT Master 7051 7812 2502
TRACK 7051 7812 2524

ORIGIN ID: JOTA (651) 639-0913
RYAN AAMOT
GHD SERVICES INC.
900 LONG LAKE ROAD
SUITE 200
SAINT PAUL, MN 55112
UNITED STATES US

SHIP DATE: 17OCT23
ACTWGT: 20.00 LB MAN
CAD: 0675805/CAFE3513

Part # 153621 #REF
570C1/BC8B/6F4D

TO SHIPPING DEPT 2
EUROFINS CHICAGO
2417 BOND ST

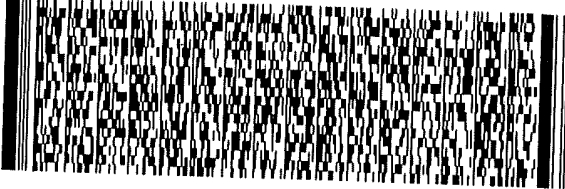
UNIVERSITY PARK IL 60484

(708) 634-5200

REF:

DEPT:

RMA: ||| ||| ||| |||



JZ11020121101W

TRK# 7051 7812 2524

RETURNS MON-SAT
PRIORITY OVERNIGHT

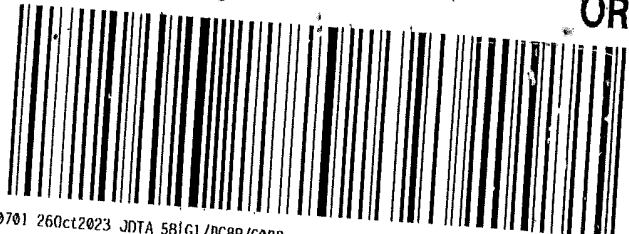
60484

TRK# 7051 7812 2524

AC JOTA

IL-US
FRI - 27 OCT AA
PRIORITY OVERNIGHT

60484
IL-US
ORD



80701 260ct2023 JOTA 581G1/BC8B/C088

Ref: Date: 17Oct23 SHIPPING: 0.00
Dep: Wgt: 20.00 LBS SPECIAL: 0.00
0.00 HANDLING: 0.00
TOTAL: 0.00

Syos PRIORITY OVERNIGHT Master 7051 7812 2502
TRACK: 7051 7812 2502

ORIGIN ID: JOTA (651) 639-0913
RYAN AAMOT
GHD SERVICES INC.
900 LONG LAKE ROAD
SUITE 200
SAINT PAUL, MN 55112
UNITED STATES US

SHIP DATE: 17OCT23
ACTWGT: 20.00 LB MAN
CAD: 0675805/CAFE3513

Part # 153621 #REF
570C1/BC8B/6F4D

TO SHIPPING DEPT 2
EUROFINS CHICAGO
2417 BOND ST

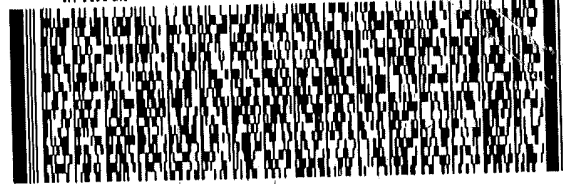
UNIVERSITY PARK IL 60484

(708) 634-5200

REF:

DEPT:

RMA: ||| ||| ||| |||



JZ11020121101W

TRK# 7051 7812 2502

RETURNS MON-SAT
PRIORITY OVERNIGHT

60484

TRK# 7051 7812 2502

FRI - 27 OCT AA
PRIORITY OVERNIGHT

A
5 10:30
2502 10:27

Ref: Date: 17Oct23 SHIPPING: 0.00
Dep: Wgt: 20.00 LBS SPECIAL: 0.00
DV: HANDLING: 0.00
0.00 TOTAL: 0.00

Svcs PRIORITY OVERNIGHT Master 7051 7812 2502
TRCK 7051 7812 2513

ORIGIN ID: JOTA (651) 699-0913
RYAN RAYOT
GHD SERVICES INC.
900 JING LAKE ROAD
SUITE 200
SAINT PAUL, MN 55112
UNITED STATES US

SHIP DATE: 17OCT23
ACTIMST: 20.00 LB PAN
CRD: 0875905/CRF3513

Part # 159469 434 MTW EXP 06/24

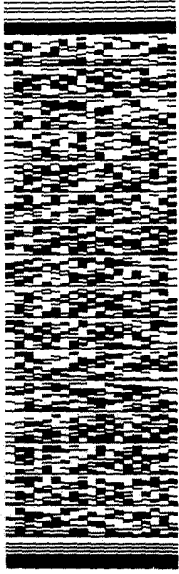
TO SHIPPING DEPT 2
EUROFINS CHICAGO
2417 BOND ST

UNIVERSITY PARK IL 60484

(708) 584-5200 REF:
NOI:
PO:

DEPT:

RMA: |||



FedEx
Express



J211020121101rv

TRK# 7051 7812 2513

0221

RETURNS MON - SAT
PRIORITY OVERNIGHT

60484

IL-US

FedEx
TRK# 7051 7812 2513
0221

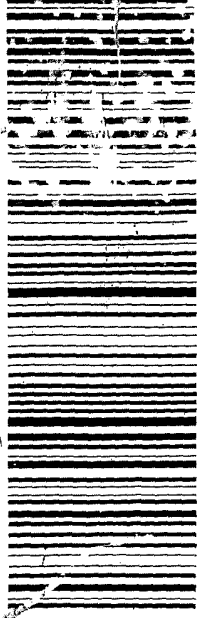
FRI - 27 OCT AA
PRIORITY OVERNIGHT

AC JOTA

60484

IL-US

ORD



6970 260ct2023 JOTA 581G1/BC88/C068



Eurofins - Cleveland Sample Receipt Form/Narrative Login # : _____
Barberton Facility

Client Eve Chicago Site Name _____ Cooler unpacked by: M. You
Cooler Received on 10-28-23 Opened on 10-28-23
FedEx: 1st Gnd Exp UPS FAS Waypoint Client Drop Off Eurofins Courier Other

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

Eurofins Cooler # 22 Foam Box _____ Client Cooler _____ Box _____ Other _____
Packing material used: Bubble Wrap Foam Plastic Bag None Other _____
COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt See Multiple Cooler Form
IR GUN # 22 (CF 02 °C) Observed Cooler Temp 2.7 °C Corrected Cooler Temp 25 °C

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

3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?
10. Were correct bottle(s) used for the test(s) indicated? Yes No
11. Sufficient quantity received to perform indicated analyses? Yes No
12. Are these work share samples and all listed on the COC? Yes No
If yes, Questions 13-17 have been checked at the originating laboratory.

13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC316719
14. Were VOAs on the COC? Yes No
15. Were air bubbles >6 mm in any VOA vials? Larger than this. Yes No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
17. Was a LL Hg or Me Hg trip blank present? Yes No

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

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page Samples processed by: _____

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

20. SAMPLE PRESERVATION
Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____
VOA Sample Preservation - Date/Time VOAs Frozen: _____

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-241697-1

Login Number: 241697

List Number: 1

Creator: James, Jeff A

List Source: Eurofins Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.0,2.6,1.9,4.7,1.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	





ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Grant Anderson
GHD Services Inc.
900 Long Lake Road
Suite 200
New Brighton, Minnesota 55112

Generated 11/27/2023 3:51:52 PM

JOB DESCRIPTION

Penta Wood 11222418

JOB NUMBER

500-241762-1

Eurofins Chicago

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



Generated
11/27/2023 3:51:52 PM

Authorized for release by
Shawn Hayes, Senior Project Manager
Shawn.Hayes@et.eurofinsus.com
(708)534-5200



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Case Narrative

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Job ID: 500-241762-1

Laboratory: Eurofins Chicago

Narrative

Job Narrative 500-241762-1

Receipt

The samples were received on 10/28/2023 9:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 5 coolers at receipt time were 1.6°C, 1.8°C, 2.2°C, 3.0°C and 3.2°C

GC/MS VOA

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

GC/MS Semi VOA

Method 8270E: The continuing calibration verification (CCV) analyzed in 500-740878 was outside the method criteria for the following analyte: Terphenyl-d14 (Surr). As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte is considered estimated.

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

GC VOA

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

Herbicides

Method 8151A: The matrix spike duplicate (MSD) precision for preparation batch 500-740191 and analytical batch 500-740405 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS) precision was within acceptance limits.

Method 8151A: The following samples required a dilution due to the nature of the sample matrix: W-231027-TS-26 (500-241762-1), W-231027-TS-27 (500-241762-2) and W-231027-TS-33 (500-241762-8). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method 8151A: The surrogate recovery for the following samples was outside acceptance limits (high biased) on the primary column due to matrix interference: W-231027-TS-28 (500-241762-3) and W-231027-TS-32 (500-241762-7). The recovery is within acceptance limits on the other column, indicating that the extraction process was in control.

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

Metals

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

General Chemistry

Method 300_48HR: The following samples were analyzed outside of analytical holding time due to instrument issues: W-231027-TS-26 (500-241762-1), W-231027-TS-27 (500-241762-2), W-231027-TS-28 (500-241762-3), W-231027-TS-29 (500-241762-4), W-231027-TS-30 (500-241762-5), W-231027-TS-31 (500-241762-6), W-231027-TS-32 (500-241762-7), W-231027-TS-33 (500-241762-8).

Method 9060A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 500-742138 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

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

Organic Prep

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

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Client Sample ID: W-231027-TS-26

Lab Sample ID: 500-241762-1

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Naphthalene	0.30	J	0.87	0.27	ug/L	1		8270E	Total/NA
Pentachlorophenol	660		99	98	ug/L	1000		8151A	Total/NA
Calcium	38000	B F1	200	44.3	ug/L	1		6020A	Total Recoverable
Copper	1.6	J	2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	51.0	J	100	46.7	ug/L	1		6020A	Total Recoverable
Magnesium	16000		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	6.0	B	2.5	0.79	ug/L	1		6020A	Total Recoverable
Calcium	38000	B	200	44.3	ug/L	1		6020A	Dissolved
Copper	1.3	J	2.0	0.50	ug/L	1		6020A	Dissolved
Magnesium	15800		200	49.4	ug/L	1		6020A	Dissolved
Manganese	4.4	B	2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	94.8		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	94.8		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	0.85	J	1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	0.61	J H	1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	2.8		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Quad	3.8		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	169		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-231027-TS-27

Lab Sample ID: 500-241762-2

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.27	J	0.50	0.15	ug/L	1		8260B	Total/NA
Ethylbenzene	0.58		0.50	0.18	ug/L	1		8260B	Total/NA
Xylenes, Total	5.0		1.0	0.22	ug/L	1		8260B	Total/NA
Naphthalene	12		0.78	0.24	ug/L	1		8270E	Total/NA
Methane	10		1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	4600		380	380	ug/L	4000		8151A	Total/NA
Arsenic	1.0		1.0	0.23	ug/L	1		6020A	Total Recoverable
Calcium	68700	B	200	44.3	ug/L	1		6020A	Total Recoverable
Copper	5.8		2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	16200		100	46.7	ug/L	1		6020A	Total Recoverable
Magnesium	30000		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	7730	B	25.0	7.9	ug/L	10		6020A	Total Recoverable
Arsenic	0.82	J	1.0	0.23	ug/L	1		6020A	Dissolved
Calcium	67900	B	200	44.3	ug/L	1		6020A	Dissolved
Copper	1.4	J	2.0	0.50	ug/L	1		6020A	Dissolved
Iron	13900		100	46.7	ug/L	1		6020A	Dissolved
Magnesium	29300		200	49.4	ug/L	1		6020A	Dissolved
Manganese	7780	B	25.0	7.9	ug/L	10		6020A	Dissolved
Calcium hardness as CaCO3	172		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	170		0.50	0.25	mg/L	1		SM 2340B	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Client Sample ID: W-231027-TS-27 (Continued)

Lab Sample ID: 500-241762-2

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Chloride	21.7		1.0	0.12	mg/L	1		300.0	Total/NA
Sulfate	18.6		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Quad	24.4		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	271		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-231027-TS-28

Lab Sample ID: 500-241762-3

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	17		0.50	0.49	ug/L	5		8151A	Total/NA
Calcium	212	B	200	44.3	ug/L	1		6020A	Total Recoverable
Copper	3.5		2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	4100		100	46.7	ug/L	1		6020A	Total Recoverable
Manganese	117	B	2.5	0.79	ug/L	1		6020A	Total Recoverable
Arsenic	0.51	J	1.0	0.23	ug/L	1		6020A	Dissolved
Calcium	3050	B	200	44.3	ug/L	1		6020A	Dissolved
Copper	7.3		2.0	0.50	ug/L	1		6020A	Dissolved
Iron	16800		100	46.7	ug/L	1		6020A	Dissolved
Magnesium	1120		200	49.4	ug/L	1		6020A	Dissolved
Manganese	365	B	2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	0.53		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	7.6		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Nitrate as N	0.19	J H	1.0	0.043	mg/L	1		300.0	Total/NA
Total Organic Carbon - Quad	0.61	J	1.0	0.47	mg/L	1		9060A	Total/NA

Client Sample ID: W-231027-TS-29

Lab Sample ID: 500-241762-4

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.25		0.099	0.098	ug/L	1		8151A	Total/NA
Arsenic	0.86	J	1.0	0.23	ug/L	1		6020A	Total Recoverable
Calcium	17700	B	200	44.3	ug/L	1		6020A	Total Recoverable
Copper	17.7		2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	5470		100	46.7	ug/L	1		6020A	Total Recoverable
Magnesium	8170		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	188	B	2.5	0.79	ug/L	1		6020A	Total Recoverable
Zinc	21.9		20.0	6.9	ug/L	1		6020A	Total Recoverable
Calcium	17800	B	200	44.3	ug/L	1		6020A	Dissolved
Copper	3.9		2.0	0.50	ug/L	1		6020A	Dissolved
Magnesium	7420		200	49.4	ug/L	1		6020A	Dissolved
Manganese	2.0	J B	2.5	0.79	ug/L	1		6020A	Dissolved
Zinc	16.3	J	20.0	6.9	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	44.1		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	44.4		0.50	0.25	mg/L	1		SM 2340B	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Client Sample ID: W-231027-TS-29 (Continued)

Lab Sample ID: 500-241762-4

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Chloride	0.21	J	1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	0.29	J H	1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	1.3		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Quad	0.72	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	80.0		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-231027-TS-30

Lab Sample ID: 500-241762-5

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.50	J	1.0	0.23	ug/L	1		6020A	Total Recoverable
Calcium	23600	B	200	44.3	ug/L	1		6020A	Total Recoverable
Copper	10.1		2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	2330		100	46.7	ug/L	1		6020A	Total Recoverable
Magnesium	9740		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	163	B	2.5	0.79	ug/L	1		6020A	Total Recoverable
Calcium	23800	B	200	44.3	ug/L	1		6020A	Dissolved
Copper	3.6		2.0	0.50	ug/L	1		6020A	Dissolved
Magnesium	9050		200	49.4	ug/L	1		6020A	Dissolved
Manganese	1.4	J B	2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	59.0		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	59.4		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	79.8		5.0	0.58	mg/L	5		300.0	Total/NA
Nitrate as N	1.7	H	1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	4.6		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Quad	0.94	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	70.9		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-231027-TS-31

Lab Sample ID: 500-241762-6

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.19	J	0.50	0.15	ug/L	1		8260B	Total/NA
Arsenic	1.3		1.0	0.23	ug/L	1		6020A	Total Recoverable
Calcium	21500	B	200	44.3	ug/L	1		6020A	Total Recoverable
Copper	26.1		2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	6000		100	46.7	ug/L	1		6020A	Total Recoverable
Magnesium	10200		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	302	B	2.5	0.79	ug/L	1		6020A	Total Recoverable
Zinc	21.2		20.0	6.9	ug/L	1		6020A	Total Recoverable
Calcium	21900	B	200	44.3	ug/L	1		6020A	Dissolved
Copper	4.0		2.0	0.50	ug/L	1		6020A	Dissolved
Iron	53.6	J	100	46.7	ug/L	1		6020A	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Client Sample ID: W-231027-TS-31 (Continued)

Lab Sample ID: 500-241762-6

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Magnesium	9430		200	49.4	ug/L	1		6020A	Dissolved
Manganese	3.0	B	2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	53.8		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	54.6		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	8.5		1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	0.91	J H	1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	2.8		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Quad	0.66	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	92.6		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-231027-TS-32

Lab Sample ID: 500-241762-7

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methane	1.3		1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	6.9		0.20	0.20	ug/L	2		8151A	Total/NA
Calcium	24300	B	200	44.3	ug/L	1		6020A	Total Recoverable
Copper	3.4		2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	266		100	46.7	ug/L	1		6020A	Total Recoverable
Magnesium	11500		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	32.1	B	2.5	0.79	ug/L	1		6020A	Total Recoverable
Calcium	24100	B	200	44.3	ug/L	1		6020A	Dissolved
Copper	2.0		2.0	0.50	ug/L	1		6020A	Dissolved
Magnesium	11400		200	49.4	ug/L	1		6020A	Dissolved
Manganese	2.3	J B	2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	60.8		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	60.3		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	0.98	J	1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	1.6	H	1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	5.4		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Quad	1.2		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	110		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-231027-TS-33

Lab Sample ID: 500-241762-8

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methane	9.9		1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	900		41	41	ug/L	400		8151A	Total/NA
Arsenic	0.23	J	1.0	0.23	ug/L	1		6020A	Total Recoverable
Calcium	55300	B	200	44.3	ug/L	1		6020A	Total Recoverable
Copper	1.8	J	2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	9720		100	46.7	ug/L	1		6020A	Total Recoverable
Magnesium	20400		200	49.4	ug/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

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Detection Summary

Client: GHD Services Inc.
 Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Client Sample ID: W-231027-TS-33 (Continued)

Lab Sample ID: 500-241762-8

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Manganese	52.7	B	2.5	0.79	ug/L	1		6020A	Total Recoverable
Zinc	60.9		20.0	6.9	ug/L	1		6020A	Total Recoverable
Calcium	55400	B	200	44.3	ug/L	1		6020A	Dissolved
Copper	4.0		2.0	0.50	ug/L	1		6020A	Dissolved
Iron	640		100	46.7	ug/L	1		6020A	Dissolved
Magnesium	19500		200	49.4	ug/L	1		6020A	Dissolved
Manganese	34.5	B	2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	138		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	138		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	2.6		1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	2.0	H	1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	8.6		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Quad	3.0		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	222		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: TRIP BLANK

Lab Sample ID: 500-241762-9

No Detections.

This Detection Summary does not include radiochemical test results.

