Semiannual Report

July through December 2022
Penta Wood Products Superfund Site

Wisconsin Department of Natural Resources

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The Power of Commitment

GHD
900 Long Lake Road, Suite 200
St. Paul, Minnesota 55112, United States
T +1 651 639 0913 | **F** +1 651 639 0923 | **E** info-northamerica@ghd.com | **ghd.com**

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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 2022 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 2022 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. 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 Field Sampling Plan (FSP) (CH2M HILL, November 1999, and November 2010) and Quality Assurance Project Plan (QAPP) (CH2M HILL, February 2005) with subsequent addendums (most recent is Addendum No. 6 dated July 2014). 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-four (34) monitoring wells and twenty-two (22) extraction well casings at the Site on October 3, 2022. 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 2022 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 0.0007 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 2022 event, LNAPL was present in monitoring wells MW10S, 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 2022 monitoring events. 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 4 though 11, 2022 and consisted of collecting groundwater samples from nineteen (19) monitoring wells (MW1, MW2, MW3, MW4, MW5, MW6S, MW10, MW12, MW13, MW14, MW17, MW21, MW22, MW23, MW25, MW28, MW30, MW31, and MW32) 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 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 2022 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 2022 PCP analytical data are summarized in Table 2.4. PCP was detected in four (4) wells (MW5, MW30, EW11D, and EW11S) 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 2022, PCP was detected in well EW11D at a concentration of 1,000 µg/L, which is greater than previous concentrations. The results of future sampling events will be evaluated to determine whether this is an anomaly or a trend.

2.2.3 Arsenic analytical data

The October 2022 dissolved and total arsenic analytical data are summarized in Table 2.4. Both dissolved and total arsenic were not detected in any wells at concentrations that exceeded 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 2022 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 ten (10) wells at concentrations exceeding the ES (300 µg/L), with dissolved iron detected at concentrations exceeding the ES in six (6) of those wells. Total manganese was detected in eight (8) wells at

concentrations exceeding the ES (50 µg/L), with dissolved manganese detected in concentrations exceeding the ES in five (5) 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 2022, water samples were collected from six residential wells located near the Site in general accordance with the FSP and 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 2022.

The residential well and onsite water supply well locations are shown on Figure 1.3. Residential well water samples were collected on October 3, 2022 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 at concentrations exceeding the ESs, 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 validation memorandum 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 2022. GHD continues to collect and containerize PPE and other waste produced during sampling events onsite. 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. 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 3, 2022 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.
– The 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 vegetation are encroaching on roads and are in need of control across the site.

Site well inspections were completed on October 3, 2022 and a copy of the well inspection form is included in Appendix D.

6. Conclusions and Recommendations

Based on the July through December 2022 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 2022, PCP was detected in well EW11D at a concentration of 1,000 µg/L, which is greater than previous concentrations. The results of future sampling events will be evaluated to determine whether this is an anomaly or a trend.
– 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 will provide oversight services. The remedial action started at the Site during 2022 and is scheduled to be completed in 2023. The work will be conducted in general accordance with the Final Remedial Design Report (October 27, 2021). 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 is planned for the Site following USEPA funding.

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.

Two modifications to the previous monitoring and sampling plan are recommended as follows:

– Exclude groundwater sampling and analysis at the onsite water supply well (DW01) during future semiannual sampling events since the well no longer provides a water supply to the building and the pump is no longer functioning
– Conduct residential well water sampling on a quarterly basis in January, April, July, and October

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.

Tables

Table 2.1

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
EW02S	X	
EW03S	X	
Unconfined (Upper) Aquifer		
EW04S	X	
EW05S	X	
EW06S	X	
EW07S	X	

Table 2.1

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]
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	

Table 2.1

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: Pentachlorphenol (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	10/03/2022	1129.44	145.62	ND	983.82	NA	0.00
MW4	10/03/2022	1087.72	104.30	ND	983.42	NA	0.00
MW6	10/03/2022	1109.11	125.42	ND	983.69	NA	0.00
MW7	10/03/2022	1096.25	112.76	ND	983.49	NA	0.00
MW8	10/03/2022	1091.13	107.41	ND	983.72	NA	0.00
MW10	10/03/2022	1089.01	105.21	ND	983.80	NA	0.00
MW11	10/03/2022	1085.48	102.35	ND	983.13	NA	0.00
MW12	10/03/2022	1080.91	97.26	ND	983.65	NA	0.00
MW14	10/03/2022	1078.25	94.81	ND	983.44	NA	0.00
MW15	10/03/2022	1127.09	143.07	ND	984.02	NA	0.00
MW17	10/03/2022	1084.43	100.76	ND	983.67	NA	0.00
MW23	10/03/2022	1017.16	33.64	ND	983.52	NA	0.00
EW02D	10/03/2022	1083.00	99.06	ND	983.94	NA	0.00
EW03D	10/03/2022	1089.48	105.54	ND	983.94	NA	0.00
EW04D	10/03/2022	1101.09	117.06	ND	984.03	NA	0.00
EW05D	10/03/2022	1076.99	92.97	ND	984.02	NA	0.00
EW06D	10/03/2022	1083.39	99.31	ND	984.08	NA	0.00
EW07D	10/03/2022	1087.52	103.34	ND	984.18	NA	0.00
EW10D	10/03/2022	1088.55	104.55	ND	984.00	NA	0.00
EW11D	10/03/2022	1048.19	64.07	ND	984.12	NA	0.00
EW12D	10/03/2022	1086.41	102.37	ND	984.04	NA	0.00
EW13D	10/03/2022	1092.88	108.82	ND	984.06	NA	0.00
EW14D	10/03/2022	1098.28	114.24	ND	984.04	NA	0.00
Unconfined Aquifer (Upper)							
MW1	10/03/2022	1072.27	88.02	ND	984.25	NA	0.00
MW2	10/03/2022	1065.03	80.80	ND	984.23	NA	0.00
MW5	10/03/2022	1071.42	87.52	ND	983.90	NA	0.00
MW6S	10/03/2022	1108.35	124.07	ND	984.28	NA	0.00
MW9	10/03/2022	1019.58	35.41	ND	984.17	NA	0.00
MW10S	10/03/2022	1090.12	106.49	106.24	983.63	983.88	0.25
MW13	10/03/2022	1005.81	21.67	ND	984.14	NA	0.00
MW16	10/03/2022	1081.95	97.75	ND	984.20	NA	0.00
MW18	10/03/2022	1071.96	88.29	87.73	983.67	984.23	0.56
MW19	10/03/2022	1087.96	104.67	104.04	983.29	983.92	0.63
MW20	10/03/2022	1098.16	115.00	113.95	983.16	984.21	1.05
MW21	10/03/2022	1095.82	111.53	ND	984.29	NA	0.00
MW22	10/03/2022	1084.65	100.43	ND	984.22	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)
Unconfined Aquifer (Upper) continued							
MW24	10/03/2022	1084.04	100.35	ND	983.69	NA	0.00
MW25	10/03/2022	1095.25	111.43	ND	983.82	NA	0.00
MW26	10/03/2022	1086.87	103.22	ND	983.65	NA	0.00
MW27	10/03/2022	1110.96	126.62	ND	984.34	NA	0.00
MW28	10/03/2022	1083.52	99.24	ND	984.28	NA	0.00
MW29	10/03/2022	1070.24	87.30	84.96	982.94	985.28	2.34
MW30	10/03/2022	1048.98	64.77	ND	984.21	NA	0.00
MW31	10/03/2022	1076.34	92.16	ND	984.18	NA	0.00
MW32	10/03/2022	1021.02	36.93	ND	984.09	NA	0.00
EW02S	10/03/2022	1082.25	98.08	ND	984.17	NA	0.00
EW03S	10/03/2022	1088.66	105.03	104.59	983.63	984.07	0.44
EW04S	10/03/2022	1101.01	116.84	ND	984.17	NA	0.00
EW05S	10/03/2022	1077.04	94.17	92.85	982.87	984.19	1.32
EW06S	10/03/2022	1083.61	102.95	99.44	980.66	984.17	3.51
EW07S	10/03/2022	1087.49	104.01	103.32	983.48	984.17	0.69
EW10S	10/03/2022	1088.72	110.19	104.55	978.53	984.17	5.64
EW11S	10/03/2022	1047.23	63.09	ND	984.14	NA	0.00
EW12S	10/03/2022	1086.31	106.50	102.16	979.81	984.15	4.34
EW13S	10/03/2022	1092.88	108.72	ND	984.16	NA	0.00
EW14S	10/03/2022	1098.32	114.82	114.35	983.50	983.97	0.47

feet AMSL - Feet above mean sea level
NA - Not applicable
ND - LNAPL was not detected in a measureable 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)
EW11D	10/4/2022	W-221004-TS-11	12:31	0.0	0.00	0.00	0	0.0	0.00	0		
	10/4/2022	Sample Time 13:28	12:36	0.1	6.73	9.78	167	101.0	1.25	-245		
	10/4/2022	Duplicate: W-221004-TS-12	12:40	0.3	6.68	9.70	293	88.0	0.51	-230		
	10/4/2022		12:46	0.4	6.82	9.69	336	88.1	0.26	-223		
	10/4/2022		12:51	0.5	6.92	9.65	350	58.9	0.21	-48		
	10/4/2022		12:56	0.7	6.98	9.66	356	53.8	0.09	-51		
	10/4/2022		13:01	0.8	7.03	9.69	359	41.8	0.13	-53		
	10/4/2022		13:06	0.9	7.21	9.73	361	25.6	0.13	-61		
	10/4/2022		13:11	1.1	7.12	9.70	362	21.0	0.10	-59		
	10/4/2022		13:16	1.2	7.11	9.69	362	16.1	0.11	-58		
	10/4/2022		13:21	1.3	7.10	9.70	363	14.5	0.09	-57		
	10/4/2022		13:26	1.5	7.09	9.68	362	10.6	0.05	-57	4.0	ND
EW11S	10/4/2022	W-221004-TS-13	13:52	0.0	0.00	0.00	0	0.0	0.00	0		
	10/4/2022	Sample Time 14:33	13:57	0.1	6.59	11.07	260	19.8	8.34	70		
	10/4/2022		14:02	0.3	6.37	10.88	254	18.4	8.11	85		
	10/4/2022		14:07	0.4	6.26	10.85	254	15.9	7.88	96		
	10/4/2022		14:12	0.5	6.18	10.71	251	14.2	7.89	103		
	10/4/2022		14:17	0.7	6.13	10.61	252	12.3	7.86	106		
	10/4/2022		14:22	0.8	6.10	10.51	252	9.0	8.61	112		
	10/4/2022		14:27	0.9	6.08	10.52	253	6.6	8.30	114		
	10/4/2022		14:32	1.1	6.07	10.53	252	4.8	8.12	118	NM	NM
EW13S	10/11/2022	W-221011-TS-37	11:05	0.0	6.07	11.59	762	582.0	0.79	-110		
		Sample Time 11:14										
MW1	10/5/2022	W-221005-TS-18	12:30	0.0	0.00	0.00	0	0.0	0.00	0		
	10/5/2022	Sample Time 12:55	12:32	0.1	6.30	10.43	305	3.4	132.80	148		
	10/5/2022		12:38	0.3	6.57	10.28	302	0.0	122.90	146		
	10/5/2022		12:45	0.4	6.70	10.27	301	0.0	120.10	145		
	10/5/2022		12:51	0.5	6.76	10.19	303	0.0	119.40	143		
	10/5/2022		12:57	0.7	6.79	10.19	302	0.0	118.90	142	ND	ND
MW2	10/6/2022	W-221006-TS-25	13:53	0.0	5.88	10.19	190	33.1	10.21	204	1.0	ND
		Sample Time 13:55										
MW3	10/10/2022	W-221010-TS-26	8:53	0.0	0.00	0.00	0	0.0	0.00	0		
	10/10/2022	Sample Time 9:29	8:58	0.1	6.30	12.36	792	0.0	34.40	-111		
	10/10/2022	Duplicate: W-221010-TS-27	9:07	0.1	6.58	12.43	802	0.0	45.40	-86		
	10/10/2022		9:12	0.3	6.64	12.45	802	0.0	48.80	-76		

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)
	10/10/2022		9:17	0.3	6.65	12.45	797	0.0	47.00	-77	2.0	ND
MW4	10/10/2022	W-221010-TS-28	9:44	0.0	0.00	0.00	0	0.0	0.00	0		
	10/10/2022	Sample Time 10:18	9:48	0.1	7.79	10.68	377	0.0	7.20	-204		
	10/10/2022		9:56	0.3	7.94	10.91	371	0.0	0.00	-216		
	10/10/2022		10:01	0.4	7.97	10.91	367	0.0	0.00	-220		
	10/10/2022		10:06	0.5	7.97	10.92	366	0.0	0.00	-221	0.1	ND
MW5	10/4/2022	W-221004-TS-46	11:11	0.0	0.00	0.00	0	0.0	0.00	0		
	10/4/2022	Sample Time 11:55	11:18	0.1	5.91	12.59	696	29.0	0.58	-92		
	10/4/2022		11:23	0.1	5.97	12.59	701	22.4	0.41	-92		
	10/4/2022		11:28	0.3	6.00	12.68	701	17.3	0.32	-92		
	10/4/2022		11:33	0.3	6.05	12.62	703	14.0	0.21	-93		
	10/4/2022		11:38	0.4	6.08	12.70	702	13.9	0.14	-93		
	10/4/2022		11:42	0.4	6.09	12.69	703	13.1	0.10	-92		
	10/4/2022		11:48	0.5	6.18	12.57	703	13.7	0.10	-91		
	10/4/2022		11:53	0.5	6.15	12.62	701	10.6	0.02	-91	10.0	0.1
MW6S	10/11/2022	W-221011-TS-35	10:08	0.0	0.00	0.00	0	0.0	0.00	0		
	10/11/2022	Sample Time 10:50	10:14	0.0	5.79	13.88	523	0.0	4.35	171		
	10/11/2022		10:19	0.1	5.72	14.07	520	0.0	3.80	178		
	10/11/2022		10:25	0.3	5.73	14.21	515	0.0	5.40	177		
	10/11/2022		10:30	0.4	5.74	14.27	514	0.0	3.08	176		
	10/11/2022		10:34	0.4	5.74	14.31	512	0.0	8.80	175		
	10/11/2022		10:38	0.5	5.74	14.32	511	0.0	7.86	175		
	10/11/2022		10:43	0.7	5.75	14.37	509	0.0	7.43	173	2.0	0.0
MW10	10/11/2022	W-221011-TS-38	11:32	0.0	0.00	0.00	0	0.0	0.00	0		
	10/11/2022	Sample Time 12:05	11:37	0.1	6.74	13.14	436	24.6	0.99	-145		

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)
	10/11/2022		11:42	0.3	6.83	13.33	431	0.0	0.15	-149		
	10/11/2022		11:47	0.4	6.88	13.37	435	0.0	0.00	-151		
	10/11/2022		11:52	0.5	6.90	13.38	437	0.0	0.00	-150		
	10/11/2022		11:57	0.7	6.93	13.37	427	0.0	0.00	-152	1.0	ND
MW12	10/10/2022	W-221010-TS-32	12:58	0.0	0.00	0.00	350	0.0	0.00	0		
	10/10/2022	Sample Time 13:30	13:09	0.1	7.17	12.87	356	0.0	11.55	-6		
	10/10/2022		13:14	0.3	7.20	12.85	359	0.0	10.11	-14		
	10/10/2022		13:21	0.4	7.23	12.87	361	0.0	8.76	-21		
	10/10/2022		13:25	0.5	7.24	12.88	362	0.0	8.21	-21		
	10/10/2022		13:28	0.7	7.24	12.86	362	0.0	7.78	-21	ND	ND
MW13	10/5/2022	W-221005-TS-16	10:09	0.0	0.00	0.00	0	0.0	0.00	0		
	10/5/2022	Sample Time 10:41	10:20	0.1	5.77	10.44	142	0.1	79.00	181		
	10/5/2022		10:25	0.3	5.59	10.42	141	0.0	75.90	192		
	10/5/2022		10:30	0.4	5.45	10.41	141	0.0	73.80	202		
	10/5/2022		10:34	0.5	5.40	10.39	141	0.0	72.60	207		
	10/5/2022		10:39	0.7	5.35	10.41	142	0.0	71.60	213	ND	ND
MW14	10/10/2022	W-221010-TS-30	11:07	0.0	0.00	0.00	0	0.0	0.00	0		
	10/10/2022	Sample Time 11:31	11:14	0.1	7.59	11.04	358	0.0	61.30	18		
	10/10/2022		11:19	0.3	7.56	11.33	352	0.0	56.50	20		
	10/10/2022		11:24	0.4	7.52	11.41	353	0.0	56.40	22	ND	ND
MW17	10/10/2022	W221010-TS-33	14:06	0.0	0.00	0.00	0	0.0	0.00	0		
	10/10/2022	Sample Time 14:36	14:13	0.1	7.34	12.34	583	0.0	10.03	38		
	10/10/2022		14:19	0.3	7.33	12.40	592	0.0	9.66	40		
	10/10/2022		14:23	0.4	7.31	12.42	595	0.0	9.55	44		
	10/10/2022		14:28	0.5	7.29	12.44	596	0.0	9.47	48	ND	ND
MW21	10/6/2022	W-221006-TS-23	12:18	0.0	0.00	0.00	0	0.0	0.00	0		

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)
	10/6/2022	Sample Time 12:19	12:20	0.1	5.49	9.56	446	7.7	115.00	198	6.0	ND
MW22	10/6/2022	W-221006-TS-24 Sample Time 13:38	13:06	0.0	6.18	9.47	222	71.7	12.20	170	0.35	ND
MW23	10/11/2022	W-221011-TS-34	9:20	0.0	0.00	0.00	0	0.0	0.00	0		
	10/11/2022	Sample Time 9:35	9:25	0.1	6.67	9.35	583	0.0	9.88	92		
	10/11/2022		9:31	0.3	6.87	9.38	588	0.0	9.37	95		
	10/11/2022		9:36	0.4	6.96	9.39	588	0.0	9.62	98		
	10/11/2022		9:42	0.5	7.01	9.43	580	0.0	9.56	102	ND	ND
MW25	10/10/2022	W-2221010-TS-31	12:04	0.0	0.00	0.00	0	0.0	0.00	0		
	10/10/2022	Sample Time 12:31	12:08	0.1	6.75	12.24	343	11.8	11.26	101		
	10/10/2022		12:12	0.3	6.47	12.43	345	22.3	10.56	111		
	10/10/2022		12:16	0.4	6.45	13.10	345	20.9	9.90	103		
	10/10/2022		12:20	0.5	6.41	13.07	347	21.9	8.63	107		
	10/10/2022		12:25	0.7	6.28	12.90	347	20.4	8.03	112		
	10/10/2022		12:28	0.8	6.24	12.85	347	20.3	7.96	118	ND	ND
MW28	10/10/2022	W-221010-TS-29	10:25	0.0	0.00	0.00	0	0.0	0.00	0		
	10/10/2022	Sample Time 10:59	10:34	0.1	7.60	12.07	351	0.0	108.70	25		
	10/10/2022		10:39	0.3	7.56	12.67	350	0.0	109.20	36		
	10/10/2022		10:45	0.4	7.53	12.79	350	0.0	108.30	46		
	10/10/2022		10:48	0.5	7.52	12.69	350	0.0	107.20	51	ND	ND
MW30	10/5/2022	W-221005-TS-19	13:59	0.0	6.76	10.45	191	4.0	86.00	81		
	10/5/2022	Sample Time 14:37	14:04	0.1	6.55	10.30	192	0.0	65.20	89		
	10/5/2022		14:09	0.3	6.48	10.28	191	0.0	59.00	95		
	10/5/2022		14:14	0.4	6.43	10.27	192	0.0	52.00	100		
	10/5/2022		14:19	0.5	6.39	10.31	192	0.0	46.20	104		
	10/5/2022		14:24	0.7	6.39	10.34	191	0.0	43.30	106		
	10/5/2022		14:29	0.8	6.38	10.41	193	0.0	40.20	109	ND	ND
MW31	10/5/2022	W-221005-TS-14	9:07	0.0	0.00	0.00	0	0.0	0.00	0		
	10/5/2022	Sample Time 9:30	9:11	0.1	6.33	10.48	282	0.1	97.00	124		
	10/5/2022	Duplicate: W-221005-TS-15	9:16	0.3	6.17	10.44	281	0.0	94.60	139		
	10/5/2022		9:21	0.3	6.13	10.42	280	0.0	93.40	145		
	10/5/2022		9:26	0.4	6.06	10.42	279	0.0	92.70	152	0.6	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)
MW32	10/6/2022	W-221006-TS-20	9:59	0.0	0.00	0.00	0	0.0	0.00	0		
	10/6/2022	Sample Time 10:37	10:06	0.1	5.43	8.73	84	28.9	0.00	186		
	10/6/2022		10:11	0.1	5.45	8.67	85	15.2	12.11	194		
	10/6/2022		10:15	0.1	5.47	8.60	86	8.4	11.26	202		
	10/6/2022		10:20	0.3	5.44	8.55	86	7.9	11.18	209		
	10/6/2022		10:26	0.3	5.38	8.38	86	5.1	11.21	217		
	10/6/2022		10:31	0.4	5.35	8.39	86	1.3	11.24	223	ND	ND
RW01	10/3/2022	W-221003-TS-04	13:34	0.0	7.41	15.10	328	0.0	0.00	0	NM	NM
		Sample Time 13:35										
RW02	10/3/2022	W-221003-TS-06	13:57	0.0	7.36	15.12	321	0.0	0.00	0	NM	NM
		Sample Time 13:58										
RW03	10/3/2022	W-221003-TS-01	11:59	0.0	8.31	15.18	274	0.0	0.00	0	NM	NM
		Sample Time 12:00										
		Duplicate W-221003-TS-02										
RW04	10/3/2022	W-221003-TS-03	12:18	0.0	7.33	14.41	630	0.0	0.00	0	NM	NM
		Sample Time 12:19										
RW05	10/3/2022	W-221003-TS-05	13:49	0.0	7.28	15.55	658	0.0	0.00	0	NM	NM
		Sample Time: 13:50										
RW06	10/3/2022	W-221003-TS-07 MSMSD	14:54	0.0	7.76	16.69	195	0.0	0.00	0	NM	NM
		Sample Time: 14:55										
RW06 SHOP	10/3/2022	W-221003-TS-08	15:02	0.0	7.02	17.10	280	0.0	0.00	0	NM	NM
		Sample Time 15:03										

Notes:

°C	- Degrees Celcius
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

Table 2.4

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

Sample Location	Sample Identification	Sample Date	Hardness, carbonate	Chloride[3]	Nitrate (as N)	Sulfate[3]	TOC averages	Alkalinity, total (as CaCO3)	Methane (dissolved)	Arsenic (dissolved)	Arsenic (total)	Copper (dissolved)	Copper (total)	Iron (dissolved)	Iron (total)	Manganese (dissolved)	Manganese (total)	Zinc (dissolved)	Zinc (total)	Pentachlorophenol	Naphthalene	Benzene	Ethylbenzene	Toluene	Xylenes (total)
		ES[1]	-	250	10	250	-	-	-	10	10	1300	1300	300	300	50	50	5000	5000	1	100	5	700	800	2000
		PAL[2]	-	125	2	125	-	-	-	1	1	130	130	150	150	25	25	2500	2500	0.1	10	0.5	140	160	400
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/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
Semiconfined Aquifer (Lower)																									
EW11D	W-221004-TS-11	10/4/2022	100	2.5	0.44	5.5	4.2	174	120	1.0 U	0.28 J	0.88 J	1.9 J	**354**	**11200**	**59.8**	**98.7**	20.0 U	46.0	**1000**	0.77 U	0.50 U	0.50 U	0.50 U	0.23 J
EW11D (Duplicate)	W-221004-TS-12	10/4/2022	100	2.5	0.44	5.6	4.0	173	110	1.0 U	1.0 U	1.3 J	1.4 J	**352**	**7830**	**61.3**	**80.9**	20.0 U	35.8	**1000**	0.81 U	0.50 U	0.50 U	0.50 U	1.0 U
MW3	W-221010-TS-26	10/10/2022	258	27.6	3.1	5.8	0.86 J	362	80	0.30 J	0.25 J	0.88 J	0.89 J	**1470**	**1660**	22.4	27.0	20.0 U	20.0 U	0.31	0.82 U	0.50 U	0.50 U	0.50 U	1.0 U
MW3 (Duplicate)	W-221010-TS-27	10/10/2022	255	27.2	3.1	6.0	0.86 J	365	78	0.31 J	0.31 J	0.93 J	0.82 J	**1540**	**1620**	23.1	22.9	20.0 U	20.0 U	0.32	0.84 U	0.50 U	0.50 U	0.50 U	1.0 U
MW4	W-221010-TS-28	10/10/2022	105	48.7	0.12 J	14.0	0.97 J	83.9	33	1.2	1.2	4.3	2.0 U	100 U	202	37.2	37.9	20.0 U	20.0 U	0.099 U	0.84 U	0.50 U	0.50 U	0.50 U	1.0 U
MW10	W-221011-TS-38	10/11/2022	129	25.3	0.20 U	10.3	21.6	155	18	1.2	1.3	2.0	8.8	**760**	**1140**	**1140**	**1110**	20.0 U	20.0 U	0.099 U	9.1	0.50 U	1.1	1.1	8.0
MW12	W-221010-TS-32	10/10/2022	130	20.2	0.24	22.6	18.8	166	0.39 J	0.77 J	0.73 J	2.3	2.9	100 U	100 U	**567**	**575**	20.0 U	20.0 U	0.099 U	5.5	0.50 U	0.82	0.35 J	4.6
MW14	W-221010-TS-30	10/10/2022	111	28.7	1.6	6.6	0.66 J	127	1.0 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	0.097 U	0.83 U	0.50 U	0.50 U	0.50 U	1.0 U
MW17	W-221010-TS-33	10/10/2022	191	11.1	1.4	95.4	1.0 U	204	1.0 U	0.77 J	0.72 J	0.63 J	0.81 J	100 U	100 U	2.5 U	2.5 U	20.0 U	20.0 U	0.10 U	0.82 U	0.50 U	0.50 U	0.50 U	1.0 U
MW23	W-221011-TS-34	10/11/2022	170	58.5	2.3	8.5	0.72 J	190	1.0 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	0.099 U	0.79 U	0.50 U	0.50 U	0.50 U	1.0 U
Unconfined Aquifer (Upper)																									
EW11S	W-221004-TS-13	10/4/2022	60.7	1.8	3.6	8.0	1.4	101	1.1	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	**2.3**	0.80 U	0.50 U	0.50 U	0.50 U	1.0 U
EW13S	W-221011-TS-37	10/11/2022	196	36.4	0.20 U	19.3	37.3	257	0.19 J	4.2	5.4	1.1 J	3.7	**26100**	**29300**	**4420**	**4610**	20.0 U	20.0 U	0.11 U	31	0.50 U	1.1	1.0	17
MW1	W-221005-TS-18	10/5/2022	82.1	14.3	3.4	5.9	0.97 J	107	1.0 U	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	0.35	0.77 U	0.50 U	0.50 U	0.50 U	1.0 U
MW2	W-221006-TS-25	10/6/2022	48.3	0.45	0.20	1.6	0.75 J	86.6	1.0 U	1.0 U	3.3	9.9	63.1	**476**	**14700**	18.8	**599**	13.4 J	52.2	0.26	0.81 U	0.50 U	0.50 U	0.50 U	1.0 U
MW5	W-221004-TS-46	10/4/2022	194	20.5	0.20 U	15.6	29.4	296	21	0.77 J	1.3	2.3	3.4	**14400**	**13900**	**7400**	**8490**	20.0 U	20.0 U	**6300**	30	0.50 U	0.90	0.51	7.4
MW6S	W-221011-TS-35	10/11/2022	147	13.4	4.0	11.8	3.3	213	1.0 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	0.10 U	0.78 U	0.50 U	0.50 U	0.50 U	1.0 U
MW13	W-221005-TS-16	10/5/2022	38.8	0.60	0.48	2.3	2.1	65.8	1.0 U	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	0.32	0.81 U	0.50 U	0.50 U	0.50 U	1.0 U
MW21	W-221006-TS-23	10/6/2022	53.2	73.9	2.1	4.7	0.95 J	76.5	1.0 U	1.0 U	0.77 J	10.2	13.3	47.5 J	**2950**	3.0	**195**	20.0 U	8.1 J	0.10 U	0.80 U	0.50 U	0.50 U	0.50 U	1.0 U
MW22	W-221006-TS-24	10/6/2022	51.6	11.4	0.87	3.4	0.67 J	75.0	1.0 U	1.0 U	0.75 J	7.0	11.0	100 U	**2380**	1.8 J	**136**	6.9 J	8.2 J	0.10 U	0.81 U	0.50 U	0.50 U	0.50 U	1.0 U
MW25	W-221010-TS-31	10/10/2022	101	24.7	1.9	3.0	0.75 J	128	1.0 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	0.11 U	0.84 U	0.50 U	0.50 U	0.50 U	1.0 U
MW28	W-221010-TS-29	10/10/2022	95.3	28.0	2.4	4.8	0.75 J	120	1.0 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	0.098 U	0.78 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	Hardness, carbonate	Chloride[3]	Nitrate (as N)	Sulfate[3]	TOC averages	Alkalinity, total (as CaCO3)	Methane (dissolved)	Arsenic (dissolved)	Arsenic (total)	Copper (dissolved)	Copper (total)	Iron (dissolved)	Iron (total)	Manganese (dissolved)	Manganese (total)	Zinc (dissolved)	Zinc (total)	Pentachlorophenol	Naphthalene	Benzene	Ethylbenzene	Toluene	Xylenes (total)
		ES[1]	-	250	10	250	-	-	-	10	10	1300	1300	300	300	50	50	5000	5000	1	100	5	700	800	2000
		PAL[2]	-	125	2	125	-	-	-	1	1	130	130	150	150	25	25	2500	2500	0.1	10	0.5	140	160	400
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/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
Unconfined Aquifer (Upper) Cont.																									
MW30		W-221005-TS-19	10/5/2022	54.4	0.75	0.28	1.8	0.72 J	92.4	1.0 U	1.0 U	1.0 U	3.4	0.79 J	100 U	100 U	3.8	4	20.0 U	20.0 U	**2.4**	0.77 U	0.50 U	0.50 U	0.50 U	1.0 U
MW31		W-221005-TS-14	10/5/2022	86.4	0.4	0.42	1.1	0.59 J	138	1.0 U	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	0.44	0.79 U	0.50 U	0.50 U	0.50 U	1.0 U
MW31	(Duplicate)	W-221005-TS-15	10/5/2022	86.4	0.4	0.42	1	0.50 J	138	1.0 U	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	0.54	0.79 U	0.50 U	0.50 U	0.50 U	1.0 U
MW32		W-221006-TS-20	10/6/2022		0.54	0.38	2.7	1	36.3	0.62 J	1.0 U		0.62 J		100 U		1.4 J		20.0 U		0.10 U	0.83 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

B - Compound was found in the blank and sample

H - Sample was prepped or analyzed beyond the specified holding time

U - Compound was not detected

bold - Concentration exceeds the ES

shaded - 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	Date	Pentachlorophenol	Naphthalene	Benzene	Ethylbenzene	Toluene	Xylenes (total)
		ES[1]	1	100	5	700	800	2000
		PAL[2]	0.1	10	0.5	140	160	400
			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
RW01	W-221003-TS-04	10/03/2022	0.10 U	0.81 U	0.50 U	0.50 U	0.50 U	1.0 U
RW02	W-221003-TS-06	10/03/2022	0.10 U	0.76 U	0.50 U	0.50 U	0.50 U	1.0 U
RW03	W-221003-TS-01	10/03/2022	0.10 U	0.77 U	0.50 U	0.50 U	0.50 U	1.0 U
RW03 (Duplicate)	W-221003-TS-02	10/03/2022	0.10 U	0.77 U	0.50 U	0.50 U	0.50 U	1.0 U
RW04	W-221003-TS-03	10/03/2022	0.10 U	0.74 U	0.50 U	0.50 U	0.50 U	1.0 U
RW05	W-221003-TS-05	10/03/2022	0.096 U	0.79 U	0.50 U	0.50 U	0.50 U	1.0 U
RW06	W-221003-TS-07	10/03/2022	0.097 U	0.75 U	0.50 U	0.50 U	0.50 U	1.0 U
RW06 SHOP	W-221003-TS-08	10/03/2022	0.11 U	0.84 U	0.50 U	0.50 U	0.17 J	0.33 J

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

Paper Size ANSI A

0 500 1,000 1,500 2,000

Feet

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

N

GHD

PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

Project No. **11222418-03**
Revision No. **-**
Date **11/23/2022**

SITE LOCATION

FIGURE 1.1

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Print date: 23 Nov 2022 - 15:07

Data source: WROC 2020; Burnett County. Created by: rjcoy

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

INFILTRATION BASIN
CAMU OUTLINE
TREATMENT BUILDINGS
DANIELS 70
MW1 MW2 MW3 MW4 MW5 MW6 MW6S MW7 MW8 MW9 MW10 MW10S MW11 MW12 MW13 MW14 MW15 MW16 MW17 MW18 MW19 MW20 MW21 MW22 MW23 MW24 MW25 MW26 MW27 MW28 MW29 MW30 MW31 MW32
EW02 EW03 EW04 EW05 EW06 EW07 EW10 EW11 EW12 EW13 EW14
SG04 SG05 SG06 SG07 SG22 SG23 SG24 SG25 SG26
SB1
BV08 BV09
DW01
RW1 RW2 RW4 RW5

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

N

GHD

PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

SITE PLAN

Project No. **11222418-03**
Revision No. **-**
Date **11/23/2022**

FIGURE 1.2

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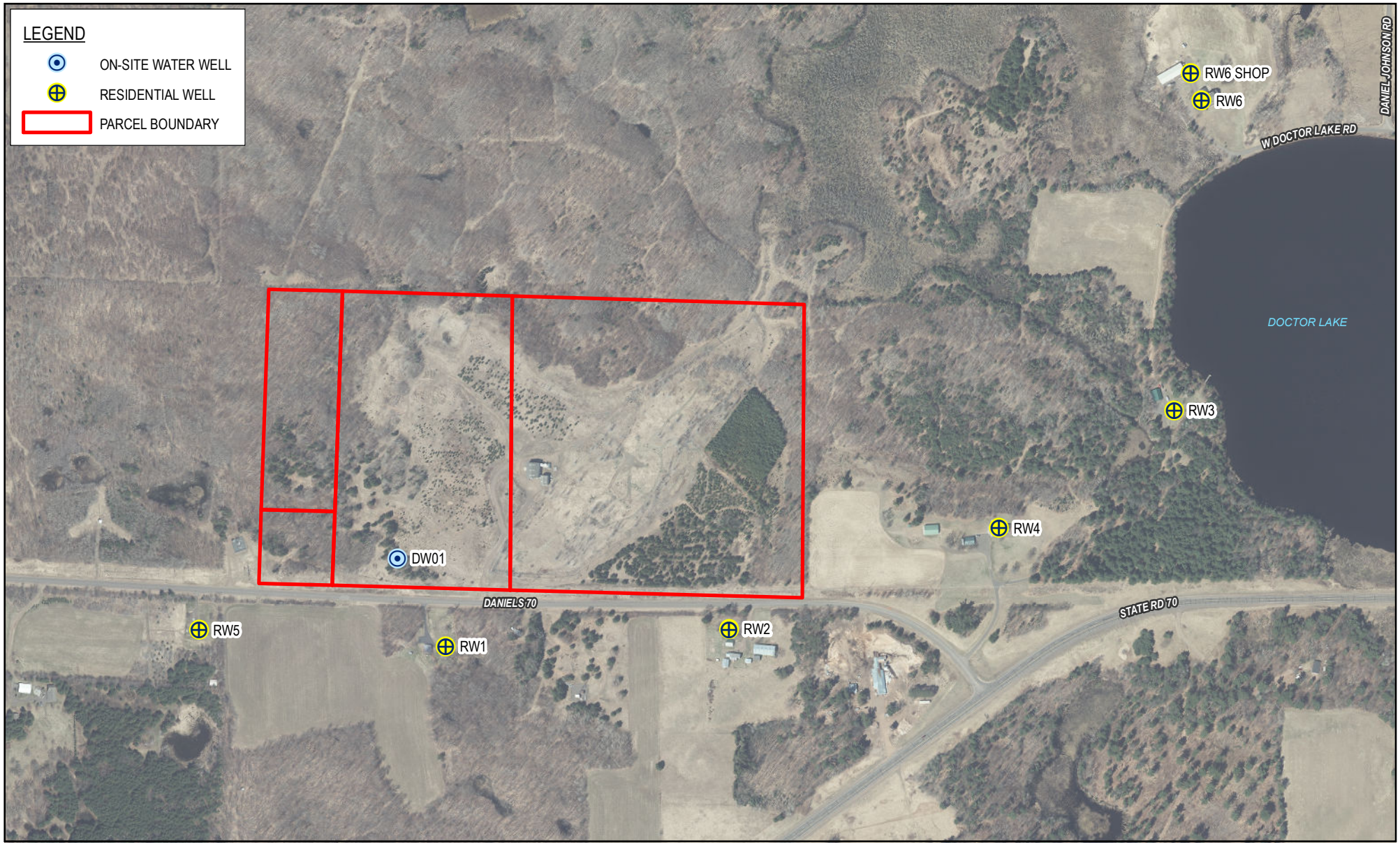

Paper Size ANSI A

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Feet

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

GHD

PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

Project No. **11222418-03**
Revision No. **-**
Date **11/23/2022**

RESIDENTIAL WELL LOCATIONS

FIGURE 1.3

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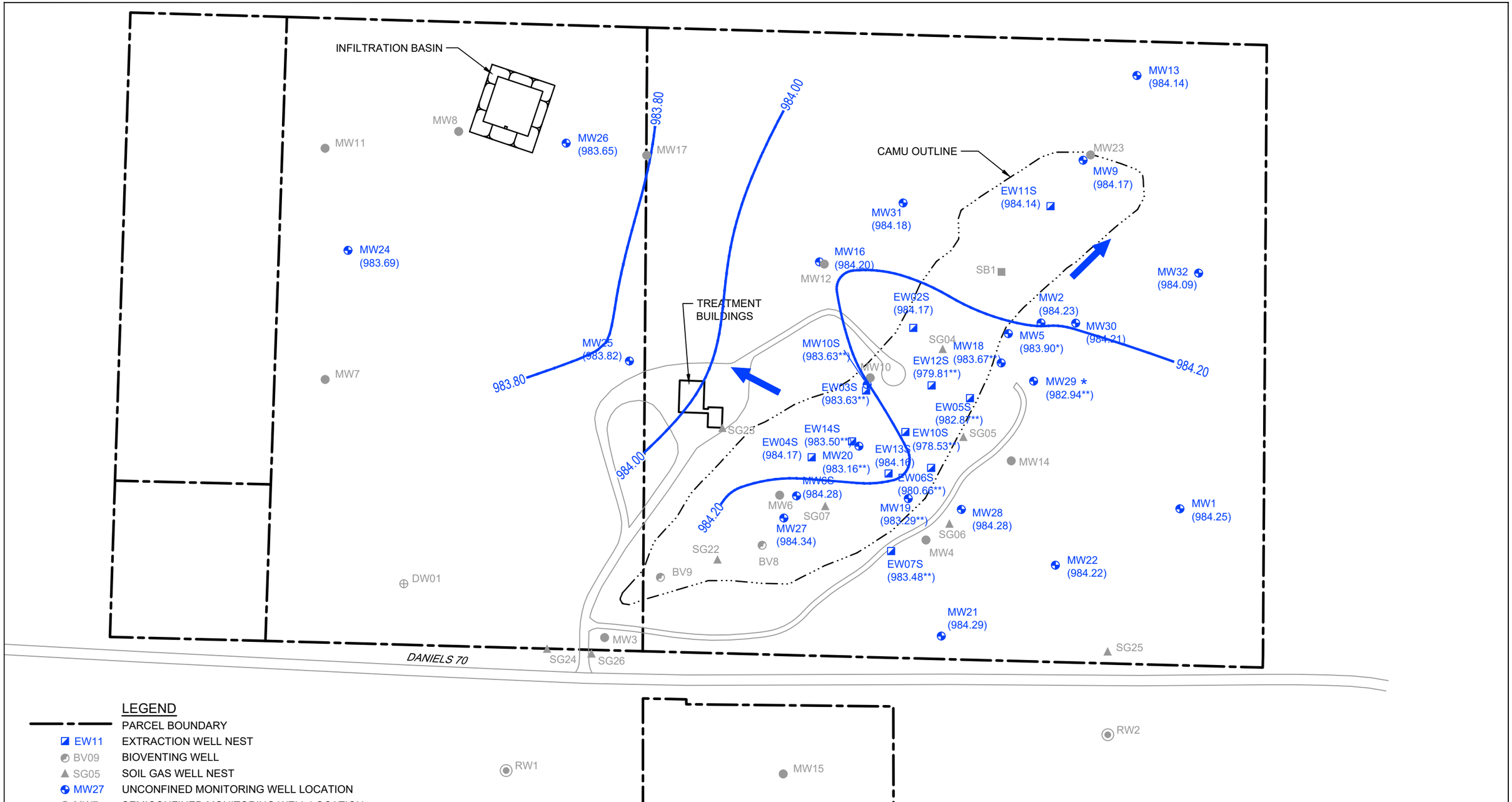

LEGEND

	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
(983.69)	GROUNDWATER ELEVATION
984.00	GROUNDWATER ELEVATION CONTOUR
	GROUNDWATER FLOW DIRECTION
*	WELL NOT UTILIZED TO INFER GROUNDWATER ELEVATION CONTOURS
**	LNAPL PRESENT IN WELL, WELL NOT UTILIZED TO INFER GROUNDWATER ELEVATION CONTOURS

0 100 200 ft

N

GHD

PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

UNCONFINED (UPPER) AQUIFER GROUNDWATER CONTOURS - OCTOBER 2022

Project No. **11222418**
Date **January 2023**

FIGURE 2.1

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

Filename: N:\US\St Paul\Projects\563\11222418\Digital_Design\ACAD\Figures\RPT007\11222418-GHD-00-00-RPT-EN-D101_WA-007.dwg
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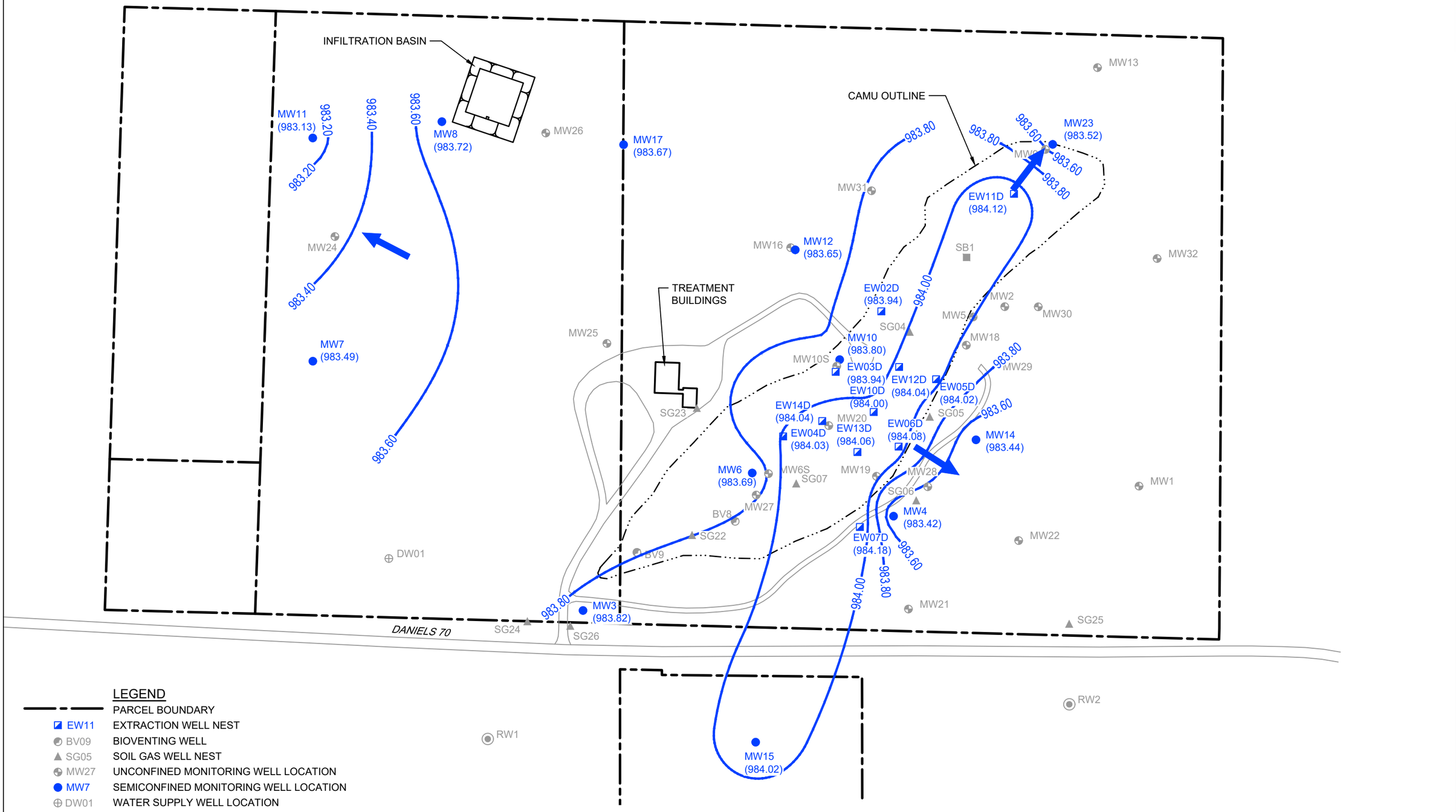

LEGEND

	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
(983.49)	GROUNDWATER ELEVATION
984.00	GROUNDWATER ELEVATION CONTOUR
	GROUNDWATER FLOW DIRECTION

0 100 200 ft

N

GHD

PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

SEMICONFINED (LOWER) AQUIFER GROUNDWATER CONTOURS - OCTOBER 2022

Project No. **11222418**
Date **January 2023**

FIGURE 2.2

Filename: N:\US\St Paul\Projects\563\11222418\Digital_Design\ACAD\Figures\RPT007\11222418-GHD-00-00-RPT-EN-D102_WA-007.dwg
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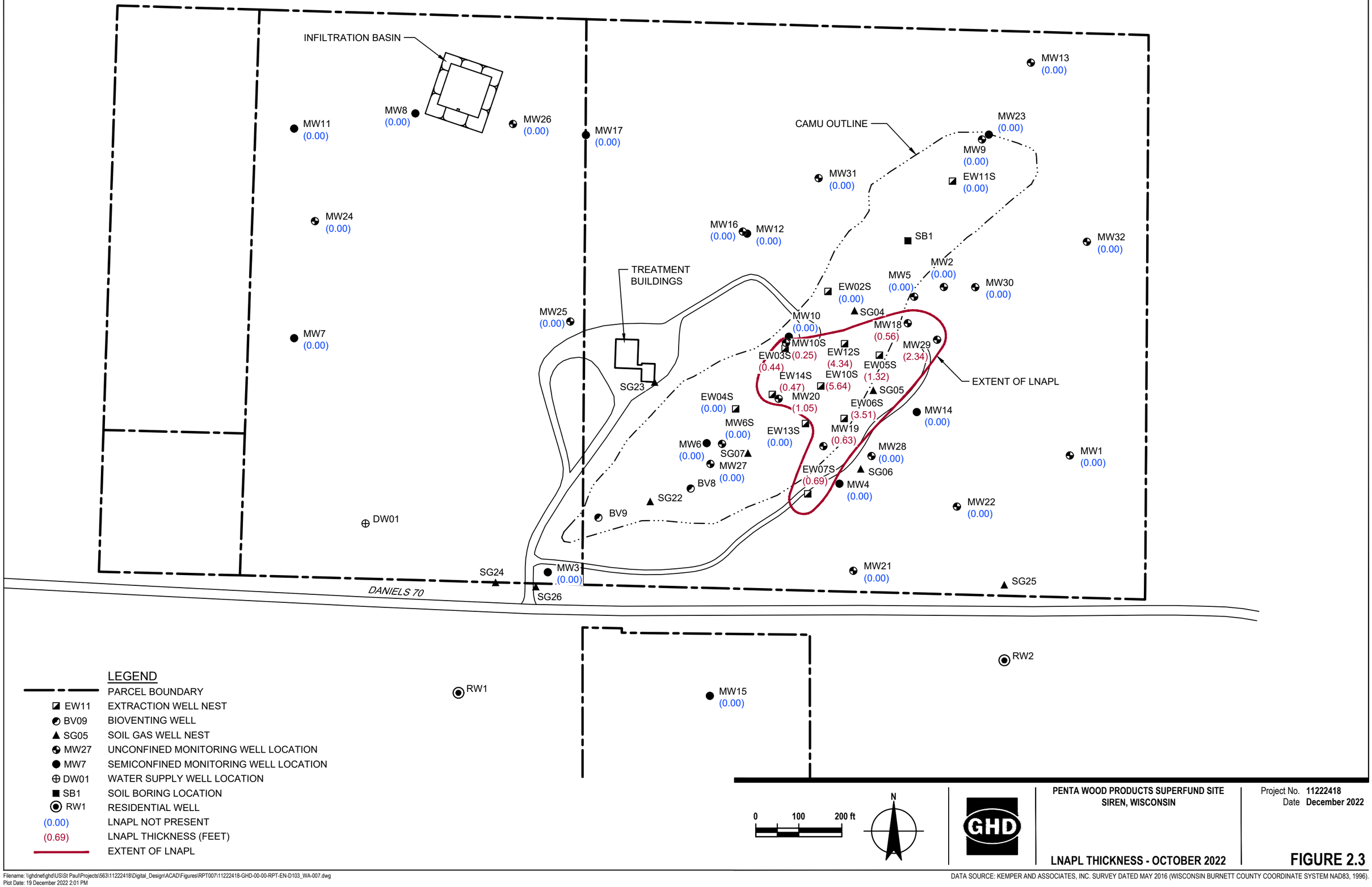

PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

Project No. **11222418**
Date **December 2022**

LNAPL THICKNESS - OCTOBER 2022

FIGURE 2.3

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

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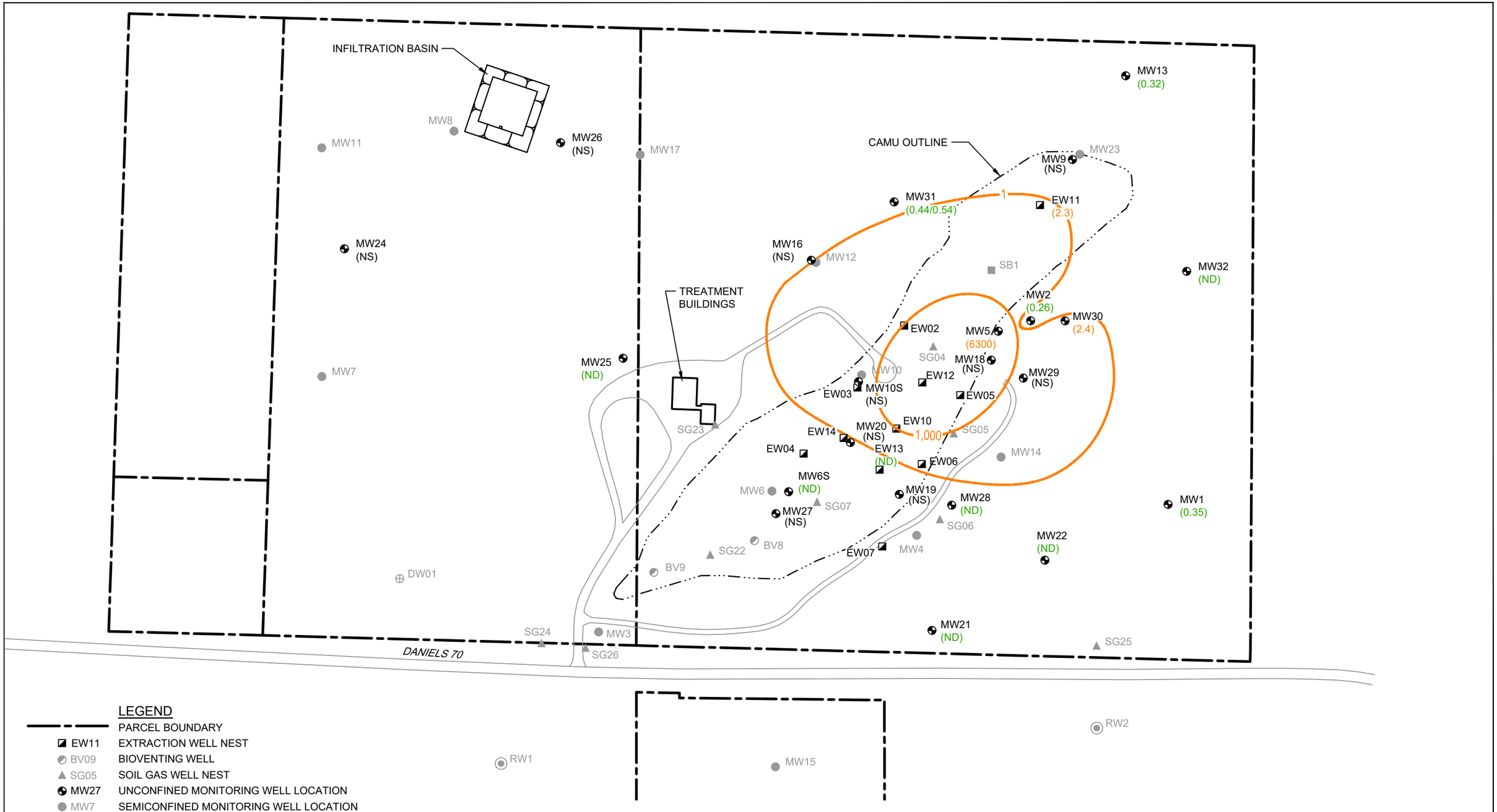

LEGEND

	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)	NOT DETECTED
(0.44/0.54)	PENTACHLOROPHENOL CONCENTRATION (µg/L) MEETS ENFORCEMENT STANDARD OF 1.0 µg/L/DUPLICATE CONCENTRATION
(2.3)	PENTACHLOROPHENOL CONCENTRATION (µg/L) EXCEEDS ENFORCEMENT STANDARD OF 1.0 µg/L

0 100 200 ft

N

GHD

PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

UNCONFINED (UPPER) AQUIFER PENTACHLOROPHENOL CONCENTRATIONS - OCTOBER 2022

Project No. **11222418**
Date **February 2023**

FIGURE 2.4

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

Filename: N:\US\St Paul\Projects\563\11222418\Digital_Design\ACAD\Figures\RPT007\11222418-GHD-00-00-RPT-EN-D104_WA-007.dwg
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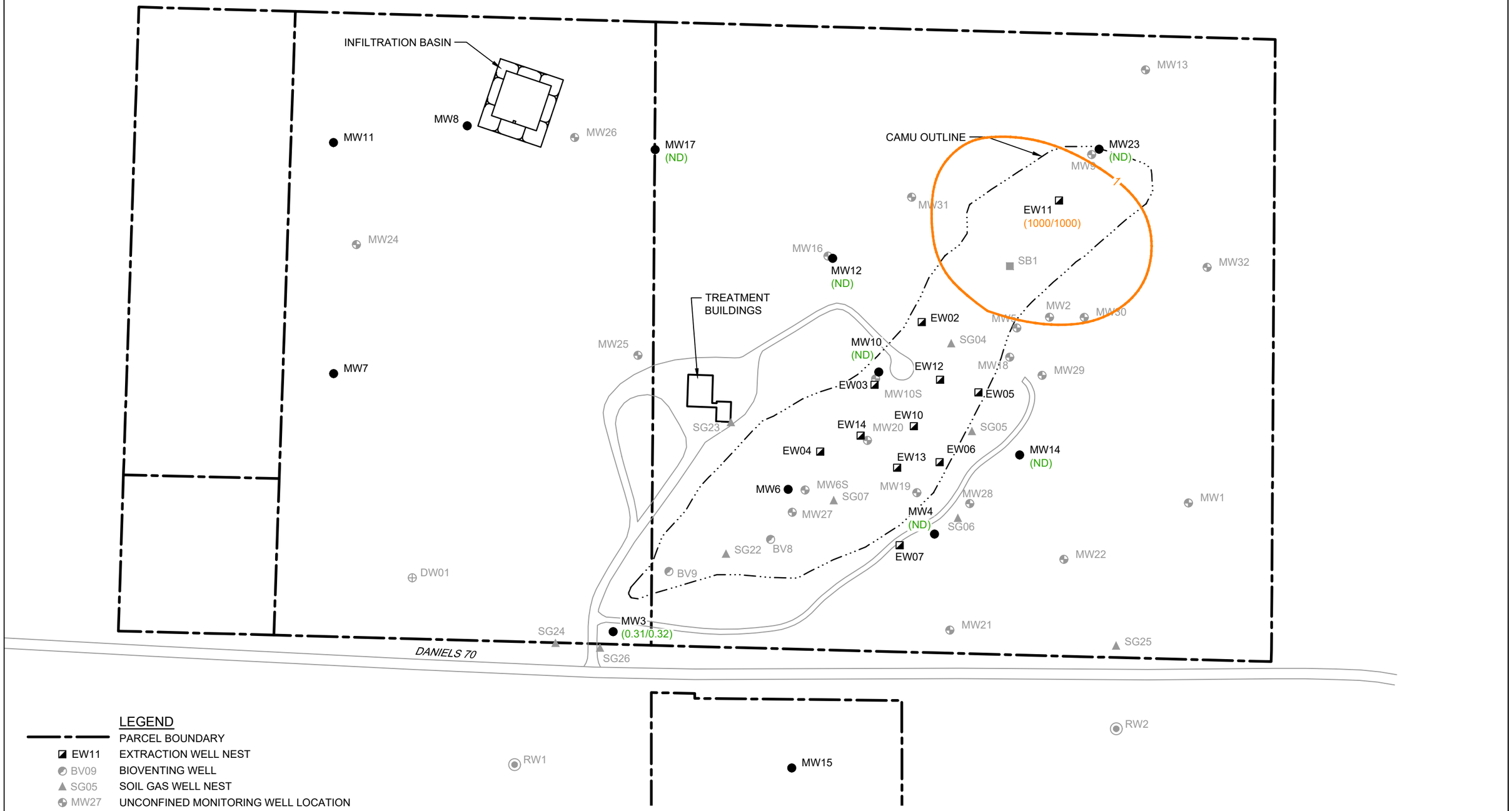

LEGEND

	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)	NOT DETECTED
(0.31/0.32)	PENTACHLOROPHENOL CONCENTRATION (µg/L) MEETS ENFORCEMENT STANDARD OF 1.0 µg/L/DUPLICATE CONCENTRATION
(1,000)	PENTACHLOROPHENOL CONCENTRATION (µg/L) EXCEEDS ENFORCEMENT STANDARD OF 1.0 µg/L

0 100 200 ft

N

GHD

PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

SEMICONFINED (LOWER) AQUIFER PENTACHLOROPHENOL CONCENTRATIONS - OCTOBER 2022

Project No. **11222418**
Date **February 2023**

FIGURE 2.5

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

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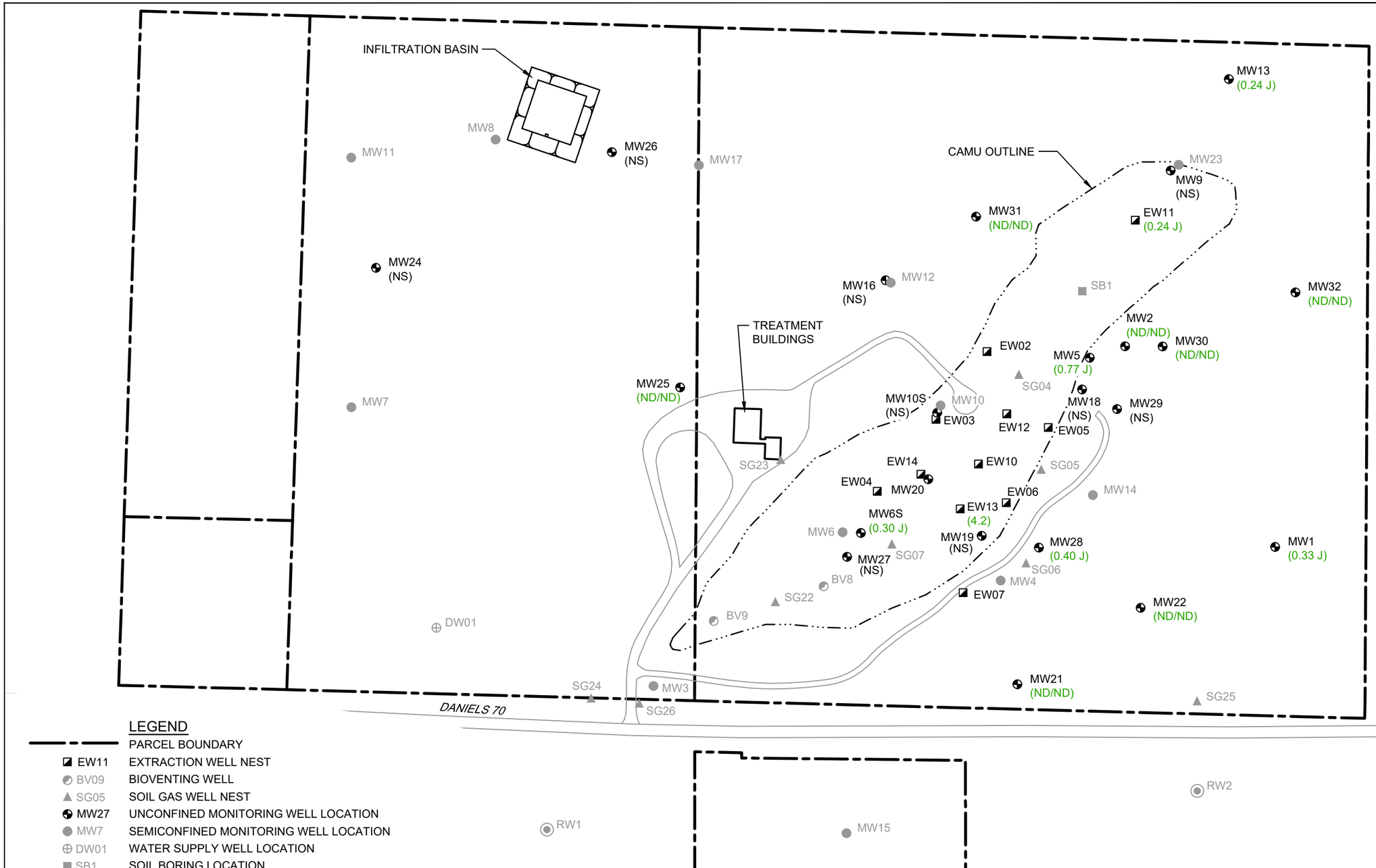

LEGEND

	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)	ARSENIC CONCENTRATION (µg/L) MEETS ENFORCEMENT STANDARD OF 10 ug/L
(ND/ND)	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

0 100 200 ft

N

GHD

PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

UNCONFINED (UPPER) AQUIFER ARSENIC CONCENTRATIONS - OCTEBER 2022

Project No. **11222418**
Date **February 2023**

FIGURE 2.6

Filename: N:\US\St Paul\Projects\563\11222418\Digital_Design\ACAD\Figures\RPT007\11222418-GHD-00-00-RPT-EN-D106_WA-007.dwg
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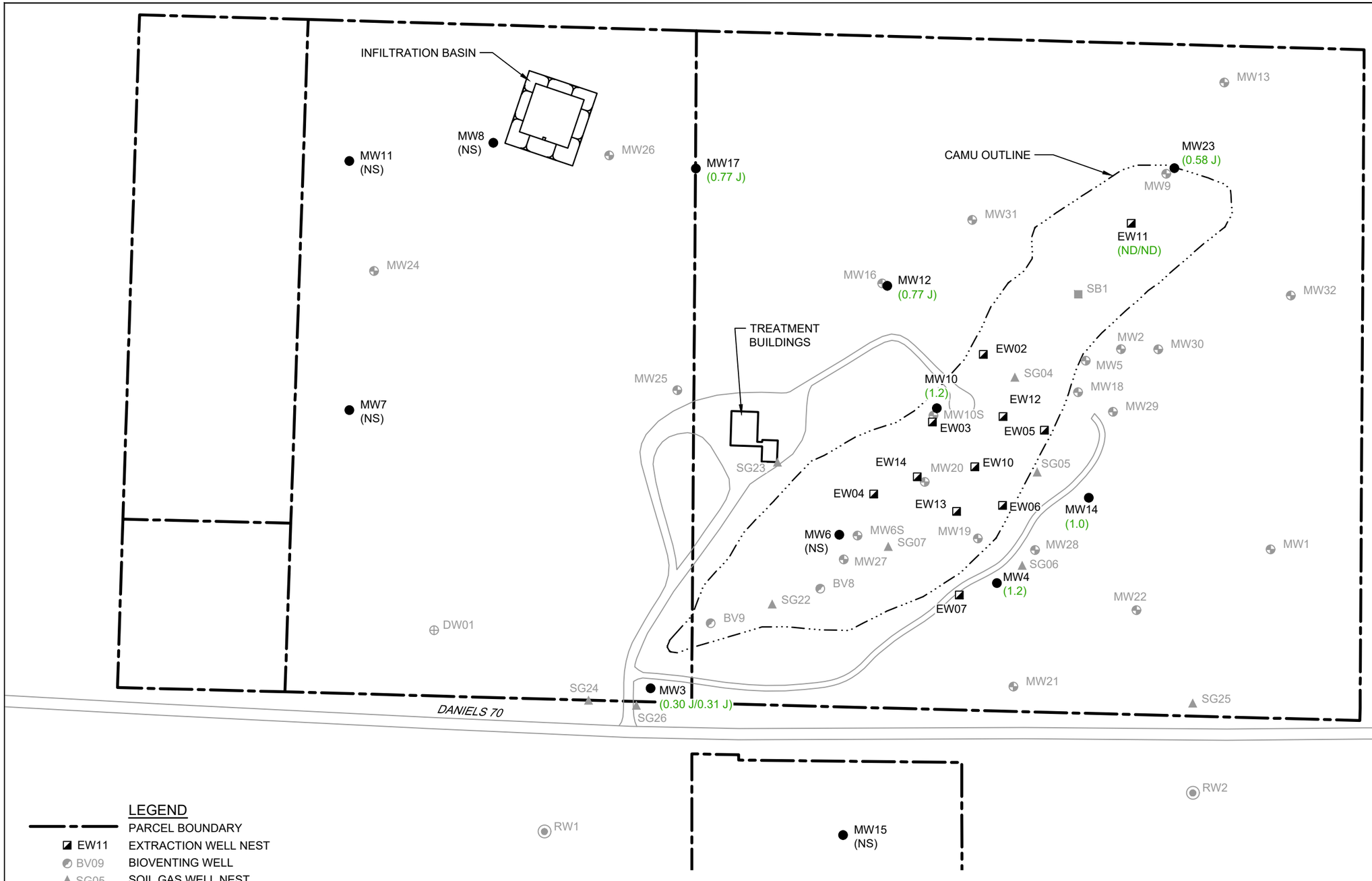

LEGEND

	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
(0.30J/0.31J)	ARSENIC CONCENTRATION (µg/L) MEETS ENFORCEMENT STANDARD OF 10 µg/L/DUPLICATE CONCENTRATION

0 100 200 ft

N

GHD

PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

SEMICONFINED (LOWER) AQUIFER ARSENIC CONCENTRATIONS - APRIL 2022

Project No. **11222418**
Date **February 2023**

FIGURE 2.7

Filename: N:\US\St Paul\Projects\563\11222418\Digital_Design\ACAD\Figures\RPT007\11222418-GHD-00-00-RPT-EN-D107_WA-007.dwg
Plot Date: 01 February 2023 7:56 AM

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	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium 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 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			58.0 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		

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	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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
EW02S	4/14/2016	N	0.094 J	690	5.0 U		1.4 J		50.2 J			39.3		20.0 U			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

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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
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
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
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

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	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium 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 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	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
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
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														

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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
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
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	5.20 J		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	9.4 J		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

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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
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											
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																0.50 U	5.0 U	5.0 U	5.0 U							
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 UJ		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 ug/L	Pentachlorophenol 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	Magnesium 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) 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
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		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
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														
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

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	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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			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	9/26/2006	N	8.7 J	460 =	1.0 UJ		10 UJ		23000 J			8000 J		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	9/20/2007	N	9.8	31 J	1.0 UJ		10 UJ		25000			7600		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	10/22/2008	N	11 J	206	2 UJ		10 UJ		10500 J		31400 J	9700 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	10/7/2009	N	17 J	33.3 J	2 UJ		10 UJ		6000 J		33600 J	11800 J		20 UJ			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	10/6/2010	N	4.1	39.8 J	3.36 J		8 U		3030		43600	12600		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	10/19/2011	N	38 J	0.97	1.0 J		2 U		2600		40000 B	11000		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	10/17/2012	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	150 B	9.2 J		0.10 UJ		140 J	1.8
MW5	10/10/2013	N	19	0.60	0.39 J		10.0 UJ		2200 J		20000 J	4700 J		20 UJ			0.20 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	FD	10	12	0.42 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	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	98.7	12.7	159	0.053 J		48.9	3.3
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	71.3	12.5	113	0.96		37.6	4.5
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	72.0	12.7	113	0.97		38.0	4.6
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	249	28.5	292	0.084 J		28.5	39.6
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	262	27.0	305	0.068 U		27.7 B	33.3 F1
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	265	25.7	283	0.068 U		24.4	38.4
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	452	28.2	273	0.068 U		25.6	38.7
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	253	27	286	0.068 U		23.8	42.5
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	244	31.6	283	0.076 JH		29.2	45.8
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	258	25.2	310	0.069 J		22.6	63.7
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	282	24.8	309	0.20 U		21.4	54.6
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	286	25.4	310	0.068 J		21.8	55.2
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	288	25.1	179	0.20 U		18.9	37.7
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	296	20.5	194	0.20 U		15.6	29.4
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
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
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														

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	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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
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 =			
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

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	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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														
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

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	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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																							3.8 J			
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
MW10	9/23/2004	N2			3.01		12.4 J		24.1 J			1810		4.23 J			160											

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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	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
MW10	9/27/2006	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
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							570				
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			
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

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	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium 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 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	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

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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	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
MW11	9/21/2004	N2			0.948 J		0.366 J		6.05 J			1.40 J		4.05 J														
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

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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
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

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	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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											
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
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 =			

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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	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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
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
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								3.92			
MW15	4/25/2001	N4			0.42		25 U		25 U			15 U		16											3.92 =			
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

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	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
MW15	10/16/2012	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
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	2.0 U	2.0 U	5 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

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Historical Groundwater Analytical Data
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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	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
MW16	4/7/2020	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
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		20 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		20 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		20 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		20 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		20 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		20 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

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	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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	0.10 U	0.77 J	0.72 J	0.63 J	0.81 J	100 U	100 U		2.5 U	2.5 U	20.0 U	20.0 U		0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	204	11.1	191	1.4		95.4	1.0 U
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

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	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
MW19	10/7/2010	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
MW19	10/10/2013	N	0.50 U	7900	0.26 J		10.0 UJ		50 UJ		5800 J	990 J		20 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		46.5 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														

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	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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		20 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
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
MW22	2/9/1998	N	13	1 U	4		255		5.5 U			3700		121				0.1 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

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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	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
MW22	10/18/2011	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
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
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

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	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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
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							
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
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

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	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
MW26	5/14/2002	N2			1.4 U		1.2 J		11.2 U			0.73 J		9.3 J										300				
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
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			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		26700	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

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	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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
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
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

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	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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	0.50 U	1.0 U	48.4	0.55	52.3	2.0		4.6	1.6
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
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
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

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	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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
RW01	10/9/1997	N		1 U																								
RW01	4/23/2001	N		0.1 U													5.3 U	0.5 U	5 U	5 U								
RW01	9/11/2001	N		0.071 J													0.26 U	0.44 U	0.5 U	0.4 U	1.2 U							
RW01	9/28/2001	N		0.1 U																								
RW01	9/28/2001	N2		0.05 U																								
RW01	5/14/2002	N		0.23													5 U	1 U	5 U	2 J	2 J							
RW01	8/6/2002	N		0.04													5 U	1 U	5 U	5 U	5 U							
RW01	4/29/2003	N		0.1 J													7.1 U	0.5 U	5 U	5 U	5 U							
RW01	9/23/2003	N		0.28													0.97 U	0.25 U	2.5 U	2.5 U	2.5 U							
RW01	11/20/2003	N		0.24																								
RW01	5/4/2004	FD		0.134 UB													5.00 U	0.500 U	5.00 U	5.00 U	5.00 U							
RW01	5/4/2004	N		0.140 UB													5.00 U	0.500 U	5.00 U	5.00 U	5.00 U							
RW01	9/22/2004	FD		1.51													5.00 U	0.500 U	5.00 U	5.00 U	5.00 U							
RW01	9/22/2004	N		0.201													5.00 U	0.500 U	5.00 U	5.00 U	5.00 U							
RW01	11/1/2004	N		0.0952 U																								
RW01	5/10/2005	FD		0.053 J													0.93 U	0.50 U	5.0 U	5.0 U	5.0 U							
RW01	5/10/2005	N		0.068 J													0.93 U	0.50 U	5.0 U	5.0 U	5.0 U							
RW01	7/7/2005	FD		0.035 J													0.96 U	0.50 U	5.0 U	5.0 U	5.0 U							
RW01	7/7/2005	N		0.043 J													0.95 U	0.50 U	5.0 U	5.0 U	5.0 U							
RW01	9/27/2005	FD		0.049 J													0.93 UJ	0.50 U	5.0 U	5.0 U	5.0 U							
RW01	9/27/2005	N		0.050 J													0.92 UJ	0.50 U	5.0 U	5.0 U	5.0 U							
RW01	5/31/2006	FD		0.055 J													0.94 U	0.50 U	5.0 U	5.0 U	5.0 U							
RW01	5/31/2006	N		0.048 J													0.93 U	0.50 U	5.0 U	5.0 U	5.0 U							
RW01	9/25/2006	FD		0.023 J													0.93 U	0.50 U	5.0 U	5.0 U	5.0 U							
RW01	9/25/2006	N		0.11 U													0.93 U	0.50 U	5.0 U	5.0 U	5.0 U							
RW01	5/9/2007	FD		0.048 J													0.95 R	1.0 U	1.0 U	1.0 U	2.0 U							
RW01	5/9/2007	N		0.035 J													0.95 R	1.0 U	1.0 U	1.0 U	2.0 U							
RW01	9/18/2007	FD		0.27 R													0.93 R	1.0 U	1.0 U	1.0 U	2.0 U							
RW01	9/18/2007	N		0.093 UJ													0.93 R	1.0 U	1.0 U	1.0 U	2.0 U							
RW01	5/20/2008	FD		0.066 J													0.95 U	1.0 UJ	1.0 U	1.0 U	2.0 UJ							
RW01	5/20/2008	N		0.060 J													0.95 U	1.0 UJ	1.0 U	1.0 U	2.0 UJ							
RW01	10/23/2008	FD															1 U											
RW01	10/23/2008	N															1 U											
RW01	12/11/2008	FD		0.1 U														0.1 U	0.4 U	0.4 U	1.0 U							
RW01	12/11/2008	N		0.1 UJ														0.1 U	0.4 U	0.4 U	1.0 U							
RW01	6/2/2009	FD		0.1 UJ													1.0 UJ	0.5 UB	2.0 UB	2.0 UB	5.0 UB							
RW01	6/2/2009	N		0.1 UJ													1.0 UJ	0.5 UB	2.0 UB	2.0 UB	5.0 U							
RW01	7/6/2009	FD																0.5 U	2.0 U	2.0 U	5.0 U							
RW01	7/6/2009	N																0.5 U	2.0 U	2.0 U	5.0 U							
RW01	10/7/2009	FD		0.1 UJ													0.997 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ							
RW01	10/7/2009	N		0.1 UJ													1 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ							
RW01	5/19/2010	FD		0.1 U													1.0 U	0.4 U	5 U	5 U	5 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	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
RW01	5/19/2010	N		0.1 U													1.0 U	0.4 UJ	5 UJ	5 UJ	5 UJ							
RW01	10/5/2010	FD		0.1 U													1.0 U	0.1 U	0.4 U	0.4 U	1 U							
RW01	10/5/2010	N		0.1 U													1.0 U	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ							
RW01	11/30/2010	N																0.1 U	0.4 U	0.4 U	1 U							
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							
RW02	10/9/1997	FD		2																								
RW02	10/9/1997	N		0.9 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	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
RW02	10/24/1997	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							
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							

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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	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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							
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							
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							

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	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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																								
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							
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							

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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	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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							
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							
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											

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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	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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							
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	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							
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							

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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	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
RW06	4/26/2021	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 SHOP	4/17/2018	N		0.024 U													0.79 U	0.50 U	0.50 U	1.5	1.0 U							
RW06 SHOP	10/16/2018	N		0.095 U													0.75 U	0.50 U	0.50 U	1.7	1.0 U							
RW06 SHOP	4/22/2019	N		0.095 U													0.23 U	0.15 U	0.18 U	0.50 U	0.22 U							
RW06 SHOP	10/1/2019	N		0.086 U													0.25 U	0.15 U	0.18 U	0.15 U	0.22 U							
RW06 SHOP	4/26/2021	N		0.097 U													0.77 U	0.50 U	0.50 U	0.50 U	1.0 U							
RW06 SHOP	10/13/2021	N		0.097 U													0.81 U	0.50 U	0.50 U	0.50 U	1.0 U							
RW06 SHOP	4/14/2022	N		0.10 U													0.78 U	0.50 U	0.50 U	0.50 U	1.0 U							
RW06 SHOP	10/03/2022	N		0.11 U													0.84 U	0.50 U	0.50 U	0.17 J	0.33 J							

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.
UJ	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

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

Note:

* - 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

Appendix A.6

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	
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	Groundwater extraction rate increased to 13.5 gpm
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	Groundwater extraction pump turned off for pilot study
			Total LNAPL Recovered		0.0	
EW04	11/4/2014	114.30	NP	0.00	NA	
EW04	12/11/2014	115.39	NP	0.00	NA	
EW04	12/23/2014	115.34	NP	0.00	NA	Groundwater extraction system shutdown pending carbon change-out
EW04	12/30/2014	115.26	NP	0.00	NA	Groundwater extraction system remained shutdown pending carbon change-out
EW04	1/8/2015	115.22	NP	0.00	NA	Groundwater extraction system remained shutdown pending carbon change-out
EW04	1/19/2015	115.23	NP	0.00	NA	Groundwater extraction system restarted after carbon change-out
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	Groundwater extraction rate increased to 10 gpm
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	
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

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	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
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	

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
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	
EW06	11/12/2014	107.80	98.30	9.50	NA	Temporary system shutdown due to alarm condition
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	Measurements recorded prior to LNAPL removal
EW06	12/11/2014	100.35	98.40	1.95	12.0	Measurements recorded immediately after LNAPL removal
EW06	12/15/2014	108.40	98.01	10.39	NA	
EW06	12/23/2014	109.35	98.01	11.34	NA	Measurements recorded prior to LNAPL removal
EW06	12/23/2014	99.50	98.35	1.15	13.0	Measurements recorded immediately after LNAPL removal, groundwater extraction system shutdown pending carbon change-out
EW06	12/30/2014	98.59	97.83	0.76	NA	Groundwater extraction system remained shutdown pending carbon change-out
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	

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
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	
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

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
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	
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

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
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	
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

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
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	
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	

Appendix A.6

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
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	
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

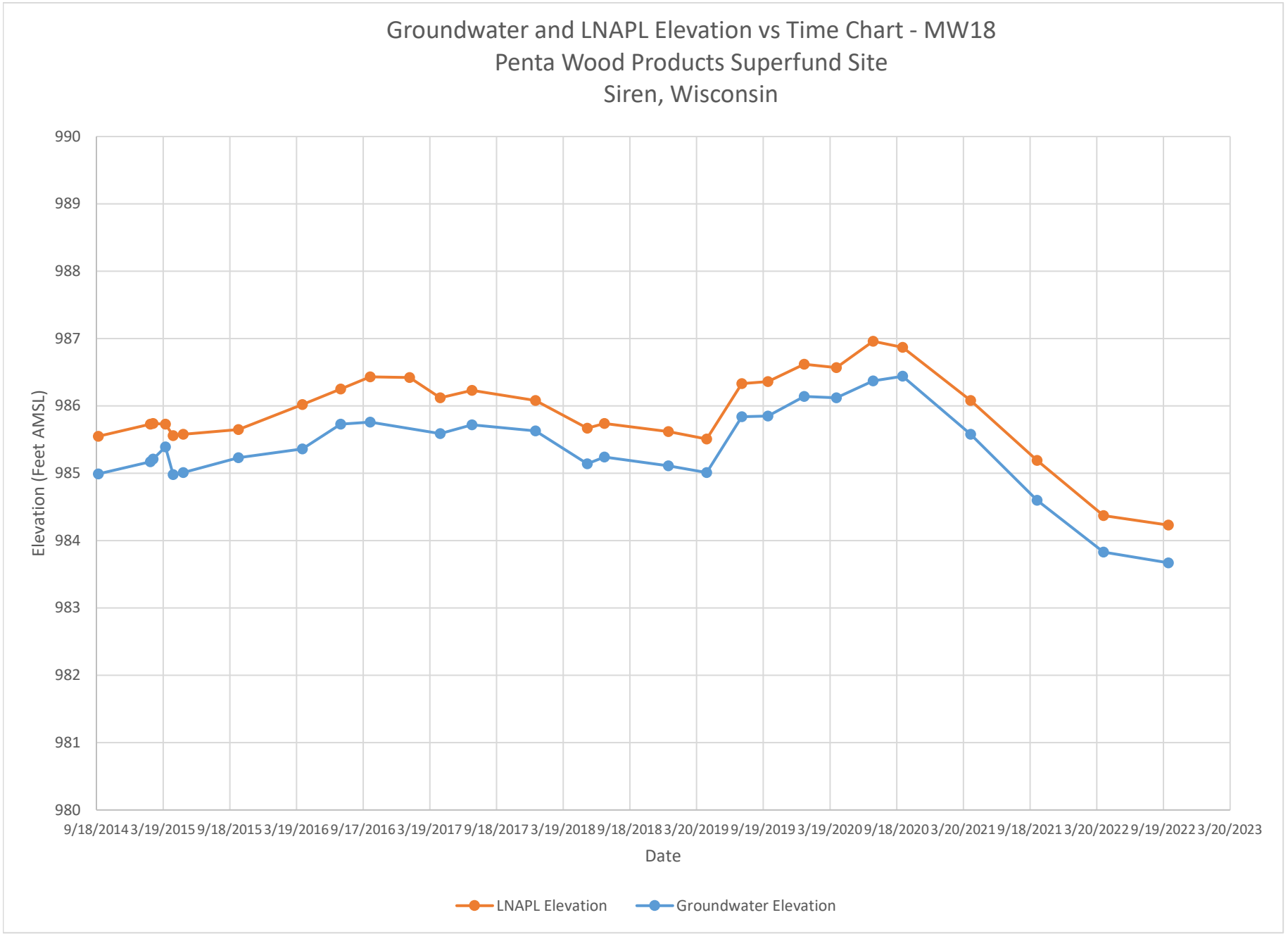
Notes:

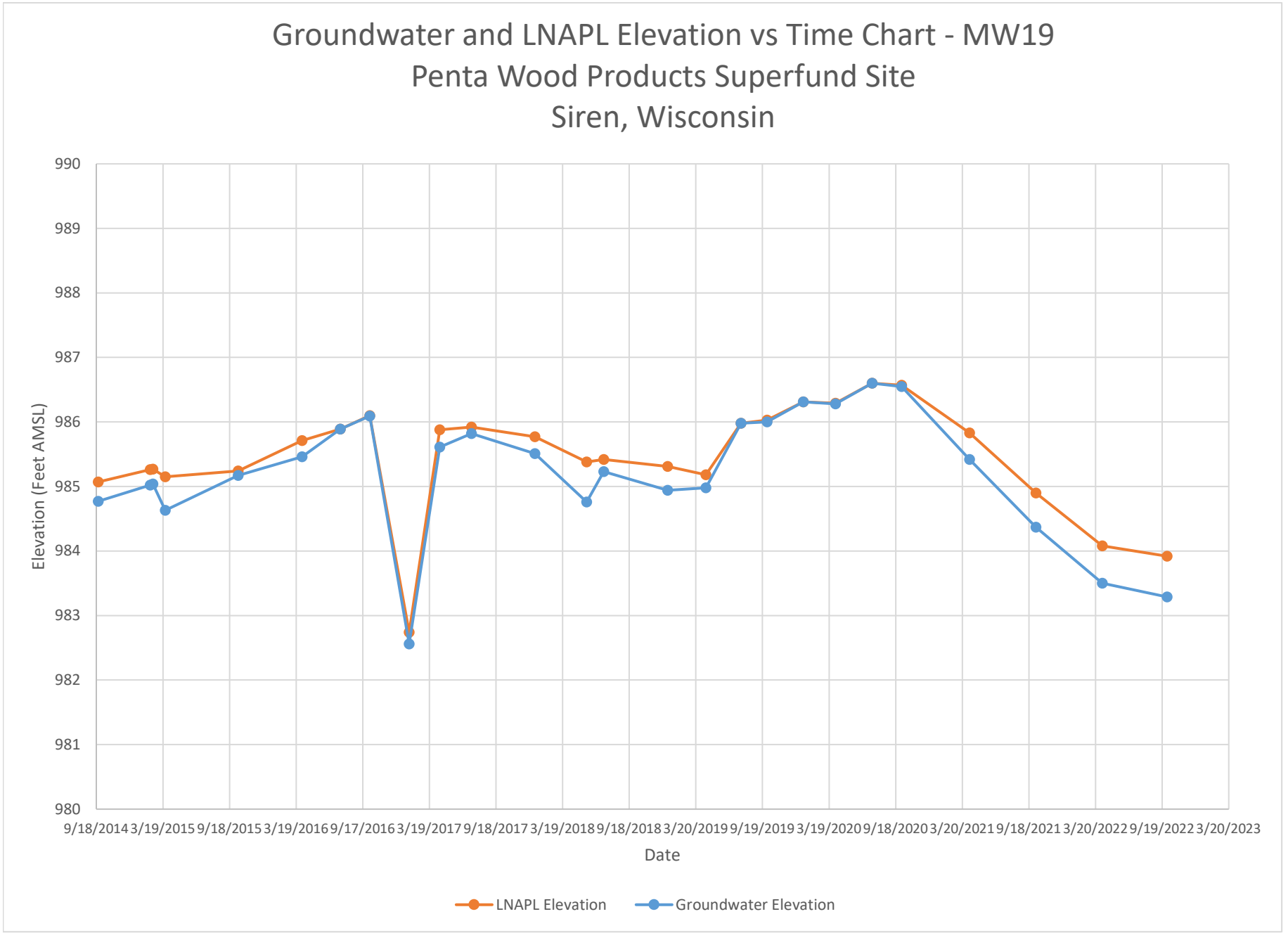
[1] location/elevation. Measurements were consistently recorded from the same benchmark location at the top of the well vault starting in December 2014.