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Method Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	EET CHI
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CHI
RSK-175	Dissolved Gases (GC)	RSK	EET CLE
8151A	Herbicides (GC)	SW846	EET CHI
6020A	Metals (ICP/MS)	SW846	EET CHI
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	EET CHI
300.0	Anions, Ion Chromatography	EPA	EET CHI
9060A	Organic Carbon, Total (TOC)	SW846	EET CHI
SM 2320B	Alkalinity	SM	EET CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CHI
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CHI
5030B	Purge and Trap	SW846	EET CHI
8151A	Extraction (Herbicides)	SW846	EET CHI

Protocol References:

EPA = US Environmental Protection Agency

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

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

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

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-241762-1	W-231027-TS-26	Water	10/27/23 09:38	10/28/23 09:30
500-241762-2	W-231027-TS-27	Water	10/27/23 10:51	10/28/23 09:30
500-241762-3	W-231027-TS-28	Water	10/27/23 12:11	10/28/23 09:30
500-241762-4	W-231027-TS-29	Water	10/27/23 11:30	10/28/23 09:30
500-241762-5	W-231027-TS-30	Water	10/27/23 12:30	10/28/23 09:30
500-241762-6	W-231027-TS-31	Water	10/27/23 13:15	10/28/23 09:30
500-241762-7	W-231027-TS-32	Water	10/27/23 12:37	10/28/23 09:30
500-241762-8	W-231027-TS-33	Water	10/27/23 13:43	10/28/23 09:30
500-241762-9	TRIP BLANK	Water	10/27/23 00:00	10/28/23 09:30

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Client Sample ID: W-231027-TS-26

Lab Sample ID: 500-241762-1

Date Collected: 10/27/23 09:38

Matrix: Water

Date Received: 10/28/23 09:30

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/02/23 19:21	1
Toluene	<0.15		0.50	0.15	ug/L			11/02/23 19:21	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/02/23 19:21	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/02/23 19:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		75 - 126		11/02/23 19:21	1
Toluene-d8 (Surr)	95		75 - 120		11/02/23 19:21	1
4-Bromofluorobenzene (Surr)	86		72 - 124		11/02/23 19:21	1
Dibromofluoromethane	104		75 - 120		11/02/23 19:21	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	0.30	J	0.87	0.27	ug/L		11/02/23 07:54	11/06/23 19:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	70		36 - 120	11/02/23 07:54	11/06/23 19:07	1
2-Fluorobiphenyl (Surr)	73		34 - 110	11/02/23 07:54	11/06/23 19:07	1
Terphenyl-d14 (Surr)	91		40 - 145	11/02/23 07:54	11/06/23 19:07	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			11/02/23 17:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	111		60 - 140		11/02/23 17:32	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	660		99	98	ug/L		11/02/23 10:32	11/10/23 12:03	1000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	0	X	25 - 130	11/02/23 10:32	11/10/23 12:03	1000

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		11/08/23 09:08	11/16/23 14:25	1
Calcium	38000	B F1	200	44.3	ug/L		11/08/23 09:08	11/21/23 17:42	1
Copper	1.6	J	2.0	0.50	ug/L		11/08/23 09:08	11/16/23 14:25	1
Iron	51.0	J	100	46.7	ug/L		11/08/23 09:08	11/16/23 14:25	1
Magnesium	16000		200	49.4	ug/L		11/08/23 09:08	11/16/23 14:25	1
Manganese	6.0	B	2.5	0.79	ug/L		11/08/23 09:08	11/16/23 14:25	1
Zinc	<6.9		20.0	6.9	ug/L		11/08/23 09:08	11/16/23 14:25	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		11/08/23 09:08	11/16/23 15:26	1
Calcium	38000	B	200	44.3	ug/L		11/08/23 09:08	11/21/23 18:30	1
Copper	1.3	J	2.0	0.50	ug/L		11/08/23 09:08	11/16/23 15:26	1
Iron	<46.7		100	46.7	ug/L		11/08/23 09:08	11/16/23 15:26	1
Magnesium	15800		200	49.4	ug/L		11/08/23 09:08	11/16/23 15:26	1
Manganese	4.4	B	2.5	0.79	ug/L		11/08/23 09:08	11/16/23 15:26	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Client Sample ID: W-231027-TS-26

Lab Sample ID: 500-241762-1

Date Collected: 10/27/23 09:38

Matrix: Water

Date Received: 10/28/23 09:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		11/08/23 09:08	11/16/23 15:26	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	94.8		0.50	0.25	mg/L		11/08/23 09:08	11/22/23 11:53	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	94.8		0.50	0.25	mg/L		11/08/23 09:08	11/22/23 11:53	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	0.85	J	1.0	0.12	mg/L			10/31/23 19:37	1
Nitrate as N (EPA 300.0)	0.61	J H	1.0	0.043	mg/L			10/31/23 19:37	1
Sulfate (EPA 300.0)	2.8		1.0	0.21	mg/L			10/31/23 19:37	1
Total Organic Carbon - Quad (SW846 9060A)	3.8		1.0	0.47	mg/L			11/15/23 15:11	1
Alkalinity (SM 2320B)	169		5.0	3.7	mg/L			11/08/23 00:29	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Client Sample ID: W-231027-TS-27

Lab Sample ID: 500-241762-2

Date Collected: 10/27/23 10:51

Matrix: Water

Date Received: 10/28/23 09:30

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/02/23 19:47	1
Toluene	0.27	J	0.50	0.15	ug/L			11/02/23 19:47	1
Ethylbenzene	0.58		0.50	0.18	ug/L			11/02/23 19:47	1
Xylenes, Total	5.0		1.0	0.22	ug/L			11/02/23 19:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		75 - 126					11/02/23 19:47	1
Toluene-d8 (Surr)	95		75 - 120					11/02/23 19:47	1
4-Bromofluorobenzene (Surr)	83		72 - 124					11/02/23 19:47	1
Dibromofluoromethane	103		75 - 120					11/02/23 19:47	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	12		0.78	0.24	ug/L		11/02/23 07:54	11/06/23 22:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	51		36 - 120				11/02/23 07:54	11/06/23 22:45	1
2-Fluorobiphenyl (Surr)	45		34 - 110				11/02/23 07:54	11/06/23 22:45	1
Terphenyl-d14 (Surr)	70		40 - 145				11/02/23 07:54	11/06/23 22:45	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	10		1.0	0.17	ug/L			11/02/23 17:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	108		60 - 140					11/02/23 17:49	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	4600		380	380	ug/L		11/02/23 10:32	11/10/23 13:43	4000
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	0	X	25 - 130				11/02/23 10:32	11/10/23 13:43	4000

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.0		1.0	0.23	ug/L		11/08/23 09:08	11/16/23 14:50	1
Calcium	68700	B	200	44.3	ug/L		11/08/23 09:08	11/21/23 17:59	1
Copper	5.8		2.0	0.50	ug/L		11/08/23 09:08	11/16/23 14:50	1
Iron	16200		100	46.7	ug/L		11/08/23 09:08	11/16/23 14:50	1
Magnesium	30000		200	49.4	ug/L		11/08/23 09:08	11/16/23 14:50	1
Manganese	7730	B	25.0	7.9	ug/L		11/08/23 09:08	11/16/23 14:58	10
Zinc	<6.9		20.0	6.9	ug/L		11/08/23 09:08	11/16/23 14:50	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.82	J	1.0	0.23	ug/L		11/08/23 09:08	11/16/23 15:30	1
Calcium	67900	B	200	44.3	ug/L		11/08/23 09:08	11/21/23 18:34	1
Copper	1.4	J	2.0	0.50	ug/L		11/08/23 09:08	11/16/23 15:30	1
Iron	13900		100	46.7	ug/L		11/08/23 09:08	11/16/23 15:30	1
Magnesium	29300		200	49.4	ug/L		11/08/23 09:08	11/16/23 15:30	1
Manganese	7780	B	25.0	7.9	ug/L		11/08/23 09:08	11/16/23 15:47	10

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Client Sample ID: W-231027-TS-27

Lab Sample ID: 500-241762-2

Date Collected: 10/27/23 10:51

Matrix: Water

Date Received: 10/28/23 09:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		11/08/23 09:08	11/16/23 15:30	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	172		0.50	0.25	mg/L		11/08/23 09:08	11/22/23 11:53	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	170		0.50	0.25	mg/L		11/08/23 09:08	11/22/23 11:53	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	21.7		1.0	0.12	mg/L			10/31/23 19:52	1
Nitrate as N (EPA 300.0)	<0.043	H	1.0	0.043	mg/L			10/31/23 19:52	1
Sulfate (EPA 300.0)	18.6		1.0	0.21	mg/L			10/31/23 19:52	1
Total Organic Carbon - Quad (SW846 9060A)	24.4		1.0	0.47	mg/L			11/15/23 15:34	1
Alkalinity (SM 2320B)	271		5.0	3.7	mg/L			11/10/23 10:19	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Client Sample ID: W-231027-TS-28

Lab Sample ID: 500-241762-3

Date Collected: 10/27/23 12:11

Matrix: Water

Date Received: 10/28/23 09:30

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/02/23 20:13	1
Toluene	<0.15		0.50	0.15	ug/L			11/02/23 20:13	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/02/23 20:13	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/02/23 20:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		75 - 126					11/02/23 20:13	1
Toluene-d8 (Surr)	95		75 - 120					11/02/23 20:13	1
4-Bromofluorobenzene (Surr)	88		72 - 124					11/02/23 20:13	1
Dibromofluoromethane	101		75 - 120					11/02/23 20:13	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.24		0.79	0.24	ug/L		11/02/23 07:54	11/06/23 19:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	48		36 - 120				11/02/23 07:54	11/06/23 19:29	1
2-Fluorobiphenyl (Surr)	48		34 - 110				11/02/23 07:54	11/06/23 19:29	1
Terphenyl-d14 (Surr)	85		40 - 145				11/02/23 07:54	11/06/23 19:29	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			11/02/23 18:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	113		60 - 140					11/02/23 18:06	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	17		0.50	0.49	ug/L		11/02/23 10:32	11/06/23 13:34	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	64		25 - 130				11/02/23 10:32	11/06/23 13:34	5

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		11/08/23 09:08	11/16/23 14:53	1
Calcium	212	B	200	44.3	ug/L		11/08/23 09:08	11/21/23 18:02	1
Copper	3.5		2.0	0.50	ug/L		11/08/23 09:08	11/16/23 14:53	1
Iron	4100		100	46.7	ug/L		11/08/23 09:08	11/16/23 14:53	1
Magnesium	<49.4		200	49.4	ug/L		11/08/23 09:08	11/16/23 14:53	1
Manganese	117	B	2.5	0.79	ug/L		11/08/23 09:08	11/16/23 14:53	1
Zinc	<6.9		20.0	6.9	ug/L		11/08/23 09:08	11/16/23 14:53	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.51	J	1.0	0.23	ug/L		11/08/23 09:08	11/16/23 15:33	1
Calcium	3050	B	200	44.3	ug/L		11/08/23 09:08	11/21/23 18:37	1
Copper	7.3		2.0	0.50	ug/L		11/08/23 09:08	11/16/23 15:33	1
Iron	16800		100	46.7	ug/L		11/08/23 09:08	11/16/23 15:33	1
Magnesium	1120		200	49.4	ug/L		11/08/23 09:08	11/16/23 15:33	1
Manganese	365	B	2.5	0.79	ug/L		11/08/23 09:08	11/16/23 15:33	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Client Sample ID: W-231027-TS-28

Lab Sample ID: 500-241762-3

Date Collected: 10/27/23 12:11

Matrix: Water

Date Received: 10/28/23 09:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		11/08/23 09:08	11/16/23 15:33	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	0.53		0.50	0.25	mg/L		11/08/23 09:08	11/22/23 11:53	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	7.6		0.50	0.25	mg/L		11/08/23 09:08	11/22/23 11:53	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	<0.12		1.0	0.12	mg/L			10/31/23 20:07	1
Nitrate as N (EPA 300.0)	0.19	J H	1.0	0.043	mg/L			10/31/23 20:07	1
Sulfate (EPA 300.0)	<0.21		1.0	0.21	mg/L			10/31/23 20:07	1
Total Organic Carbon - Quad (SW846 9060A)	0.61	J	1.0	0.47	mg/L			11/15/23 16:01	1
Alkalinity (SM 2320B)	<3.7		5.0	3.7	mg/L			11/10/23 10:30	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Client Sample ID: W-231027-TS-29

Lab Sample ID: 500-241762-4

Date Collected: 10/27/23 11:30

Matrix: Water

Date Received: 10/28/23 09:30

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/02/23 20:39	1
Toluene	<0.15		0.50	0.15	ug/L			11/02/23 20:39	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/02/23 20:39	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/02/23 20:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		75 - 126					11/02/23 20:39	1
Toluene-d8 (Surr)	95		75 - 120					11/02/23 20:39	1
4-Bromofluorobenzene (Surr)	89		72 - 124					11/02/23 20:39	1
Dibromofluoromethane	102		75 - 120					11/02/23 20:39	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.27		0.87	0.27	ug/L		11/02/23 07:54	11/06/23 19:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	65		36 - 120				11/02/23 07:54	11/06/23 19:51	1
2-Fluorobiphenyl (Surr)	67		34 - 110				11/02/23 07:54	11/06/23 19:51	1
Terphenyl-d14 (Surr)	91		40 - 145				11/02/23 07:54	11/06/23 19:51	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			11/02/23 18:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	113		60 - 140					11/02/23 18:23	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.25		0.099	0.098	ug/L		11/02/23 10:32	11/03/23 18:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	81		25 - 130				11/02/23 10:32	11/03/23 18:14	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.86	J	1.0	0.23	ug/L		11/08/23 09:08	11/16/23 15:01	1
Calcium	17700	B	200	44.3	ug/L		11/08/23 09:08	11/21/23 18:06	1
Copper	17.7		2.0	0.50	ug/L		11/08/23 09:08	11/16/23 15:01	1
Iron	5470		100	46.7	ug/L		11/08/23 09:08	11/16/23 15:01	1
Magnesium	8170		200	49.4	ug/L		11/08/23 09:08	11/16/23 15:01	1
Manganese	188	B	2.5	0.79	ug/L		11/08/23 09:08	11/16/23 15:01	1
Zinc	21.9		20.0	6.9	ug/L		11/08/23 09:08	11/16/23 15:01	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		11/08/23 09:08	11/16/23 15:37	1
Calcium	17800	B	200	44.3	ug/L		11/08/23 09:08	11/21/23 18:41	1
Copper	3.9		2.0	0.50	ug/L		11/08/23 09:08	11/16/23 15:37	1
Iron	<46.7		100	46.7	ug/L		11/08/23 09:08	11/16/23 15:37	1
Magnesium	7420		200	49.4	ug/L		11/08/23 09:08	11/16/23 15:37	1
Manganese	2.0	J B	2.5	0.79	ug/L		11/08/23 09:08	11/16/23 15:37	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Client Sample ID: W-231027-TS-29

Lab Sample ID: 500-241762-4

Date Collected: 10/27/23 11:30

Matrix: Water

Date Received: 10/28/23 09:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	16.3	J	20.0	6.9	ug/L		11/08/23 09:08	11/16/23 15:37	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	44.1		0.50	0.25	mg/L		11/08/23 09:08	11/22/23 11:53	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	44.4		0.50	0.25	mg/L		11/08/23 09:08	11/22/23 11:53	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	0.21	J	1.0	0.12	mg/L			10/31/23 20:22	1
Nitrate as N (EPA 300.0)	0.29	J H	1.0	0.043	mg/L			10/31/23 20:22	1
Sulfate (EPA 300.0)	1.3		1.0	0.21	mg/L			10/31/23 20:22	1
Total Organic Carbon - Quad (SW846 9060A)	0.72	J	1.0	0.47	mg/L			11/15/23 16:28	1
Alkalinity (SM 2320B)	80.0		5.0	3.7	mg/L			11/10/23 10:36	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Client Sample ID: W-231027-TS-30

Lab Sample ID: 500-241762-5

Date Collected: 10/27/23 12:30

Matrix: Water

Date Received: 10/28/23 09:30

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/02/23 21:05	1
Toluene	<0.15		0.50	0.15	ug/L			11/02/23 21:05	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/02/23 21:05	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/02/23 21:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		75 - 126					11/02/23 21:05	1
Toluene-d8 (Surr)	95		75 - 120					11/02/23 21:05	1
4-Bromofluorobenzene (Surr)	89		72 - 124					11/02/23 21:05	1
Dibromofluoromethane	102		75 - 120					11/02/23 21:05	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.26		0.85	0.26	ug/L		11/02/23 07:54	11/06/23 20:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	56		36 - 120				11/02/23 07:54	11/06/23 20:13	1
2-Fluorobiphenyl (Surr)	57		34 - 110				11/02/23 07:54	11/06/23 20:13	1
Terphenyl-d14 (Surr)	87		40 - 145				11/02/23 07:54	11/06/23 20:13	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			11/02/23 18:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	113		60 - 140					11/02/23 18:40	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.10		0.10	0.10	ug/L		11/02/23 10:32	11/03/23 18:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	65		25 - 130				11/02/23 10:32	11/03/23 18:32	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.50	J	1.0	0.23	ug/L		11/08/23 09:08	11/16/23 15:04	1
Calcium	23600	B	200	44.3	ug/L		11/08/23 09:08	11/21/23 18:16	1
Copper	10.1		2.0	0.50	ug/L		11/08/23 09:08	11/16/23 15:04	1
Iron	2330		100	46.7	ug/L		11/08/23 09:08	11/16/23 15:04	1
Magnesium	9740		200	49.4	ug/L		11/08/23 09:08	11/16/23 15:04	1
Manganese	163	B	2.5	0.79	ug/L		11/08/23 09:08	11/16/23 15:04	1
Zinc	<6.9		20.0	6.9	ug/L		11/08/23 09:08	11/16/23 15:04	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		11/08/23 09:08	11/16/23 15:40	1
Calcium	23800	B	200	44.3	ug/L		11/08/23 09:08	11/21/23 18:44	1
Copper	3.6		2.0	0.50	ug/L		11/08/23 09:08	11/16/23 15:40	1
Iron	<46.7		100	46.7	ug/L		11/08/23 09:08	11/16/23 15:40	1
Magnesium	9050		200	49.4	ug/L		11/08/23 09:08	11/16/23 15:40	1
Manganese	1.4	J B	2.5	0.79	ug/L		11/08/23 09:08	11/16/23 15:40	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Client Sample ID: W-231027-TS-30

Lab Sample ID: 500-241762-5

Date Collected: 10/27/23 12:30

Matrix: Water

Date Received: 10/28/23 09:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		11/08/23 09:08	11/16/23 15:40	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	59.0		0.50	0.25	mg/L		11/08/23 09:08	11/22/23 11:53	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	59.4		0.50	0.25	mg/L		11/08/23 09:08	11/22/23 11:53	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	79.8		5.0	0.58	mg/L			11/01/23 19:57	5
Nitrate as N (EPA 300.0)	1.7	H	1.0	0.043	mg/L			10/31/23 21:38	1
Sulfate (EPA 300.0)	4.6		1.0	0.21	mg/L			10/31/23 21:38	1
Total Organic Carbon - Quad (SW846 9060A)	0.94	J	1.0	0.47	mg/L			11/15/23 16:50	1
Alkalinity (SM 2320B)	70.9		5.0	3.7	mg/L			11/10/23 10:44	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Client Sample ID: W-231027-TS-31

Lab Sample ID: 500-241762-6

Date Collected: 10/27/23 13:15

Matrix: Water

Date Received: 10/28/23 09:30

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/02/23 21:31	1
Toluene	0.19	J	0.50	0.15	ug/L			11/02/23 21:31	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/02/23 21:31	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/02/23 21:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		75 - 126					11/02/23 21:31	1
Toluene-d8 (Surr)	94		75 - 120					11/02/23 21:31	1
4-Bromofluorobenzene (Surr)	88		72 - 124					11/02/23 21:31	1
Dibromofluoromethane	104		75 - 120					11/02/23 21:31	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.80	0.25	ug/L		11/02/23 07:54	11/06/23 20:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	63		36 - 120				11/02/23 07:54	11/06/23 20:35	1
2-Fluorobiphenyl (Surr)	61		34 - 110				11/02/23 07:54	11/06/23 20:35	1
Terphenyl-d14 (Surr)	88		40 - 145				11/02/23 07:54	11/06/23 20:35	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			11/02/23 18:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	112		60 - 140					11/02/23 18:57	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.10		0.10	0.10	ug/L		11/02/23 10:32	11/03/23 18:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	43		25 - 130				11/02/23 10:32	11/03/23 18:51	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.3		1.0	0.23	ug/L		11/08/23 09:08	11/16/23 15:08	1
Calcium	21500	B	200	44.3	ug/L		11/08/23 09:08	11/21/23 18:20	1
Copper	26.1		2.0	0.50	ug/L		11/08/23 09:08	11/16/23 15:08	1
Iron	6000		100	46.7	ug/L		11/08/23 09:08	11/16/23 15:08	1
Magnesium	10200		200	49.4	ug/L		11/08/23 09:08	11/16/23 15:08	1
Manganese	302	B	2.5	0.79	ug/L		11/08/23 09:08	11/16/23 15:08	1
Zinc	21.2		20.0	6.9	ug/L		11/08/23 09:08	11/16/23 15:08	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		11/08/23 09:08	11/16/23 15:44	1
Calcium	21900	B	200	44.3	ug/L		11/08/23 09:08	11/21/23 18:48	1
Copper	4.0		2.0	0.50	ug/L		11/08/23 09:08	11/16/23 15:44	1
Iron	53.6	J	100	46.7	ug/L		11/08/23 09:08	11/16/23 15:44	1
Magnesium	9430		200	49.4	ug/L		11/08/23 09:08	11/16/23 15:44	1
Manganese	3.0	B	2.5	0.79	ug/L		11/08/23 09:08	11/16/23 15:44	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Client Sample ID: W-231027-TS-31

Lab Sample ID: 500-241762-6

Date Collected: 10/27/23 13:15

Matrix: Water

Date Received: 10/28/23 09:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		11/08/23 09:08	11/16/23 15:44	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	53.8		0.50	0.25	mg/L		11/08/23 09:08	11/22/23 11:53	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	54.6		0.50	0.25	mg/L		11/08/23 09:08	11/22/23 11:53	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	8.5		1.0	0.12	mg/L			10/31/23 21:53	1
Nitrate as N (EPA 300.0)	0.91	J H	1.0	0.043	mg/L			10/31/23 21:53	1
Sulfate (EPA 300.0)	2.8		1.0	0.21	mg/L			10/31/23 21:53	1
Total Organic Carbon - Quad (SW846 9060A)	0.66	J	1.0	0.47	mg/L			11/15/23 17:13	1
Alkalinity (SM 2320B)	92.6		5.0	3.7	mg/L			11/10/23 10:53	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Client Sample ID: W-231027-TS-32

Lab Sample ID: 500-241762-7

Date Collected: 10/27/23 12:37

Matrix: Water

Date Received: 10/28/23 09:30

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/02/23 21:57	1
Toluene	<0.15		0.50	0.15	ug/L			11/02/23 21:57	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/02/23 21:57	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/02/23 21:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		75 - 126		11/02/23 21:57	1
Toluene-d8 (Surr)	95		75 - 120		11/02/23 21:57	1
4-Bromofluorobenzene (Surr)	87		72 - 124		11/02/23 21:57	1
Dibromofluoromethane	104		75 - 120		11/02/23 21:57	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.28		0.90	0.28	ug/L		11/02/23 07:54	11/07/23 22:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	51		36 - 120	11/02/23 07:54	11/07/23 22:19	1
2-Fluorobiphenyl (Surr)	55		34 - 110	11/02/23 07:54	11/07/23 22:19	1
Terphenyl-d14 (Surr)	92	^c	40 - 145	11/02/23 07:54	11/07/23 22:19	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	1.3		1.0	0.17	ug/L			11/06/23 14:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	111		60 - 140		11/06/23 14:28	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	6.9		0.20	0.20	ug/L		11/02/23 10:32	11/06/23 13:53	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	76		25 - 130	11/02/23 10:32	11/06/23 13:53	2

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		11/08/23 09:08	11/16/23 15:11	1
Calcium	24300	B	200	44.3	ug/L		11/08/23 09:08	11/21/23 18:23	1
Copper	3.4		2.0	0.50	ug/L		11/08/23 09:08	11/16/23 15:11	1
Iron	266		100	46.7	ug/L		11/08/23 09:08	11/16/23 15:11	1
Magnesium	11500		200	49.4	ug/L		11/08/23 09:08	11/16/23 15:11	1
Manganese	32.1	B	2.5	0.79	ug/L		11/08/23 09:08	11/16/23 15:11	1
Zinc	<6.9		20.0	6.9	ug/L		11/08/23 09:08	11/16/23 15:11	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		11/08/23 09:08	11/16/23 15:51	1
Calcium	24100	B	200	44.3	ug/L		11/08/23 09:08	11/21/23 18:58	1
Copper	2.0		2.0	0.50	ug/L		11/08/23 09:08	11/16/23 15:51	1
Iron	<46.7		100	46.7	ug/L		11/08/23 09:08	11/16/23 15:51	1
Magnesium	11400		200	49.4	ug/L		11/08/23 09:08	11/16/23 15:51	1
Manganese	2.3	J B	2.5	0.79	ug/L		11/08/23 09:08	11/16/23 15:51	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Client Sample ID: W-231027-TS-32

Lab Sample ID: 500-241762-7

Date Collected: 10/27/23 12:37

Matrix: Water

Date Received: 10/28/23 09:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		11/08/23 09:08	11/16/23 15:51	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	60.8		0.50	0.25	mg/L		11/08/23 09:08	11/22/23 11:53	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	60.3		0.50	0.25	mg/L		11/08/23 09:08	11/22/23 11:53	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	0.98	J	1.0	0.12	mg/L			10/31/23 22:08	1
Nitrate as N (EPA 300.0)	1.6	H	1.0	0.043	mg/L			10/31/23 22:08	1
Sulfate (EPA 300.0)	5.4		1.0	0.21	mg/L			10/31/23 22:08	1
Total Organic Carbon - Quad (SW846 9060A)	1.2		1.0	0.47	mg/L			11/15/23 17:35	1
Alkalinity (SM 2320B)	110		5.0	3.7	mg/L			11/10/23 11:02	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Client Sample ID: W-231027-TS-33

Lab Sample ID: 500-241762-8

Date Collected: 10/27/23 13:43

Matrix: Water

Date Received: 10/28/23 09:30

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/02/23 22:23	1
Toluene	<0.15		0.50	0.15	ug/L			11/02/23 22:23	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/02/23 22:23	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/02/23 22:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		75 - 126					11/02/23 22:23	1
Toluene-d8 (Surr)	94		75 - 120					11/02/23 22:23	1
4-Bromofluorobenzene (Surr)	86		72 - 124					11/02/23 22:23	1
Dibromofluoromethane	104		75 - 120					11/02/23 22:23	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.26		0.83	0.26	ug/L		11/02/23 07:54	11/06/23 21:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	68		36 - 120				11/02/23 07:54	11/06/23 21:18	1
2-Fluorobiphenyl (Surr)	68		34 - 110				11/02/23 07:54	11/06/23 21:18	1
Terphenyl-d14 (Surr)	92		40 - 145				11/02/23 07:54	11/06/23 21:18	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	9.9		1.0	0.17	ug/L			11/06/23 14:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	108		60 - 140					11/06/23 14:45	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	900		41	41	ug/L		11/02/23 10:32	11/10/23 11:45	400
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	0	X	25 - 130				11/02/23 10:32	11/10/23 11:45	400

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.23	J	1.0	0.23	ug/L		11/08/23 09:08	11/16/23 15:22	1
Calcium	55300	B	200	44.3	ug/L		11/08/23 09:08	11/21/23 18:27	1
Copper	1.8	J	2.0	0.50	ug/L		11/08/23 09:08	11/16/23 15:22	1
Iron	9720		100	46.7	ug/L		11/08/23 09:08	11/16/23 15:22	1
Magnesium	20400		200	49.4	ug/L		11/08/23 09:08	11/16/23 15:22	1
Manganese	52.7	B	2.5	0.79	ug/L		11/08/23 09:08	11/16/23 15:22	1
Zinc	60.9		20.0	6.9	ug/L		11/08/23 09:08	11/16/23 15:22	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		11/08/23 09:08	11/16/23 15:54	1
Calcium	55400	B	200	44.3	ug/L		11/08/23 09:08	11/21/23 19:02	1
Copper	4.0		2.0	0.50	ug/L		11/08/23 09:08	11/16/23 15:54	1
Iron	640		100	46.7	ug/L		11/08/23 09:08	11/16/23 15:54	1
Magnesium	19500		200	49.4	ug/L		11/08/23 09:08	11/16/23 15:54	1
Manganese	34.5	B	2.5	0.79	ug/L		11/08/23 09:08	11/16/23 15:54	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Client Sample ID: W-231027-TS-33

Lab Sample ID: 500-241762-8

Date Collected: 10/27/23 13:43

Matrix: Water

Date Received: 10/28/23 09:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		11/08/23 09:08	11/16/23 15:54	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	138		0.50	0.25	mg/L		11/08/23 09:08	11/22/23 11:53	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	138		0.50	0.25	mg/L		11/08/23 09:08	11/22/23 11:55	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	2.6		1.0	0.12	mg/L			10/31/23 22:24	1
Nitrate as N (EPA 300.0)	2.0	H	1.0	0.043	mg/L			10/31/23 22:24	1
Sulfate (EPA 300.0)	8.6		1.0	0.21	mg/L			10/31/23 22:24	1
Total Organic Carbon - Quad (SW846 9060A)	3.0		1.0	0.47	mg/L			11/20/23 04:10	1
Alkalinity (SM 2320B)	222		5.0	3.7	mg/L			11/10/23 11:11	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 500-241762-9

Date Collected: 10/27/23 00:00

Matrix: Water

Date Received: 10/28/23 09:30

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			11/02/23 15:26	1
Toluene	<0.15		0.50	0.15	ug/L			11/02/23 15:26	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/02/23 15:26	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/02/23 15:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		75 - 126		11/02/23 15:26	1
Toluene-d8 (Surr)	94		75 - 120		11/02/23 15:26	1
4-Bromofluorobenzene (Surr)	85		72 - 124		11/02/23 15:26	1
Dibromofluoromethane	104		75 - 120		11/02/23 15:26	1

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Reported value was between the limit of detection and the limit of quantitation.

GC/MS Semi VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.
J	Reported value was between the limit of detection and the limit of quantitation.

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate recovery exceeds control limits

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
F1	MS and/or MSD recovery exceeds control limits.
J	Reported value was between the limit of detection and the limit of quantitation.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.
J	Reported value was between the limit of detection and the limit of quantitation.

Glossary

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

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Definitions/Glossary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

GC/MS VOA

Analysis Batch: 740154

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241762-1	W-231027-TS-26	Total/NA	Water	8260B	
500-241762-2	W-231027-TS-27	Total/NA	Water	8260B	
500-241762-3	W-231027-TS-28	Total/NA	Water	8260B	
500-241762-4	W-231027-TS-29	Total/NA	Water	8260B	
500-241762-5	W-231027-TS-30	Total/NA	Water	8260B	
500-241762-6	W-231027-TS-31	Total/NA	Water	8260B	
500-241762-7	W-231027-TS-32	Total/NA	Water	8260B	
500-241762-8	W-231027-TS-33	Total/NA	Water	8260B	
500-241762-9	TRIP BLANK	Total/NA	Water	8260B	
MB 500-740154/7	Method Blank	Total/NA	Water	8260B	
LCS 500-740154/4	Lab Control Sample	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 740011

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241762-1	W-231027-TS-26	Total/NA	Water	3510C	
500-241762-2	W-231027-TS-27	Total/NA	Water	3510C	
500-241762-3	W-231027-TS-28	Total/NA	Water	3510C	
500-241762-4	W-231027-TS-29	Total/NA	Water	3510C	
500-241762-5	W-231027-TS-30	Total/NA	Water	3510C	
500-241762-6	W-231027-TS-31	Total/NA	Water	3510C	
500-241762-7	W-231027-TS-32	Total/NA	Water	3510C	
500-241762-8	W-231027-TS-33	Total/NA	Water	3510C	
MB 500-740011/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-740011/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 500-740011/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 740615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241762-1	W-231027-TS-26	Total/NA	Water	8270E	740011
500-241762-2	W-231027-TS-27	Total/NA	Water	8270E	740011
500-241762-3	W-231027-TS-28	Total/NA	Water	8270E	740011
500-241762-4	W-231027-TS-29	Total/NA	Water	8270E	740011
500-241762-5	W-231027-TS-30	Total/NA	Water	8270E	740011
500-241762-6	W-231027-TS-31	Total/NA	Water	8270E	740011
500-241762-8	W-231027-TS-33	Total/NA	Water	8270E	740011
MB 500-740011/1-A	Method Blank	Total/NA	Water	8270E	740011
LCS 500-740011/2-A	Lab Control Sample	Total/NA	Water	8270E	740011
LCS 500-740011/3-A	Lab Control Sample Dup	Total/NA	Water	8270E	740011

Analysis Batch: 740878

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241762-7	W-231027-TS-32	Total/NA	Water	8270E	740011

GC VOA

Analysis Batch: 593187

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241762-1	W-231027-TS-26	Total/NA	Water	RSK-175	
500-241762-2	W-231027-TS-27	Total/NA	Water	RSK-175	
500-241762-3	W-231027-TS-28	Total/NA	Water	RSK-175	

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

GC VOA (Continued)

Analysis Batch: 593187 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241762-4	W-231027-TS-29	Total/NA	Water	RSK-175	
500-241762-5	W-231027-TS-30	Total/NA	Water	RSK-175	
500-241762-6	W-231027-TS-31	Total/NA	Water	RSK-175	
MB 240-593187/3	Method Blank	Total/NA	Water	RSK-175	
LCS 240-593187/4	Lab Control Sample	Total/NA	Water	RSK-175	

Analysis Batch: 593586

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241762-7	W-231027-TS-32	Total/NA	Water	RSK-175	
500-241762-8	W-231027-TS-33	Total/NA	Water	RSK-175	
MB 240-593586/3	Method Blank	Total/NA	Water	RSK-175	
LCS 240-593586/4	Lab Control Sample	Total/NA	Water	RSK-175	

GC Semi VOA

Prep Batch: 740191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241762-1	W-231027-TS-26	Total/NA	Water	8151A	
500-241762-2	W-231027-TS-27	Total/NA	Water	8151A	
500-241762-3	W-231027-TS-28	Total/NA	Water	8151A	
500-241762-4	W-231027-TS-29	Total/NA	Water	8151A	
500-241762-5	W-231027-TS-30	Total/NA	Water	8151A	
500-241762-6	W-231027-TS-31	Total/NA	Water	8151A	
500-241762-7	W-231027-TS-32	Total/NA	Water	8151A	
500-241762-8	W-231027-TS-33	Total/NA	Water	8151A	
MB 500-740191/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-740191/2-A	Lab Control Sample	Total/NA	Water	8151A	

Analysis Batch: 740405

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241762-4	W-231027-TS-29	Total/NA	Water	8151A	740191
500-241762-5	W-231027-TS-30	Total/NA	Water	8151A	740191
500-241762-6	W-231027-TS-31	Total/NA	Water	8151A	740191
MB 500-740191/1-A	Method Blank	Total/NA	Water	8151A	740191
LCS 500-740191/2-A	Lab Control Sample	Total/NA	Water	8151A	740191

Analysis Batch: 740727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241762-3	W-231027-TS-28	Total/NA	Water	8151A	740191
500-241762-7	W-231027-TS-32	Total/NA	Water	8151A	740191

Analysis Batch: 741630

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241762-1	W-231027-TS-26	Total/NA	Water	8151A	740191
500-241762-2	W-231027-TS-27	Total/NA	Water	8151A	740191
500-241762-8	W-231027-TS-33	Total/NA	Water	8151A	740191

Metals

Prep Batch: 741171

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241762-1	W-231027-TS-26	Dissolved	Water	3005A	

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Metals (Continued)

Prep Batch: 741171 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241762-1	W-231027-TS-26	Total Recoverable	Water	3005A	
500-241762-2	W-231027-TS-27	Dissolved	Water	3005A	
500-241762-2	W-231027-TS-27	Total Recoverable	Water	3005A	
500-241762-3	W-231027-TS-28	Dissolved	Water	3005A	
500-241762-3	W-231027-TS-28	Total Recoverable	Water	3005A	
500-241762-4	W-231027-TS-29	Dissolved	Water	3005A	
500-241762-4	W-231027-TS-29	Total Recoverable	Water	3005A	
500-241762-5	W-231027-TS-30	Dissolved	Water	3005A	
500-241762-5	W-231027-TS-30	Total Recoverable	Water	3005A	
500-241762-6	W-231027-TS-31	Dissolved	Water	3005A	
500-241762-6	W-231027-TS-31	Total Recoverable	Water	3005A	
500-241762-7	W-231027-TS-32	Dissolved	Water	3005A	
500-241762-7	W-231027-TS-32	Total Recoverable	Water	3005A	
500-241762-8	W-231027-TS-33	Dissolved	Water	3005A	
500-241762-8	W-231027-TS-33	Total Recoverable	Water	3005A	
MB 500-741171/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-741171/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
500-241762-1 MS	W-231027-TS-26	Total Recoverable	Water	3005A	
500-241762-1 MSD	W-231027-TS-26	Total Recoverable	Water	3005A	
500-241762-1 DU	W-231027-TS-26	Total Recoverable	Water	3005A	