NM - Not measured

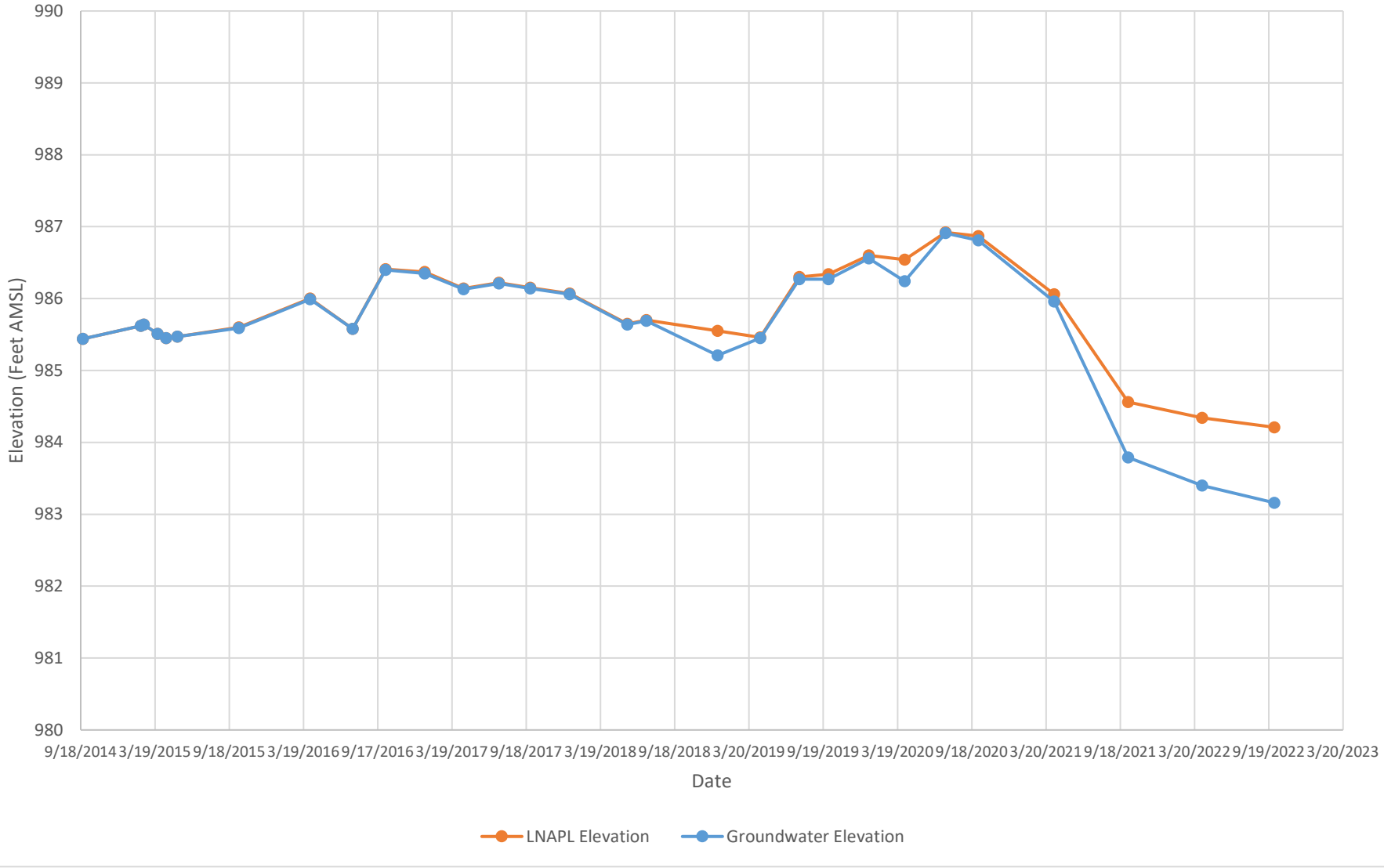
NP - LNAPL was not present in a measurable quantity

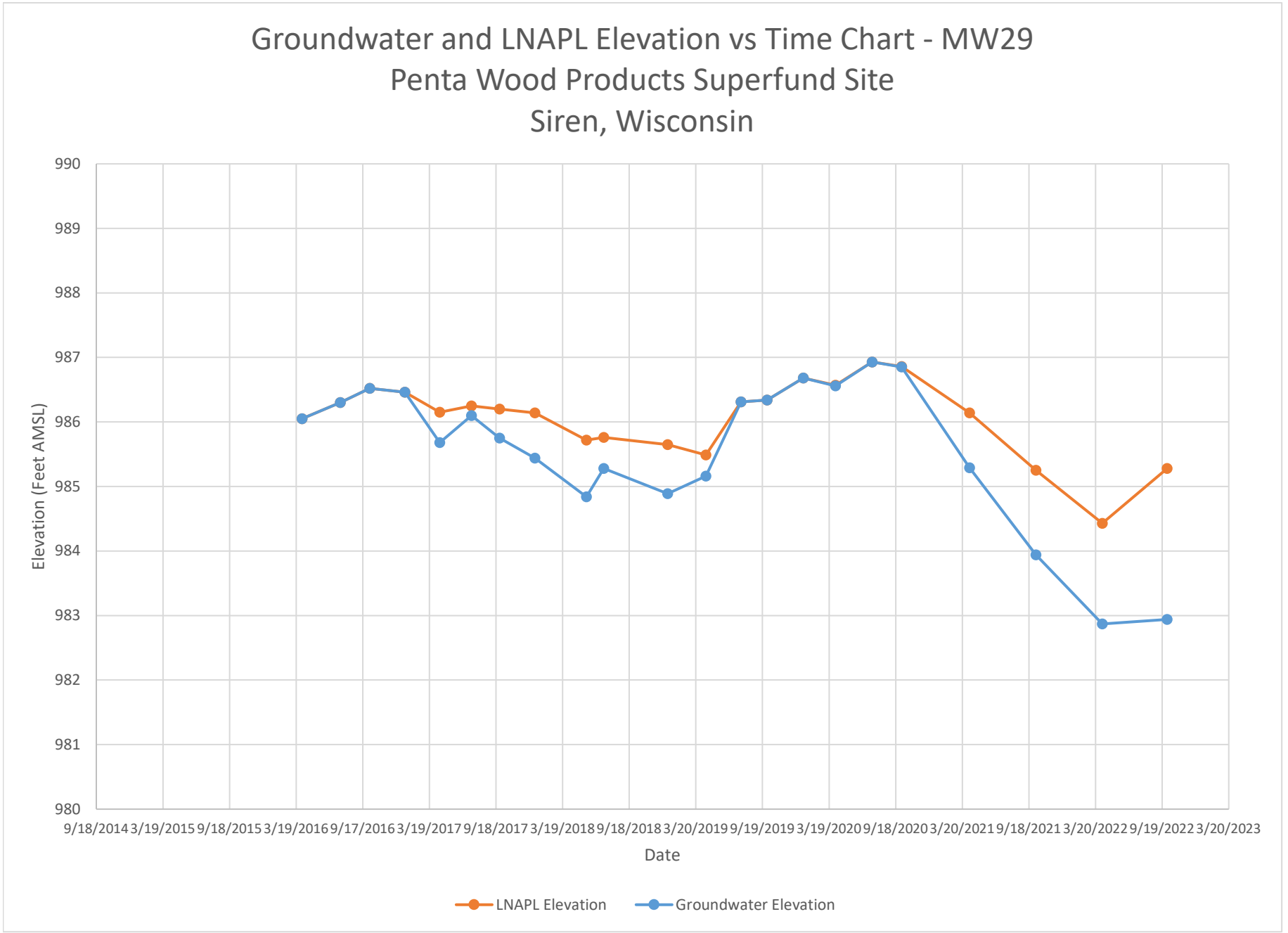
NA - Not applicable


Groundwater and LNAPL Elevation vs Time Chart - MW18
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
990
989
988
987
986
985
984
983
982
981
980
9/18/2014
3/19/2015
9/18/2015
3/19/2016
9/17/2016
3/19/2017
9/18/2017
3/19/2018
9/18/2018
3/20/2019
9/19/2019
3/19/2020
9/18/2020
3/20/2021
9/18/2021
3/20/2022
9/19/2022
3/20/2023
Date
LNAPL Elevation
Groundwater Elevation

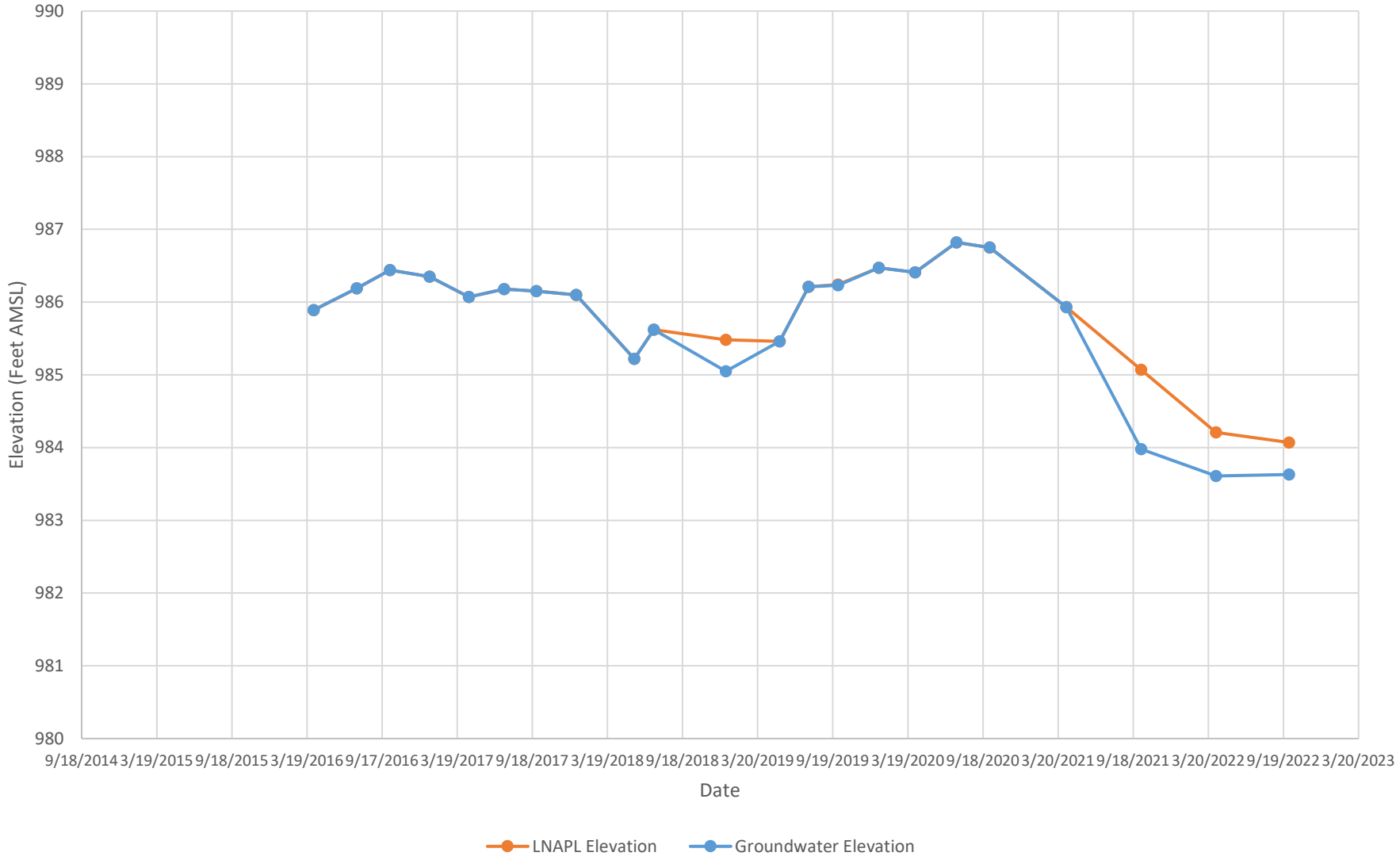

Groundwater and LNAPL Elevation vs Time Chart - MW19
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
990
989
988
987
986
985
984
983
982
981
980
9/18/2014
3/19/2015
9/18/2015
3/19/2016
9/17/2016
3/19/2017
9/18/2017
3/19/2018
9/18/2018
3/20/2019
9/19/2019
3/19/2020
9/18/2020
3/20/2021
9/18/2021
3/20/2022
9/19/2022
3/20/2023
Date
LNAPL Elevation
Groundwater Elevation

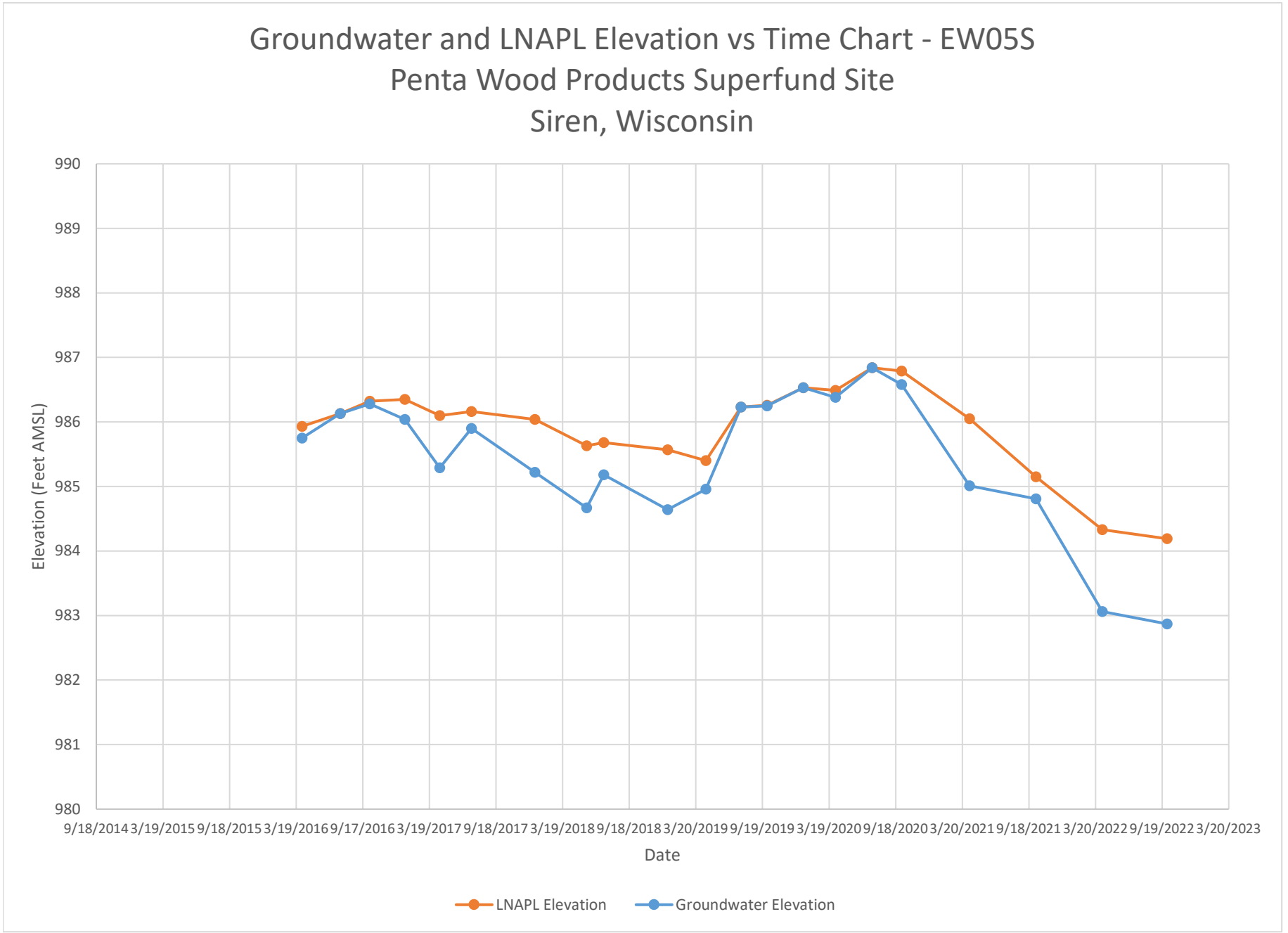
Groundwater and LNAPL Elevation vs Time Chart - MW20
Pent Wood Products Superfund Site
Siren, Wisconsin

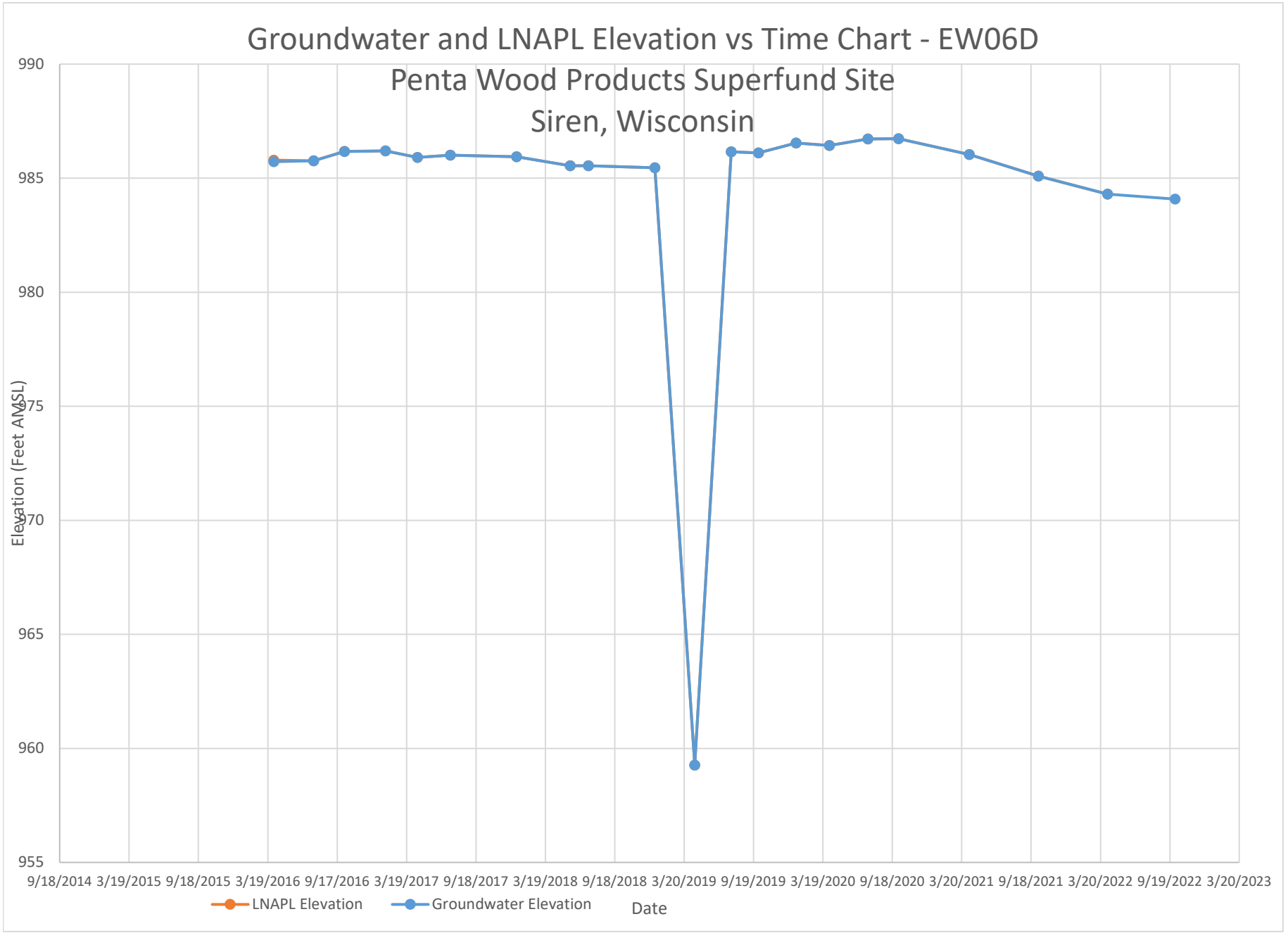



Groundwater and LNAPL Elevation vs Time Chart - MW29
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
990
989
988
987
986
985
984
983
982
981
980
9/18/2014
3/19/2015
9/18/2015
3/19/2016
9/17/2016
3/19/2017
9/18/2017
3/19/2018
9/18/2018
3/20/2019
9/19/2019
3/19/2020
9/18/2020
3/20/2021
9/18/2021
3/20/2022
9/19/2022
3/20/2023
Date
LNAPL Elevation
Groundwater Elevation

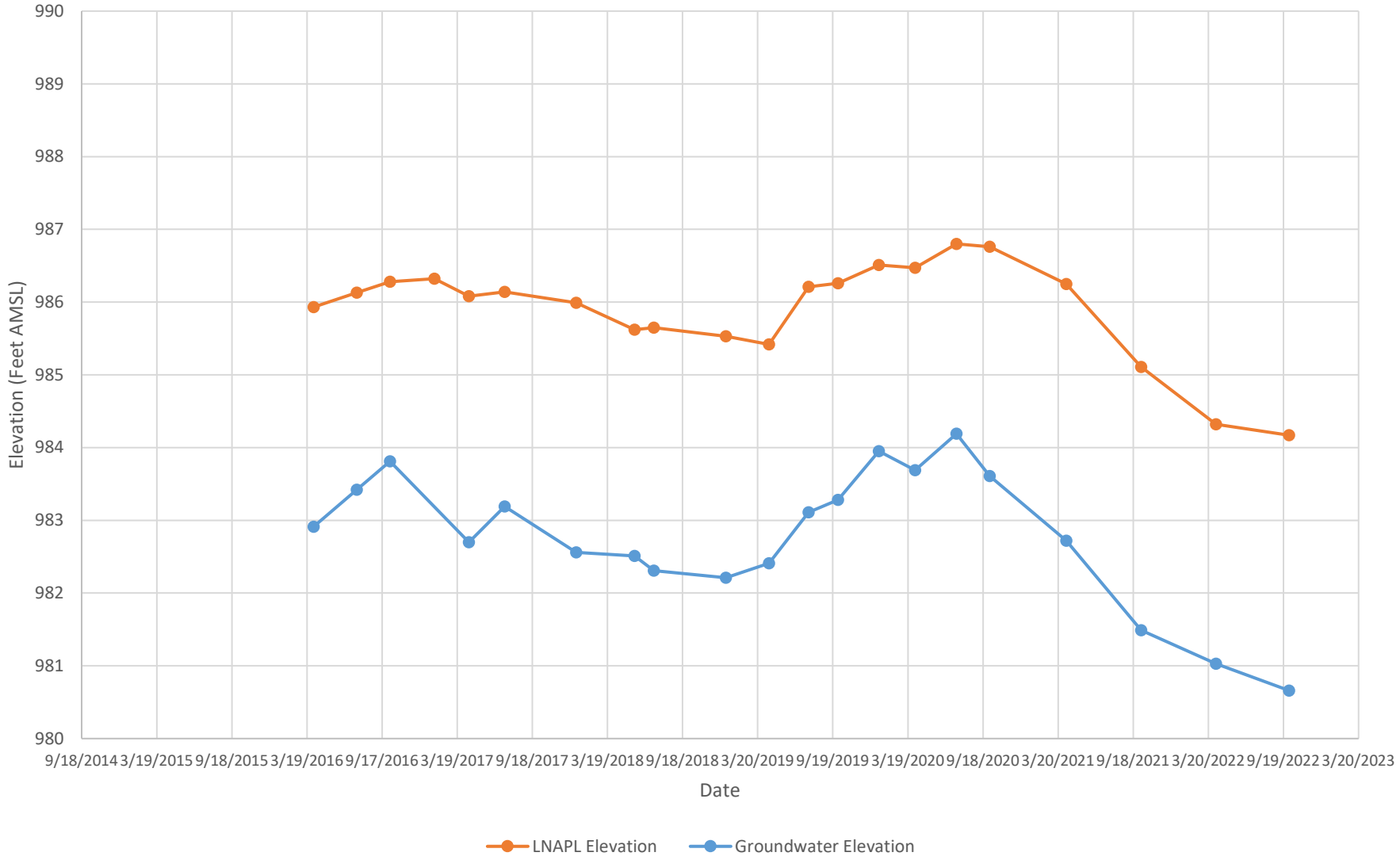
Groundwater and LNAPL Elevation vs Time Chart - EW03S
Penta Wood Products Superfund Site
Siren, Wisconsin

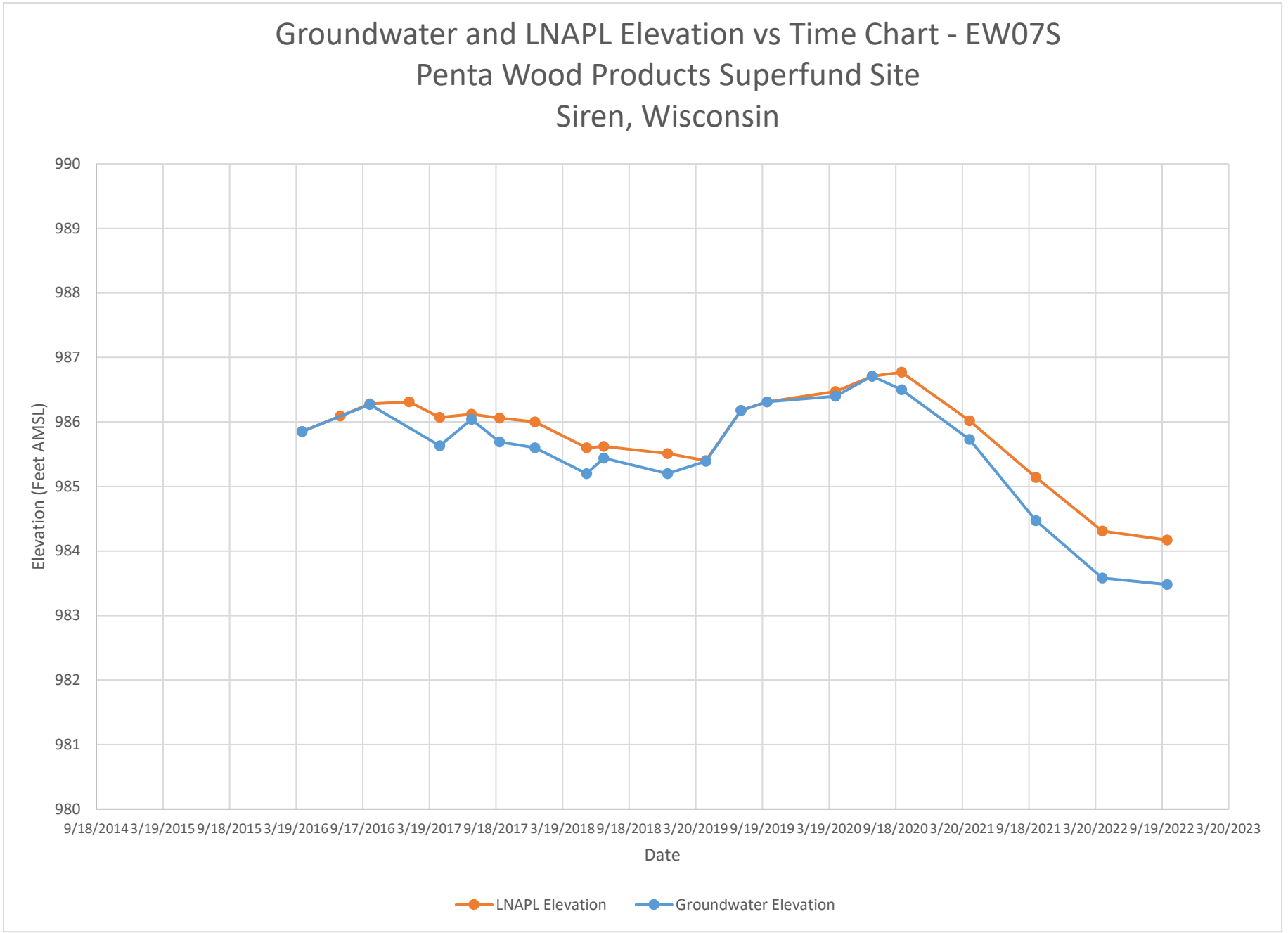



Groundwater and LNAPL Elevation vs Time Chart - EW05S
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
990
989
988
987
986
985
984
983
982
981
980
9/18/2014
3/19/2015
9/18/2015
3/19/2016
9/17/2016
3/19/2017
9/18/2017
3/19/2018
9/18/2018
3/20/2019
9/19/2019
3/19/2020
9/18/2020
3/20/2021
9/18/2021
3/20/2022
9/19/2022
3/20/2023
Date
LNAPL Elevation
Groundwater Elevation

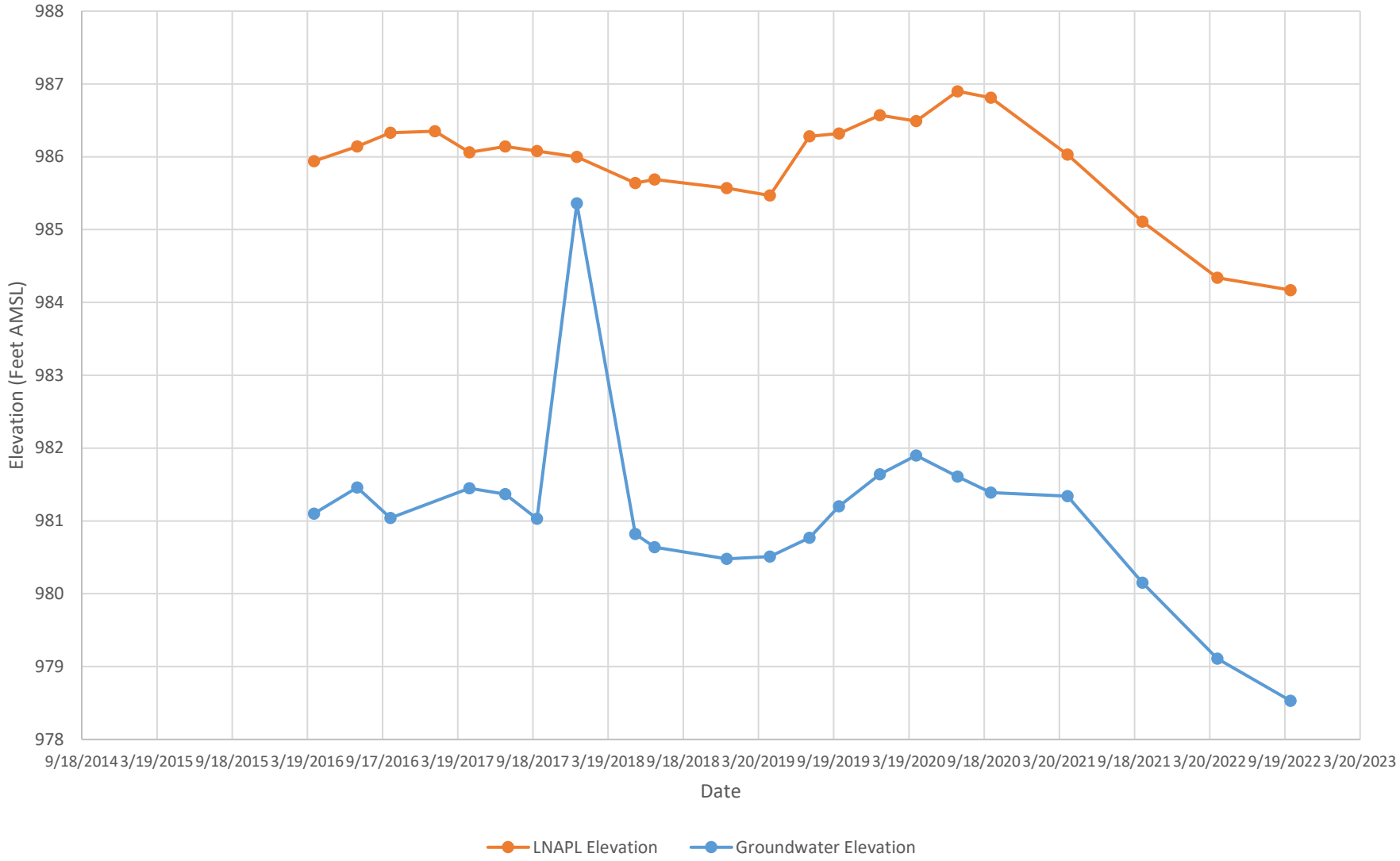

Groundwater and LNAPL Elevation vs Time Chart - EW06D
Penta Wood Products Superfund Site
Siren, Wisconsin
990
985
980
975
970
965
960
955
Elevation (Feet AMSL)
9/18/2014 3/19/2015 9/18/2015 3/19/2016 9/17/2016 3/19/2017 9/18/2017 3/19/2018 9/18/2018 3/20/2019 9/19/2019 3/19/2020 9/18/2020 3/20/2021 9/18/2021 3/20/2022 9/19/2022 3/20/2023
LNAPL Elevation
Groundwater Elevation
Date

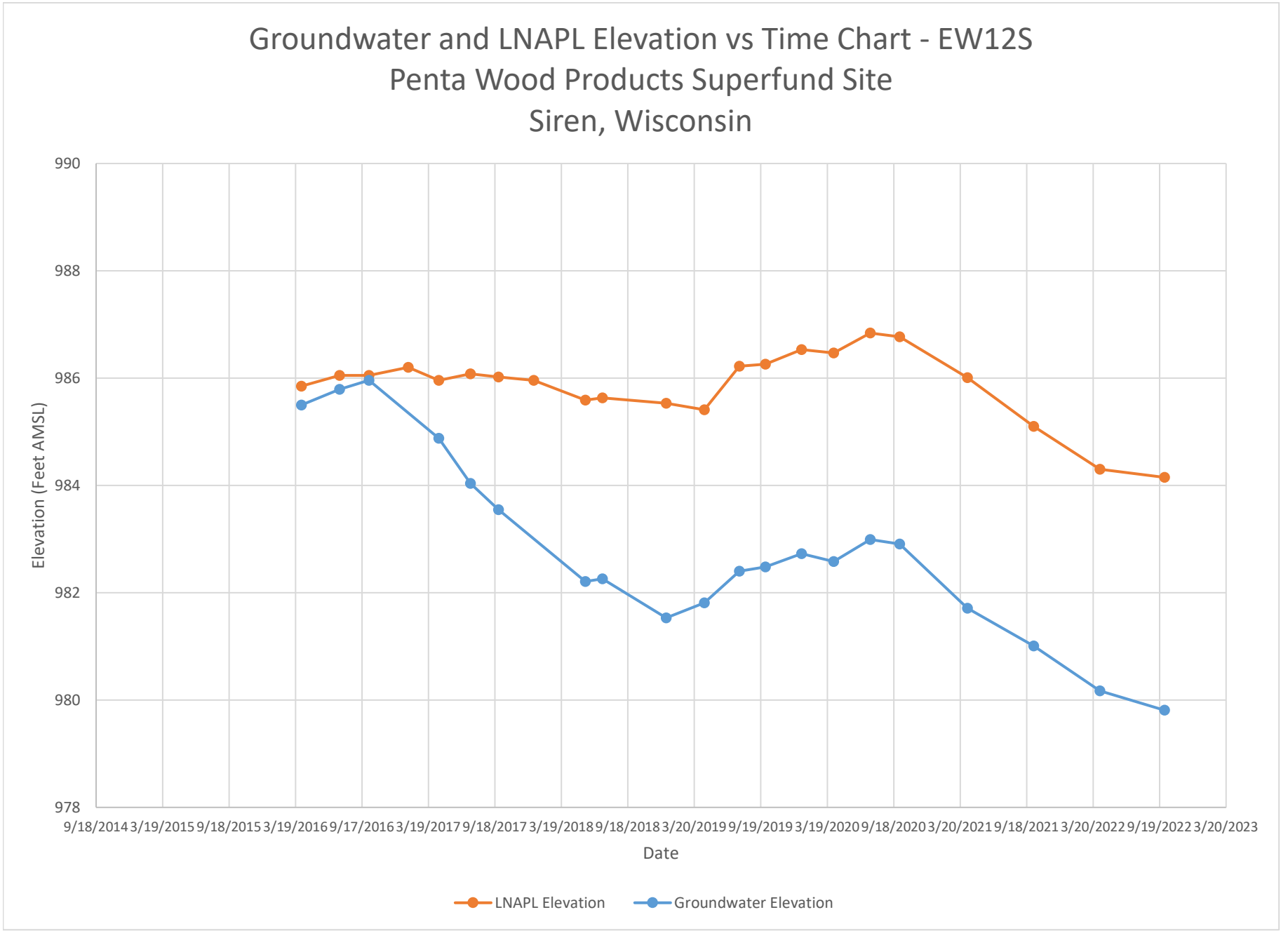
Groundwater and LNAPL Elevation vs Time Chart - EW06S
Penta Wood Products Superfund Site
Siren, Wisconsin

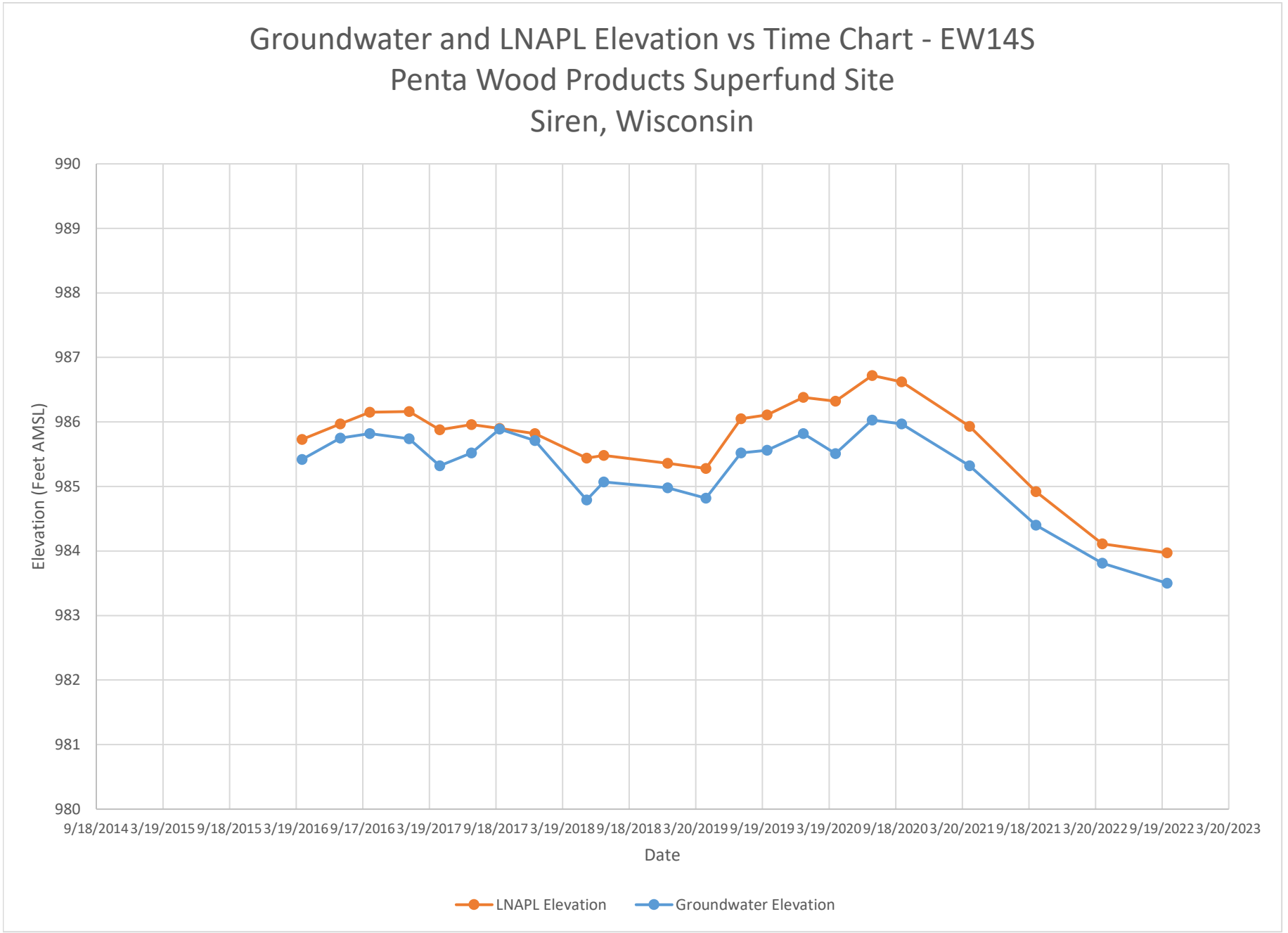



Groundwater and LNAPL Elevation vs Time Chart - EW07S
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
990
989
988
987
986
985
984
983
982
981
980
9/18/2014
3/19/2015
9/18/2015
3/19/2016
9/17/2016
3/19/2017
9/18/2017
3/19/2018
9/18/2018
3/20/2019
9/19/2019
3/19/2020
9/18/2020
3/20/2021
9/18/2021
3/20/2022
9/19/2022
3/20/2023
Date
LNAPL Elevation
Groundwater Elevation

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
Elevation (Feet AMSL)
990
988
986
984
982
980
978
9/18/2014
3/19/2015
9/18/2015
3/19/2016
9/17/2016
3/19/2017
9/18/2017
3/19/2018
9/18/2018
3/20/2019
9/19/2019
3/19/2020
9/18/2020
3/20/2021
9/18/2021
3/20/2022
9/19/2022
3/20/2023
Date
LNAPL Elevation
Groundwater Elevation


Groundwater and LNAPL Elevation vs Time Chart - EW14S
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
990
989
988
987
986
985
984
983
982
981
980
9/18/2014
3/19/2015
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3/19/2016
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3/19/2017
9/18/2017
3/19/2018
9/18/2018
3/20/2019
9/19/2019
3/19/2020
9/18/2020
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9/19/2022
3/20/2023
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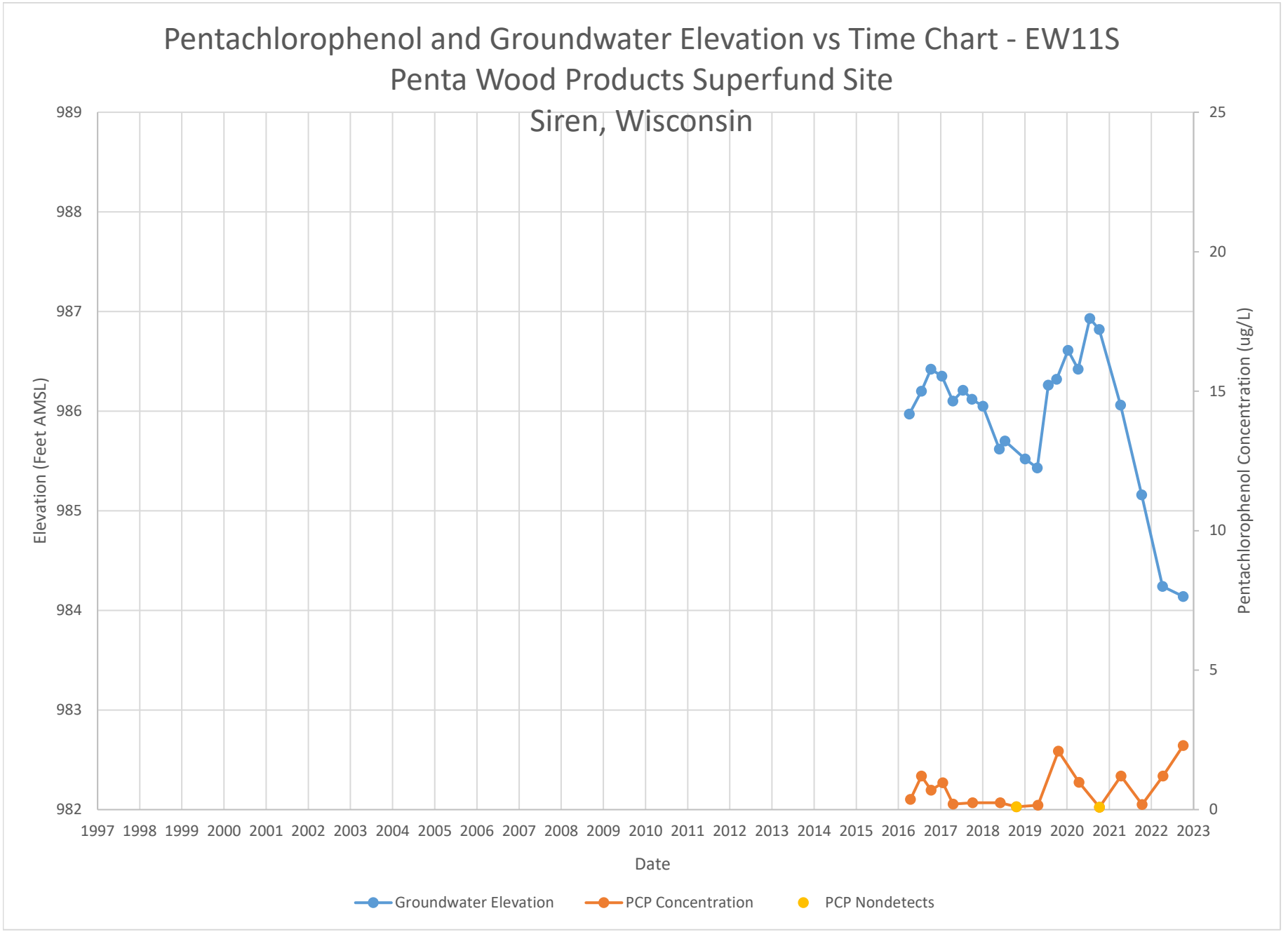
LNAPL Elevation
Groundwater Elevation


Pentachlorophenol and Groundwater Elevation vs Time Chart - EW11S
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
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988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
25
20
15
10
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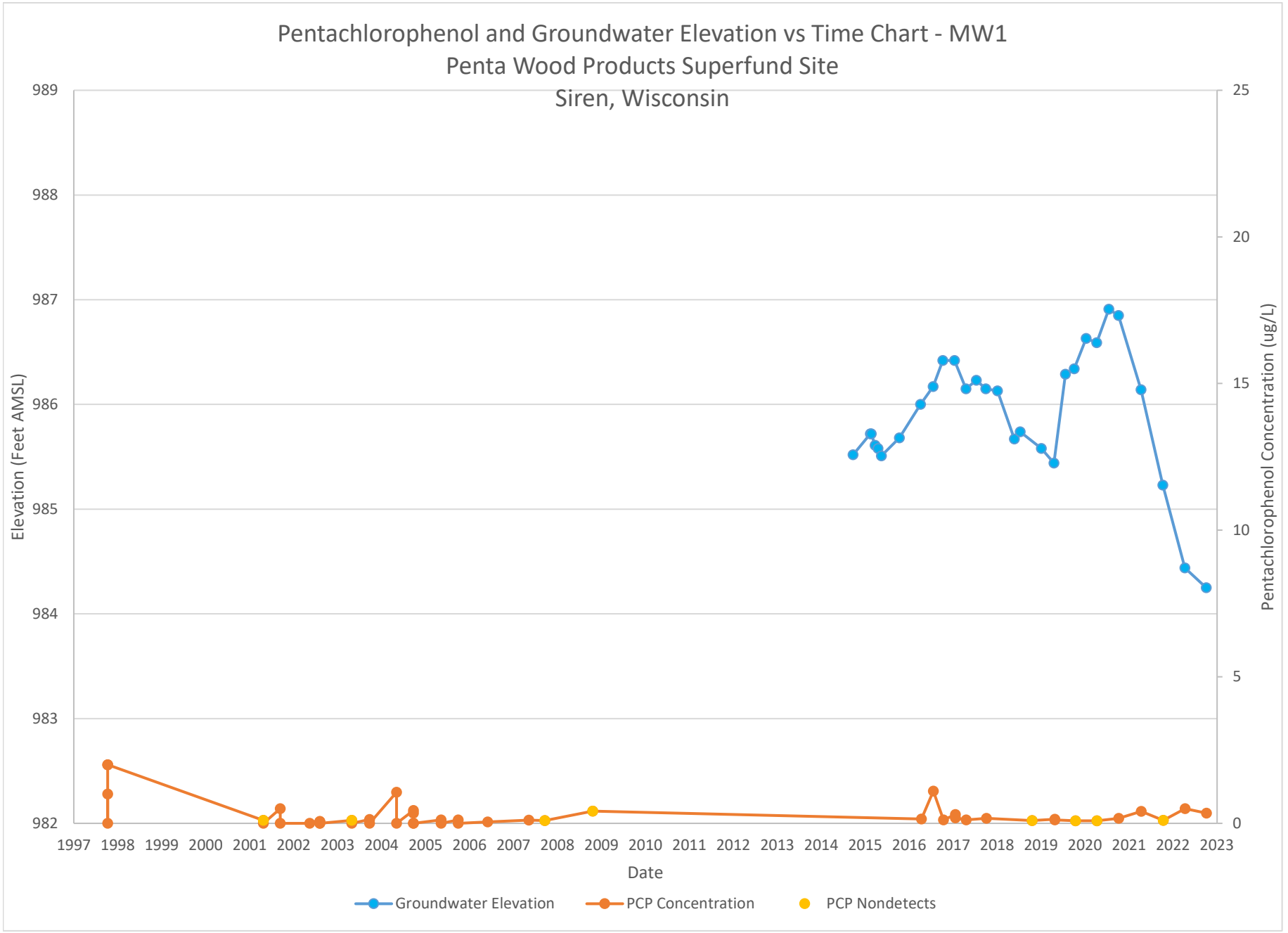
Date
Groundwater Elevation
PCP Concentration
PCP Nondetects


Pentachlorophenol and Groundwater Elevation vs Time Chart - MW1
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
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987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
25
20
15
10
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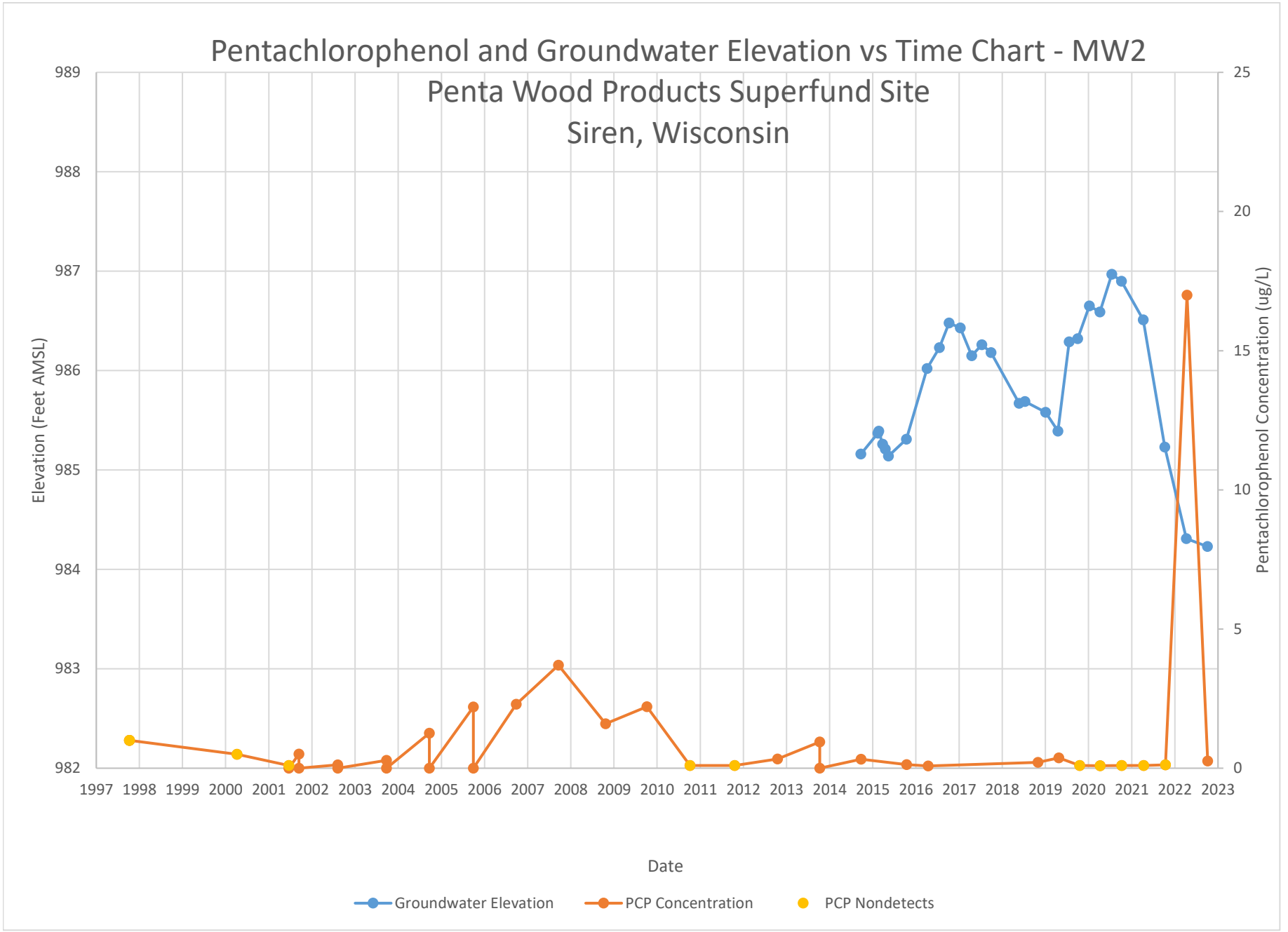
Date
Groundwater Elevation
PCP Concentration
PCP Nondetects


Pentachlorophenol and Groundwater Elevation vs Time Chart - MW2
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
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988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
25
20
15
10
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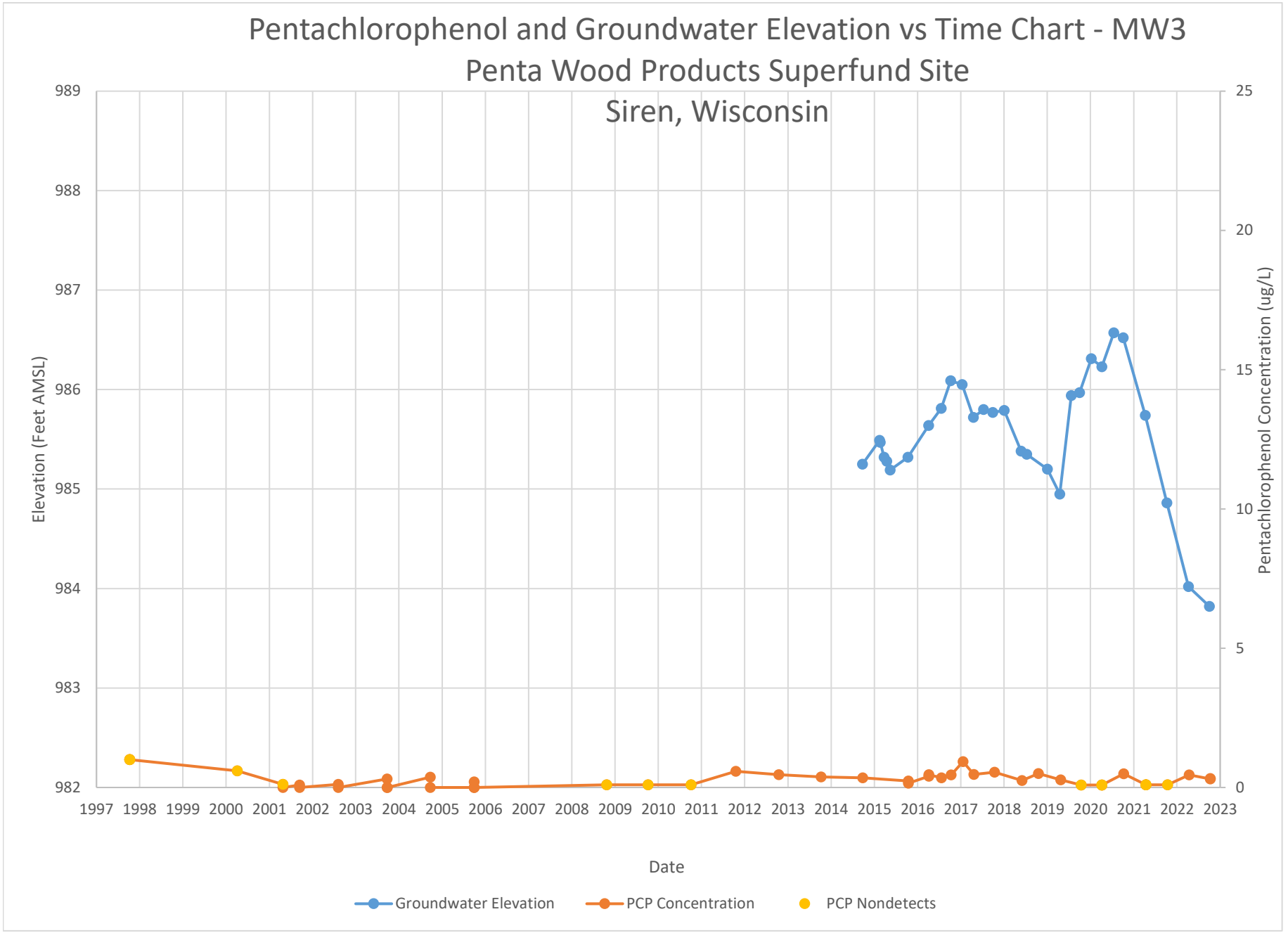
Date
Groundwater Elevation
PCP Concentration
PCP Nondetects


Pentachlorophenol and Groundwater Elevation vs Time Chart - MW3
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
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988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
25
20
15
10
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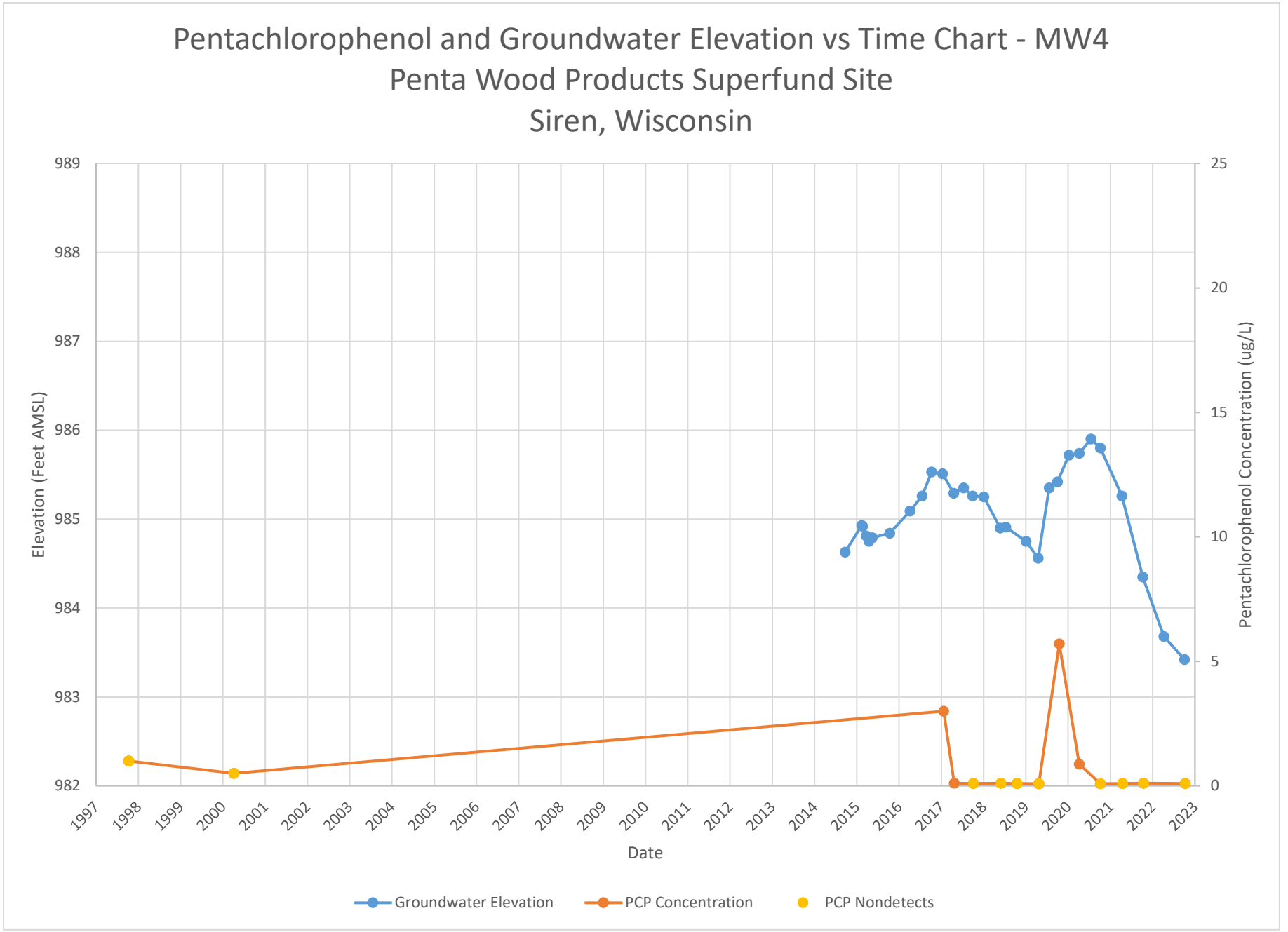
Date
Groundwater Elevation
PCP Concentration
PCP Nondetects


Pentachlorophenol and Groundwater Elevation vs Time Chart - MW4
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
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987
986
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982
Pentachlorophenol Concentration (ug/L)
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20
15
10
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1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
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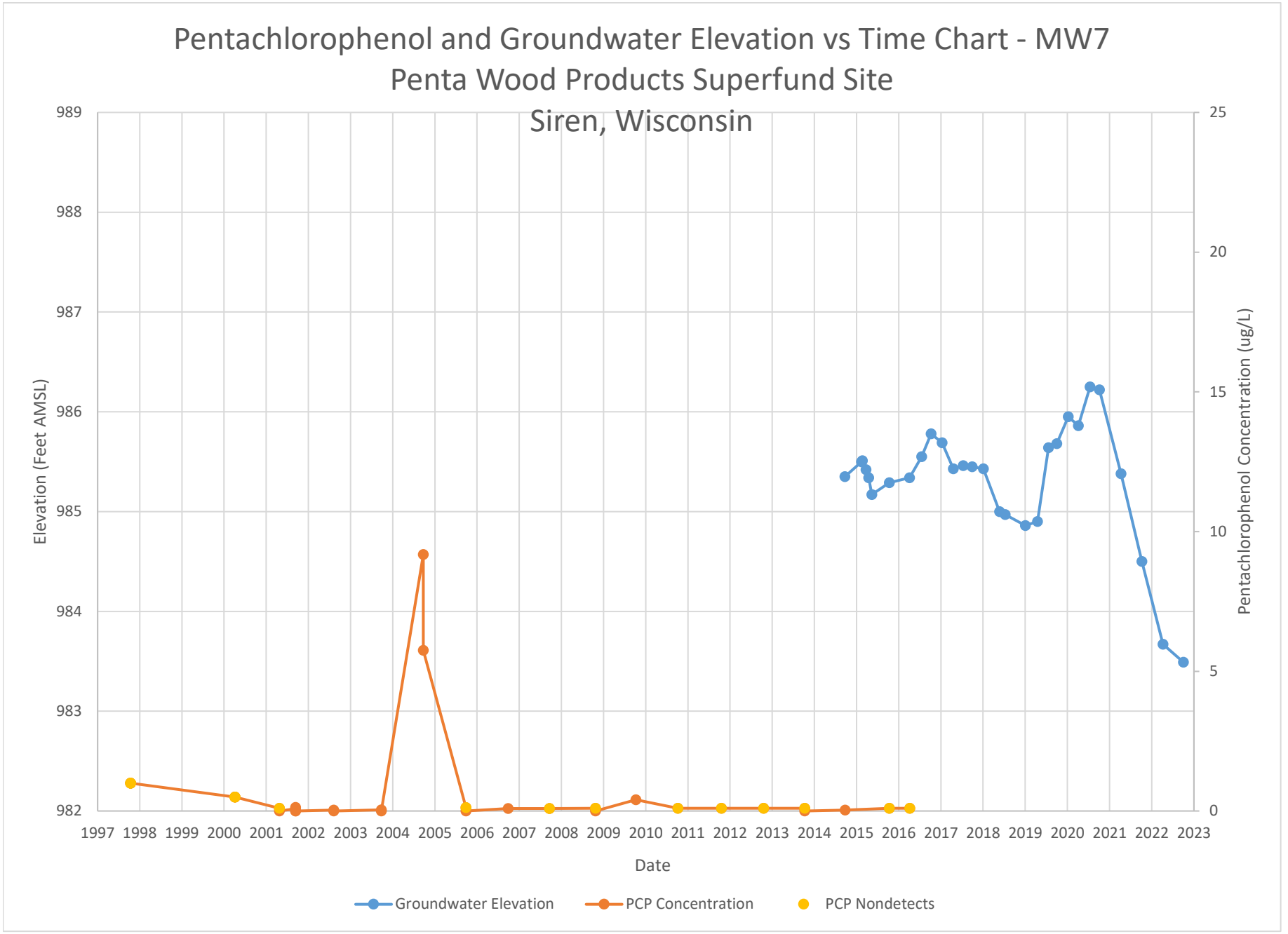
2022
2023
Date
Groundwater Elevation
PCP Concentration
PCP Nondetects