Analysis Batch: 742639

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241762-1	W-231027-TS-26	Dissolved	Water	6020A	741171
500-241762-1	W-231027-TS-26	Total Recoverable	Water	6020A	741171
500-241762-2	W-231027-TS-27	Dissolved	Water	6020A	741171
500-241762-2	W-231027-TS-27	Dissolved	Water	6020A	741171
500-241762-2	W-231027-TS-27	Total Recoverable	Water	6020A	741171
500-241762-2	W-231027-TS-27	Total Recoverable	Water	6020A	741171
500-241762-3	W-231027-TS-28	Dissolved	Water	6020A	741171
500-241762-3	W-231027-TS-28	Total Recoverable	Water	6020A	741171
500-241762-4	W-231027-TS-29	Dissolved	Water	6020A	741171
500-241762-4	W-231027-TS-29	Total Recoverable	Water	6020A	741171
500-241762-5	W-231027-TS-30	Dissolved	Water	6020A	741171
500-241762-5	W-231027-TS-30	Total Recoverable	Water	6020A	741171
500-241762-6	W-231027-TS-31	Dissolved	Water	6020A	741171
500-241762-6	W-231027-TS-31	Total Recoverable	Water	6020A	741171
500-241762-7	W-231027-TS-32	Dissolved	Water	6020A	741171
500-241762-7	W-231027-TS-32	Total Recoverable	Water	6020A	741171
500-241762-8	W-231027-TS-33	Dissolved	Water	6020A	741171
500-241762-8	W-231027-TS-33	Total Recoverable	Water	6020A	741171
MB 500-741171/1-A	Method Blank	Total Recoverable	Water	6020A	741171
LCS 500-741171/2-A	Lab Control Sample	Total Recoverable	Water	6020A	741171
500-241762-1 MS	W-231027-TS-26	Total Recoverable	Water	6020A	741171
500-241762-1 MSD	W-231027-TS-26	Total Recoverable	Water	6020A	741171
500-241762-1 DU	W-231027-TS-26	Total Recoverable	Water	6020A	741171

Analysis Batch: 743511

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241762-1	W-231027-TS-26	Dissolved	Water	6020A	741171
500-241762-1	W-231027-TS-26	Total Recoverable	Water	6020A	741171

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Metals (Continued)

Analysis Batch: 743511 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241762-2	W-231027-TS-27	Dissolved	Water	6020A	741171
500-241762-2	W-231027-TS-27	Total Recoverable	Water	6020A	741171
500-241762-3	W-231027-TS-28	Dissolved	Water	6020A	741171
500-241762-3	W-231027-TS-28	Total Recoverable	Water	6020A	741171
500-241762-4	W-231027-TS-29	Dissolved	Water	6020A	741171
500-241762-4	W-231027-TS-29	Total Recoverable	Water	6020A	741171
500-241762-5	W-231027-TS-30	Dissolved	Water	6020A	741171
500-241762-5	W-231027-TS-30	Total Recoverable	Water	6020A	741171
500-241762-6	W-231027-TS-31	Dissolved	Water	6020A	741171
500-241762-6	W-231027-TS-31	Total Recoverable	Water	6020A	741171
500-241762-7	W-231027-TS-32	Dissolved	Water	6020A	741171
500-241762-7	W-231027-TS-32	Total Recoverable	Water	6020A	741171
500-241762-8	W-231027-TS-33	Dissolved	Water	6020A	741171
500-241762-8	W-231027-TS-33	Total Recoverable	Water	6020A	741171
MB 500-741171/1-A	Method Blank	Total Recoverable	Water	6020A	741171
LCS 500-741171/2-A	Lab Control Sample	Total Recoverable	Water	6020A	741171
500-241762-1 MS	W-231027-TS-26	Total Recoverable	Water	6020A	741171
500-241762-1 MSD	W-231027-TS-26	Total Recoverable	Water	6020A	741171
500-241762-1 DU	W-231027-TS-26	Total Recoverable	Water	6020A	741171

Analysis Batch: 743572

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241762-1	W-231027-TS-26	Dissolved	Water	SM 2340B	741171
500-241762-1	W-231027-TS-26	Total Recoverable	Water	SM 2340B	741171
500-241762-2	W-231027-TS-27	Dissolved	Water	SM 2340B	741171
500-241762-2	W-231027-TS-27	Total Recoverable	Water	SM 2340B	741171
500-241762-3	W-231027-TS-28	Dissolved	Water	SM 2340B	741171
500-241762-3	W-231027-TS-28	Total Recoverable	Water	SM 2340B	741171
500-241762-4	W-231027-TS-29	Dissolved	Water	SM 2340B	741171
500-241762-4	W-231027-TS-29	Total Recoverable	Water	SM 2340B	741171
500-241762-5	W-231027-TS-30	Dissolved	Water	SM 2340B	741171
500-241762-5	W-231027-TS-30	Total Recoverable	Water	SM 2340B	741171
500-241762-6	W-231027-TS-31	Dissolved	Water	SM 2340B	741171
500-241762-6	W-231027-TS-31	Total Recoverable	Water	SM 2340B	741171
500-241762-7	W-231027-TS-32	Dissolved	Water	SM 2340B	741171
500-241762-7	W-231027-TS-32	Total Recoverable	Water	SM 2340B	741171
500-241762-8	W-231027-TS-33	Dissolved	Water	SM 2340B	741171
500-241762-8	W-231027-TS-33	Total Recoverable	Water	SM 2340B	741171

General Chemistry

Analysis Batch: 739774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241762-1	W-231027-TS-26	Total/NA	Water	300.0	
500-241762-2	W-231027-TS-27	Total/NA	Water	300.0	
500-241762-3	W-231027-TS-28	Total/NA	Water	300.0	
500-241762-4	W-231027-TS-29	Total/NA	Water	300.0	
500-241762-5	W-231027-TS-30	Total/NA	Water	300.0	
500-241762-6	W-231027-TS-31	Total/NA	Water	300.0	
500-241762-7	W-231027-TS-32	Total/NA	Water	300.0	
500-241762-8	W-231027-TS-33	Total/NA	Water	300.0	

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

General Chemistry (Continued)

Analysis Batch: 739774 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-739774/11	Method Blank	Total/NA	Water	300.0	
LCS 500-739774/12	Lab Control Sample	Total/NA	Water	300.0	
500-241762-4 MS	W-231027-TS-29	Total/NA	Water	300.0	
500-241762-4 MSD	W-231027-TS-29	Total/NA	Water	300.0	

Analysis Batch: 739775

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241762-1	W-231027-TS-26	Total/NA	Water	300.0	
500-241762-2	W-231027-TS-27	Total/NA	Water	300.0	
500-241762-3	W-231027-TS-28	Total/NA	Water	300.0	
500-241762-4	W-231027-TS-29	Total/NA	Water	300.0	
500-241762-5	W-231027-TS-30	Total/NA	Water	300.0	
500-241762-6	W-231027-TS-31	Total/NA	Water	300.0	
500-241762-7	W-231027-TS-32	Total/NA	Water	300.0	
500-241762-8	W-231027-TS-33	Total/NA	Water	300.0	
MB 500-739775/11	Method Blank	Total/NA	Water	300.0	
LCS 500-739775/12	Lab Control Sample	Total/NA	Water	300.0	
500-241762-4 MS	W-231027-TS-29	Total/NA	Water	300.0	
500-241762-4 MSD	W-231027-TS-29	Total/NA	Water	300.0	

Analysis Batch: 739972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241762-5	W-231027-TS-30	Total/NA	Water	300.0	
MB 500-739972/11	Method Blank	Total/NA	Water	300.0	
LCS 500-739972/12	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 741150

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241762-1	W-231027-TS-26	Total/NA	Water	SM 2320B	
MB 500-741150/53	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-741150/81	Lab Control Sample	Total/NA	Water	SM 2320B	
500-241762-1 DU	W-231027-TS-26	Total/NA	Water	SM 2320B	

Analysis Batch: 741834

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241762-2	W-231027-TS-27	Total/NA	Water	SM 2320B	
500-241762-3	W-231027-TS-28	Total/NA	Water	SM 2320B	
500-241762-4	W-231027-TS-29	Total/NA	Water	SM 2320B	
500-241762-5	W-231027-TS-30	Total/NA	Water	SM 2320B	
500-241762-6	W-231027-TS-31	Total/NA	Water	SM 2320B	
500-241762-7	W-231027-TS-32	Total/NA	Water	SM 2320B	
500-241762-8	W-231027-TS-33	Total/NA	Water	SM 2320B	
MB 500-741834/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-741834/4	Lab Control Sample	Total/NA	Water	SM 2320B	
500-241762-3 DU	W-231027-TS-28	Total/NA	Water	SM 2320B	

Analysis Batch: 742509

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241762-1	W-231027-TS-26	Total/NA	Water	9060A	
500-241762-2	W-231027-TS-27	Total/NA	Water	9060A	
500-241762-3	W-231027-TS-28	Total/NA	Water	9060A	

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

General Chemistry (Continued)

Analysis Batch: 742509 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241762-4	W-231027-TS-29	Total/NA	Water	9060A	
500-241762-5	W-231027-TS-30	Total/NA	Water	9060A	
500-241762-6	W-231027-TS-31	Total/NA	Water	9060A	
500-241762-7	W-231027-TS-32	Total/NA	Water	9060A	
MB 500-742509/6	Method Blank	Total/NA	Water	9060A	
LCS 500-742509/7	Lab Control Sample	Total/NA	Water	9060A	

Analysis Batch: 743337

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-241762-8	W-231027-TS-33	Total/NA	Water	9060A	
MB 500-743337/14	Method Blank	Total/NA	Water	9060A	
MB 500-743337/38	Method Blank	Total/NA	Water	9060A	
LCS 500-743337/15	Lab Control Sample	Total/NA	Water	9060A	
LCS 500-743337/39	Lab Control Sample	Total/NA	Water	9060A	

Surrogate Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-126)	TOL (75-120)	BFB (72-124)	DBFM (75-120)
500-241762-1	W-231027-TS-26	95	95	86	104
500-241762-2	W-231027-TS-27	94	95	83	103
500-241762-3	W-231027-TS-28	91	95	88	101
500-241762-4	W-231027-TS-29	91	95	89	102
500-241762-5	W-231027-TS-30	91	95	89	102
500-241762-6	W-231027-TS-31	95	94	88	104
500-241762-7	W-231027-TS-32	94	95	87	104
500-241762-8	W-231027-TS-33	97	94	86	104
500-241762-9	TRIP BLANK	92	94	85	104
LCS 500-740154/4	Lab Control Sample	91	95	86	101
MB 500-740154/7	Method Blank	96	94	86	105

Surrogate Legend

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

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		NBZ (36-120)	FBP (34-110)	TPHL (40-145)
500-241762-1	W-231027-TS-26	70	73	91
500-241762-2	W-231027-TS-27	51	45	70
500-241762-3	W-231027-TS-28	48	48	85
500-241762-4	W-231027-TS-29	65	67	91
500-241762-5	W-231027-TS-30	56	57	87
500-241762-6	W-231027-TS-31	63	61	88
500-241762-7	W-231027-TS-32	51	55	92 ^c
500-241762-8	W-231027-TS-33	68	68	92
LCS 500-740011/2-A	Lab Control Sample	68	67	85
LCSD 500-740011/3-A	Lab Control Sample Dup	69	68	90
MB 500-740011/1-A	Method Blank	66	65	95

Surrogate Legend

NBZ = Nitrobenzene-d5 (Surr)
FBP = 2-Fluorobiphenyl (Surr)
TPHL = Terphenyl-d14 (Surr)

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		TFE1 (60-140)
500-241762-1	W-231027-TS-26	111
500-241762-2	W-231027-TS-27	108
500-241762-3	W-231027-TS-28	113
500-241762-4	W-231027-TS-29	113

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Surrogate Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TFE1 (60-140)
500-241762-5	W-231027-TS-30	113
500-241762-6	W-231027-TS-31	112
500-241762-7	W-231027-TS-32	111
500-241762-8	W-231027-TS-33	108
LCS 240-593187/4	Lab Control Sample	117
LCS 240-593586/4	Lab Control Sample	111
MB 240-593187/3	Method Blank	117
MB 240-593586/3	Method Blank	114

Surrogate Legend

TFE = 1,1,1-Trifluoroethane

Method: 8151A - Herbicides (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (25-130)
500-241762-1	W-231027-TS-26	0 X
500-241762-2	W-231027-TS-27	0 X
500-241762-4	W-231027-TS-29	81
500-241762-5	W-231027-TS-30	65
500-241762-6	W-231027-TS-31	43
500-241762-8	W-231027-TS-33	0 X
LCS 500-740191/2-A	Lab Control Sample	70
MB 500-740191/1-A	Method Blank	60

Surrogate Legend

DCPAA = DCAA

Method: 8151A - Herbicides (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA2 (25-130)
500-241762-3	W-231027-TS-28	64
500-241762-7	W-231027-TS-32	76

Surrogate Legend

DCPAA = DCAA

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-740154/7
Matrix: Water
Analysis Batch: 740154

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

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	<0.15		0.50	0.15	ug/L			11/02/23 14:34	1
Toluene	<0.15		0.50	0.15	ug/L			11/02/23 14:34	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/02/23 14:34	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			11/02/23 14:34	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	96		75 - 126		11/02/23 14:34	1
Toluene-d8 (Surr)	94		75 - 120		11/02/23 14:34	1
4-Bromofluorobenzene (Surr)	86		72 - 124		11/02/23 14:34	1
Dibromofluoromethane	105		75 - 120		11/02/23 14:34	1

Lab Sample ID: LCS 500-740154/4
Matrix: Water
Analysis Batch: 740154

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

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Benzene	40.0	40.8		ug/L		102	70 - 120
Toluene	40.0	37.9		ug/L		95	70 - 125
Ethylbenzene	40.0	41.2		ug/L		103	70 - 123
Xylenes, Total	80.0	76.7		ug/L		96	70 - 125

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	91		75 - 126
Toluene-d8 (Surr)	95		75 - 120
4-Bromofluorobenzene (Surr)	86		72 - 124
Dibromofluoromethane	101		75 - 120

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

Lab Sample ID: MB 500-740011/1-A
Matrix: Water
Analysis Batch: 740615

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 740011

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Naphthalene	<0.25		0.80	0.25	ug/L		11/01/23 18:06	11/06/23 16:57	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Nitrobenzene-d5 (Surr)	66		36 - 120	11/01/23 18:06	11/06/23 16:57	1
2-Fluorobiphenyl (Surr)	65		34 - 110	11/01/23 18:06	11/06/23 16:57	1
Terphenyl-d14 (Surr)	95		40 - 145	11/01/23 18:06	11/06/23 16:57	1

Lab Sample ID: LCS 500-740011/2-A
Matrix: Water
Analysis Batch: 740615

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 740011

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Naphthalene	32.0	17.7		ug/L		55	36 - 110

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

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

Lab Sample ID: LCS 500-740011/2-A
Matrix: Water
Analysis Batch: 740615

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 740011

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Nitrobenzene-d5 (Surr)	68		36 - 120
2-Fluorobiphenyl (Surr)	67		34 - 110
Terphenyl-d14 (Surr)	85		40 - 145

Lab Sample ID: LCSD 500-740011/3-A
Matrix: Water
Analysis Batch: 740615

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 740011

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Naphthalene	32.0	18.0		ug/L		56	36 - 110	2		20

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
Nitrobenzene-d5 (Surr)	69		36 - 120
2-Fluorobiphenyl (Surr)	68		34 - 110
Terphenyl-d14 (Surr)	90		40 - 145

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 240-593187/3
Matrix: Water
Analysis Batch: 593187

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

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Methane	<0.17		1.0	0.17	ug/L			11/02/23 12:09	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,1,1-Trifluoroethane	117		60 - 140		11/02/23 12:09	1

Lab Sample ID: LCS 240-593187/4
Matrix: Water
Analysis Batch: 593187

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	
							Limits	RPD
Methane	284	300		ug/L		106	80 - 120	

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,1,1-Trifluoroethane	117		60 - 140

Lab Sample ID: MB 240-593586/3
Matrix: Water
Analysis Batch: 593586

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

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Methane	<0.17		1.0	0.17	ug/L			11/06/23 12:46	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,1,1-Trifluoroethane	114		60 - 140		11/06/23 12:46	1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCS 240-593586/4
Matrix: Water
Analysis Batch: 593586

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methane	284	293		ug/L		103	80 - 120
Surrogate	%Recovery	LCS Qualifier	Limits				
1,1,1-Trifluoroethane	111		60 - 140				

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 500-740191/1-A
Matrix: Water
Analysis Batch: 740405

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 740191

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.099		0.10	0.099	ug/L		11/02/23 10:32	11/03/23 11:48	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	60		25 - 130				11/02/23 10:32	11/03/23 11:48	1

Lab Sample ID: LCS 500-740191/2-A
Matrix: Water
Analysis Batch: 740405

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 740191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Pentachlorophenol	2.53	1.52		ug/L		60	40 - 122
Surrogate	%Recovery	LCS Qualifier	Limits				
DCAA	70		25 - 130				

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 500-741171/1-A
Matrix: Water
Analysis Batch: 742639

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 741171

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		11/08/23 09:08	11/16/23 14:18	1
Copper	<0.50		2.0	0.50	ug/L		11/08/23 09:08	11/16/23 14:18	1
Iron	<46.7		100	46.7	ug/L		11/08/23 09:08	11/16/23 14:18	1
Magnesium	<49.4		200	49.4	ug/L		11/08/23 09:08	11/16/23 14:18	1
Manganese	0.832	J	2.5	0.79	ug/L		11/08/23 09:08	11/16/23 14:18	1
Zinc	<6.9		20.0	6.9	ug/L		11/08/23 09:08	11/16/23 14:18	1

Lab Sample ID: MB 500-741171/1-A
Matrix: Water
Analysis Batch: 743511

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 741171

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	118.3	J	200	44.3	ug/L		11/08/23 09:08	11/21/23 17:38	1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

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

Lab Sample ID: LCS 500-741171/2-A
Matrix: Water
Analysis Batch: 742639

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 741171

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	100	97.19		ug/L		97	80 - 120
Copper	250	253.0		ug/L		101	80 - 120
Iron	1000	1085		ug/L		109	80 - 120
Magnesium	10000	10310		ug/L		103	80 - 120
Manganese	500	532.4		ug/L		106	80 - 120
Zinc	500	501.8		ug/L		100	80 - 120

Lab Sample ID: LCS 500-741171/2-A
Matrix: Water
Analysis Batch: 743511

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 741171

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	10000	8607		ug/L		86	80 - 120

Lab Sample ID: 500-241762-1 MS
Matrix: Water
Analysis Batch: 742639

Client Sample ID: W-231027-TS-26
Prep Type: Total Recoverable
Prep Batch: 741171

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	<0.23		100	97.96		ug/L		98	75 - 125
Copper	1.6	J	250	250.2		ug/L		99	75 - 125
Iron	51.0	J	1000	1107		ug/L		106	75 - 125
Magnesium	16000		10000	25650		ug/L		96	75 - 125
Manganese	6.0	B	500	524.5		ug/L		104	75 - 125
Zinc	<6.9		500	496.5		ug/L		99	75 - 125

Lab Sample ID: 500-241762-1 MS
Matrix: Water
Analysis Batch: 743511

Client Sample ID: W-231027-TS-26
Prep Type: Total Recoverable
Prep Batch: 741171

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	38000	B F1	10000	43610	F1	ug/L		56	75 - 125