Pentachlorophenol and Groundwater Elevation vs Time Chart - MW7
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
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988
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986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
25
20
15
10
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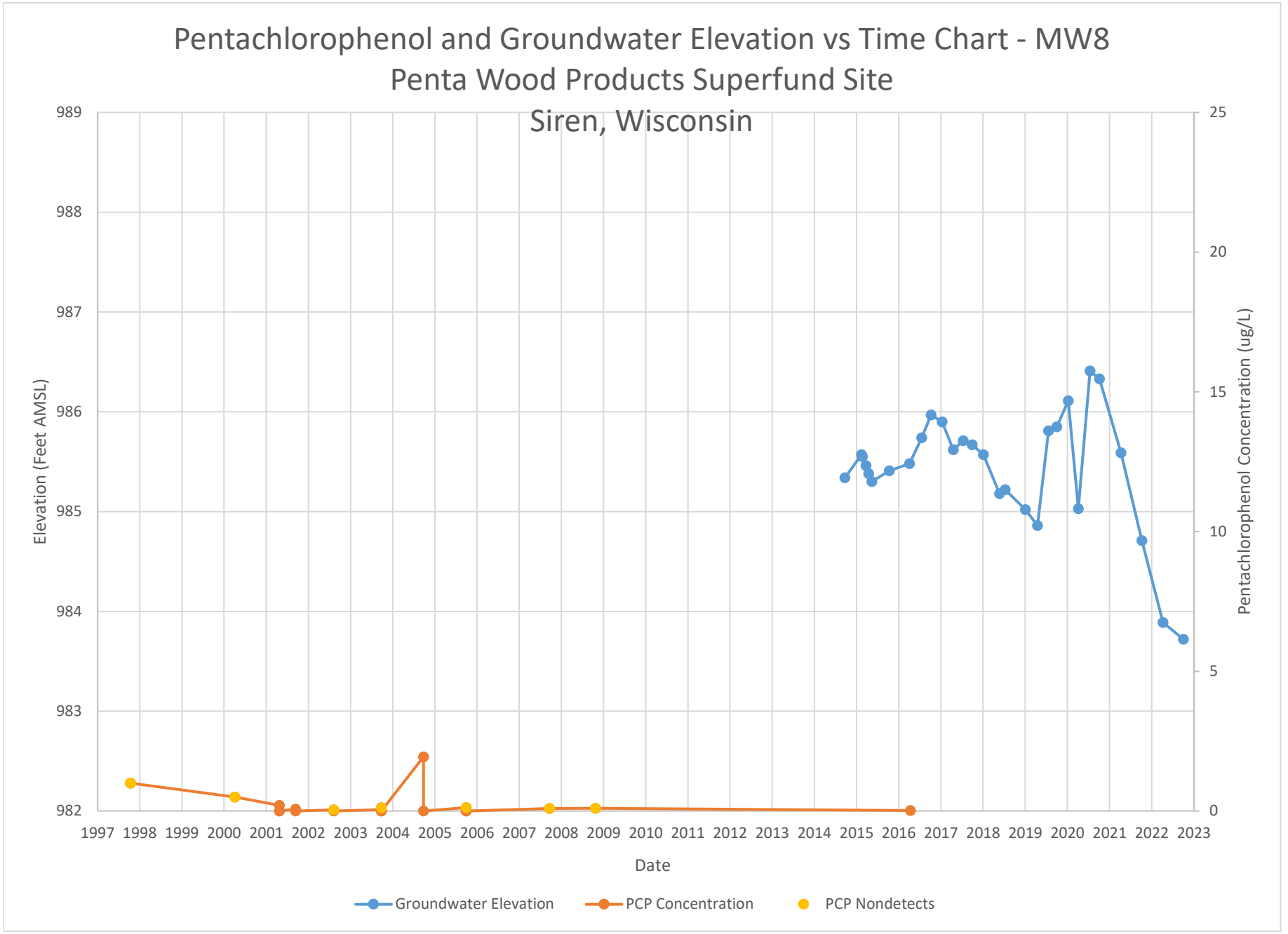
Date
Groundwater Elevation
PCP Concentration
PCP Nondetects


Pentachlorophenol and Groundwater Elevation vs Time Chart - MW8
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
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986
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983
982
Pentachlorophenol Concentration (ug/L)
25
20
15
10
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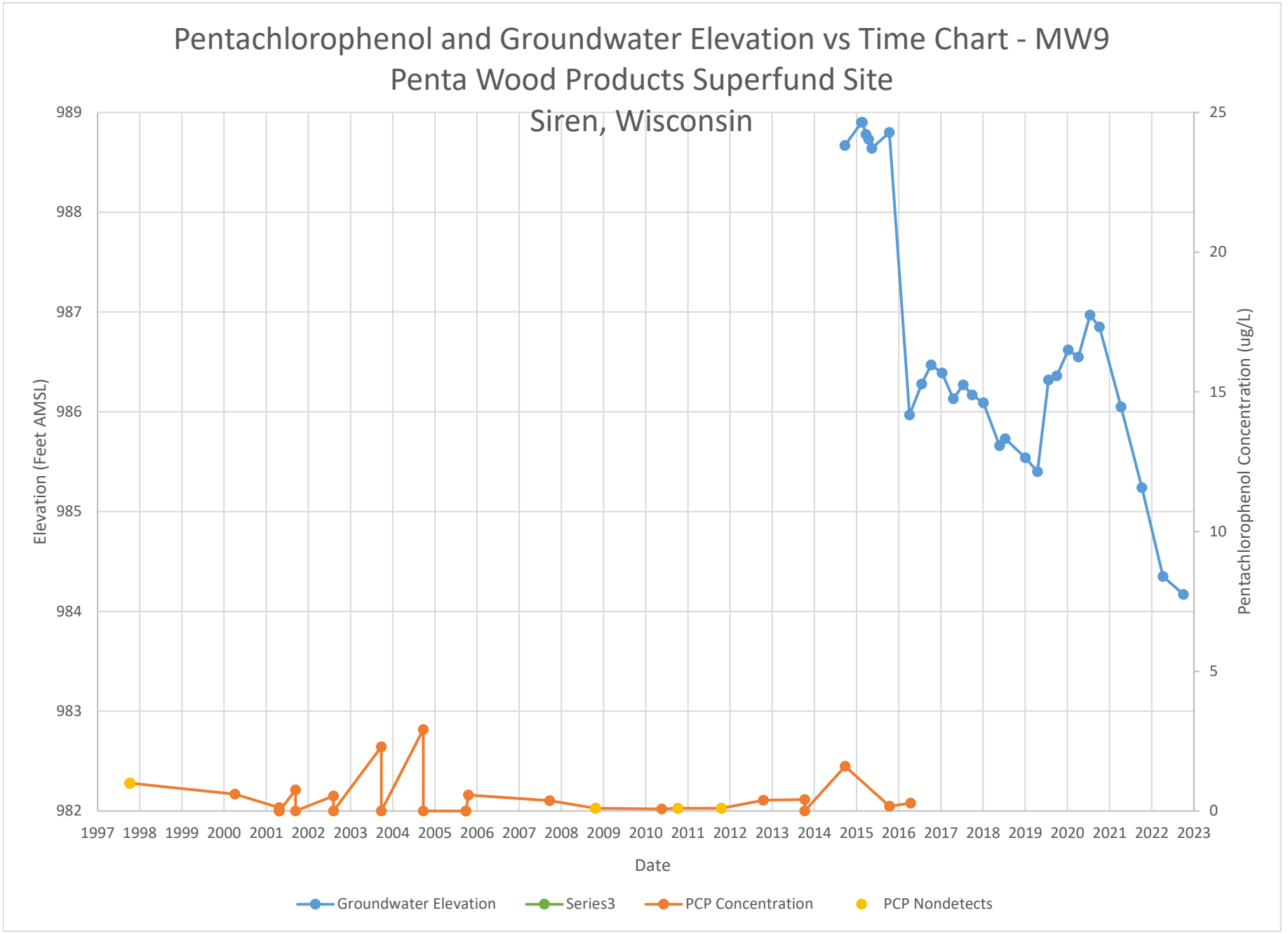
Date
Groundwater Elevation
PCP Concentration
PCP Nondetects


Pentachlorophenol and Groundwater Elevation vs Time Chart - MW9
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
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983
982
Pentachlorophenol Concentration (ug/L)
25
20
15
10
5
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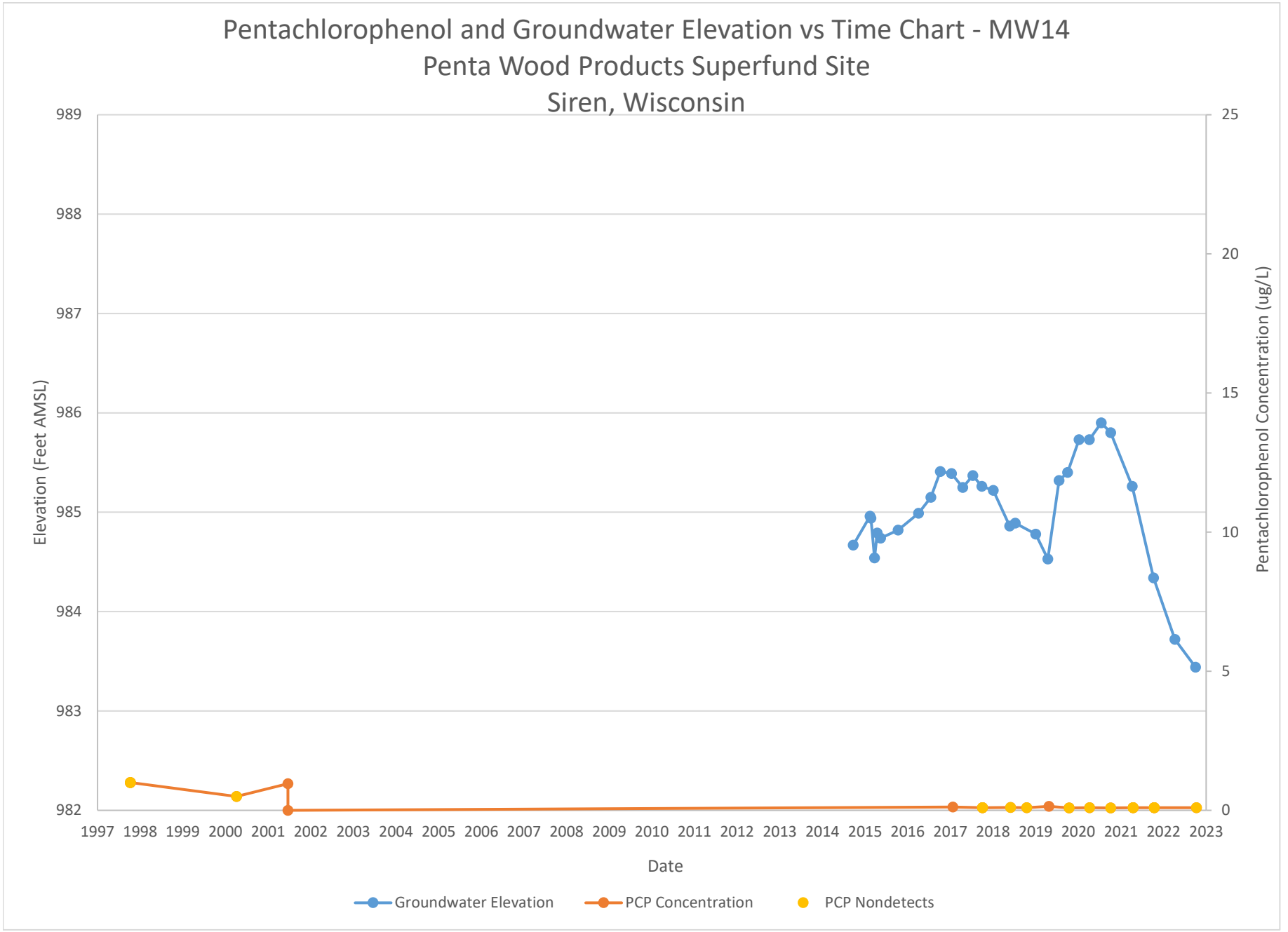
Date
Groundwater Elevation
Series3
PCP Concentration
PCP Nondetects


Pentachlorophenol and Groundwater Elevation vs Time Chart - MW14
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
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988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
25
20
15
10
5
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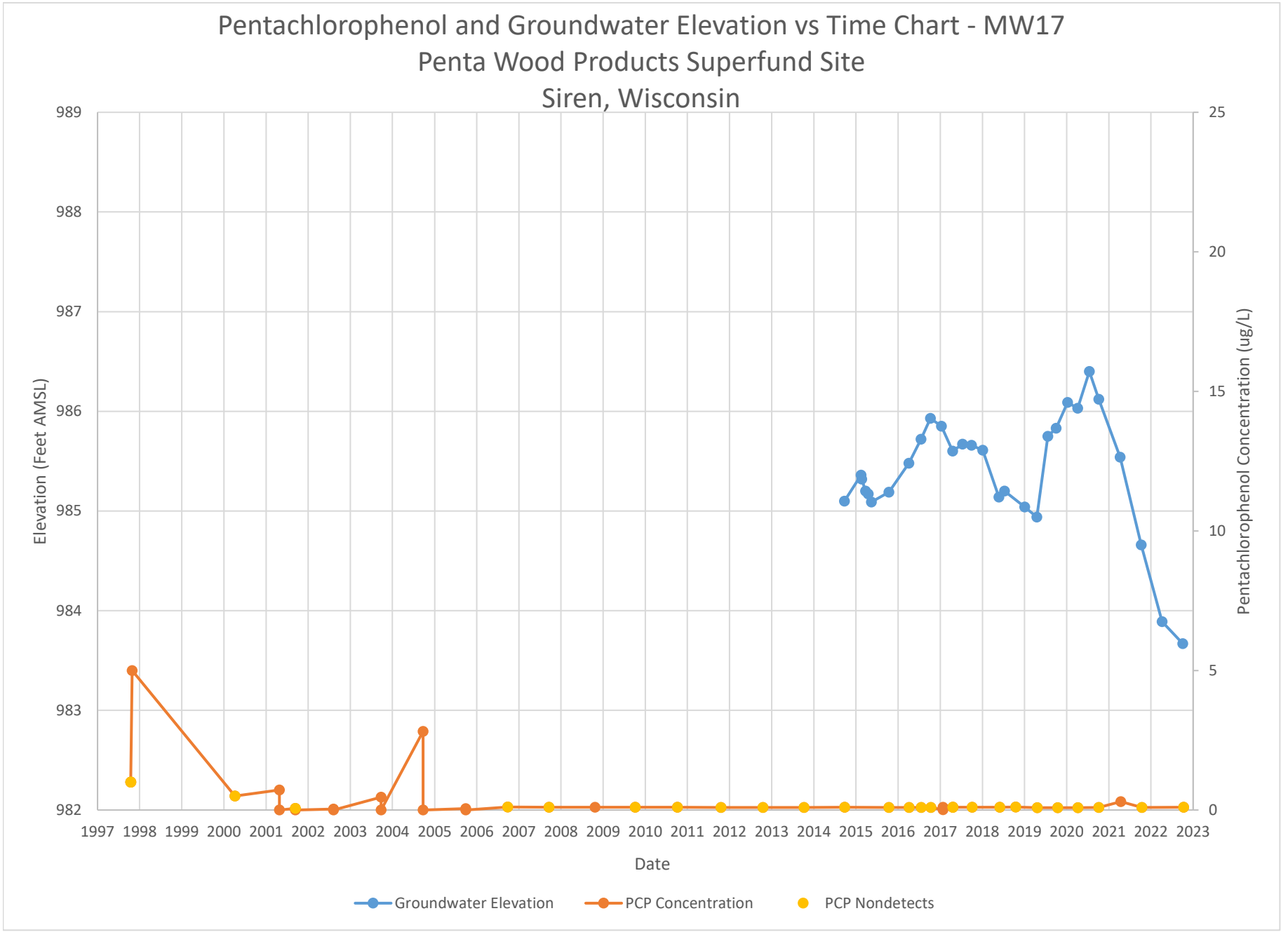
Date
Groundwater Elevation
PCP Concentration
PCP Nondetects


Pentachlorophenol and Groundwater Elevation vs Time Chart - MW17
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
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988
987
986
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983
982
Pentachlorophenol Concentration (ug/L)
25
20
15
10
5
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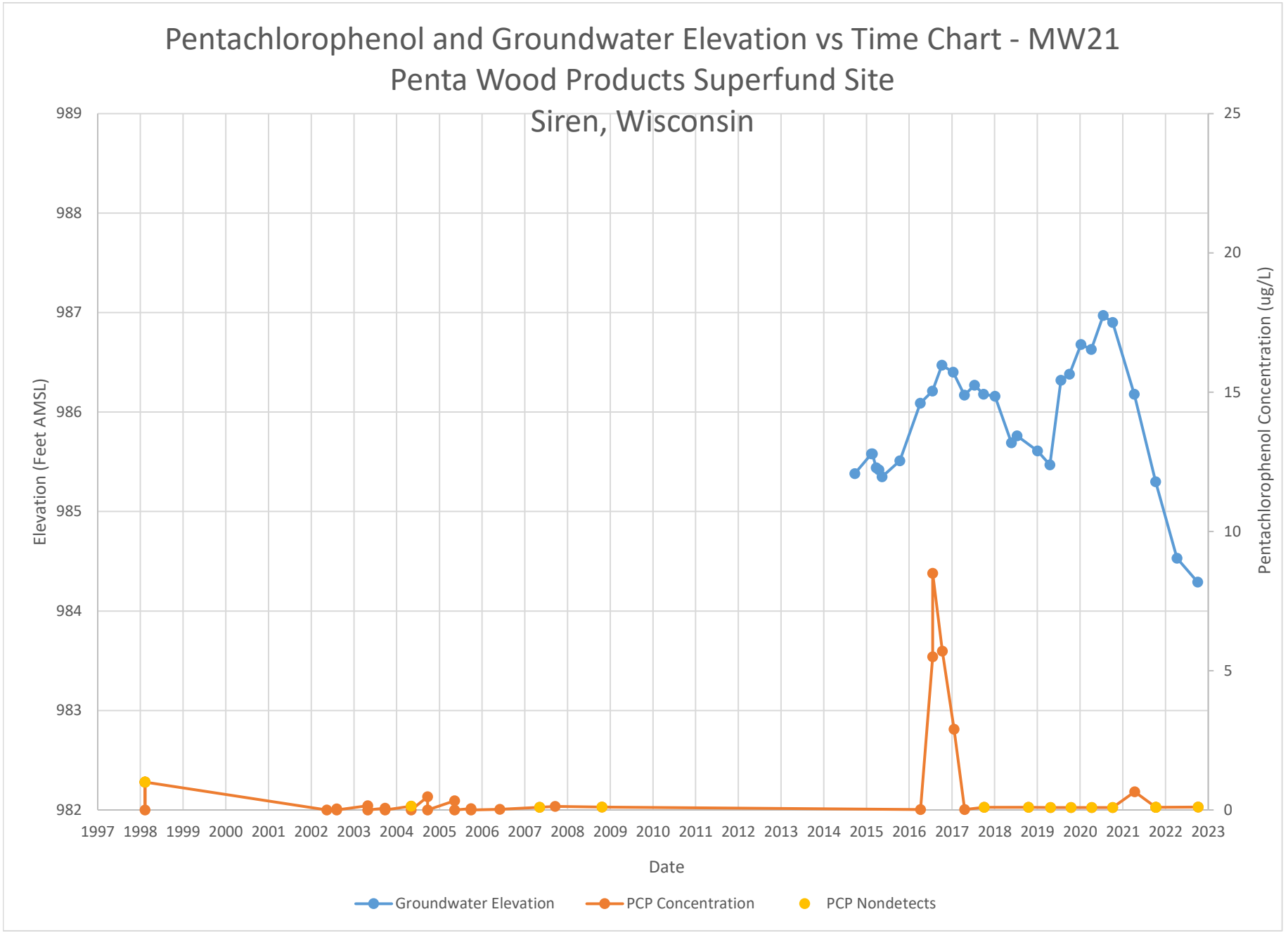
Date
Groundwater Elevation
PCP Concentration
PCP Nondetects


Pentachlorophenol and Groundwater Elevation vs Time Chart - MW21
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
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988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
25
20
15
10
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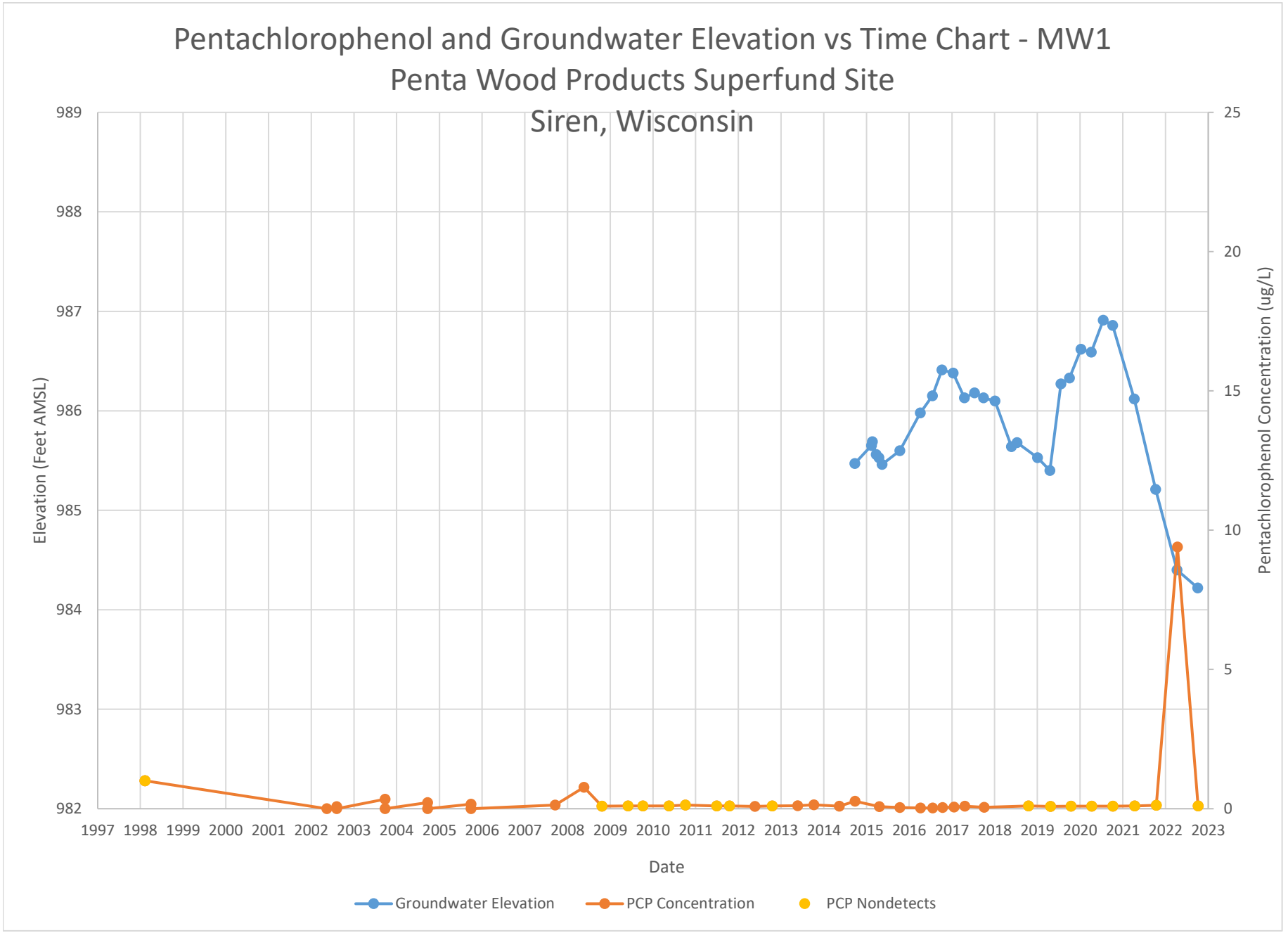
Date
Groundwater Elevation
PCP Concentration
PCP Nondetects


Pentachlorophenol and Groundwater Elevation vs Time Chart - MW1
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
989
988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
25
20
15
10
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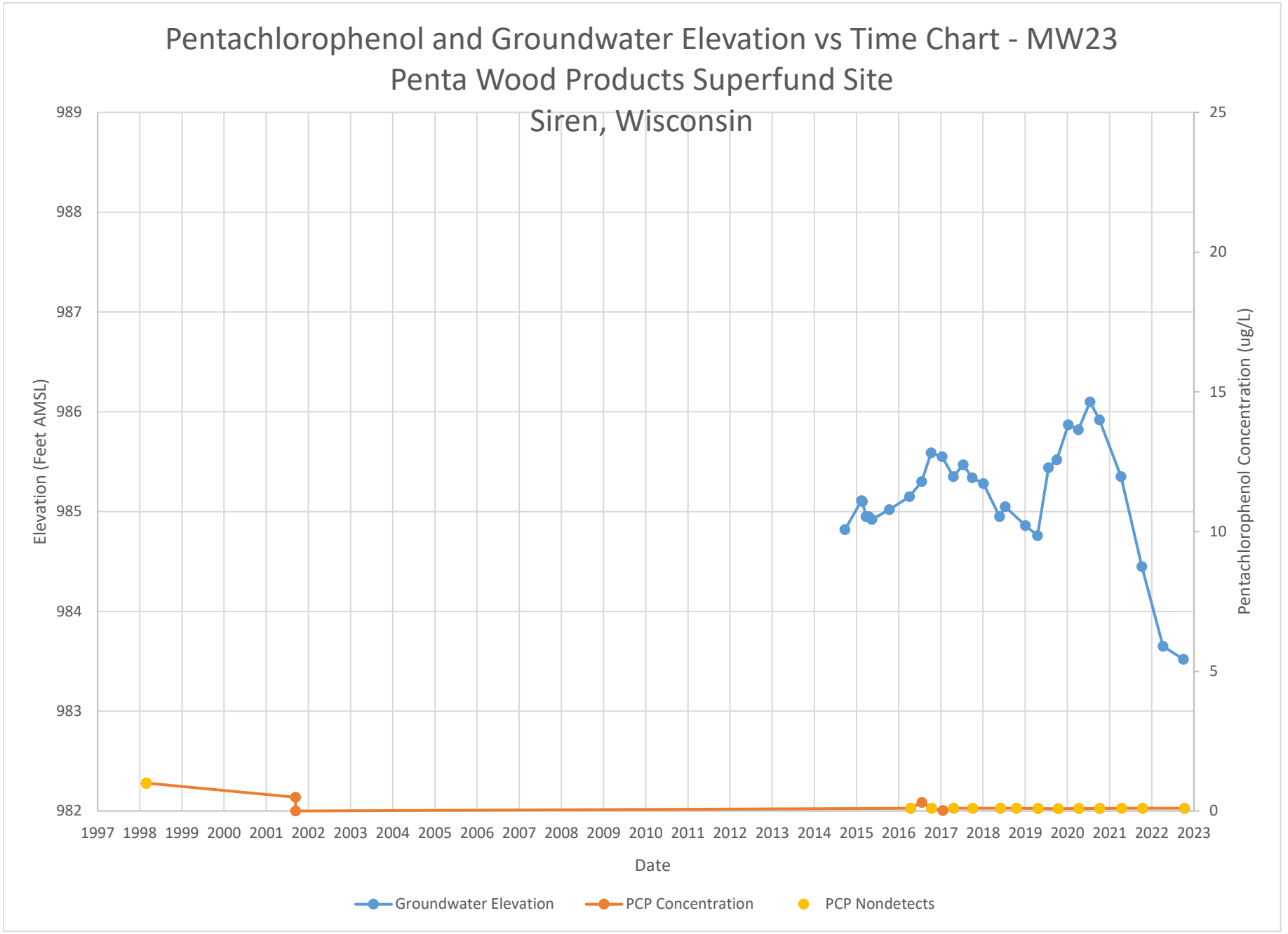
Date
Groundwater Elevation
PCP Concentration
PCP Nondetects


Pentachlorophenol and Groundwater Elevation vs Time Chart - MW23
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
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988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
25
20
15
10
5
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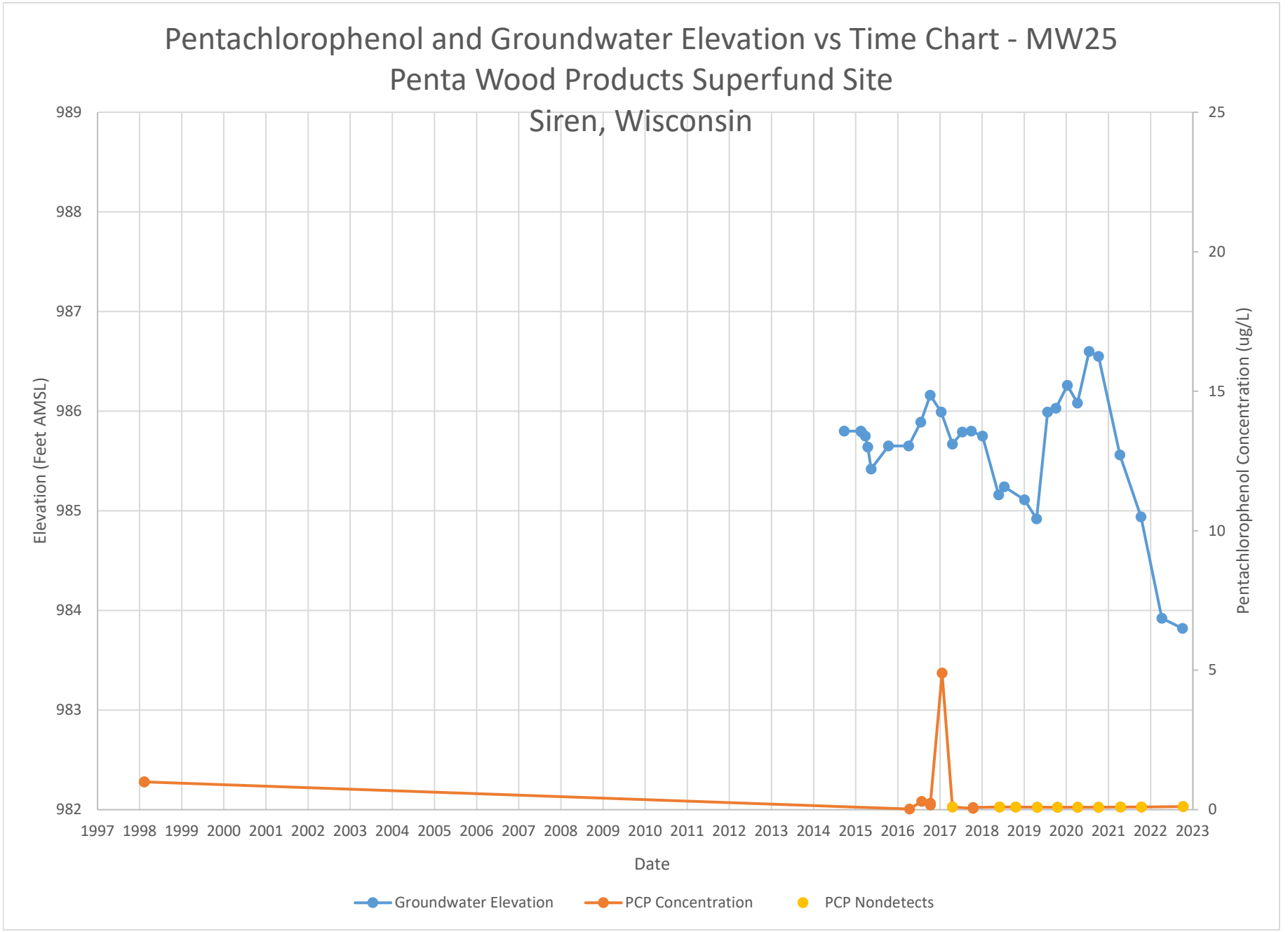
Date
Groundwater Elevation
PCP Concentration
PCP Nondetects


Pentachlorophenol and Groundwater Elevation vs Time Chart - MW25
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
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988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
25
20
15
10
5
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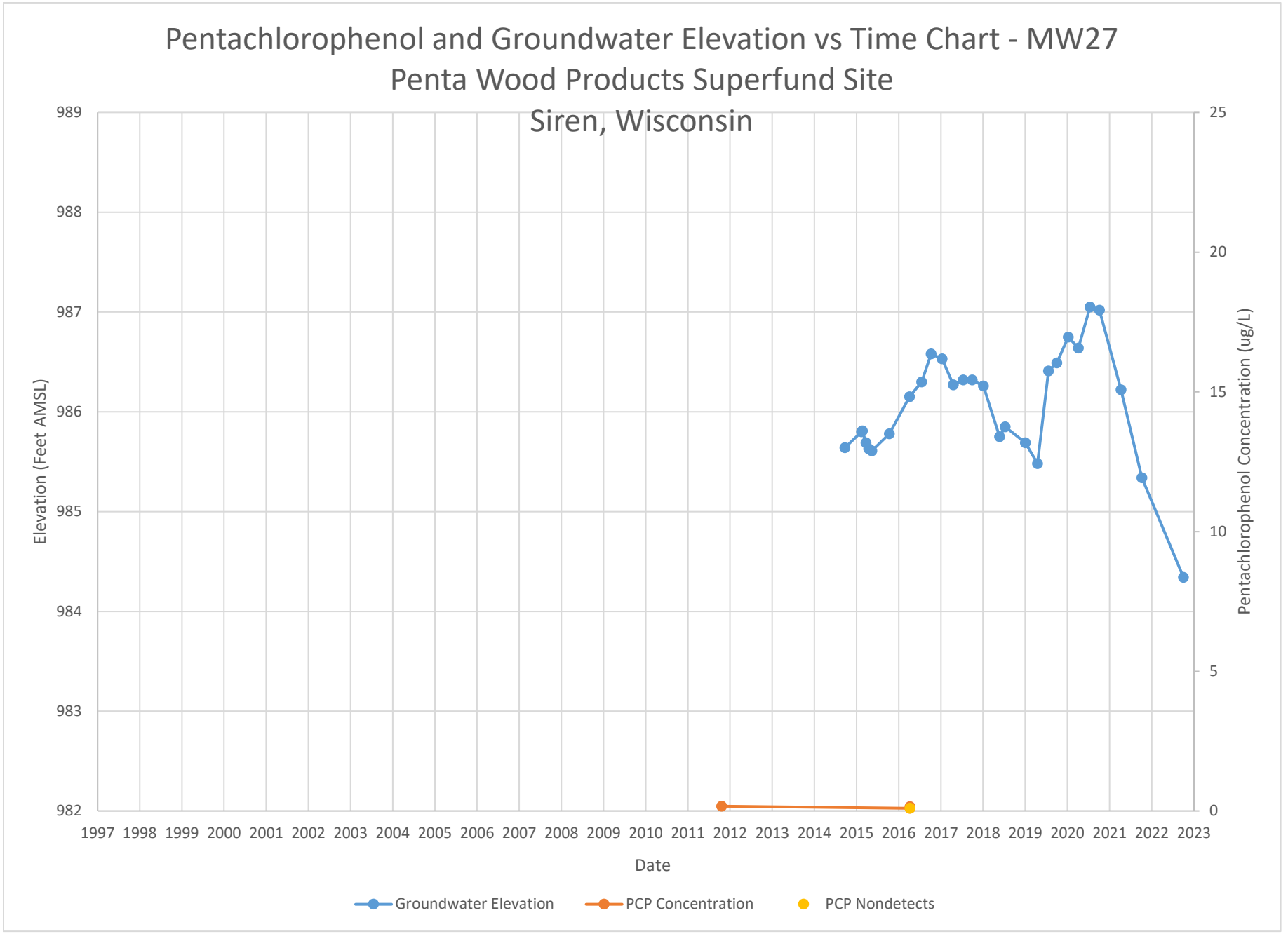
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
PCP Concentration
PCP Nondetects


Pentachlorophenol and Groundwater Elevation vs Time Chart - MW27
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
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988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
25
20
15
10
5
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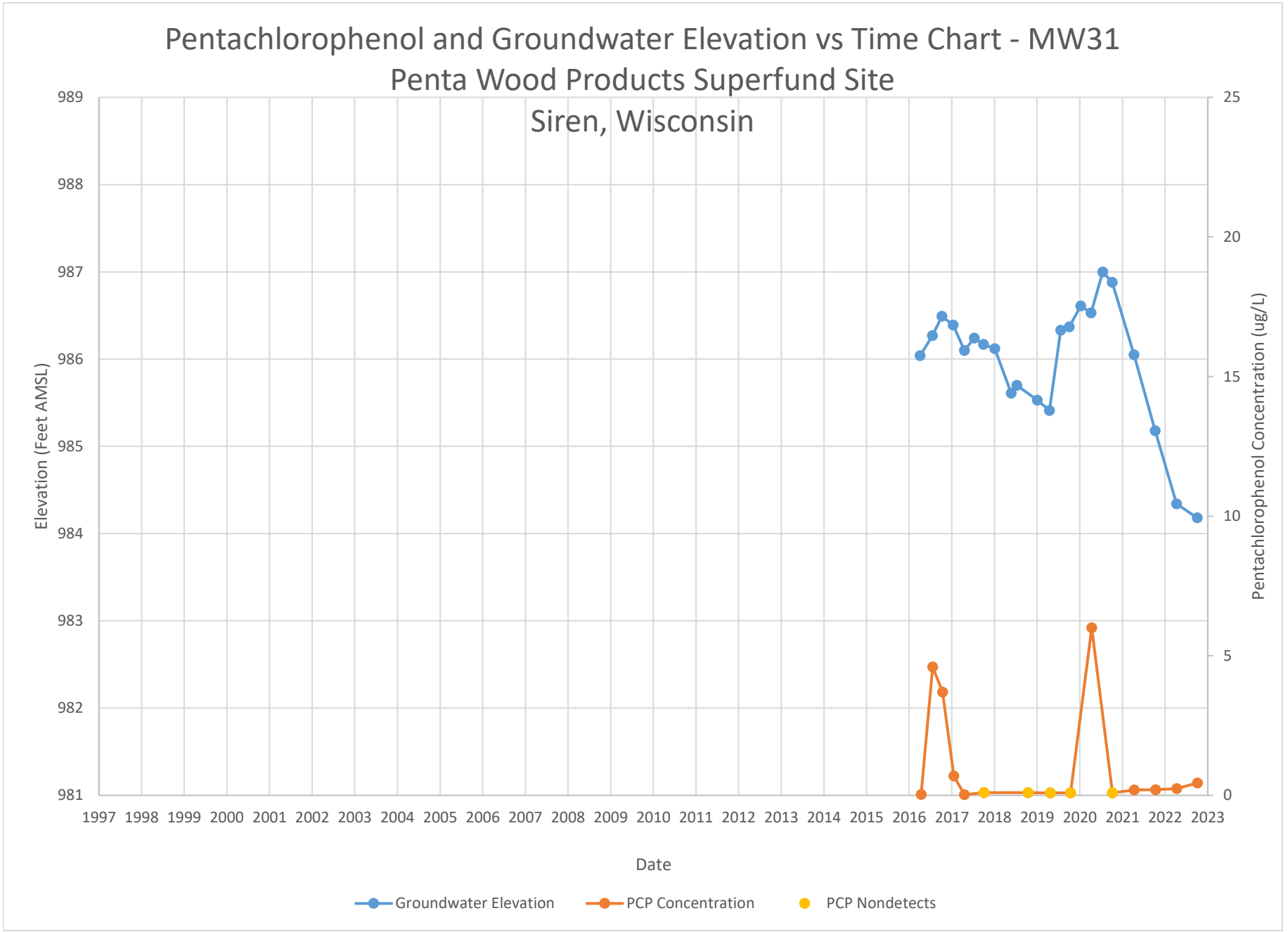
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
PCP Concentration
PCP Nondetects


Pentachlorophenol and Groundwater Elevation vs Time Chart - MW31
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
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988
987
986
985
984
983
982
981
Pentachlorophenol Concentration (ug/L)
25
20
15
10
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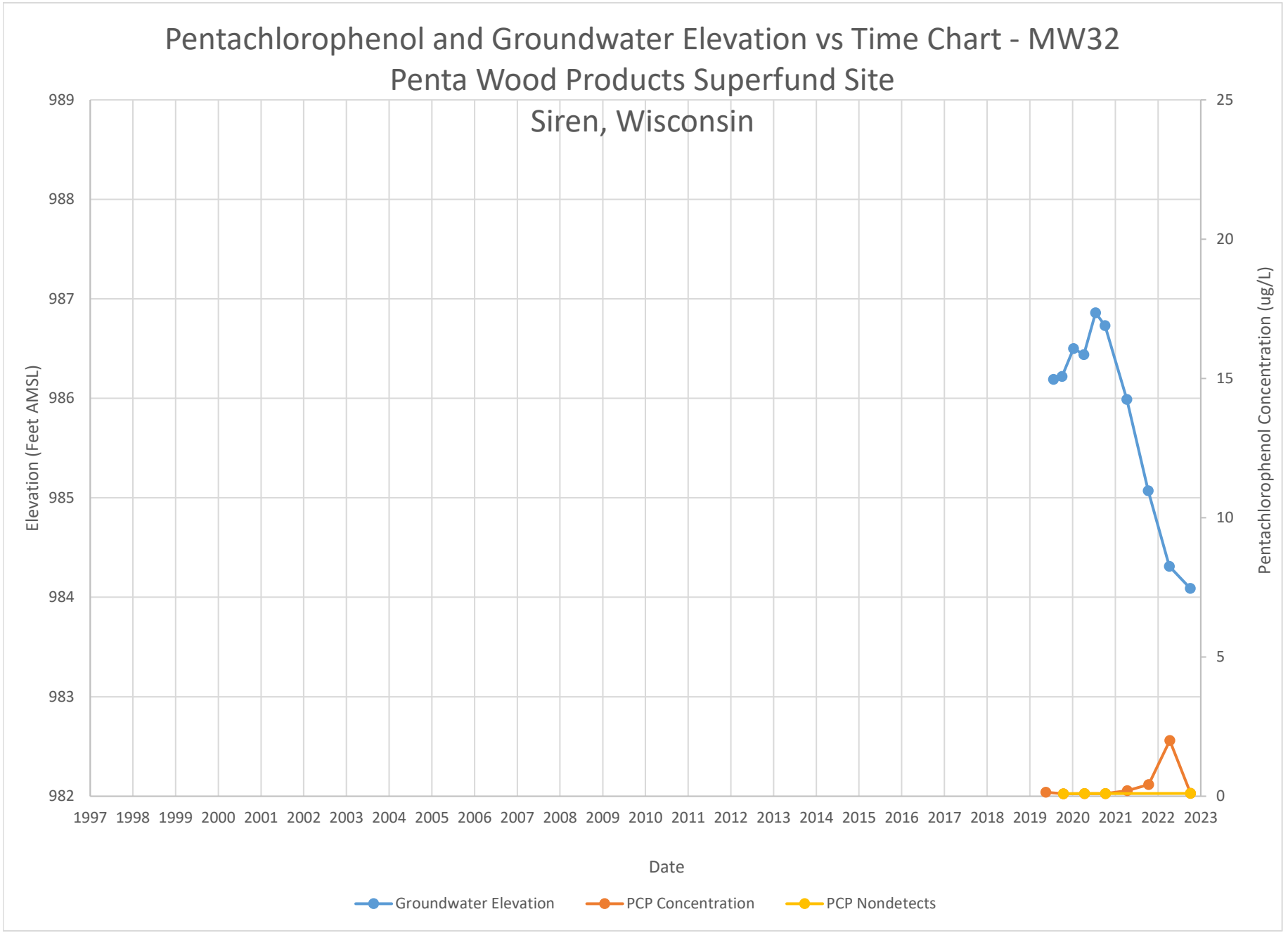
Date
Groundwater Elevation
PCP Concentration
PCP Nondetects


Pentachlorophenol and Groundwater Elevation vs Time Chart - MW32
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
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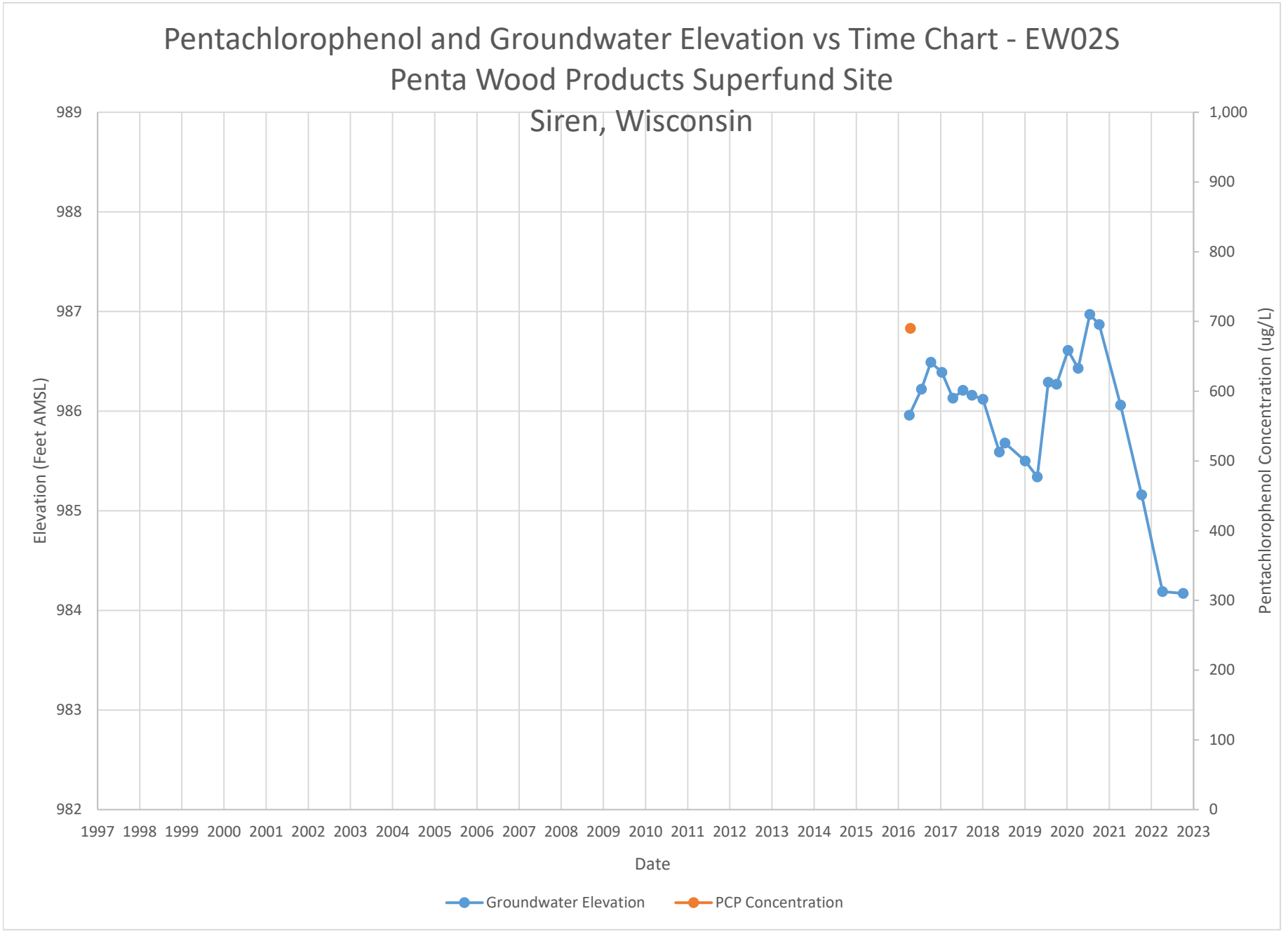
988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
25
20
15
10
5
0
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
PCP Concentration
PCP Nondetects


Pentachlorophenol and Groundwater Elevation vs Time Chart - EW02S
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
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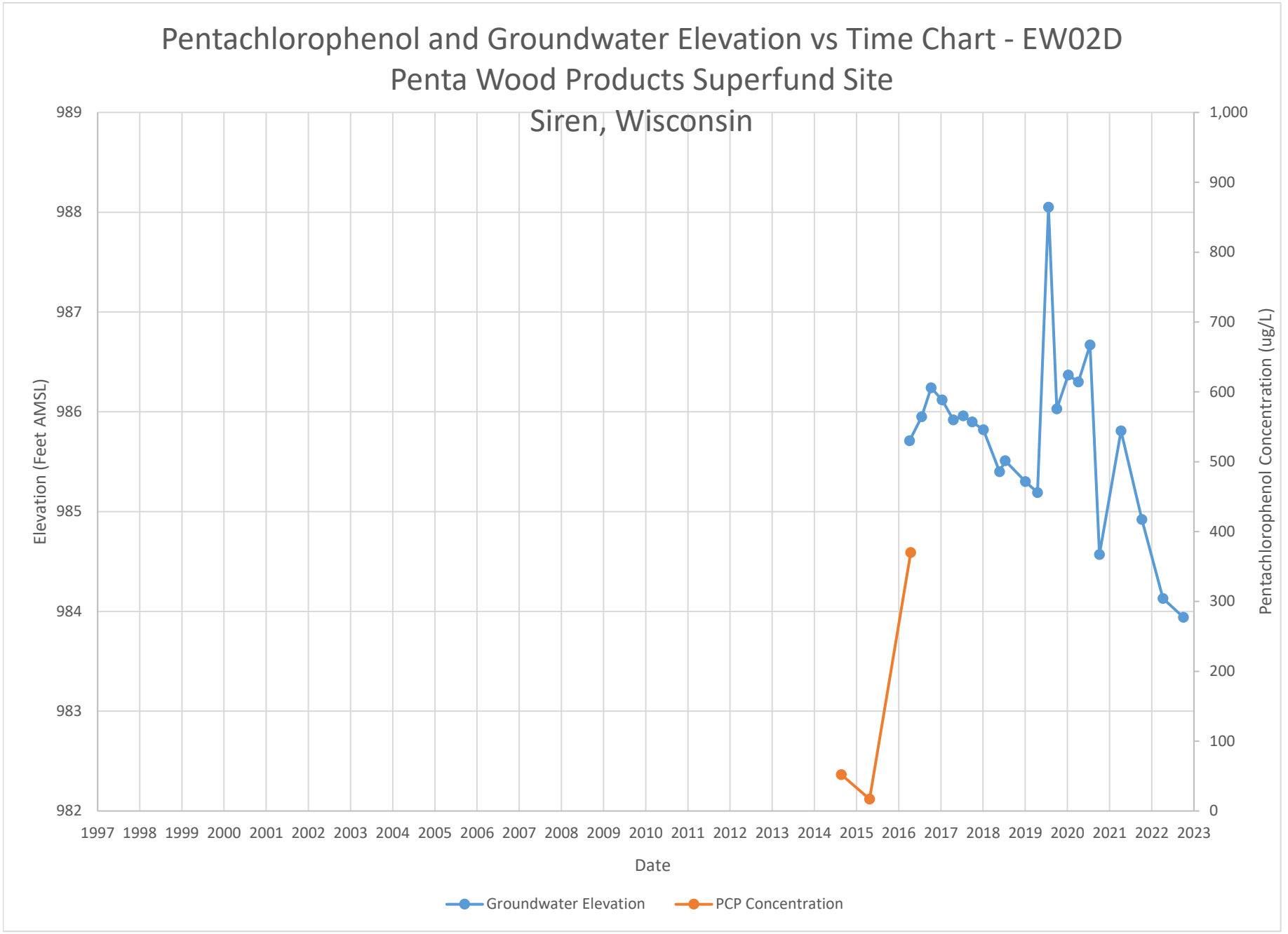
988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
1,000
900
800
700
600
500
400
300
200
100
0
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
PCP Concentration


Pentachlorophenol and Groundwater Elevation vs Time Chart - EW02D
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
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988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
1,000
900
800
700
600
500
400
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200
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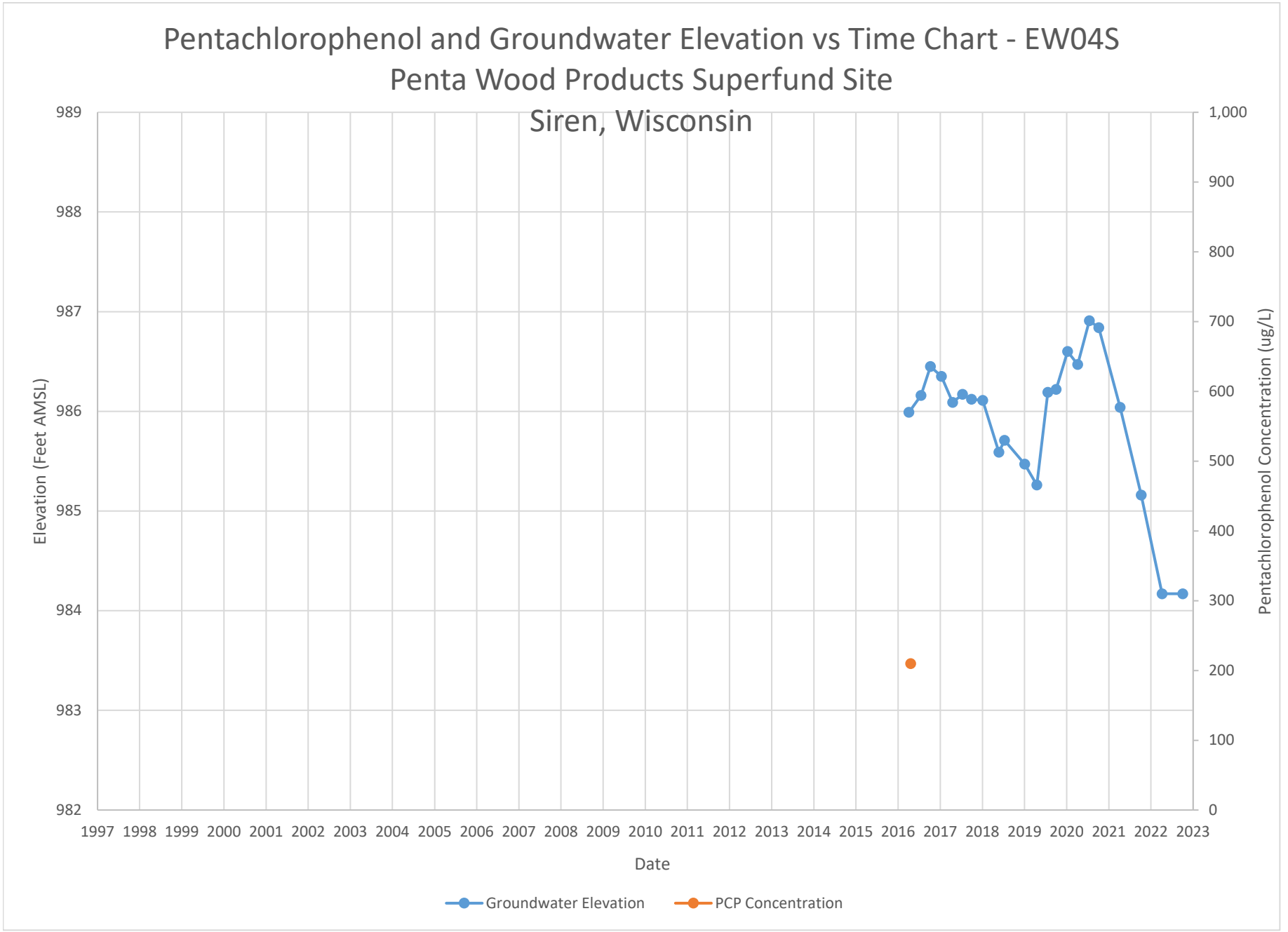
0
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
PCP Concentration


Pentachlorophenol and Groundwater Elevation vs Time Chart - EW04S
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
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988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
1,000
900
800
700
600
500
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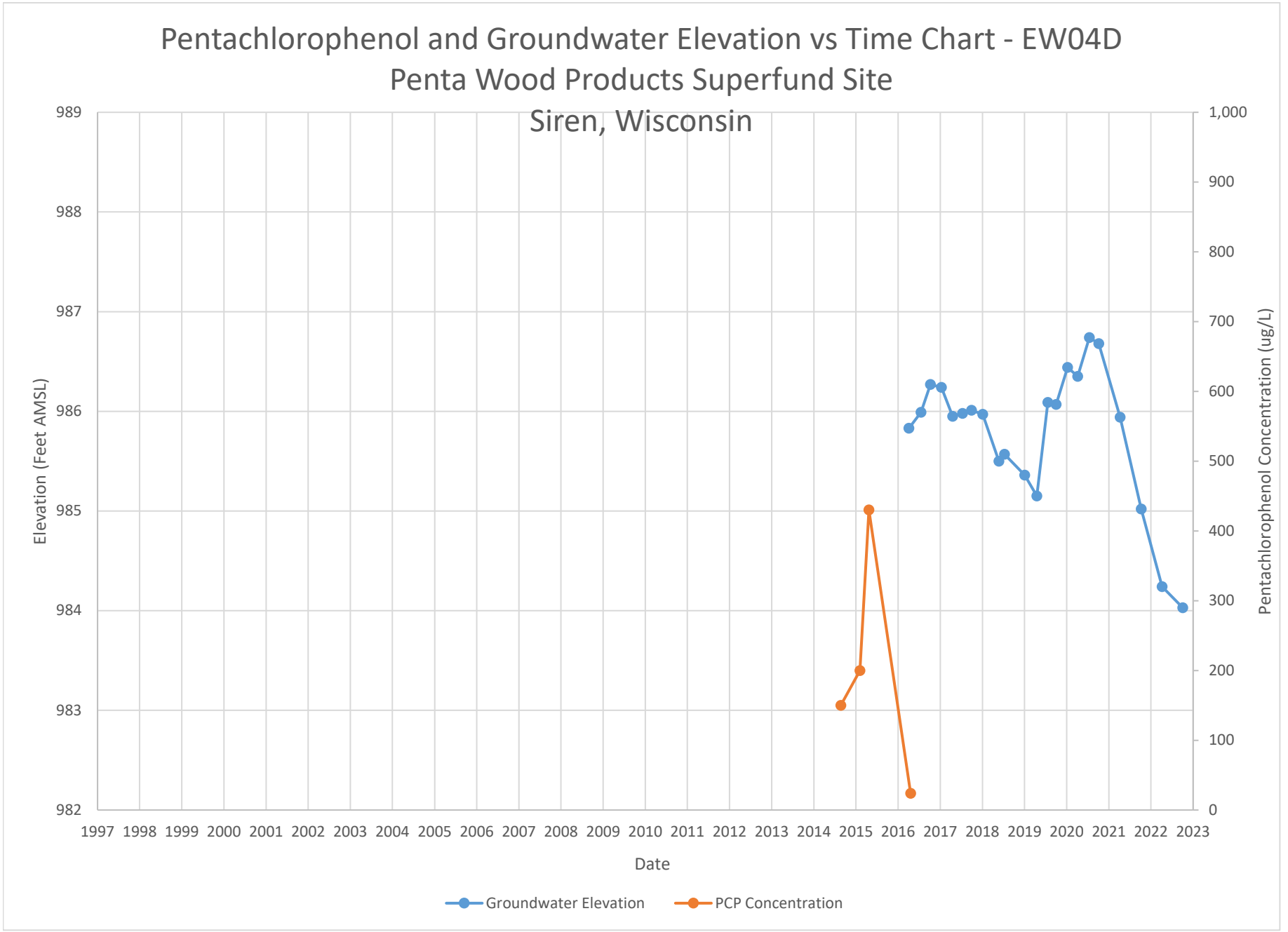
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
PCP Concentration


Pentachlorophenol and Groundwater Elevation vs Time Chart - EW04D
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
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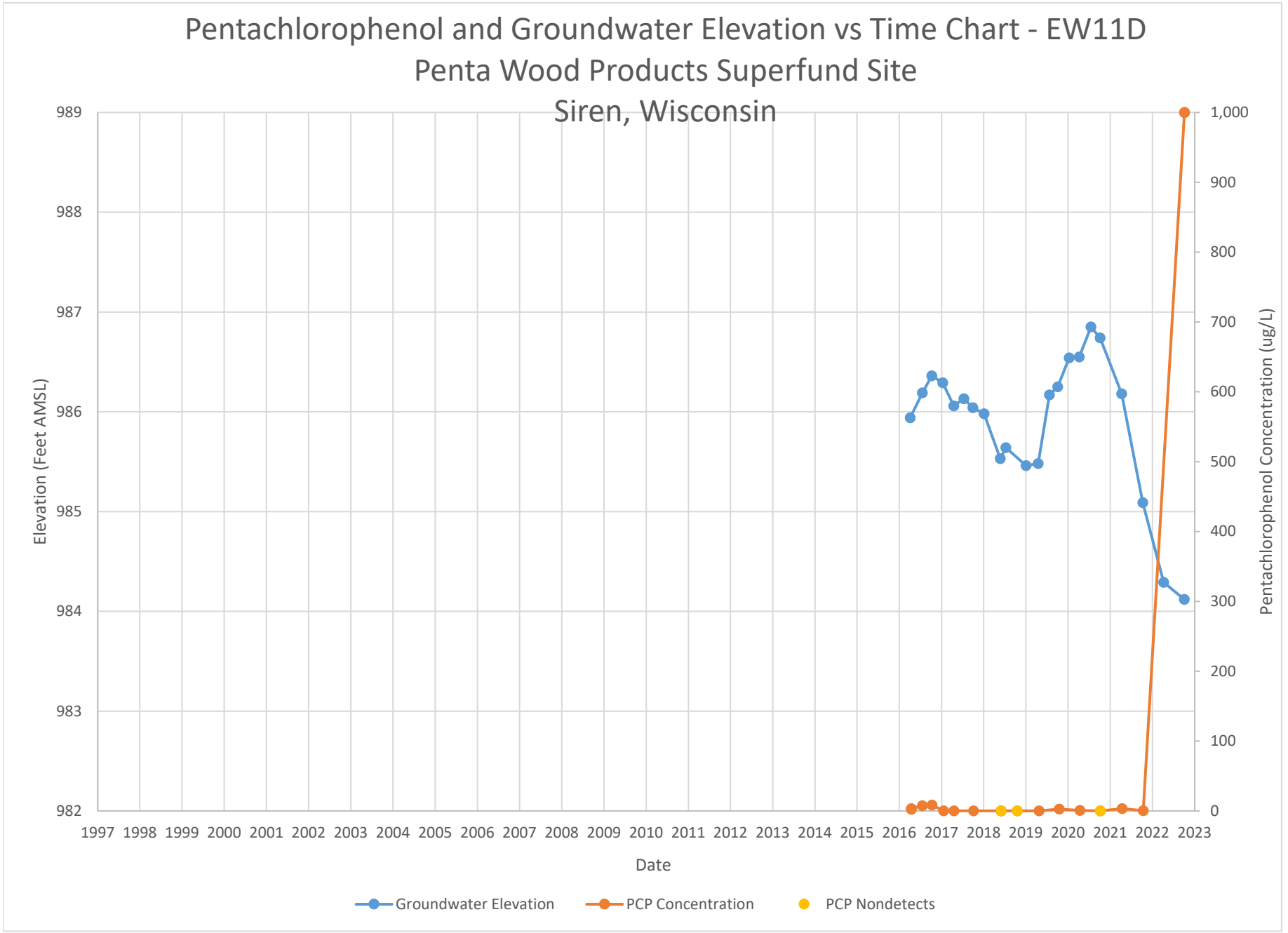
988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
1,000
900
800
700
600
500
400
300
200
100
0
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
PCP Concentration


Pentachlorophenol and Groundwater Elevation vs Time Chart - EW11D
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
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988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
1,000
900
800
700
600
500
400
300
200
100
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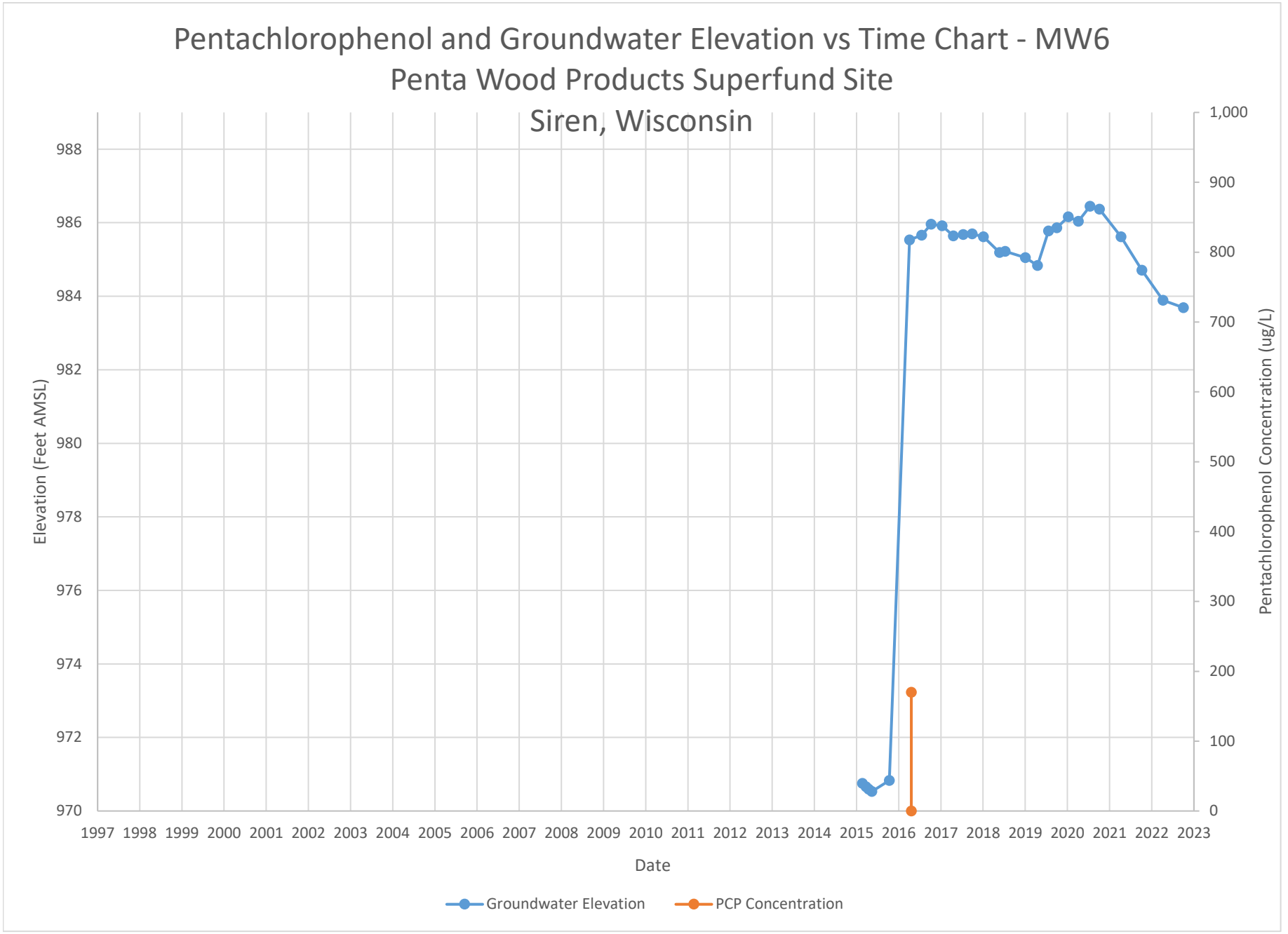
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
PCP Concentration
PCP Nondetects


Pentachlorophenol and Groundwater Elevation vs Time Chart - MW6
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
988
986
984
982
980
978
976
974
972
970
Pentachlorophenol Concentration (ug/L)
1,000
900
800
700
600
500
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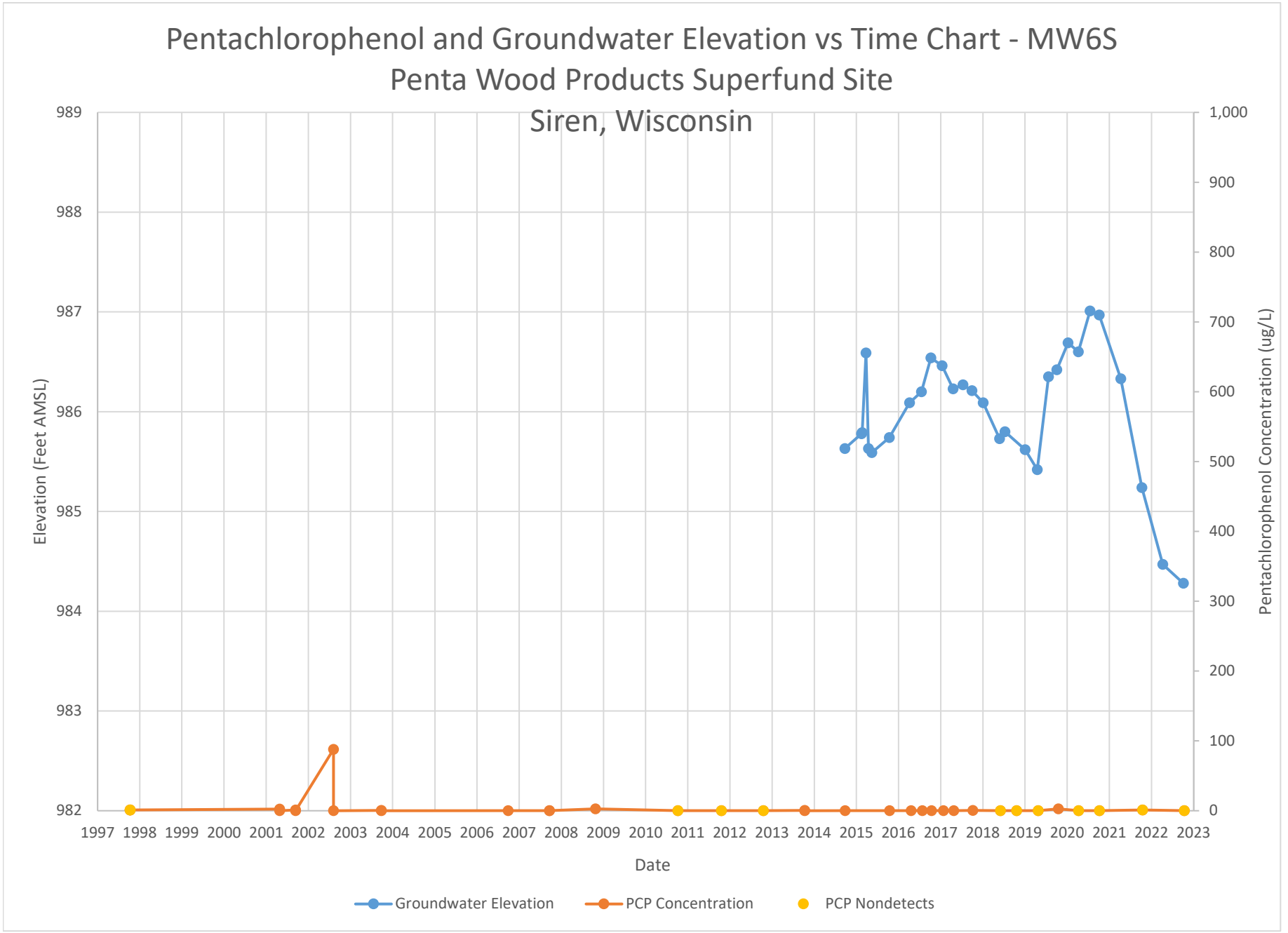
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
PCP Concentration


Pentachlorophenol and Groundwater Elevation vs Time Chart - MW6S
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
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988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
1,000
900
800
700
600
500
400
300
200
100
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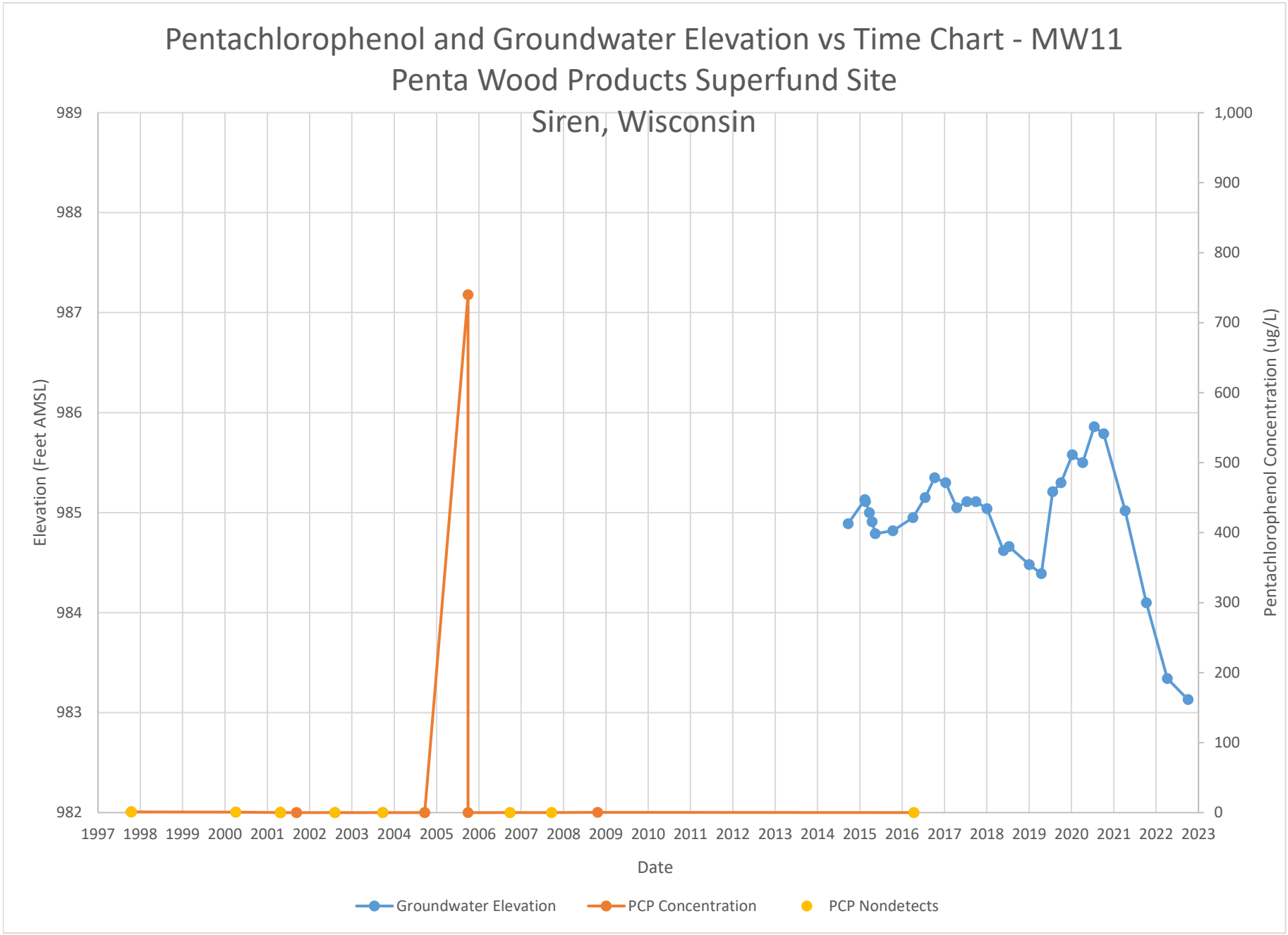
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
PCP Concentration
PCP Nondetects


Pentachlorophenol and Groundwater Elevation vs Time Chart - MW11
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
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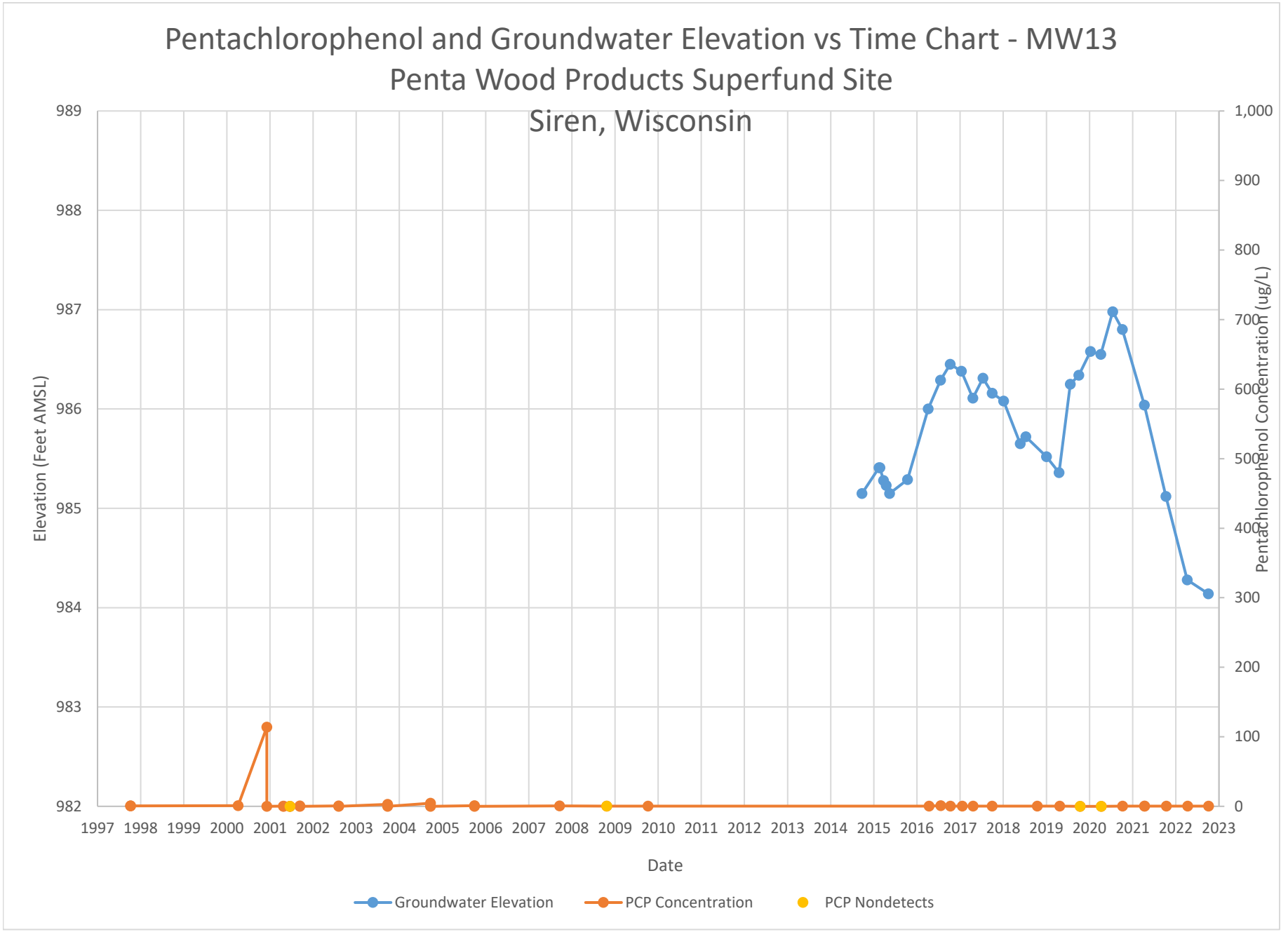
988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
1,000
900
800
700
600
500
400
300
200
100
0
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
PCP Concentration
PCP Nondetects