Lab Sample ID: 500-241762-1 MSD
Matrix: Water
Analysis Batch: 742639

Client Sample ID: W-231027-TS-26
Prep Type: Total Recoverable
Prep Batch: 741171

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Arsenic	<0.23		100	96.21		ug/L		96	75 - 125	2	20
Copper	1.6	J	250	246.4		ug/L		98	75 - 125	2	20
Iron	51.0	J	1000	1068		ug/L		102	75 - 125	4	20
Magnesium	16000		10000	24640		ug/L		86	75 - 125	4	20
Manganese	6.0	B	500	505.2		ug/L		100	75 - 125	4	20
Zinc	<6.9		500	484.8		ug/L		97	75 - 125	2	20

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

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

Lab Sample ID: 500-241762-1 MSD
Matrix: Water
Analysis Batch: 743511

Client Sample ID: W-231027-TS-26
Prep Type: Total Recoverable
Prep Batch: 741171

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	38000	B F1	10000	44060	F1	ug/L		61	75 - 125	1	20

Lab Sample ID: 500-241762-1 DU
Matrix: Water
Analysis Batch: 742639

Client Sample ID: W-231027-TS-26
Prep Type: Total Recoverable
Prep Batch: 741171

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	<0.23		<0.23		ug/L		NC	20
Copper	1.6	J	1.92	J	ug/L		16	20
Iron	51.0	J	47.77	J	ug/L		7	20
Magnesium	16000		16170		ug/L		0.8	20
Manganese	6.0	B	5.71		ug/L		5	20
Zinc	<6.9		<6.9		ug/L		NC	20

Lab Sample ID: 500-241762-1 DU
Matrix: Water
Analysis Batch: 743511

Client Sample ID: W-231027-TS-26
Prep Type: Total Recoverable
Prep Batch: 741171

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Calcium	38000	B F1	37740		ug/L		0.6	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 500-739774/11
Matrix: Water
Analysis Batch: 739774

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.043		1.0	0.043	mg/L			10/31/23 18:05	1

Lab Sample ID: LCS 500-739774/12
Matrix: Water
Analysis Batch: 739774

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	20.0	20.68		mg/L		103	90 - 110

Lab Sample ID: 500-241762-4 MS
Matrix: Water
Analysis Batch: 739774

Client Sample ID: W-231027-TS-29
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	0.29	J H	10.0	9.47		mg/L		92	80 - 120

Lab Sample ID: 500-241762-4 MSD
Matrix: Water
Analysis Batch: 739774

Client Sample ID: W-231027-TS-29
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	0.29	J H	10.0	9.46		mg/L		92	80 - 120	0	20

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 500-739775/11
Matrix: Water
Analysis Batch: 739775

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.12		1.0	0.12	mg/L			10/31/23 18:05	1
Sulfate	<0.21		1.0	0.21	mg/L			10/31/23 18:05	1

Lab Sample ID: LCS 500-739775/12
Matrix: Water
Analysis Batch: 739775

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	20.0	19.55		mg/L		98	90 - 110
Sulfate	20.0	19.28		mg/L		96	90 - 110

Lab Sample ID: 500-241762-4 MS
Matrix: Water
Analysis Batch: 739775

Client Sample ID: W-231027-TS-29
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	0.21	J	10.0	9.16		mg/L		89	80 - 120
Sulfate	1.3		10.0	10.87		mg/L		95	80 - 120

Lab Sample ID: 500-241762-4 MSD
Matrix: Water
Analysis Batch: 739775

Client Sample ID: W-231027-TS-29
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	0.21	J	10.0	8.97		mg/L		88	80 - 120	2	20
Sulfate	1.3		10.0	10.66		mg/L		93	80 - 120	2	20

Lab Sample ID: MB 500-739972/11
Matrix: Water
Analysis Batch: 739972

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.12		1.0	0.12	mg/L			11/01/23 14:54	1

Lab Sample ID: LCS 500-739972/12
Matrix: Water
Analysis Batch: 739972

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	20.0	18.50		mg/L		92	90 - 110

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 500-742509/6
Matrix: Water
Analysis Batch: 742509

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	<0.47		1.0	0.47	mg/L			11/15/23 10:19	1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCS 500-742509/7
Matrix: Water
Analysis Batch: 742509

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon - Quad	50.0	47.53		mg/L		95	86 - 116

Lab Sample ID: MB 500-743337/14
Matrix: Water
Analysis Batch: 743337

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	<0.47		1.0	0.47	mg/L			11/19/23 16:53	1

Lab Sample ID: MB 500-743337/38
Matrix: Water
Analysis Batch: 743337

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	<0.47		1.0	0.47	mg/L			11/20/23 03:22	1

Lab Sample ID: LCS 500-743337/15
Matrix: Water
Analysis Batch: 743337

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon - Quad	50.0	47.52		mg/L		95	86 - 116

Lab Sample ID: LCS 500-743337/39
Matrix: Water
Analysis Batch: 743337

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon - Quad	50.0	48.68		mg/L		97	86 - 116

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-741150/53
Matrix: Water
Analysis Batch: 741150

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	<3.7		5.0	3.7	mg/L			11/07/23 19:36	1

Lab Sample ID: LCS 500-741150/81
Matrix: Water
Analysis Batch: 741150

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	100	102.8		mg/L		103	90 - 110

QC Sample Results

Client: GHD Services Inc.
 Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: 500-241762-1 DU
Matrix: Water
Analysis Batch: 741150

Client Sample ID: W-231027-TS-26
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	169		166.1		mg/L		2	20

Lab Sample ID: MB 500-741834/3
Matrix: Water
Analysis Batch: 741834

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	<3.7		5.0	3.7	mg/L			11/10/23 10:06	1

Lab Sample ID: LCS 500-741834/4
Matrix: Water
Analysis Batch: 741834

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	100	100.9		mg/L		101	90 - 110

Lab Sample ID: 500-241762-3 DU
Matrix: Water
Analysis Batch: 741834

Client Sample ID: W-231027-TS-28
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	<3.7		<3.7		mg/L		NC	20

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Client Sample ID: W-231027-TS-26

Lab Sample ID: 500-241762-1

Date Collected: 10/27/23 09:38

Matrix: Water

Date Received: 10/28/23 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	740154	W1T	EET CHI	11/02/23 19:21
Total/NA	Prep	3510C			740011	DAK	EET CHI	11/02/23 07:54
Total/NA	Analysis	8270E		1	740615	SS	EET CHI	11/06/23 19:07
Total/NA	Analysis	RSK-175		1	593187	JBN	EET CLE	11/02/23 17:32
Total/NA	Prep	8151A			740191	DAK	EET CHI	11/02/23 10:32
Total/NA	Analysis	8151A		1000	741630	SS	EET CHI	11/10/23 12:03
Dissolved	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Dissolved	Analysis	6020A		1	742639	BJH	EET CHI	11/16/23 15:26
Dissolved	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Dissolved	Analysis	6020A		1	743511	BJH	EET CHI	11/21/23 18:30
Total Recoverable	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Total Recoverable	Analysis	6020A		1	742639	BJH	EET CHI	11/16/23 14:25
Total Recoverable	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Total Recoverable	Analysis	6020A		1	743511	BJH	EET CHI	11/21/23 17:42
Dissolved	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Dissolved	Analysis	SM 2340B		1	743572	DAJ	EET CHI	11/22/23 11:53
Total Recoverable	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Total Recoverable	Analysis	SM 2340B		1	743572	DAJ	EET CHI	11/22/23 11:53
Total/NA	Analysis	300.0		1	739774	NMB	EET CHI	10/31/23 19:37
Total/NA	Analysis	300.0		1	739775	NMB	EET CHI	10/31/23 19:37
Total/NA	Analysis	9060A		1	742509	TR	EET CHI	11/15/23 15:11
Total/NA	Analysis	SM 2320B		1	741150	SO	EET CHI	11/08/23 00:29

Client Sample ID: W-231027-TS-27

Lab Sample ID: 500-241762-2

Date Collected: 10/27/23 10:51

Matrix: Water

Date Received: 10/28/23 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	740154	W1T	EET CHI	11/02/23 19:47
Total/NA	Prep	3510C			740011	DAK	EET CHI	11/02/23 07:54
Total/NA	Analysis	8270E		1	740615	SS	EET CHI	11/06/23 22:45
Total/NA	Analysis	RSK-175		1	593187	JBN	EET CLE	11/02/23 17:49
Total/NA	Prep	8151A			740191	DAK	EET CHI	11/02/23 10:32
Total/NA	Analysis	8151A		4000	741630	SS	EET CHI	11/10/23 13:43
Dissolved	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Dissolved	Analysis	6020A		1	742639	BJH	EET CHI	11/16/23 15:30
Dissolved	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Dissolved	Analysis	6020A		10	742639	BJH	EET CHI	11/16/23 15:47
Dissolved	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Dissolved	Analysis	6020A		1	743511	BJH	EET CHI	11/21/23 18:34
Total Recoverable	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Total Recoverable	Analysis	6020A		1	742639	BJH	EET CHI	11/16/23 14:50
Total Recoverable	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Total Recoverable	Analysis	6020A		10	742639	BJH	EET CHI	11/16/23 14:58

Eurofins Chicago

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Client Sample ID: W-231027-TS-27

Lab Sample ID: 500-241762-2

Date Collected: 10/27/23 10:51

Matrix: Water

Date Received: 10/28/23 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Total Recoverable	Analysis	6020A		1	743511	BJH	EET CHI	11/21/23 17:59
Dissolved	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Dissolved	Analysis	SM 2340B		1	743572	DAJ	EET CHI	11/22/23 11:53
Total Recoverable	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Total Recoverable	Analysis	SM 2340B		1	743572	DAJ	EET CHI	11/22/23 11:53
Total/NA	Analysis	300.0		1	739774	NMB	EET CHI	10/31/23 19:52
Total/NA	Analysis	300.0		1	739775	NMB	EET CHI	10/31/23 19:52
Total/NA	Analysis	9060A		1	742509	TR	EET CHI	11/15/23 15:34
Total/NA	Analysis	SM 2320B		1	741834	SO	EET CHI	11/10/23 10:19

Client Sample ID: W-231027-TS-28

Lab Sample ID: 500-241762-3

Date Collected: 10/27/23 12:11

Matrix: Water

Date Received: 10/28/23 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	740154	W1T	EET CHI	11/02/23 20:13
Total/NA	Prep	3510C			740011	DAK	EET CHI	11/02/23 07:54
Total/NA	Analysis	8270E		1	740615	SS	EET CHI	11/06/23 19:29
Total/NA	Analysis	RSK-175		1	593187	JBN	EET CLE	11/02/23 18:06
Total/NA	Prep	8151A			740191	DAK	EET CHI	11/02/23 10:32
Total/NA	Analysis	8151A		5	740727	SS	EET CHI	11/06/23 13:34
Dissolved	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Dissolved	Analysis	6020A		1	742639	BJH	EET CHI	11/16/23 15:33
Dissolved	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Dissolved	Analysis	6020A		1	743511	BJH	EET CHI	11/21/23 18:37
Total Recoverable	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Total Recoverable	Analysis	6020A		1	742639	BJH	EET CHI	11/16/23 14:53
Total Recoverable	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Total Recoverable	Analysis	6020A		1	743511	BJH	EET CHI	11/21/23 18:02
Dissolved	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Dissolved	Analysis	SM 2340B		1	743572	DAJ	EET CHI	11/22/23 11:53
Total Recoverable	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Total Recoverable	Analysis	SM 2340B		1	743572	DAJ	EET CHI	11/22/23 11:53
Total/NA	Analysis	300.0		1	739774	NMB	EET CHI	10/31/23 20:07
Total/NA	Analysis	300.0		1	739775	NMB	EET CHI	10/31/23 20:07
Total/NA	Analysis	9060A		1	742509	TR	EET CHI	11/15/23 16:01
Total/NA	Analysis	SM 2320B		1	741834	SO	EET CHI	11/10/23 10:30

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Client Sample ID: W-231027-TS-29

Lab Sample ID: 500-241762-4

Date Collected: 10/27/23 11:30

Matrix: Water

Date Received: 10/28/23 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	740154	W1T	EET CHI	11/02/23 20:39
Total/NA	Prep	3510C			740011	DAK	EET CHI	11/02/23 07:54
Total/NA	Analysis	8270E		1	740615	SS	EET CHI	11/06/23 19:51
Total/NA	Analysis	RSK-175		1	593187	JBN	EET CLE	11/02/23 18:23
Total/NA	Prep	8151A			740191	DAK	EET CHI	11/02/23 10:32
Total/NA	Analysis	8151A		1	740405	SS	EET CHI	11/03/23 18:14
Dissolved	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Dissolved	Analysis	6020A		1	742639	BJH	EET CHI	11/16/23 15:37
Dissolved	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Dissolved	Analysis	6020A		1	743511	BJH	EET CHI	11/21/23 18:41
Total Recoverable	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Total Recoverable	Analysis	6020A		1	742639	BJH	EET CHI	11/16/23 15:01
Total Recoverable	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Total Recoverable	Analysis	6020A		1	743511	BJH	EET CHI	11/21/23 18:06
Dissolved	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Dissolved	Analysis	SM 2340B		1	743572	DAJ	EET CHI	11/22/23 11:53
Total Recoverable	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Total Recoverable	Analysis	SM 2340B		1	743572	DAJ	EET CHI	11/22/23 11:53
Total/NA	Analysis	300.0		1	739774	NMB	EET CHI	10/31/23 20:22
Total/NA	Analysis	300.0		1	739775	NMB	EET CHI	10/31/23 20:22
Total/NA	Analysis	9060A		1	742509	TR	EET CHI	11/15/23 16:28
Total/NA	Analysis	SM 2320B		1	741834	SO	EET CHI	11/10/23 10:36

Client Sample ID: W-231027-TS-30

Lab Sample ID: 500-241762-5

Date Collected: 10/27/23 12:30

Matrix: Water

Date Received: 10/28/23 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	740154	W1T	EET CHI	11/02/23 21:05
Total/NA	Prep	3510C			740011	DAK	EET CHI	11/02/23 07:54
Total/NA	Analysis	8270E		1	740615	SS	EET CHI	11/06/23 20:13
Total/NA	Analysis	RSK-175		1	593187	JBN	EET CLE	11/02/23 18:40
Total/NA	Prep	8151A			740191	DAK	EET CHI	11/02/23 10:32
Total/NA	Analysis	8151A		1	740405	SS	EET CHI	11/03/23 18:32
Dissolved	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Dissolved	Analysis	6020A		1	742639	BJH	EET CHI	11/16/23 15:40
Dissolved	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Dissolved	Analysis	6020A		1	743511	BJH	EET CHI	11/21/23 18:44
Total Recoverable	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Total Recoverable	Analysis	6020A		1	742639	BJH	EET CHI	11/16/23 15:04
Total Recoverable	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Total Recoverable	Analysis	6020A		1	743511	BJH	EET CHI	11/21/23 18:16
Dissolved	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Dissolved	Analysis	SM 2340B		1	743572	DAJ	EET CHI	11/22/23 11:53

Eurofins Chicago

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Client Sample ID: W-231027-TS-30

Lab Sample ID: 500-241762-5

Date Collected: 10/27/23 12:30

Matrix: Water

Date Received: 10/28/23 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Total Recoverable	Analysis	SM 2340B		1	743572	DAJ	EET CHI	11/22/23 11:53
Total/NA	Analysis	300.0		1	739774	NMB	EET CHI	10/31/23 21:38
Total/NA	Analysis	300.0		1	739775	NMB	EET CHI	10/31/23 21:38
Total/NA	Analysis	300.0		5	739972	NMB	EET CHI	11/01/23 19:57
Total/NA	Analysis	9060A		1	742509	TR	EET CHI	11/15/23 16:50
Total/NA	Analysis	SM 2320B		1	741834	SO	EET CHI	11/10/23 10:44

Client Sample ID: W-231027-TS-31

Lab Sample ID: 500-241762-6

Date Collected: 10/27/23 13:15

Matrix: Water

Date Received: 10/28/23 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	740154	W1T	EET CHI	11/02/23 21:31
Total/NA	Prep	3510C			740011	DAK	EET CHI	11/02/23 07:54
Total/NA	Analysis	8270E		1	740615	SS	EET CHI	11/06/23 20:35
Total/NA	Analysis	RSK-175		1	593187	JBN	EET CLE	11/02/23 18:57
Total/NA	Prep	8151A			740191	DAK	EET CHI	11/02/23 10:32
Total/NA	Analysis	8151A		1	740405	SS	EET CHI	11/03/23 18:51
Dissolved	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Dissolved	Analysis	6020A		1	742639	BJH	EET CHI	11/16/23 15:44
Dissolved	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Dissolved	Analysis	6020A		1	743511	BJH	EET CHI	11/21/23 18:48
Total Recoverable	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Total Recoverable	Analysis	6020A		1	742639	BJH	EET CHI	11/16/23 15:08
Total Recoverable	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Total Recoverable	Analysis	6020A		1	743511	BJH	EET CHI	11/21/23 18:20
Dissolved	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Dissolved	Analysis	SM 2340B		1	743572	DAJ	EET CHI	11/22/23 11:53
Total Recoverable	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Total Recoverable	Analysis	SM 2340B		1	743572	DAJ	EET CHI	11/22/23 11:53
Total/NA	Analysis	300.0		1	739774	NMB	EET CHI	10/31/23 21:53
Total/NA	Analysis	300.0		1	739775	NMB	EET CHI	10/31/23 21:53
Total/NA	Analysis	9060A		1	742509	TR	EET CHI	11/15/23 17:13
Total/NA	Analysis	SM 2320B		1	741834	SO	EET CHI	11/10/23 10:53

Client Sample ID: W-231027-TS-32

Lab Sample ID: 500-241762-7

Date Collected: 10/27/23 12:37

Matrix: Water

Date Received: 10/28/23 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	740154	W1T	EET CHI	11/02/23 21:57
Total/NA	Prep	3510C			740011	DAK	EET CHI	11/02/23 07:54
Total/NA	Analysis	8270E		1	740878	SS	EET CHI	11/07/23 22:19

Eurofins Chicago

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Client Sample ID: W-231027-TS-32

Lab Sample ID: 500-241762-7

Date Collected: 10/27/23 12:37

Matrix: Water

Date Received: 10/28/23 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	593586	JBN	EET CLE	11/06/23 14:28
Total/NA	Prep	8151A			740191	DAK	EET CHI	11/02/23 10:32
Total/NA	Analysis	8151A		2	740727	SS	EET CHI	11/06/23 13:53
Dissolved	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Dissolved	Analysis	6020A		1	742639	BJH	EET CHI	11/16/23 15:51
Dissolved	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Dissolved	Analysis	6020A		1	743511	BJH	EET CHI	11/21/23 18:58
Total Recoverable	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Total Recoverable	Analysis	6020A		1	742639	BJH	EET CHI	11/16/23 15:11
Total Recoverable	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Total Recoverable	Analysis	6020A		1	743511	BJH	EET CHI	11/21/23 18:23
Dissolved	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Dissolved	Analysis	SM 2340B		1	743572	DAJ	EET CHI	11/22/23 11:53
Total Recoverable	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Total Recoverable	Analysis	SM 2340B		1	743572	DAJ	EET CHI	11/22/23 11:53
Total/NA	Analysis	300.0		1	739774	NMB	EET CHI	10/31/23 22:08
Total/NA	Analysis	300.0		1	739775	NMB	EET CHI	10/31/23 22:08
Total/NA	Analysis	9060A		1	742509	TR	EET CHI	11/15/23 17:35
Total/NA	Analysis	SM 2320B		1	741834	SO	EET CHI	11/10/23 11:02