Pentachlorophenol and Groundwater Elevation vs Time Chart - MW13
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
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987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
1,000
900
800
700
600
500
400
300
200
100
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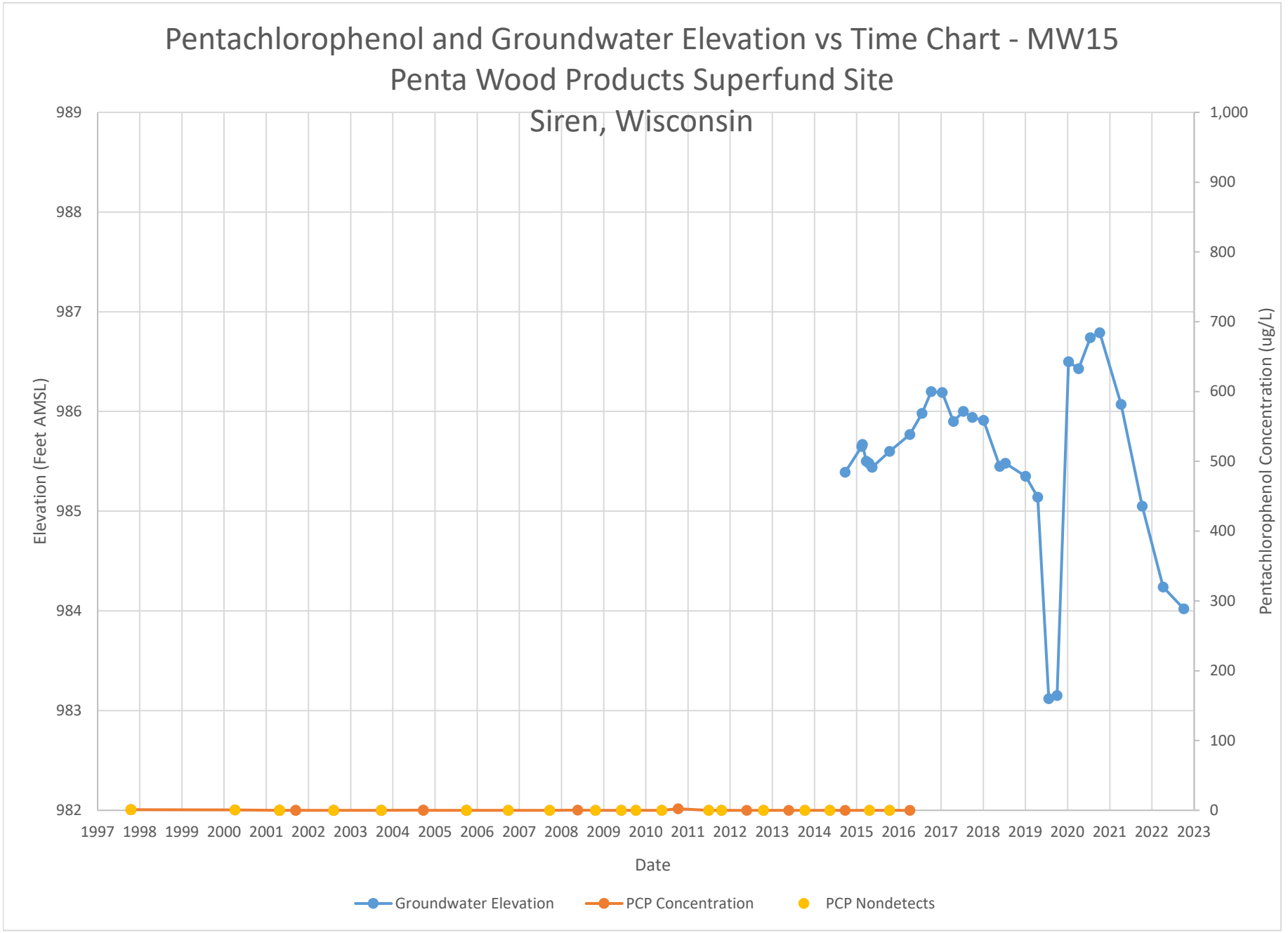
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
PCP Concentration
PCP Nondetects


Pentachlorophenol and Groundwater Elevation vs Time Chart - MW15
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
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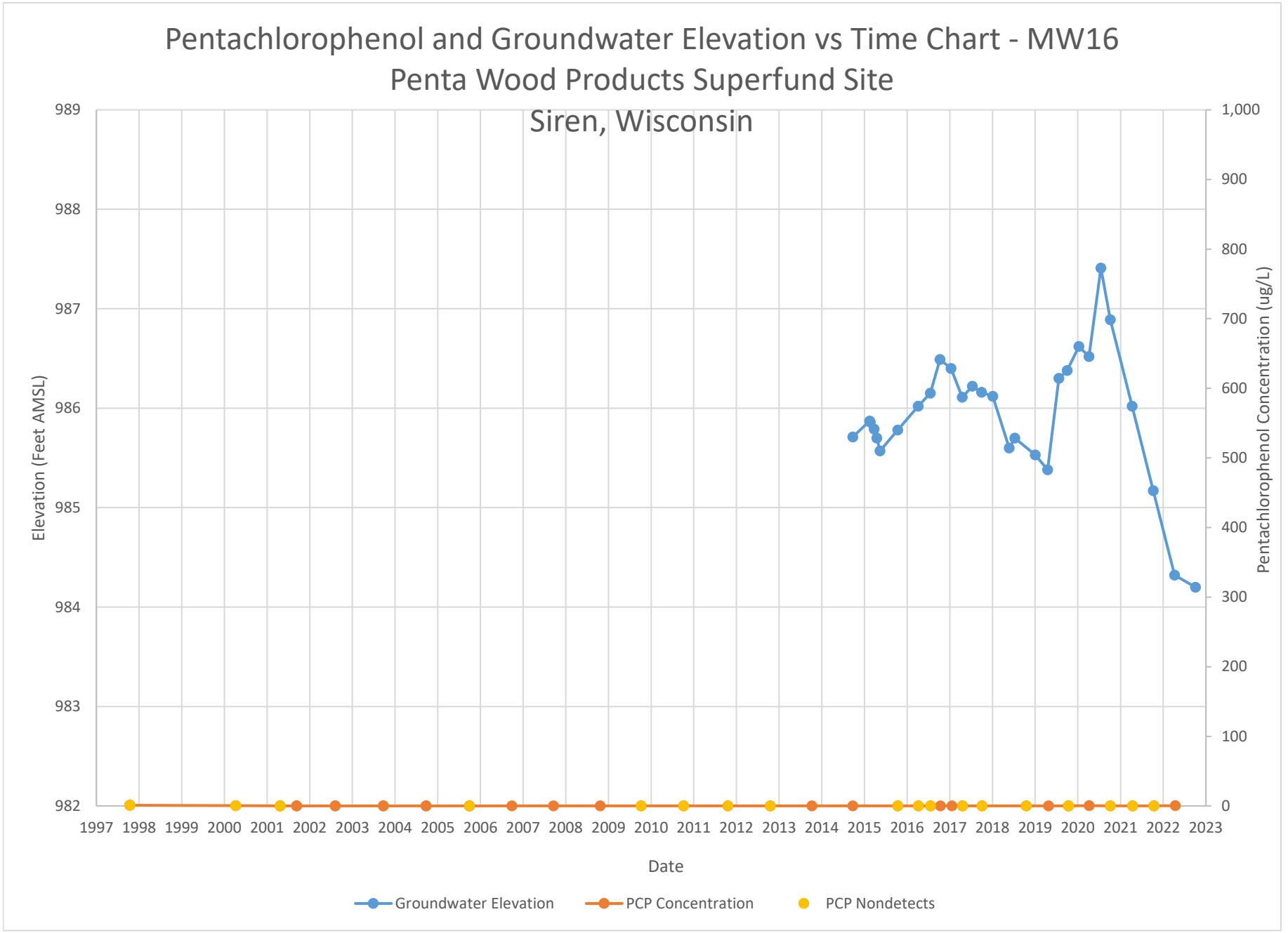
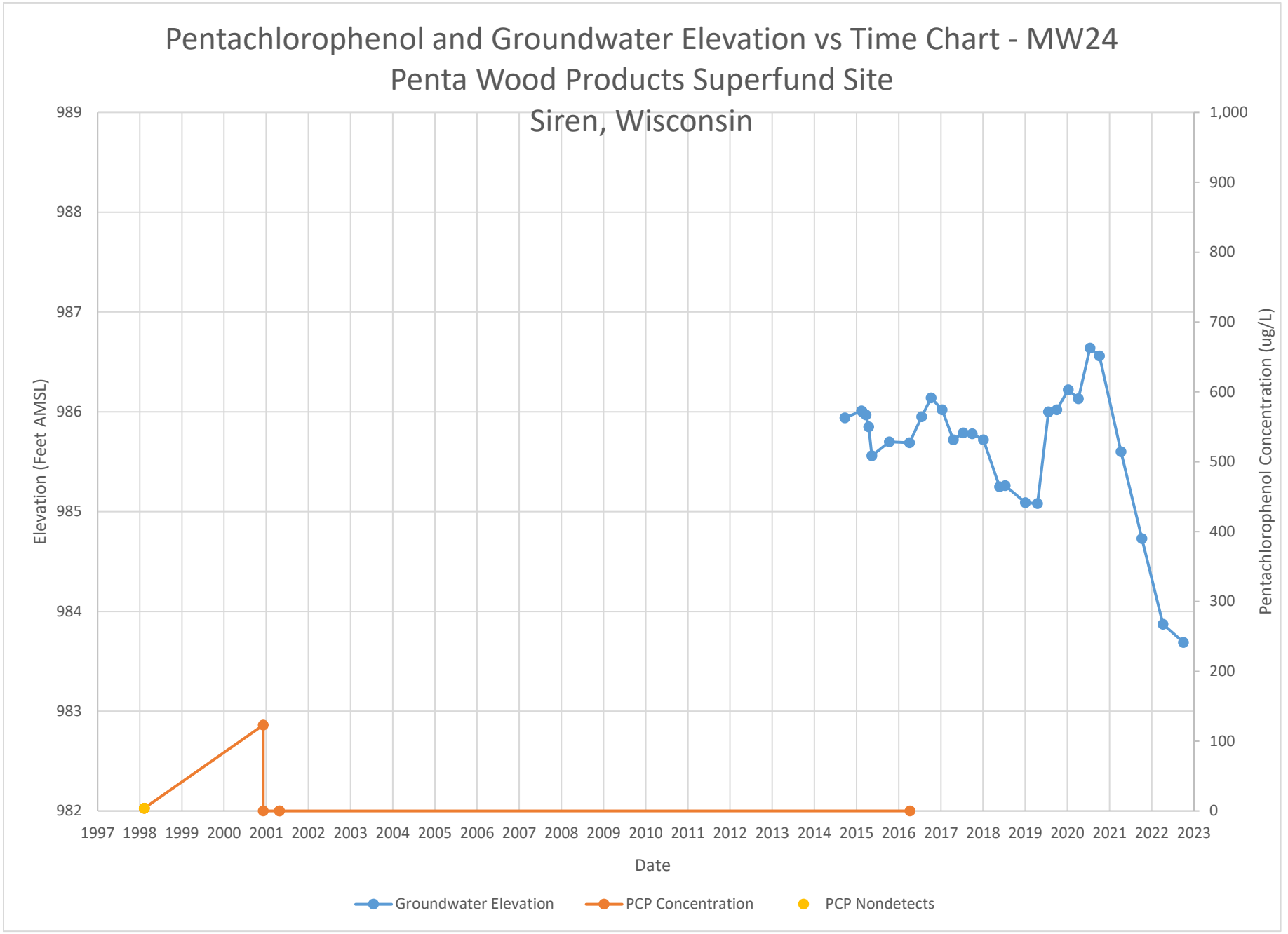
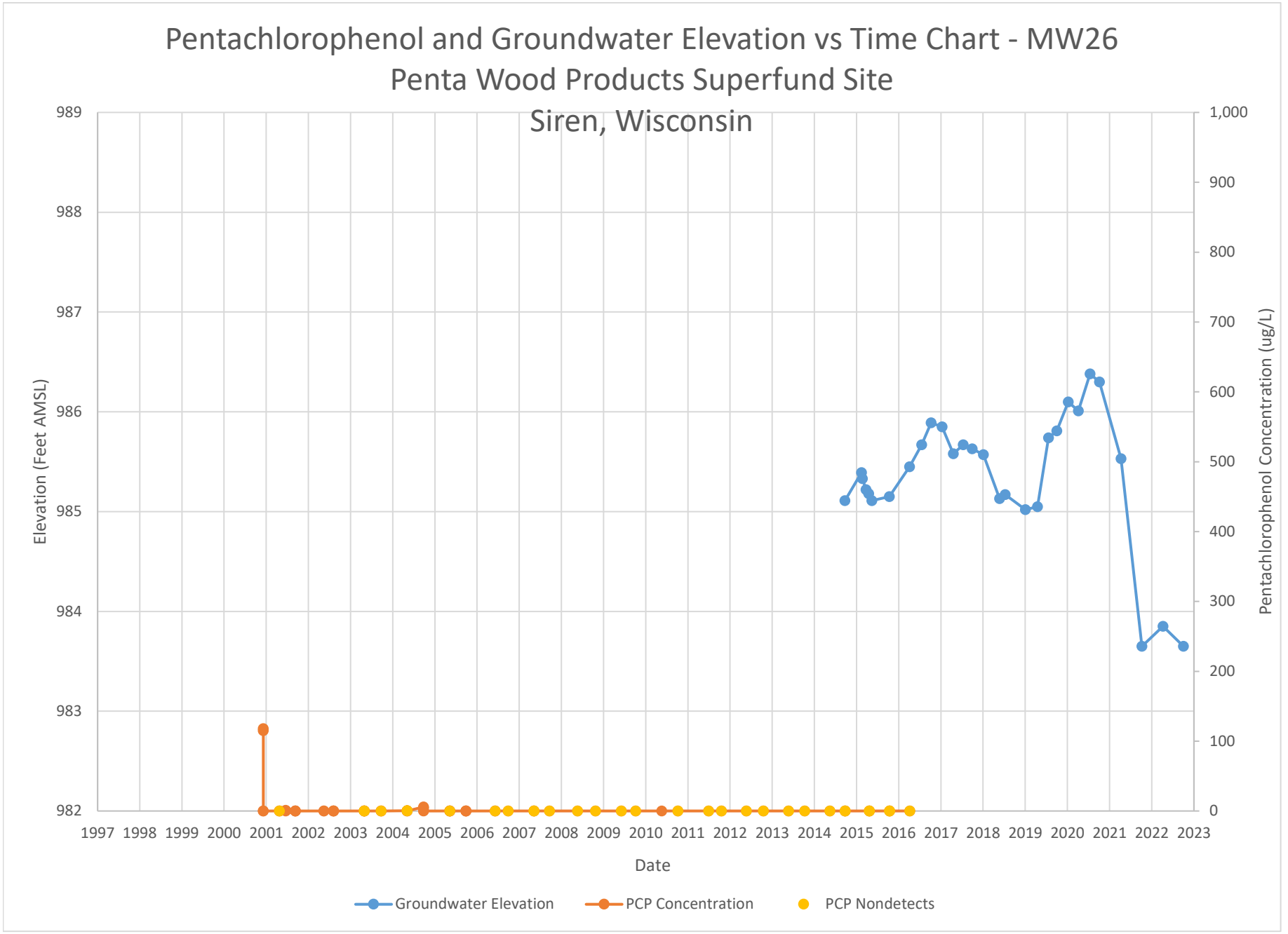
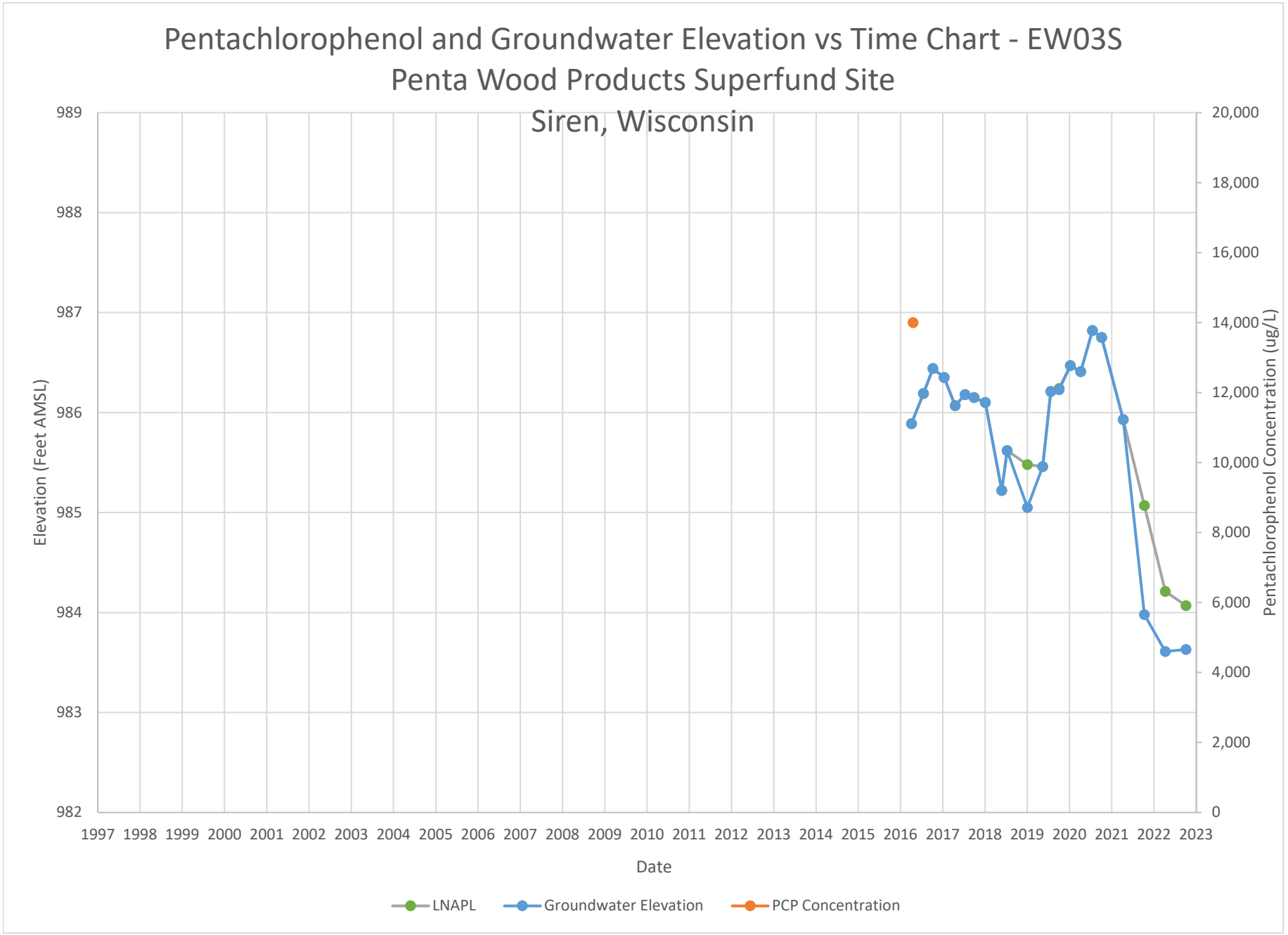
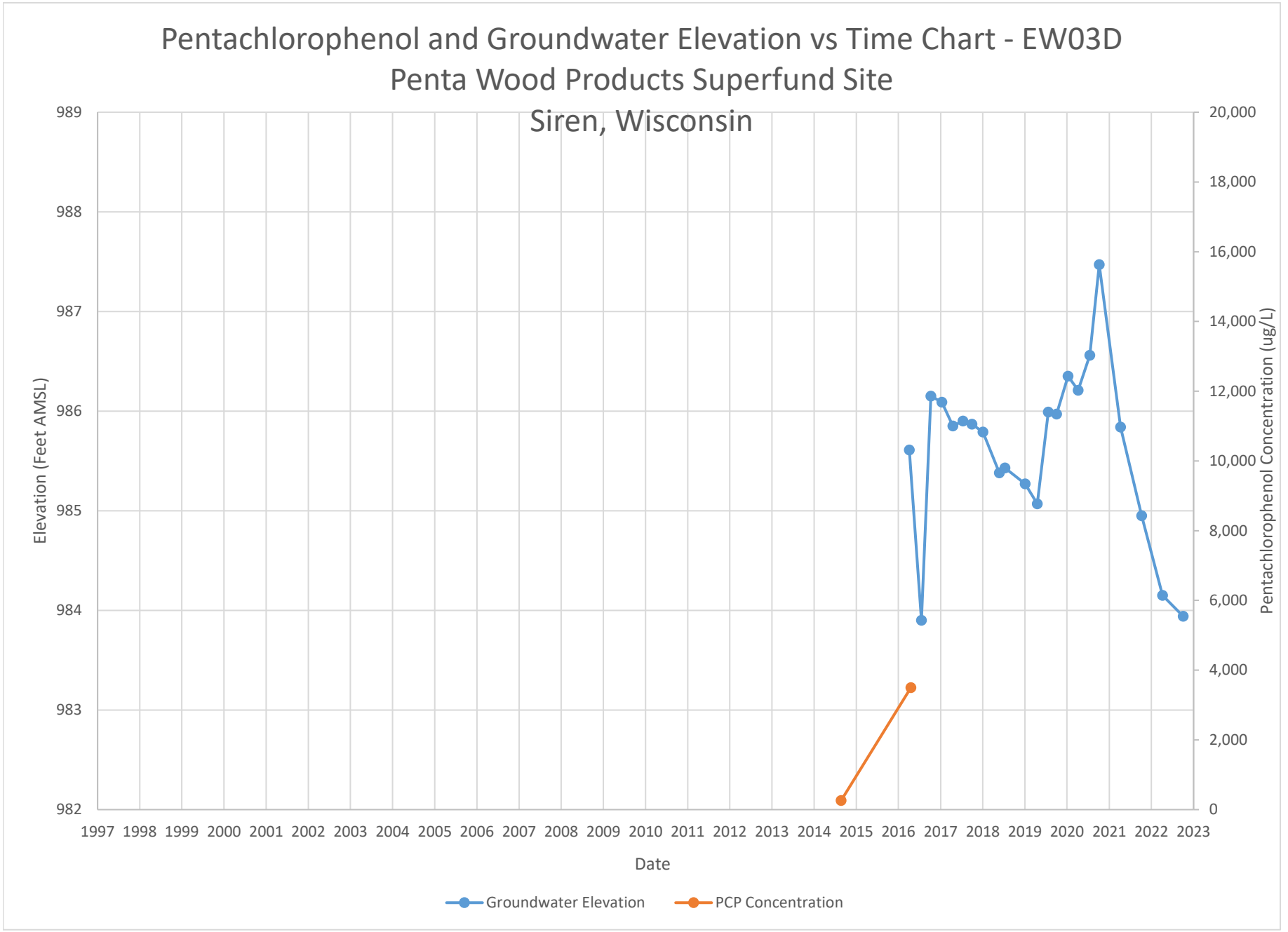
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
1,000
900
800
700
600
500
400
300
200
100
0
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
PCP Concentration
PCP Nondetects

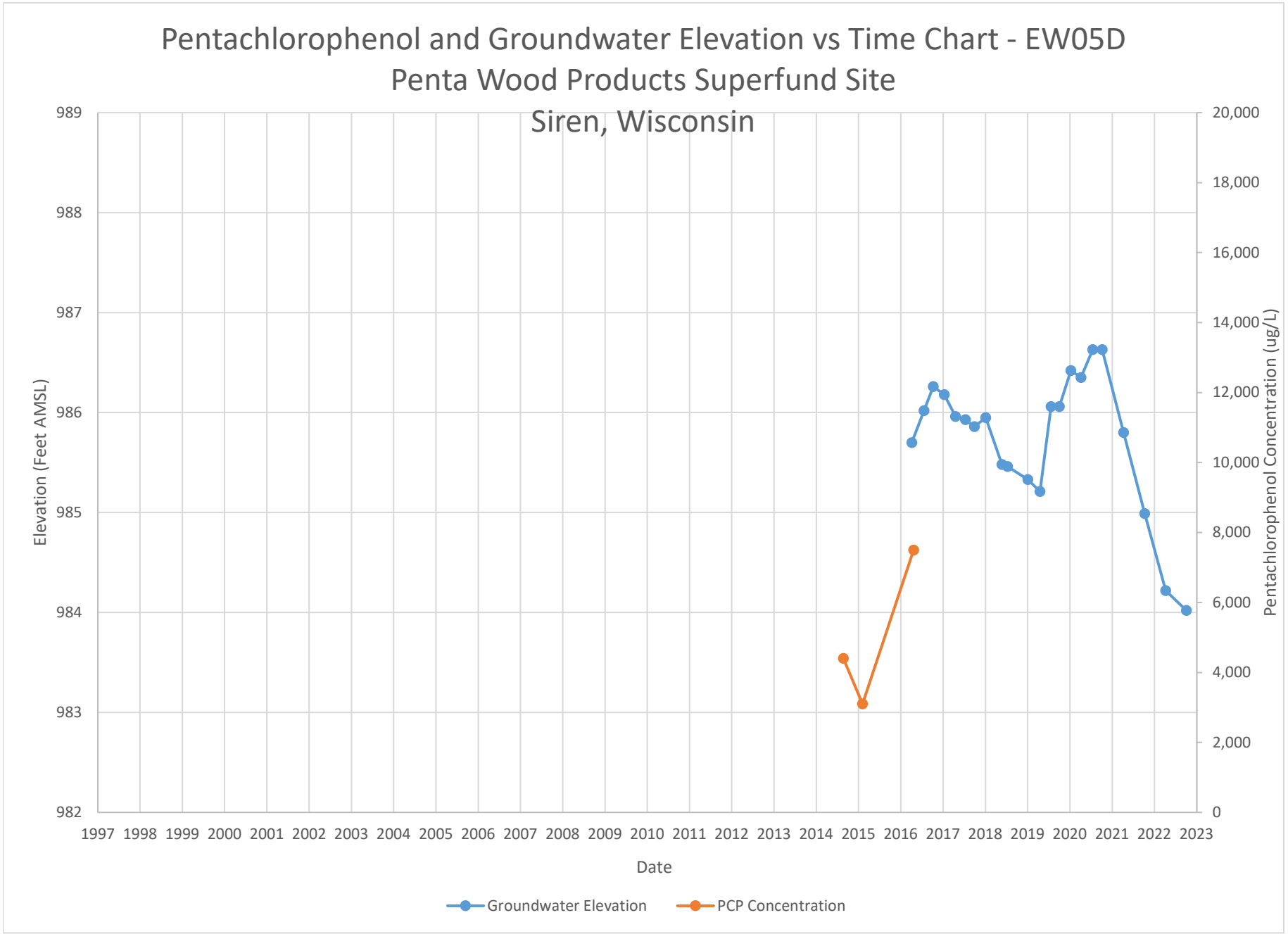

Pentachlorophenol and Groundwater Elevation vs Time Chart - MW16
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
989
988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
1,000
900
800
700
600
500
400
300
200
100
0
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
PCP Concentration
PCP Nondetects

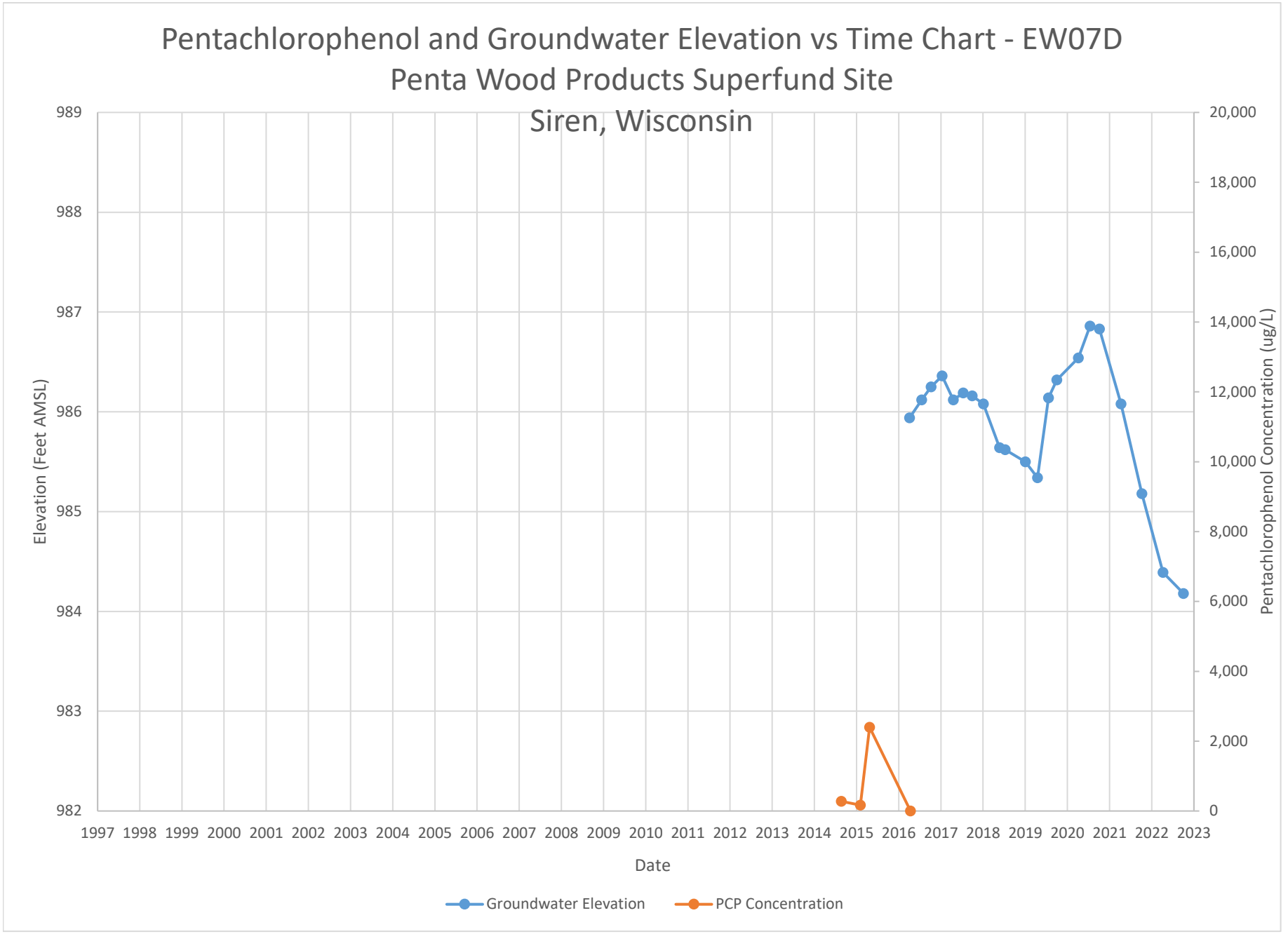

Pentachlorophenol and Groundwater Elevation vs Time Chart - MW24
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
989
988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
1,000
900
800
700
600
500
400
300
200
100
0
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
PCP Concentration
PCP Nondetects

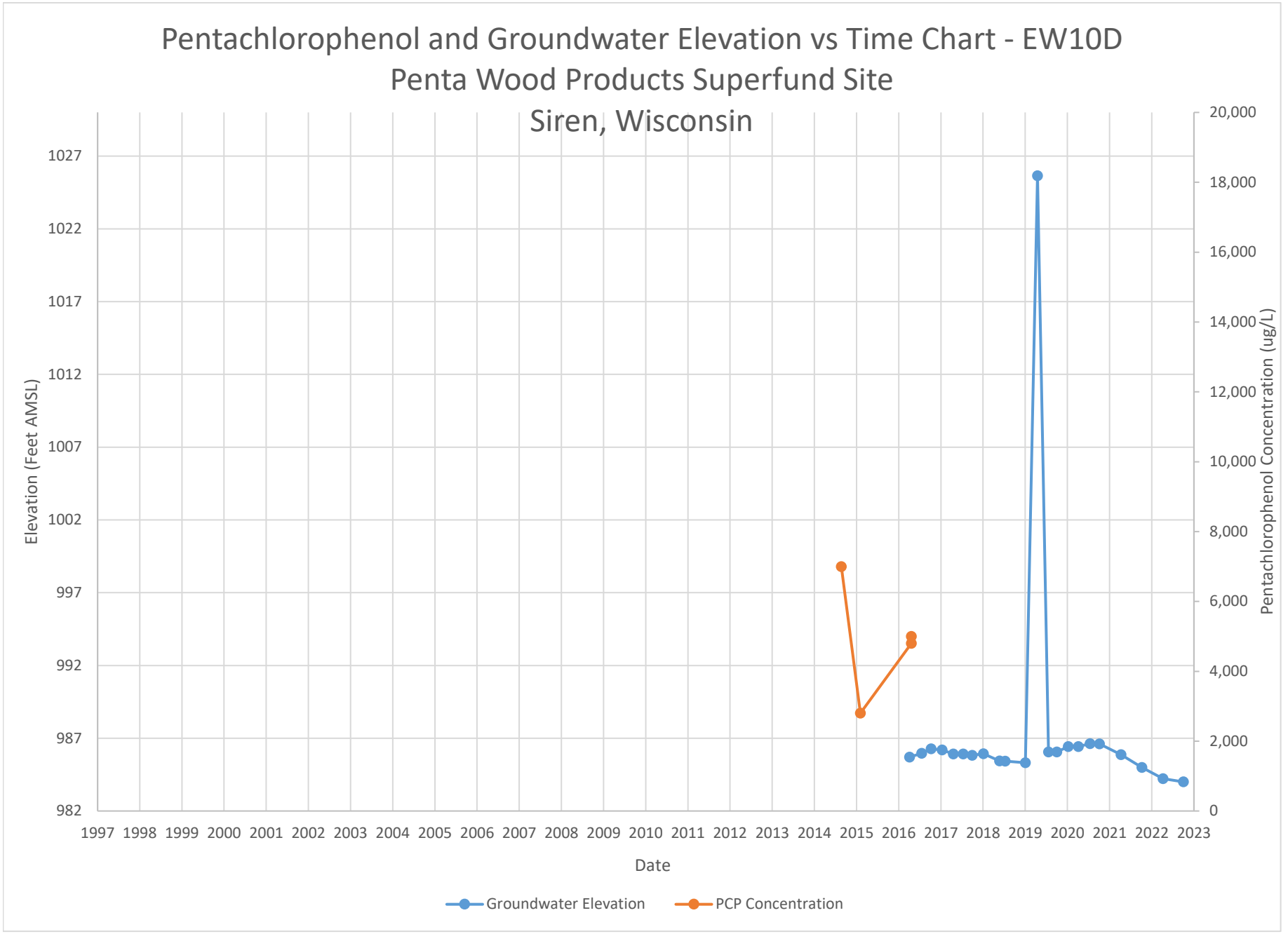

Pentachlorophenol and Groundwater Elevation vs Time Chart - MW26
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
989
988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
1,000
900
800
700
600
500
400
300
200
100
0
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
PCP Concentration
PCP Nondetects

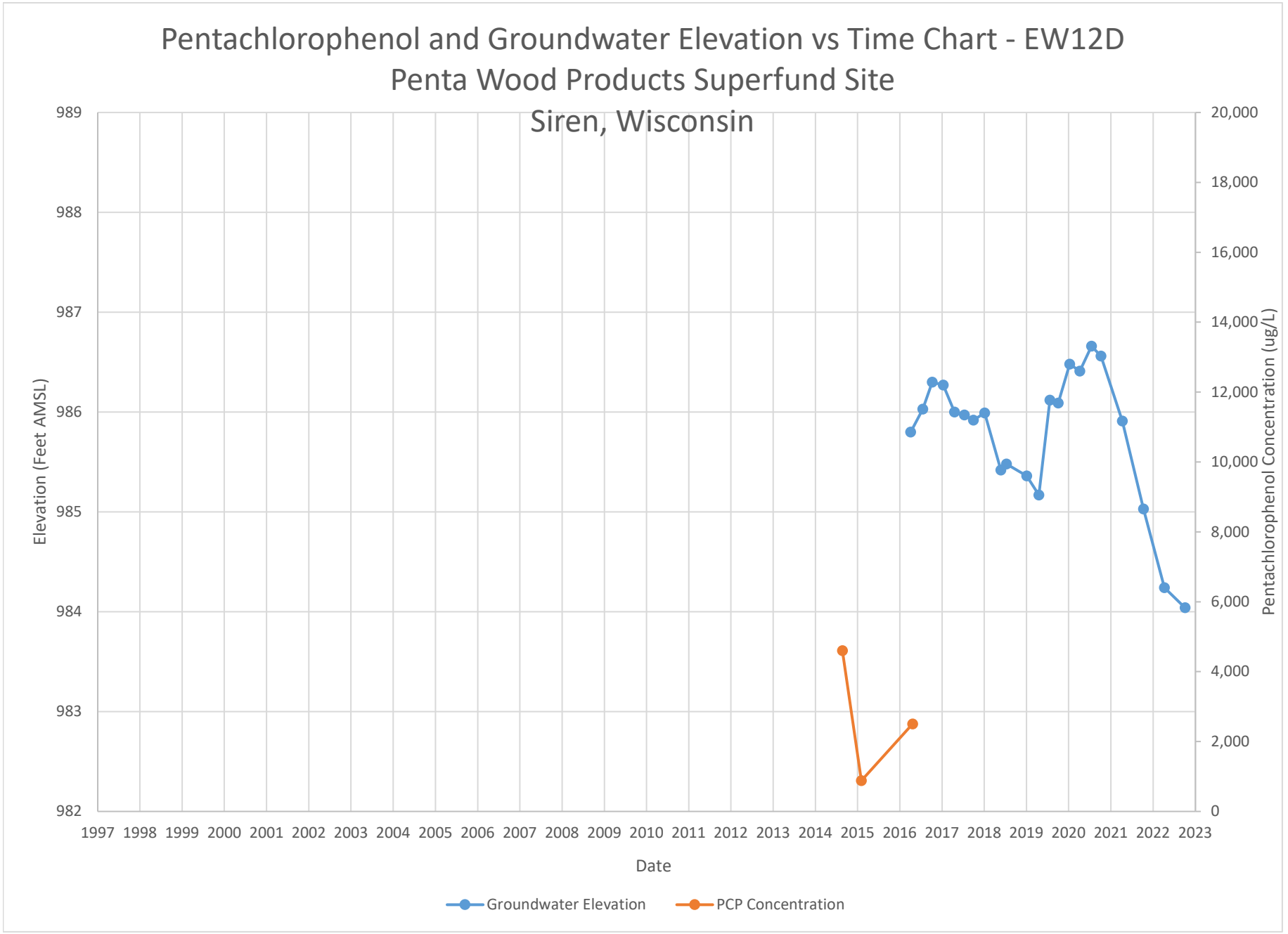

Pentachlorophenol and Groundwater Elevation vs Time Chart - EW03S
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
989
988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
LNAPL
Groundwater Elevation
PCP Concentration

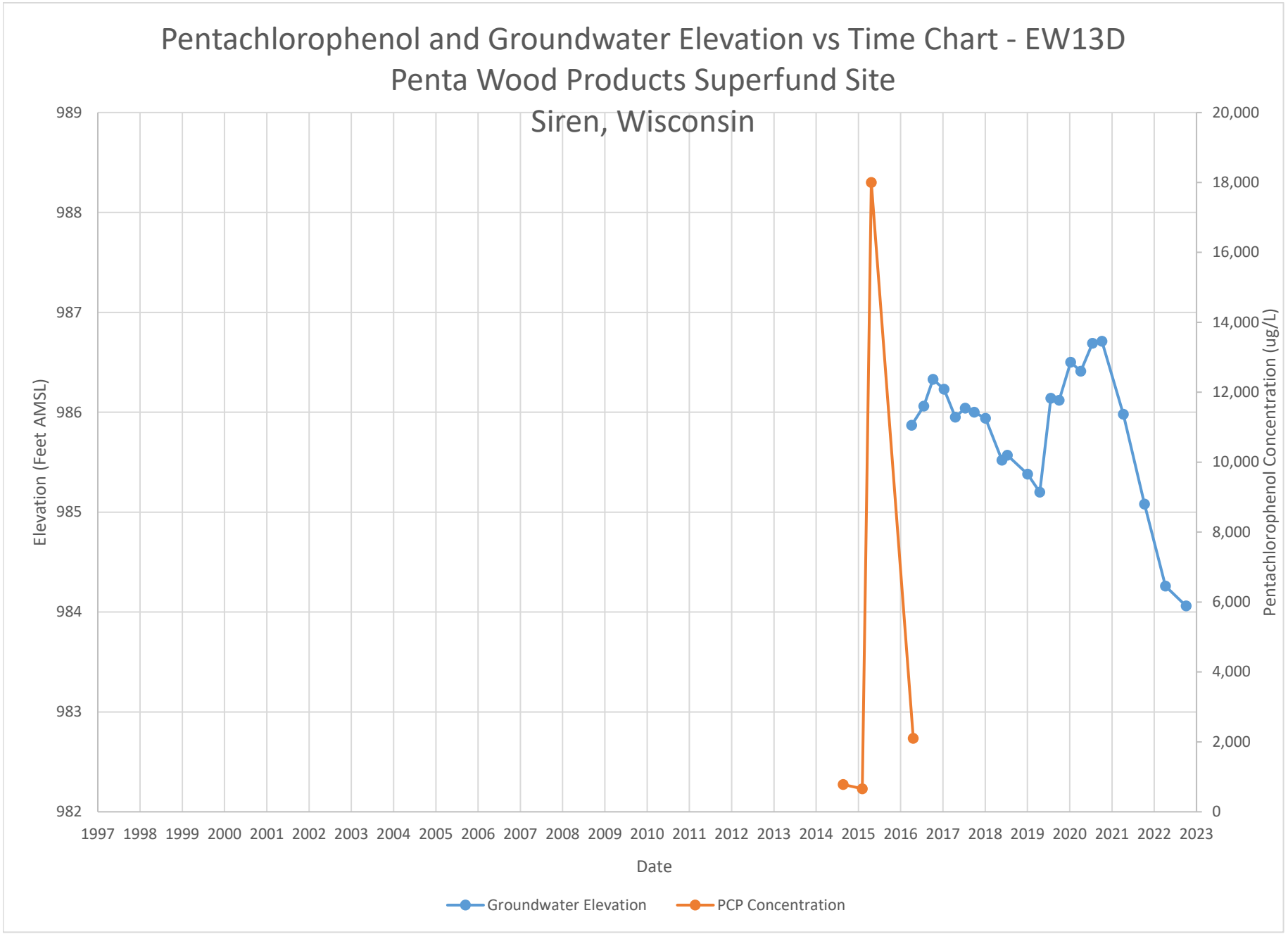

Pentachlorophenol and Groundwater Elevation vs Time Chart - EW03D
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
989
988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
PCP Concentration

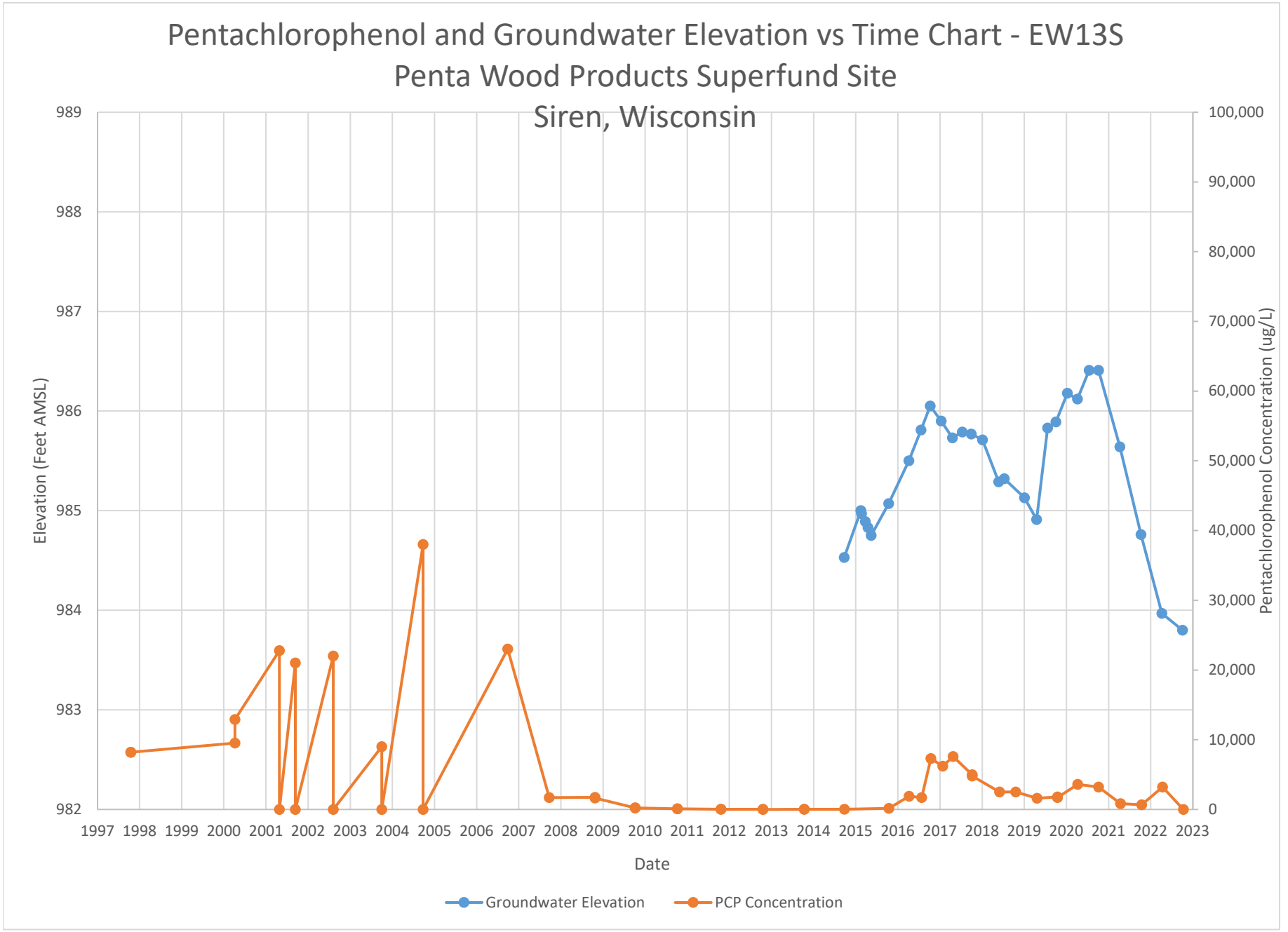

Pentachlorophenol and Groundwater Elevation vs Time Chart - EW05D
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
989
988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
PCP Concentration

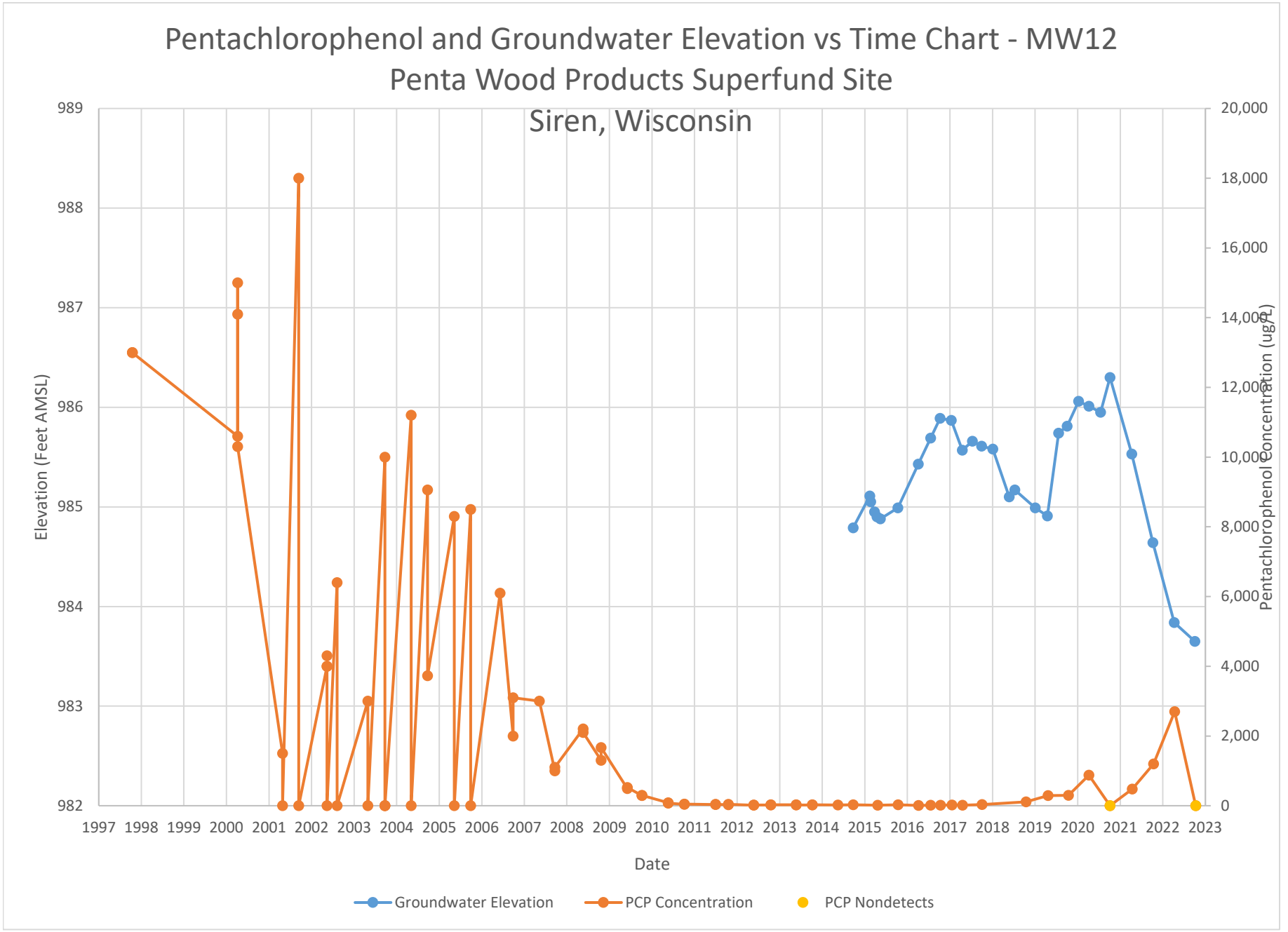

Pentachlorophenol and Groundwater Elevation vs Time Chart - EW07D
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
989
988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
PCP Concentration

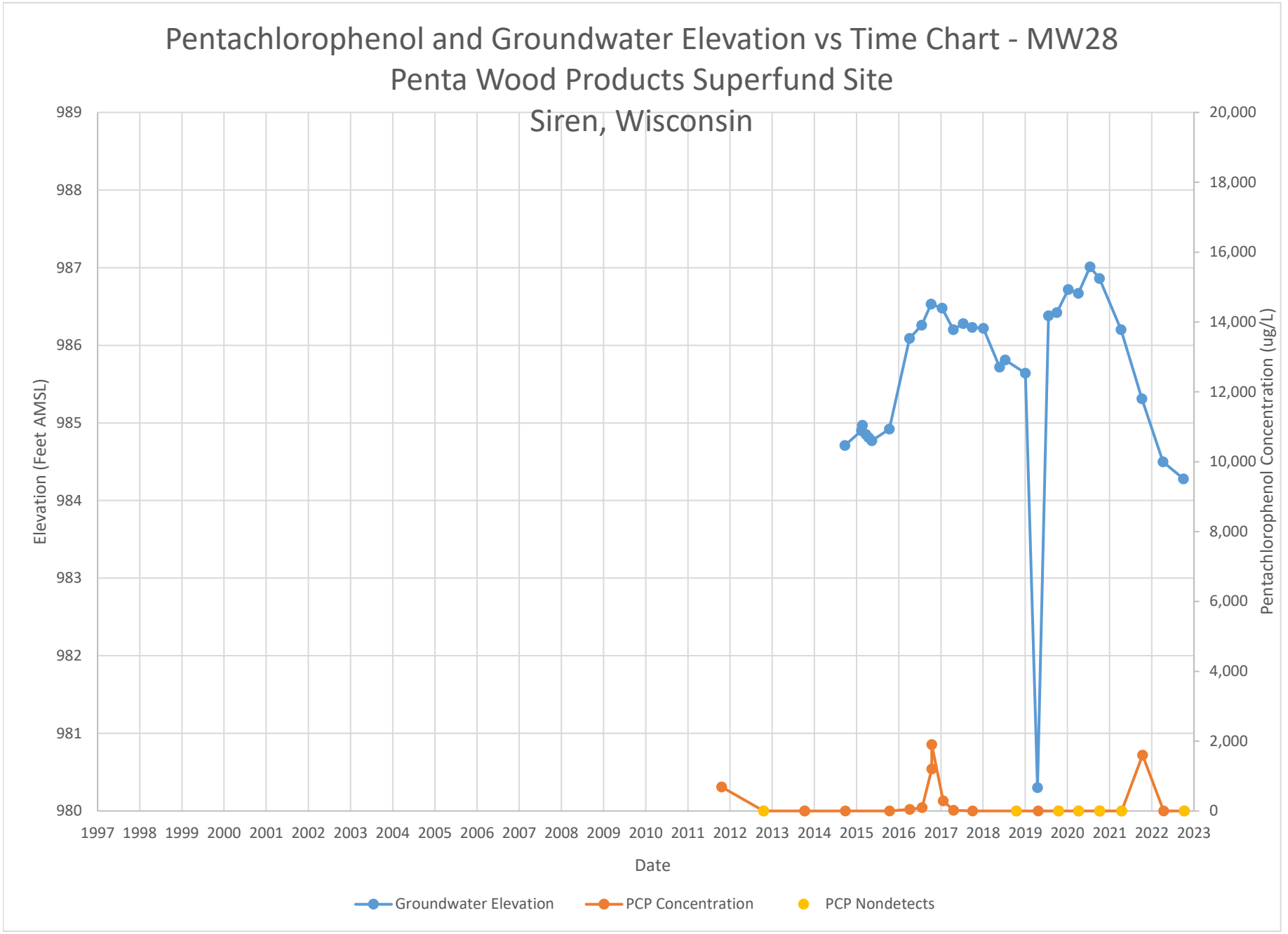

Pentachlorophenol and Groundwater Elevation vs Time Chart - EW10D
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
1027
1022
1017
1012
1007
1002
997
992
987
982
Pentachlorophenol Concentration (ug/L)
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
PCP Concentration

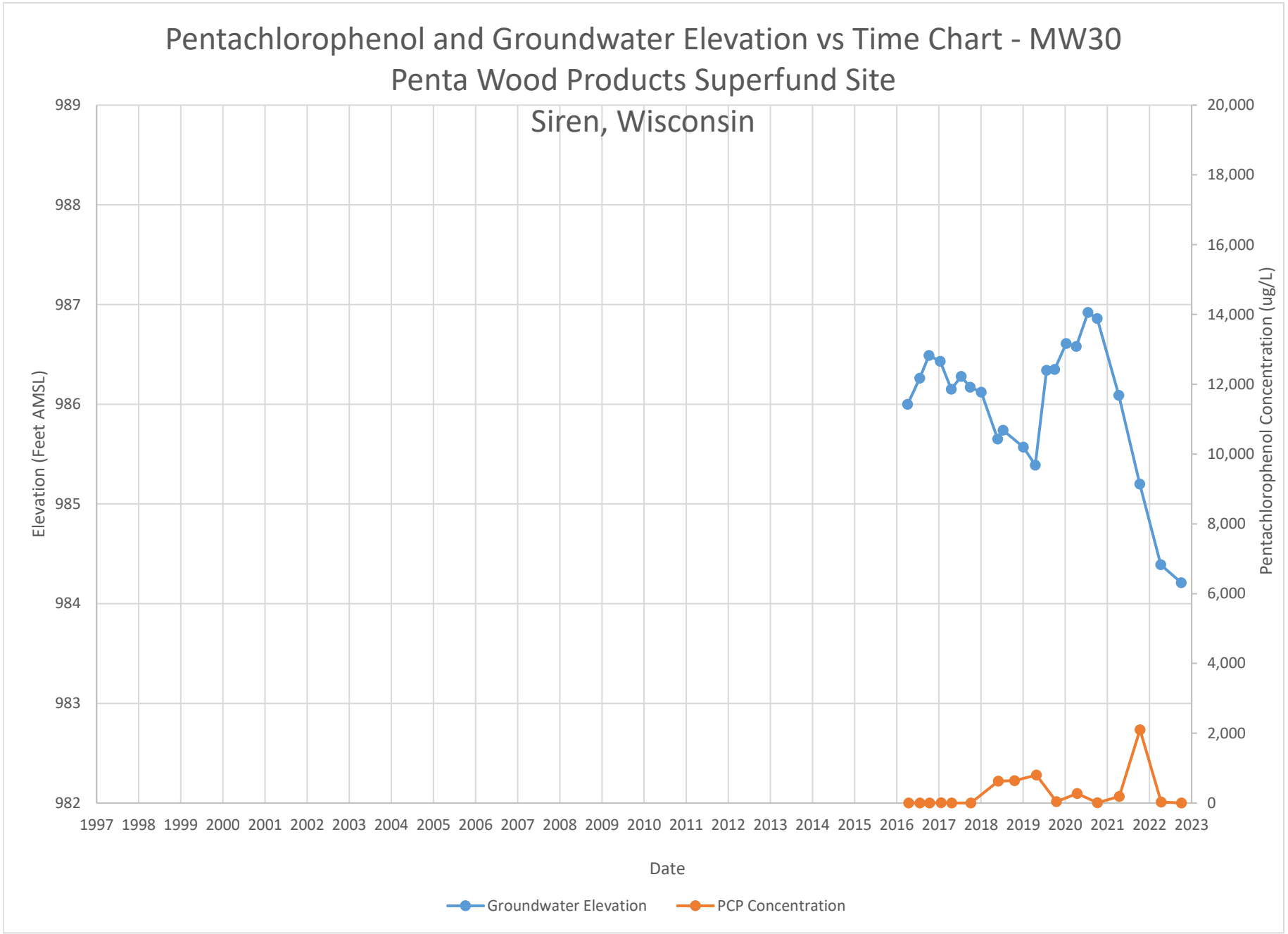

Pentachlorophenol and Groundwater Elevation vs Time Chart - EW12D
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
989
988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
PCP Concentration

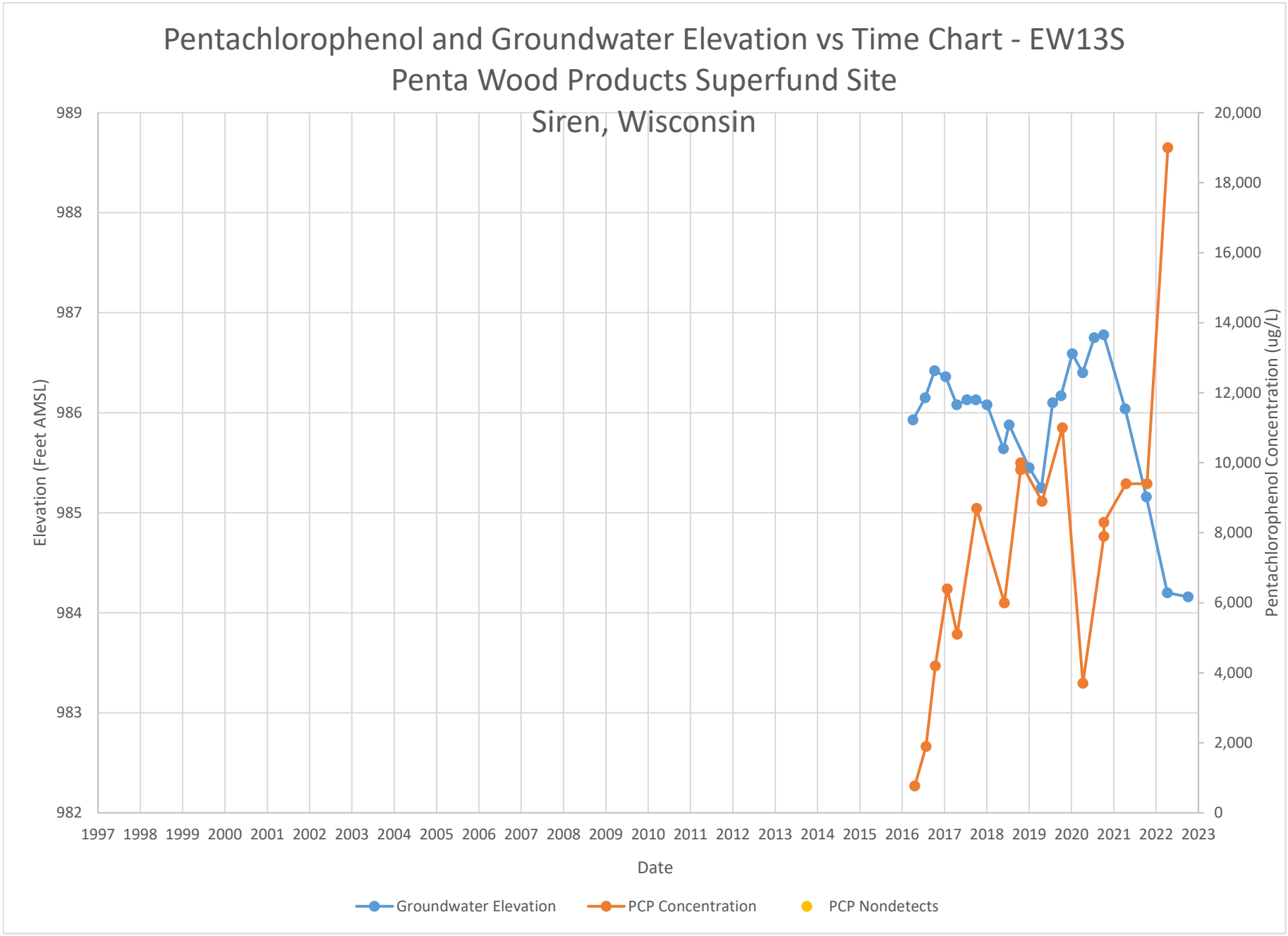

Pentachlorophenol and Groundwater Elevation vs Time Chart - EW13D
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
989
988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
PCP Concentration

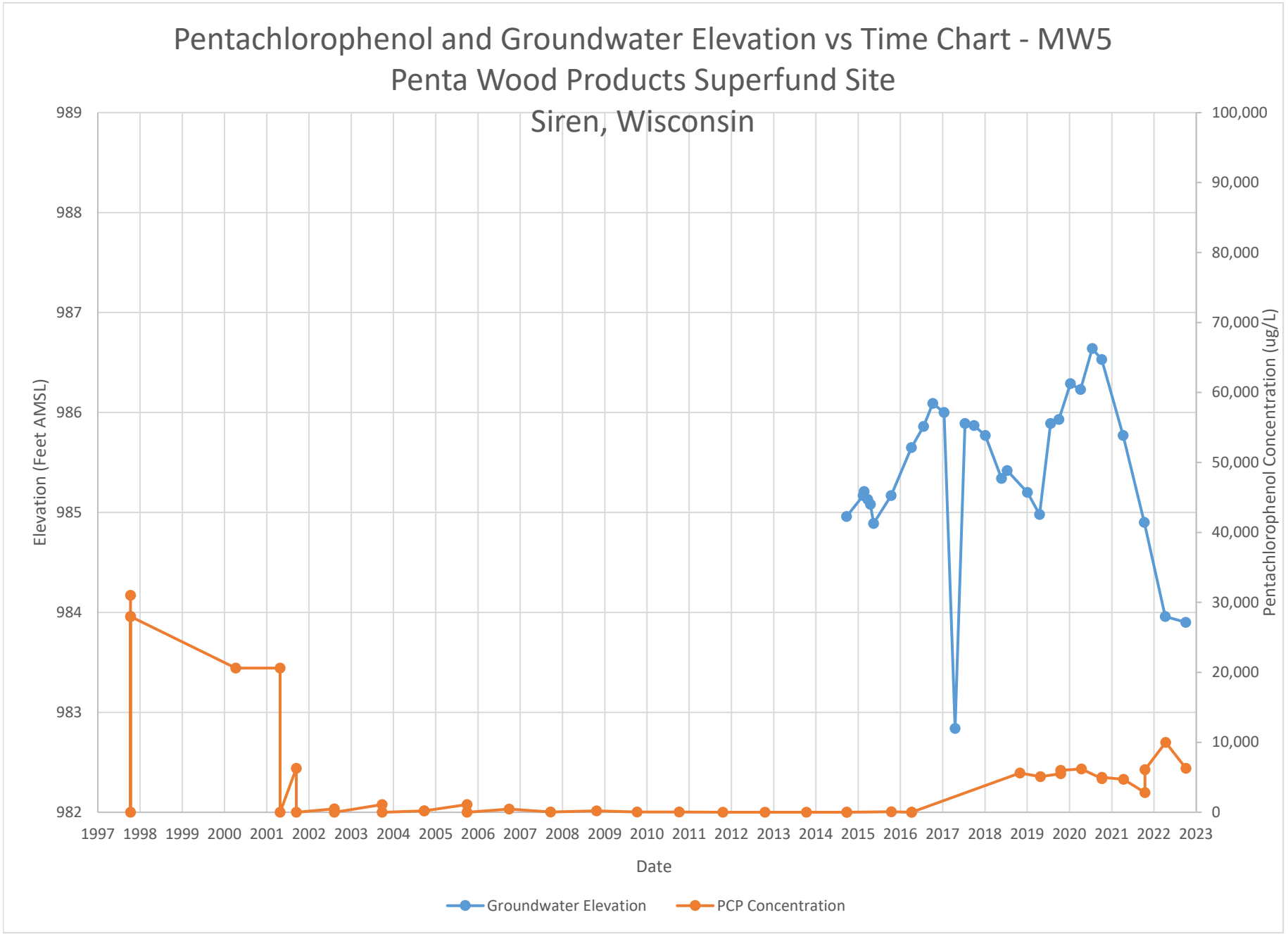

Pentachlorophenol and Groundwater Elevation vs Time Chart - EW13S
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
989
988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
PCP Concentration

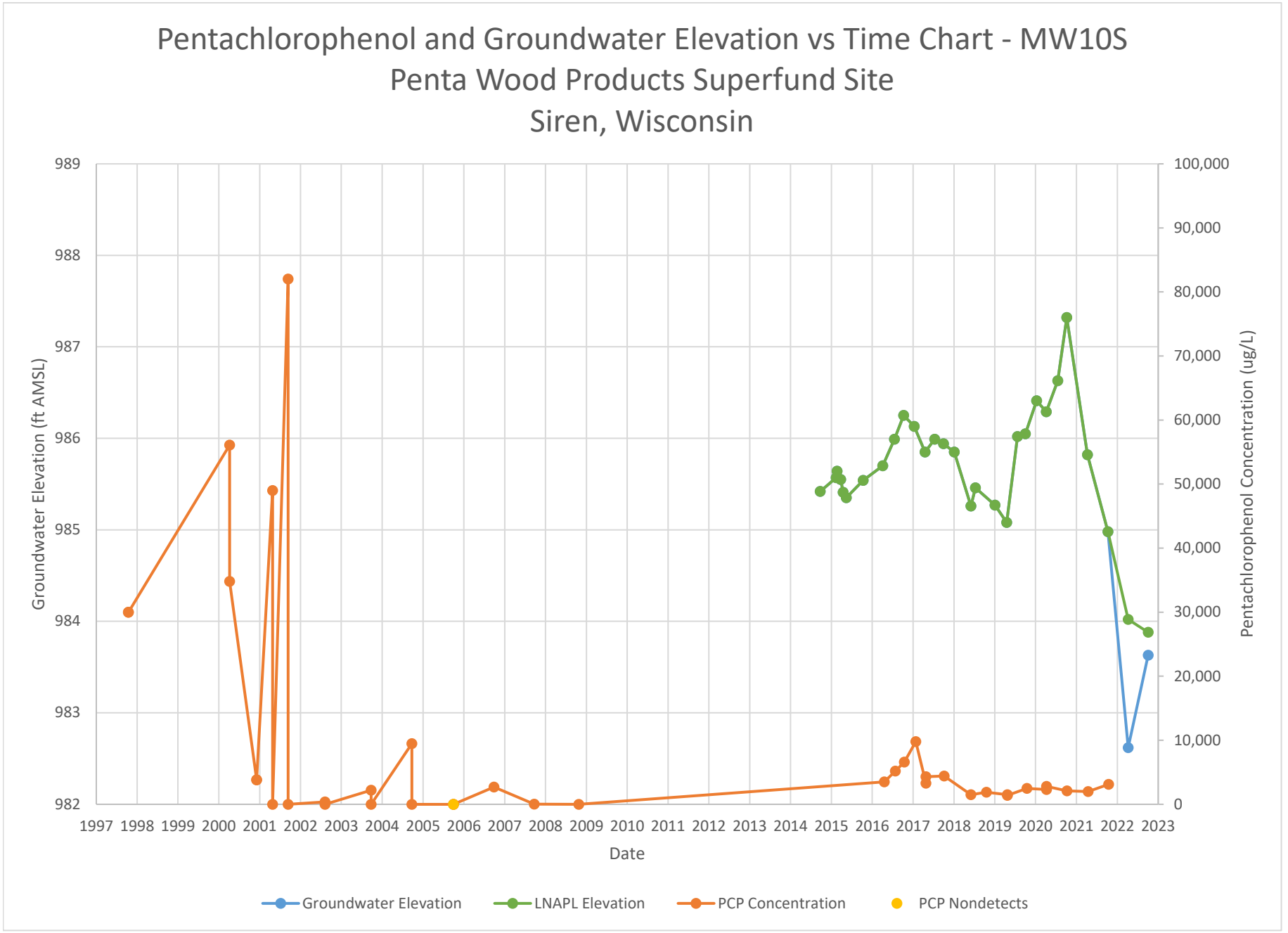

Pentachlorophenol and Groundwater Elevation vs Time Chart - MW12
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
989
988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
PCP Concentration
PCP Nondetects

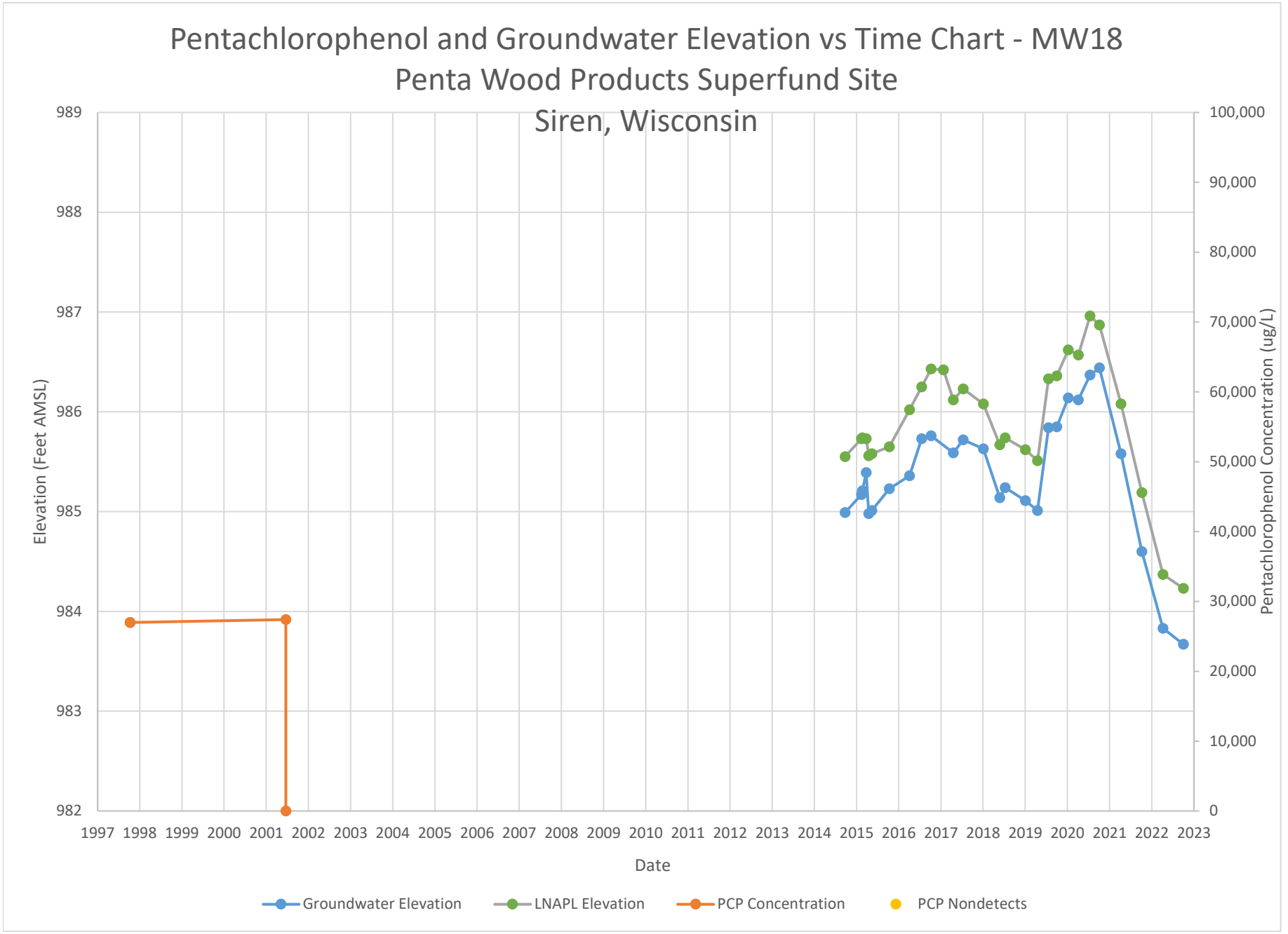

Pentachlorophenol and Groundwater Elevation vs Time Chart - MW28
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
989
988
987
986
985
984
983
982
981
980
Pentachlorophenol Concentration (ug/L)
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
PCP Concentration
PCP Nondetects

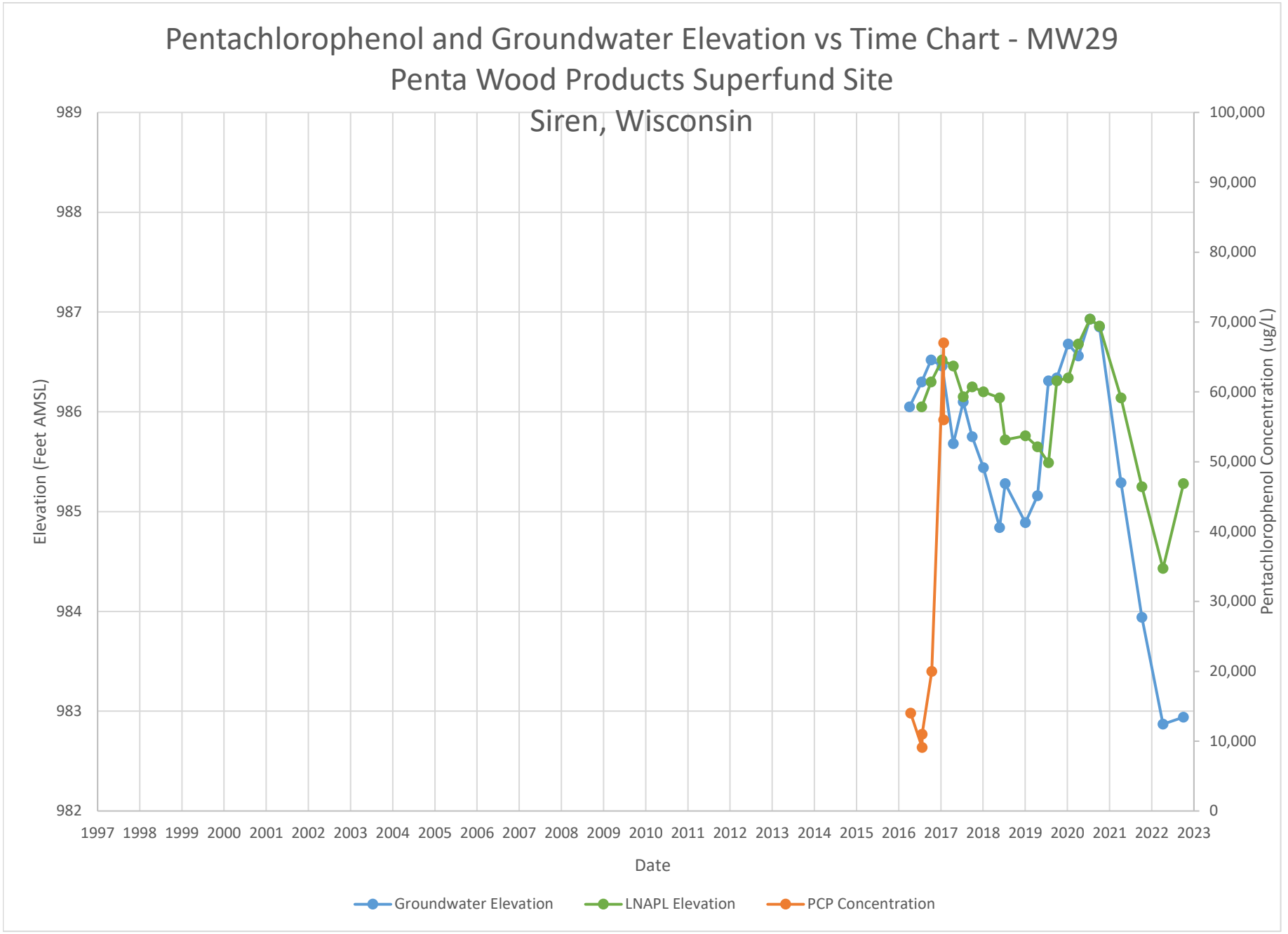

Pentachlorophenol and Groundwater Elevation vs Time Chart - MW30
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
989
988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
PCP Concentration

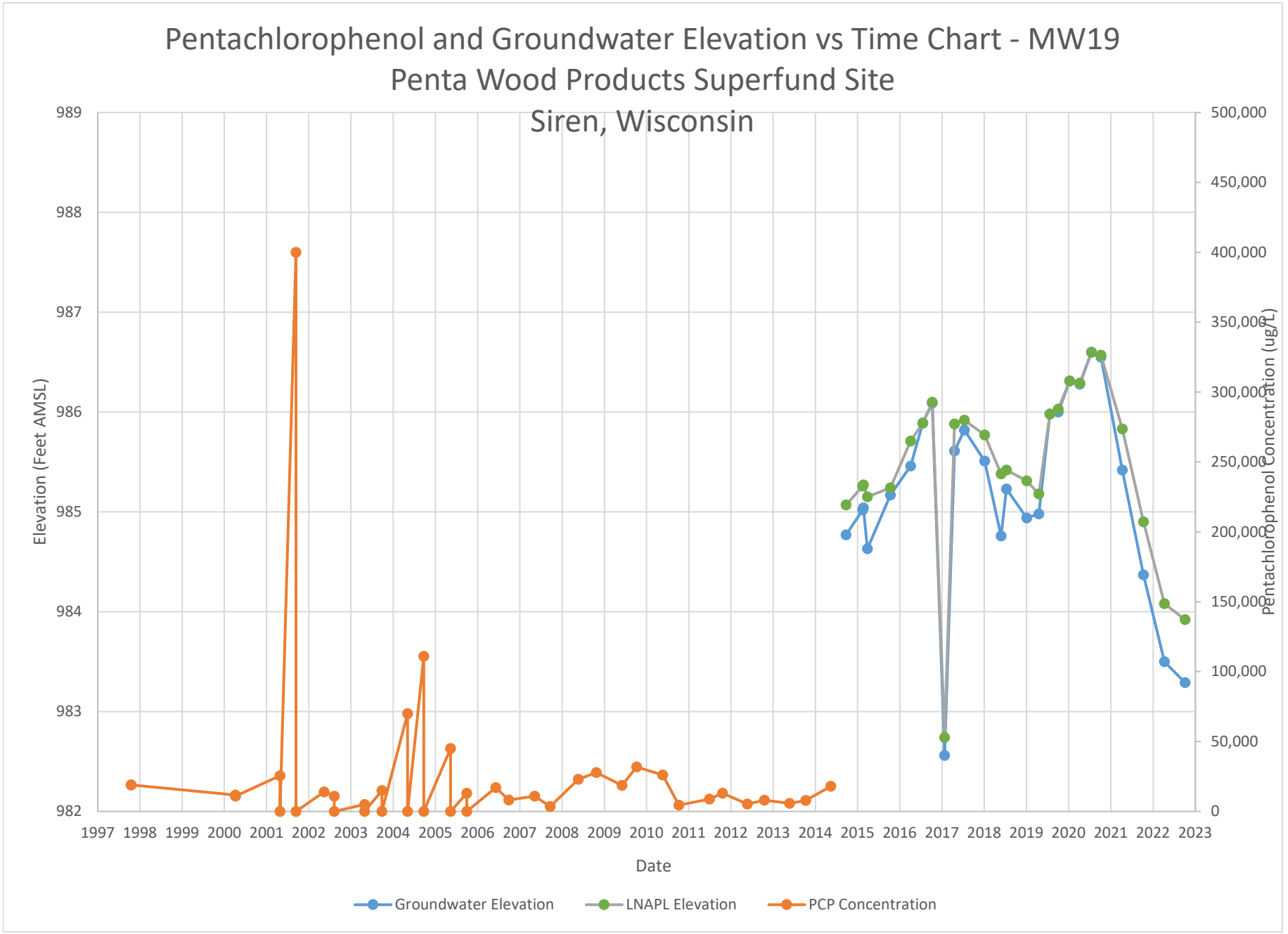

Pentachlorophenol and Groundwater Elevation vs Time Chart - EW13S
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
989
988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
PCP Concentration
PCP Nondetects

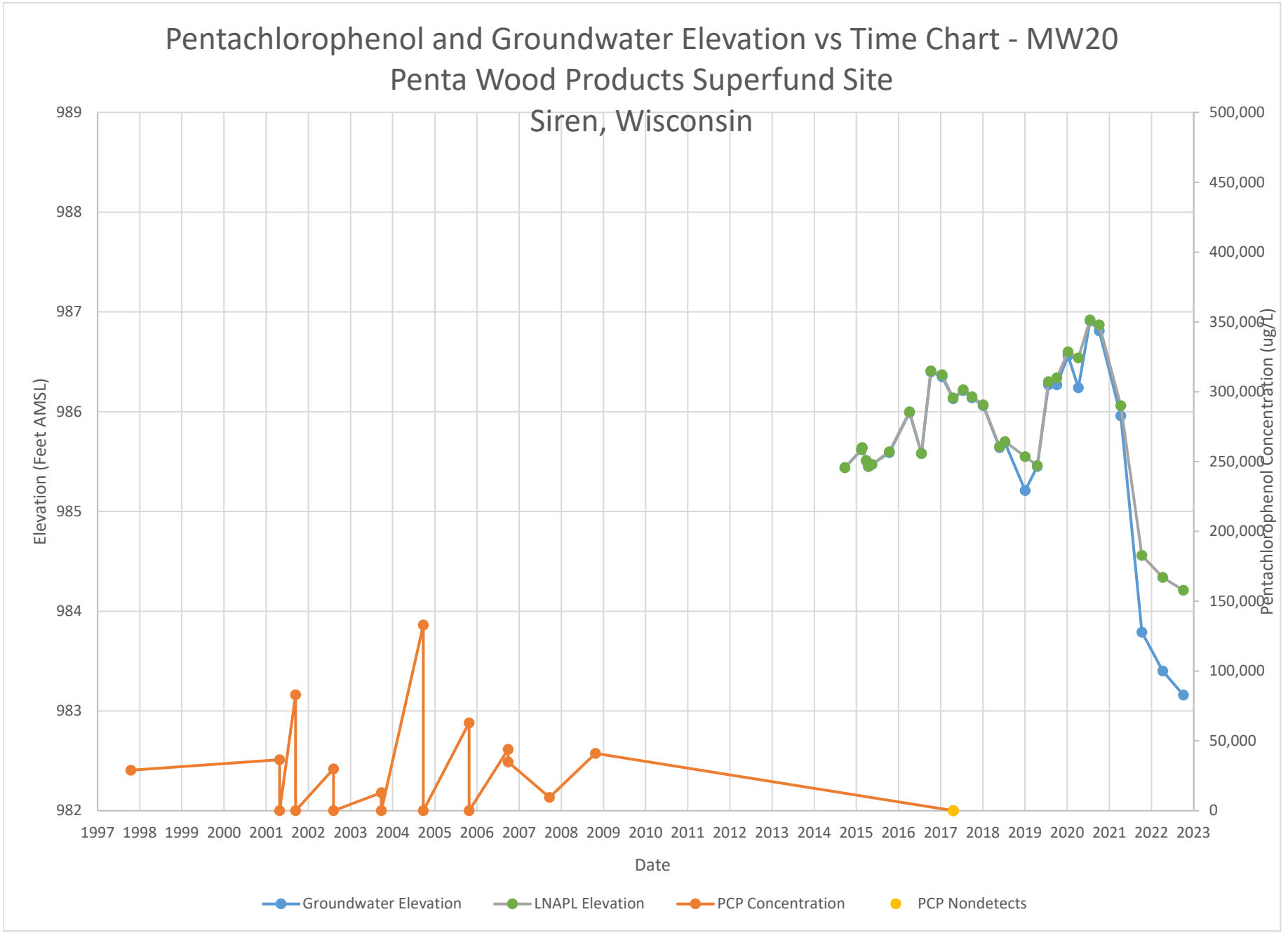

Pentachlorophenol and Groundwater Elevation vs Time Chart - MW5
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
989
988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
PCP Concentration


Pentachlorophenol and Groundwater Elevation vs Time Chart - MW10S
Penta Wood Products Superfund Site
Siren, Wisconsin
Groundwater Elevation (ft AMSL)
989
988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
LNAPL Elevation
PCP Concentration
PCP Nondetects


Pentachlorophenol and Groundwater Elevation vs Time Chart - MW18
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
989
988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
LNAPL Elevation
PCP Concentration
PCP Nondetects


Pentachlorophenol and Groundwater Elevation vs Time Chart - MW29
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
989
988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
LNAPL Elevation
PCP Concentration


Pentachlorophenol and Groundwater Elevation vs Time Chart - MW19
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
989
988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
500,000
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
LNAPL Elevation
PCP Concentration


Pentachlorophenol and Groundwater Elevation vs Time Chart - MW20
Penta Wood Products Superfund Site
Siren, Wisconsin
Elevation (Feet AMSL)
989
988
987
986
985
984
983
982
Pentachlorophenol Concentration (ug/L)
500,000
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Date
Groundwater Elevation
LNAPL Elevation
PCP Concentration
PCP Nondetects

Appendix B

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

eurofins | Environment Testing

ANALYTICAL REPORT

Eurofins Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

Laboratory Job ID: 500-223243-1
Client Project/Site: Penta Wood 11222418

For:
GHD Services Inc.
900 Long Lake Road
Suite 200
New Brighton, Minnesota 55112

Attn: Mr. Grant Anderson

Authorized for release by:
10/31/2022 12:11:20 PM

Richard Wright, Senior Project Manager
(708)746-0045
Richard.Wright@et.eurofinsus.com

Table of Contents

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

Job ID: 500-223243-1

Job ID: 500-223243-1

Laboratory: Eurofins Chicago

Narrative

Job Narrative
500-223243-1

Receipt
The samples were received on 10/5/2022 4:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 8 coolers at receipt time were 0.1º C, 0.1º C, 0.3º C, 0.3º C, 1.0º C, 1.4º C, 1.6º C and 2.5º C.

Receipt Exceptions
Received 1 VOA vial broken for 7 MSD.
Received 1 Methanol vial for sample 10 & 10 MS with headspace.
A trip blank was submitted for analysis with these samples; however, it was not listed on the Chain of Custody (COC). Added to COC and logged in.

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

GC/MS Semi VOA
Method 8270D: The following sample contained one base surrogate outside acceptance limits: (MB 500-678650/1-A). The laboratory's SOP allows one base surrogate to be outside acceptance limits; therefore, re-extraction was not performed. These results have been reported and qualified.

Method 8270D: Due to the high concentration of Naphthalene, the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 500-678650 and analytical batch 500-680628 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method 8270D: The matrix spike (MS) recoveries for preparation batch 500-678650 and analytical batch 500-680628 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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 continuing calibration verification (CCV) associated with batch 500-679106 recovered above the upper control limit for Pentachlorophenol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 500-679106/22).

Method 8151A: The following samples required a dilution due to the nature of the sample matrix: W-221004-TS-46 (500-223243-10), W-221004-TS-46 (500-223243-10[MS]), W-221004-TS-46 (500-223243-10[MSD]), W-221004-TS-11 (500-223243-11) and W-221004-TS-12 (500-223243-12). 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 were diluted due to the abundance of target analytes : W-221004-TS-46 (500-223243-10[MS]) and W-221004-TS-46 (500-223243-10[MSD]). Because of this dilution, the matrix 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

Job ID: 500-223243-1 (Continued)

Laboratory: Eurofins Chicago (Continued)

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: 500-223243-1

Client Sample ID: W-221003-TS-01 — Lab Sample ID: 500-223243-1

No Detections.

Client Sample ID: W-221003-TS-02 — Lab Sample ID: 500-223243-2

No Detections.

Client Sample ID: W-221003-TS-03 — Lab Sample ID: 500-223243-3

No Detections.

Client Sample ID: W-221003-TS-04 — Lab Sample ID: 500-223243-4

No Detections.

Client Sample ID: W-221003-TS-05 — Lab Sample ID: 500-223243-5

No Detections.

Client Sample ID: W-221003-TS-06 — Lab Sample ID: 500-223243-6

No Detections.

Client Sample ID: W-221003-TS-07 — Lab Sample ID: 500-223243-7

No Detections.

Client Sample ID: W-221003-TS-08 — Lab Sample ID: 500-223243-8

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.17	J	0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	0.33	J	1.0	0.22	ug/L	1		8260B	Total/NA

Client Sample ID: W-221003-TS-09 — Lab Sample ID: 500-223243-9

No Detections.

Client Sample ID: W-221004-TS-46 — Lab Sample ID: 500-223243-10

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.51		0.50	0.15	ug/L	1		8260B	Total/NA
Ethylbenzene	0.90		0.50	0.18	ug/L	1		8260B	Total/NA
Xylenes, Total	7.4		1.0	0.22	ug/L	1		8260B	Total/NA
Naphthalene	30	F1	0.81	0.25	ug/L	1		8270D	Total/NA
Methane	21		1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	6300		210	300	ug/L	2000		8151A	Total/NA
Arsenic	1.3		1.0	0.23	ug/L	1		6020A	Total Recoverable
Copper	3.4	B	2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	13900		100	46.7	ug/L	1		6020A	Total Recoverable
Manganese	8490		12.5	4.0	ug/L	5		6020A	Total Recoverable
Arsenic	0.77	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	2.3	B	2.0	0.50	ug/L	1		6020A	Dissolved
Iron	14400		100	46.7	ug/L	1		6020A	Dissolved
Manganese	7400		12.5	4.0	ug/L	5		6020A	Dissolved
Calcium hardness as CaCO3	194		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Chloride	20.5	F1	2.0	1.7	mg/L	10		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

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

Job ID: 500-223243-1

Client Sample ID: W-221004-TS-46 (Continued) — Lab Sample ID: 500-223243-10

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Sulfate	15.6		2.0	0.95	mg/L	10		300.0	Total/NA
Total Organic Carbon - Duplicates	29.4		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	296		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-221004-TS-11 — Lab Sample ID: 500-223243-11

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Xylenes, Total	0.23	J	1.0	0.22	ug/L	1		8260B	Total/NA
Methane	120		1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	1000		49	71	ug/L	500		8151A	Total/NA
Arsenic	0.28	J	1.0	0.23	ug/L	1		6020A	Total Recoverable
Copper	1.9	J B	2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	11200		100	46.7	ug/L	1		6020A	Total Recoverable
Manganese	98.7		2.5	0.79	ug/L	1		6020A	Total Recoverable
Zinc	46.0		20.0	6.9	ug/L	1		6020A	Total Recoverable
Copper	0.88	J B	2.0	0.50	ug/L	1		6020A	Dissolved
Iron	354		100	46.7	ug/L	1		6020A	Dissolved
Manganese	59.8		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
Chloride	2.5		0.20	0.17	mg/L	1		300.0	Total/NA
Nitrate as N	0.44		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	5.5		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	4.2		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	174		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-221004-TS-12 — Lab Sample ID: 500-223243-12

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methane	110		1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	1000		52	75	ug/L	500		8151A	Total/NA
Copper	1.4	J B	2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	7830		100	46.7	ug/L	1		6020A	Total Recoverable
Manganese	80.9		2.5	0.79	ug/L	1		6020A	Total Recoverable
Zinc	35.8		20.0	6.9	ug/L	1		6020A	Total Recoverable
Copper	1.3	J B	2.0	0.50	ug/L	1		6020A	Dissolved
Iron	352		100	46.7	ug/L	1		6020A	Dissolved
Manganese	61.3		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
Chloride	2.5		0.20	0.17	mg/L	1		300.0	Total/NA
Nitrate as N	0.44		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	5.6		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	4.0		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	173		5.0	3.7	mg/L	1		SM 2320B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

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

Job ID: 500-223243-1

Client Sample ID: W-221004-TS-13 — Lab Sample ID: 500-223243-13

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methane	1.1		1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	2.3		0.10	0.14	ug/L	1		8151A	Total/NA
Copper	1.8	J B	2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	422		100	46.7	ug/L	1		6020A	Total Recoverable
Manganese	39.6		2.5	0.79	ug/L	1		6020A	Total Recoverable
Arsenic	0.24	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	1.4	J B	2.0	0.50	ug/L	1		6020A	Dissolved
Manganese	1.9	J	2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	60.7		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Chloride	1.8		0.20	0.17	mg/L	1		300.0	Total/NA
Nitrate as N	3.6		0.40	0.14	mg/L	2		300.0	Total/NA
Sulfate	8.0		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	1.4		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	101		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 500-223243-14

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

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

Job ID: 500-223243-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	EET CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	EET CHI
RSK-175	Dissolved Gases (GC)	RSK	EET CAN
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	MCAWW	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:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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 CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

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: 500-223243-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-223243-1	W-221003-TS-01	Water	10/03/22 12:00	10/05/22 16:00
500-223243-2	W-221003-TS-02	Water	10/03/22 12:08	10/05/22 16:00
500-223243-3	W-221003-TS-03	Water	10/03/22 12:19	10/05/22 16:00
500-223243-4	W-221003-TS-04	Water	10/03/22 13:35	10/05/22 16:00
500-223243-5	W-221003-TS-05	Water	10/03/22 13:50	10/05/22 16:00
500-223243-6	W-221003-TS-06	Water	10/03/22 13:58	10/05/22 16:00
500-223243-7	W-221003-TS-07	Water	10/03/22 14:55	10/05/22 16:00
500-223243-8	W-221003-TS-08	Water	10/03/22 15:03	10/05/22 16:00
500-223243-9	W-221003-TS-09	Water	10/03/22 15:03	10/05/22 16:00
500-223243-10	W-221004-TS-46	Water	10/04/22 11:55	10/05/22 16:00
500-223243-11	W-221004-TS-11	Water	10/04/22 13:28	10/05/22 16:00
500-223243-12	W-221004-TS-12	Water	10/04/22 12:30	10/05/22 16:00
500-223243-13	W-221004-TS-13	Water	10/04/22 14:33	10/05/22 16:00
500-223243-14	Trip Blank	Water	10/03/22 00:00	10/05/22 16:00

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

Job ID: 500-223243-1

Client Sample ID: W-221003-TS-01

Date Collected: 10/03/22 12:00
Date Received: 10/05/22 16:00

Lab Sample ID: 500-223243-1

Matrix: Water

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			10/12/22 23:50	1
Toluene	<0.15		0.50	0.15	ug/L			10/12/22 23:50	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/12/22 23:50	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/12/22 23:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 126*		*10/12/22 23:50*	*1*
Toluene-d8 (Surr)	*94*		*75 - 120*		*10/12/22 23:50*	*1*
4-Bromofluorobenzene (Surr)	*104*		*72 - 124*		*10/12/22 23:50*	*1*
Dibromofluoromethane	*100*		*75 - 120*		*10/12/22 23:50*	*1*

Method: SW846 8270D - 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		10/09/22 12:24	10/20/22 13:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*74*		*36 - 120*	*10/09/22 12:24*	*10/20/22 13:16*	*1*
2-Fluorobiphenyl (Surr)	*83*		*34 - 110*	*10/09/22 12:24*	*10/20/22 13:16*	*1*
Terphenyl-d14 (Surr)	*113*		*40 - 145*	*10/09/22 12:24*	*10/20/22 13:16*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.15		0.10	0.15	ug/L		10/10/22 09:54	10/11/22 15:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*92*		*25 - 130*	*10/10/22 09:54*	*10/11/22 15:41*	*1*

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

Job ID: 500-223243-1

Client Sample ID: W-221003-TS-02

Date Collected: 10/03/22 12:08
Date Received: 10/05/22 16:00

Lab Sample ID: 500-223243-2

Matrix: Water

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			10/13/22 00:14	1
Toluene	<0.15		0.50	0.15	ug/L			10/13/22 00:14	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/13/22 00:14	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/13/22 00:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 126*		*10/13/22 00:14*	*1*
Toluene-d8 (Surr)	*96*		*75 - 120*		*10/13/22 00:14*	*1*
4-Bromofluorobenzene (Surr)	*105*		*72 - 124*		*10/13/22 00:14*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*10/13/22 00:14*	*1*

Method: SW846 8270D - 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		10/09/22 12:24	10/20/22 13:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*70*		*36 - 120*	*10/09/22 12:24*	*10/20/22 13:37*	*1*
2-Fluorobiphenyl (Surr)	*82*		*34 - 110*	*10/09/22 12:24*	*10/20/22 13:37*	*1*
Terphenyl-d14 (Surr)	*129*		*40 - 145*	*10/09/22 12:24*	*10/20/22 13:37*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.15		0.10	0.15	ug/L		10/10/22 09:54	10/11/22 16:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*88*		*25 - 130*	*10/10/22 09:54*	*10/11/22 16:00*	*1*

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

Job ID: 500-223243-1

Client Sample ID: W-221003-TS-03

Date Collected: 10/03/22 12:19
Date Received: 10/05/22 16:00

Lab Sample ID: 500-223243-3

Matrix: Water

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			10/13/22 00:38	1
Toluene	<0.15		0.50	0.15	ug/L			10/13/22 00:38	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/13/22 00:38	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/13/22 00:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 126*		*10/13/22 00:38*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*10/13/22 00:38*	*1*
4-Bromofluorobenzene (Surr)	*105*		*72 - 124*		*10/13/22 00:38*	*1*
Dibromofluoromethane	*100*		*75 - 120*		*10/13/22 00:38*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.23		0.74	0.23	ug/L		10/09/22 12:24	10/20/22 13:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*78*		*36 - 120*	*10/09/22 12:24*	*10/20/22 13:59*	*1*
2-Fluorobiphenyl (Surr)	*85*		*34 - 110*	*10/09/22 12:24*	*10/20/22 13:59*	*1*
Terphenyl-d14 (Surr)	*122*		*40 - 145*	*10/09/22 12:24*	*10/20/22 13:59*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.15		0.10	0.15	ug/L		10/10/22 09:54	10/11/22 16:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*84*		*25 - 130*	*10/10/22 09:54*	*10/11/22 16:19*	*1*

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

Job ID: 500-223243-1

Client Sample ID: W-221003-TS-04

Date Collected: 10/03/22 13:35
Date Received: 10/05/22 16:00

Lab Sample ID: 500-223243-4

Matrix: Water

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			10/13/22 01:02	1
Toluene	<0.15		0.50	0.15	ug/L			10/13/22 01:02	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/13/22 01:02	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/13/22 01:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 126*		*10/13/22 01:02*	*1*
Toluene-d8 (Surr)	*93*		*75 - 120*		*10/13/22 01:02*	*1*
4-Bromofluorobenzene (Surr)	*105*		*72 - 124*		*10/13/22 01:02*	*1*
Dibromofluoromethane	*100*		*75 - 120*		*10/13/22 01:02*	*1*

Method: SW846 8270D - 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		10/09/22 12:24	10/20/22 14:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*79*		*36 - 120*	*10/09/22 12:24*	*10/20/22 14:20*	*1*
2-Fluorobiphenyl (Surr)	*81*		*34 - 110*	*10/09/22 12:24*	*10/20/22 14:20*	*1*
Terphenyl-d14 (Surr)	*111*		*40 - 145*	*10/09/22 12:24*	*10/20/22 14:20*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.15		0.10	0.15	ug/L		10/10/22 09:54	10/11/22 16:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*93*		*25 - 130*	*10/10/22 09:54*	*10/11/22 16:37*	*1*

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

Job ID: 500-223243-1

Client Sample ID: W-221003-TS-05

Date Collected: 10/03/22 13:50
Date Received: 10/05/22 16:00

Lab Sample ID: 500-223243-5

Matrix: Water

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			10/13/22 01:26	1
Toluene	<0.15		0.50	0.15	ug/L			10/13/22 01:26	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/13/22 01:26	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/13/22 01:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 126*		*10/13/22 01:26*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*10/13/22 01:26*	*1*
4-Bromofluorobenzene (Surr)	*106*		*72 - 124*		*10/13/22 01:26*	*1*
Dibromofluoromethane	*98*		*75 - 120*		*10/13/22 01:26*	*1*

Method: SW846 8270D - 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		10/09/22 12:24	10/20/22 14:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*82*		*36 - 120*	*10/09/22 12:24*	*10/20/22 14:41*	*1*
2-Fluorobiphenyl (Surr)	*94*		*34 - 110*	*10/09/22 12:24*	*10/20/22 14:41*	*1*
Terphenyl-d14 (Surr)	*116*		*40 - 145*	*10/09/22 12:24*	*10/20/22 14:41*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14		0.096	0.14	ug/L		10/10/22 09:54	10/11/22 16:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*90*		*25 - 130*	*10/10/22 09:54*	*10/11/22 16:56*	*1*

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

Job ID: 500-223243-1

Client Sample ID: W-221003-TS-06

Date Collected: 10/03/22 13:58
Date Received: 10/05/22 16:00

Lab Sample ID: 500-223243-6

Matrix: Water

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			10/13/22 01:50	1
Toluene	<0.15		0.50	0.15	ug/L			10/13/22 01:50	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/13/22 01:50	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/13/22 01:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 126*		*10/13/22 01:50*	*1*
Toluene-d8 (Surr)	*94*		*75 - 120*		*10/13/22 01:50*	*1*
4-Bromofluorobenzene (Surr)	*109*		*72 - 124*		*10/13/22 01:50*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*10/13/22 01:50*	*1*

Method: SW846 8270D - 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		10/09/22 12:24	10/20/22 15:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*64*		*36 - 120*	*10/09/22 12:24*	*10/20/22 15:02*	*1*
2-Fluorobiphenyl (Surr)	*86*		*34 - 110*	*10/09/22 12:24*	*10/20/22 15:02*	*1*
Terphenyl-d14 (Surr)	*121*		*40 - 145*	*10/09/22 12:24*	*10/20/22 15:02*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.15		0.10	0.15	ug/L		10/10/22 09:54	10/11/22 17:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*91*		*25 - 130*	*10/10/22 09:54*	*10/11/22 17:15*	*1*

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

Job ID: 500-223243-1

Client Sample ID: W-221003-TS-07

Date Collected: 10/03/22 14:55
Date Received: 10/05/22 16:00

Lab Sample ID: 500-223243-7

Matrix: Water

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			10/13/22 02:14	1
Toluene	<0.15		0.50	0.15	ug/L			10/13/22 02:14	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/13/22 02:14	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/13/22 02:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 126*		*10/13/22 02:14*	*1*
Toluene-d8 (Surr)	*93*		*75 - 120*		*10/13/22 02:14*	*1*
4-Bromofluorobenzene (Surr)	*106*		*72 - 124*		*10/13/22 02:14*	*1*
Dibromofluoromethane	*101*		*75 - 120*		*10/13/22 02:14*	*1*

Method: SW846 8270D - 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		10/09/22 12:24	10/20/22 15:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*74*		*36 - 120*	*10/09/22 12:24*	*10/20/22 15:24*	*1*
2-Fluorobiphenyl (Surr)	*76*		*34 - 110*	*10/09/22 12:24*	*10/20/22 15:24*	*1*
Terphenyl-d14 (Surr)	*103*		*40 - 145*	*10/09/22 12:24*	*10/20/22 15:24*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14	^c	0.097	0.14	ug/L		10/10/22 09:54	10/11/22 17:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*87*		*25 - 130*	*10/10/22 09:54*	*10/11/22 17:53*	*1*

Client Sample ID: W-221003-TS-08

Date Collected: 10/03/22 15:03
Date Received: 10/05/22 16:00

Lab Sample ID: 500-223243-8

Matrix: Water

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			10/13/22 03:26	1
Toluene	**0.17**	**J**	0.50	0.15	ug/L			10/13/22 03:26	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/13/22 03:26	1
Xylenes, Total	**0.33**	**J**	1.0	0.22	ug/L			10/13/22 03:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 126*		*10/13/22 03:26*	*1*
Toluene-d8 (Surr)	*93*		*75 - 120*		*10/13/22 03:26*	*1*
4-Bromofluorobenzene (Surr)	*107*		*72 - 124*		*10/13/22 03:26*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*10/13/22 03:26*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.26		0.84	0.26	ug/L		10/09/22 12:24	10/20/22 16:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*79*		*36 - 120*	*10/09/22 12:24*	*10/20/22 16:27*	*1*
2-Fluorobiphenyl (Surr)	*86*		*34 - 110*	*10/09/22 12:24*	*10/20/22 16:27*	*1*
Terphenyl-d14 (Surr)	*118*		*40 - 145*	*10/09/22 12:24*	*10/20/22 16:27*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.15	^c	0.11	0.15	ug/L		10/10/22 09:54	10/11/22 18:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*82*		*25 - 130*	*10/10/22 09:54*	*10/11/22 18:49*	*1*

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

Job ID: 500-223243-1

Client Sample ID: W-221003-TS-09

Date Collected: 10/03/22 15:03
Date Received: 10/05/22 16:00

Lab Sample ID: 500-223243-9

Matrix: Water

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			10/13/22 03:50	1
Toluene	<0.15		0.50	0.15	ug/L			10/13/22 03:50	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/13/22 03:50	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/13/22 03:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 126*		*10/13/22 03:50*	*1*
Toluene-d8 (Surr)	*96*		*75 - 120*		*10/13/22 03:50*	*1*
4-Bromofluorobenzene (Surr)	*108*		*72 - 124*		*10/13/22 03:50*	*1*
Dibromofluoromethane	*98*		*75 - 120*		*10/13/22 03:50*	*1*

Method: SW846 8270D - 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		10/09/22 12:24	10/20/22 16:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*77*		*36 - 120*	*10/09/22 12:24*	*10/20/22 16:49*	*1*
2-Fluorobiphenyl (Surr)	*83*		*34 - 110*	*10/09/22 12:24*	*10/20/22 16:49*	*1*
Terphenyl-d14 (Surr)	*116*		*40 - 145*	*10/09/22 12:24*	*10/20/22 16:49*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.15	^c	0.10	0.15	ug/L		10/10/22 09:54	10/11/22 19:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*84*		*25 - 130*	*10/10/22 09:54*	*10/11/22 19:08*	*1*

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

Job ID: 500-223243-1

Client Sample ID: W-221004-TS-46

Date Collected: 10/04/22 11:55
Date Received: 10/05/22 16:00

Lab Sample ID: 500-223243-10

Matrix: Water

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			10/13/22 04:13	1
Toluene	**0.51**		0.50	0.15	ug/L			10/13/22 04:13	1
Ethylbenzene	**0.90**		0.50	0.18	ug/L			10/13/22 04:13	1
Xylenes, Total	**7.4**		1.0	0.22	ug/L			10/13/22 04:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 126*		*10/13/22 04:13*	*1*
Toluene-d8 (Surr)	*94*		*75 - 120*		*10/13/22 04:13*	*1*
4-Bromofluorobenzene (Surr)	*102*		*72 - 124*		*10/13/22 04:13*	*1*
Dibromofluoromethane	*102*		*75 - 120*		*10/13/22 04:13*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**30**	**F1**	0.81	0.25	ug/L		10/09/22 12:24	10/20/22 17:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*62*		*36 - 120*	*10/09/22 12:24*	*10/20/22 17:10*	*1*
2-Fluorobiphenyl (Surr)	*49*		*34 - 110*	*10/09/22 12:24*	*10/20/22 17:10*	*1*
Terphenyl-d14 (Surr)	*113*		*40 - 145*	*10/09/22 12:24*	*10/20/22 17:10*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**21**		1.0	0.17	ug/L			10/10/22 12:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,1-Trifluoroethane	*87*		*60 - 140*		*10/10/22 12:51*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	**6300**		210	300	ug/L		10/10/22 09:54	10/12/22 09:31	2000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*0*	*X*	*25 - 130*	*10/10/22 09:54*	*10/12/22 09:31*	*2000*

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		10/11/22 09:26	10/11/22 17:55	1
Copper	**3.4**	**B**	2.0	0.50	ug/L		10/11/22 09:26	10/11/22 17:55	1
Iron	**13900**		100	46.7	ug/L		10/11/22 09:26	10/11/22 17:55	1
Manganese	**8490**		12.5	4.0	ug/L		10/11/22 09:26	10/12/22 12:45	5
Zinc	<6.9		20.0	6.9	ug/L		10/11/22 09:26	10/11/22 17:55	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.77**	**J**	1.0	0.23	ug/L		10/11/22 09:26	10/11/22 18:29	1
Copper	**2.3**	**B**	2.0	0.50	ug/L		10/11/22 09:26	10/11/22 18:29	1
Iron	**14400**		100	46.7	ug/L		10/11/22 09:26	10/11/22 18:29	1
Manganese	**7400**		12.5	4.0	ug/L		10/11/22 09:26	10/12/22 13:03	5
Zinc	<6.9		20.0	6.9	ug/L		10/11/22 09:26	10/11/22 18:29	1

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

Job ID: 500-223243-1

Client Sample ID: W-221004-TS-46
Date Collected: 10/04/22 11:55
Date Received: 10/05/22 16:00

Lab Sample ID: 500-223243-10
Matrix: Water

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	194		0.50	0.25	mg/L		10/11/22 09:26	10/12/22 14:04	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	20.5	F1	2.0	1.7	mg/L			10/20/22 20:30	10
Nitrate as N (MCAWW 300.0)	<0.068		0.20	0.068	mg/L			10/06/22 10:49	1
Sulfate (MCAWW 300.0)	15.6		2.0	0.95	mg/L			10/20/22 20:30	10
Total Organic Carbon - Duplicates (SW846 9060A)	29.4		1.0	0.47	mg/L			10/17/22 13:52	1
Alkalinity (SM 2320B)	296		5.0	3.7	mg/L			10/15/22 13:41	1

Client Sample ID: W-221004-TS-11

Date Collected: 10/04/22 13:28
Date Received: 10/05/22 16:00

Lab Sample ID: 500-223243-11

Matrix: Water

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			10/13/22 05:26	1
Toluene	<0.15		0.50	0.15	ug/L			10/13/22 05:26	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/13/22 05:26	1
Xylenes, Total	**0.23**	**J**	1.0	0.22	ug/L			10/13/22 05:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 126*		*10/13/22 05:26*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*10/13/22 05:26*	*1*
4-Bromofluorobenzene (Surr)	*105*		*72 - 124*		*10/13/22 05:26*	*1*
Dibromofluoromethane	*100*		*75 - 120*		*10/13/22 05:26*	*1*

Method: SW846 8270D - 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		10/09/22 12:24	10/20/22 18:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*86*		*36 - 120*	*10/09/22 12:24*	*10/20/22 18:14*	*1*
2-Fluorobiphenyl (Surr)	*91*		*34 - 110*	*10/09/22 12:24*	*10/20/22 18:14*	*1*
Terphenyl-d14 (Surr)	*122*		*40 - 145*	*10/09/22 12:24*	*10/20/22 18:14*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**120**		1.0	0.17	ug/L			10/10/22 18:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,1-Trifluoroethane	*89*		*60 - 140*		*10/10/22 18:31*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	**1000**		49	71	ug/L		10/10/22 09:54	10/12/22 10:28	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*0*	*X*	*25 - 130*	*10/10/22 09:54*	*10/12/22 10:28*	*500*

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		10/11/22 09:26	10/11/22 18:12	1
Copper	**1.9**	**J B**	2.0	0.50	ug/L		10/11/22 09:26	10/11/22 18:12	1
Iron	**11200**		100	46.7	ug/L		10/11/22 09:26	10/11/22 18:12	1
Manganese	**98.7**		2.5	0.79	ug/L		10/11/22 09:26	10/11/22 18:12	1
Zinc	**46.0**		20.0	6.9	ug/L		10/11/22 09:26	10/11/22 18:12	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		10/11/22 09:26	10/11/22 18:43	1
Copper	**0.88**	**J B**	2.0	0.50	ug/L		10/11/22 09:26	10/11/22 18:43	1
Iron	**354**		100	46.7	ug/L		10/11/22 09:26	10/11/22 18:43	1
Manganese	**59.8**		2.5	0.79	ug/L		10/11/22 09:26	10/11/22 18:43	1
Zinc	<6.9		20.0	6.9	ug/L		10/11/22 09:26	10/11/22 18:43	1

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

Job ID: 500-223243-1

Client Sample ID: W-221004-TS-11

Date Collected: 10/04/22 13:28
Date Received: 10/05/22 16:00

Lab Sample ID: 500-223243-11

Matrix: Water

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		10/11/22 09:26	10/12/22 14:04	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	2.5		0.20	0.17	mg/L			10/07/22 14:19	1
Nitrate as N (MCAWW 300.0)	0.44		0.20	0.068	mg/L			10/06/22 09:58	1
Sulfate (MCAWW 300.0)	5.5		0.20	0.095	mg/L			10/07/22 14:19	1
Total Organic Carbon - Duplicates (SW846 9060A)	4.2		1.0	0.47	mg/L			10/17/22 14:40	1
Alkalinity (SM 2320B)	174		5.0	3.7	mg/L			10/15/22 14:16	1

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

Job ID: 500-223243-1

Client Sample ID: W-221004-TS-12

Date Collected: 10/04/22 12:30
Date Received: 10/05/22 16:00

Lab Sample ID: 500-223243-12

Matrix: Water

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			10/13/22 05:50	1
Toluene	<0.15		0.50	0.15	ug/L			10/13/22 05:50	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/13/22 05:50	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/13/22 05:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 126*		*10/13/22 05:50*	*1*
Toluene-d8 (Surr)	*94*		*75 - 120*		*10/13/22 05:50*	*1*
4-Bromofluorobenzene (Surr)	*108*		*72 - 124*		*10/13/22 05:50*	*1*
Dibromofluoromethane	*100*		*75 - 120*		*10/13/22 05:50*	*1*

Method: SW846 8270D - 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		10/09/22 12:24	10/20/22 18:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*70*		*36 - 120*	*10/09/22 12:24*	*10/20/22 18:35*	*1*
2-Fluorobiphenyl (Surr)	*73*		*34 - 110*	*10/09/22 12:24*	*10/20/22 18:35*	*1*
Terphenyl-d14 (Surr)	*107*		*40 - 145*	*10/09/22 12:24*	*10/20/22 18:35*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**110**		1.0	0.17	ug/L			10/10/22 18:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,1-Trifluoroethane	*90*		*60 - 140*		*10/10/22 18:48*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	**1000**		52	75	ug/L		10/10/22 09:54	10/12/22 10:47	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*0*	*X*	*25 - 130*	*10/10/22 09:54*	*10/12/22 10:47*	*500*

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		10/11/22 09:26	10/11/22 18:15	1
Copper	**1.4**	**J B**	2.0	0.50	ug/L		10/11/22 09:26	10/11/22 18:15	1
Iron	**7830**		100	46.7	ug/L		10/11/22 09:26	10/11/22 18:15	1
Manganese	**80.9**		2.5	0.79	ug/L		10/11/22 09:26	10/11/22 18:15	1
Zinc	**35.8**		20.0	6.9	ug/L		10/11/22 09:26	10/11/22 18:15	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		10/11/22 09:26	10/11/22 18:46	1
Copper	**1.3**	**J B**	2.0	0.50	ug/L		10/11/22 09:26	10/11/22 18:46	1
Iron	**352**		100	46.7	ug/L		10/11/22 09:26	10/11/22 18:46	1
Manganese	**61.3**		2.5	0.79	ug/L		10/11/22 09:26	10/11/22 18:46	1
Zinc	<6.9		20.0	6.9	ug/L		10/11/22 09:26	10/11/22 18:46	1

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

Job ID: 500-223243-1

Client Sample ID: W-221004-TS-12

Date Collected: 10/04/22 12:30
Date Received: 10/05/22 16:00

Lab Sample ID: 500-223243-12

Matrix: Water

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		10/11/22 09:26	10/12/22 14:04	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	2.5		0.20	0.17	mg/L			10/07/22 14:32	1
Nitrate as N (MCAWW 300.0)	0.44		0.20	0.068	mg/L			10/06/22 10:25	1
Sulfate (MCAWW 300.0)	5.6		0.20	0.095	mg/L			10/07/22 14:32	1
Total Organic Carbon - Duplicates (SW846 9060A)	4.0		1.0	0.47	mg/L			10/17/22 14:51	1
Alkalinity (SM 2320B)	173		5.0	3.7	mg/L			10/15/22 14:27	1

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

Job ID: 500-223243-1

Client Sample ID: W-221004-TS-13

Date Collected: 10/04/22 14:33
Date Received: 10/05/22 16:00

Lab Sample ID: 500-223243-13

Matrix: Water

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			10/13/22 06:14	1
Toluene	<0.15		0.50	0.15	ug/L			10/13/22 06:14	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/13/22 06:14	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/13/22 06:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 126*		*10/13/22 06:14*	*1*
Toluene-d8 (Surr)	*94*		*75 - 120*		*10/13/22 06:14*	*1*
4-Bromofluorobenzene (Surr)	*106*		*72 - 124*		*10/13/22 06:14*	*1*
Dibromofluoromethane	*101*		*75 - 120*		*10/13/22 06:14*	*1*

Method: SW846 8270D - 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		10/09/22 12:24	10/20/22 18:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*60*		*36 - 120*	*10/09/22 12:24*	*10/20/22 18:56*	*1*
2-Fluorobiphenyl (Surr)	*68*		*34 - 110*	*10/09/22 12:24*	*10/20/22 18:56*	*1*
Terphenyl-d14 (Surr)	*118*		*40 - 145*	*10/09/22 12:24*	*10/20/22 18:56*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**1.1**		1.0	0.17	ug/L			10/10/22 19:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,1-Trifluoroethane	*90*		*60 - 140*		*10/10/22 19:05*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	**2.3**		0.10	0.14	ug/L		10/10/22 09:54	10/12/22 09:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*83*		*25 - 130*	*10/10/22 09:54*	*10/12/22 09:05*	*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		10/11/22 09:26	10/11/22 18:19	1
Copper	**1.8**	**J B**	2.0	0.50	ug/L		10/11/22 09:26	10/11/22 18:19	1
Iron	**422**		100	46.7	ug/L		10/11/22 09:26	10/11/22 18:19	1
Manganese	**39.6**		2.5	0.79	ug/L		10/11/22 09:26	10/11/22 18:19	1
Zinc	<6.9		20.0	6.9	ug/L		10/11/22 09:26	10/11/22 18:19	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		10/11/22 09:26	10/11/22 18:50	1
Copper	**1.4**	**J B**	2.0	0.50	ug/L		10/11/22 09:26	10/11/22 18:50	1
Iron	<46.7		100	46.7	ug/L		10/11/22 09:26	10/11/22 18:50	1
Manganese	**1.9**	**J**	2.5	0.79	ug/L		10/11/22 09:26	10/11/22 18:50	1
Zinc	<6.9		20.0	6.9	ug/L		10/11/22 09:26	10/11/22 18:50	1

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

Job ID: 500-223243-1

Client Sample ID: W-221004-TS-13

Lab Sample ID: 500-223243-13

Date Collected: 10/04/22 14:33

Matrix: Water

Date Received: 10/05/22 16:00

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	60.7		0.50	0.25	mg/L		10/11/22 09:26	10/12/22 14:04	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	1.8		0.20	0.17	mg/L			10/07/22 14:45	1
Nitrate as N (MCAWW 300.0)	3.6		0.40	0.14	mg/L			10/06/22 12:52	2
Sulfate (MCAWW 300.0)	8.0		0.20	0.095	mg/L			10/07/22 14:45	1
Total Organic Carbon - Duplicates (SW846 9060A)	1.4		1.0	0.47	mg/L			10/17/22 15:04	1
Alkalinity (SM 2320B)	101		5.0	3.7	mg/L			10/15/22 14:34	1

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

Job ID: 500-223243-1

Client Sample ID: Trip Blank

Date Collected: 10/03/22 00:00
Date Received: 10/05/22 16:00

Lab Sample ID: 500-223243-14

Matrix: Water

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			10/12/22 23:26	1
Toluene	<0.15		0.50	0.15	ug/L			10/12/22 23:26	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/12/22 23:26	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/12/22 23:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 126*		*10/12/22 23:26*	*1*
Toluene-d8 (Surr)	*94*		*75 - 120*		*10/12/22 23:26*	*1*
4-Bromofluorobenzene (Surr)	*105*		*72 - 124*		*10/12/22 23:26*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*10/12/22 23:26*	*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
E	Result exceeded calibration range.
F1	MS and/or MSD recovery exceeds control limits.
X	Surrogate recovery exceeds control limits

GC Semi VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
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.
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
F1	MS and/or MSD recovery exceeds control limits.
H	Sample was prepped or analyzed beyond the specified holding time

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

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
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

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

Job ID: 500-223243-1

GC/MS VOA

Analysis Batch: 679285

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223243-1	W-221003-TS-01	Total/NA	Water	8260B	
500-223243-2	W-221003-TS-02	Total/NA	Water	8260B	
500-223243-3	W-221003-TS-03	Total/NA	Water	8260B	
500-223243-4	W-221003-TS-04	Total/NA	Water	8260B	
500-223243-5	W-221003-TS-05	Total/NA	Water	8260B	
500-223243-6	W-221003-TS-06	Total/NA	Water	8260B	
500-223243-7	W-221003-TS-07	Total/NA	Water	8260B	
500-223243-8	W-221003-TS-08	Total/NA	Water	8260B	
500-223243-9	W-221003-TS-09	Total/NA	Water	8260B	
500-223243-10	W-221004-TS-46	Total/NA	Water	8260B	
500-223243-11	W-221004-TS-11	Total/NA	Water	8260B	
500-223243-12	W-221004-TS-12	Total/NA	Water	8260B	
500-223243-13	W-221004-TS-13	Total/NA	Water	8260B	
500-223243-14	Trip Blank	Total/NA	Water	8260B	
MB 500-679285/5	Method Blank	Total/NA	Water	8260B	
LCS 500-679285/3	Lab Control Sample	Total/NA	Water	8260B	
500-223243-7 MS	W-221003-TS-07	Total/NA	Water	8260B	
500-223243-7 MSD	W-221003-TS-07	Total/NA	Water	8260B	
500-223243-10 MS	W-221004-TS-46	Total/NA	Water	8260B	
500-223243-10 MSD	W-221004-TS-46	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 678650

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223243-1	W-221003-TS-01	Total/NA	Water	3510C	
500-223243-2	W-221003-TS-02	Total/NA	Water	3510C	
500-223243-3	W-221003-TS-03	Total/NA	Water	3510C	
500-223243-4	W-221003-TS-04	Total/NA	Water	3510C	
500-223243-5	W-221003-TS-05	Total/NA	Water	3510C	
500-223243-6	W-221003-TS-06	Total/NA	Water	3510C	
500-223243-7	W-221003-TS-07	Total/NA	Water	3510C	
500-223243-8	W-221003-TS-08	Total/NA	Water	3510C	
500-223243-9	W-221003-TS-09	Total/NA	Water	3510C	
500-223243-10	W-221004-TS-46	Total/NA	Water	3510C	
500-223243-11	W-221004-TS-11	Total/NA	Water	3510C	
500-223243-12	W-221004-TS-12	Total/NA	Water	3510C	
500-223243-13	W-221004-TS-13	Total/NA	Water	3510C	
MB 500-678650/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-678650/2-A	Lab Control Sample	Total/NA	Water	3510C	
500-223243-7 MS	W-221003-TS-07	Total/NA	Water	3510C	
500-223243-7 MSD	W-221003-TS-07	Total/NA	Water	3510C	
500-223243-10 MS	W-221004-TS-46	Total/NA	Water	3510C	
500-223243-10 MSD	W-221004-TS-46	Total/NA	Water	3510C	

Analysis Batch: 680076

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-678650/1-A	Method Blank	Total/NA	Water	8270D	678650
LCS 500-678650/2-A	Lab Control Sample	Total/NA	Water	8270D	678650

GC/MS Semi VOA

Analysis Batch: 680628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223243-1	W-221003-TS-01	Total/NA	Water	8270D	678650
500-223243-2	W-221003-TS-02	Total/NA	Water	8270D	678650
500-223243-3	W-221003-TS-03	Total/NA	Water	8270D	678650
500-223243-4	W-221003-TS-04	Total/NA	Water	8270D	678650
500-223243-5	W-221003-TS-05	Total/NA	Water	8270D	678650
500-223243-6	W-221003-TS-06	Total/NA	Water	8270D	678650
500-223243-7	W-221003-TS-07	Total/NA	Water	8270D	678650
500-223243-8	W-221003-TS-08	Total/NA	Water	8270D	678650
500-223243-9	W-221003-TS-09	Total/NA	Water	8270D	678650
500-223243-10	W-221004-TS-46	Total/NA	Water	8270D	678650
500-223243-11	W-221004-TS-11	Total/NA	Water	8270D	678650
500-223243-12	W-221004-TS-12	Total/NA	Water	8270D	678650
500-223243-13	W-221004-TS-13	Total/NA	Water	8270D	678650
500-223243-7 MS	W-221003-TS-07	Total/NA	Water	8270D	678650
500-223243-7 MSD	W-221003-TS-07	Total/NA	Water	8270D	678650
500-223243-10 MS	W-221004-TS-46	Total/NA	Water	8270D	678650
500-223243-10 MSD	W-221004-TS-46	Total/NA	Water	8270D	678650

GC VOA

Analysis Batch: 546306

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223243-10	W-221004-TS-46	Total/NA	Water	RSK-175	
500-223243-11	W-221004-TS-11	Total/NA	Water	RSK-175	
500-223243-12	W-221004-TS-12	Total/NA	Water	RSK-175	
500-223243-13	W-221004-TS-13	Total/NA	Water	RSK-175	
MB 240-546306/3	Method Blank	Total/NA	Water	RSK-175	
LCS 240-546306/4	Lab Control Sample	Total/NA	Water	RSK-175	
500-223243-10 MS	W-221004-TS-46	Total/NA	Water	RSK-175	
500-223243-10 MSD	W-221004-TS-46	Total/NA	Water	RSK-175	

GC Semi VOA

Prep Batch: 678749

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223243-1	W-221003-TS-01	Total/NA	Water	8151A	
500-223243-2	W-221003-TS-02	Total/NA	Water	8151A	
500-223243-3	W-221003-TS-03	Total/NA	Water	8151A	
500-223243-4	W-221003-TS-04	Total/NA	Water	8151A	
500-223243-5	W-221003-TS-05	Total/NA	Water	8151A	
500-223243-6	W-221003-TS-06	Total/NA	Water	8151A	
500-223243-7	W-221003-TS-07	Total/NA	Water	8151A	
500-223243-8	W-221003-TS-08	Total/NA	Water	8151A	
500-223243-9	W-221003-TS-09	Total/NA	Water	8151A	
500-223243-10	W-221004-TS-46	Total/NA	Water	8151A	
500-223243-11	W-221004-TS-11	Total/NA	Water	8151A	
500-223243-12	W-221004-TS-12	Total/NA	Water	8151A	
500-223243-13	W-221004-TS-13	Total/NA	Water	8151A	
MB 500-678749/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-678749/2-A	Lab Control Sample	Total/NA	Water	8151A	
500-223243-7 MS	W-221003-TS-07	Total/NA	Water	8151A	
500-223243-7 MSD	W-221003-TS-07	Total/NA	Water	8151A	

GC Semi VOA (Continued)

Prep Batch: 678749 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223243-10 MS	W-221004-TS-46	Total/NA	Water	8151A	
500-223243-10 MSD	W-221004-TS-46	Total/NA	Water	8151A	

Analysis Batch: 679106

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223243-1	W-221003-TS-01	Total/NA	Water	8151A	678749
500-223243-2	W-221003-TS-02	Total/NA	Water	8151A	678749
500-223243-3	W-221003-TS-03	Total/NA	Water	8151A	678749
500-223243-4	W-221003-TS-04	Total/NA	Water	8151A	678749
500-223243-5	W-221003-TS-05	Total/NA	Water	8151A	678749
500-223243-6	W-221003-TS-06	Total/NA	Water	8151A	678749
500-223243-7	W-221003-TS-07	Total/NA	Water	8151A	678749
500-223243-8	W-221003-TS-08	Total/NA	Water	8151A	678749
500-223243-9	W-221003-TS-09	Total/NA	Water	8151A	678749
MB 500-678749/1-A	Method Blank	Total/NA	Water	8151A	678749
LCS 500-678749/2-A	Lab Control Sample	Total/NA	Water	8151A	678749
500-223243-7 MS	W-221003-TS-07	Total/NA	Water	8151A	678749
500-223243-7 MSD	W-221003-TS-07	Total/NA	Water	8151A	678749

Analysis Batch: 679150

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223243-10	W-221004-TS-46	Total/NA	Water	8151A	678749
500-223243-11	W-221004-TS-11	Total/NA	Water	8151A	678749
500-223243-12	W-221004-TS-12	Total/NA	Water	8151A	678749
500-223243-13	W-221004-TS-13	Total/NA	Water	8151A	678749
500-223243-10 MS	W-221004-TS-46	Total/NA	Water	8151A	678749
500-223243-10 MSD	W-221004-TS-46	Total/NA	Water	8151A	678749

Metals

Prep Batch: 678976

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223243-10	W-221004-TS-46	Dissolved	Water	3005A	
500-223243-10	W-221004-TS-46	Total Recoverable	Water	3005A	
500-223243-11	W-221004-TS-11	Dissolved	Water	3005A	
500-223243-11	W-221004-TS-11	Total Recoverable	Water	3005A	
500-223243-12	W-221004-TS-12	Dissolved	Water	3005A	
500-223243-12	W-221004-TS-12	Total Recoverable	Water	3005A	
500-223243-13	W-221004-TS-13	Dissolved	Water	3005A	
500-223243-13	W-221004-TS-13	Total Recoverable	Water	3005A	
MB 500-678976/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-678976/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
500-223243-10 MS	W-221004-TS-46	Dissolved	Water	3005A	
500-223243-10 MS	W-221004-TS-46	Total Recoverable	Water	3005A	
500-223243-10 MSD	W-221004-TS-46	Dissolved	Water	3005A	
500-223243-10 MSD	W-221004-TS-46	Total Recoverable	Water	3005A	
500-223243-10 DU	W-221004-TS-46	Dissolved	Water	3005A	
500-223243-10 DU	W-221004-TS-46	Total Recoverable	Water	3005A	

Metals

Analysis Batch: 679240

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223243-10	W-221004-TS-46	Dissolved	Water	6020A	678976
500-223243-10	W-221004-TS-46	Total Recoverable	Water	6020A	678976
500-223243-11	W-221004-TS-11	Dissolved	Water	6020A	678976
500-223243-11	W-221004-TS-11	Total Recoverable	Water	6020A	678976
500-223243-12	W-221004-TS-12	Dissolved	Water	6020A	678976
500-223243-12	W-221004-TS-12	Total Recoverable	Water	6020A	678976
500-223243-13	W-221004-TS-13	Dissolved	Water	6020A	678976
500-223243-13	W-221004-TS-13	Total Recoverable	Water	6020A	678976
MB 500-678976/1-A	Method Blank	Total Recoverable	Water	6020A	678976
LCS 500-678976/2-A	Lab Control Sample	Total Recoverable	Water	6020A	678976
500-223243-10 MS	W-221004-TS-46	Dissolved	Water	6020A	678976
500-223243-10 MS	W-221004-TS-46	Total Recoverable	Water	6020A	678976
500-223243-10 MSD	W-221004-TS-46	Dissolved	Water	6020A	678976
500-223243-10 MSD	W-221004-TS-46	Total Recoverable	Water	6020A	678976
500-223243-10 DU	W-221004-TS-46	Total Recoverable	Water	6020A	678976

Analysis Batch: 679294

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223243-10	W-221004-TS-46	Total Recoverable	Water	SM 2340B	678976
500-223243-11	W-221004-TS-11	Total Recoverable	Water	SM 2340B	678976
500-223243-12	W-221004-TS-12	Total Recoverable	Water	SM 2340B	678976
500-223243-13	W-221004-TS-13	Total Recoverable	Water	SM 2340B	678976

Analysis Batch: 679315

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223243-10	W-221004-TS-46	Dissolved	Water	6020A	678976
500-223243-10	W-221004-TS-46	Total Recoverable	Water	6020A	678976
500-223243-10 MS	W-221004-TS-46	Dissolved	Water	6020A	678976
500-223243-10 MS	W-221004-TS-46	Total Recoverable	Water	6020A	678976
500-223243-10 MSD	W-221004-TS-46	Dissolved	Water	6020A	678976
500-223243-10 MSD	W-221004-TS-46	Total Recoverable	Water	6020A	678976
500-223243-10 DU	W-221004-TS-46	Dissolved	Water	6020A	678976
500-223243-10 DU	W-221004-TS-46	Dissolved	Water	6020A	678976
500-223243-10 DU	W-221004-TS-46	Total Recoverable	Water	6020A	678976

General Chemistry

Analysis Batch: 678290

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223243-10	W-221004-TS-46	Total/NA	Water	300.0	
500-223243-11	W-221004-TS-11	Total/NA	Water	300.0	
500-223243-12	W-221004-TS-12	Total/NA	Water	300.0	
500-223243-13	W-221004-TS-13	Total/NA	Water	300.0	
MB 500-678290/11	Method Blank	Total/NA	Water	300.0	
LCS 500-678290/12	Lab Control Sample	Total/NA	Water	300.0	
500-223243-10 MS	W-221004-TS-46	Total/NA	Water	300.0	
500-223243-10 MSD	W-221004-TS-46	Total/NA	Water	300.0	

Analysis Batch: 678496

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223243-11	W-221004-TS-11	Total/NA	Water	300.0	

General Chemistry (Continued)

Analysis Batch: 678496 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223243-12	W-221004-TS-12	Total/NA	Water	300.0	
500-223243-13	W-221004-TS-13	Total/NA	Water	300.0	
MB 500-678496/11	Method Blank	Total/NA	Water	300.0	
LCS 500-678496/12	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 679828

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223243-10	W-221004-TS-46	Total/NA	Water	SM 2320B	
500-223243-11	W-221004-TS-11	Total/NA	Water	SM 2320B	
500-223243-12	W-221004-TS-12	Total/NA	Water	SM 2320B	
500-223243-13	W-221004-TS-13	Total/NA	Water	SM 2320B	
MB 500-679828/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-679828/4	Lab Control Sample	Total/NA	Water	SM 2320B	
500-223243-10 DU	W-221004-TS-46	Total/NA	Water	SM 2320B	

Analysis Batch: 680071

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223243-10	W-221004-TS-46	Total/NA	Water	9060A	
500-223243-11	W-221004-TS-11	Total/NA	Water	9060A	
500-223243-12	W-221004-TS-12	Total/NA	Water	9060A	
500-223243-13	W-221004-TS-13	Total/NA	Water	9060A	
MB 500-680071/4	Method Blank	Total/NA	Water	9060A	
LCS 500-680071/5	Lab Control Sample	Total/NA	Water	9060A	
LCSD 500-680071/6	Lab Control Sample Dup	Total/NA	Water	9060A	
500-223243-10 MS	W-221004-TS-46	Total/NA	Water	9060A	
500-223243-10 MSD	W-221004-TS-46	Total/NA	Water	9060A	

Analysis Batch: 680760

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223243-10	W-221004-TS-46	Total/NA	Water	300.0	
MB 500-680760/3	Method Blank	Total/NA	Water	300.0	
LCS 500-680760/4	Lab Control Sample	Total/NA	Water	300.0	
500-223243-10 MS	W-221004-TS-46	Total/NA	Water	300.0	
500-223243-10 MSD	W-221004-TS-46	Total/NA	Water	300.0	

Surrogate Summary

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

Job ID: 500-223243-1

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	TOL	BFB	DBFM
Lab Sample ID	Client Sample ID	(75-126)	(75-120)	(72-124)	(75-120)
500-223243-1	W-221003-TS-01	102	94	104	100
500-223243-2	W-221003-TS-02	98	96	105	99
500-223243-3	W-221003-TS-03	98	95	105	100
500-223243-4	W-221003-TS-04	100	93	105	100
500-223243-5	W-221003-TS-05	98	95	106	98
500-223243-6	W-221003-TS-06	100	94	109	99
500-223243-7	W-221003-TS-07	99	93	106	101
500-223243-7 MS	W-221003-TS-07	98	95	101	98
500-223243-7 MSD	W-221003-TS-07	97	94	102	99
500-223243-8	W-221003-TS-08	101	93	107	99
500-223243-9	W-221003-TS-09	97	96	108	98
500-223243-10	W-221004-TS-46	101	94	102	102
500-223243-10 MS	W-221004-TS-46	98	96	100	99
500-223243-10 MSD	W-221004-TS-46	96	95	101	98
500-223243-11	W-221004-TS-11	98	95	105	100
500-223243-12	W-221004-TS-12	100	94	108	100
500-223243-13	W-221004-TS-13	101	94	106	101
500-223243-14	Trip Blank	99	94	105	99
LCS 500-679285/3	Lab Control Sample	94	95	101	98
MB 500-679285/5	Method Blank	100	94	104	99

Surrogate Legend

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

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		NBZ	FBP	TPHL
Lab Sample ID	Client Sample ID	(36-120)	(34-110)	(40-145)
500-223243-1	W-221003-TS-01	74	83	113
500-223243-2	W-221003-TS-02	70	82	129
500-223243-3	W-221003-TS-03	78	85	122
500-223243-4	W-221003-TS-04	79	81	111
500-223243-5	W-221003-TS-05	82	94	116
500-223243-6	W-221003-TS-06	64	86	121
500-223243-7	W-221003-TS-07	74	76	103
500-223243-7 MS	W-221003-TS-07	85	93	119
500-223243-7 MSD	W-221003-TS-07	83	91	117
500-223243-8	W-221003-TS-08	79	86	118
500-223243-9	W-221003-TS-09	77	83	116
500-223243-10	W-221004-TS-46	62	49	113
500-223243-10 MS	W-221004-TS-46	82	75	116
500-223243-10 MSD	W-221004-TS-46	87	81	121
500-223243-11	W-221004-TS-11	86	91	122
500-223243-12	W-221004-TS-12	70	73	107
500-223243-13	W-221004-TS-13	60	68	118

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

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		NBZ	FBP	TPHL
Lab Sample ID	Client Sample ID	(36-120)	(34-110)	(40-145)
LCS 500-678650/2-A	Lab Control Sample	84	82	122
MB 500-678650/1-A	Method Blank	79	83	149 X

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**

		Percent Surrogate Recovery (Acceptance Limits)
		TFE1
Lab Sample ID	Client Sample ID	(60-140)
500-223243-10	W-221004-TS-46	87
500-223243-10 MS	W-221004-TS-46	85
500-223243-10 MSD	W-221004-TS-46	81
500-223243-11	W-221004-TS-11	89
500-223243-12	W-221004-TS-12	90
500-223243-13	W-221004-TS-13	90
LCS 240-546306/4	Lab Control Sample	90
MB 240-546306/3	Method Blank	91

Surrogate Legend

TFE = 1,1,1-Trifluoroethane

Method: 8151A - Herbicides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		DCPAA1
Lab Sample ID	Client Sample ID	(25-130)
500-223243-1	W-221003-TS-01	92
500-223243-2	W-221003-TS-02	88
500-223243-3	W-221003-TS-03	84
500-223243-4	W-221003-TS-04	93
500-223243-5	W-221003-TS-05	90
500-223243-6	W-221003-TS-06	91
500-223243-7	W-221003-TS-07	87
500-223243-7 MS	W-221003-TS-07	96
500-223243-7 MSD	W-221003-TS-07	88
500-223243-8	W-221003-TS-08	82
500-223243-9	W-221003-TS-09	84
500-223243-10	W-221004-TS-46	0 X
500-223243-10 MS	W-221004-TS-46	0 X
500-223243-10 MSD	W-221004-TS-46	0 X
500-223243-11	W-221004-TS-11	0 X
500-223243-12	W-221004-TS-12	0 X
500-223243-13	W-221004-TS-13	83
LCS 500-678749/2-A	Lab Control Sample	102
MB 500-678749/1-A	Method Blank	95

Surrogate Summary

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

Job ID: 500-223243-1

Surrogate Legend

DCPAA = DCAA

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

Lab Sample ID: MB 500-679285/5
Matrix: Water
Analysis Batch: 679285

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			10/12/22 23:02	1
Toluene	<0.15		0.50	0.15	ug/L			10/12/22 23:02	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/12/22 23:02	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/12/22 23:02	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 126*		*10/12/22 23:02*	*1*
Toluene-d8 (Surr)	*94*		*75 - 120*		*10/12/22 23:02*	*1*
4-Bromofluorobenzene (Surr)	*104*		*72 - 124*		*10/12/22 23:02*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*10/12/22 23:02*	*1*

Lab Sample ID: LCS 500-679285/3
Matrix: Water
Analysis Batch: 679285

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	43.3		ug/L		87	70 - 120
Toluene	50.0	46.1		ug/L		92	70 - 125
Ethylbenzene	50.0	46.8		ug/L		94	70 - 123
Xylenes, Total	100	92.7		ug/L		93	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 126*
Toluene-d8 (Surr)	*95*		*75 - 120*
4-Bromofluorobenzene (Surr)	*101*		*72 - 124*
Dibromofluoromethane	*98*		*75 - 120*

Lab Sample ID: 500-223243-7 MS
Matrix: Water
Analysis Batch: 679285

Client Sample ID: W-221003-TS-07
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.15		50.0	43.4		ug/L		87	70 - 120
Toluene	<0.15		50.0	45.7		ug/L		91	70 - 125
Ethylbenzene	<0.18		50.0	46.6		ug/L		93	70 - 123
Xylenes, Total	<0.22		100	92.0		ug/L		92	70 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 126*
Toluene-d8 (Surr)	*95*		*75 - 120*
4-Bromofluorobenzene (Surr)	*101*		*72 - 124*
Dibromofluoromethane	*98*		*75 - 120*

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

Lab Sample ID: 500-223243-7 MSD
Matrix: Water
Analysis Batch: 679285

Client Sample ID: W-221003-TS-07
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	44.7		ug/L		89	70 - 120	3	20
Toluene	<0.15		50.0	47.3		ug/L		95	70 - 125	3	20
Ethylbenzene	<0.18		50.0	48.1		ug/L		96	70 - 123	3	20
Xylenes, Total	<0.22		100	94.8		ug/L		95	70 - 125	3	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 126*
Toluene-d8 (Surr)	*94*		*75 - 120*
4-Bromofluorobenzene (Surr)	*102*		*72 - 124*
Dibromofluoromethane	*99*		*75 - 120*

Lab Sample ID: 500-223243-10 MS
Matrix: Water
Analysis Batch: 679285

Client Sample ID: W-221004-TS-46
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.15		50.0	39.5		ug/L		79	70 - 120
Toluene	0.51		50.0	44.4		ug/L		88	70 - 125
Ethylbenzene	0.90		50.0	44.2		ug/L		87	70 - 123
Xylenes, Total	7.4		100	97.3		ug/L		90	70 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 126*
Toluene-d8 (Surr)	*96*		*75 - 120*
4-Bromofluorobenzene (Surr)	*100*		*72 - 124*
Dibromofluoromethane	*99*		*75 - 120*

Lab Sample ID: 500-223243-10 MSD
Matrix: Water
Analysis Batch: 679285

Client Sample ID: W-221004-TS-46
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	44.7		ug/L		89	70 - 120	12	20
Toluene	0.51		50.0	47.9		ug/L		95	70 - 125	8	20
Ethylbenzene	0.90		50.0	48.9		ug/L		96	70 - 123	10	20
Xylenes, Total	7.4		100	105		ug/L		98	70 - 125	8	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*75 - 126*
Toluene-d8 (Surr)	*95*		*75 - 120*
4-Bromofluorobenzene (Surr)	*101*		*72 - 124*
Dibromofluoromethane	*98*		*75 - 120*

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

Lab Sample ID: MB 500-678650/1-A
Matrix: Water
Analysis Batch: 680076

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 678650

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.80	0.25	ug/L		10/09/22 12:24	10/18/22 11:34	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*79*		*36 - 120*	*10/09/22 12:24*	*10/18/22 11:34*	*1*
2-Fluorobiphenyl (Surr)	*83*		*34 - 110*	*10/09/22 12:24*	*10/18/22 11:34*	*1*
Terphenyl-d14 (Surr)	*149*	*X*	*40 - 145*	*10/09/22 12:24*	*10/18/22 11:34*	*1*

Lab Sample ID: LCS 500-678650/2-A
Matrix: Water
Analysis Batch: 680076

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 678650

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Naphthalene	32.0	22.4		ug/L		70	36 - 110

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*84*		*36 - 120*
2-Fluorobiphenyl (Surr)	*82*		*34 - 110*
Terphenyl-d14 (Surr)	*122*		*40 - 145*

Lab Sample ID: 500-223243-7 MS
Matrix: Water
Analysis Batch: 680628

Client Sample ID: W-221003-TS-07
Prep Type: Total/NA
Prep Batch: 678650

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Naphthalene	<0.23		30.7	20.8		ug/L		68	36 - 110

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*85*		*36 - 120*
2-Fluorobiphenyl (Surr)	*93*		*34 - 110*
Terphenyl-d14 (Surr)	*119*		*40 - 145*

Lab Sample ID: 500-223243-7 MSD
Matrix: Water
Analysis Batch: 680628

Client Sample ID: W-221003-TS-07
Prep Type: Total/NA
Prep Batch: 678650

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Naphthalene	<0.23		30.1	19.9		ug/L		66	36 - 110	5	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*83*		*36 - 120*
2-Fluorobiphenyl (Surr)	*91*		*34 - 110*
Terphenyl-d14 (Surr)	*117*		*40 - 145*

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

Lab Sample ID: 500-223243-10 MS
Matrix: Water
Analysis Batch: 680628

Client Sample ID: W-221004-TS-46
Prep Type: Total/NA
Prep Batch: 678650

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Naphthalene	30	F1	33.2	68.1	E F1	ug/L		116	36 - 110

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*82*		*36 - 120*
2-Fluorobiphenyl (Surr)	*75*		*34 - 110*
Terphenyl-d14 (Surr)	*116*		*40 - 145*

Lab Sample ID: 500-223243-10 MSD
Matrix: Water
Analysis Batch: 680628

Client Sample ID: W-221004-TS-46
Prep Type: Total/NA
Prep Batch: 678650

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Naphthalene	30	F1	31.8	63.4	E	ug/L		107	36 - 110	7	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*87*		*36 - 120*
2-Fluorobiphenyl (Surr)	*81*		*34 - 110*
Terphenyl-d14 (Surr)	*121*		*40 - 145*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 240-546306/3
Matrix: Water
Analysis Batch: 546306

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			10/10/22 12:00	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,1-Trifluoroethane	*91*		*60 - 140*		*10/10/22 12:00*	*1*

Lab Sample ID: LCS 240-546306/4
Matrix: Water
Analysis Batch: 546306

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methane			284	247		ug/L		87	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,1-Trifluoroethane	*90*		*60 - 140*

Lab Sample ID: 500-223243-10 MS
Matrix: Water
Analysis Batch: 546306

Client Sample ID: W-221004-TS-46
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Methane	21		284	269		ug/L		87	50 - 150

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

Lab Sample ID: 500-223243-10 MS
Matrix: Water
Analysis Batch: 546306

Client Sample ID: W-221004-TS-46
Prep Type: Total/NA

Surrogate	MS %Recovery	MS Qualifier	Limits
1,1,1-Trifluoroethane	85		60 - 140

Lab Sample ID: 500-223243-10 MSD
Matrix: Water
Analysis Batch: 546306

Client Sample ID: W-221004-TS-46
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methane	21		284	272		ug/L		88	50 - 150	1	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,1,1-Trifluoroethane	81		60 - 140

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 500-678749/1-A
Matrix: Water
Analysis Batch: 679106

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 678749

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14		0.10	0.14	ug/L		10/10/22 09:54	10/11/22 15:04	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	95		25 - 130	10/10/22 09:54	10/11/22 15:04	1

Lab Sample ID: LCS 500-678749/2-A
Matrix: Water
Analysis Batch: 679106

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 678749

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Pentachlorophenol			2.53	2.63		ug/L		104	40 - 122		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCAA	102		25 - 130

Lab Sample ID: 500-223243-7 MS
Matrix: Water
Analysis Batch: 679106

Client Sample ID: W-221003-TS-07
Prep Type: Total/NA
Prep Batch: 678749

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Pentachlorophenol	<0.14	^c	2.44	2.38		ug/L		98	40 - 122		

Surrogate	MS %Recovery	MS Qualifier	Limits
DCAA	96		25 - 130

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

Lab Sample ID: 500-223243-7 MSD
Matrix: Water
Analysis Batch: 679106

Client Sample ID: W-221003-TS-07
Prep Type: Total/NA
Prep Batch: 678749

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Pentachlorophenol	<0.14	^c	2.47	2.13		ug/L		86	40 - 122	11	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
DCAA	*88*		*25 - 130*

Lab Sample ID: 500-223243-10 MS
Matrix: Water
Analysis Batch: 679150

Client Sample ID: W-221004-TS-46
Prep Type: Total/NA
Prep Batch: 678749

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Pentachlorophenol	6300		2.59	6410	4	ug/L		4799	40 - 122

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
DCAA	*0*	*X*	*25 - 130*

Lab Sample ID: 500-223243-10 MSD
Matrix: Water
Analysis Batch: 679150

Client Sample ID: W-221004-TS-46
Prep Type: Total/NA
Prep Batch: 678749

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Pentachlorophenol	6300		2.56	6140	4	ug/L		-5787	40 - 122	4	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
DCAA	*0*	*X*	*25 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 500-678976/1-A
Matrix: Water
Analysis Batch: 679240

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 678976

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		10/11/22 09:26	10/11/22 17:48	1
Copper	0.785	J	2.0	0.50	ug/L		10/11/22 09:26	10/11/22 17:48	1
Iron	<46.7		100	46.7	ug/L		10/11/22 09:26	10/11/22 17:48	1
Manganese	<0.79		2.5	0.79	ug/L		10/11/22 09:26	10/11/22 17:48	1
Zinc	<6.9		20.0	6.9	ug/L		10/11/22 09:26	10/11/22 17:48	1

Lab Sample ID: LCS 500-678976/2-A
Matrix: Water
Analysis Batch: 679240

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 678976

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	100	99.79		ug/L		100	80 - 120
Copper	250	268.7		ug/L		107	80 - 120
Iron	1000	1079		ug/L		108	80 - 120
Manganese	500	526.9		ug/L		105	80 - 120
Zinc	500	541.1		ug/L		108	80 - 120

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

Lab Sample ID: 500-223243-10 MS
Matrix: Water
Analysis Batch: 679240

Client Sample ID: W-221004-TS-46
Prep Type: Total Recoverable
Prep Batch: 678976

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Arsenic	1.3		100	99.47		ug/L		98	75 - 125		
Copper	3.4	B	250	263.5		ug/L		104	75 - 125		
Iron	13900		1000	14730	4	ug/L		87	75 - 125		
Zinc	<6.9		500	521.7		ug/L		104	75 - 125		

Lab Sample ID: 500-223243-10 MS
Matrix: Water
Analysis Batch: 679315

Client Sample ID: W-221004-TS-46
Prep Type: Total Recoverable
Prep Batch: 678976

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Manganese	8490		500	8259	4	ug/L		-47	75 - 125		