Client Sample ID: W-231027-TS-33

Lab Sample ID: 500-241762-8

Date Collected: 10/27/23 13:43

Matrix: Water

Date Received: 10/28/23 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	740154	W1T	EET CHI	11/02/23 22:23
Total/NA	Prep	3510C			740011	DAK	EET CHI	11/02/23 07:54
Total/NA	Analysis	8270E		1	740615	SS	EET CHI	11/06/23 21:18
Total/NA	Analysis	RSK-175		1	593586	JBN	EET CLE	11/06/23 14:45
Total/NA	Prep	8151A			740191	DAK	EET CHI	11/02/23 10:32
Total/NA	Analysis	8151A		400	741630	SS	EET CHI	11/10/23 11:45
Dissolved	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Dissolved	Analysis	6020A		1	742639	BJH	EET CHI	11/16/23 15:54
Dissolved	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Dissolved	Analysis	6020A		1	743511	BJH	EET CHI	11/21/23 19:02
Total Recoverable	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Total Recoverable	Analysis	6020A		1	742639	BJH	EET CHI	11/16/23 15:22
Total Recoverable	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Total Recoverable	Analysis	6020A		1	743511	BJH	EET CHI	11/21/23 18:27
Dissolved	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Dissolved	Analysis	SM 2340B		1	743572	DAJ	EET CHI	11/22/23 11:55
Total Recoverable	Prep	3005A			741171	BDE	EET CHI	11/08/23 09:08 - 11/08/23 09:38 ¹
Total Recoverable	Analysis	SM 2340B		1	743572	DAJ	EET CHI	11/22/23 11:53
Total/NA	Analysis	300.0		1	739774	NMB	EET CHI	10/31/23 22:24

Eurofins Chicago

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Client Sample ID: W-231027-TS-33

Lab Sample ID: 500-241762-8

Date Collected: 10/27/23 13:43

Matrix: Water

Date Received: 10/28/23 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	739775	NMB	EET CHI	10/31/23 22:24
Total/NA	Analysis	9060A		1	743337	TR	EET CHI	11/20/23 04:10
Total/NA	Analysis	SM 2320B		1	741834	SO	EET CHI	11/10/23 11:11

Client Sample ID: TRIP BLANK

Lab Sample ID: 500-241762-9

Date Collected: 10/27/23 00:00

Matrix: Water

Date Received: 10/28/23 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	740154	W1T	EET CHI	11/02/23 15:26

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

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200
EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396



Accreditation/Certification Summary

Client: GHD Services Inc.
 Project/Site: Penta Wood 11222418

Job ID: 500-241762-1

Laboratory: Eurofins Chicago

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

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-24

Laboratory: Eurofins Cleveland

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-24
Georgia	State	4062	02-27-24
Illinois	NELAP	200004	07-31-24
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-28-24
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-24
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23 *
New Jersey	NELAP	OH001	07-01-24
New York	NELAP	10975	04-02-24
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-27-24
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-19	08-31-24
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.



DV: 0.00
Svcs PRIORITY OVERNIGHT Master 7051 7812 2590
TRCK 7051 7812 2590

ORIGIN ID: JOTA (651)
RYAN AAMOT
GHD SERVICES INC.
900 LONG LAKE ROAD
SUITE 200
SAINT PAUL, MN 55112
UNITED STATES US

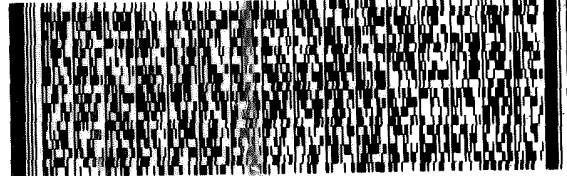
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ACTWGT: 20.00 LB MAN
CAD: 0675905/CAFE3513

TO SHIPPING DEPT
EUROFINS CHICAGO
2417 BOND ST

UNIVERSITY PARK IL 60484

(708) 534-5200
REF: DEPT:

RMA: ||| ||| |||



FedEx Express



RETURNS MON - SAT
PRIORITY OVERNIGHT

TRK# 7051 7812 2590
0221

60484

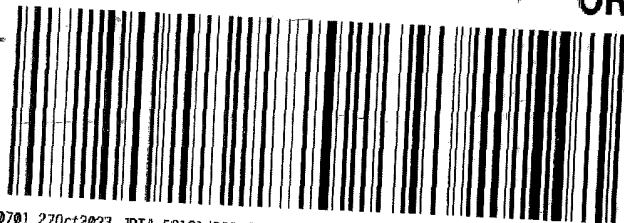
FedEx

TRK# 7051 7812 2590
0221

SATURDAY 12:00P
PRIORITY OVERNIGHT

60484
IL-US
ORD

X0 JOTA



80701 270ct2023 JD7* 581G1/BC8B/C0B8

Ref:
Dep:

Dt: 17Oct23
Wg: 20.00 LBS

SHIPPING: 0.00
SPECIAL: 0.00
HANDLING: 0.00
TOTAL: 0.00

Svcs PRIORITY OVERNIGHT Master 7051 7812 2502
TRCK 7051 7812 2579

ORIGIN ID: JOTA (651) 638-0913

RYAN AAMOT
GHD SERVICES INC.
900 LONG LAKE ROAD
SUITE 200
SAINT PAUL, MN 55112
UNITED STATES US

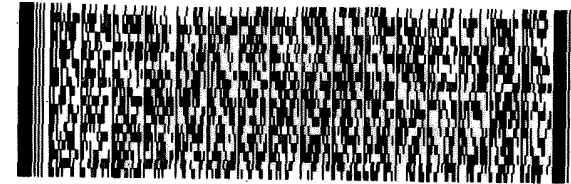
SHIP DATE: 17OCT23
ACTWGT: 20.00 LB MAN
CAD: 0675905/CAFE3513

TO SHIPPING DEPT 2
EUROFINS CHICAGO
2417 BOND ST

UNIVERSITY PARK IL 60484

(708) 534-5200
REF: DEPT:

RMA: ||| ||| |||



FedEx Express



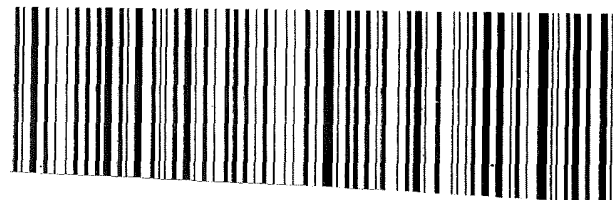
RETURNS MON - SAT
PRIORITY OVERNIGHT

TRK# 7051 7812 2579
0221

SATURDAY 12:00P
PRIORITY OVERNIGHT

60484
IL-US
ORD

X0 JOTA



500-241762 Waybr

RYAN RAMOT
GHD SERVICES INC.
900 LONG LAKE ROAD
SUITE 200
SAINT PAUL, MN 55112
UNITED STATES US

ACTWGT: 20.00 LB MAN
CAD: 0675905/CAFE3513

TO SHIPPING DEPT 2
EUROFINS CHICAGO
2417 BOND ST

UNIVERSITY PARK IL 60484

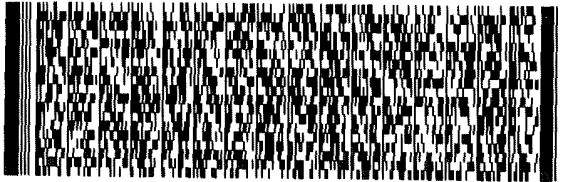
(708) 634-6200

REF:

INV:

DEPT:

RMA: 01111111



FedEx
Express



J211020121101uv

RETURNS MON-SAT
PRIORITY OVERNIGHT

TRK# 7051 7812 2580
0221

60484

IL-US

SATURDAY 12:00P
PRIORITY OVERNIGHT

FedEx

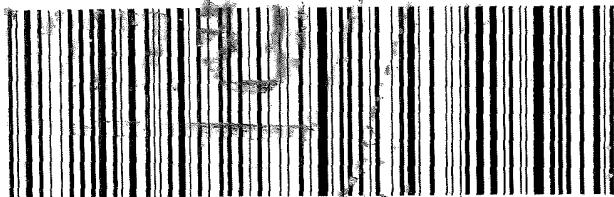
TRK# 7051 7812 2580
0221

X0 JOTA

60484

IL-US

ORD



80701 270ct2023 JOTA 581G1/BC88/C888

36est

ORIGIN ID: JOTA (651) 639-0913
RYAN RAMOT
GHD SERVICES INC.
900 LONG LAKE ROAD
SUITE 200
SAINT PAUL, MN 55112
UNITED STATES US

SHIP DATE:
ACTWGT: 20.00 LB MAN
CAD: 0675905/CAFE3513

TO SHIPPING DEPT 2
EUROFINS CHICAGO
2417 BOND ST

UNIVERSITY PARK IL 60484

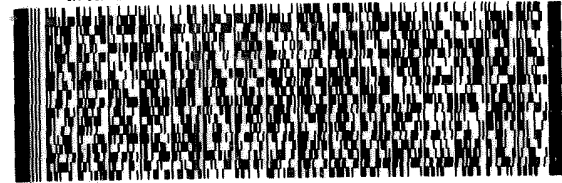
(708) 634-6200

REF:

INV:

DEPT:

RMA: 01111111



FedEx
Express



J211020121101uv

RETURNS MON-SAT
PRIORITY OVERNIGHT

TRK# 7051 7812 2568
0221

60484

SATURDAY 12:00P
PRIORITY OVERNIGHT

FedEx

TRK# 7051 7812 2568
0221

X0 JOTA

60484

IL-US

ORD



80701 270ct2023 JOTA 581G1/BC88/C888

48sat

Wgt: 20.00 LBS SPECIAL: 0.00
DV: 0.00 HANDLING: 0.00
TOTAL: 0.00

Svcs PRIORITY OVERNIGHT Master 7051 7812 2502
TRK 7051 7812 2557

ORIGIN ID: JOTA (651) 639-0913
RYAN AAMOT
GHD SERVICES INC.
900 LONG LAKE ROAD
SUITE 200
SAINT PAUL, MN 55112
UNITED STATES US

SHIP DATE: 17OCT23
ACTWGT: 20.00 LB MAN
CAD: 0675905/CAFE3513

TO SHIPPING DEPT 2
EUROFINS CHICAGO
2417 BOND ST

570C1/BCEB/6F4D

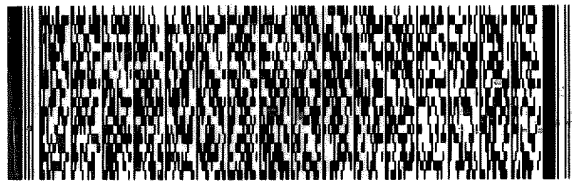
UNIVERSITY PARK IL 60484

(708) 634-6200

REF:

DEPT:

RMA: ||| ||| |||



FedEx
Express



J211020121101W

TRK# 7051 7812 2557
0221

RETURNS MON-SAT
PRIORITY OVERNIGHT

60484

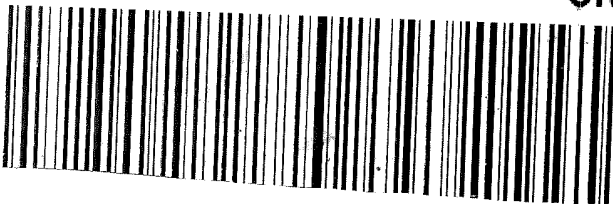
IL-US

FedEx
TRK# 7051 7812 2557
0221

SATURDAY 12:00P
PRIORITY OVERNIGHT

X0 JOTA

60484
IL-US
ORD



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Eurofins - Cleveland Sample Receipt Form/Narrative
Barberton Facility

Login # : _____

Client E. Chicago

Site Name _____

Cooler unpacked by: [Signature]

Cooler Received on 11-1-23

Opened on 11-1-23

FedEx: 1st Grd Exp UPS FAS Waypoint Client Drop Off Eurofins Courier Other

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

Storage Location _____

Eurofins Cooler # EC Foam Box Client Cooler Box Other

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

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt See Multiple Cooler Form

IR GUN # 21 (CF +0.2 °C) Observed Cooler Temp. 3.6 °C Corrected Cooler Temp. 3.8 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No

-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA

-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No

-Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes No

4. Did custody papers accompany the sample(s)? Yes No

5. Were the custody papers relinquished & signed in the appropriate place? Yes No

6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No

7. Did all bottles arrive in good condition (Unbroken)? Yes No

8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No

9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No

10. Were correct bottle(s) used for the test(s) indicated? Yes No

11. Sufficient quantity received to perform indicated analyses? Yes No

12. Are these work share samples and all listed on the COC? Yes No

If yes, Questions 13-17 have been checked at the originating laboratory.

13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC316719

14. Were VOAs on the COC? Yes No

15. Were air bubbles >6 mm in any VOA vials? Yes No NA  ← Larger than this.

16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No

17. Was a LL Hg or Me Hg trip blank present? _____ Yes No

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

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page

Samples processed by: _____

19. SAMPLE CONDITION

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

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

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

20. SAMPLE PRESERVATION

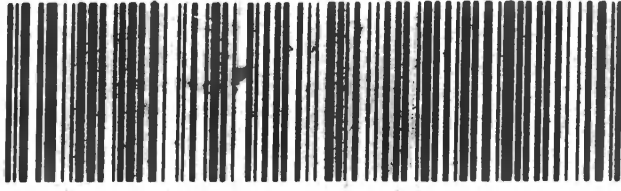
Sample(s) _____ were further preserved in the laboratory.

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

VOA Sample Preservation - Date/Time VOAs Frozen: _____

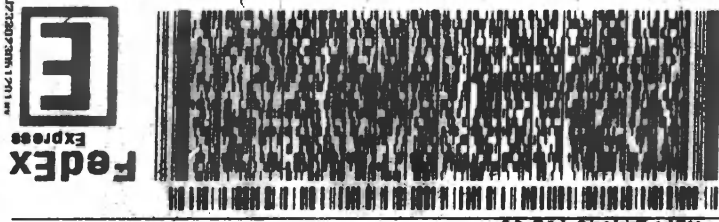
- 1
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- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

764 6 10:30 A
5753 11.01



eurofins
Environment Testing
TestAmerica
2305735

NX CAKA
TRK# 7051 7617 5753
TUE - 31 OCT 10:30A
PRIORITY OVERNIGHT
44203 OH-US CLE



BARBERTON OH 44203
REF: 241749 762 88
(800) 407-0808
SHIP DATE: 30OCT23
ACTWGT: 52.00 LB MAN
CAD: 0675858/CAFE3755
BILL GENDER
SHIP ID: J07A (708) 534-5200
ORIGIN ID: J07A (708) 534-5200
UNIVERSITY PARK, IL 60484
UNITED STATES US
2417 BOND ST
EUROFINS CHICAGO
SHIPPING DEPT
EUROFINS - CANTON
180 S. VAN BUREN AVENUE
SAMPLE RECEIVING
10

Part # 159488-434 MTW EXP 01/24

Temperature Controlled

IF THIS SHIPMENT IS DELAYED IN TRANSIT,
STORE REFRIGERATED (2° TO 8° C / 36° TO 47° F)

TAL-0090(1016)

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-241762-1

Login Number: 241762

List Source: Eurofins Chicago

List Number: 1

Creator: Scott, Sherri L

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.6,2.2,3.0,1.8,3.2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	False	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Appendix C

Data Verification Report

Data Verification Report

December 22, 2023

To	Tim Ree, GHD	Project No.	11222418
Copy to	Thor Solberg, GHD	Email	grant.anderson@ghd.com
From	Grant Anderson/mg/7	Contact No.	612-524-6836
Project Name	Penta Wood Products Superfund Site		
Subject	Analytical Results and Data Verification Groundwater and Residential Water Sampling Event Penta Wood Products Superfund Site Siren, Wisconsin October 2023		

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

1. Introduction

This document details a data verification of analytical results for groundwater and residential water samples collected in support of the Mitigation Sampling Event at the Penta Wood Products Superfund Site in Siren, Wisconsin during October 2023. Samples were submitted Eurofins Chicago, located in University Park, Illinois. Methane samples were analyzed at Eurofins Cleveland, located in Barberton, Ohio. A sample collection and analysis summary is presented in Table 1. The validated analytical results are summarized in Tables 2A and 2B. A summary of the analytical methodology is presented in Table 3.

Standard GHD report deliverables were submitted by the laboratory. The final results and supporting quality assurance/quality control (QA/QC) data were assessed. Evaluation of the data was based on information obtained from the chain of custody forms, finished report forms, method blank data, recovery data from laboratory control samples (LCS)/matrix spikes (MS) and field QA/QC samples.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 3 and applicable guidance from the documents entitled:

1. "Quality Assurance Project Plan (QAPP) Wetland Excavation and Surface Debris Mitigation Sampling", February 2023
2. "National Functional Guidelines for Organic Superfund Methods Data Review", EPA 540-R-20-005, November 2020
3. "National Functional Guidelines for Inorganic Superfund Methods Data Review", EPA 542-R-20-006, November 2020

Items 2. and 3. will subsequently be referred to as the "Guidelines" in this report.

2. Sample Holding Time and Preservation

The sample holding time criteria for the analyses are summarized in Table 3. Sample chain of custody documents and analytical reports were used to determine sample holding times. With the exception of nitrate (as N), all samples were analyzed within the required holding times. One non-detect result was rejected due to holding time exceedance; the remaining were qualified as estimated with low bias. Table 4 lists the holding time exceedances. One non-detect result was rejected due to holding time exceedance; the remaining were qualified as estimated with low bias. Associated sample data are qualified as noted in the table.

All samples were properly preserved, delivered on ice, and stored by the laboratory at the required temperature (0-6°C).

3. Laboratory Method Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

Laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

Table 5 lists sample results that were qualified based on compounds detected in the method blanks. Associated sample data are qualified as noted in the table. All remaining method blank results were non-detect or did not result in qualification of associated samples.

4. Surrogate Spike Recoveries - Organic Analyses

In accordance with the methods employed, all samples, blanks, and QC samples analyzed for organics are spiked with surrogate compounds prior to sample extraction and/or analysis. Surrogate recoveries provide a means to evaluate the effects of laboratory performance on individual sample matrices.

All samples submitted for benzene, toluene, ethylbenzene, xylenes (BTEX), pentachlorophenol and naphthalene determinations were spiked with the appropriate number of surrogate compounds prior to sample extraction and/or analysis.

High surrogate recoveries do not impact any associated non-detect sample results.

Each individual surrogate compound is expected to meet the laboratory control limits. For naphthalene analyses, it is generally acceptable for there to be one outlying surrogate in the base/neutral provided that the recovery is at least 10 percent.

Surrogate recoveries were assessed against laboratory control limits. With the exception of one naphthalene sample, all surrogate recoveries were within the laboratory control limits. Table 6 lists the outlying surrogate recoveries. The associated sample result is qualified as noted in the table.

5. Laboratory Control Sample Analyses

LCS or LCS/laboratory control sample duplicates (LCSD) are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects. The relative percent difference (RPD) of the LCS/LCSD recoveries is used to evaluate analytical precision.

High LCS recoveries and/or RPDs do not impact any associated non-detect sample results.

For this study, LCS or LCS/LCSD were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

Organic Analyses

The LCS/LCSD contained all compounds of interest. All LCS recoveries and RPDs were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision.

Inorganic Analyses

The LCS contained all analytes of interest. LCS recoveries were assessed per the "Guidelines" using the laboratory control limits. All LCS recoveries were within the control limits, demonstrating acceptable analytical accuracy.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

To evaluate the effects of sample matrices on the preparation process, measurement procedures, and accuracy of a particular analysis, samples are spiked with known concentrations of the analytes of concern and analyzed as MS/MSD samples. The RPD between the MS and MSD is used to assess analytical precision.

High MS/MSD recoveries and/or RPDs do not impact any associated non-detect sample results.

The laboratory performed site-specific MS/MSD analyses internally.

Organic Analyses

The MS/MSD samples were spiked with all compounds of interest. All percent recoveries and RPD values were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision.

Inorganic Analyses

The MS/MSD samples were spiked with the analytes of interest, and the results were evaluated using the "Guidelines" using the laboratory control limits. With the exception of magnesium, all percent recoveries and RPD values were within the control limits. Table 7 lists the outlying MS/MSD recoveries. Associated sample results are qualified as noted in the table.

7. Field QA/QC Samples

The field QA/QC consisted of five trip blank samples, three field blanks, two rinsate blanks and four field duplicate sample sets.

Trip Blank Sample Analysis

To evaluate contamination from sample collection, transportation, storage, and analytical activities, five trip blanks were submitted to the laboratory for BTEX analysis. All results were non-detect for the compounds of interest.

Field Blank Sample Analysis

To assess ambient conditions at the site, three field blank samples were submitted for analysis, as identified in Table 1. All results were non-detect for the analytes of interest. With exception of copper, all results were non-detect or yielded detections that did not result in qualification of sample data. Table 8 lists copper sample results requiring qualification-based field blank detections. Associated sample data are qualified as noted in the table.

Rinsate Blank Sample Analysis

To assess field decontamination procedures and cleanliness of sample containers, two rinsate blanks were submitted for analysis, as identified in Table 1. Table 9 lists qualified data based on rinsate blank results. Associated sample results are qualified as noted in the table.

Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, four field duplicate sample sets were collected and submitted "blind" to the laboratory. The RPDs associated with these duplicate samples must be less than 50 percent. If the reported concentration in either the investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criteria is one times the RL value.

All field duplicate results met the above criteria demonstrating acceptable sampling and analytical precision.

8. Analyte Reporting

Non-detect data were reported down to the laboratory's sample-specific MDL for each analyte. Positive analyte detections less than the RL but greater than the sample-specific MDL were qualified as estimated (J) in Tables 2A and 2B.

Non-detect results were presented as non-detect at the RL in Tables 2A and 2B.

9. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Tables 2A and 2B are acceptable with the specific qualifications and exception noted herein.

Regards,



Grant Anderson
Digital Intelligence-Data Management-Data Validator

Encl.

Table 1
Sample Collection and Analysis Summary
Groundwater and Residential Water Sampling Events
Penta Wood Products Superfund Site
Siren, Wisconsin
October 2023

Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters										Comments	
					BTEX	Naphthalene	Pentachlorophenol	Methane	Metals	Hardness	Alkalinity	Chloride, Sulfate	Nitrate (as N)	TOC		
W-231003-RA-01	RW02	water	10/03/2023	10:27	x	x	x									MS/MSD
W-231003-RA-02	RW01	water	10/03/2023	10:40	x	x	x									
W-231003-RA-03	RW05	water	10/03/2023	10:48	x	x	x									
W-231003-RA-04	RW05	water	10/03/2023	10:48	x	x	x									Duplicate (RA-03)
W-231003-RA-05	Field Blank	water	10/03/2023	11:03	x	x	x									Field Blank
W-231003-RA-06	RW04	water	10/03/2023	11:13	x	x	x									
W-231003-RA-07	RW03	water	10/03/2023	11:23	x	x	x									
W-231003-RA-08	RW06 SHOP	water	10/03/2023	11:45	x	x	x									
W-231003-RA-09	RW06	water	10/03/2023	11:50	x	x	x									
Trip Blank	Lab	water	10/03/2023	00:00	x											Trip Blank
W-231024-TS-01	MW14	water	10/24/2023	11:07	x	x	x	x	x	x	x	x	x	x		
W-231024-TS-02	MW28	water	10/24/2023	11:40	x	x	x	x	x	x	x	x	x	x		
W-231024-TS-03	MW4	water	10/24/2023	12:54	x	x	x	x	x	x	x	x	x	x		
W-231024-TS-04	MW4	water	10/24/2023	12:55	x	x	x	x	x	x	x	x	x	x		Duplicate (TS-03)
W-231024-TS-05	MW3	water	10/24/2023	13:30	x	x	x		x	x	x	x	x	x		Field Blank
W-231024-TS-06	MW25	water	10/24/2023	14:18	x	x	x	x	x	x	x	x	x	x		
TRIP BLANK	Lab	water	10/24/2023	00:00	x											Trip Blank
W-231025-TS-07	MW6S	water	10/25/2023	10:16	x	x	x	x	x	x	x	x	x	x		
W-231025-TS-08	MW6S	water	10/25/2023	10:17	x	x	x	x	x	x	x	x	x	x		Duplicate (TS-07)
W-231025-TS-09	EW13S	water	10/25/2023	10:42	x	x	x	x	x	x	x	x	x	x		
W-231025-TS-10	MW10D	water	10/25/2023	11:54	x	x	x	x	x	x	x	x	x	x		
W-231025-TS-11	MW17	water	10/25/2023	13:55	x	x	x	x	x	x	x	x	x	x		MS/MSD
W-231025-TS-14	MW12	water	10/25/2023	12:58	x	x	x	x	x	x	x	x	x	x		
W-231025-TS-15	Field Blank	water	10/25/2023	13:56	x	x	x		x	x						Field Blank
W-231025-TS-16	MW32	water	10/25/2023	14:57	x	x	x	x	x	x	x	x	x	x		

Table 1

**Sample Collection and Analysis Summary
Groundwater and Residential Water Sampling Events
Penta Wood Products Superfund Site
Siren, Wisconsin
October 2023**

Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters									Comments	
					BTEX	Naphthalene	Pentachlorophenol	Methane	Metals	Hardness	Alkalinity	Chloride, Sulfate	Nitrate (as N)		TOC
TRIP BLANK	Lab	water	10/25/2023	00:00	x										Trip Blank
W-231026-TS-17	MW13	water	10/26/2023	10:46	x	x	x	x	x	x	x	x	x		
W-231026-TS-18	MW13	water	10/26/2023	10:46	x	x	x	x	x	x	x	x	x		Duplicate (TS-17)
W-231026-TS-19	Equipment Blank	water	10/26/2023	11:01	x	x	x		x	x					Rinsate Blank
W-231026-TS-20	MW33	water	10/26/2023	11:55	x	x	x	x	x	x	x	x	x		
W-231026-TS-21	MW23	water	10/26/2023	13:07	x	x	x	x	x	x	x	x	x		
W-231026-TS-22	MW31	water	10/26/2023	13:49	x	x	x	x	x	x	x	x	x		MS/MSD
W-231026-TS-25	MW1	water	10/26/2023	15:01	x	x	x	x	x	x	x	x	x		
TRIP BLANK	Lab	water	10/26/2023	00:00	x										Trip Blank
W-231027-TS-26	MW30	water	10/27/2023	09:38	x	x	x	x	x	x	x	x	x		
W-231027-TS-27	MW5	water	10/27/2023	10:51	x	x	x	x	x	x	x	x	x		
W-231027-TS-28	Equipment Blank	water	10/27/2023	12:11	x	x	x		x	x	x	x	x		Rinsate Blank
W-231027-TS-29	MW2	water	10/27/2023	11:30	x	x	x	x	x	x	x	x	x		
W-231027-TS-30	MW21	water	10/27/2023	12:30	x	x	x	x	x	x	x	x	x		
W-231027-TS-31	MW22	water	10/27/2023	13:15	x	x	x	x	x	x	x	x	x		
W-231027-TS-32	EW11S	water	10/27/2023	12:37	x	x	x	x	x	x	x	x	x		
W-231027-TS-33	EW11D	water	10/27/2023	13:43	x	x	x	x	x	x	x	x	x		
TRIP BLANK	Lab	water	10/27/2023	00:00	x										Trip Blank

Notes:

BTEX - Benzene, Toluene, Ethylbenzene, and Xylenes (total)

MS/MSD - Matrix Spike/Matrix Spike Duplicate

TOC - Total Organic Carbon

Table 2A

Validated Analytical Results Summary - Groundwater
 Groundwater and Residential Water Sampling Events
 Penta Wood Products Superfund Site
 Siren, Wisconsin
 October 2023

Location ID:	EW11D	EW11S	EW13S	MW1	MW2	MW3	MW4	MW4	MW5	MW6S
Sample Name:	W-231027-TS-33	W-231027-TS-32	W-231025-TS-09	W-231026-TS-25	W-231027-TS-29	W-231024-TS-05	W-231024-TS-03	W-231024-TS-04	W-231027-TS-27	W-231025-TS-07
Sample Date:	10/27/2023	10/27/2023	10/25/2023	10/26/2023	10/27/2023	10/24/2023	10/24/2023	10/24/2023 Duplicate	10/27/2023	10/25/2023
Parameters	Unit									
Volatile Organic Compounds										
Benzene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Ethylbenzene	µg/L	0.50 U	0.50 U	0.94	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.58
Toluene	µg/L	0.50 U	0.50 U	0.87	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.27 J
Xylenes (total)	µg/L	1.0 U	1.0 U	14	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0
Semivolatile Organic Compounds										
Naphthalene	µg/L	0.83 U	0.90 U	25	0.80 U	0.87 U	0.91 U	0.80 U	0.82 U	12
Dissolved Gases										
Methane	µg/L	9.9	1.3	6.2	1.0 U	1.0 U	61	29	22	10
Herbicides										
Pentachlorophenol	µg/L	900	6.9 U	15000	0.10 U	0.25 U	0.35	0.10 U	0.10 U	4600
Metals										
Arsenic	µg/L	1.0 U	1.0 U	10.4	1.0 U	1.0 U	0.42 J	1.3	1.3	1.0 U
Arsenic (dissolved)	µg/L	1.0 U	1.0 U	3.0	1.0 U	1.0 U	0.39 J	1.3	1.3	1.0 U
Calcium	µg/L	55300	24300	69300	34400	17700	117000	40200	41300	68700
Calcium (dissolved)	µg/L	55400	24100	78900	35400	17800	114000	42200	41500	67900
Copper	µg/L	1.8 U	3.4 U	47.0	2.0 U	17.7	1.1 J	2.0 U	0.51 J	5.8
Copper (dissolved)	µg/L	4.0 U	2.0 U	2.0 U	2.8 U	3.9 U	1.4 J	2.0 U	2.0 U	2.0 U
Iron	µg/L	9720	266	35600	100 U	5470	1730	156	88.5 J	16200
Iron (dissolved)	µg/L	640	100 U	17400	100 U	100 U	1510	100 U	100 U	13900
Magnesium	µg/L	20400	11500	27300 J-	11900	8170	31300	11900	12400	30000
Magnesium (dissolved)	µg/L	19500	11400	31000 J-	11700	7420	31300	12800	12400	29300
Manganese	µg/L	52.7 U	32.1 U	3280	2.5 U	188 U	23.9	31.9	32.4	7730
Manganese (dissolved)	µg/L	34.5 U	2.5 U	3700	2.5 U	2.5 U	22.1	34.0	33.1	7780
Zinc	µg/L	60.9	20.0 U	25.3	20.0 U	21.9	20.0 U	20.0 U	20.0 U	20.0 U
Zinc (dissolved)	µg/L	20.0 U	20.0 U	20.0 U	20.0 U	16.3 J	20.0 U	20.0 U	20.0 U	20.0 U
General Chemistry										
Alkalinity, total (as CaCO3)	mg/L	222	110	313	123	80.0	415	86.2	86.3	271
Chloride	mg/L	2.6	0.98 J	36.7	17.3	0.21 J	23.8	46.4	46.9	21.7
Hardness, calcium	mg/L	138	60.8	173	89.7	44.1	292	100	103	172
Hardness, carbonate (dissolved)	mg/L	138	60.3	197	88.3	44.4	286	105	104	170
Nitrate (as N)	mg/L	2.0 J-	1.6 J-	1.0 U	1.7 J-	1.0 U	2.5	0.61 J	0.61 J	R
Sulfate	mg/L	8.6	5.4	10.9	4.0	1.3	6.4	14.4	14.5	18.6
Total organic carbon (TOC)	mg/L	3.0	1.2	28.8	0.85 J	1.0 U	0.90 J	0.78 J	0.67 J	24.4

Table 2A

Validated Analytical Results Summary - Groundwater
Groundwater and Residential Water Sampling Events
Penta Wood Products Superfund Site
Siren, Wisconsin
October 2023

Location ID:	MW6S	MW10D	MW12	MW13	MW13	MW14	MW17	MW21	MW22	MW23
Sample Name:	W-231025-TS-08	W-231025-TS-10	W-231025-TS-14	W-231026-TS-17	W-231026-TS-18	W-231024-TS-01	W-231025-TS-11	W-231027-TS-30	W-231027-TS-31	W-231026-TS-21
Sample Date:	10/25/2023 Duplicate	10/25/2023	10/25/2023	10/26/2023	10/26/2023 Duplicate	10/24/2023	10/25/2023	10/27/2023	10/27/2023	10/26/2023
Parameters	Unit									
Volatile Organic Compounds										
Benzene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Ethylbenzene	µg/L	0.50 U	1.3	0.80	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	µg/L	0.50 U	1.1	0.32 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.19 J
Xylenes (total)	µg/L	1.0 U	8.9	4.5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Semivolatile Organic Compounds										
Naphthalene	µg/L	0.88 U	8.1	6.2	0.88 U	0.85 U	0.86 U	0.81 UJ	0.85 U	0.80 U
Dissolved Gases										
Methane	µg/L	1.0 U	420	0.83 J	1.0 U	1.0 U	0.21 J	1.0 U	1.0 U	1.0 U
Herbicides										
Pentachlorophenol	µg/L	0.10 U	8000	1800	0.18 U	0.11 U	0.11 U	0.10 U	0.10 U	0.10 U
Metals										
Arsenic	µg/L	0.33 J	1.1	0.75 J	1.0 U	1.0 U	1.1	0.53 J	1.0 U	1.3 J+
Arsenic (dissolved)	µg/L	0.28 J	1.0	0.69 J	1.0 U	1.0 U	1.1	0.55 J	1.0 U	1.0 U
Calcium	µg/L	61100	48000	51700	12200	12200	45500	65100	23600	21500
Calcium (dissolved)	µg/L	58300	47400	49000	12100	12500	44000	62100	23800	21900
Copper	µg/L	3.8	7.6	4.1	2.9 U	2.0 U	0.83 J	2.0 U	10.1	26.1
Copper (dissolved)	µg/L	3.6	4.1	2.9	2.0 U	2.6 U	1.7 J	2.0 U	3.6 U	4.0 U
Iron	µg/L	100 U	1260	100 U	100 U	100 U	100 U	100 U	2330	6000
Iron (dissolved)	µg/L	100 U	851	100 U	100 U	100 U	100 U	100 U	100 U	53.6 J
Magnesium	µg/L	24900 J-	16000 J-	22800 J-	5640	5860	13200	24800 J-	9740	10200
Magnesium (dissolved)	µg/L	23900 J-	15700 J-	21800 J-	5740	5660	12700	23900 J-	9050	9430
Manganese	µg/L	2.2 J	1140	833	2.5 U	2.5 U	1.1 J	2.5 U	163 U	302
Manganese (dissolved)	µg/L	2.0 J	1110	749	3.3 U	2.5 U	1.0 J	2.5 U	2.5 U	3.0 U
Zinc	µg/L	8.0 J	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	21.2
Zinc (dissolved)	µg/L	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
General Chemistry										
Alkalinity, total (as CaCO3)	mg/L	237	171	181	69.5	69.5	129	197	70.9	92.6
Chloride	mg/L	12.1	33.4	26.3	0.63 J	0.57 J	25.0	8.1	79.8	8.5
Hardness, calcium	mg/L	153	120	129	39.4	39.8	114	163	59.0	53.8
Hardness, carbonate (dissolved)	mg/L	145	118	122	30.2	31.2	110	155	59.4	54.6
Nitrate (as N)	mg/L	3.1	0.48 J	0.57 J	0.74 J	0.74 J	1.6	1.4	1.7 J-	0.91 J-
Sulfate	mg/L	13.4	10.1	23.4	2.2	2.1	6.0	81.1	4.6	2.8
Total organic carbon (TOC)	mg/L	4.5	26.7	22.4	2.1	1.9	0.67 J	1.1	1.0 U	1.0 U

Table 2A

**Validated Analytical Results Summary - Groundwater
Groundwater and Residential Water Sampling Events
Penta Wood Products Superfund Site
Siren, Wisconsin
October 2023**

Location ID:	MW25	MW28	MW30	MW31	MW32	MW33
Sample Name:	W-231024-TS-06	W-231024-TS-02	W-231027-TS-26	W-231026-TS-22	W-231025-TS-16	W-231026-TS-20
Sample Date:	10/24/2023	10/24/2023	10/27/2023	10/26/2023	10/25/2023	10/26/2023
Parameters	Unit					
Volatile Organic Compounds						
Benzene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Ethylbenzene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Xylenes (total)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Semivolatile Organic Compounds						
Naphthalene	µg/L	0.82 U	0.85 U	0.30 J	0.78 U	0.96 U
Dissolved Gases						
Methane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	0.67 J
Herbicides						
Pentachlorophenol	µg/L	0.10 U	0.10 U	660	0.10 U	0.099 U
Metals						
Arsenic	µg/L	0.35 J	0.43 J	1.0 U	1.0 U	1.0
Arsenic (dissolved)	µg/L	0.27 J	0.44 J	1.0 U	1.0 U	1.0 U
Calcium	µg/L	36100	37000	38000	40700	8830
Calcium (dissolved)	µg/L	35900	37600	38000	40200	8460
Copper	µg/L	1.4 J	1.4 J	2.0 U	2.0 U	2.0 U
Copper (dissolved)	µg/L	2.4	2.4	2.0 U	2.6 U	3.1
Iron	µg/L	99.4 J	100 U	51.0 J	109	85.3 J
Iron (dissolved)	µg/L	100 U	100 U	100 U	100 U	100 U
Magnesium	µg/L	13700	11600	16000	13600	3620 J-
Magnesium (dissolved)	µg/L	13600	12100	15800	13600	3480 J-
Manganese	µg/L	2.3 J	2.5 U	6.0 U	4.4 U	1.6 J
Manganese (dissolved)	µg/L	0.80 J	2.5 U	4.4 U	2.5 U	2.5 U
Zinc	µg/L	8.0 J	20.0 U	20.0 U	20.0 U	20.0 U
Zinc (dissolved)	µg/L	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
General Chemistry						
Alkalinity, total (as CaCO ₃)	mg/L	121	129	169	169	41.9
Chloride	mg/L	24.5	20.1	0.85 J	0.48 J	0.64 J
Hardness, calcium	mg/L	90.0	92.4	94.8	103	22.1
Hardness, carbonate (dissolved)	mg/L	89.7	93.8	94.8	100	21.1
Nitrate (as N)	mg/L	1.7	3.0	1.0 U	0.57 J-	0.85 J
Sulfate	mg/L	2.6	5.0	2.8	1.1	2.7
Total organic carbon (TOC)	mg/L	0.64 J	0.85 J	3.8	0.50 J	1.0