Lab Sample ID: 500-223243-10 MSD
Matrix: Water
Analysis Batch: 679240

Client Sample ID: W-221004-TS-46
Prep Type: Total Recoverable
Prep Batch: 678976

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	1.3		100	98.52		ug/L		97	75 - 125	1	20
Copper	3.4	B	250	262.4		ug/L		104	75 - 125	0	20
Iron	13900		1000	14320	4	ug/L		46	75 - 125	3	20
Zinc	<6.9		500	522.6		ug/L		105	75 - 125	0	20

Lab Sample ID: 500-223243-10 MSD
Matrix: Water
Analysis Batch: 679315

Client Sample ID: W-221004-TS-46
Prep Type: Total Recoverable
Prep Batch: 678976

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Manganese	8490		500	9089	4	ug/L		119	75 - 125	10	20

Lab Sample ID: 500-223243-10 DU
Matrix: Water
Analysis Batch: 679240

Client Sample ID: W-221004-TS-46
Prep Type: Total Recoverable
Prep Batch: 678976

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Arsenic	1.3			1.19		ug/L				5	20
Copper	3.4	B		3.40		ug/L				0.6	20
Iron	13900			14160		ug/L				2	20
Zinc	<6.9			<6.9		ug/L				NC	20

Lab Sample ID: 500-223243-10 DU
Matrix: Water
Analysis Batch: 679315

Client Sample ID: W-221004-TS-46
Prep Type: Total Recoverable
Prep Batch: 678976

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Manganese	8490			8668		ug/L				2	20

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

Lab Sample ID: 500-223243-10 MS
Matrix: Water
Analysis Batch: 679240

Client Sample ID: W-221004-TS-46
Prep Type: Dissolved
Prep Batch: 678976

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Arsenic	0.77	J	100	93.82		ug/L		93	75 - 125		
Copper	2.3	B	250	248.7		ug/L		99	75 - 125		
Iron	14400		1000	14880	4	ug/L		44	75 - 125		
Zinc	<6.9		500	498.1		ug/L		100	75 - 125		

Lab Sample ID: 500-223243-10 MS
Matrix: Water
Analysis Batch: 679315

Client Sample ID: W-221004-TS-46
Prep Type: Dissolved
Prep Batch: 678976

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Manganese	7400		500	9739	4	ug/L		467	75 - 125		

Lab Sample ID: 500-223243-10 MSD
Matrix: Water
Analysis Batch: 679240

Client Sample ID: W-221004-TS-46
Prep Type: Dissolved
Prep Batch: 678976

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	0.77	J	100	99.19		ug/L		98	75 - 125	6	20
Copper	2.3	B	250	262.3		ug/L		104	75 - 125	5	20
Iron	14400		1000	15030	4	ug/L		59	75 - 125	1	20
Zinc	<6.9		500	519.1		ug/L		104	75 - 125	4	20

Lab Sample ID: 500-223243-10 MSD
Matrix: Water
Analysis Batch: 679315

Client Sample ID: W-221004-TS-46
Prep Type: Dissolved
Prep Batch: 678976

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Manganese	7400		500	9467	4	ug/L		413	75 - 125	3	20

Lab Sample ID: 500-223243-10 DU
Matrix: Water
Analysis Batch: 679315

Client Sample ID: W-221004-TS-46
Prep Type: Dissolved
Prep Batch: 678976

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	0.77	J	0.387	J F5	ug/L		66	20
Copper	2.3	B	0.780	J F5	ug/L		99	20
Iron	14400		13860		ug/L		4	20
Zinc	<6.9		<6.9		ug/L		NC	20

Lab Sample ID: 500-223243-10 DU
Matrix: Water
Analysis Batch: 679315

Client Sample ID: W-221004-TS-46
Prep Type: Dissolved
Prep Batch: 678976

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Manganese	7400		7631		ug/L		3	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 500-678290/11
Matrix: Water
Analysis Batch: 678290

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	<0.068		0.20	0.068	mg/L			10/06/22 11:16	1

Lab Sample ID: LCS 500-678290/12
Matrix: Water
Analysis Batch: 678290

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	2.00	1.86		mg/L		93	90 - 110

Lab Sample ID: 500-223243-10 MS
Matrix: Water
Analysis Batch: 678290

Client Sample ID: W-221004-TS-46
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	<0.068		1.00	0.981		mg/L		98	80 - 120

Lab Sample ID: 500-223243-10 MSD
Matrix: Water
Analysis Batch: 678290

Client Sample ID: W-221004-TS-46
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	<0.068		1.00	0.985	H	mg/L		99	80 - 120	0	20

Lab Sample ID: MB 500-678496/11
Matrix: Water
Analysis Batch: 678496

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.17		0.20	0.17	mg/L			10/07/22 10:06	1
Sulfate	<0.095		0.20	0.095	mg/L			10/07/22 10:06	1

Lab Sample ID: LCS 500-678496/12
Matrix: Water
Analysis Batch: 678496

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	3.00	3.18		mg/L		106	90 - 110
Sulfate	5.00	5.24		mg/L		105	90 - 110

Lab Sample ID: MB 500-680760/3
Matrix: Water
Analysis Batch: 680760

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.17		0.20	0.17	mg/L			10/20/22 17:19	1
Sulfate	<0.095		0.20	0.095	mg/L			10/20/22 17:19	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 500-680760/4
Matrix: Water
Analysis Batch: 680760

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	3.00	2.97		mg/L		99	90 - 110
Sulfate	5.00	5.21		mg/L		104	90 - 110

Lab Sample ID: 500-223243-10 MS
Matrix: Water
Analysis Batch: 680760

Client Sample ID: W-221004-TS-46
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	20.5	F1	10.0	28.49		mg/L		80	80 - 120
Sulfate	15.6		25.0	39.70		mg/L		96	80 - 120

Lab Sample ID: 500-223243-10 MSD
Matrix: Water
Analysis Batch: 680760

Client Sample ID: W-221004-TS-46
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	20.5	F1	10.0	28.37	F1	mg/L		78	80 - 120	0	20
Sulfate	15.6		25.0	39.50		mg/L		96	80 - 120	1	20

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

Lab Sample ID: MB 500-680071/4
Matrix: Water
Analysis Batch: 680071

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 - Duplicates	<0.47		1.0	0.47	mg/L			10/17/22 12:42	1

Lab Sample ID: LCS 500-680071/5
Matrix: Water
Analysis Batch: 680071

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 - Duplicates	10.0	9.67		mg/L		97	86 - 116

Lab Sample ID: LCSD 500-680071/6
Matrix: Water
Analysis Batch: 680071

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 - Duplicates	10.0	9.66		mg/L		97	86 - 116	0	20

Lab Sample ID: 500-223243-10 MS
Matrix: Water
Analysis Batch: 680071

Client Sample ID: W-221004-TS-46
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon - Duplicates	29.4		10.0	39.58		mg/L		102	75 - 125

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

Job ID: 500-223243-1

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

Lab Sample ID: 500-223243-10 MSD
Matrix: Water
Analysis Batch: 680071

Client Sample ID: W-221004-TS-46
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 - Duplicates	29.4		10.0	39.82		mg/L		105	75 - 125	1	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-679828/3
Matrix: Water
Analysis Batch: 679828

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			10/15/22 12:52	1

Lab Sample ID: LCS 500-679828/4
Matrix: Water
Analysis Batch: 679828

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	100	109.0		mg/L		109	90 - 110

Lab Sample ID: 500-223243-10 DU
Matrix: Water
Analysis Batch: 679828

Client Sample ID: W-221004-TS-46
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	296		289.7		mg/L		2	20

Lab Chronicle

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

Job ID: 500-223243-1

Client Sample ID: W-221003-TS-01
Date Collected: 10/03/22 12:00
Date Received: 10/05/22 16:00

Lab Sample ID: 500-223243-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679285	W1T	EET CHI	10/12/22 23:50
Total/NA	Prep	3510C			678650	TS	EET CHI	10/09/22 12:24
Total/NA	Analysis	8270D		1	680628	SS	EET CHI	10/20/22 13:16
Total/NA	Prep	8151A			678749	TS	EET CHI	10/10/22 09:54
Total/NA	Analysis	8151A		1	679106	SS	EET CHI	10/11/22 15:41

Client Sample ID: W-221003-TS-02
Date Collected: 10/03/22 12:08
Date Received: 10/05/22 16:00

Lab Sample ID: 500-223243-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679285	W1T	EET CHI	10/13/22 00:14
Total/NA	Prep	3510C			678650	TS	EET CHI	10/09/22 12:24
Total/NA	Analysis	8270D		1	680628	SS	EET CHI	10/20/22 13:37
Total/NA	Prep	8151A			678749	TS	EET CHI	10/10/22 09:54
Total/NA	Analysis	8151A		1	679106	SS	EET CHI	10/11/22 16:00

Client Sample ID: W-221003-TS-03
Date Collected: 10/03/22 12:19
Date Received: 10/05/22 16:00

Lab Sample ID: 500-223243-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679285	W1T	EET CHI	10/13/22 00:38
Total/NA	Prep	3510C			678650	TS	EET CHI	10/09/22 12:24
Total/NA	Analysis	8270D		1	680628	SS	EET CHI	10/20/22 13:59
Total/NA	Prep	8151A			678749	TS	EET CHI	10/10/22 09:54
Total/NA	Analysis	8151A		1	679106	SS	EET CHI	10/11/22 16:19

Client Sample ID: W-221003-TS-04
Date Collected: 10/03/22 13:35
Date Received: 10/05/22 16:00

Lab Sample ID: 500-223243-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679285	W1T	EET CHI	10/13/22 01:02
Total/NA	Prep	3510C			678650	TS	EET CHI	10/09/22 12:24
Total/NA	Analysis	8270D		1	680628	SS	EET CHI	10/20/22 14:20
Total/NA	Prep	8151A			678749	TS	EET CHI	10/10/22 09:54
Total/NA	Analysis	8151A		1	679106	SS	EET CHI	10/11/22 16:37

Client Sample ID: W-221003-TS-05
Date Collected: 10/03/22 13:50
Date Received: 10/05/22 16:00

Lab Sample ID: 500-223243-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679285	W1T	EET CHI	10/13/22 01:26

Client Sample ID: W-221003-TS-05
Lab Sample ID: 500-223243-5

Date Collected: 10/03/22 13:50
Matrix: Water
Date Received: 10/05/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			678650	TS	EET CHI	10/09/22 12:24
Total/NA	Analysis	8270D		1	680628	SS	EET CHI	10/20/22 14:41
Total/NA	Prep	8151A			678749	TS	EET CHI	10/10/22 09:54
Total/NA	Analysis	8151A		1	679106	SS	EET CHI	10/11/22 16:56

Client Sample ID: W-221003-TS-06
Lab Sample ID: 500-223243-6

Date Collected: 10/03/22 13:58
Matrix: Water
Date Received: 10/05/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679285	W1T	EET CHI	10/13/22 01:50
Total/NA	Prep	3510C			678650	TS	EET CHI	10/09/22 12:24
Total/NA	Analysis	8270D		1	680628	SS	EET CHI	10/20/22 15:02
Total/NA	Prep	8151A			678749	TS	EET CHI	10/10/22 09:54
Total/NA	Analysis	8151A		1	679106	SS	EET CHI	10/11/22 17:15

Client Sample ID: W-221003-TS-07
Lab Sample ID: 500-223243-7

Date Collected: 10/03/22 14:55
Matrix: Water
Date Received: 10/05/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679285	W1T	EET CHI	10/13/22 02:14
Total/NA	Prep	3510C			678650	TS	EET CHI	10/09/22 12:24
Total/NA	Analysis	8270D		1	680628	SS	EET CHI	10/20/22 15:24
Total/NA	Prep	8151A			678749	TS	EET CHI	10/10/22 09:54
Total/NA	Analysis	8151A		1	679106	SS	EET CHI	10/11/22 17:53

Client Sample ID: W-221003-TS-08
Lab Sample ID: 500-223243-8

Date Collected: 10/03/22 15:03
Matrix: Water
Date Received: 10/05/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679285	W1T	EET CHI	10/13/22 03:26
Total/NA	Prep	3510C			678650	TS	EET CHI	10/09/22 12:24
Total/NA	Analysis	8270D		1	680628	SS	EET CHI	10/20/22 16:27
Total/NA	Prep	8151A			678749	TS	EET CHI	10/10/22 09:54
Total/NA	Analysis	8151A		1	679106	SS	EET CHI	10/11/22 18:49

Client Sample ID: W-221003-TS-09
Lab Sample ID: 500-223243-9

Date Collected: 10/03/22 15:03
Matrix: Water
Date Received: 10/05/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679285	W1T	EET CHI	10/13/22 03:50

Lab Chronicle

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

Job ID: 500-223243-1

Client Sample ID: W-221003-TS-09

Lab Sample ID: 500-223243-9

Date Collected: 10/03/22 15:03

Matrix: Water

Date Received: 10/05/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			678650	TS	EET CHI	10/09/22 12:24
Total/NA	Analysis	8270D		1	680628	SS	EET CHI	10/20/22 16:49
Total/NA	Prep	8151A			678749	TS	EET CHI	10/10/22 09:54
Total/NA	Analysis	8151A		1	679106	SS	EET CHI	10/11/22 19:08

Client Sample ID: W-221004-TS-46

Lab Sample ID: 500-223243-10

Date Collected: 10/04/22 11:55

Matrix: Water

Date Received: 10/05/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679285	W1T	EET CHI	10/13/22 04:13
Total/NA	Prep	3510C			678650	TS	EET CHI	10/09/22 12:24
Total/NA	Analysis	8270D		1	680628	SS	EET CHI	10/20/22 17:10
Total/NA	Analysis	RSK-175		1	546306	JBN	EET CAN	10/10/22 12:51
Total/NA	Prep	8151A			678749	TS	EET CHI	10/10/22 09:54
Total/NA	Analysis	8151A		2000	679150	NB	EET CHI	10/12/22 09:31
Dissolved	Prep	3005A			678976	BDE	EET CHI	10/11/22 09:26 - 10/11/22 09:56 [1]
Dissolved	Analysis	6020A		1	679240	FXG	EET CHI	10/11/22 18:29
Dissolved	Prep	3005A			678976	BDE	EET CHI	10/11/22 09:26 - 10/11/22 09:56 [1]
Dissolved	Analysis	6020A		5	679315	FXG	EET CHI	10/12/22 13:03
Total Recoverable	Prep	3005A			678976	BDE	EET CHI	10/11/22 09:26 - 10/11/22 09:56 [1]
Total Recoverable	Analysis	6020A		1	679240	FXG	EET CHI	10/11/22 17:55
Total Recoverable	Prep	3005A			678976	BDE	EET CHI	10/11/22 09:26 - 10/11/22 09:56 [1]
Total Recoverable	Analysis	6020A		5	679315	FXG	EET CHI	10/12/22 12:45
Total Recoverable	Prep	3005A			678976	BDE	EET CHI	10/11/22 09:26 - 10/11/22 09:56 [1]
Total Recoverable	Analysis	SM 2340B		1	679294	FXG	EET CHI	10/12/22 14:04
Total/NA	Analysis	300.0		10	680760	RES	EET CHI	10/20/22 20:30
Total/NA	Analysis	300.0		1	678290	RES	EET CHI	10/06/22 10:49
Total/NA	Analysis	9060A		1	680071	BC	EET CHI	10/17/22 13:52
Total/NA	Analysis	SM 2320B		1	679828	SMO	EET CHI	10/15/22 13:41

Client Sample ID: W-221004-TS-11

Lab Sample ID: 500-223243-11

Date Collected: 10/04/22 13:28

Matrix: Water

Date Received: 10/05/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679285	W1T	EET CHI	10/13/22 05:26
Total/NA	Prep	3510C			678650	TS	EET CHI	10/09/22 12:24
Total/NA	Analysis	8270D		1	680628	SS	EET CHI	10/20/22 18:14
Total/NA	Analysis	RSK-175		1	546306	JBN	EET CAN	10/10/22 18:31
Total/NA	Prep	8151A			678749	TS	EET CHI	10/10/22 09:54
Total/NA	Analysis	8151A		500	679150	NB	EET CHI	10/12/22 10:28
Dissolved	Prep	3005A			678976	BDE	EET CHI	10/11/22 09:26 - 10/11/22 09:56 [1]
Dissolved	Analysis	6020A		1	679240	FXG	EET CHI	10/11/22 18:43

Client Sample ID: W-221004-TS-11

Lab Sample ID: 500-223243-11

Date Collected: 10/04/22 13:28

Matrix: Water

Date Received: 10/05/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			678976	BDE	EET CHI	10/11/22 09:26 - 10/11/22 09:56 [1]
Total Recoverable	Analysis	6020A		1	679240	FXG	EET CHI	10/11/22 18:12
Total Recoverable	Prep	3005A			678976	BDE	EET CHI	10/11/22 09:26 - 10/11/22 09:56 [1]
Total Recoverable	Analysis	SM 2340B		1	679294	FXG	EET CHI	10/12/22 14:04
Total/NA	Analysis	300.0		1	678290	RES	EET CHI	10/06/22 09:58
Total/NA	Analysis	300.0		1	678496	RES	EET CHI	10/07/22 14:19
Total/NA	Analysis	9060A		1	680071	BC	EET CHI	10/17/22 14:40
Total/NA	Analysis	SM 2320B		1	679828	SMO	EET CHI	10/15/22 14:16

Client Sample ID: W-221004-TS-12

Lab Sample ID: 500-223243-12

Date Collected: 10/04/22 12:30

Matrix: Water

Date Received: 10/05/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679285	W1T	EET CHI	10/13/22 05:50
Total/NA	Prep	3510C			678650	TS	EET CHI	10/09/22 12:24
Total/NA	Analysis	8270D		1	680628	SS	EET CHI	10/20/22 18:35
Total/NA	Analysis	RSK-175		1	546306	JBN	EET CAN	10/10/22 18:48
Total/NA	Prep	8151A			678749	TS	EET CHI	10/10/22 09:54
Total/NA	Analysis	8151A		500	679150	NB	EET CHI	10/12/22 10:47
Dissolved	Prep	3005A			678976	BDE	EET CHI	10/11/22 09:26 - 10/11/22 09:56 [1]
Dissolved	Analysis	6020A		1	679240	FXG	EET CHI	10/11/22 18:46
Total Recoverable	Prep	3005A			678976	BDE	EET CHI	10/11/22 09:26 - 10/11/22 09:56 [1]
Total Recoverable	Analysis	6020A		1	679240	FXG	EET CHI	10/11/22 18:15
Total Recoverable	Prep	3005A			678976	BDE	EET CHI	10/11/22 09:26 - 10/11/22 09:56 [1]
Total Recoverable	Analysis	SM 2340B		1	679294	FXG	EET CHI	10/12/22 14:04
Total/NA	Analysis	300.0		1	678290	RES	EET CHI	10/06/22 10:25
Total/NA	Analysis	300.0		1	678496	RES	EET CHI	10/07/22 14:32
Total/NA	Analysis	9060A		1	680071	BC	EET CHI	10/17/22 14:51
Total/NA	Analysis	SM 2320B		1	679828	SMO	EET CHI	10/15/22 14:27

Client Sample ID: W-221004-TS-13

Lab Sample ID: 500-223243-13

Date Collected: 10/04/22 14:33

Matrix: Water

Date Received: 10/05/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679285	W1T	EET CHI	10/13/22 06:14
Total/NA	Prep	3510C			678650	TS	EET CHI	10/09/22 12:24
Total/NA	Analysis	8270D		1	680628	SS	EET CHI	10/20/22 18:56
Total/NA	Analysis	RSK-175		1	546306	JBN	EET CAN	10/10/22 19:05
Total/NA	Prep	8151A			678749	TS	EET CHI	10/10/22 09:54
Total/NA	Analysis	8151A		1	679150	NB	EET CHI	10/12/22 09:05
Dissolved	Prep	3005A			678976	BDE	EET CHI	10/11/22 09:26 - 10/11/22 09:56 [1]
Dissolved	Analysis	6020A		1	679240	FXG	EET CHI	10/11/22 18:50

Lab Chronicle

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

Job ID: 500-223243-1

Client Sample ID: W-221004-TS-13

Lab Sample ID: 500-223243-13

Date Collected: 10/04/22 14:33

Matrix: Water

Date Received: 10/05/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			678976	BDE	EET CHI	10/11/22 09:26 - 10/11/22 09:56 [1]
Total Recoverable	Analysis	6020A		1	679240	FXG	EET CHI	10/11/22 18:19
Total Recoverable	Prep	3005A			678976	BDE	EET CHI	10/11/22 09:26 - 10/11/22 09:56 [1]
Total Recoverable	Analysis	SM 2340B		1	679294	FXG	EET CHI	10/12/22 14:04
Total/NA	Analysis	300.0		2	678290	RES	EET CHI	10/06/22 12:52
Total/NA	Analysis	300.0		1	678496	RES	EET CHI	10/07/22 14:45
Total/NA	Analysis	9060A		1	680071	BC	EET CHI	10/17/22 15:04
Total/NA	Analysis	SM 2320B		1	679828	SMO	EET CHI	10/15/22 14:34

Client Sample ID: Trip Blank

Lab Sample ID: 500-223243-14

Date Collected: 10/03/22 00:00

Matrix: Water

Date Received: 10/05/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679285	W1T	EET CHI	10/12/22 23:26

[1] Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Laboratory References:

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

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

Accreditation/Certification Summary

Client: GHD Services Inc.
Job ID: 500-223243-1
Project/Site: Penta Wood 11222418

Laboratory: Eurofins Chicago

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

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-23

Laboratory: Eurofins Canton

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	02-27-23
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23
Kentucky (WW)	State	KY98016	12-31-22
Minnesota	NELAP	039-999-348	12-31-22
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	10-10-22
New York	NELAP	10975	04-01-23
Ohio	State	8303	10-12-22
Ohio VAP	State	CL0024	02-27-23
Oregon	NELAP	4062	02-27-23
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
Washington	State	C971	01-12-23
West Virginia DEP	State	210	12-31-22

Chain of Custody Record

543317

eurofins | Environment Testing TestAmerica

Address _____

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TAL-8210

Client Contact	Project Manager: T M PEE	Site Contact:	Date: 10/4/2022	COC No
Company Name GHD	Tel/Email: T M PEE @ GHD.COM	Lab Contact:	Carrier: FEDEX	1 of 2 COCs
Address 900 LONG LAKE ROAD 200	Analysis Turnaround Time			Sampler: TYLER SOLBERG
City/State/Zip ST PAUL / MN / 55112	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone 612 - 613 - 7458	TAT if different from Below _____			Walk-in Client
Fax -	☐ 2 weeks			Lab Sampling
Project Name 12224.8	☐ 1 week			
Site PENTA WOOD	☐ 2 days			Job / SDG No
P O #	☐ 1 day			500-223243

500-223243 COC

	Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	PENTACHLOROPHENOL	NAPTHALENE	BTEX	Sample Specific Notes
1	W-221003-TS-01	10/3	1200	G	W	7	N	N	X	X	X	
2	W-221003-TS-02	10/3	1209				N	N	X	X	X	
3	W-221003-TS-03	10/3	1214				N	N	X	X		
4	W-221003-TS-04	10/3	1335			7	N	N	X	X	X	
5	W-221003-TS-05	10/3	1350			7	N	N	X	X	X	
6	W-221003-TS-06	10/3	1358			7	N	N	X	X	X	
7	W-221003-TS-07	10/3	1455			7	N	N	X	X	X	
8	W-221003-TS-08	10/3	1503			7	N	N	X	X	X	
9	W-221003-TS-09	10/3	1513	↓	↓	7	N	N		X	X	

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

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: 3.6→16, 1.9→14, 21→0.1, 0.6→0.1, 1.2→0.3, 23→0.3, 4.5→2.5, 1.5→1.0

Custody Seals Intact ☐ Yes ☐ No	Custody Seal No	Cooler Temp (°C) Obs'd _____ Corr'd _____ Therm ID No _____			
Relinquished by: TYLER SOLBERG	Company: GHD	Date/Time: 10/4	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received by Laboratory by: [signature]	Company: BETA	Date/Time: 10/5/22 1600

Chain of Custody Record

524954

eurofins | Environment Testing TestAmerica

Address _____

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TAL-8210

Client Contact	Project Manager: T M REE	Site Contact:	Date: 10/5/2022	COC No
Company Name: GHD	Tel/Email: TIM.REE@GHD.COM	Lab Contact:	Carrier: FEDEX	2 of 2 COCs
Address: 1600 LONG LAKE RD 200	Analysis Turnaround Time			Sampler: NICK SOLTERS
City/State/Zip: ST PAUL / MN / 55112	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 612 213 7152	TAT if different from Below _____			Walk-in Client
Fax	☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling
Project Name: 117-22118				Job / SDG No: 500-223243
Site: PINA WELLS				
P O #				

	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, ANIONS	TCLP	BTEX	NAPHTHALENE	DISSOLVED METALS	TOTAL METALS	TOC	METHANE	Sample Specific Notes
10	W-221004-TS-46	10/4	11:55	G	GW	45	N	Y	X	X	X	X	X	X	X	X	
11	W-221004-TS-11	10/4	13:25	G		15	N	N	X	X	X	X	X	X	X	X	
12	W-221004-TS-12	10/4	12:30	G		15	N	N	X	X	X	X	X	X	X	X	
13	W-221004-TS-12	10/4	14:55	G		5	N	N	X	X	X	X	X	X	X	X	
14	Trip Blank																Added by BEETA

Preservation Used: 1= Ice, 2= HCl, 3= H_2SO_4, 4=HNO_3, 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

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd _____ Corr'd _____ Therm ID No _____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Thom Solters	GHD	10/4			
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time
			[signature]	BEETA	10/5/22 1600

500-223243 Waybi

FedEx Express Package US Airbill

FedEx Tracking Number 8174 6502 3599

Form ID No. 0215

1 From

Date

Sender's Name Phone

Company

Address

Dept./Floor/Suite/Room

City State ZIP

2 Your Internal Billing Reference

3 To

Recipient's Name Phone

Company

Address

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept./Floor/Suite/Room

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City State ZIP

Hold Weekday
FedEx location address REQUIRED. **NOT available for** FedEx First Overnight.

Hold Saturday
FedEx location address REQUIRED. **Available ONLY for** FedEx Priority Overnight and FedEx 2Day to select locations.

8174 6502 3599

4 Express Package Service * To most locations.

Packages up to 150 lbs.
For packages over 150 lbs. use the FedEx Express Freight US Airbill.

Next Business Day

- FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Priority Overnight — Next business morning. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Standard Overnight — Next business afternoon. Saturday Delivery NOT available.

2 or 3 Business Days

- FedEx 2Day A.M — Second business morning.* Saturday Delivery NOT available.
- FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Express Saver — Third business day. Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

FedEx Envelope* FedEx Pak* FedEx Box FedEx Tube Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.

Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Express Saver

No Signature Required — Package may be left without obtaining a signature for delivery

Direct Signature — Someone at recipient's address may sign for delivery.

Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?

One box must be checked.

No

Yes — As per attached Shipper's Declaration.

Yes — Shipper's Declaration not required.

Dry Ice — Dry Ice, 9, UN 1845 x kg

Restrictions apply for dangerous goods. See the current FedEx Service Guide.

Cargo Aircraft Only

7 Payment ***Bill to:***

Enter FedEx Acct. No. below

Obtain FedEx A

Sender — Acct. No. in Section 1 will be billed.

Recipient

Third Party

Total Packages Total Weight

lbs.

[1] Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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FedEx Express **Package US Airbill**

FedEx Tracking Number **8174 6502 3577**

Form ID No. **0215**

1 From

Date

Sender's Name _____ Phone _____

Company _____

Address _____ Dept./Floor/Suite/Room

City _____ State _____ ZIP _____

2 Your Internal Billing Reference

3 To

Recipient's Name _____ Phone _____

Company _____

Address _____ Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address _____

Use this line for the HOLD location address or for continuation of your shipping address.

City _____ State _____ ZIP _____

Hold Weekday — FedEx location address REQUIRED. **NOT available for** FedEx First Overnight.

Hold Saturday — FedEx location address REQUIRED. **Available ONLY for** FedEx Priority Overnight and FedEx 2Day to select locations.

8174 6502 3577

4 Express Package Service * To most locations.

Packages up to 150 lbs.
For packages over 150 lbs. use the FedEx Express Freight US Airbill.

Next Business Day

- ☐ FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- ☐ FedEx Priority Overnight — Next business morning. Friday shipments will be *delivered on Monday unless Saturday Delivery* is selected.
- ☑ FedEx Standard Overnight — Next business afternoon. Saturday Delivery NOT available.

2 or 3 Business Days

- ☐ FedEx 2Day A.M — Second business morning.* Saturday Delivery NOT available.
- ☐ FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.
- ☐ FedEx Express Saver — Third business day. Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

☐ FedEx Envelope* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☐ Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.

☐ Saturday Delivery — **NOT available for** FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Express Saver

☐ No Signature Required — Package may be left without obtaining a signature for delivery.

☐ Direct Signature — Someone at recipient's address may sign for delivery.

☐ Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?

One box must be checked

☐ No ☐ Yes — As per attached Shipper's Declaration. ☐ Yes — Shipper's Declaration not required. ☐ Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Restrictions apply for dangerous goods — see the current FedEx Service Guide. ☐ Cargo Aircraft Only

7 Payment ***Bill to:***

Enter FedEx Acct. No. below

☐ Sender — Acct. No. in Section 1 will be billed. ☐ Recipient ☐ Third Party

Obtain FedEx Acct No ☐

Total Packages _____ Total Weight _____ lbs.

†Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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FedEx Express Package US Airbill

FedEx Tracking Number 8174 6502 3533

Form ID No. 0215

fedex.com 1.800 GoFedEx 1.800 463.3339

1 From

Date

Sender's Name Phone

Company

Address

Dept./Floor/Suite/Room

City State ZIP

2 Your Internal Billing Reference

3 To

Recipient's Name Phone

Company

Address

We cannot deliver to P.O. boxes o. P.O. ZIP codes. Dept./Floor/Suite/Room

Hold Weekday
FedEx location address REQUIRED. **NOT available for** FedEx First Overnight.

Address

Use this line fo. the HOLD location address or fo. continuation of you. shipp.ng address.

Hold Saturday
FedEx location address REQUIRED. **Available ONLY for** FedEx Priority Overnight and FedEx 2Day to select locations.

City State ZIP

8174 6502 3533

4 Express Package Service * To most locations.

Packages up to 150 lbs.
For packages over 150 lbs., use the FedEx Express Freight US Airbill.

Next Business Day

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- FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Express Saver — Third business day. Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

FedEx Envelope* FedEx Pak* FedEx Box FedEx Tube Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.

Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Express Saver

No Signature Required — Package may be left without obtaining a signature for delivery.

Direct Signature — Someone at recipient's address may sign for delivery.

Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?

One box must be checked

No Yes — As per attached Shipper's Declaration Yes — Shipper's Declaration not required. Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Restrictions apply for dangerous goods — see the current FedEx Service Guide. Cargo Aircraft Only

7 Payment *Bill to.*

Enter FedEx Acct. No. below

Sender — Acct. No. in Section 1 will be billed. Recipient Third Party

Total Packages Total Weight

____ ____ lbs.

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FedEx Express Package US Airbill

FedEx Tracking Number 8174 6502 3588

Form ID No. 0215

1 From

Date

Sender's Name Phone

Company

Address

Dept./Floor/Suite/Room

City State ZIP

2 Your Internal Billing Reference

3 To

Recipient's Name Phone

Company

Address

We cannot deliver to P.O. boxes o P.O. ZIP codes. Dept./Floor/Suite/Room

Address

Use this line for the HOLD location address or for continuation of your shipping address

City State ZIP

Hold Weekday
FedEx location address REQUIRED. **NOT available for** FedEx First Overnight.

Hold Saturday
FedEx location address REQUIRED. **Available ONLY for** FedEx Priority Overnight and FedEx 2Day to select locations.

8174 6502 3588

4 Express Package Service * To most locations.

Packages up to 150 lbs.
For packages over 150 lbs. use the FedEx Express Freight US Airbill.

Next Business Day

- FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Priority Overnight — Next business morning. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

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- FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

FedEx Envelope* FedEx Pak* FedEx Box FedEx Tube Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.

Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Express Saver

No Signature Required — Package may be left without obtaining a signature for delivery.

Direct Signature — Someone at recipient's address may sign for delivery.

Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?

One box must be checked

No

Yes — As per attached Shipper's Declaration.

Yes — Shipper's Declaration not required.

Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Restrictions apply for dangerous goods — see the current FedEx Service Guide.

Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. below

Obtain Rec FedEx Acct. No

Sender — Acct. No. in Section 1 will be billed.

Recipient

Third Party

Total Packages

Total Weight ____ lbs.

†Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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FedEx Express Package US Airbill

FedEx Tracking Number 8174 6502 3566

Form ID No. 0215

fedex.com 1.800 GoFedEx 1.800 463.3339

1 From

Date

Sender's Name Phone

Company

Address

Dept./Floor/Suite/Room

City State ZIP

2 Your Internal Billing Reference

3 To

Recipient's Name Phone

Company

Address

We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City State ZIP

Hold Weekday
FedEx location address REQUIRED. **NOT available for** FedEx First Overnight.

Hold Saturday
FedEx location address REQUIRED. **Available ONLY for** FedEx Priority Overnight and FedEx 2Day to select locations.

8174 6502 3566

4 Express Package Service * To most locations.

Packages up to 150 lbs.
For packages over 150 lbs., use the FedEx Express Freight US Airbill.

Next Business Day

- FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
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2 or 3 Business Days

- FedEx 2Day A.M — Second business morning. Saturday Delivery NOT available.
- FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Express Saver — Third business day. Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

FedEx Envelope* FedEx Pak* FedEx Box FedEx Tube Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.

Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Express Saver

No Signature Required — Package may be left without obtaining a signature for delivery.
Direct Signature — Someone at recipient's address may sign for delivery.
Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?

One box must be checked

No
Yes — As per attached Shipper's Declaration.
Yes — Shipper's Declaration not required.
Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Restrictions apply for dangerous goods see the current FedEx Service Guide.

Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. below

Sender — Acct No. in Section 1 will be billed.
Recipient
Third Party

Total Packages Total Weight ____ lbs.

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FedEx Express **Package US Airbill**

FedEx Tracking Number **8174 6502 3555**

Form ID No. **0215**

1 From

Date

Sender's Name Phone

Company

Address

Dept./Floor/Suite/Room

City State ZIP

2 Your Internal Billing Reference

3 To

Recipient's Name Phone

Company

Address

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept./Floor/Suite/Room

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City State ZIP

Hold Weekday
FedEx location address REQUIRED. **NOT available for** FedEx First Overnight.

Hold Saturday
FedEx location address REQUIRED. **Available ONLY for** FedEx Priority Overnight and FedEx 2Day to select locations.

8174 6502 3555

4 Express Package Service * To most locations.

Packages up to 150 lbs.
For packages over 150 lbs. use the FedEx Express Freight US Airbill.

Next Business Day

- FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
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- FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

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FedEx Envelope* FedEx Pak* FedEx Box FedEx Tube Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.

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Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

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No

Yes — As per attached Shipper's Declaration.

Yes — Shipper's Declaration not required.

Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Restrictions apply for dangerous goods — see the current FedEx Service Guide.

Cargo Aircraft Only

7 Payment ***Bill to.***

Enter FedEx Acct. No. below

Obtain FedEx Acct. No.

Sender — Acct. No. in Section 1 will be billed.

Recipient

Third Party

Total Packages Total Weight

lbs.

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FedEx Express Package US Airbill

FedEx Tracking Number 8174 6502 3603

Form ID No. 0215

1 From

Date

Sender's Name Phone

Company

Address

Dept./Floor/Suite/Room

City State ZIP

2 Your Internal Billing Reference

3 To

Recipient's Name Phone

Company

Address

We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City State ZIP

Hold Weekday
FedEx location address REQUIRED. **NOT available for** FedEx First Overnight.

Hold Saturday
FedEx location address REQUIRED. **Available ONLY for** FedEx Priority Overnight and FedEx 2Day to select locations.

8174 6502 3603

4 Express Package Service * To most locations.

Packages up to 150 lbs.
For packages over 150 lbs. use the FedEx Express Freight US Airbill.

Next Business Day

- FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Priority Overnight — Next business morning. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

- FedEx 2Day A.M — Second business morning.* Saturday Delivery NOT available.
- FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Express Saver — Third business day. Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

FedEx Envelope* FedEx Pak* FedEx Box FedEx Tube Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.

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Yes — Shipper's Declaration not required.
Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Restrictions apply for dangerous goods see the current FedEx Service Guide.
Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. below

Sender — Acct. No. in Section 1 will be billed.
Recipient
Third Party

Total Packages Total Weight

lbs.

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FedEx Express Package US Airbill

FedEx Tracking Number 8174 6502 3544

Form ID No. 0215

1 From

Date

Sender's Name Phone

Company

Address

Dept./Floor/Suite/Room

City State ZIP

2 Your Internal Billing Reference

3 To

Recipient's Name Phone

Company

Address

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept./Floor/Suite/Room

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City State ZIP

Hold Weekday
FedEx location address REQUIRED. **NOT available for** FedEx First Overnight.

Hold Saturday
FedEx location address REQUIRED. **Available ONLY for** FedEx Priority Overnight and FedEx 2Day to select locations.

8174 6502 3544

4 Express Package Service * To most locations.

Packages up to 150 lbs.
For packages over 150 lbs., use the FedEx Express Freight US Airbill.

Next Business Day

- FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Standard Overnight — Next business afternoon. Saturday Delivery NOT available.

2 or 3 Business Days

- FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.
- FedEx 2Day — Second business afternoon. Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Express Saver — Third business day. Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

FedEx Envelope* FedEx Pak* FedEx Box FedEx Tube Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.

Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver

No Signature Required — Package may be left without obtaining a signature for delivery.

Direct Signature — Someone at recipient's address may sign for delivery.

Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

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Yes — Shipper's Declaration not required.

Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Restrictions apply for dangerous goods — see the current FedEx Service Guide.

Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. below

Sender — Acct. No. in Section 1 will be billed.

Recipient

Third Party

Total Packages Total Weight

lbs.

[1] Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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Eurofins Chicago
2417 Bond Street
University Park, IL 60484
Phone: 708-534-5200 Fax: 708-534-5211

0.1/0.8

Chain of Custody Record

eurofins Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Wright, Richard	Carrier Tracking No(s):	COC No: 500-165869.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Richard.Wright@et.eurofinsus.com	State of Origin: Wisconsin	Page: Page 1 of 1
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): State Program - Wisconsin		Job #: 500-223243-1
Address: 180 S. Van Buren Avenue,	Due Date Requested: 10/18/2022			
City: Barberton	TAT Requested (days):			
State, Zip: OH, 44203				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Penta Wood 11222418	Project #: 50013796			
Site:	SSOW#:			

Analysis Requested

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, 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)

Other:

RSK

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_175/ (MOD) Methane	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
W-221004-TS-46 (500-223243-10)	10/4/22	11:55 Central		Water			X	3	WI
W-221004-TS-46 (500-223243-10MS)	10/4/22	11:55 Central	MS	Water			X	3	WI
W-221004-TS-46 (500-223243-10MSD)	10/4/22	11:55 Central	MSD	Water			X	3	WI
W-221004-TS-11 (500-223243-11)	10/4/22	13:28 Central		Water			X	3	WI
W-221004-TS-12 (500-223243-12)	10/4/22	12:30 Central		Water			X	3	WI
W-221004-TS-13 (500-223243-13)	10/4/22	14:33 Central		Water			X	3	WI

Note: Since laboratory accreditations are subject to change, Eurofins Chicago places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/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 complicance to Eurofins Chicago.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ______ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) | Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:	Time:		Method of Shipment:	
Relinquished by: Shari Scott	Date/Time: 10/6/22 0850	Company: EETA	Received by: Marolyn Bl	Date/Time: 10-7-22 9:30	Company: Cetac	
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:	
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:	

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Eurofins - Canton Sample Receipt Form/Narrative Login # :_____
Barberton Facility

Client Eurofins Chicago Site Name_____ Cooler unpacked by: Mandaly

Cooler Received on 10-7-22 Opened on 10-7-22

FedEx: 1st Grd (Exp) UPS FAS Clipper Client Drop Off Eurofins Courier Other

Receipt After-hours: Drop-off Date/Time_____ Storage Location_____

Eurofins Cooler # (DMC) 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# IR-13 (CF +0.7 °C) Observed Cooler Temp 0.1 °C Corrected Cooler Temp 0.8 °C
   IR GUN #IR-15 (CF 0.0°C) Observed Cooler Temp._____ °C Corrected Cooler Temp._____ °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# HC286797
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

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

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: _____

WI-NC-099

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-223243-1

Login Number: 223243
List Number: 1
Creator: Scott, Sherri L

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	1.6,1.4,0.1,0.1,0.3,0.3,2.5,1.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	
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 <6mm (1/4").	False	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

Eurofins Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

Laboratory Job ID: 500-223355-1
Client Project/Site: Penta Wood 11222418

For:
GHD Services Inc.
900 Long Lake Road
Suite 200
New Brighton, Minnesota 55112

Attn: Mr. Grant Anderson

Authorized for release by:
10/31/2022 12:06:35 PM

Richard Wright, Senior Project Manager
(708)746-0045
Richard.Wright@et.eurofinsus.com

Table of Contents

Job ID: 500-223355-1

Laboratory: Eurofins Chicago

Narrative

Job Narrative
500-223355-1

Receipt
The samples were received on 10/6/2022 9:55 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 0.2º C, 0.4º C, 0.4º C and 0.9º C.

Receipt Exceptions
A trip blank was submitted for analysis with these samples; however, it was not listed on the Chain of Custody (COC).Added to COC and logged.

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

GC/MS Semi VOA
Method 8270D: Surrogate recovery for the following samples were outside the upper control limit: W-221005-TS-14 (500-223355-1), W-221005-TS-15 (500-223355-2), W-221005-TS-16 (500-223355-3), W-221005-TS-17 (500-223355-4), W-221005-TS-18 (500-223355-5), W-221005-TS-18 (500-223355-5[MSD]) and W-221005-TS-19 (500-223355-6). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

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 continuing calibration verification (CCV) associated with batch 500-679994 recovered above the upper control limit for Pentachlorophenol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: (CCV 500-679994/13) and (CCVRT 500-679994/2).

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.

General Chemistry
Method 300.0: The laboratory control sample (LCS) and continuing calibration verification (CCV) associated with batch 500-678496 recovered above the upper control limit for Nitrate as N. The samples associated with this CCV were reanalyzed later the same day, but were outside of hold time. The out of hold results had passing QC and similar results as the original analysis; therefore, the original data have been reported. The associated samples are impacted: W-221005-TS-14 (500-223355-1), W-221005-TS-15 (500-223355-2), W-221005-TS-16 (500-223355-3), W-221005-TS-18 (500-223355-5), W-221005-TS-18 (500-223355-5[MS]), W-221005-TS-18 (500-223355-5[MSD]) and W-221005-TS-19 (500-223355-6).

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: 500-223355-1

Client Sample ID: W-221005-TS-14 — Lab Sample ID: 500-223355-1

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.44		0.098	0.14	ug/L	1		8151A	Total/NA
Copper	0.95	J	2.0	0.50	ug/L	1		6020A	Total Recoverable
Manganese	1.5	J	2.5	0.79	ug/L	1		6020A	Total Recoverable
Copper	0.89	J	2.0	0.50	ug/L	1		6020A	Dissolved
Manganese	0.99	J	2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	86.4		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Chloride	0.40		0.20	0.17	mg/L	1		300.0	Total/NA
Nitrate as N	0.42	^ *	0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	1.1		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.59	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	138		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-221005-TS-15 — Lab Sample ID: 500-223355-2

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.54		0.097	0.14	ug/L	1		8151A	Total/NA
Copper	0.72	J	2.0	0.50	ug/L	1		6020A	Total Recoverable
Manganese	1.2	J	2.5	0.79	ug/L	1		6020A	Total Recoverable
Copper	0.65	J	2.0	0.50	ug/L	1		6020A	Dissolved
Manganese	1.2	J	2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	86.4		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Chloride	0.40		0.20	0.17	mg/L	1		300.0	Total/NA
Nitrate as N	0.42	^ *	0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	1.0		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.50	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	138		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-221005-TS-16 — Lab Sample ID: 500-223355-3

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.32		0.10	0.14	ug/L	1		8151A	Total/NA
Arsenic	0.23	J	1.0	0.23	ug/L	1		6020A	Total Recoverable
Copper	1.9	J	2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	51.4	J	100	46.7	ug/L	1		6020A	Total Recoverable
Manganese	1.6	J	2.5	0.79	ug/L	1		6020A	Total Recoverable
Arsenic	0.24	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	1.7	J	2.0	0.50	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	38.8		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Chloride	0.60		0.20	0.17	mg/L	1		300.0	Total/NA
Nitrate as N	0.48	^ *	0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	2.3		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	2.1		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	65.8		5.0	3.7	mg/L	1		SM 2320B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

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

Job ID: 500-223355-1

Client Sample ID: W-221005-TS-17 — Lab Sample ID: 500-223355-4

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	0.36	J	0.50	0.18	ug/L	1		8260B	Total/NA
Xylenes, Total	1.6		1.0	0.22	ug/L	1		8260B	Total/NA
Pentachlorophenol	0.28		0.098	0.14	ug/L	1		8151A	Total/NA
Manganese	1.2	J	2.5	0.79	ug/L	1		6020A	Total Recoverable
Iron	309		100	46.7	ug/L	1		6020A	Dissolved
Manganese	1.2	J	2.5	0.79	ug/L	1		6020A	Dissolved

Client Sample ID: W-221005-TS-18 — Lab Sample ID: 500-223355-5

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.35		0.10	0.14	ug/L	1		8151A	Total/NA
Arsenic	0.32	J	1.0	0.23	ug/L	1		6020A	Total Recoverable
Copper	1.4	J	2.0	0.50	ug/L	1		6020A	Total Recoverable
Arsenic	0.33	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	1.7	J	2.0	0.50	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	82.1		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Chloride	14.3		0.40	0.34	mg/L	2		300.0	Total/NA
Nitrate as N	3.4	^ *	0.40	0.14	mg/L	2		300.0	Total/NA
Sulfate	5.9		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.97	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	107		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-221005-TS-19 — Lab Sample ID: 500-223355-6

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	2.4		0.099	0.14	ug/L	1		8151A	Total/NA
Copper	0.79	J	2.0	0.50	ug/L	1		6020A	Total Recoverable
Manganese	4.0		2.5	0.79	ug/L	1		6020A	Total Recoverable
Copper	3.4		2.0	0.50	ug/L	1		6020A	Dissolved
Manganese	3.8		2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	54.4		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Chloride	0.75		0.20	0.17	mg/L	1		300.0	Total/NA
Nitrate as N	0.28	^ *	0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	1.8		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.72	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	92.4		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 500-223355-7

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

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

Job ID: 500-223355-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	EET CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	EET CHI
RSK-175	Dissolved Gases (GC)	RSK	EET CAN
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	MCAWW	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:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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 CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

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: 500-223355-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-223355-1	W-221005-TS-14	Water	10/05/22 09:30	10/06/22 09:55
500-223355-2	W-221005-TS-15	Water	10/05/22 09:34	10/06/22 09:55
500-223355-3	W-221005-TS-16	Water	10/05/22 10:41	10/06/22 09:55
500-223355-4	W-221005-TS-17	Water	10/05/22 11:30	10/06/22 09:55
500-223355-5	W-221005-TS-18	Water	10/05/22 12:55	10/06/22 09:55
500-223355-6	W-221005-TS-19	Water	10/05/22 14:37	10/06/22 09:55
500-223355-7	Trip Blank	Water	10/05/22 00:00	10/06/22 09:55

Client Sample ID: W-221005-TS-14

Date Collected: 10/05/22 09:30
Date Received: 10/06/22 09:55

Lab Sample ID: 500-223355-1

Matrix: Water

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			10/15/22 00:23	1
Toluene	<0.15		0.50	0.15	ug/L			10/15/22 00:23	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/15/22 00:23	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/15/22 00:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*75 - 126*		*10/15/22 00:23*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*10/15/22 00:23*	*1*
4-Bromofluorobenzene (Surr)	*108*		*72 - 124*		*10/15/22 00:23*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*10/15/22 00:23*	*1*

Method: SW846 8270D - 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		10/07/22 07:59	10/19/22 23:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*96*		*36 - 120*	*10/07/22 07:59*	*10/19/22 23:24*	*1*
2-Fluorobiphenyl (Surr)	*101*		*34 - 110*	*10/07/22 07:59*	*10/19/22 23:24*	*1*
Terphenyl-d14 (Surr)	*161*	*X*	*40 - 145*	*10/07/22 07:59*	*10/19/22 23:24*	*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			10/11/22 02:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,1-Trifluoroethane	*90*		*60 - 140*		*10/11/22 02:27*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	**0.44**		0.098	0.14	ug/L		10/12/22 10:05	10/21/22 14:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*78*		*25 - 130*	*10/12/22 10:05*	*10/21/22 14:35*	*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		10/13/22 09:28	10/14/22 01:00	1
Copper	**0.95**	**J**	2.0	0.50	ug/L		10/13/22 09:28	10/14/22 01:00	1
Iron	<46.7		100	46.7	ug/L		10/13/22 09:28	10/14/22 01:00	1
Manganese	**1.5**	**J**	2.5	0.79	ug/L		10/13/22 09:28	10/14/22 01:00	1
Zinc	<6.9		20.0	6.9	ug/L		10/13/22 09:28	10/14/22 01:00	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		10/13/22 09:28	10/14/22 01:41	1
Copper	**0.89**	**J**	2.0	0.50	ug/L		10/13/22 09:28	10/14/22 01:41	1
Iron	<46.7		100	46.7	ug/L		10/13/22 09:28	10/14/22 01:41	1
Manganese	**0.99**	**J**	2.5	0.79	ug/L		10/13/22 09:28	10/14/22 01:41	1
Zinc	<6.9		20.0	6.9	ug/L		10/13/22 09:28	10/14/22 01:41	1

Client Sample Results

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

Job ID: 500-223355-1

Client Sample ID: W-221005-TS-14

Date Collected: 10/05/22 09:30
Date Received: 10/06/22 09:55

Lab Sample ID: 500-223355-1

Matrix: Water

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	86.4		0.50	0.25	mg/L		10/13/22 09:28	10/14/22 11:50	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	0.40		0.20	0.17	mg/L			10/07/22 08:25	1
Nitrate as N (MCAWW 300.0)	0.42	^ *	0.20	0.068	mg/L			10/07/22 08:25	1
Sulfate (MCAWW 300.0)	1.1		0.20	0.095	mg/L			10/07/22 08:25	1
Total Organic Carbon - Duplicates (SW846 9060A)	0.59	J	1.0	0.47	mg/L			10/18/22 21:08	1
Alkalinity (SM 2320B)	138		5.0	3.7	mg/L			10/17/22 14:24	1

Client Sample ID: W-221005-TS-15

Date Collected: 10/05/22 09:34
Date Received: 10/06/22 09:55

Lab Sample ID: 500-223355-2

Matrix: Water

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			10/15/22 00:47	1
Toluene	<0.15		0.50	0.15	ug/L			10/15/22 00:47	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/15/22 00:47	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/15/22 00:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*75 - 126*		*10/15/22 00:47*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*10/15/22 00:47*	*1*
4-Bromofluorobenzene (Surr)	*107*		*72 - 124*		*10/15/22 00:47*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*10/15/22 00:47*	*1*

Method: SW846 8270D - 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		10/07/22 07:59	10/19/22 23:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*86*		*36 - 120*	*10/07/22 07:59*	*10/19/22 23:45*	*1*
2-Fluorobiphenyl (Surr)	*90*		*34 - 110*	*10/07/22 07:59*	*10/19/22 23:45*	*1*
Terphenyl-d14 (Surr)	*149*	*X*	*40 - 145*	*10/07/22 07:59*	*10/19/22 23:45*	*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			10/11/22 02:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,1-Trifluoroethane	*89*		*60 - 140*		*10/11/22 02:44*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	**0.54**		0.097	0.14	ug/L		10/12/22 10:05	10/21/22 14:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*83*		*25 - 130*	*10/12/22 10:05*	*10/21/22 14:35*	*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		10/13/22 09:28	10/14/22 01:03	1
Copper	**0.72**	**J**	2.0	0.50	ug/L		10/13/22 09:28	10/14/22 01:03	1
Iron	<46.7		100	46.7	ug/L		10/13/22 09:28	10/14/22 01:03	1
Manganese	**1.2**	**J**	2.5	0.79	ug/L		10/13/22 09:28	10/14/22 01:03	1
Zinc	<6.9		20.0	6.9	ug/L		10/13/22 09:28	10/14/22 01:03	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		10/13/22 09:28	10/14/22 01:44	1
Copper	**0.65**	**J**	2.0	0.50	ug/L		10/13/22 09:28	10/14/22 01:44	1
Iron	<46.7		100	46.7	ug/L		10/13/22 09:28	10/14/22 01:44	1
Manganese	**1.2**	**J**	2.5	0.79	ug/L		10/13/22 09:28	10/14/22 01:44	1
Zinc	<6.9		20.0	6.9	ug/L		10/13/22 09:28	10/14/22 01:44	1

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

Job ID: 500-223355-1

Client Sample ID: W-221005-TS-15

Lab Sample ID: 500-223355-2

Date Collected: 10/05/22 09:34

Matrix: Water

Date Received: 10/06/22 09:55

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	86.4		0.50	0.25	mg/L		10/13/22 09:28	10/14/22 11:50	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	0.40		0.20	0.17	mg/L			10/07/22 08:38	1
Nitrate as N (MCAWW 300.0)	0.42	^ *	0.20	0.068	mg/L			10/07/22 08:38	1
Sulfate (MCAWW 300.0)	1.0		0.20	0.095	mg/L			10/07/22 08:38	1
Total Organic Carbon - Duplicates (SW846 9060A)	0.50	J	1.0	0.47	mg/L			10/18/22 21:43	1
Alkalinity (SM 2320B)	138		5.0	3.7	mg/L			10/17/22 14:30	1

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

Job ID: 500-223355-1

Client Sample ID: W-221005-TS-16

Date Collected: 10/05/22 10:41
Date Received: 10/06/22 09:55

Lab Sample ID: 500-223355-3

Matrix: Water

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			10/15/22 01:11	1
Toluene	<0.15		0.50	0.15	ug/L			10/15/22 01:11	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/15/22 01:11	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/15/22 01:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*75 - 126*		*10/15/22 01:11*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*10/15/22 01:11*	*1*
4-Bromofluorobenzene (Surr)	*105*		*72 - 124*		*10/15/22 01:11*	*1*
Dibromofluoromethane	*98*		*75 - 120*		*10/15/22 01:11*	*1*

Method: SW846 8270D - 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		10/07/22 07:59	10/20/22 00:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*78*		*36 - 120*	*10/07/22 07:59*	*10/20/22 00:06*	*1*
2-Fluorobiphenyl (Surr)	*92*		*34 - 110*	*10/07/22 07:59*	*10/20/22 00:06*	*1*
Terphenyl-d14 (Surr)	*162*	*X*	*40 - 145*	*10/07/22 07:59*	*10/20/22 00:06*	*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			10/11/22 03:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,1-Trifluoroethane	*91*		*60 - 140*		*10/11/22 03:01*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	**0.32**		0.10	0.14	ug/L		10/12/22 10:05	10/21/22 14:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*81*		*25 - 130*	*10/12/22 10:05*	*10/21/22 14:50*	*1*

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		10/13/22 09:28	10/14/22 01:06	1
Copper	**1.9**	**J**	2.0	0.50	ug/L		10/13/22 09:28	10/14/22 01:06	1
Iron	**51.4**	**J**	100	46.7	ug/L		10/13/22 09:28	10/14/22 01:06	1
Manganese	**1.6**	**J**	2.5	0.79	ug/L		10/13/22 09:28	10/14/22 01:06	1
Zinc	<6.9		20.0	6.9	ug/L		10/13/22 09:28	10/14/22 01:06	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		10/13/22 09:28	10/14/22 01:48	1
Copper	**1.7**	**J**	2.0	0.50	ug/L		10/13/22 09:28	10/14/22 01:48	1
Iron	<46.7		100	46.7	ug/L		10/13/22 09:28	10/14/22 01:48	1
Manganese	<0.79		2.5	0.79	ug/L		10/13/22 09:28	10/14/22 01:48	1
Zinc	<6.9		20.0	6.9	ug/L		10/13/22 09:28	10/14/22 01:48	1

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

Job ID: 500-223355-1

Client Sample ID: W-221005-TS-16

Lab Sample ID: 500-223355-3

Date Collected: 10/05/22 10:41

Matrix: Water

Date Received: 10/06/22 09:55

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	38.8		0.50	0.25	mg/L		10/13/22 09:28	10/14/22 11:50	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	0.60		0.20	0.17	mg/L			10/07/22 08:50	1
Nitrate as N (MCAWW 300.0)	0.48	^ *	0.20	0.068	mg/L			10/07/22 08:50	1
Sulfate (MCAWW 300.0)	2.3		0.20	0.095	mg/L			10/07/22 08:50	1
Total Organic Carbon - Duplicates (SW846 9060A)	2.1		1.0	0.47	mg/L			10/18/22 21:57	1
Alkalinity (SM 2320B)	65.8		5.0	3.7	mg/L			10/17/22 14:37	1

Client Sample ID: W-221005-TS-17

Date Collected: 10/05/22 11:30
Date Received: 10/06/22 09:55

Lab Sample ID: 500-223355-4

Matrix: Water

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			10/15/22 01:35	1
Toluene	<0.15		0.50	0.15	ug/L			10/15/22 01:35	1
Ethylbenzene	**0.36**	**J**	0.50	0.18	ug/L			10/15/22 01:35	1
Xylenes, Total	**1.6**		1.0	0.22	ug/L			10/15/22 01:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 126*		*10/15/22 01:35*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*10/15/22 01:35*	*1*
4-Bromofluorobenzene (Surr)	*105*		*72 - 124*		*10/15/22 01:35*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*10/15/22 01:35*	*1*

Method: SW846 8270D - 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		10/07/22 07:59	10/20/22 00:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*75*		*36 - 120*	*10/07/22 07:59*	*10/20/22 00:27*	*1*
2-Fluorobiphenyl (Surr)	*82*		*34 - 110*	*10/07/22 07:59*	*10/20/22 00:27*	*1*
Terphenyl-d14 (Surr)	*160*	*X*	*40 - 145*	*10/07/22 07:59*	*10/20/22 00:27*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	**0.28**		0.098	0.14	ug/L		10/12/22 10:05	10/21/22 15:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*81*		*25 - 130*	*10/12/22 10:05*	*10/21/22 15:09*	*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		10/13/22 09:28	10/14/22 01:10	1
Copper	<0.50		2.0	0.50	ug/L		10/13/22 09:28	10/14/22 01:10	1
Iron	<46.7		100	46.7	ug/L		10/13/22 09:28	10/14/22 01:10	1
Manganese	**1.2**	**J**	2.5	0.79	ug/L		10/13/22 09:28	10/14/22 01:10	1
Zinc	<6.9		20.0	6.9	ug/L		10/13/22 09:28	10/14/22 01:10	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		10/13/22 09:28	10/14/22 01:51	1
Copper	<0.50		2.0	0.50	ug/L		10/13/22 09:28	10/14/22 01:51	1
Iron	**309**		100	46.7	ug/L		10/13/22 09:28	10/14/22 01:51	1
Manganese	**1.2**	**J**	2.5	0.79	ug/L		10/13/22 09:28	10/14/22 01:51	1
Zinc	<6.9		20.0	6.9	ug/L		10/13/22 09:28	10/14/22 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	<0.25		0.50	0.25	mg/L		10/13/22 09:28	10/14/22 11:50	1

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

Job ID: 500-223355-1

Client Sample ID: W-221005-TS-18

Date Collected: 10/05/22 12:55
Date Received: 10/06/22 09:55

Lab Sample ID: 500-223355-5

Matrix: Water

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			10/15/22 01:59	1
Toluene	<0.15		0.50	0.15	ug/L			10/15/22 01:59	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/15/22 01:59	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/15/22 01:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 126*		*10/15/22 01:59*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*10/15/22 01:59*	*1*
4-Bromofluorobenzene (Surr)	*108*		*72 - 124*		*10/15/22 01:59*	*1*
Dibromofluoromethane	*97*		*75 - 120*		*10/15/22 01:59*	*1*

Method: SW846 8270D - 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		10/07/22 07:59	10/20/22 00:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*81*		*36 - 120*	*10/07/22 07:59*	*10/20/22 00:49*	*1*
2-Fluorobiphenyl (Surr)	*89*		*34 - 110*	*10/07/22 07:59*	*10/20/22 00:49*	*1*
Terphenyl-d14 (Surr)	*150*	*X*	*40 - 145*	*10/07/22 07:59*	*10/20/22 00:49*	*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			10/10/22 22:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,1-Trifluoroethane	*90*		*60 - 140*		*10/10/22 22:29*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	**0.35**		0.10	0.14	ug/L		10/12/22 10:05	10/21/22 15:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*81*		*25 - 130*	*10/12/22 10:05*	*10/21/22 15:28*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.32**	**J**	1.0	0.23	ug/L		10/13/22 09:28	10/14/22 01:13	1
Copper	**1.4**	**J**	2.0	0.50	ug/L		10/13/22 09:28	10/14/22 01:13	1
Iron	<46.7		100	46.7	ug/L		10/13/22 09:28	10/14/22 01:13	1
Manganese	<0.79		2.5	0.79	ug/L		10/13/22 09:28	10/14/22 01:13	1
Zinc	<6.9		20.0	6.9	ug/L		10/13/22 09:28	10/14/22 01:13	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.33**	**J**	1.0	0.23	ug/L		10/13/22 09:28	10/14/22 01:55	1
Copper	**1.7**	**J**	2.0	0.50	ug/L		10/13/22 09:28	10/14/22 01:55	1
Iron	<46.7		100	46.7	ug/L		10/13/22 09:28	10/14/22 01:55	1
Manganese	<0.79		2.5	0.79	ug/L		10/13/22 09:28	10/14/22 01:55	1
Zinc	<6.9		20.0	6.9	ug/L		10/13/22 09:28	10/14/22 01:55	1

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

Job ID: 500-223355-1

Client Sample ID: W-221005-TS-18

Lab Sample ID: 500-223355-5

Date Collected: 10/05/22 12:55

Matrix: Water

Date Received: 10/06/22 09:55

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	82.1		0.50	0.25	mg/L		10/13/22 09:28	10/14/22 11:50	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	14.3		0.40	0.34	mg/L			10/07/22 09:41	2
Nitrate as N (MCAWW 300.0)	3.4	^ *	0.40	0.14	mg/L			10/07/22 09:41	2
Sulfate (MCAWW 300.0)	5.9		0.20	0.095	mg/L			10/07/22 09:03	1
Total Organic Carbon - Duplicates (SW846 9060A)	0.97	J	1.0	0.47	mg/L			10/18/22 22:07	1
Alkalinity (SM 2320B)	107		5.0	3.7	mg/L			10/17/22 14:43	1

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

Job ID: 500-223355-1

Client Sample ID: W-221005-TS-19

Date Collected: 10/05/22 14:37
Date Received: 10/06/22 09:55

Lab Sample ID: 500-223355-6

Matrix: Water

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			10/17/22 19:15	1
Toluene	<0.15		0.50	0.15	ug/L			10/17/22 19:15	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/17/22 19:15	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/17/22 19:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*75 - 126*		*10/17/22 19:15*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*10/17/22 19:15*	*1*
4-Bromofluorobenzene (Surr)	*110*		*72 - 124*		*10/17/22 19:15*	*1*
Dibromofluoromethane	*102*		*75 - 120*		*10/17/22 19:15*	*1*

Method: SW846 8270D - 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		10/07/22 07:59	10/20/22 01:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*66*		*36 - 120*	*10/07/22 07:59*	*10/20/22 01:52*	*1*
2-Fluorobiphenyl (Surr)	*71*		*34 - 110*	*10/07/22 07:59*	*10/20/22 01:52*	*1*
Terphenyl-d14 (Surr)	*157*	*X*	*40 - 145*	*10/07/22 07:59*	*10/20/22 01:52*	*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			10/11/22 03:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,1-Trifluoroethane	*92*		*60 - 140*		*10/11/22 03:18*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	**2.4**		0.099	0.14	ug/L		10/12/22 10:05	10/21/22 16:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*82*		*25 - 130*	*10/12/22 10:05*	*10/21/22 16:24*	*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		10/13/22 09:28	10/14/22 01:37	1
Copper	**0.79**	**J**	2.0	0.50	ug/L		10/13/22 09:28	10/14/22 01:37	1
Iron	<46.7		100	46.7	ug/L		10/13/22 09:28	10/14/22 01:37	1
Manganese	**4.0**		2.5	0.79	ug/L		10/13/22 09:28	10/14/22 01:37	1
Zinc	<6.9		20.0	6.9	ug/L		10/13/22 09:28	10/14/22 01:37	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		10/13/22 09:28	10/14/22 02:19	1
Copper	**3.4**		2.0	0.50	ug/L		10/13/22 09:28	10/14/22 02:19	1
Iron	<46.7		100	46.7	ug/L		10/13/22 09:28	10/14/22 02:19	1
Manganese	**3.8**		2.5	0.79	ug/L		10/13/22 09:28	10/14/22 02:19	1
Zinc	<6.9		20.0	6.9	ug/L		10/13/22 09:28	10/14/22 02:19	1

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

Job ID: 500-223355-1

Client Sample ID: W-221005-TS-19
Date Collected: 10/05/22 14:37
Date Received: 10/06/22 09:55

Lab Sample ID: 500-223355-6
Matrix: Water

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	54.4		0.50	0.25	mg/L		10/13/22 09:28	10/14/22 11:50	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	0.75		0.20	0.17	mg/L			10/07/22 11:09	1
Nitrate as N (MCAWW 300.0)	0.28	^ *	0.20	0.068	mg/L			10/07/22 11:09	1
Sulfate (MCAWW 300.0)	1.8		0.20	0.095	mg/L			10/07/22 11:09	1
Total Organic Carbon - Duplicates (SW846 9060A)	0.72	J	1.0	0.47	mg/L			10/18/22 22:43	1
Alkalinity (SM 2320B)	92.4		5.0	3.7	mg/L			10/17/22 14:56	1

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

Job ID: 500-223355-1

Client Sample ID: Trip Blank

Date Collected: 10/05/22 00:00
Date Received: 10/06/22 09:55

Lab Sample ID: 500-223355-7

Matrix: Water

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			10/14/22 23:59	1
Toluene	<0.15		0.50	0.15	ug/L			10/14/22 23:59	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/14/22 23:59	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/14/22 23:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 126*		*10/14/22 23:59*	*1*
Toluene-d8 (Surr)	*94*		*75 - 120*		*10/14/22 23:59*	*1*
4-Bromofluorobenzene (Surr)	*105*		*72 - 124*		*10/14/22 23:59*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*10/14/22 23:59*	*1*

Definitions/Glossary

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

Job ID: 500-223355-1

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
X	Surrogate recovery exceeds control limits

Metals

Qualifier	Qualifier Description
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
*	LCS or LCSD is outside acceptance limits.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
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)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TNTC	Too Numerous To Count

QC Association Summary

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

Job ID: 500-223355-1

GC/MS VOA

Analysis Batch: 679700

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223355-1	W-221005-TS-14	Total/NA	Water	8260B	
500-223355-2	W-221005-TS-15	Total/NA	Water	8260B	
500-223355-3	W-221005-TS-16	Total/NA	Water	8260B	
500-223355-4	W-221005-TS-17	Total/NA	Water	8260B	
500-223355-5	W-221005-TS-18	Total/NA	Water	8260B	
500-223355-7	Trip Blank	Total/NA	Water	8260B	
MB 500-679700/6	Method Blank	Total/NA	Water	8260B	
LCS 500-679700/4	Lab Control Sample	Total/NA	Water	8260B	
500-223355-5 MS	W-221005-TS-18	Total/NA	Water	8260B	
500-223355-5 MSD	W-221005-TS-18	Total/NA	Water	8260B	

Analysis Batch: 679829

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223355-6	W-221005-TS-19	Total/NA	Water	8260B	
MB 500-679829/6	Method Blank	Total/NA	Water	8260B	
LCS 500-679829/4	Lab Control Sample	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 678419

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223355-1	W-221005-TS-14	Total/NA	Water	3510C	
500-223355-2	W-221005-TS-15	Total/NA	Water	3510C	
500-223355-3	W-221005-TS-16	Total/NA	Water	3510C	
500-223355-4	W-221005-TS-17	Total/NA	Water	3510C	
500-223355-5	W-221005-TS-18	Total/NA	Water	3510C	
500-223355-6	W-221005-TS-19	Total/NA	Water	3510C	
MB 500-678419/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-678419/2-A	Lab Control Sample	Total/NA	Water	3510C	
500-223355-5 MS	W-221005-TS-18	Total/NA	Water	3510C	
500-223355-5 MSD	W-221005-TS-18	Total/NA	Water	3510C	

Analysis Batch: 679628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-678419/1-A	Method Blank	Total/NA	Water	8270D	678419
LCS 500-678419/2-A	Lab Control Sample	Total/NA	Water	8270D	678419

Analysis Batch: 680404

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223355-1	W-221005-TS-14	Total/NA	Water	8270D	678419
500-223355-2	W-221005-TS-15	Total/NA	Water	8270D	678419
500-223355-3	W-221005-TS-16	Total/NA	Water	8270D	678419
500-223355-4	W-221005-TS-17	Total/NA	Water	8270D	678419
500-223355-5	W-221005-TS-18	Total/NA	Water	8270D	678419
500-223355-6	W-221005-TS-19	Total/NA	Water	8270D	678419
500-223355-5 MS	W-221005-TS-18	Total/NA	Water	8270D	678419
500-223355-5 MSD	W-221005-TS-18	Total/NA	Water	8270D	678419

GC VOA

Analysis Batch: 546307

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223355-1	W-221005-TS-14	Total/NA	Water	RSK-175	
500-223355-2	W-221005-TS-15	Total/NA	Water	RSK-175	
500-223355-3	W-221005-TS-16	Total/NA	Water	RSK-175	
500-223355-5	W-221005-TS-18	Total/NA	Water	RSK-175	
500-223355-6	W-221005-TS-19	Total/NA	Water	RSK-175	
MB 240-546307/35	Method Blank	Total/NA	Water	RSK-175	
LCS 240-546307/36	Lab Control Sample	Total/NA	Water	RSK-175	
500-223355-5 MS	W-221005-TS-18	Total/NA	Water	RSK-175	
500-223355-5 MSD	W-221005-TS-18	Total/NA	Water	RSK-175	

GC Semi VOA

Prep Batch: 679229

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223355-1	W-221005-TS-14	Total/NA	Water	8151A	
500-223355-2	W-221005-TS-15	Total/NA	Water	8151A	
500-223355-3	W-221005-TS-16	Total/NA	Water	8151A	
500-223355-4	W-221005-TS-17	Total/NA	Water	8151A	
500-223355-5	W-221005-TS-18	Total/NA	Water	8151A	
500-223355-6	W-221005-TS-19	Total/NA	Water	8151A	
MB 500-679229/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-679229/2-A	Lab Control Sample	Total/NA	Water	8151A	
500-223355-5 MS	W-221005-TS-18	Total/NA	Water	8151A	
500-223355-5 MSD	W-221005-TS-18	Total/NA	Water	8151A	

Analysis Batch: 679994

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-679229/1-A	Method Blank	Total/NA	Water	8151A	679229
LCS 500-679229/2-A	Lab Control Sample	Total/NA	Water	8151A	679229

Analysis Batch: 680738

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223355-1	W-221005-TS-14	Total/NA	Water	8151A	679229
500-223355-2	W-221005-TS-15	Total/NA	Water	8151A	679229
500-223355-3	W-221005-TS-16	Total/NA	Water	8151A	679229
500-223355-4	W-221005-TS-17	Total/NA	Water	8151A	679229
500-223355-5	W-221005-TS-18	Total/NA	Water	8151A	679229
500-223355-6	W-221005-TS-19	Total/NA	Water	8151A	679229
500-223355-5 MS	W-221005-TS-18	Total/NA	Water	8151A	679229
500-223355-5 MSD	W-221005-TS-18	Total/NA	Water	8151A	679229

Metals

Prep Batch: 679429

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223355-1	W-221005-TS-14	Dissolved	Water	3005A	
500-223355-1	W-221005-TS-14	Total Recoverable	Water	3005A	
500-223355-2	W-221005-TS-15	Dissolved	Water	3005A	
500-223355-2	W-221005-TS-15	Total Recoverable	Water	3005A	
500-223355-3	W-221005-TS-16	Dissolved	Water	3005A	
500-223355-3	W-221005-TS-16	Total Recoverable	Water	3005A	
500-223355-4	W-221005-TS-17	Dissolved	Water	3005A	

Metals (Continued)

Prep Batch: 679429 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223355-4	W-221005-TS-17	Total Recoverable	Water	3005A	
500-223355-5	W-221005-TS-18	Dissolved	Water	3005A	
500-223355-5	W-221005-TS-18	Total Recoverable	Water	3005A	
500-223355-6	W-221005-TS-19	Dissolved	Water	3005A	
500-223355-6	W-221005-TS-19	Total Recoverable	Water	3005A	
MB 500-679429/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-679429/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
500-223355-5 MS	W-221005-TS-18	Dissolved	Water	3005A	
500-223355-5 MS	W-221005-TS-18	Total Recoverable	Water	3005A	
500-223355-5 MSD	W-221005-TS-18	Dissolved	Water	3005A	
500-223355-5 MSD	W-221005-TS-18	Total Recoverable	Water	3005A	
500-223355-5 DU	W-221005-TS-18	Dissolved	Water	3005A	
500-223355-5 DU	W-221005-TS-18	Total Recoverable	Water	3005A	

Analysis Batch: 679657

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223355-1	W-221005-TS-14	Dissolved	Water	6020A	679429
500-223355-1	W-221005-TS-14	Total Recoverable	Water	6020A	679429
500-223355-2	W-221005-TS-15	Dissolved	Water	6020A	679429
500-223355-2	W-221005-TS-15	Total Recoverable	Water	6020A	679429
500-223355-3	W-221005-TS-16	Dissolved	Water	6020A	679429
500-223355-3	W-221005-TS-16	Total Recoverable	Water	6020A	679429
500-223355-4	W-221005-TS-17	Dissolved	Water	6020A	679429
500-223355-4	W-221005-TS-17	Total Recoverable	Water	6020A	679429
500-223355-5	W-221005-TS-18	Dissolved	Water	6020A	679429
500-223355-5	W-221005-TS-18	Total Recoverable	Water	6020A	679429
500-223355-6	W-221005-TS-19	Dissolved	Water	6020A	679429
500-223355-6	W-221005-TS-19	Total Recoverable	Water	6020A	679429
MB 500-679429/1-A	Method Blank	Total Recoverable	Water	6020A	679429
LCS 500-679429/2-A	Lab Control Sample	Total Recoverable	Water	6020A	679429
500-223355-5 MS	W-221005-TS-18	Dissolved	Water	6020A	679429
500-223355-5 MS	W-221005-TS-18	Total Recoverable	Water	6020A	679429
500-223355-5 MSD	W-221005-TS-18	Dissolved	Water	6020A	679429
500-223355-5 MSD	W-221005-TS-18	Total Recoverable	Water	6020A	679429
500-223355-5 DU	W-221005-TS-18	Dissolved	Water	6020A	679429
500-223355-5 DU	W-221005-TS-18	Total Recoverable	Water	6020A	679429

Analysis Batch: 679681

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223355-1	W-221005-TS-14	Total Recoverable	Water	SM 2340B	679429
500-223355-2	W-221005-TS-15	Total Recoverable	Water	SM 2340B	679429
500-223355-3	W-221005-TS-16	Total Recoverable	Water	SM 2340B	679429
500-223355-4	W-221005-TS-17	Total Recoverable	Water	SM 2340B	679429
500-223355-5	W-221005-TS-18	Total Recoverable	Water	SM 2340B	679429
500-223355-6	W-221005-TS-19	Total Recoverable	Water	SM 2340B	679429

General Chemistry

Analysis Batch: 678496

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223355-1	W-221005-TS-14	Total/NA	Water	300.0	

General Chemistry (Continued)

Analysis Batch: 678496 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223355-2	W-221005-TS-15	Total/NA	Water	300.0	
500-223355-3	W-221005-TS-16	Total/NA	Water	300.0	
500-223355-5	W-221005-TS-18	Total/NA	Water	300.0	
500-223355-5	W-221005-TS-18	Total/NA	Water	300.0	
500-223355-6	W-221005-TS-19	Total/NA	Water	300.0	
MB 500-678496/11	Method Blank	Total/NA	Water	300.0	
LCS 500-678496/12	Lab Control Sample	Total/NA	Water	300.0	
500-223355-5 MS	W-221005-TS-18	Total/NA	Water	300.0	
500-223355-5 MS	W-221005-TS-18	Total/NA	Water	300.0	
500-223355-5 MSD	W-221005-TS-18	Total/NA	Water	300.0	
500-223355-5 MSD	W-221005-TS-18	Total/NA	Water	300.0	

Analysis Batch: 680042

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223355-1	W-221005-TS-14	Total/NA	Water	SM 2320B	
500-223355-2	W-221005-TS-15	Total/NA	Water	SM 2320B	
500-223355-3	W-221005-TS-16	Total/NA	Water	SM 2320B	
500-223355-5	W-221005-TS-18	Total/NA	Water	SM 2320B	
500-223355-6	W-221005-TS-19	Total/NA	Water	SM 2320B	
MB 500-680042/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-680042/4	Lab Control Sample	Total/NA	Water	SM 2320B	
500-223355-5 DU	W-221005-TS-18	Total/NA	Water	SM 2320B	

Analysis Batch: 680333

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223355-1	W-221005-TS-14	Total/NA	Water	9060A	
500-223355-2	W-221005-TS-15	Total/NA	Water	9060A	
500-223355-3	W-221005-TS-16	Total/NA	Water	9060A	
500-223355-5	W-221005-TS-18	Total/NA	Water	9060A	
500-223355-6	W-221005-TS-19	Total/NA	Water	9060A	
MB 500-680333/4	Method Blank	Total/NA	Water	9060A	
LCS 500-680333/5	Lab Control Sample	Total/NA	Water	9060A	
LCSD 500-680333/6	Lab Control Sample Dup	Total/NA	Water	9060A	
500-223355-5 MS	W-221005-TS-18	Total/NA	Water	9060A	
500-223355-5 MSD	W-221005-TS-18	Total/NA	Water	9060A	

Surrogate Summary

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

Job ID: 500-223355-1

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	TOL	BFB	DBFM
Lab Sample ID	Client Sample ID	(75-126)	(75-120)	(72-124)	(75-120)
500-223355-1	W-221005-TS-14	96	95	108	99
500-223355-2	W-221005-TS-15	96	95	107	99
500-223355-3	W-221005-TS-16	96	95	105	98
500-223355-4	W-221005-TS-17	98	95	105	99
500-223355-5	W-221005-TS-18	97	95	108	97
500-223355-5 MS	W-221005-TS-18	94	95	102	98
500-223355-5 MSD	W-221005-TS-18	95	94	98	99
500-223355-6	W-221005-TS-19	96	98	110	102
500-223355-7	Trip Blank	97	94	105	99
LCS 500-679700/4	Lab Control Sample	94	95	99	96
LCS 500-679829/4	Lab Control Sample	90	98	102	96
MB 500-679700/6	Method Blank	93	95	103	96
MB 500-679829/6	Method Blank	94	99	112	98

Surrogate Legend

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

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		NBZ	FBP	TPHL
Lab Sample ID	Client Sample ID	(36-120)	(34-110)	(40-145)
500-223355-1	W-221005-TS-14	96	101	161 X
500-223355-2	W-221005-TS-15	86	90	149 X
500-223355-3	W-221005-TS-16	78	92	162 X
500-223355-4	W-221005-TS-17	75	82	160 X
500-223355-5	W-221005-TS-18	81	89	150 X
500-223355-5 MS	W-221005-TS-18	93	103	133
500-223355-5 MSD	W-221005-TS-18	102	111 X	137
500-223355-6	W-221005-TS-19	66	71	157 X
LCS 500-678419/2-A	Lab Control Sample	71	81	108
MB 500-678419/1-A	Method Blank	70	77	130

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**

		Percent Surrogate Recovery (Acceptance Limits)
		TFE1
Lab Sample ID	Client Sample ID	(60-140)
500-223355-1	W-221005-TS-14	90
500-223355-2	W-221005-TS-15	89
500-223355-3	W-221005-TS-16	91

Surrogate Summary

Client: GHD Services Inc.
Job ID: 500-223355-1
Project/Site: Penta Wood 11222418

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

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)										
		TFE1										
Lab Sample ID	Client Sample ID	(60-140)										
500-223355-5	W-221005-TS-18	90										
500-223355-5 MS	W-221005-TS-18	90										
500-223355-5 MSD	W-221005-TS-18	90										
500-223355-6	W-221005-TS-19	92										
LCS 240-546307/36	Lab Control Sample	91										
MB 240-546307/35	Method Blank	92										

Surrogate Legend

TFE = 1,1,1-Trifluoroethane

Method: 8151A - Herbicides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)										
		DCPAA1										
Lab Sample ID	Client Sample ID	(25-130)										
500-223355-1	W-221005-TS-14	78										
500-223355-2	W-221005-TS-15	83										
500-223355-3	W-221005-TS-16	81										
500-223355-4	W-221005-TS-17	81										
500-223355-5	W-221005-TS-18	81										
500-223355-5 MS	W-221005-TS-18	86										
500-223355-5 MSD	W-221005-TS-18	93										
500-223355-6	W-221005-TS-19	82										
LCS 500-679229/2-A	Lab Control Sample	93										
MB 500-679229/1-A	Method Blank	89										

Surrogate Legend

DCPAA = DCAA

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

Lab Sample ID: MB 500-679700/6
Matrix: Water
Analysis Batch: 679700

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			10/14/22 23:11	1
Toluene	<0.15		0.50	0.15	ug/L			10/14/22 23:11	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/14/22 23:11	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/14/22 23:11	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*75 - 126*		*10/14/22 23:11*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*10/14/22 23:11*	*1*
4-Bromofluorobenzene (Surr)	*103*		*72 - 124*		*10/14/22 23:11*	*1*
Dibromofluoromethane	*96*		*75 - 120*		*10/14/22 23:11*	*1*

Lab Sample ID: LCS 500-679700/4
Matrix: Water
Analysis Batch: 679700

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	49.2		ug/L		98	70 - 120
Toluene	50.0	52.8		ug/L		106	70 - 125
Ethylbenzene	50.0	53.7		ug/L		107	70 - 123
Xylenes, Total	100	107		ug/L		107	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 126*
Toluene-d8 (Surr)	*95*		*75 - 120*
4-Bromofluorobenzene (Surr)	*99*		*72 - 124*
Dibromofluoromethane	*96*		*75 - 120*

Lab Sample ID: 500-223355-5 MS
Matrix: Water
Analysis Batch: 679700

Client Sample ID: W-221005-TS-18
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.15		50.0	50.0		ug/L		100	70 - 120
Toluene	<0.15		50.0	53.6		ug/L		107	70 - 125
Ethylbenzene	<0.18		50.0	54.4		ug/L		109	70 - 123
Xylenes, Total	<0.22		100	109		ug/L		109	70 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 126*
Toluene-d8 (Surr)	*95*		*75 - 120*
4-Bromofluorobenzene (Surr)	*102*		*72 - 124*
Dibromofluoromethane	*98*		*75 - 120*

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

Lab Sample ID: 500-223355-5 MSD
Matrix: Water
Analysis Batch: 679700

Client Sample ID: W-221005-TS-18
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	49.6		ug/L		99	70 - 120	1	20
Toluene	<0.15		50.0	52.7		ug/L		105	70 - 125	2	20
Ethylbenzene	<0.18		50.0	53.3		ug/L		107	70 - 123	2	20
Xylenes, Total	<0.22		100	107		ug/L		107	70 - 125	2	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*75 - 126*
Toluene-d8 (Surr)	*94*		*75 - 120*
4-Bromofluorobenzene (Surr)	*98*		*72 - 124*
Dibromofluoromethane	*99*		*75 - 120*

Lab Sample ID: MB 500-679829/6
Matrix: Water
Analysis Batch: 679829

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			10/17/22 11:04	1
Toluene	<0.15		0.50	0.15	ug/L			10/17/22 11:04	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/17/22 11:04	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/17/22 11:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 126*		*10/17/22 11:04*	*1*
Toluene-d8 (Surr)	*99*		*75 - 120*		*10/17/22 11:04*	*1*
4-Bromofluorobenzene (Surr)	*112*		*72 - 124*		*10/17/22 11:04*	*1*
Dibromofluoromethane	*98*		*75 - 120*		*10/17/22 11:04*	*1*

Lab Sample ID: LCS 500-679829/4
Matrix: Water
Analysis Batch: 679829

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	43.0		ug/L		86	70 - 120
Toluene	50.0	44.5		ug/L		89	70 - 125
Ethylbenzene	50.0	46.4		ug/L		93	70 - 123
Xylenes, Total	100	95.0		ug/L		95	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*90*		*75 - 126*
Toluene-d8 (Surr)	*98*		*75 - 120*
4-Bromofluorobenzene (Surr)	*102*		*72 - 124*
Dibromofluoromethane	*96*		*75 - 120*

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

Lab Sample ID: MB 500-678419/1-A
Matrix: Water
Analysis Batch: 679628

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 678419

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.80	0.25	ug/L		10/07/22 07:59	10/14/22 12:18	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*70*		*36 - 120*	*10/07/22 07:59*	*10/14/22 12:18*	*1*
2-Fluorobiphenyl (Surr)	*77*		*34 - 110*	*10/07/22 07:59*	*10/14/22 12:18*	*1*
Terphenyl-d14 (Surr)	*130*		*40 - 145*	*10/07/22 07:59*	*10/14/22 12:18*	*1*

Lab Sample ID: LCS 500-678419/2-A
Matrix: Water
Analysis Batch: 679628

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 678419

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Naphthalene			32.0	18.9		ug/L		59	36 - 110		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*71*		*36 - 120*
2-Fluorobiphenyl (Surr)	*81*		*34 - 110*
Terphenyl-d14 (Surr)	*108*		*40 - 145*

Lab Sample ID: 500-223355-5 MS
Matrix: Water
Analysis Batch: 680404

Client Sample ID: W-221005-TS-18
Prep Type: Total/NA
Prep Batch: 678419

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Naphthalene	<0.24		30.7	21.3		ug/L		69	36 - 110		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*93*		*36 - 120*
2-Fluorobiphenyl (Surr)	*103*		*34 - 110*
Terphenyl-d14 (Surr)	*133*		*40 - 145*

Lab Sample ID: 500-223355-5 MSD
Matrix: Water
Analysis Batch: 680404

Client Sample ID: W-221005-TS-18
Prep Type: Total/NA
Prep Batch: 678419

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Naphthalene	<0.24		31.3	22.3		ug/L		71	36 - 110	5	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*102*		*36 - 120*
2-Fluorobiphenyl (Surr)	*111*	*X*	*34 - 110*
Terphenyl-d14 (Surr)	*137*		*40 - 145*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 240-546307/35
Matrix: Water
Analysis Batch: 546307

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			10/10/22 21:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,1-Trifluoroethane	*92*		*60 - 140*		*10/10/22 21:04*	*1*

Lab Sample ID: LCS 240-546307/36
Matrix: Water
Analysis Batch: 546307

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Methane			284	249		ug/L		88	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,1-Trifluoroethane	*91*		*60 - 140*

Lab Sample ID: 500-223355-5 MS
Matrix: Water
Analysis Batch: 546307

Client Sample ID: W-221005-TS-18
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Methane	<0.17		284	241		ug/L		85	50 - 150		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,1,1-Trifluoroethane	*90*		*60 - 140*

Lab Sample ID: 500-223355-5 MSD
Matrix: Water
Analysis Batch: 546307

Client Sample ID: W-221005-TS-18
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	243		ug/L		86	50 - 150	1	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,1,1-Trifluoroethane	*90*		*60 - 140*

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 500-679229/1-A
Matrix: Water
Analysis Batch: 679994

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 679229

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14		0.10	0.14	ug/L		10/12/22 10:05	10/17/22 16:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*89*		*25 - 130*	*10/12/22 10:05*	*10/17/22 16:19*	*1*

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

Lab Sample ID: LCS 500-679229/2-A
Matrix: Water
Analysis Batch: 679994

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 679229

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Pentachlorophenol			2.53	2.66		ug/L		105	40 - 122		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCAA	*93*		*25 - 130*

Lab Sample ID: 500-223355-5 MS
Matrix: Water
Analysis Batch: 680738

Client Sample ID: W-221005-TS-18
Prep Type: Total/NA
Prep Batch: 679229

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Pentachlorophenol	0.35		2.48	2.35		ug/L		81	40 - 122		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
DCAA	*86*		*25 - 130*

Lab Sample ID: 500-223355-5 MSD
Matrix: Water
Analysis Batch: 680738

Client Sample ID: W-221005-TS-18
Prep Type: Total/NA
Prep Batch: 679229

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Pentachlorophenol	0.35		2.50	2.36		ug/L		80	40 - 122	0	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
DCAA	*93*		*25 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 500-679429/1-A
Matrix: Water
Analysis Batch: 679657

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 679429

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		10/13/22 09:28	10/14/22 00:53	1
Copper	<0.50		2.0	0.50	ug/L		10/13/22 09:28	10/14/22 00:53	1
Iron	<46.7		100	46.7	ug/L		10/13/22 09:28	10/14/22 00:53	1
Manganese	<0.79		2.5	0.79	ug/L		10/13/22 09:28	10/14/22 00:53	1
Zinc	<6.9		20.0	6.9	ug/L		10/13/22 09:28	10/14/22 00:53	1

Lab Sample ID: LCS 500-679429/2-A
Matrix: Water
Analysis Batch: 679657

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 679429

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Arsenic			100	100.5		ug/L		101	80 - 120		
Copper			250	258.5		ug/L		103	80 - 120		
Iron			1000	1041		ug/L		104	80 - 120		
Manganese			500	516.7		ug/L		103	80 - 120		
Zinc			500	522.3		ug/L		104	80 - 120		

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

Lab Sample ID: 500-223355-5 MS
Matrix: Water
Analysis Batch: 679657

Client Sample ID: W-221005-TS-18
Prep Type: Total Recoverable
Prep Batch: 679429

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.32	J	100	98.65		ug/L		98	75 - 125
Copper	1.4	J	250	250.2		ug/L		100	75 - 125
Iron	<46.7		1000	999.5		ug/L		100	75 - 125
Manganese	<0.79		500	494.1		ug/L		99	75 - 125
Zinc	<6.9		500	509.4		ug/L		102	75 - 125

Lab Sample ID: 500-223355-5 MSD
Matrix: Water
Analysis Batch: 679657

Client Sample ID: W-221005-TS-18
Prep Type: Total Recoverable
Prep Batch: 679429

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	0.32	J	100	100.4		ug/L		100	75 - 125	2	20
Copper	1.4	J	250	256.0		ug/L		102	75 - 125	2	20
Iron	<46.7		1000	1014		ug/L		101	75 - 125	1	20
Manganese	<0.79		500	503.5		ug/L		101	75 - 125	2	20
Zinc	<6.9		500	517.0		ug/L		103	75 - 125	1	20

Lab Sample ID: 500-223355-5 DU
Matrix: Water
Analysis Batch: 679657

Client Sample ID: W-221005-TS-18
Prep Type: Total Recoverable
Prep Batch: 679429

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	0.32	J	0.342	J	ug/L		8	20
Copper	1.4	J	1.40	J	ug/L		0.3	20
Iron	<46.7		<46.7		ug/L		NC	20
Manganese	<0.79		<0.79		ug/L		NC	20
Zinc	<6.9		<6.9		ug/L		NC	20

Lab Sample ID: 500-223355-5 DU
Matrix: Water
Analysis Batch: 679657

Client Sample ID: W-221005-TS-18
Prep Type: Dissolved
Prep Batch: 679429

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	0.33	J	0.356	J	ug/L		7	20
Copper	1.7	J	1.35	J F5	ug/L		22	20
Iron	<46.7		<46.7		ug/L		NC	20
Manganese	<0.79		<0.79		ug/L		NC	20
Zinc	<6.9		<6.9		ug/L		NC	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 500-678496/11
Matrix: Water
Analysis Batch: 678496

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.17		0.20	0.17	mg/L			10/07/22 10:06	1
Nitrate as N	<0.068	^	0.20	0.068	mg/L			10/07/22 10:06	1
Sulfate	<0.095		0.20	0.095	mg/L			10/07/22 10:06	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 500-678496/12
Matrix: Water
Analysis Batch: 678496

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			3.00	3.18		mg/L		106	90 - 110		
Nitrate as N			2.00	2.22	^ *	mg/L		111	90 - 110		
Sulfate			5.00	5.24		mg/L		105	90 - 110		

Lab Sample ID: 500-223355-5 MS
Matrix: Water
Analysis Batch: 678496

Client Sample ID: W-221005-TS-18
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate	5.9		2.50	8.43		mg/L		103	80 - 120		

Lab Sample ID: 500-223355-5 MS
Matrix: Water
Analysis Batch: 678496

Client Sample ID: W-221005-TS-18
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	14.3		2.00	16.73	E 4	mg/L		124	80 - 120		
Nitrate as N	3.4	^ *	2.00	5.70	^	mg/L		116	80 - 120		

Lab Sample ID: 500-223355-5 MSD
Matrix: Water
Analysis Batch: 678496

Client Sample ID: W-221005-TS-18
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	5.9		2.50	8.31		mg/L		97	80 - 120	2	20

Lab Sample ID: 500-223355-5 MSD
Matrix: Water
Analysis Batch: 678496

Client Sample ID: W-221005-TS-18
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	14.3		2.00	16.78	E 4	mg/L		126	80 - 120	0	20
Nitrate as N	3.4	^ *	2.00	5.72	^	mg/L		117	80 - 120	0	20

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

Lab Sample ID: MB 500-680333/4
Matrix: Water
Analysis Batch: 680333

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 - Duplicates	<0.47		1.0	0.47	mg/L			10/18/22 18:41	1

Lab Sample ID: LCS 500-680333/5
Matrix: Water
Analysis Batch: 680333

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 - Duplicates			10.0	9.78		mg/L		98	86 - 116		

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

Lab Sample ID: LCSD 500-680333/6
Matrix: Water
Analysis Batch: 680333

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 - Duplicates			10.0	9.78		mg/L		98	86 - 116	0	20

Lab Sample ID: 500-223355-5 MS
Matrix: Water
Analysis Batch: 680333

Client Sample ID: W-221005-TS-18
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon - Duplicates	0.97	J	10.0	10.69		mg/L		97	75 - 125		

Lab Sample ID: 500-223355-5 MSD
Matrix: Water
Analysis Batch: 680333

Client Sample ID: W-221005-TS-18
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 - Duplicates	0.97	J	10.0	10.67		mg/L		97	75 - 125	0	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-680042/3
Matrix: Water
Analysis Batch: 680042

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			10/17/22 10:46	1

Lab Sample ID: LCS 500-680042/4
Matrix: Water
Analysis Batch: 680042

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Alkalinity			100	108.6		mg/L		109	90 - 110		

Lab Sample ID: 500-223355-5 DU
Matrix: Water
Analysis Batch: 680042

Client Sample ID: W-221005-TS-18
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Alkalinity	107			109.5		mg/L				2	20

Lab Chronicle

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

Job ID: 500-223355-1

Client Sample ID: W-221005-TS-14

Lab Sample ID: 500-223355-1
Matrix: Water
Date Collected: 10/05/22 09:30
Date Received: 10/06/22 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679700	PMF	EET CHI	10/15/22 00:23
Total/NA	Prep	3510C			678419	TS	EET CHI	10/07/22 07:59
Total/NA	Analysis	8270D		1	680404	SS	EET CHI	10/19/22 23:24
Total/NA	Analysis	RSK-175		1	546307	JBN	EET CAN	10/11/22 02:27
Total/NA	Prep	8151A			679229	DAK	EET CHI	10/12/22 10:05
Total/NA	Analysis	8151A		1	680738	SB	EET CHI	10/21/22 14:35
Dissolved	Prep	3005A			679429	BDE	EET CHI	10/13/22 09:28 - 10/13/22 09:58 [1]
Dissolved	Analysis	6020A		1	679657	FXG	EET CHI	10/14/22 01:41
Total Recoverable	Prep	3005A			679429	BDE	EET CHI	10/13/22 09:28 - 10/13/22 09:58 [1]
Total Recoverable	Analysis	6020A		1	679657	FXG	EET CHI	10/14/22 01:00
Total Recoverable	Prep	3005A			679429	BDE	EET CHI	10/13/22 09:28 - 10/13/22 09:58 [1]
Total Recoverable	Analysis	SM 2340B		1	679681	FXG	EET CHI	10/14/22 11:50
Total/NA	Analysis	300.0		1	678496	RES	EET CHI	10/07/22 08:25
Total/NA	Analysis	9060A		1	680333	BC	EET CHI	10/18/22 21:08
Total/NA	Analysis	SM 2320B		1	680042	SMO	EET CHI	10/17/22 14:24

Client Sample ID: W-221005-TS-15

Lab Sample ID: 500-223355-2
Matrix: Water
Date Collected: 10/05/22 09:34
Date Received: 10/06/22 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679700	PMF	EET CHI	10/15/22 00:47
Total/NA	Prep	3510C			678419	TS	EET CHI	10/07/22 07:59
Total/NA	Analysis	8270D		1	680404	SS	EET CHI	10/19/22 23:45
Total/NA	Analysis	RSK-175		1	546307	JBN	EET CAN	10/11/22 02:44
Total/NA	Prep	8151A			679229	DAK	EET CHI	10/12/22 10:05
Total/NA	Analysis	8151A		1	680738	SB	EET CHI	10/21/22 14:35
Dissolved	Prep	3005A			679429	BDE	EET CHI	10/13/22 09:28 - 10/13/22 09:58 [1]
Dissolved	Analysis	6020A		1	679657	FXG	EET CHI	10/14/22 01:44
Total Recoverable	Prep	3005A			679429	BDE	EET CHI	10/13/22 09:28 - 10/13/22 09:58 [1]
Total Recoverable	Analysis	6020A		1	679657	FXG	EET CHI	10/14/22 01:03
Total Recoverable	Prep	3005A			679429	BDE	EET CHI	10/13/22 09:28 - 10/13/22 09:58 [1]
Total Recoverable	Analysis	SM 2340B		1	679681	FXG	EET CHI	10/14/22 11:50
Total/NA	Analysis	300.0		1	678496	RES	EET CHI	10/07/22 08:38
Total/NA	Analysis	9060A		1	680333	BC	EET CHI	10/18/22 21:43
Total/NA	Analysis	SM 2320B		1	680042	SMO	EET CHI	10/17/22 14:30

Client Sample ID: W-221005-TS-16

Lab Sample ID: 500-223355-3
Matrix: Water
Date Collected: 10/05/22 10:41
Date Received: 10/06/22 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679700	PMF	EET CHI	10/15/22 01:11

Lab Chronicle

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

Job ID: 500-223355-1

Client Sample ID: W-221005-TS-16

Lab Sample ID: 500-223355-3

Date Collected: 10/05/22 10:41

Matrix: Water

Date Received: 10/06/22 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			678419	TS	EET CHI	10/07/22 07:59
Total/NA	Analysis	8270D		1	680404	SS	EET CHI	10/20/22 00:06
Total/NA	Analysis	RSK-175		1	546307	JBN	EET CAN	10/11/22 03:01
Total/NA	Prep	8151A			679229	DAK	EET CHI	10/12/22 10:05
Total/NA	Analysis	8151A		1	680738	SB	EET CHI	10/21/22 14:50
Dissolved	Prep	3005A			679429	BDE	EET CHI	10/13/22 09:28 - 10/13/22 09:58 [1]
Dissolved	Analysis	6020A		1	679657	FXG	EET CHI	10/14/22 01:48
Total Recoverable	Prep	3005A			679429	BDE	EET CHI	10/13/22 09:28 - 10/13/22 09:58 [1]
Total Recoverable	Analysis	6020A		1	679657	FXG	EET CHI	10/14/22 01:06
Total Recoverable	Prep	3005A			679429	BDE	EET CHI	10/13/22 09:28 - 10/13/22 09:58 [1]
Total Recoverable	Analysis	SM 2340B		1	679681	FXG	EET CHI	10/14/22 11:50
Total/NA	Analysis	300.0		1	678496	RES	EET CHI	10/07/22 08:50
Total/NA	Analysis	9060A		1	680333	BC	EET CHI	10/18/22 21:57
Total/NA	Analysis	SM 2320B		1	680042	SMO	EET CHI	10/17/22 14:37

Client Sample ID: W-221005-TS-17

Lab Sample ID: 500-223355-4

Date Collected: 10/05/22 11:30

Matrix: Water

Date Received: 10/06/22 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679700	PMF	EET CHI	10/15/22 01:35
Total/NA	Prep	3510C			678419	TS	EET CHI	10/07/22 07:59
Total/NA	Analysis	8270D		1	680404	SS	EET CHI	10/20/22 00:27
Total/NA	Prep	8151A			679229	DAK	EET CHI	10/12/22 10:05
Total/NA	Analysis	8151A		1	680738	SB	EET CHI	10/21/22 15:09
Dissolved	Prep	3005A			679429	BDE	EET CHI	10/13/22 09:28 - 10/13/22 09:58 [1]
Dissolved	Analysis	6020A		1	679657	FXG	EET CHI	10/14/22 01:51
Total Recoverable	Prep	3005A			679429	BDE	EET CHI	10/13/22 09:28 - 10/13/22 09:58 [1]
Total Recoverable	Analysis	6020A		1	679657	FXG	EET CHI	10/14/22 01:10
Total Recoverable	Prep	3005A			679429	BDE	EET CHI	10/13/22 09:28 - 10/13/22 09:58 [1]
Total Recoverable	Analysis	SM 2340B		1	679681	FXG	EET CHI	10/14/22 11:50

Client Sample ID: W-221005-TS-18

Lab Sample ID: 500-223355-5

Date Collected: 10/05/22 12:55

Matrix: Water

Date Received: 10/06/22 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679700	PMF	EET CHI	10/15/22 01:59
Total/NA	Prep	3510C			678419	TS	EET CHI	10/07/22 07:59
Total/NA	Analysis	8270D		1	680404	SS	EET CHI	10/20/22 00:49
Total/NA	Analysis	RSK-175		1	546307	JBN	EET CAN	10/10/22 22:29
Total/NA	Prep	8151A			679229	DAK	EET CHI	10/12/22 10:05
Total/NA	Analysis	8151A		1	680738	SB	EET CHI	10/21/22 15:28

Lab Chronicle

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

Job ID: 500-223355-1

Client Sample ID: W-221005-TS-18

Lab Sample ID: 500-223355-5

Date Collected: 10/05/22 12:55
Matrix: Water
Date Received: 10/06/22 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			679429	BDE	EET CHI	10/13/22 09:28 - 10/13/22 09:58 [1]
Dissolved	Analysis	6020A		1	679657	FXG	EET CHI	10/14/22 01:55
Total Recoverable	Prep	3005A			679429	BDE	EET CHI	10/13/22 09:28 - 10/13/22 09:58 [1]
Total Recoverable	Analysis	6020A		1	679657	FXG	EET CHI	10/14/22 01:13
Total Recoverable	Prep	3005A			679429	BDE	EET CHI	10/13/22 09:28 - 10/13/22 09:58 [1]
Total Recoverable	Analysis	SM 2340B		1	679681	FXG	EET CHI	10/14/22 11:50
Total/NA	Analysis	300.0		1	678496	RES	EET CHI	10/07/22 09:03
Total/NA	Analysis	300.0		2	678496	RES	EET CHI	10/07/22 09:41
Total/NA	Analysis	9060A		1	680333	BC	EET CHI	10/18/22 22:07
Total/NA	Analysis	SM 2320B		1	680042	SMO	EET CHI	10/17/22 14:43

Client Sample ID: W-221005-TS-19

Lab Sample ID: 500-223355-6

Date Collected: 10/05/22 14:37
Matrix: Water
Date Received: 10/06/22 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679829	W1T	EET CHI	10/17/22 19:15
Total/NA	Prep	3510C			678419	TS	EET CHI	10/07/22 07:59
Total/NA	Analysis	8270D		1	680404	SS	EET CHI	10/20/22 01:52
Total/NA	Analysis	RSK-175		1	546307	JBN	EET CAN	10/11/22 03:18
Total/NA	Prep	8151A			679229	DAK	EET CHI	10/12/22 10:05
Total/NA	Analysis	8151A		1	680738	SB	EET CHI	10/21/22 16:24
Dissolved	Prep	3005A			679429	BDE	EET CHI	10/13/22 09:28 - 10/13/22 09:58 [1]
Dissolved	Analysis	6020A		1	679657	FXG	EET CHI	10/14/22 02:19
Total Recoverable	Prep	3005A			679429	BDE	EET CHI	10/13/22 09:28 - 10/13/22 09:58 [1]
Total Recoverable	Analysis	6020A		1	679657	FXG	EET CHI	10/14/22 01:37
Total Recoverable	Prep	3005A			679429	BDE	EET CHI	10/13/22 09:28 - 10/13/22 09:58 [1]
Total Recoverable	Analysis	SM 2340B		1	679681	FXG	EET CHI	10/14/22 11:50
Total/NA	Analysis	300.0		1	678496	RES	EET CHI	10/07/22 11:09
Total/NA	Analysis	9060A		1	680333	BC	EET CHI	10/18/22 22:43
Total/NA	Analysis	SM 2320B		1	680042	SMO	EET CHI	10/17/22 14:56

Client Sample ID: Trip Blank

Lab Sample ID: 500-223355-7

Date Collected: 10/05/22 00:00
Matrix: Water
Date Received: 10/06/22 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679700	PMF	EET CHI	10/14/22 23:59

[1] Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Laboratory References:

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

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

Accreditation/Certification Summary

Client: GHD Services Inc.
Job ID: 500-223355-1
Project/Site: Penta Wood 11222418

Laboratory: Eurofins Chicago

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

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-23

Laboratory: Eurofins Canton

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	02-27-23
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23
Kentucky (WW)	State	KY98016	12-31-22
Minnesota	NELAP	039-999-348	12-31-22
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	10-12-22
Ohio VAP	State	CL0024	02-27-23
Oregon	NELAP	4062	02-27-23
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
Washington	State	C971	01-12-23
West Virginia DEP	State	210	12-31-22

Chain of Custody Record

543318

eurofins | Environment Testing TestAmerica

Address: _____

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TAL-8210

Client Contact	Project Manager: TIM REE	Site Contact:	Date: 10/5/22	COC No:
Company Name: GHD	Tel/Email: TIM.REE@GHD.COM	Lab Contact:	Carrier: FEDEX	1 of 1 COCs
Address: 900 LONG LAKE ROAD #200	**Analysis Turnaround Time**			Sampler:
City/State/Zip: ST PAUL / MN / 55112	☐ CALENDAR DAYS ☐ WORKING DAYS			**For Lab Use Only:**
Phone: 612 713 3452	TAT if different from Below _____			Walk-in Client:
Fax:	☐ 2 weeks			Lab Sampling:
Project Name: 11222418	☐ 1 week			
Site: PENTA WOOD	☐ 2 days			Job / SDG No.:
PO#	☐ 1 day			500-223355

500-223355 COC

	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 ANIONS	PCP	BTEX	NAPHTHALENE	DISSOLVED METALS	TOTAL METALS	TOC	METHANE	Sample Specific Notes:
1	W-221005-TS-121	10/5	9:30	G	GW	15	N	N	X	X	X	X	X	X	X	X	
2	W-221005-TS-15	10/5	9:36			15	N	N	X	X	X	X	X	X	X	X	
3	W-221005-TS-16	10/5	10:41			15	N	N	X	X	X	X	X	X	X	X	
4	W-221005-TS-17	10/5	11:30			15	N	N		X	X	X	X	X			
5	W-221005-TS-18	10/5	12:55			45	N	N	X	X	X	X	X	X	X	X	
6	W-221005-TS-19	10/5	11:37			15	N	N	X	X	X	X	X	X	X	X	
7	Trip Blank																Added by EETA 10/6/22 SH

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.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

0.9+0.4, 1.3+0.4, 2.2+0.2, 1.4+0.9

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____

	Company	Date/Time		Company	Date/Time
Relinquished by: Thomas Schoy	GHD	10/5 3:30	Received by:		
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: Stephanie Hernandez	EETA	10/6/22 0955

FedEx Express **Package US Airbill**

FedEx Tracking Number **8174 6502 3452**

Form ID No. **0215**

500-223355 Waybi

fedex.com 1.800 GoFedEx 1.800 463.3339

1 From

Date

Sender's Name Phone

Company

Address

Dept./Floor/Suite/Room

City State ZIP

2 Your Internal Billing Reference

3 To

Recipient's Name Phone

Company

Address

We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room

Address

Use this line for the HOLD location address or for continuation of your shipping address

City State ZIP

Hold Weekday
FedEx location address REQUIRED. **NOT available for** FedEx First Overnight.

Hold Saturday
FedEx location address REQUIRED. **Available ONLY for** FedEx Priority Overnight and FedEx 2Day to select locations.

8174 6502 3452

4 Express Package Service * To most locations.

Packages up to 150 lbs.
For packages over 150 lbs. use the FedEx Express Freight US Airbill.

Next Business Day

- ☐ FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- ☑ FedEx Priority Overnight — *Next business morning.* Friday shipments will be* delivered on Monday unless Saturday Delivery is selected.
- ☐ FedEx Standard Overnight — Next business afternoon. Saturday Delivery NOT available.

2 or 3 Business Days

- ☐ FedEx 2Day A.M. — *Second business morning.** Saturday Delivery NOT available.
- ☐ FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.
- ☐ FedEx Express Saver — Third business day. Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

☐ FedEx Envelope* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☐ Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.

☐ Saturday Delivery
***NOT available for** FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Express Saver*

☐ No Signature Required — Package may be left without obtaining a signature for delivery.
☐ Direct Signature — Someone at recipient's address may sign for delivery.
☐ Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?

One box must be checked.

☐ No ☐ Yes — As per attached Shipper's Declaration. ☐ Yes — Shipper's Declaration not required. ☐ Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Restrictions apply for dangerous goods — see the current FedEx Service Guide. ☐ Cargo Aircraft Only

7 Payment ***Bill to:***

Enter FedEx Acct. No. below

☐ Sender — Acct. No. in Section 1 will be billed. ☐ Recipient ☐ Third Party

Total Packages Total Weight lbs.

†Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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fedex.com 1.800 GoFedEx 1.800 463.3339

FedEx Express **Package US Airbill**

FedEx Tracking Number **8174 6502 3474**

Form ID No. **0215**

1 From

Date

Sender's Name Phone

Company

Address

Dept./Floor/Suite/Room

City State ZIP

2 Your Internal Billing Reference

3 To

Recipient's Name Phone

Company

Address

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept./Floor/Suite/Room

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City State ZIP

Hold Weekday
FedEx location address REQUIRED. **NOT available for** FedEx First Overnight

Hold Saturday
FedEx location address REQUIRED. **Available ONLY for** FedEx Priority Overnight and FedEx 2Day to select locations.

8174 6502 3474

4 Express Package Service

* To most locations.

Packages up to 150 lbs.
For packages over 150 lbs. use the FedEx Express Freight US Airbill.

Next Business Day

- FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Standard Overnight — Next business afternoon. Saturday Delivery NOT available.

2 or 3 Business Days

- FedEx 2Day A.M. — Second business morning. Saturday Delivery NOT available.
- FedEx 2Day — Second business afternoon. Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging

* Declared value limit $500.

FedEx Envelope* FedEx Pak* FedEx Box FedEx Tube Other

6 Special Handling and Delivery Signature Options

Fees may apply. See the FedEx Service Guide.

Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Express Saver

No Signature Required — Package may be left without obtaining a signature for delivery.

Direct Signature — Someone at recipient's address may sign for delivery.

Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?

One box must be checked

No

Yes — As per attached Shipper's Declaration.

Yes — Shipper's Declaration not required.

Dry Ice — Dry Ice, 9, UN 1845 x kg

Restrictions apply for dangerous goods — see the current FedEx Service Guide.

Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. below

Sender — Acct. No. in Section 1 will be billed.

Recipient

Third Party

Total Packages Total Weight lbs.

†Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

611

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fedex.com 1.800.GoFedEx 1.800.463.3339

FedEx Express

Package US Airbill

FedEx Tracking Number 8174 6502 3625

Form ID No. 0215

fedex.com 1.800 GoFedEx 1.800.463.3339

1 From [redacted]

Date

Sender's Name ______ Phone ______

Company ______

Address ______ Dept./Floor/Suite/Room

City ______ State ______ ZIP ______

2 Your Internal Billing Reference

3 To

Recipient's Name ______ Phone ______

Company ______

Address ______ Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

☐ Hold Weekday
FedEx location address REQUIRED. **NOT available for** FedEx First Overnight.

Address ______

Use this line for the HOLD location address or for continuation of your shipping address.

☐ Hold Saturday
FedEx location address REQUIRED. **Available ONLY for** FedEx Priority Overnight and FedEx 2Day to select locations.

City ______ State ______ ZIP ______

[redacted]

8174 6502 3625

4 Express Package Service * To most locations.

Packages up to 150 lbs.
For packages over 150 lbs. use the FedEx Express Freight US Airbill.

Next Business Day

☐ FedEx First Overnight
Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

☐ FedEx Priority Overnight
Next business morning. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

☐ FedEx Standard Overnight
Next business afternoon.
Saturday Delivery NOT available.

2 or 3 Business Days

☐ FedEx 2Day A.M.
Second business morning.
Saturday Delivery NOT available.

☐ FedEx 2Day
Second business afternoon. Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.

☐ FedEx Express Saver
Third business day.
Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

☐ FedEx Envelope* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☐ Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.

☐ Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Express Saver

☐ No Signature Required
Package may be left without obtaining a signature for delivery.

☐ Direct Signature
Someone at recipient's address may sign for delivery.

☐ Indirect Signature
If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?

One box must be checked

☐ No ☐ Yes As per attached Shipper's Declaration. ☐ Yes Shipper's Declaration not required. ☐ Dry Ice Dry Ice, 9, UN 1845 ____ x ____ kg

Restrictions apply for dangerous goods — see the current FedEx Service Guide. ☐ Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. below

☐ Sender Acct. No. in Section 1 will be billed. ☐ Recipient ☐ Third Party ☐

[redacted]

Total Packages ______ Total Weight ______ lbs. [redacted]

†Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

611

FedEx Express Package US Airbill

FedEx Tracking Number 8174 6502 3614

Form ID No. 0215

1 From

Date

Sender's Name Phone

Company

Address

Dept./Floor/Suite/Room

City State ZIP

2 Your Internal Billing Reference

3 To

Recipient's Name Phone

Company

Address

We cannot deliver to PO boxes or PO ZIP codes. Dept./Floor/Suite/Room

Address

Use this line for the HOLD location address or for continuation of your shipping address

City State ZIP

Hold Weekday
FedEx location address REQUIRED. **NOT available for** FedEx First Overnight.

Hold Saturday
FedEx location address REQUIRED. **Available ONLY for** FedEx Priority Overnight and FedEx 2Day to select locations.

8174 6502 3614

4 Express Package Service * To most locations.

Packages up to 150 lbs.
For packages over 150 lbs. use the FedEx Express Freight US Airbill.

Next Business Day

- FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Priority Overnight — Next business morning. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Standard Overnight — Next business afternoon. Saturday Delivery NOT available.

2 or 3 Business Days

- FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.
- FedEx 2Day — Second business afternoon. Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Express Saver — Third business day. Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

FedEx Envelope* FedEx Pak* FedEx Box FedEx Tube Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide

Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Express Saver

No Signature Required — Package may be left without obtaining a signature for delivery.

Direct Signature — Someone at recipient's address may sign for delivery.

Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?

One box must be checked.

No

Yes — As per attached Shipper's Declaration.

Yes — Shipper's Declaration not required.

Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Restrictions apply for dangerous goods — see the current FedEx Service Guide.

Cargo Aircraft Only

7 Payment *Bill to.*

Enter FedEx Acct. No. below

Obtain FedEx Acct No.

Sender — Acct. No. in Section 1 will be billed.

Recipient

Third Party

Total Packages Total Weight* lbs.

*Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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Eurofins Chicago
2417 Bond Street
University Park, IL 60484
Phone: 708-534-5200 Fax: 708-534-5211

Chain of Custody Record

eurofins Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Wright, Richard	Carrier Tracking No(s):	COC No: 500-165890.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Richard.Wright@et.eurofinsus.com	State of Origin: Wisconsin	Page: Page 1 of 1
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): State Program - Wisconsin		Job #: 500-223355-1
Address: 180 S. Van Buren Avenue,	Due Date Requested: 10/19/2022			
City: Barberton	TAT Requested (days):			
State, Zip: OH, 44203				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Penta Wood 11222418	Project #: 50013796			
Site:	SSOW#:			

Analysis Requested

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
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)
Other:

RSK

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_175/ (MOD) Methane	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
W-221005-TS-14 (500-223355-1)	10/5/22	09:30 Central		Water			X	3	WI
W-221005-TS-15 (500-223355-2)	10/5/22	09:34 Central		Water			X	3	WI
W-221005-TS-16 (500-223355-3)	10/5/22	10:41 Central		Water			X	3	WI
W-221005-TS-18 (500-223355-5)	10/5/22	12:55 Central		Water			X	3	WI
W-221005-TS-18 (500-223355-5MS)	10/5/22	12:55 Central	MS	Water			X	3	WI
W-221005-TS-18 (500-223355-5MSD)	10/5/22	12:55 Central	MSD	Water			X	3	WI
W-221005-TS-19 (500-223355-6)	10/5/22	14:37 Central		Water			X	3	WI

Note: Since laboratory accreditations are subject to change, Eurofins Chicago places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/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 complicance to Eurofins Chicago.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ______ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:	
Relinquished by: Shir Scott	Date/Time: 10/6/22 1500	Company: EETA	Received by: Mandy Bl	Date/Time: 10-7-22 9:30	Company: eetnc
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Eurofins - Canton Sample Receipt Form/Narrative Login # :_____
Barberton Facility

Client Eurofins Chicago Site Name_____ Cooler unpacked by: Mandeby
Cooler Received on 10-7-22 Opened on 10-7-22
FedEx: 1st Grd (Exp) UPS FAS Clipper Client Drop Off Eurofins Courier Other
Receipt After-hours: Drop-off Date/Time Storage Location

Eurofins Cooler # (COOLER) 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# IR-13 (CF +0.7 °C) Observed Cooler Temp. 0.1 °C Corrected Cooler Temp. 0.8 °C
IR GUN #IR-15 (CF 0.0°C) Observed Cooler Temp._____ °C Corrected Cooler Temp._____ °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)?	(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# HC286797
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

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

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: _____

WI-NC-099

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-223355-1

Login Number: 223355
List Number: 1
Creator: Scott, Sherri L

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	0.4,0.4,0.2,0.9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	
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	

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

Laboratory Job ID: 500-223438-1
Client Project/Site: Penta Wood 11222418

For:
GHD Services Inc.
900 Long Lake Road
Suite 200
New Brighton, Minnesota 55112

Attn: Mr. Grant Anderson

Authorized for release by:
10/25/2022 4:14:56 PM

Richard Wright, Senior Project Manager
(708)746-0045
Richard.Wright@et.eurofinsus.com

Table of Contents

Case Narrative

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

Job ID: 500-223438-1

Job ID: 500-223438-1

Laboratory: Eurofins Chicago

Narrative

Job Narrative
500-223438-1

Receipt
The samples were received on 10/7/2022 10:05 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were -0.2º C, -0.2º C and 0.2º C.

Receipt Exceptions
Received one of the three Methane vials for sample W-221006-TS-20 with an ID of -21. Per client, use the vials ending in -20 first.

Although listed on the chain of custody, a Total Metals bottle for W-221006-TS-20 was not received.

Although listed on the chain of custody, the lab did not receive sample bottles for the following W-221006-TS-22 analyses: Methane, TOC, Alkalinity, and IC. Per client, the chain of custody was miss-marked.

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

GC/MS Semi VOA
Method 8270D: The following sample contained one base surrogate outside acceptance limits: W-221006-TS-20 (500-223438-1), W-221006-TS-22 (500-223438-2), W-221006-TS-23 (500-223438-3), W-221006-TS-24 (500-223438-4), W-221006-TS-25 (500-223438-5) and (MB 500-679182/1-A). The laboratory's SOP allows one base surrogate to be outside acceptance limits; therefore, re-extraction was not performed. These results have been reported and qualified.

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 continuing calibration verification (CCV) associated with batch 500-679994 recovered above the upper control limit for Pentachlorophenol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: W-221006-TS-23 (500-223438-3), W-221006-TS-24 (500-223438-4), (CCV 500-679994/13), (CCV 500-679994/24) and (CCVRT 500-679994/2).

Method 8151A: Surrogate recovery for the following sample was outside the upper control limit: W-221006-TS-23 (500-223438-3). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

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.

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: 500-223438-1

Client Sample ID: W-221006-TS-20 — Lab Sample ID: 500-223438-1

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methane	0.62	J	1.0	0.17	ug/L	1		RSK-175	Total/NA
Copper	0.62	J	2.0	0.50	ug/L	1		6020A	Dissolved
Manganese	1.4	J	2.5	0.79	ug/L	1		6020A	Dissolved
Chloride	0.54		0.20	0.17	mg/L	1		300.0	Total/NA
Nitrate as N	0.38		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	2.7		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	1.0		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	36.3		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-221006-TS-22 — Lab Sample ID: 500-223438-2

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.81		0.10	0.15	ug/L	1		8151A	Total/NA
Copper	0.80	J	2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	337		100	46.7	ug/L	1		6020A	Total Recoverable
Manganese	6.2		2.5	0.79	ug/L	1		6020A	Total Recoverable
Copper	3.0		2.0	0.50	ug/L	1		6020A	Dissolved
Iron	1200		100	46.7	ug/L	1		6020A	Dissolved
Manganese	17.6		2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	0.47	J	0.50	0.25	mg/L	1		SM 2340B	Total Recoverable

Client Sample ID: W-221006-TS-23 — Lab Sample ID: 500-223438-3

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.77	J	1.0	0.23	ug/L	1		6020A	Total Recoverable
Copper	13.3		2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	2950		100	46.7	ug/L	1		6020A	Total Recoverable
Manganese	195		2.5	0.79	ug/L	1		6020A	Total Recoverable
Zinc	8.1	J	20.0	6.9	ug/L	1		6020A	Total Recoverable
Copper	10.2		2.0	0.50	ug/L	1		6020A	Dissolved
Iron	47.5	J	100	46.7	ug/L	1		6020A	Dissolved
Manganese	3.0		2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	53.2		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Chloride	73.9		4.0	3.4	mg/L	20		300.0	Total/NA
Nitrate as N	2.1		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	4.7		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.95	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	76.5		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-221006-TS-24 — Lab Sample ID: 500-223438-4

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.75	J	1.0	0.23	ug/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: W-221006-TS-24 (Continued) — Lab Sample ID: 500-223438-4

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Copper	11.0		2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	2380		100	46.7	ug/L	1		6020A	Total Recoverable
Manganese	136		2.5	0.79	ug/L	1		6020A	Total Recoverable
Zinc	8.2	J	20.0	6.9	ug/L	1		6020A	Total Recoverable
Copper	7.0		2.0	0.50	ug/L	1		6020A	Dissolved
Manganese	1.8	J	2.5	0.79	ug/L	1		6020A	Dissolved
Zinc	6.9	J	20.0	6.9	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	51.6		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Chloride	11.4		0.40	0.34	mg/L	2		300.0	Total/NA
Nitrate as N	0.87		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	3.4		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.67	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	75.0		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-221006-TS-25 — Lab Sample ID: 500-223438-5

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.26		0.099	0.14	ug/L	1		8151A	Total/NA
Arsenic	3.3		1.0	0.23	ug/L	1		6020A	Total Recoverable
Copper	63.1		2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	14700		100	46.7	ug/L	1		6020A	Total Recoverable
Manganese	599		2.5	0.79	ug/L	1		6020A	Total Recoverable
Zinc	52.2		20.0	6.9	ug/L	1		6020A	Total Recoverable
Copper	9.9		2.0	0.50	ug/L	1		6020A	Dissolved
Iron	476		100	46.7	ug/L	1		6020A	Dissolved
Manganese	18.8		2.5	0.79	ug/L	1		6020A	Dissolved
Zinc	13.4	J	20.0	6.9	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	48.3		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Chloride	0.45		0.20	0.17	mg/L	1		300.0	Total/NA
Nitrate as N	0.20		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	1.6		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.75	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	86.6		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: TRIP BLANK — Lab Sample ID: 500-223438-6

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

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

Job ID: 500-223438-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	EET CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	EET CHI
RSK-175	Dissolved Gases (GC)	RSK	EET CAN
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	MCAWW	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:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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 CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

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: 500-223438-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-223438-1	W-221006-TS-20	Water	10/06/22 10:37	10/07/22 10:05
500-223438-2	W-221006-TS-22	Water	10/06/22 11:30	10/07/22 10:05
500-223438-3	W-221006-TS-23	Water	10/06/22 12:19	10/07/22 10:05
500-223438-4	W-221006-TS-24	Water	10/06/22 13:38	10/07/22 10:05
500-223438-5	W-221006-TS-25	Water	10/06/22 13:55	10/07/22 10:05
500-223438-6	TRIP BLANK	Water	10/06/22 00:00	10/07/22 10:05

Client Sample ID: W-221006-TS-20

Date Collected: 10/06/22 10:37
Date Received: 10/07/22 10:05

Lab Sample ID: 500-223438-1

Matrix: Water

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			10/15/22 04:00	1
Toluene	<0.15		0.50	0.15	ug/L			10/15/22 04:00	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/15/22 04:00	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/15/22 04:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 126*		*10/15/22 04:00*	*1*
Toluene-d8 (Surr)	*94*		*75 - 120*		*10/15/22 04:00*	*1*
4-Bromofluorobenzene (Surr)	*104*		*72 - 124*		*10/15/22 04:00*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*10/15/22 04:00*	*1*

Method: SW846 8270D - 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		10/12/22 07:51	10/24/22 18:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*84*		*36 - 120*	*10/12/22 07:51*	*10/24/22 18:08*	*1*
2-Fluorobiphenyl (Surr)	*87*		*34 - 110*	*10/12/22 07:51*	*10/24/22 18:08*	*1*
Terphenyl-d14 (Surr)	*175*	*X*	*40 - 145*	*10/12/22 07:51*	*10/24/22 18:08*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**0.62**	**J**	1.0	0.17	ug/L			10/12/22 18:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,1-Trifluoroethane	*103*		*60 - 140*		*10/12/22 18:40*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.15		0.10	0.15	ug/L		10/12/22 10:05	10/21/22 17:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*78*		*25 - 130*	*10/12/22 10:05*	*10/21/22 17:02*	*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		10/13/22 09:30	10/14/22 04:16	1
Copper	**0.62**	**J**	2.0	0.50	ug/L		10/13/22 09:30	10/14/22 04:16	1
Iron	<46.7		100	46.7	ug/L		10/13/22 09:30	10/14/22 04:16	1
Manganese	**1.4**	**J**	2.5	0.79	ug/L		10/13/22 09:30	10/14/22 04:16	1
Zinc	<6.9		20.0	6.9	ug/L		10/13/22 09:30	10/14/22 04:16	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	**0.54**		0.20	0.17	mg/L			10/07/22 19:19	1
Nitrate as N (MCAWW 300.0)	**0.38**		0.20	0.068	mg/L			10/07/22 19:19	1
Sulfate (MCAWW 300.0)	**2.7**		0.20	0.095	mg/L			10/07/22 19:19	1
Total Organic Carbon - Duplicates (SW846 9060A)	**1.0**		1.0	0.47	mg/L			10/19/22 01:56	1
Alkalinity (SM 2320B)	**36.3**		5.0	3.7	mg/L			10/17/22 15:02	1

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

Job ID: 500-223438-1

Client Sample ID: W-221006-TS-22

Date Collected: 10/06/22 11:30
Date Received: 10/07/22 10:05

Lab Sample ID: 500-223438-2

Matrix: Water

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			10/15/22 04:24	1
Toluene	<0.15		0.50	0.15	ug/L			10/15/22 04:24	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/15/22 04:24	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/15/22 04:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 126*		*10/15/22 04:24*	*1*
Toluene-d8 (Surr)	*93*		*75 - 120*		*10/15/22 04:24*	*1*
4-Bromofluorobenzene (Surr)	*104*		*72 - 124*		*10/15/22 04:24*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*10/15/22 04:24*	*1*

Method: SW846 8270D - 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		10/12/22 07:51	10/24/22 18:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*100*		*36 - 120*	*10/12/22 07:51*	*10/24/22 18:32*	*1*
2-Fluorobiphenyl (Surr)	*103*		*34 - 110*	*10/12/22 07:51*	*10/24/22 18:32*	*1*
Terphenyl-d14 (Surr)	*208*	*X*	*40 - 145*	*10/12/22 07:51*	*10/24/22 18:32*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	**0.81**		0.10	0.15	ug/L		10/12/22 10:05	10/21/22 17:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*86*		*25 - 130*	*10/12/22 10:05*	*10/21/22 17:21*	*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		10/13/22 09:30	10/14/22 03:41	1
Copper	**0.80**	**J**	2.0	0.50	ug/L		10/13/22 09:30	10/14/22 03:41	1
Iron	**337**		100	46.7	ug/L		10/13/22 09:30	10/14/22 03:41	1
Manganese	**6.2**		2.5	0.79	ug/L		10/13/22 09:30	10/14/22 03:41	1
Zinc	<6.9		20.0	6.9	ug/L		10/13/22 09:30	10/14/22 03:41	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		10/13/22 09:30	10/14/22 04:19	1
Copper	**3.0**		2.0	0.50	ug/L		10/13/22 09:30	10/14/22 04:19	1
Iron	**1200**		100	46.7	ug/L		10/13/22 09:30	10/14/22 04:19	1
Manganese	**17.6**		2.5	0.79	ug/L		10/13/22 09:30	10/14/22 04:19	1
Zinc	<6.9		20.0	6.9	ug/L		10/13/22 09:30	10/14/22 04:19	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	**0.47**	**J**	0.50	0.25	mg/L		10/13/22 09:30	10/14/22 11:52	1

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

Job ID: 500-223438-1

Client Sample ID: W-221006-TS-23

Date Collected: 10/06/22 12:19
Date Received: 10/07/22 10:05

Lab Sample ID: 500-223438-3

Matrix: Water

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			10/15/22 04:48	1
Toluene	<0.15		0.50	0.15	ug/L			10/15/22 04:48	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/15/22 04:48	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/15/22 04:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 126*		*10/15/22 04:48*	*1*
Toluene-d8 (Surr)	*94*		*75 - 120*		*10/15/22 04:48*	*1*
4-Bromofluorobenzene (Surr)	*104*		*72 - 124*		*10/15/22 04:48*	*1*
Dibromofluoromethane	*100*		*75 - 120*		*10/15/22 04:48*	*1*

Method: SW846 8270D - 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		10/12/22 07:51	10/24/22 18:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*107*		*36 - 120*	*10/12/22 07:51*	*10/24/22 18:56*	*1*
2-Fluorobiphenyl (Surr)	*108*		*34 - 110*	*10/12/22 07:51*	*10/24/22 18:56*	*1*
Terphenyl-d14 (Surr)	*190*	*X*	*40 - 145*	*10/12/22 07:51*	*10/24/22 18:56*	*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			10/12/22 18:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,1-Trifluoroethane	*101*		*60 - 140*		*10/12/22 18:57*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.15	^c	0.10	0.15	ug/L		10/12/22 10:05	10/17/22 21:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*132*	*X*	*25 - 130*	*10/12/22 10:05*	*10/17/22 21:57*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.77**	**J**	1.0	0.23	ug/L		10/13/22 09:30	10/14/22 03:58	1
Copper	**13.3**		2.0	0.50	ug/L		10/13/22 09:30	10/14/22 03:58	1
Iron	**2950**		100	46.7	ug/L		10/13/22 09:30	10/14/22 03:58	1
Manganese	**195**		2.5	0.79	ug/L		10/13/22 09:30	10/14/22 03:58	1
Zinc	**8.1**	**J**	20.0	6.9	ug/L		10/13/22 09:30	10/14/22 03:58	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		10/13/22 09:30	10/14/22 04:22	1
Copper	**10.2**		2.0	0.50	ug/L		10/13/22 09:30	10/14/22 04:22	1
Iron	**47.5**	**J**	100	46.7	ug/L		10/13/22 09:30	10/14/22 04:22	1
Manganese	**3.0**		2.5	0.79	ug/L		10/13/22 09:30	10/14/22 04:22	1
Zinc	<6.9		20.0	6.9	ug/L		10/13/22 09:30	10/14/22 04:22	1

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

Job ID: 500-223438-1

Client Sample ID: W-221006-TS-23

Lab Sample ID: 500-223438-3

Date Collected: 10/06/22 12:19

Matrix: Water

Date Received: 10/07/22 10:05

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	53.2		0.50	0.25	mg/L		10/13/22 09:30	10/14/22 11:52	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	73.9		4.0	3.4	mg/L			10/07/22 21:48	20
Nitrate as N (MCAWW 300.0)	2.1		0.20	0.068	mg/L			10/07/22 20:00	1
Sulfate (MCAWW 300.0)	4.7		0.20	0.095	mg/L			10/07/22 20:00	1
Total Organic Carbon - Duplicates (SW846 9060A)	0.95	J	1.0	0.47	mg/L			10/19/22 02:09	1
Alkalinity (SM 2320B)	76.5		5.0	3.7	mg/L			10/17/22 15:10	1

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

Job ID: 500-223438-1

Client Sample ID: W-221006-TS-24

Date Collected: 10/06/22 13:38
Date Received: 10/07/22 10:05

Lab Sample ID: 500-223438-4

Matrix: Water

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			10/15/22 05:12	1
Toluene	<0.15		0.50	0.15	ug/L			10/15/22 05:12	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/15/22 05:12	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/15/22 05:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 126*		*10/15/22 05:12*	*1*
Toluene-d8 (Surr)	*94*		*75 - 120*		*10/15/22 05:12*	*1*
4-Bromofluorobenzene (Surr)	*108*		*72 - 124*		*10/15/22 05:12*	*1*
Dibromofluoromethane	*100*		*75 - 120*		*10/15/22 05:12*	*1*

Method: SW846 8270D - 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		10/12/22 07:51	10/24/22 19:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*99*		*36 - 120*	*10/12/22 07:51*	*10/24/22 19:20*	*1*
2-Fluorobiphenyl (Surr)	*104*		*34 - 110*	*10/12/22 07:51*	*10/24/22 19:20*	*1*
Terphenyl-d14 (Surr)	*179*	*X*	*40 - 145*	*10/12/22 07:51*	*10/24/22 19:20*	*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			10/12/22 19:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,1-Trifluoroethane	*103*		*60 - 140*		*10/12/22 19:14*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.15	^c	0.10	0.15	ug/L		10/12/22 10:05	10/17/22 22:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*88*		*25 - 130*	*10/12/22 10:05*	*10/17/22 22:16*	*1*

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		10/13/22 09:30	10/14/22 04:02	1
Copper	**11.0**		2.0	0.50	ug/L		10/13/22 09:30	10/14/22 04:02	1
Iron	**2380**		100	46.7	ug/L		10/13/22 09:30	10/14/22 04:02	1
Manganese	**136**		2.5	0.79	ug/L		10/13/22 09:30	10/14/22 04:02	1
Zinc	**8.2**	**J**	20.0	6.9	ug/L		10/13/22 09:30	10/14/22 04:02	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		10/13/22 09:30	10/14/22 04:26	1
Copper	**7.0**		2.0	0.50	ug/L		10/13/22 09:30	10/14/22 04:26	1
Iron	<46.7		100	46.7	ug/L		10/13/22 09:30	10/14/22 04:26	1
Manganese	**1.8**	**J**	2.5	0.79	ug/L		10/13/22 09:30	10/14/22 04:26	1
Zinc	**6.9**	**J**	20.0	6.9	ug/L		10/13/22 09:30	10/14/22 04:26	1

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

Job ID: 500-223438-1

Client Sample ID: W-221006-TS-24

Lab Sample ID: 500-223438-4

Date Collected: 10/06/22 13:38

Matrix: Water

Date Received: 10/07/22 10:05

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	51.6		0.50	0.25	mg/L		10/13/22 09:30	10/14/22 11:52	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	11.4		0.40	0.34	mg/L			10/07/22 22:02	2
Nitrate as N (MCAWW 300.0)	0.87		0.20	0.068	mg/L			10/07/22 20:13	1
Sulfate (MCAWW 300.0)	3.4		0.20	0.095	mg/L			10/07/22 20:13	1
Total Organic Carbon - Duplicates (SW846 9060A)	0.67	J	1.0	0.47	mg/L			10/19/22 02:46	1
Alkalinity (SM 2320B)	75.0		5.0	3.7	mg/L			10/17/22 15:16	1

Client Sample ID: W-221006-TS-25

Lab Sample ID: 500-223438-5

Date Collected: 10/06/22 13:55

Matrix: Water

Date Received: 10/07/22 10:05

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			10/15/22 05:36	1
Toluene	<0.15		0.50	0.15	ug/L			10/15/22 05:36	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/15/22 05:36	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/15/22 05:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 126*		*10/15/22 05:36*	*1*
Toluene-d8 (Surr)	*94*		*75 - 120*		*10/15/22 05:36*	*1*
4-Bromofluorobenzene (Surr)	*106*		*72 - 124*		*10/15/22 05:36*	*1*
Dibromofluoromethane	*101*		*75 - 120*		*10/15/22 05:36*	*1*

Method: SW846 8270D - 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		10/12/22 07:51	10/24/22 19:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*94*		*36 - 120*	*10/12/22 07:51*	*10/24/22 19:44*	*1*
2-Fluorobiphenyl (Surr)	*96*		*34 - 110*	*10/12/22 07:51*	*10/24/22 19:44*	*1*
Terphenyl-d14 (Surr)	*159*	*X*	*40 - 145*	*10/12/22 07:51*	*10/24/22 19:44*	*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			10/12/22 19:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,1-Trifluoroethane	*101*		*60 - 140*		*10/12/22 19:31*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	**0.26**		0.099	0.14	ug/L		10/12/22 10:05	10/21/22 17:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*83*		*25 - 130*	*10/12/22 10:05*	*10/21/22 17:40*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**3.3**		1.0	0.23	ug/L		10/13/22 09:30	10/14/22 04:05	1
Copper	**63.1**		2.0	0.50	ug/L		10/13/22 09:30	10/14/22 04:05	1
Iron	**14700**		100	46.7	ug/L		10/13/22 09:30	10/14/22 04:05	1
Manganese	**599**		2.5	0.79	ug/L		10/13/22 09:30	10/14/22 04:05	1
Zinc	**52.2**		20.0	6.9	ug/L		10/13/22 09:30	10/14/22 04:05	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		10/13/22 09:30	10/14/22 04:29	1
Copper	**9.9**		2.0	0.50	ug/L		10/13/22 09:30	10/14/22 04:29	1
Iron	**476**		100	46.7	ug/L		10/13/22 09:30	10/14/22 04:29	1
Manganese	**18.8**		2.5	0.79	ug/L		10/13/22 09:30	10/14/22 04:29	1
Zinc	**13.4**	**J**	20.0	6.9	ug/L		10/13/22 09:30	10/14/22 04:29	1

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

Job ID: 500-223438-1

Client Sample ID: W-221006-TS-25

Date Collected: 10/06/22 13:55
Date Received: 10/07/22 10:05

Lab Sample ID: 500-223438-5

Matrix: Water

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	48.3		0.50	0.25	mg/L		10/13/22 09:30	10/14/22 11:52	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	0.45		0.20	0.17	mg/L			10/07/22 20:27	1
Nitrate as N (MCAWW 300.0)	0.20		0.20	0.068	mg/L			10/07/22 20:27	1
Sulfate (MCAWW 300.0)	1.6		0.20	0.095	mg/L			10/07/22 20:27	1
Total Organic Carbon - Duplicates (SW846 9060A)	0.75	J	1.0	0.47	mg/L			10/19/22 02:59	1
Alkalinity (SM 2320B)	86.6		5.0	3.7	mg/L			10/17/22 15:26	1

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

Job ID: 500-223438-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 500-223438-6

Date Collected: 10/06/22 00:00

Matrix: Water

Date Received: 10/07/22 10:05

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			10/14/22 23:35	1
Toluene	<0.15		0.50	0.15	ug/L			10/14/22 23:35	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/14/22 23:35	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/14/22 23:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*75 - 126*		*10/14/22 23:35*	*1*
Toluene-d8 (Surr)	*94*		*75 - 120*		*10/14/22 23:35*	*1*
4-Bromofluorobenzene (Surr)	*103*		*72 - 124*		*10/14/22 23:35*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*10/14/22 23:35*	*1*

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
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
^c	CCV Recovery is outside acceptance limits.
X	Surrogate recovery exceeds control limits

Metals

Qualifier	Qualifier Description
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.
¤	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)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TNTC	Too Numerous To Count

GC/MS VOA

Analysis Batch: 679700

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223438-1	W-221006-TS-20	Total/NA	Water	8260B	
500-223438-2	W-221006-TS-22	Total/NA	Water	8260B	
500-223438-3	W-221006-TS-23	Total/NA	Water	8260B	
500-223438-4	W-221006-TS-24	Total/NA	Water	8260B	
500-223438-5	W-221006-TS-25	Total/NA	Water	8260B	
500-223438-6	TRIP BLANK	Total/NA	Water	8260B	
MB 500-679700/6	Method Blank	Total/NA	Water	8260B	
LCS 500-679700/4	Lab Control Sample	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 679182

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223438-1	W-221006-TS-20	Total/NA	Water	3510C	
500-223438-2	W-221006-TS-22	Total/NA	Water	3510C	
500-223438-3	W-221006-TS-23	Total/NA	Water	3510C	
500-223438-4	W-221006-TS-24	Total/NA	Water	3510C	
500-223438-5	W-221006-TS-25	Total/NA	Water	3510C	
MB 500-679182/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-679182/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-679182/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 681089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223438-1	W-221006-TS-20	Total/NA	Water	8270D	679182
500-223438-2	W-221006-TS-22	Total/NA	Water	8270D	679182
500-223438-3	W-221006-TS-23	Total/NA	Water	8270D	679182
500-223438-4	W-221006-TS-24	Total/NA	Water	8270D	679182
500-223438-5	W-221006-TS-25	Total/NA	Water	8270D	679182
MB 500-679182/1-A	Method Blank	Total/NA	Water	8270D	679182
LCS 500-679182/2-A	Lab Control Sample	Total/NA	Water	8270D	679182
LCSD 500-679182/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	679182

GC VOA

Analysis Batch: 546724

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223438-1	W-221006-TS-20	Total/NA	Water	RSK-175	
500-223438-3	W-221006-TS-23	Total/NA	Water	RSK-175	
500-223438-4	W-221006-TS-24	Total/NA	Water	RSK-175	
500-223438-5	W-221006-TS-25	Total/NA	Water	RSK-175	
MB 240-546724/3	Method Blank	Total/NA	Water	RSK-175	
LCS 240-546724/4	Lab Control Sample	Total/NA	Water	RSK-175	

GC Semi VOA

Prep Batch: 679229

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223438-1	W-221006-TS-20	Total/NA	Water	8151A	
500-223438-2	W-221006-TS-22	Total/NA	Water	8151A	
500-223438-3	W-221006-TS-23	Total/NA	Water	8151A	
500-223438-4	W-221006-TS-24	Total/NA	Water	8151A	

GC Semi VOA (Continued)

Prep Batch: 679229 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223438-5	W-221006-TS-25	Total/NA	Water	8151A	
MB 500-679229/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-679229/2-A	Lab Control Sample	Total/NA	Water	8151A	

Analysis Batch: 679994

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223438-3	W-221006-TS-23	Total/NA	Water	8151A	679229
500-223438-4	W-221006-TS-24	Total/NA	Water	8151A	679229
MB 500-679229/1-A	Method Blank	Total/NA	Water	8151A	679229
LCS 500-679229/2-A	Lab Control Sample	Total/NA	Water	8151A	679229

Analysis Batch: 680738

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223438-1	W-221006-TS-20	Total/NA	Water	8151A	679229
500-223438-2	W-221006-TS-22	Total/NA	Water	8151A	679229
500-223438-5	W-221006-TS-25	Total/NA	Water	8151A	679229

Metals

Prep Batch: 679430

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223438-1	W-221006-TS-20	Dissolved	Water	3005A	
500-223438-2	W-221006-TS-22	Dissolved	Water	3005A	
500-223438-2	W-221006-TS-22	Total Recoverable	Water	3005A	
500-223438-3	W-221006-TS-23	Dissolved	Water	3005A	
500-223438-3	W-221006-TS-23	Total Recoverable	Water	3005A	
500-223438-4	W-221006-TS-24	Dissolved	Water	3005A	
500-223438-4	W-221006-TS-24	Total Recoverable	Water	3005A	
500-223438-5	W-221006-TS-25	Dissolved	Water	3005A	
500-223438-5	W-221006-TS-25	Total Recoverable	Water	3005A	
MB 500-679430/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-679430/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
500-223438-2 MS	W-221006-TS-22	Total Recoverable	Water	3005A	
500-223438-2 MSD	W-221006-TS-22	Total Recoverable	Water	3005A	
500-223438-2 DU	W-221006-TS-22	Total Recoverable	Water	3005A	

Analysis Batch: 679657

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223438-1	W-221006-TS-20	Dissolved	Water	6020A	679430
500-223438-2	W-221006-TS-22	Dissolved	Water	6020A	679430
500-223438-2	W-221006-TS-22	Total Recoverable	Water	6020A	679430
500-223438-3	W-221006-TS-23	Dissolved	Water	6020A	679430
500-223438-3	W-221006-TS-23	Total Recoverable	Water	6020A	679430
500-223438-4	W-221006-TS-24	Dissolved	Water	6020A	679430
500-223438-4	W-221006-TS-24	Total Recoverable	Water	6020A	679430
500-223438-5	W-221006-TS-25	Dissolved	Water	6020A	679430
500-223438-5	W-221006-TS-25	Total Recoverable	Water	6020A	679430
MB 500-679430/1-A	Method Blank	Total Recoverable	Water	6020A	679430
LCS 500-679430/2-A	Lab Control Sample	Total Recoverable	Water	6020A	679430
500-223438-2 MS	W-221006-TS-22	Total Recoverable	Water	6020A	679430
500-223438-2 MSD	W-221006-TS-22	Total Recoverable	Water	6020A	679430

Metals (Continued)

Analysis Batch: 679657 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223438-2 DU	W-221006-TS-22	Total Recoverable	Water	6020A	679430

Analysis Batch: 679681

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223438-2	W-221006-TS-22	Total Recoverable	Water	SM 2340B	679430
500-223438-3	W-221006-TS-23	Total Recoverable	Water	SM 2340B	679430
500-223438-4	W-221006-TS-24	Total Recoverable	Water	SM 2340B	679430
500-223438-5	W-221006-TS-25	Total Recoverable	Water	SM 2340B	679430

General Chemistry

Analysis Batch: 678592

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223438-1	W-221006-TS-20	Total/NA	Water	300.0	
500-223438-3	W-221006-TS-23	Total/NA	Water	300.0	
500-223438-3	W-221006-TS-23	Total/NA	Water	300.0	
500-223438-4	W-221006-TS-24	Total/NA	Water	300.0	
500-223438-4	W-221006-TS-24	Total/NA	Water	300.0	
500-223438-5	W-221006-TS-25	Total/NA	Water	300.0	
MB 500-678592/3	Method Blank	Total/NA	Water	300.0	
LCS 500-678592/4	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 680042

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223438-1	W-221006-TS-20	Total/NA	Water	SM 2320B	
500-223438-3	W-221006-TS-23	Total/NA	Water	SM 2320B	
500-223438-4	W-221006-TS-24	Total/NA	Water	SM 2320B	
500-223438-5	W-221006-TS-25	Total/NA	Water	SM 2320B	
MB 500-680042/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-680042/4	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 680333

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223438-1	W-221006-TS-20	Total/NA	Water	9060A	
500-223438-3	W-221006-TS-23	Total/NA	Water	9060A	
500-223438-4	W-221006-TS-24	Total/NA	Water	9060A	
500-223438-5	W-221006-TS-25	Total/NA	Water	9060A	
MB 500-680333/4	Method Blank	Total/NA	Water	9060A	
LCS 500-680333/5	Lab Control Sample	Total/NA	Water	9060A	
LCSD 500-680333/6	Lab Control Sample Dup	Total/NA	Water	9060A	

Surrogate Summary

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

Job ID: 500-223438-1

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	TOL	BFB	DBFM
Lab Sample ID	Client Sample ID	(75-126)	(75-120)	(72-124)	(75-120)
500-223438-1	W-221006-TS-20	97	94	104	99
500-223438-2	W-221006-TS-22	99	93	104	99
500-223438-3	W-221006-TS-23	97	94	104	100
500-223438-4	W-221006-TS-24	97	94	108	100
500-223438-5	W-221006-TS-25	99	94	106	101
500-223438-6	TRIP BLANK	95	94	103	99
LCS 500-679700/4	Lab Control Sample	94	95	99	96
MB 500-679700/6	Method Blank	93	95	103	96

Surrogate Legend

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

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		NBZ	FBP	TPHL
Lab Sample ID	Client Sample ID	(36-120)	(34-110)	(40-145)
500-223438-1	W-221006-TS-20	84	87	175 X
500-223438-2	W-221006-TS-22	100	103	208 X
500-223438-3	W-221006-TS-23	107	108	190 X
500-223438-4	W-221006-TS-24	99	104	179 X
500-223438-5	W-221006-TS-25	94	96	159 X
LCS 500-679182/2-A	Lab Control Sample	94	97	131
LCSD 500-679182/3-A	Lab Control Sample Dup	92	98	137
MB 500-679182/1-A	Method Blank	87	90	161 X

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**

		Percent Surrogate Recovery (Acceptance Limits)
		TFE1
Lab Sample ID	Client Sample ID	(60-140)
500-223438-1	W-221006-TS-20	103
500-223438-3	W-221006-TS-23	101
500-223438-4	W-221006-TS-24	103
500-223438-5	W-221006-TS-25	101
LCS 240-546724/4	Lab Control Sample	104
MB 240-546724/3	Method Blank	104

Surrogate Legend

TFE = 1,1,1-Trifluoroethane

Surrogate Summary

Client: GHD Services Inc.
Job ID: 500-223438-1
Project/Site: Penta Wood 11222418

Method: 8151A - Herbicides (GC)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	DCPAA1 (25-130)
500-223438-1	W-221006-TS-20	78
500-223438-2	W-221006-TS-22	86
500-223438-3	W-221006-TS-23	132 X
500-223438-4	W-221006-TS-24	88
500-223438-5	W-221006-TS-25	83
LCS 500-679229/2-A	Lab Control Sample	93
MB 500-679229/1-A	Method Blank	89

Surrogate Legend

DCPAA = DCAA

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

Lab Sample ID: MB 500-679700/6
Matrix: Water
Analysis Batch: 679700

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			10/14/22 23:11	1
Toluene	<0.15		0.50	0.15	ug/L			10/14/22 23:11	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/14/22 23:11	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/14/22 23:11	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*75 - 126*		*10/14/22 23:11*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*10/14/22 23:11*	*1*
4-Bromofluorobenzene (Surr)	*103*		*72 - 124*		*10/14/22 23:11*	*1*
Dibromofluoromethane	*96*		*75 - 120*		*10/14/22 23:11*	*1*

Lab Sample ID: LCS 500-679700/4
Matrix: Water
Analysis Batch: 679700

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	49.2		ug/L		98	70 - 120
Toluene	50.0	52.8		ug/L		106	70 - 125
Ethylbenzene	50.0	53.7		ug/L		107	70 - 123
Xylenes, Total	100	107		ug/L		107	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 126*
Toluene-d8 (Surr)	*95*		*75 - 120*
4-Bromofluorobenzene (Surr)	*99*		*72 - 124*
Dibromofluoromethane	*96*		*75 - 120*

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

Lab Sample ID: MB 500-679182/1-A
Matrix: Water
Analysis Batch: 681089

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 679182

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.80	0.25	ug/L		10/12/22 07:51	10/24/22 13:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*87*		*36 - 120*	*10/12/22 07:51*	*10/24/22 13:38*	*1*
2-Fluorobiphenyl (Surr)	*90*		*34 - 110*	*10/12/22 07:51*	*10/24/22 13:38*	*1*
Terphenyl-d14 (Surr)	*161*	*X*	*40 - 145*	*10/12/22 07:51*	*10/24/22 13:38*	*1*

Lab Sample ID: LCS 500-679182/2-A
Matrix: Water
Analysis Batch: 681089

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 679182

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Naphthalene	32.0	24.3		ug/L		76	36 - 110

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

Lab Sample ID: LCS 500-679182/2-A
Matrix: Water
Analysis Batch: 681089

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 679182

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Nitrobenzene-d5 (Surr)	94		36 - 120
2-Fluorobiphenyl (Surr)	97		34 - 110
Terphenyl-d14 (Surr)	131		40 - 145

Lab Sample ID: LCSD 500-679182/3-A
Matrix: Water
Analysis Batch: 681089

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 679182

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Naphthalene			32.0	24.1		ug/L		75	36 - 110	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Nitrobenzene-d5 (Surr)	92		36 - 120
2-Fluorobiphenyl (Surr)	98		34 - 110
Terphenyl-d14 (Surr)	137		40 - 145

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 240-546724/3
Matrix: Water
Analysis Batch: 546724

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			10/12/22 12:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	104		60 - 140		10/12/22 12:42	1