Notes:

U - Not detected at the associated reporting limit
 UJ - Not detected; associated reporting limit is estimated
 J - Estimated concentration
 J+ - Estimated concentration; result may be biased high
 J- - Estimated concentration; result may be biased low
 R - Rejected

Table 2B

**Validated Analytical Results Summary - Residential Water
Groundwater and Residential Water Sampling Events
Penta Wood Products Superfund Site
Siren, Wisconsin
October 2023**

Location ID: Sample Name: Sample Date:	RW01 W-231003-RA-02 10/03/2023	RW02 W-231003-RA-01 10/03/2023	RW03 W-231003-RA-07 10/03/2023	RW04 W-231003-RA-06 10/03/2023	RW05 W-231003-RA-03 10/03/2023	RW05 W-231003-RA-04 10/03/2023 Duplicate	RW06 W-231003-RA-09 10/03/2023	RW06 SHOP W-231003-RA-08 10/03/2023	
Parameters	Unit								
Volatile Organic Compounds									
Benzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Ethylbenzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Xylenes (total)	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Semivolatile Organic Compounds									
Naphthalene	0.82 U	0.77 U	0.75 U	0.83 U	0.79 U	0.77 U	0.82 U	0.88 U	
Herbicides									
Pentachlorophenol	0.10 U	0.096 U	0.097 U	0.097 U	0.098 U	0.097 U	0.097 U	0.096 U	

Notes:
U - Not detected at the associated reporting limit

Table 3

**Analytical Methods and Holding Time Criteria
Groundwater and Residential Water Sampling Events
Penta Wood Products Superfund Site
Siren, Wisconsin
October 2023**

Parameter	Method	Matrix	Holding Time	
			Collection to Extraction (Days)	Collection or Extraction to Analysis (Days)
BTEX	SW-846 8260B	Water	-	14
Naphthalene	SW-846 8270E	Water	7	40
Pentachlorophenol	SW 8151A	Water	7	40
Methane	RSK-175	Water	-	14
Metals	SW 6020A	Water	-	180
Hardness	SM 2340B	Water	-	180
Alkalinity	SM 2320B	Water	-	14
Chloride, Sulfate	EPA 300.0	Water	-	28
Nitrate (as N)	EPA 300.0	Water	-	48 hours
Total Organic Carbon (TOC)	SW 9060A	Water	-	28

Note:

BTEX - Benzene, Toluene, Ethylbenzene, and Xylenes (total)

Method References:

SW-846 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, 1986, with subsequent revisions

SM - "Standard Methods for the Examination of Water and Wastewater"

RSK - "Sample Prep and Calculations for Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibration Technique",

RSKSOP - 175, Rev.0, 8/11/94, USEPA Research Lab

EPA - "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions

Table 4

**Qualified Sample Results Due to Holding Time Exceedance
Groundwater and Residential Water Sampling Events
Penta Wood Products Superfund Site
Siren, Wisconsin
October 2023**

Parameter	Sample ID	Holding Time (days)	Holding Time Criteria	Analyte	Qualified Sample Results	Units
General Chemistry	W-231026-TS-22	5	48 hours	Nitrate (as N)	0.57 J-	mg/L
	W-231026-TS-25	5	48 hours	Nitrate (as N)	1.7 J-	mg/L
	W-231027-TS-27	4	48 hours	Nitrate (as N)	R	mg/L
	W-231027-TS-30	4	48 hours	Nitrate (as N)	1.7 J-	mg/L
	W-231027-TS-31	4	48 hours	Nitrate (as N)	0.91 J-	mg/L
	W-231027-TS-32	4	48 hours	Nitrate (as N)	1.6 J-	mg/L
	W-231027-TS-33	4	48 hours	Nitrate (as N)	2.0 J-	mg/L

Notes:

J- - Estimated concentration; result may be biased low

R - Rejected

Table 5

**Qualified Sample Results Due to Analyte Concentrations in the Method Blanks
Groundwater and Residential Water Sampling Events
Penta Wood Products Superfund Site
Siren, Wisconsin
October 2023**

Parameter	Analyte	Analysis Batch	Blank Result *	Sample ID	Original Result	Qualified Result	Units
Metals	Manganese	500-741169	2.01J	W-231026-TS-17	1.6 J	2.5 U	ug/L
	Manganese			W-231026-TS-18	1.7 J	2.5 U	ug/L
	Manganese (dissolved)			W-231026-TS-18	1.6 J	2.5 U	ug/L
	Manganese			W-231026-TS-21	2.1 J	2.5 U	ug/L
	Manganese (dissolved)			W-231026-TS-21	1.2 J	2.5 U	ug/L
	Manganese (dissolved)			W-231026-TS-22	1.4 J	2.5 U	ug/L
	Manganese			W-231026-TS-25	1.7 J	2.5 U	ug/L
Metals	Manganese (dissolved)	500-741171	0.832J	W-231027-TS-29	2.0 J	2.5 U	ug/L
	Manganese (dissolved)			W-231027-TS-30	1.4 J	2.5 U	ug/L
	Manganese (dissolved)			W-231027-TS-32	2.3 J	2.5 U	ug/L

Notes:

* - Blank result adjusted for sample factors where applicable

U - Not detected at the associated reporting limit

J - Estimated concentration

Table 6

**Qualified Sample Data Due to Outlying Surrogate Recoveries
Groundwater and Residential Water Sampling Events
Penta Wood Products Superfund Site
Siren, Wisconsin
October 2023**

Parameter	Sample ID	Surrogate	Surrogate % Recovery	Control Limits % Recovery	Analyte	Qualified Result	Units
SVOC	W-231025-TS-11	2-Fluorobiphenyl	16	34-110	Naphthalene	0.81 UJ	ug/L
		Nitrobenzene-D5	15	36-120			
		Terphenyl-d14	19	40-145			

Notes:
SVOC - Semi-volatile Organic Compounds
UJ - Not detected; associated reporting limit is estimated

Table 7

**Qualified Sample Results Due to Outlying MS/MSD Results
Groundwater and Residential Water Sampling Events
Penta Wood Products Superfund Site
Siren, Wisconsin
October 2023**

Parameter	Sample ID	Analyte	MS % Recovery	MSD % Recovery	RPD (percent)	Control Limits		Qualified Result	Units
						% Recovery	RPD		
Metals	W-231025-TS-07	Magnesium	71	74	1	75-125	20	23700 J-	ug/L
	W-231025-TS-07	Magnesium (dissolved)						24000 J-	ug/L
	W-231025-TS-08	Magnesium						24900 J-	ug/L
	W-231025-TS-08	Magnesium (dissolved)						23900 J-	ug/L
	W-231025-TS-09	Magnesium						27300 J-	ug/L
	W-231025-TS-09	Magnesium (dissolved)						31000 J-	ug/L
	W-231025-TS-10	Magnesium						16000 J-	ug/L
	W-231025-TS-10	Magnesium (dissolved)						15700 J-	ug/L
	W-231025-TS-11	Magnesium						24800 J-	ug/L
	W-231025-TS-11	Magnesium (dissolved)						23900 J-	ug/L
	W-231025-TS-14	Magnesium						22800 J-	ug/L
	W-231025-TS-14	Magnesium (dissolved)						21800 J-	ug/L
	W-231025-TS-16	Magnesium						3620 J-	ug/L
	W-231025-TS-16	Magnesium (dissolved)						3480 J-	ug/L

Notes:

MS - Matrix Spike

MSD - Matrix Spike Duplicate

RPD - Relative Percent Difference

J- - Estimated concentration; result may be biased low

Table 8

**Qualified Sample Data Due to Analyte Concentrations in the Field Blanks
Groundwater and Residential Water Sampling Events
Penta Wood Products Superfund Site
Siren, Wisconsin
October 2023**

Parameter	Field Blank ID	Blank Date (mm/dd/yyyy)	Analyte	Blank Result	Associated Sample ID	Original Result	Qualified Result	Units
Metals	W-231025-TS-15	10/25/2023	Copper (dissolved)	0.52J	W-231025-TS-09	0.78 J	2.0 U	ug/L
			Copper		W-231025-TS-11	0.85 J	2.0 U	ug/L
			Copper (dissolved)		W-231025-TS-11	1.2 J	2.0 U	ug/L
			Copper		W-231025-TS-16	0.81 J	2.0 U	ug/L

Notes:

U - Not detected at the associated reporting limit

J - Estimated concentration

Table 9

**Qualified Sample Data Due to Analyte Concentrations in the Rinsate Blanks
Groundwater and Residential Water Sampling Events
Penta Wood Products Superfund Site
Siren, Wisconsin
October 2023**

Parameter	Rinsate Blank ID	Blank Date (mm/dd/yyyy)	Analyte	Blank Result	Associated Sample ID	Original Result	Qualified Result	Units
Metals	W-231026-TS-19	10/26/2023	Arsenic	0.31J	W-231026-TS-21	0.65 J	1.0 U	ug/L
			Arsenic (dissolved)		W-231026-TS-21	0.65 J	1.0 U	ug/L
			Arsenic		W-231026-TS-22	0.24 J	1.0 U	ug/L
			Arsenic		W-231026-TS-25	0.34 J	1.0 U	ug/L
			Arsenic (dissolved)		W-231026-TS-25	0.28 J	1.0 U	ug/L
Metals	W-231026-TS-19	10/26/2023	Copper	4.3	W-231026-TS-17	2.9	2.9 U	ug/L
			Copper (dissolved)		W-231026-TS-17	1.9 J	2.0 U	ug/L
			Copper		W-231026-TS-18	1.9 J	2.0 U	ug/L
			Copper (dissolved)		W-231026-TS-18	2.6	2.6 U	ug/L
			Copper (dissolved)		W-231026-TS-20	1.3 J	2.0 U	ug/L
			Copper		W-231026-TS-21	0.75 J	2.0 U	ug/L
			Copper (dissolved)		W-231026-TS-21	1.0 J	2.0 U	ug/L
			Copper		W-231026-TS-22	0.94 J	2.0 U	ug/L
			Copper (dissolved)		W-231026-TS-22	2.6	2.6 U	ug/L
			Copper		W-231026-TS-25	1.1 J	2.0 U	ug/L
Copper (dissolved)	W-231026-TS-25	2.8	2.8 U	ug/L				
Metals	W-231026-TS-19	10/26/2023	Manganese (dissolved)	882	W-231026-TS-17	3.3	3.3 U	ug/L
			Manganese (dissolved)		W-231026-TS-20	14.4	14.4 U	ug/L
			Manganese		W-231026-TS-22	4.4	4.4 U	ug/L
Herbicides	W-231026-TS-19	10/26/2023	Pentachlorophenol	0.22	W-231026-TS-17	0.18	0.18 U	ug/L
					W-231026-TS-18	0.11	0.11 U	ug/L
Metals	W-231026-TS-19	10/26/2023	Zinc	18.0J	W-231026-TS-20	17.7 J	20.0 U	ug/L
Metals	W-231027-TS-28	10/27/2023	Arsenic	0.51J	W-231027-TS-27	1.0	1.0 U	ug/L
			Arsenic (dissolved)		W-231027-TS-27	0.82 J	1.0 U	ug/L
			Arsenic		W-231027-TS-29	0.86 J	1.0 U	ug/L
			Arsenic		W-231027-TS-30	0.50 J	1.0 U	ug/L
			Arsenic		W-231027-TS-31	1.3	1.3 J+	ug/L
			Arsenic		W-231027-TS-33	0.23 J	1.0 U	ug/L
Metals	W-231027-TS-28	10/27/2023	Copper	7.3	W-231027-TS-26	1.6 J	2.0 U	ug/L
			Copper (dissolved)		W-231027-TS-26	1.3 J	2.0 U	ug/L
			Copper (dissolved)		W-231027-TS-27	1.4 J	2.0 U	ug/L

Table 9

**Qualified Sample Data Due to Analyte Concentrations in the Rinsate Blanks
Groundwater and Residential Water Sampling Events
Penta Wood Products Superfund Site
Siren, Wisconsin
October 2023**

Parameter	Rinsate Blank ID	Blank Date (mm/dd/yyyy)	Analyte	Blank Result	Associated Sample ID	Original Result	Qualified Result	Units
			Copper (dissolved)		W-231027-TS-29	3.9	3.9 U	ug/L
			Copper (dissolved)		W-231027-TS-30	3.6	3.6 U	ug/L
			Copper (dissolved)		W-231027-TS-31	4.0	4.0 U	ug/L
			Copper		W-231027-TS-32	3.4	3.4 U	ug/L
			Copper (dissolved)		W-231027-TS-32	2.0	2.0 U	ug/L
			Copper		W-231027-TS-33	1.8 J	1.8 U	ug/L
			Copper (dissolved)		W-231027-TS-33	4.0	4.0 U	ug/L
Metals	W-231027-TS-28	10/27/2023	Manganese	365	W-231027-TS-26	6.0	6.0 U	ug/L
			Manganese (dissolved)		W-231027-TS-26	4.4	4.4 U	ug/L
			Manganese		W-231027-TS-29	188	188 U	ug/L
			Manganese		W-231027-TS-30	163	163 U	ug/L
			Manganese (dissolved)		W-231027-TS-31	3.0	3.0 U	ug/L
			Manganese		W-231027-TS-32	32.1	32.1 U	ug/L
			Manganese		W-231027-TS-33	52.7	52.7 U	ug/L
			Manganese (dissolved)		W-231027-TS-33	34.5	34.5 U	ug/L
General Chemistry	W-231027-TS-28	10/27/2023	Nitrate (as N)	0.19J	W-231027-TS-26	0.61 J	1.0 U	mg/L
			Nitrate (as N)		W-231027-TS-29	0.29 J	1.0 U	mg/L
Herbicides	W-231027-TS-28	10/27/2023	Pentachlorophenol	17	W-231027-TS-29	0.25	0.25 U	ug/L
			Pentachlorophenol		W-231027-TS-32	6.9	6.9 U	ug/L
General Chemistry	W-231027-TS-28	10/27/2023	Total organic carbon (TOC)	0.61J	W-231027-TS-29	0.72 J	1.0 U	mg/L
			Total organic carbon (TOC)		W-231027-TS-30	0.94 J	1.0 U	mg/L
			Total organic carbon (TOC)		W-231027-TS-31	0.66 J	1.0 U	mg/L

Notes:

U - Not detected at the associated reporting limit

J - Estimated concentration

J+ - Estimated concentration; result may be biased high

Appendix D

Site Inspection Forms

**Continuing Obligations Inspection Form
Penta Wood Products Superfund Site
Siren, Wisconsin**

Verified

Notes

Verify Site Conditions

- CAMU area fence condition is satisfactory
- CAMU signage is present/visible at all fence gates
- CAMU surface soil condition is satisfactory and does not require erosion/settlement repairs
- Perimeter area fence is satisfactory and does not require repairs
- Perimeter signage is present/visible
- Site access is limited and all perimeter fence locks in working order
- NaOH tank condition is satisfactory with no signs of leaks
- FeSO4 tank condition is satisfactory with no signs of leaks

X	
X	
X	
X	
X	
X	
X	
X	

Verify situations have not and are not occurring

- Removal of the existing barrier or cover
- Replacement with another barrier or cover
- Excavating or grading of the land surface
- Filling on covered or paved areas
- Plowing for agricultural cultivation
- Construction or placement of a building or other structure
- Change in use or occupancy of the property

X	
X	
X	
X	
X	
X	
X	

Inspected By: TS

Date: 10/27/2023

Notes:

Site locks are all working alright, but some are becoming difficult to operate / close

Well Inspection Form
Penta Wood Products Superfund Site
Siren, Wisconsin

	Protective Casing	Lock & Cover	J-Plug	Well Casing	Ground Surface	Notes
Monitoring Wells						
MW1	X	X	X	X	X	
MW2	X	X	X	X	X	
MW3	X	X	X	X	X	
MW4	X	X	X	X	X	
MW5	X	X	X	X	X	
MW6	X	X	X	X	X	
MW6S	X	X	X	X	X	
MW7	X	X	X	X	X	
MW8	X	X	X	X	X	
MW9	X	X	X	X	X	
MW10	X	X	X	X	X	
MW10S	X	X	X	X	X	
MW11	X	X	X	X	X	
MW12	X	X	X	X	X	
MW13	X	X	X	X	X	
MW14	X	X	X	X	X	
MW15	X	X	X	X	X	
MW16	X	X	X	X	X	
MW17	X	X	X	X	X	
MW18	X	X	X	X	X	
MW19	X	X	X	X	X	
MW20	X	X	X	X	X	
MW21	X	X	X	X	X	
MW22	X	X	X	X	X	
MW23	X	X	X	X	X	
MW24	X	X	X	X	X	Settlement
MW25	X	X	X	X	X	Hose not attached to cap
MW26	X	X	X	X	X	
MW27	X	X	X	X	X	
MW28	X	X	X	X	X	
MW29	X	X	X	X	X	
MW30	X	X	X	X	X	
MW31	X	X	X	X	X	
MW32	X	X	X	X	X	
MW33	X	X	X	X	X	Replace Lock

	Vault & Cover	Well Casings	Ground Surface	Notes
Extraction Wells				
EW2	X	X	X	
EW3	X	X	X	
EW4	X	X	X	
EW5	X	X	X	
EW6	X	X	X	
EW7	X	X	X	
EW10	X	X	X	
EW11	X	X	X	
EW12	X	X	X	
EW13	X	X	X	
EW14	X	X	X	

	Protective Casing	Lock & Cover	Ground Surface	Inner Casing/Tubing	Notes
Gas Probes					

SG-04DIS	X	X	X	X	
SG-05DIS	X	X	X	X	
SG-06DIS	X	X	X	X	
SG-07DIS	X	X	X	X	
SG-22	X	X	X	X	Rusty Lock
SG-23	X	X	X	X	
SG-24	X	X	X	X	
SG-25	X	X	X	X	
SG-26	X	X	X	X	

Inspected By: Thor Solberg
 Date: 10/27/2023
 Additional Notes: _____



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