Lab Sample ID: LCS 240-546724/4
Matrix: Water
Analysis Batch: 546724

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Methane			284	297		ug/L		105	80 - 120		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,1,1-Trifluoroethane	104		60 - 140

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 500-679229/1-A
Matrix: Water
Analysis Batch: 679994

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 679229

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14		0.10	0.14	ug/L		10/12/22 10:05	10/17/22 16:19	1

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

Lab Sample ID: MB 500-679229/1-A
Matrix: Water
Analysis Batch: 679994

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 679229

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	89		25 - 130	10/12/22 10:05	10/17/22 16:19	1

Lab Sample ID: LCS 500-679229/2-A
Matrix: Water
Analysis Batch: 679994

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 679229

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Pentachlorophenol	2.53	2.66		ug/L		105	40 - 122

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCAA	93		25 - 130

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 500-679430/1-A
Matrix: Water
Analysis Batch: 679657

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 679430

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		10/13/22 09:30	10/14/22 02:56	1
Copper	<0.50		2.0	0.50	ug/L		10/13/22 09:30	10/14/22 02:56	1
Iron	<46.7		100	46.7	ug/L		10/13/22 09:30	10/14/22 02:56	1
Manganese	<0.79		2.5	0.79	ug/L		10/13/22 09:30	10/14/22 02:56	1
Zinc	<6.9		20.0	6.9	ug/L		10/13/22 09:30	10/14/22 02:56	1

Lab Sample ID: LCS 500-679430/2-A
Matrix: Water
Analysis Batch: 679657

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 679430

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	100	97.19		ug/L		97	80 - 120
Copper	250	252.8		ug/L		101	80 - 120
Iron	1000	1051		ug/L		105	80 - 120
Manganese	500	517.5		ug/L		103	80 - 120
Zinc	500	515.3		ug/L		103	80 - 120

Lab Sample ID: 500-223438-2 MS
Matrix: Water
Analysis Batch: 679657

Client Sample ID: W-221006-TS-22
Prep Type: Total Recoverable
Prep Batch: 679430

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	<0.23		100	99.18		ug/L		99	75 - 125
Copper	0.80	J	250	256.8		ug/L		102	75 - 125
Iron	337		1000	1311		ug/L		97	75 - 125
Manganese	6.2		500	529.2		ug/L		105	75 - 125
Zinc	<6.9		500	519.2		ug/L		104	75 - 125

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

Lab Sample ID: 500-223438-2 MSD
Matrix: Water
Analysis Batch: 679657

Client Sample ID: W-221006-TS-22
Prep Type: Total Recoverable
Prep Batch: 679430

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	<0.23		100	97.48		ug/L		97	75 - 125	2	20
Copper	0.80	J	250	252.0		ug/L		100	75 - 125	2	20
Iron	337		1000	1332		ug/L		99	75 - 125	2	20
Manganese	6.2		500	519.1		ug/L		103	75 - 125	2	20
Zinc	<6.9		500	512.7		ug/L		103	75 - 125	1	20

Lab Sample ID: 500-223438-2 DU
Matrix: Water
Analysis Batch: 679657

Client Sample ID: W-221006-TS-22
Prep Type: Total Recoverable
Prep Batch: 679430

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	<0.23		<0.23		ug/L		NC	20
Copper	0.80	J	1.05	J F5	ug/L		27	20
Iron	337		270.5	F5	ug/L		22	20
Manganese	6.2		5.66		ug/L		9	20
Zinc	<6.9		11.62	J	ug/L		NC	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 500-678592/3
Matrix: Water
Analysis Batch: 678592

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.17		0.20	0.17	mg/L			10/07/22 17:16	1
Nitrate as N	<0.068		0.20	0.068	mg/L			10/07/22 17:16	1
Sulfate	<0.095		0.20	0.095	mg/L			10/07/22 17:16	1

Lab Sample ID: LCS 500-678592/4
Matrix: Water
Analysis Batch: 678592

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	3.00	3.16		mg/L		105	90 - 110
Nitrate as N	2.00	2.19		mg/L		109	90 - 110
Sulfate	5.00	5.18		mg/L		104	90 - 110

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

Lab Sample ID: MB 500-680333/4
Matrix: Water
Analysis Batch: 680333

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 - Duplicates	<0.47		1.0	0.47	mg/L			10/18/22 18:41	1

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

Lab Sample ID: LCS 500-680333/5
Matrix: Water
Analysis Batch: 680333

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 - Duplicates			10.0	9.78		mg/L		98	86 - 116		

Lab Sample ID: LCSD 500-680333/6
Matrix: Water
Analysis Batch: 680333

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 - Duplicates			10.0	9.78		mg/L		98	86 - 116	0	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-680042/3
Matrix: Water
Analysis Batch: 680042

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			10/17/22 10:46	1

Lab Sample ID: LCS 500-680042/4
Matrix: Water
Analysis Batch: 680042

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Alkalinity			100	108.6		mg/L		109	90 - 110		

Lab Chronicle

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

Job ID: 500-223438-1

Client Sample ID: W-221006-TS-20

Lab Sample ID: 500-223438-1

Date Collected: 10/06/22 10:37

Matrix: Water

Date Received: 10/07/22 10:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679700	PMF	EET CHI	10/15/22 04:00
Total/NA	Prep	3510C			679182	TS	EET CHI	10/12/22 07:51
Total/NA	Analysis	8270D		1	681089	SS	EET CHI	10/24/22 18:08
Total/NA	Analysis	RSK-175		1	546724	JBN	EET CAN	10/12/22 18:40
Total/NA	Prep	8151A			679229	DAK	EET CHI	10/12/22 10:05
Total/NA	Analysis	8151A		1	680738	SB	EET CHI	10/21/22 17:02
Dissolved	Prep	3005A			679430	BDE	EET CHI	10/13/22 09:30 - 10/13/22 10:00 [1]
Dissolved	Analysis	6020A		1	679657	FXG	EET CHI	10/14/22 04:16
Total/NA	Analysis	300.0		1	678592	RES	EET CHI	10/07/22 19:19
Total/NA	Analysis	9060A		1	680333	BC	EET CHI	10/19/22 01:56
Total/NA	Analysis	SM 2320B		1	680042	SMO	EET CHI	10/17/22 15:02

Client Sample ID: W-221006-TS-22

Lab Sample ID: 500-223438-2

Date Collected: 10/06/22 11:30

Matrix: Water

Date Received: 10/07/22 10:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679700	PMF	EET CHI	10/15/22 04:24
Total/NA	Prep	3510C			679182	TS	EET CHI	10/12/22 07:51
Total/NA	Analysis	8270D		1	681089	SS	EET CHI	10/24/22 18:32
Total/NA	Prep	8151A			679229	DAK	EET CHI	10/12/22 10:05
Total/NA	Analysis	8151A		1	680738	SB	EET CHI	10/21/22 17:21
Dissolved	Prep	3005A			679430	BDE	EET CHI	10/13/22 09:30 - 10/13/22 10:00 [1]
Dissolved	Analysis	6020A		1	679657	FXG	EET CHI	10/14/22 04:19
Total Recoverable	Prep	3005A			679430	BDE	EET CHI	10/13/22 09:30 - 10/13/22 10:00 [1]
Total Recoverable	Analysis	6020A		1	679657	FXG	EET CHI	10/14/22 03:41
Total Recoverable	Prep	3005A			679430	BDE	EET CHI	10/13/22 09:30 - 10/13/22 10:00 [1]
Total Recoverable	Analysis	SM 2340B		1	679681	FXG	EET CHI	10/14/22 11:52

Client Sample ID: W-221006-TS-23

Lab Sample ID: 500-223438-3

Date Collected: 10/06/22 12:19

Matrix: Water

Date Received: 10/07/22 10:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679700	PMF	EET CHI	10/15/22 04:48
Total/NA	Prep	3510C			679182	TS	EET CHI	10/12/22 07:51
Total/NA	Analysis	8270D		1	681089	SS	EET CHI	10/24/22 18:56
Total/NA	Analysis	RSK-175		1	546724	JBN	EET CAN	10/12/22 18:57
Total/NA	Prep	8151A			679229	DAK	EET CHI	10/12/22 10:05
Total/NA	Analysis	8151A		1	679994	NB	EET CHI	10/17/22 21:57
Dissolved	Prep	3005A			679430	BDE	EET CHI	10/13/22 09:30 - 10/13/22 10:00 [1]
Dissolved	Analysis	6020A		1	679657	FXG	EET CHI	10/14/22 04:22
Total Recoverable	Prep	3005A			679430	BDE	EET CHI	10/13/22 09:30 - 10/13/22 10:00 [1]
Total Recoverable	Analysis	6020A		1	679657	FXG	EET CHI	10/14/22 03:58

Lab Chronicle

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

Job ID: 500-223438-1

Client Sample ID: W-221006-TS-23

Lab Sample ID: 500-223438-3
Date Collected: 10/06/22 12:19
Matrix: Water
Date Received: 10/07/22 10:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			679430	BDE	EET CHI	10/13/22 09:30 - 10/13/22 10:00 [1]
Total Recoverable	Analysis	SM 2340B		1	679681	FXG	EET CHI	10/14/22 11:52
Total/NA	Analysis	300.0		1	678592	RES	EET CHI	10/07/22 20:00
Total/NA	Analysis	300.0		20	678592	RES	EET CHI	10/07/22 21:48
Total/NA	Analysis	9060A		1	680333	BC	EET CHI	10/19/22 02:09
Total/NA	Analysis	SM 2320B		1	680042	SMO	EET CHI	10/17/22 15:10

Client Sample ID: W-221006-TS-24

Lab Sample ID: 500-223438-4
Date Collected: 10/06/22 13:38
Matrix: Water
Date Received: 10/07/22 10:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679700	PMF	EET CHI	10/15/22 05:12
Total/NA	Prep	3510C			679182	TS	EET CHI	10/12/22 07:51
Total/NA	Analysis	8270D		1	681089	SS	EET CHI	10/24/22 19:20
Total/NA	Analysis	RSK-175		1	546724	JBN	EET CAN	10/12/22 19:14
Total/NA	Prep	8151A			679229	DAK	EET CHI	10/12/22 10:05
Total/NA	Analysis	8151A		1	679994	NB	EET CHI	10/17/22 22:16
Dissolved	Prep	3005A			679430	BDE	EET CHI	10/13/22 09:30 - 10/13/22 10:00 [1]
Dissolved	Analysis	6020A		1	679657	FXG	EET CHI	10/14/22 04:26
Total Recoverable	Prep	3005A			679430	BDE	EET CHI	10/13/22 09:30 - 10/13/22 10:00 [1]
Total Recoverable	Analysis	6020A		1	679657	FXG	EET CHI	10/14/22 04:02
Total Recoverable	Prep	3005A			679430	BDE	EET CHI	10/13/22 09:30 - 10/13/22 10:00 [1]
Total Recoverable	Analysis	SM 2340B		1	679681	FXG	EET CHI	10/14/22 11:52
Total/NA	Analysis	300.0		1	678592	RES	EET CHI	10/07/22 20:13
Total/NA	Analysis	300.0		2	678592	RES	EET CHI	10/07/22 22:02
Total/NA	Analysis	9060A		1	680333	BC	EET CHI	10/19/22 02:46
Total/NA	Analysis	SM 2320B		1	680042	SMO	EET CHI	10/17/22 15:16

Client Sample ID: W-221006-TS-25

Lab Sample ID: 500-223438-5
Date Collected: 10/06/22 13:55
Matrix: Water
Date Received: 10/07/22 10:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679700	PMF	EET CHI	10/15/22 05:36
Total/NA	Prep	3510C			679182	TS	EET CHI	10/12/22 07:51
Total/NA	Analysis	8270D		1	681089	SS	EET CHI	10/24/22 19:44
Total/NA	Analysis	RSK-175		1	546724	JBN	EET CAN	10/12/22 19:31
Total/NA	Prep	8151A			679229	DAK	EET CHI	10/12/22 10:05
Total/NA	Analysis	8151A		1	680738	SB	EET CHI	10/21/22 17:40
Dissolved	Prep	3005A			679430	BDE	EET CHI	10/13/22 09:30 - 10/13/22 10:00 [1]
Dissolved	Analysis	6020A		1	679657	FXG	EET CHI	10/14/22 04:29
Total Recoverable	Prep	3005A			679430	BDE	EET CHI	10/13/22 09:30 - 10/13/22 10:00 [1]
Total Recoverable	Analysis	6020A		1	679657	FXG	EET CHI	10/14/22 04:05

Lab Chronicle

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

Job ID: 500-223438-1

Client Sample ID: W-221006-TS-25

Lab Sample ID: 500-223438-5

Date Collected: 10/06/22 13:55

Matrix: Water

Date Received: 10/07/22 10:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			679430	BDE	EET CHI	10/13/22 09:30 - 10/13/22 10:00 [1]
Total Recoverable	Analysis	SM 2340B		1	679681	FXG	EET CHI	10/14/22 11:52
Total/NA	Analysis	300.0		1	678592	RES	EET CHI	10/07/22 20:27
Total/NA	Analysis	9060A		1	680333	BC	EET CHI	10/19/22 02:59
Total/NA	Analysis	SM 2320B		1	680042	SMO	EET CHI	10/17/22 15:26

Client Sample ID: TRIP BLANK

Lab Sample ID: 500-223438-6

Date Collected: 10/06/22 00:00

Matrix: Water

Date Received: 10/07/22 10:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679700	PMF	EET CHI	10/14/22 23:35

[1] Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Laboratory References:

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

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

Accreditation/Certification Summary

Client: GHD Services Inc.
Job ID: 500-223438-1
Project/Site: Penta Wood 11222418

Laboratory: Eurofins Chicago

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

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-23

Laboratory: Eurofins Canton

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	02-27-23
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23
Kentucky (WW)	State	KY98016	12-31-22
Minnesota	NELAP	039-999-348	12-31-22
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	10-12-22
Ohio VAP	State	CL0024	02-27-23
Oregon	NELAP	4062	02-27-23
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
Washington	State	C971	01-12-23
West Virginia DEP	State	210	12-31-22

Chain of Custody Record 524955

eurofins | Environment Testing TestAmerica

Address: _____

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other: TAL-8210

Client Contact	Project Manager: TIM REE	Site Contact:	Date: 10/6/22	COC No:
Company Name: GHD	Tel/Email: TIM.REE@GHD.com	Lab Contact:	Carrier: FEDEX	1 of 1 COCs
Address: 900 LONG LAKE ROAD 206	Analysis Turnaround Time			Sampler: THOR SALBERG
City/State/Zip: ST PAUL / MN / 55112	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 612 712 7452	TAT if different from Below _____			Walk-in Client:
Fax:	☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
Project Name: 11277418				Job / SDG No.: 500-223438
Site: PEMA WOOD				
PO #				

500-223438 COC

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 ANIONS	PCP	BTEX	NAPHTHALENE	DISSOLVED METALS	TOTAL METALS	TOC	METHANE	Sample Specific Notes:
1 W-221006-TS-20	10/6	10:37	G	GW	15	N	N	X	X	X	X	X	X	X	X	
2 W-221006-TS-22	10/6	11:50				N	N	X	X	X	X	X	X	X	X	
3 W-221006-TS-23	10/6	12:19				N	N	X	X	X	X	X	X	X	X	
4 W-221006-TS-24	10/6	13:35				N	N	X	X	X	X	X	X	X	X	
5 W-221006-TS-25	10/6	13:55				N	N	X	X	X	X	X	X	X	X	
6 TRIP BLANK										X						

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.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

0.3 → 0.2 1.1 → 0.2 0.3 → 0.2

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ | Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	GHD	10/6			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: [signature]	Company: EEDA	Date/Time: 10/7/22 1005

500-223438 Waybi

FedEx Express Package US Airbill

FedEx Tracking Numbe 8174 6502 3511

Form ID No. 0215

fedex.com 1.800 GoFedEx 1.800 463.3339

1 From

Date

Sender's Name Phone

Company

Address

Dept./Floor/Suite/Room

City State ZIP

2 Your Internal Billing Reference

3 To

Recipient's Name Phone

Company

Address

We cannot delive to PO boxes o PO ZIP codes. Dept./Floor/Suite/Room

Address

Use this ine for the HOLD location address o fo continuation of you shipping address.

City State ZIP

Hold Weekday
FedEx location address REQUIRED. **NOT available for** FedEx First Overnight.

Hold Saturday
FedEx location address REQUIRED. **Available ONLY for** FedEx Priority Overnight and FedEx 2Day to select locations.

8174 6502 3511

4 Express Package Service * To most locations.

Packages up to 150 lbs.
For packages over 150 lbs. use the FedEx Express Freight US Airbill.

Next Business Day

- ☐ FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- ☑ FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- ☐ FedEx Standard Overnight — Next business afternoon. Saturday Delivery NOT available.

2 or 3 Business Days

- ☐ FedEx 2Day A.M — Second business morning. Saturday Delivery NOT available.
- ☐ FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.
- ☐ FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

☐ FedEx Envelope* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☐ Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide

☐ Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Express Saver.

☐ No Signature Required — Package may be left without obtaining a signature for delivery.

☐ Direct Signature — Someone at recipient's address may sign for delivery.

☐ Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?

One box st be checked.

☐ No ☐ Yes — As per attached Shipper's Declaration. ☐ Yes — Shipper's Declaration not required.

Dry Ice — Dry Ice, 9, UN 1845 x ____ kg

Restrictions apply for dangerous goods — see the current FedEx Service Guide.

☐ Cargo Aircraft Only

7 Payment *Bill to.*

Enter FedEx Acct. No. below

☐ Sender — Acct. No. in Section 1 will be billed. ☐ Recipient ☐ Third Party

Is a FedEx Ac No ☐

Total Packages Total Weight lbs.

[redacted]

[1]Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

611

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FedEx Express Package US Airbill

FedEx Tracking Number 8174 6502 3496

Form ID No. 0215

1 From

Date

Sender's Name Phone

Company

Address

Dept./Floor/Suite/Room

City State ZIP

2 Your Internal Billing Reference

3 To

Recipient's Name Phone

Company

Address

We cannot delive to P O boxes o P.O ZIP codes. Dept./Floor/Suite/Room

Address

Use this line for the HOLD location address or for continuation of you shipping address.

City State ZIP

Hold Weekday
FedEx location address REQUIRED. **NOT available for** FedEx First Overnight.

Hold Saturday
FedEx location address REQUIRED **Available ONLY for** FedEx Priority Overnight and FedEx 2Day to select locations.

8174 6502 3496

4 Express Package Service * To most locations.

Packages up to 150 lbs.
For packages over 150 lbs. use the FedEx Express Freight US Airbill.

Next Business Day

- FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Standard Overnight — Next business afternoon. Saturday Delivery NOT available.

2 or 3 Business Days

- FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.
- FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Express Saver — Third business day. Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

FedEx Envelope* | FedEx Pak* | FedEx Box | FedEx Tube | Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.

Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Express Saver

No Signature Required — Package may be left without obtaining a signature for delivery.

Direct Signature — Someone at recipient's address may sign for delivery.

Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?

One box must be checked.

No | Yes — As per attached Shipper's Declaration. | Yes — Shipper's Declaration not required. | Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Restrictions apply for dangerous goods see the current FedEx Service Guide.

Cargo Aircraft Only

7 Payment *Bill to.*

Enter FedEx Acct. No. below

Sender Acct. No. in Section 1 will be billed. | Recipient | Third Party | Credit Card

Total Packages Total Weight

____ ____ lbs.

†Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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FedEx Express Package US Airbill

FedEx Tracking Number 8174 6502 3500

Form ID No. 0215

1 From

Date

Sender's Name Phone

Company

Address

Dept./Floor/Suite/Room

City State ZIP

2 Your Internal Billing Reference

3 To

Recipient's Name Phone

Company

Address

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept./Floor/Suite/Room

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City State ZIP

Hold Weekday
FedEx location address REQUIRED. **NOT available for** FedEx First Overnight.

Hold Saturday
FedEx location address REQUIRED. **Available ONLY for** FedEx Priority Overnight and FedEx 2Day to select locations.

8174 6502 3500

4 Express Package Service * To most locations.

Packages up to 150 lbs.
For packages over 150 lbs., use the FedEx Express Freight US Airbill.

Next Business Day

- FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Priority Overnight — Next business morning. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Standard Overnight — Next business afternoon. Saturday Delivery NOT available.

2 or 3 Business Days

- FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.
- FedEx 2Day — Second business afternoon. Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Express Saver — Third business day. Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

FedEx Envelope* FedEx Pak* FedEx Box FedEx Tube Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.

Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Express Saver

No Signature Required — Package may be left without obtaining a signature for delivery.

Direct Signature — Someone at recipient's address may sign for delivery.

Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?

One box must be checked

No

Yes — As per attached Shipper's Declaration.

Yes — Shipper's Declaration not required.

Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Restrictions apply for dangerous goods see the current FedEx Service Guide.

Cargo Aircraft Only

7 Payment *Bill to.*

Enter FedEx Acct. No. below

Sender Acct. No. in Section 1 will be billed. Recipient Third Party

Total Packages Total Weight

lbs.

[1]Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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Eurofins Chicago
2417 Bond Street
University Park, IL 60484
Phone: 708-534-5200 Fax: 708-534-5211

0.110.8

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Wright, Richard	Carrier Tracking No(s):	COC No: 500-165931.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Richard.Wright@et.eurofinsus.com	State of Origin: Wisconsin	Page: Page 1 of 1
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): State Program - Wisconsin		Job #: 500-223438-1
Address: 180 S. Van Buren Avenue, ,	Due Date Requested: 10/20/2022			
City: Barberton	TAT Requested (days):			
State, Zip: OH, 44203				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Penta Wood 11222418	Project #: 50013796			
Site:	SSOW#:			

Analysis Requested

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, 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)

Other:

RSK

Special Instructions/Note:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_175/ (MOD) Methane	Total Number of containers
			Preservation Code:					
W-221006-TS-20 (500-223438-1)	10/6/22	10:37 Central		Water			X	3
W-221006-TS-23 (500-223438-3)	10/6/22	12:19 Central		Water			X	3
W-221006-TS-24 (500-223438-4)	10/6/22	13:38 Central		Water			X	3
W-221006-TS-25 (500-223438-5)	10/6/22	13:55 Central		Water			X	3

Note: Since laboratory accreditations are subject to change, Eurofins Chicago places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/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 complicance to Eurofins Chicago.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

10/25/2022

Eurofins - Canton Sample Receipt Form/Narrative Login # :_____
Barberton Facility

Client ETA Site Name_____ Cooler unpacked by: Jamy Page

Cooler Received on 10-8-22 Opened on 10-8-22

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other

Receipt After-hours: Drop-off Date/Time Storage Location

Eurofins Cooler # TA 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# IR-13 (CF +0.7 °C) Observed Cooler Temp. 0.1 °C Corrected Cooler Temp. 0.8 °C
   IR GUN #IR-15 (CF 0.0°C) Observed Cooler Temp._____ °C Corrected Cooler Temp._____ °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)?		
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# HC286797
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

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

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: _____

WI-NC-099

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-223438-1

Login Number: 223438
List Number: 1
Creator: Scott, Sherri L

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	-0.2,0.2,-0.2 samples not frozen
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	
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	

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

Laboratory Job ID: 500-223573-1
Client Project/Site: Penta Wood 11222418

For:
GHD Services Inc.
900 Long Lake Road
Suite 200
New Brighton, Minnesota 55112

Attn: Mr. Grant Anderson

Authorized for release by:
10/25/2022 5:26:14 PM

Richard Wright, Senior Project Manager
(708)746-0045
Richard.Wright@et.eurofinsus.com

Table of Contents

Case Narrative

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

Job ID: 500-223573-1

Job ID: 500-223573-1

Laboratory: Eurofins Chicago

Narrative

Job Narrative
500-223573-1

Comments
No additional comments.

Receipt
The samples were received on 10/11/2022 10:00 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 0.7º C, 1.6º C, 2.6º C and 2.8º C.

Receipt Exceptions
One or more containers for the following sample(s) was received empty: Sample #3 "W-221010-TS-28" both vials for TOC. Poured off from unpreserved container into H2S04 vials.

GC/MS VOA
Method 8260B: Internal standard (1,4-Dichlorobenzene-d4) response was outside of acceptance limits for the following sample: W-221010-TS-31 (500-223573-6). The sample did not have detects of requested analytes using this internal standard. Surrogate 4-Bromofluorobenzene is also being quantitated with this internal standard.

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

GC/MS Semi VOA
Method 8270D: Surrogate recovery for the following samples were outside the upper control limit: W-221010-TS-26 (500-223573-1), W-221010-TS-28 (500-223573-3), W-221010-TS-29 (500-223573-4), W-221010-TS-30 (500-223573-5), W-221010-TS-31 (500-223573-6) and W-221010-TS-33 (500-223573-8). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Method 8270D: The following sample contained one base surrogate outside acceptance limits: (MB 500-679616/1-A). The laboratory's SOP allows one acid and one base surrogate to be outside acceptance limits; therefore, re-extraction was not performed. These results have been reported and qualified.

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

GC VOA
Method RSK-175: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 240-547115.

No additional analytical or quality issues were noted, other than those described above or 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 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: 500-223573-1

Client Sample ID: W-221010-TS-26 — Lab Sample ID: 500-223573-1

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methane	80		1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	0.31		0.10	0.14	ug/L	1		8151A	Total/NA
Arsenic	0.25	J	1.0	0.23	ug/L	1		6020A	Total Recoverable
Copper	0.89	J	2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	1660		100	46.7	ug/L	1		6020A	Total Recoverable
Manganese	27.0		2.5	0.79	ug/L	1		6020A	Total Recoverable
Arsenic	0.30	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	0.88	J	2.0	0.50	ug/L	1		6020A	Dissolved
Iron	1470		100	46.7	ug/L	1		6020A	Dissolved
Manganese	22.4		2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	258		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Chloride	27.6		1.0	0.85	mg/L	5		300.0	Total/NA
Nitrate as N	3.1		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	5.8		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.86	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	362		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-221010-TS-27 — Lab Sample ID: 500-223573-2

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methane	78		1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	0.32		0.098	0.14	ug/L	1		8151A	Total/NA
Arsenic	0.31	J	1.0	0.23	ug/L	1		6020A	Total Recoverable
Copper	0.82	J	2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	1620		100	46.7	ug/L	1		6020A	Total Recoverable
Manganese	22.9		2.5	0.79	ug/L	1		6020A	Total Recoverable
Arsenic	0.31	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	0.93	J	2.0	0.50	ug/L	1		6020A	Dissolved
Iron	1540		100	46.7	ug/L	1		6020A	Dissolved
Manganese	23.1		2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	255		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Chloride	27.2		1.0	0.85	mg/L	5		300.0	Total/NA
Nitrate as N	3.1		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	6.0		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.86	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	365		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-221010-TS-28 — Lab Sample ID: 500-223573-3

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methane	33		1.0	0.17	ug/L	1		RSK-175	Total/NA
Arsenic	1.2		1.0	0.23	ug/L	1		6020A	Total Recoverable
Iron	202		100	46.7	ug/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

Client Sample ID: W-221010-TS-28 (Continued) — Lab Sample ID: 500-223573-3

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Manganese	37.9		2.5	0.79	ug/L	1		6020A	Total Recoverable
Arsenic	1.2		1.0	0.23	ug/L	1		6020A	Dissolved
Copper	4.3		2.0	0.50	ug/L	1		6020A	Dissolved
Manganese	37.2		2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	105		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Chloride	48.7		4.0	3.4	mg/L	20		300.0	Total/NA
Nitrate as N	0.12	J	0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	14.0		1.0	0.48	mg/L	5		300.0	Total/NA
Total Organic Carbon - Duplicates	0.97	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	83.9		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-221010-TS-29 — Lab Sample ID: 500-223573-4

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
Copper	0.63	J	2.0	0.50	ug/L	1		6020A	Total Recoverable
Arsenic	0.40	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	0.78	J	2.0	0.50	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	95.3		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Chloride	28.0		1.0	0.85	mg/L	5		300.0	Total/NA
Nitrate as N	2.4		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	4.8		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.75	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	120		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-221010-TS-30 — Lab Sample ID: 500-223573-5

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.2		1.0	0.23	ug/L	1		6020A	Total Recoverable
Copper	0.50	J	2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	49.5	J	100	46.7	ug/L	1		6020A	Total Recoverable
Manganese	2.8		2.5	0.79	ug/L	1		6020A	Total Recoverable
Arsenic	1.0		1.0	0.23	ug/L	1		6020A	Dissolved
Copper	0.53	J	2.0	0.50	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	111		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Chloride	28.7		1.0	0.85	mg/L	5		300.0	Total/NA
Nitrate as N	1.6		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	6.6		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.66	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	127		5.0	3.7	mg/L	1		SM 2320B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

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

Job ID: 500-223573-1

Client Sample ID: W-221010-TS-31 — Lab Sample ID: 500-223573-6

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.29	J	1.0	0.23	ug/L	1		6020A	Total Recoverable
Copper	2.1		2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	411		100	46.7	ug/L	1		6020A	Total Recoverable
Manganese	6.6		2.5	0.79	ug/L	1		6020A	Total Recoverable
Copper	1.1	J	2.0	0.50	ug/L	1		6020A	Dissolved
Manganese	0.98	J	2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	101		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Chloride	24.7		1.0	0.85	mg/L	5		300.0	Total/NA
Nitrate as N	1.9		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	3.0		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.75	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	128		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-221010-TS-32 — Lab Sample ID: 500-223573-7

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.35	J	0.50	0.15	ug/L	1		8260B	Total/NA
Ethylbenzene	0.82		0.50	0.18	ug/L	1		8260B	Total/NA
Xylenes, Total	4.6		1.0	0.22	ug/L	1		8260B	Total/NA
Naphthalene	5.5		0.78	0.24	ug/L	1		8270D	Total/NA
Methane	0.39	J	1.0	0.17	ug/L	1		RSK-175	Total/NA
Arsenic	0.73	J	1.0	0.23	ug/L	1		6020A	Total Recoverable
Copper	2.9		2.0	0.50	ug/L	1		6020A	Total Recoverable
Manganese	575		2.5	0.79	ug/L	1		6020A	Total Recoverable
Arsenic	0.77	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	2.3		2.0	0.50	ug/L	1		6020A	Dissolved
Manganese	567		2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	130		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Chloride	20.2		1.0	0.85	mg/L	5		300.0	Total/NA
Nitrate as N	0.24		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	22.6		1.0	0.48	mg/L	5		300.0	Total/NA
Total Organic Carbon - Duplicates	18.8		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	166		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-221010-TS-33 — Lab Sample ID: 500-223573-8

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.72	J	1.0	0.23	ug/L	1		6020A	Total Recoverable
Copper	0.81	J	2.0	0.50	ug/L	1		6020A	Total Recoverable
Arsenic	0.77	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	0.63	J	2.0	0.50	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	191		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Chloride	11.1		0.40	0.34	mg/L	2		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: W-221010-TS-33 (Continued)

Lab Sample ID: 500-223573-8

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	1.4		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	95.4		4.0	1.9	mg/L	20		300.0	Total/NA
Alkalinity	204		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: Trip Blank

Lab Sample ID: 500-223573-9

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

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

Job ID: 500-223573-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	EET CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	EET CHI
RSK-175	Dissolved Gases (GC)	RSK	EET CAN
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	MCAWW	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:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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 CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

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: 500-223573-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-223573-1	W-221010-TS-26	Water	10/10/22 09:29	10/11/22 10:00
500-223573-2	W-221010-TS-27	Water	10/10/22 09:30	10/11/22 10:00
500-223573-3	W-221010-TS-28	Water	10/10/22 10:18	10/11/22 10:00
500-223573-4	W-221010-TS-29	Water	10/10/22 10:59	10/11/22 10:00
500-223573-5	W-221010-TS-30	Water	10/10/22 11:31	10/11/22 10:00
500-223573-6	W-221010-TS-31	Water	10/10/22 12:31	10/11/22 10:00
500-223573-7	W-221010-TS-32	Water	10/10/22 13:30	10/11/22 10:00
500-223573-8	W-221010-TS-33	Water	10/10/22 14:36	10/11/22 10:00
500-223573-9	Trip Blank	Water	10/10/22 00:00	10/11/22 10:00

Client Sample ID: W-221010-TS-26

Lab Sample ID: 500-223573-1

Date Collected: 10/10/22 09:29

Matrix: Water

Date Received: 10/11/22 10:00

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			10/17/22 15:43	1
Toluene	<0.15		0.50	0.15	ug/L			10/17/22 15:43	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/17/22 15:43	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/17/22 15:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 126*		*10/17/22 15:43*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*10/17/22 15:43*	*1*
4-Bromofluorobenzene (Surr)	*110*		*72 - 124*		*10/17/22 15:43*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*10/17/22 15:43*	*1*

Method: SW846 8270D - 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		10/14/22 09:42	10/19/22 18:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*94*		*36 - 120*	*10/14/22 09:42*	*10/19/22 18:47*	*1*
2-Fluorobiphenyl (Surr)	*106*		*34 - 110*	*10/14/22 09:42*	*10/19/22 18:47*	*1*
Terphenyl-d14 (Surr)	*146*	*X*	*40 - 145*	*10/14/22 09:42*	*10/19/22 18:47*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**80**		1.0	0.17	ug/L			10/13/22 16:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,1-Trifluoroethane	*100*		*60 - 140*		*10/13/22 16:49*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	**0.31**		0.10	0.14	ug/L		10/17/22 09:57	10/20/22 20:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*88*		*25 - 130*	*10/17/22 09:57*	*10/20/22 20:18*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.25**	**J**	1.0	0.23	ug/L		10/20/22 08:43	10/21/22 12:52	1
Copper	**0.89**	**J**	2.0	0.50	ug/L		10/20/22 08:43	10/21/22 12:52	1
Iron	**1660**		100	46.7	ug/L		10/20/22 08:43	10/21/22 12:52	1
Manganese	**27.0**		2.5	0.79	ug/L		10/20/22 08:43	10/21/22 12:52	1
Zinc	<6.9		20.0	6.9	ug/L		10/20/22 08:43	10/21/22 12:52	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.30**	**J**	1.0	0.23	ug/L		10/20/22 08:43	10/21/22 12:56	1
Copper	**0.88**	**J**	2.0	0.50	ug/L		10/20/22 08:43	10/21/22 12:56	1
Iron	**1470**		100	46.7	ug/L		10/20/22 08:43	10/21/22 12:56	1
Manganese	**22.4**		2.5	0.79	ug/L		10/20/22 08:43	10/21/22 12:56	1
Zinc	<6.9		20.0	6.9	ug/L		10/20/22 08:43	10/21/22 12:56	1

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

Job ID: 500-223573-1

Client Sample ID: W-221010-TS-26
Date Collected: 10/10/22 09:29
Date Received: 10/11/22 10:00

Lab Sample ID: 500-223573-1
Matrix: Water

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	258		0.50	0.25	mg/L		10/20/22 08:43	10/21/22 14:47	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	27.6		1.0	0.85	mg/L			10/11/22 20:06	5
Nitrate as N (MCAWW 300.0)	3.1		0.20	0.068	mg/L			10/11/22 19:53	1
Sulfate (MCAWW 300.0)	5.8		0.20	0.095	mg/L			10/11/22 19:53	1
Total Organic Carbon - Duplicates (SW846 9060A)	0.86	J	1.0	0.47	mg/L			10/24/22 16:51	1
Alkalinity (SM 2320B)	362		5.0	3.7	mg/L			10/17/22 15:34	1

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

Job ID: 500-223573-1

Client Sample ID: W-221010-TS-27

Date Collected: 10/10/22 09:30
Date Received: 10/11/22 10:00

Lab Sample ID: 500-223573-2

Matrix: Water

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			10/17/22 16:07	1
Toluene	<0.15		0.50	0.15	ug/L			10/17/22 16:07	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/17/22 16:07	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/17/22 16:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*75 - 126*		*10/17/22 16:07*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*10/17/22 16:07*	*1*
4-Bromofluorobenzene (Surr)	*113*		*72 - 124*		*10/17/22 16:07*	*1*
Dibromofluoromethane	*101*		*75 - 120*		*10/17/22 16:07*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.26		0.84	0.26	ug/L		10/14/22 09:42	10/19/22 19:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*64*		*36 - 120*	*10/14/22 09:42*	*10/19/22 19:09*	*1*
2-Fluorobiphenyl (Surr)	*69*		*34 - 110*	*10/14/22 09:42*	*10/19/22 19:09*	*1*
Terphenyl-d14 (Surr)	*99*		*40 - 145*	*10/14/22 09:42*	*10/19/22 19:09*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**78**		1.0	0.17	ug/L			10/13/22 17:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,1-Trifluoroethane	*101*		*60 - 140*		*10/13/22 17:06*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	**0.32**		0.098	0.14	ug/L		10/17/22 09:57	10/20/22 20:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*93*		*25 - 130*	*10/17/22 09:57*	*10/20/22 20:56*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.31**	**J**	1.0	0.23	ug/L		10/20/22 08:43	10/21/22 12:59	1
Copper	**0.82**	**J**	2.0	0.50	ug/L		10/20/22 08:43	10/21/22 12:59	1
Iron	**1620**		100	46.7	ug/L		10/20/22 08:43	10/21/22 12:59	1
Manganese	**22.9**		2.5	0.79	ug/L		10/20/22 08:43	10/21/22 12:59	1
Zinc	<6.9		20.0	6.9	ug/L		10/20/22 08:43	10/21/22 12:59	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		10/20/22 08:43	10/21/22 13:03	1
Copper	**0.93**	**J**	2.0	0.50	ug/L		10/20/22 08:43	10/21/22 13:03	1
Iron	**1540**		100	46.7	ug/L		10/20/22 08:43	10/21/22 13:03	1
Manganese	**23.1**		2.5	0.79	ug/L		10/20/22 08:43	10/21/22 13:03	1
Zinc	<6.9		20.0	6.9	ug/L		10/20/22 08:43	10/21/22 13:03	1

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

Job ID: 500-223573-1

Client Sample ID: W-221010-TS-27

Date Collected: 10/10/22 09:30
Date Received: 10/11/22 10:00

Lab Sample ID: 500-223573-2

Matrix: Water

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	255		0.50	0.25	mg/L		10/20/22 08:43	10/21/22 14:47	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	27.2		1.0	0.85	mg/L			10/11/22 20:44	5
Nitrate as N (MCAWW 300.0)	3.1		0.20	0.068	mg/L			10/11/22 20:31	1
Sulfate (MCAWW 300.0)	6.0		0.20	0.095	mg/L			10/11/22 20:31	1
Total Organic Carbon - Duplicates (SW846 9060A)	0.86	J	1.0	0.47	mg/L			10/24/22 17:04	1
Alkalinity (SM 2320B)	365		5.0	3.7	mg/L			10/17/22 15:42	1

Client Sample ID: W-221010-TS-28

Date Collected: 10/10/22 10:18
Date Received: 10/11/22 10:00

Lab Sample ID: 500-223573-3

Matrix: Water

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			10/17/22 16:30	1
Toluene	<0.15		0.50	0.15	ug/L			10/17/22 16:30	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/17/22 16:30	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/17/22 16:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*75 - 126*		*10/17/22 16:30*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*10/17/22 16:30*	*1*
4-Bromofluorobenzene (Surr)	*113*		*72 - 124*		*10/17/22 16:30*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*10/17/22 16:30*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.26		0.84	0.26	ug/L		10/14/22 09:42	10/19/22 19:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*100*		*36 - 120*	*10/14/22 09:42*	*10/19/22 19:30*	*1*
2-Fluorobiphenyl (Surr)	*112*	*X*	*34 - 110*	*10/14/22 09:42*	*10/19/22 19:30*	*1*
Terphenyl-d14 (Surr)	*164*	*X*	*40 - 145*	*10/14/22 09:42*	*10/19/22 19:30*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**33**		1.0	0.17	ug/L			10/13/22 17:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,1-Trifluoroethane	*103*		*60 - 140*		*10/13/22 17:23*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14		0.099	0.14	ug/L		10/17/22 09:57	10/20/22 21:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*99*		*25 - 130*	*10/17/22 09:57*	*10/20/22 21:14*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**1.2**		1.0	0.23	ug/L		10/20/22 08:43	10/21/22 13:06	1
Copper	<0.50		2.0	0.50	ug/L		10/20/22 08:43	10/21/22 13:06	1
Iron	**202**		100	46.7	ug/L		10/20/22 08:43	10/21/22 13:06	1
Manganese	**37.9**		2.5	0.79	ug/L		10/20/22 08:43	10/21/22 13:06	1
Zinc	<6.9		20.0	6.9	ug/L		10/20/22 08:43	10/21/22 13:06	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**1.2**		1.0	0.23	ug/L		10/20/22 08:43	10/21/22 13:10	1
Copper	**4.3**		2.0	0.50	ug/L		10/20/22 08:43	10/21/22 13:10	1
Iron	<46.7		100	46.7	ug/L		10/20/22 08:43	10/21/22 13:10	1
Manganese	**37.2**		2.5	0.79	ug/L		10/20/22 08:43	10/21/22 13:10	1
Zinc	<6.9		20.0	6.9	ug/L		10/20/22 08:43	10/21/22 13:10	1

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

Job ID: 500-223573-1

Client Sample ID: W-221010-TS-28

Date Collected: 10/10/22 10:18
Date Received: 10/11/22 10:00

Lab Sample ID: 500-223573-3

Matrix: Water

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	105		0.50	0.25	mg/L		10/20/22 08:43	10/21/22 14:47	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	48.7		4.0	3.4	mg/L			10/11/22 21:34	20
Nitrate as N (MCAWW 300.0)	0.12	J	0.20	0.068	mg/L			10/11/22 21:09	1
Sulfate (MCAWW 300.0)	14.0		1.0	0.48	mg/L			10/11/22 21:22	5
Total Organic Carbon - Duplicates (SW846 9060A)	0.97	J	1.0	0.47	mg/L			10/24/22 17:16	1
Alkalinity (SM 2320B)	83.9		5.0	3.7	mg/L			10/17/22 16:03	1

Client Sample ID: W-221010-TS-29

Date Collected: 10/10/22 10:59
Date Received: 10/11/22 10:00

Lab Sample ID: 500-223573-4

Matrix: Water

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			10/17/22 16:53	1
Toluene	<0.15		0.50	0.15	ug/L			10/17/22 16:53	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/17/22 16:53	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/17/22 16:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 126*		*10/17/22 16:53*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*10/17/22 16:53*	*1*
4-Bromofluorobenzene (Surr)	*110*		*72 - 124*		*10/17/22 16:53*	*1*
Dibromofluoromethane	*102*		*75 - 120*		*10/17/22 16:53*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.24		0.78	0.24	ug/L		10/14/22 09:42	10/19/22 19:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*99*		*36 - 120*	*10/14/22 09:42*	*10/19/22 19:51*	*1*
2-Fluorobiphenyl (Surr)	*100*		*34 - 110*	*10/14/22 09:42*	*10/19/22 19:51*	*1*
Terphenyl-d14 (Surr)	*155*	*X*	*40 - 145*	*10/14/22 09:42*	*10/19/22 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			10/13/22 17:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,1-Trifluoroethane	*103*		*60 - 140*		*10/13/22 17:40*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14		0.098	0.14	ug/L		10/17/22 09:57	10/20/22 21:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*78*		*25 - 130*	*10/17/22 09:57*	*10/20/22 21:33*	*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		10/20/22 08:43	10/21/22 13:20	1
Copper	**0.63**	**J**	2.0	0.50	ug/L		10/20/22 08:43	10/21/22 13:20	1
Iron	<46.7		100	46.7	ug/L		10/20/22 08:43	10/21/22 13:20	1
Manganese	<0.79		2.5	0.79	ug/L		10/20/22 08:43	10/21/22 13:20	1
Zinc	<6.9		20.0	6.9	ug/L		10/20/22 08:43	10/21/22 13:20	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.40**	**J**	1.0	0.23	ug/L		10/20/22 08:43	10/21/22 13:23	1
Copper	**0.78**	**J**	2.0	0.50	ug/L		10/20/22 08:43	10/21/22 13:23	1
Iron	<46.7		100	46.7	ug/L		10/20/22 08:43	10/21/22 13:23	1
Manganese	<0.79		2.5	0.79	ug/L		10/20/22 08:43	10/21/22 13:23	1
Zinc	<6.9		20.0	6.9	ug/L		10/20/22 08:43	10/21/22 13:23	1

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

Job ID: 500-223573-1

Client Sample ID: W-221010-TS-29

Date Collected: 10/10/22 10:59
Date Received: 10/11/22 10:00

Lab Sample ID: 500-223573-4

Matrix: Water

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	95.3		0.50	0.25	mg/L		10/20/22 08:43	10/21/22 14:47	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	28.0		1.0	0.85	mg/L			10/11/22 22:25	5
Nitrate as N (MCAWW 300.0)	2.4		0.20	0.068	mg/L			10/11/22 22:12	1
Sulfate (MCAWW 300.0)	4.8		0.20	0.095	mg/L			10/11/22 22:12	1
Total Organic Carbon - Duplicates (SW846 9060A)	0.75	J	1.0	0.47	mg/L			10/24/22 17:29	1
Alkalinity (SM 2320B)	120		5.0	3.7	mg/L			10/17/22 16:20	1

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

Job ID: 500-223573-1

Client Sample ID: W-221010-TS-30

Date Collected: 10/10/22 11:31
Date Received: 10/11/22 10:00

Lab Sample ID: 500-223573-5

Matrix: Water

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			10/17/22 17:17	1
Toluene	<0.15		0.50	0.15	ug/L			10/17/22 17:17	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/17/22 17:17	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/17/22 17:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*75 - 126*		*10/17/22 17:17*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*10/17/22 17:17*	*1*
4-Bromofluorobenzene (Surr)	*113*		*72 - 124*		*10/17/22 17:17*	*1*
Dibromofluoromethane	*101*		*75 - 120*		*10/17/22 17:17*	*1*

Method: SW846 8270D - 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		10/14/22 09:42	10/19/22 20:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*103*		*36 - 120*	*10/14/22 09:42*	*10/19/22 20:12*	*1*
2-Fluorobiphenyl (Surr)	*115*	*X*	*34 - 110*	*10/14/22 09:42*	*10/19/22 20:12*	*1*
Terphenyl-d14 (Surr)	*156*	*X*	*40 - 145*	*10/14/22 09:42*	*10/19/22 20:12*	*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			10/13/22 17:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,1-Trifluoroethane	*104*		*60 - 140*		*10/13/22 17:57*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14		0.097	0.14	ug/L		10/17/22 09:57	10/20/22 21:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*87*		*25 - 130*	*10/17/22 09:57*	*10/20/22 21:52*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**1.2**		1.0	0.23	ug/L		10/20/22 08:43	10/21/22 13:27	1
Copper	**0.50**	**J**	2.0	0.50	ug/L		10/20/22 08:43	10/21/22 13:27	1
Iron	**49.5**	**J**	100	46.7	ug/L		10/20/22 08:43	10/21/22 13:27	1
Manganese	**2.8**		2.5	0.79	ug/L		10/20/22 08:43	10/21/22 13:27	1
Zinc	<6.9		20.0	6.9	ug/L		10/20/22 08:43	10/21/22 13:27	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		10/20/22 08:43	10/21/22 13:30	1
Copper	**0.53**	**J**	2.0	0.50	ug/L		10/20/22 08:43	10/21/22 13:30	1
Iron	<46.7		100	46.7	ug/L		10/20/22 08:43	10/21/22 13:30	1
Manganese	<0.79		2.5	0.79	ug/L		10/20/22 08:43	10/21/22 13:30	1
Zinc	<6.9		20.0	6.9	ug/L		10/20/22 08:43	10/21/22 13:30	1

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

Job ID: 500-223573-1

Client Sample ID: W-221010-TS-30

Lab Sample ID: 500-223573-5

Date Collected: 10/10/22 11:31

Matrix: Water

Date Received: 10/11/22 10:00

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	111		0.50	0.25	mg/L		10/20/22 08:43	10/21/22 14:47	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	28.7		1.0	0.85	mg/L			10/11/22 23:03	5
Nitrate as N (MCAWW 300.0)	1.6		0.20	0.068	mg/L			10/11/22 22:50	1
Sulfate (MCAWW 300.0)	6.6		0.20	0.095	mg/L			10/11/22 22:50	1
Total Organic Carbon - Duplicates (SW846 9060A)	0.66	J	1.0	0.47	mg/L			10/24/22 17:42	1
Alkalinity (SM 2320B)	127		5.0	3.7	mg/L			10/17/22 16:27	1

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

Job ID: 500-223573-1

Client Sample ID: W-221010-TS-31

Date Collected: 10/10/22 12:31
Date Received: 10/11/22 10:00

Lab Sample ID: 500-223573-6

Matrix: Water

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			10/17/22 17:40	1
Toluene	<0.15		0.50	0.15	ug/L			10/17/22 17:40	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/17/22 17:40	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/17/22 17:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*75 - 126*		*10/17/22 17:40*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*10/17/22 17:40*	*1*
4-Bromofluorobenzene (Surr)	*114*	*	*72 - 124*		*10/17/22 17:40*	*1*
Dibromofluoromethane	*102*		*75 - 120*		*10/17/22 17:40*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.26		0.84	0.26	ug/L		10/14/22 09:42	10/19/22 20:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*108*		*36 - 120*	*10/14/22 09:42*	*10/19/22 20:33*	*1*
2-Fluorobiphenyl (Surr)	*113*	*X*	*34 - 110*	*10/14/22 09:42*	*10/19/22 20:33*	*1*
Terphenyl-d14 (Surr)	*153*	*X*	*40 - 145*	*10/14/22 09:42*	*10/19/22 20:33*	*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			10/13/22 18:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,1-Trifluoroethane	*102*		*60 - 140*		*10/13/22 18:14*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.15		0.11	0.15	ug/L		10/17/22 09:57	10/20/22 22:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*74*		*25 - 130*	*10/17/22 09:57*	*10/20/22 22:11*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.29**	**J**	1.0	0.23	ug/L		10/20/22 08:43	10/21/22 13:34	1
Copper	**2.1**		2.0	0.50	ug/L		10/20/22 08:43	10/21/22 13:34	1
Iron	**411**		100	46.7	ug/L		10/20/22 08:43	10/21/22 13:34	1
Manganese	**6.6**		2.5	0.79	ug/L		10/20/22 08:43	10/21/22 13:34	1
Zinc	<6.9		20.0	6.9	ug/L		10/20/22 08:43	10/21/22 13:34	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		10/20/22 08:43	10/21/22 13:37	1
Copper	**1.1**	**J**	2.0	0.50	ug/L		10/20/22 08:43	10/21/22 13:37	1
Iron	<46.7		100	46.7	ug/L		10/20/22 08:43	10/21/22 13:37	1
Manganese	**0.98**	**J**	2.5	0.79	ug/L		10/20/22 08:43	10/21/22 13:37	1
Zinc	<6.9		20.0	6.9	ug/L		10/20/22 08:43	10/21/22 13:37	1

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

Job ID: 500-223573-1

Client Sample ID: W-221010-TS-31

Date Collected: 10/10/22 12:31
Date Received: 10/11/22 10:00

Lab Sample ID: 500-223573-6

Matrix: Water

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	101		0.50	0.25	mg/L		10/20/22 08:43	10/21/22 14:47	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	24.7		1.0	0.85	mg/L			10/11/22 23:41	5
Nitrate as N (MCAWW 300.0)	1.9		0.20	0.068	mg/L			10/11/22 23:28	1
Sulfate (MCAWW 300.0)	3.0		0.20	0.095	mg/L			10/11/22 23:28	1
Total Organic Carbon - Duplicates (SW846 9060A)	0.75	J	1.0	0.47	mg/L			10/24/22 17:54	1
Alkalinity (SM 2320B)	128		5.0	3.7	mg/L			10/17/22 16:33	1

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

Job ID: 500-223573-1

Client Sample ID: W-221010-TS-32

Date Collected: 10/10/22 13:30
Date Received: 10/11/22 10:00

Lab Sample ID: 500-223573-7

Matrix: Water

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			10/17/22 18:04	1
Toluene	**0.35**	**J**	0.50	0.15	ug/L			10/17/22 18:04	1
Ethylbenzene	**0.82**		0.50	0.18	ug/L			10/17/22 18:04	1
Xylenes, Total	**4.6**		1.0	0.22	ug/L			10/17/22 18:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 126*		*10/17/22 18:04*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*10/17/22 18:04*	*1*
4-Bromofluorobenzene (Surr)	*107*		*72 - 124*		*10/17/22 18:04*	*1*
Dibromofluoromethane	*103*		*75 - 120*		*10/17/22 18:04*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**5.5**		0.78	0.24	ug/L		10/14/22 09:42	10/20/22 19:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*71*		*36 - 120*	*10/14/22 09:42*	*10/20/22 19:17*	*1*
2-Fluorobiphenyl (Surr)	*64*		*34 - 110*	*10/14/22 09:42*	*10/20/22 19:17*	*1*
Terphenyl-d14 (Surr)	*97*		*40 - 145*	*10/14/22 09:42*	*10/20/22 19:17*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**0.39**	**J**	1.0	0.17	ug/L			10/14/22 23:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,1-Trifluoroethane	*101*		*60 - 140*		*10/14/22 23:29*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14		0.099	0.14	ug/L		10/17/22 09:57	10/20/22 22:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*61*		*25 - 130*	*10/17/22 09:57*	*10/20/22 22:30*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.73**	**J**	1.0	0.23	ug/L		10/20/22 08:43	10/21/22 13:41	1
Copper	**2.9**		2.0	0.50	ug/L		10/20/22 08:43	10/21/22 13:41	1
Iron	<46.7		100	46.7	ug/L		10/20/22 08:43	10/21/22 13:41	1
Manganese	**575**		2.5	0.79	ug/L		10/20/22 08:43	10/21/22 13:41	1
Zinc	<6.9		20.0	6.9	ug/L		10/20/22 08:43	10/21/22 13:41	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.77**	**J**	1.0	0.23	ug/L		10/20/22 08:43	10/21/22 13:44	1
Copper	**2.3**		2.0	0.50	ug/L		10/20/22 08:43	10/21/22 13:44	1
Iron	<46.7		100	46.7	ug/L		10/20/22 08:43	10/21/22 13:44	1
Manganese	**567**		2.5	0.79	ug/L		10/20/22 08:43	10/21/22 13:44	1
Zinc	<6.9		20.0	6.9	ug/L		10/20/22 08:43	10/21/22 13:44	1

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

Job ID: 500-223573-1

Client Sample ID: W-221010-TS-32

Date Collected: 10/10/22 13:30
Date Received: 10/11/22 10:00

Lab Sample ID: 500-223573-7

Matrix: Water

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	130		0.50	0.25	mg/L		10/20/22 08:43	10/21/22 14:47	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	20.2		1.0	0.85	mg/L			10/12/22 00:44	5
Nitrate as N (MCAWW 300.0)	0.24		0.20	0.068	mg/L			10/12/22 00:06	1
Sulfate (MCAWW 300.0)	22.6		1.0	0.48	mg/L			10/12/22 00:44	5
Total Organic Carbon - Duplicates (SW846 9060A)	18.8		1.0	0.47	mg/L			10/24/22 18:13	1
Alkalinity (SM 2320B)	166		5.0	3.7	mg/L			10/17/22 16:44	1

Client Sample ID: W-221010-TS-33

Date Collected: 10/10/22 14:36
Date Received: 10/11/22 10:00

Lab Sample ID: 500-223573-8

Matrix: Water

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			10/17/22 18:28	1
Toluene	<0.15		0.50	0.15	ug/L			10/17/22 18:28	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/17/22 18:28	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/17/22 18:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*75 - 126*		*10/17/22 18:28*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*10/17/22 18:28*	*1*
4-Bromofluorobenzene (Surr)	*108*		*72 - 124*		*10/17/22 18:28*	*1*
Dibromofluoromethane	*101*		*75 - 120*		*10/17/22 18:28*	*1*

Method: SW846 8270D - 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		10/14/22 09:42	10/19/22 21:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*101*		*36 - 120*	*10/14/22 09:42*	*10/19/22 21:16*	*1*
2-Fluorobiphenyl (Surr)	*105*		*34 - 110*	*10/14/22 09:42*	*10/19/22 21:16*	*1*
Terphenyl-d14 (Surr)	*151*	*X*	*40 - 145*	*10/14/22 09:42*	*10/19/22 21:16*	*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			10/14/22 23:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,1-Trifluoroethane	*101*		*60 - 140*		*10/14/22 23:47*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.15		0.10	0.15	ug/L		10/17/22 09:57	10/20/22 22:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*80*		*25 - 130*	*10/17/22 09:57*	*10/20/22 22:48*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.72**	**J**	1.0	0.23	ug/L		10/20/22 08:43	10/21/22 13:47	1
Copper	**0.81**	**J**	2.0	0.50	ug/L		10/20/22 08:43	10/21/22 13:47	1
Iron	<46.7		100	46.7	ug/L		10/20/22 08:43	10/21/22 13:47	1
Manganese	<0.79		2.5	0.79	ug/L		10/20/22 08:43	10/21/22 13:47	1
Zinc	<6.9		20.0	6.9	ug/L		10/20/22 08:43	10/21/22 13:47	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.77**	**J**	1.0	0.23	ug/L		10/20/22 08:43	10/21/22 13:51	1
Copper	**0.63**	**J**	2.0	0.50	ug/L		10/20/22 08:43	10/21/22 13:51	1
Iron	<46.7		100	46.7	ug/L		10/20/22 08:43	10/21/22 13:51	1
Manganese	<0.79		2.5	0.79	ug/L		10/20/22 08:43	10/21/22 13:51	1
Zinc	<6.9		20.0	6.9	ug/L		10/20/22 08:43	10/21/22 13:51	1

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

Job ID: 500-223573-1

Client Sample ID: W-221010-TS-33

Date Collected: 10/10/22 14:36
Date Received: 10/11/22 10:00

Lab Sample ID: 500-223573-8

Matrix: Water

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	191		0.50	0.25	mg/L		10/20/22 08:43	10/21/22 14:47	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	11.1		0.40	0.34	mg/L			10/12/22 01:09	2
Nitrate as N (MCAWW 300.0)	1.4		0.20	0.068	mg/L			10/12/22 00:57	1
Sulfate (MCAWW 300.0)	95.4		4.0	1.9	mg/L			10/12/22 01:22	20
Total Organic Carbon - Duplicates (SW846 9060A)	<0.47		1.0	0.47	mg/L			10/24/22 18:50	1
Alkalinity (SM 2320B)	204		5.0	3.7	mg/L			10/17/22 16:52	1

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

Job ID: 500-223573-1

Client Sample ID: Trip Blank

Date Collected: 10/10/22 00:00
Date Received: 10/11/22 10:00

Lab Sample ID: 500-223573-9

Matrix: Water

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			10/17/22 18:51	1
Toluene	<0.15		0.50	0.15	ug/L			10/17/22 18:51	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/17/22 18:51	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/17/22 18:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 126*		*10/17/22 18:51*	*1*
Toluene-d8 (Surr)	*96*		*75 - 120*		*10/17/22 18:51*	*1*
4-Bromofluorobenzene (Surr)	*111*		*72 - 124*		*10/17/22 18:51*	*1*
Dibromofluoromethane	*102*		*75 - 120*		*10/17/22 18:51*	*1*

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	ISTD response or retention time outside acceptable limits
J	Reported value was between the limit of detection and the limit of quantitation.

GC/MS Semi VOA

Qualifier	Qualifier Description
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.

Metals

Qualifier	Qualifier Description
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.
¤	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

GC/MS VOA

Analysis Batch: 679829

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223573-1	W-221010-TS-26	Total/NA	Water	8260B	
500-223573-2	W-221010-TS-27	Total/NA	Water	8260B	
500-223573-3	W-221010-TS-28	Total/NA	Water	8260B	
500-223573-4	W-221010-TS-29	Total/NA	Water	8260B	
500-223573-5	W-221010-TS-30	Total/NA	Water	8260B	
500-223573-6	W-221010-TS-31	Total/NA	Water	8260B	
500-223573-7	W-221010-TS-32	Total/NA	Water	8260B	
500-223573-8	W-221010-TS-33	Total/NA	Water	8260B	
500-223573-9	Trip Blank	Total/NA	Water	8260B	
MB 500-679829/6	Method Blank	Total/NA	Water	8260B	
LCS 500-679829/4	Lab Control Sample	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 679616

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223573-1	W-221010-TS-26	Total/NA	Water	3510C	
500-223573-2	W-221010-TS-27	Total/NA	Water	3510C	
500-223573-3	W-221010-TS-28	Total/NA	Water	3510C	
500-223573-4	W-221010-TS-29	Total/NA	Water	3510C	
500-223573-5	W-221010-TS-30	Total/NA	Water	3510C	
500-223573-6	W-221010-TS-31	Total/NA	Water	3510C	
500-223573-7	W-221010-TS-32	Total/NA	Water	3510C	
500-223573-8	W-221010-TS-33	Total/NA	Water	3510C	
MB 500-679616/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-679616/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-679616/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 680076

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-679616/1-A	Method Blank	Total/NA	Water	8270D	679616
LCS 500-679616/2-A	Lab Control Sample	Total/NA	Water	8270D	679616
LCSD 500-679616/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	679616

Analysis Batch: 680404

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223573-1	W-221010-TS-26	Total/NA	Water	8270D	679616
500-223573-2	W-221010-TS-27	Total/NA	Water	8270D	679616
500-223573-3	W-221010-TS-28	Total/NA	Water	8270D	679616
500-223573-4	W-221010-TS-29	Total/NA	Water	8270D	679616
500-223573-5	W-221010-TS-30	Total/NA	Water	8270D	679616
500-223573-6	W-221010-TS-31	Total/NA	Water	8270D	679616
500-223573-8	W-221010-TS-33	Total/NA	Water	8270D	679616

Analysis Batch: 680628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223573-7	W-221010-TS-32	Total/NA	Water	8270D	679616

QC Association Summary

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

Job ID: 500-223573-1

GC VOA

Analysis Batch: 546887

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223573-1	W-221010-TS-26	Total/NA	Water	RSK-175	
500-223573-2	W-221010-TS-27	Total/NA	Water	RSK-175	
500-223573-3	W-221010-TS-28	Total/NA	Water	RSK-175	
500-223573-4	W-221010-TS-29	Total/NA	Water	RSK-175	
500-223573-5	W-221010-TS-30	Total/NA	Water	RSK-175	
500-223573-6	W-221010-TS-31	Total/NA	Water	RSK-175	
MB 240-546887/3	Method Blank	Total/NA	Water	RSK-175	
LCS 240-546887/4	Lab Control Sample	Total/NA	Water	RSK-175	

Analysis Batch: 547115

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223573-7	W-221010-TS-32	Total/NA	Water	RSK-175	
500-223573-8	W-221010-TS-33	Total/NA	Water	RSK-175	
MB 240-547115/33	Method Blank	Total/NA	Water	RSK-175	
LCS 240-547115/34	Lab Control Sample	Total/NA	Water	RSK-175	

GC Semi VOA

Prep Batch: 679903

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223573-1	W-221010-TS-26	Total/NA	Water	8151A	
500-223573-2	W-221010-TS-27	Total/NA	Water	8151A	
500-223573-3	W-221010-TS-28	Total/NA	Water	8151A	
500-223573-4	W-221010-TS-29	Total/NA	Water	8151A	
500-223573-5	W-221010-TS-30	Total/NA	Water	8151A	
500-223573-6	W-221010-TS-31	Total/NA	Water	8151A	
500-223573-7	W-221010-TS-32	Total/NA	Water	8151A	
500-223573-8	W-221010-TS-33	Total/NA	Water	8151A	
MB 500-679903/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-679903/2-A	Lab Control Sample	Total/NA	Water	8151A	
LCSD 500-679903/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	

Analysis Batch: 680687

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223573-1	W-221010-TS-26	Total/NA	Water	8151A	679903
500-223573-2	W-221010-TS-27	Total/NA	Water	8151A	679903
500-223573-3	W-221010-TS-28	Total/NA	Water	8151A	679903
500-223573-4	W-221010-TS-29	Total/NA	Water	8151A	679903
500-223573-5	W-221010-TS-30	Total/NA	Water	8151A	679903
500-223573-6	W-221010-TS-31	Total/NA	Water	8151A	679903
500-223573-7	W-221010-TS-32	Total/NA	Water	8151A	679903
500-223573-8	W-221010-TS-33	Total/NA	Water	8151A	679903

Analysis Batch: 680738

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-679903/1-A	Method Blank	Total/NA	Water	8151A	679903
LCS 500-679903/2-A	Lab Control Sample	Total/NA	Water	8151A	679903
LCSD 500-679903/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	679903

Metals

Prep Batch: 680538

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223573-1	W-221010-TS-26	Dissolved	Water	3005A	
500-223573-1	W-221010-TS-26	Total Recoverable	Water	3005A	
500-223573-2	W-221010-TS-27	Dissolved	Water	3005A	
500-223573-2	W-221010-TS-27	Total Recoverable	Water	3005A	
500-223573-3	W-221010-TS-28	Dissolved	Water	3005A	
500-223573-3	W-221010-TS-28	Total Recoverable	Water	3005A	
500-223573-4	W-221010-TS-29	Dissolved	Water	3005A	
500-223573-4	W-221010-TS-29	Total Recoverable	Water	3005A	
500-223573-5	W-221010-TS-30	Dissolved	Water	3005A	
500-223573-5	W-221010-TS-30	Total Recoverable	Water	3005A	
500-223573-6	W-221010-TS-31	Dissolved	Water	3005A	
500-223573-6	W-221010-TS-31	Total Recoverable	Water	3005A	
500-223573-7	W-221010-TS-32	Dissolved	Water	3005A	
500-223573-7	W-221010-TS-32	Total Recoverable	Water	3005A	
500-223573-8	W-221010-TS-33	Dissolved	Water	3005A	
500-223573-8	W-221010-TS-33	Total Recoverable	Water	3005A	
MB 500-680538/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-680538/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 680892

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223573-1	W-221010-TS-26	Dissolved	Water	6020A	680538
500-223573-1	W-221010-TS-26	Total Recoverable	Water	6020A	680538
500-223573-2	W-221010-TS-27	Dissolved	Water	6020A	680538
500-223573-2	W-221010-TS-27	Total Recoverable	Water	6020A	680538
500-223573-3	W-221010-TS-28	Dissolved	Water	6020A	680538
500-223573-3	W-221010-TS-28	Total Recoverable	Water	6020A	680538
500-223573-4	W-221010-TS-29	Dissolved	Water	6020A	680538
500-223573-4	W-221010-TS-29	Total Recoverable	Water	6020A	680538
500-223573-5	W-221010-TS-30	Dissolved	Water	6020A	680538
500-223573-5	W-221010-TS-30	Total Recoverable	Water	6020A	680538
500-223573-6	W-221010-TS-31	Dissolved	Water	6020A	680538
500-223573-6	W-221010-TS-31	Total Recoverable	Water	6020A	680538
500-223573-7	W-221010-TS-32	Dissolved	Water	6020A	680538
500-223573-7	W-221010-TS-32	Total Recoverable	Water	6020A	680538
500-223573-8	W-221010-TS-33	Dissolved	Water	6020A	680538
500-223573-8	W-221010-TS-33	Total Recoverable	Water	6020A	680538
MB 500-680538/1-A	Method Blank	Total Recoverable	Water	6020A	680538
LCS 500-680538/2-A	Lab Control Sample	Total Recoverable	Water	6020A	680538

Analysis Batch: 680899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223573-1	W-221010-TS-26	Total Recoverable	Water	SM 2340B	680538
500-223573-2	W-221010-TS-27	Total Recoverable	Water	SM 2340B	680538
500-223573-3	W-221010-TS-28	Total Recoverable	Water	SM 2340B	680538
500-223573-4	W-221010-TS-29	Total Recoverable	Water	SM 2340B	680538
500-223573-5	W-221010-TS-30	Total Recoverable	Water	SM 2340B	680538
500-223573-6	W-221010-TS-31	Total Recoverable	Water	SM 2340B	680538
500-223573-7	W-221010-TS-32	Total Recoverable	Water	SM 2340B	680538
500-223573-8	W-221010-TS-33	Total Recoverable	Water	SM 2340B	680538

General Chemistry

Analysis Batch: 679146

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223573-1	W-221010-TS-26	Total/NA	Water	300.0	
500-223573-1	W-221010-TS-26	Total/NA	Water	300.0	
500-223573-2	W-221010-TS-27	Total/NA	Water	300.0	
500-223573-2	W-221010-TS-27	Total/NA	Water	300.0	
500-223573-3	W-221010-TS-28	Total/NA	Water	300.0	
500-223573-3	W-221010-TS-28	Total/NA	Water	300.0	
500-223573-3	W-221010-TS-28	Total/NA	Water	300.0	
500-223573-4	W-221010-TS-29	Total/NA	Water	300.0	
500-223573-4	W-221010-TS-29	Total/NA	Water	300.0	
500-223573-5	W-221010-TS-30	Total/NA	Water	300.0	
500-223573-5	W-221010-TS-30	Total/NA	Water	300.0	
500-223573-6	W-221010-TS-31	Total/NA	Water	300.0	
500-223573-6	W-221010-TS-31	Total/NA	Water	300.0	
500-223573-7	W-221010-TS-32	Total/NA	Water	300.0	
500-223573-7	W-221010-TS-32	Total/NA	Water	300.0	
500-223573-8	W-221010-TS-33	Total/NA	Water	300.0	
500-223573-8	W-221010-TS-33	Total/NA	Water	300.0	
500-223573-8	W-221010-TS-33	Total/NA	Water	300.0	
MB 500-679146/3	Method Blank	Total/NA	Water	300.0	
LCS 500-679146/4	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 680042

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223573-1	W-221010-TS-26	Total/NA	Water	SM 2320B	
500-223573-2	W-221010-TS-27	Total/NA	Water	SM 2320B	
500-223573-3	W-221010-TS-28	Total/NA	Water	SM 2320B	
500-223573-4	W-221010-TS-29	Total/NA	Water	SM 2320B	
500-223573-5	W-221010-TS-30	Total/NA	Water	SM 2320B	
500-223573-6	W-221010-TS-31	Total/NA	Water	SM 2320B	
500-223573-7	W-221010-TS-32	Total/NA	Water	SM 2320B	
500-223573-8	W-221010-TS-33	Total/NA	Water	SM 2320B	
MB 500-680042/28	Method Blank	Total/NA	Water	SM 2320B	
MB 500-680042/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-680042/31	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 500-680042/4	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 681230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223573-1	W-221010-TS-26	Total/NA	Water	9060A	
500-223573-2	W-221010-TS-27	Total/NA	Water	9060A	
500-223573-3	W-221010-TS-28	Total/NA	Water	9060A	
500-223573-4	W-221010-TS-29	Total/NA	Water	9060A	
500-223573-5	W-221010-TS-30	Total/NA	Water	9060A	
500-223573-6	W-221010-TS-31	Total/NA	Water	9060A	
500-223573-7	W-221010-TS-32	Total/NA	Water	9060A	
500-223573-8	W-221010-TS-33	Total/NA	Water	9060A	
MB 500-681230/4	Method Blank	Total/NA	Water	9060A	
LCS 500-681230/5	Lab Control Sample	Total/NA	Water	9060A	
LCSD 500-681230/6	Lab Control Sample Dup	Total/NA	Water	9060A	

Surrogate Summary

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

Job ID: 500-223573-1

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	TOL	BFB	DBFM
Lab Sample ID	Client Sample ID	(75-126)	(75-120)	(72-124)	(75-120)
500-223573-1	W-221010-TS-26	94	97	110	99
500-223573-2	W-221010-TS-27	96	97	113	101
500-223573-3	W-221010-TS-28	96	97	113	99
500-223573-4	W-221010-TS-29	97	97	110	102
500-223573-5	W-221010-TS-30	96	100	113	101
500-223573-6	W-221010-TS-31	96	98	114 *	102
500-223573-7	W-221010-TS-32	99	95	107	103
500-223573-8	W-221010-TS-33	96	98	108	101
500-223573-9	Trip Blank	97	96	111	102
LCS 500-679829/4	Lab Control Sample	90	98	102	96
MB 500-679829/6	Method Blank	94	99	112	98

Surrogate Legend

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

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		NBZ	FBP	TPHL
Lab Sample ID	Client Sample ID	(36-120)	(34-110)	(40-145)
500-223573-1	W-221010-TS-26	94	106	146 X
500-223573-2	W-221010-TS-27	64	69	99
500-223573-3	W-221010-TS-28	100	112 X	164 X
500-223573-4	W-221010-TS-29	99	100	155 X
500-223573-5	W-221010-TS-30	103	115 X	156 X
500-223573-6	W-221010-TS-31	108	113 X	153 X
500-223573-7	W-221010-TS-32	71	64	97
500-223573-8	W-221010-TS-33	101	105	151 X
LCS 500-679616/2-A	Lab Control Sample	78	90	121
LCSD 500-679616/3-A	Lab Control Sample Dup	83	95	126
MB 500-679616/1-A	Method Blank	75	85	151 X

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**

		Percent Surrogate Recovery (Acceptance Limits)
		TFE1
Lab Sample ID	Client Sample ID	(60-140)
500-223573-1	W-221010-TS-26	100
500-223573-2	W-221010-TS-27	101
500-223573-3	W-221010-TS-28	103
500-223573-4	W-221010-TS-29	103

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)												
500-223573-5	W-221010-TS-30	104												
500-223573-6	W-221010-TS-31	102												
500-223573-7	W-221010-TS-32	101												
500-223573-8	W-221010-TS-33	101												
LCS 240-546887/4	Lab Control Sample	104												
LCS 240-547115/34	Lab Control Sample	103												
MB 240-546887/3	Method Blank	102												
MB 240-547115/33	Method Blank	106												

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)												
500-223573-1	W-221010-TS-26	88												
500-223573-2	W-221010-TS-27	93												
500-223573-3	W-221010-TS-28	99												
500-223573-4	W-221010-TS-29	78												
500-223573-5	W-221010-TS-30	87												
500-223573-6	W-221010-TS-31	74												
500-223573-7	W-221010-TS-32	61												
500-223573-8	W-221010-TS-33	80												
LCS 500-679903/2-A	Lab Control Sample	90												
LCSD 500-679903/3-A	Lab Control Sample Dup	89												
MB 500-679903/1-A	Method Blank	84												

Surrogate Legend

DCPAA = DCAA

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

Lab Sample ID: MB 500-679829/6
Matrix: Water
Analysis Batch: 679829

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			10/17/22 11:04	1
Toluene	<0.15		0.50	0.15	ug/L			10/17/22 11:04	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/17/22 11:04	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/17/22 11:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 126*		*10/17/22 11:04*	*1*
Toluene-d8 (Surr)	*99*		*75 - 120*		*10/17/22 11:04*	*1*
4-Bromofluorobenzene (Surr)	*112*		*72 - 124*		*10/17/22 11:04*	*1*
Dibromofluoromethane	*98*		*75 - 120*		*10/17/22 11:04*	*1*

Lab Sample ID: LCS 500-679829/4
Matrix: Water
Analysis Batch: 679829

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	43.0		ug/L		86	70 - 120
Toluene	50.0	44.5		ug/L		89	70 - 125
Ethylbenzene	50.0	46.4		ug/L		93	70 - 123
Xylenes, Total	100	95.0		ug/L		95	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*90*		*75 - 126*
Toluene-d8 (Surr)	*98*		*75 - 120*
4-Bromofluorobenzene (Surr)	*102*		*72 - 124*
Dibromofluoromethane	*96*		*75 - 120*

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

Lab Sample ID: MB 500-679616/1-A
Matrix: Water
Analysis Batch: 680076

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 679616

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.80	0.25	ug/L		10/14/22 09:42	10/18/22 12:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*75*		*36 - 120*	*10/14/22 09:42*	*10/18/22 12:21*	*1*
2-Fluorobiphenyl (Surr)	*85*		*34 - 110*	*10/14/22 09:42*	*10/18/22 12:21*	*1*
Terphenyl-d14 (Surr)	*151*	*X*	*40 - 145*	*10/14/22 09:42*	*10/18/22 12:21*	*1*

Lab Sample ID: LCS 500-679616/2-A
Matrix: Water
Analysis Batch: 680076

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 679616

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Naphthalene	32.0	22.1		ug/L		69	36 - 110

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

Lab Sample ID: LCS 500-679616/2-A
Matrix: Water
Analysis Batch: 680076

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 679616

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Nitrobenzene-d5 (Surr)	78		36 - 120
2-Fluorobiphenyl (Surr)	90		34 - 110
Terphenyl-d14 (Surr)	121		40 - 145

Lab Sample ID: LCSD 500-679616/3-A
Matrix: Water
Analysis Batch: 680076

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 679616

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Naphthalene			32.0	23.5		ug/L		74	36 - 110	6	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Nitrobenzene-d5 (Surr)	83		36 - 120
2-Fluorobiphenyl (Surr)	95		34 - 110
Terphenyl-d14 (Surr)	126		40 - 145

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 240-546887/3
Matrix: Water
Analysis Batch: 546887

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			10/13/22 12:00	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	102		60 - 140		10/13/22 12:00	1

Lab Sample ID: LCS 240-546887/4
Matrix: Water
Analysis Batch: 546887

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Methane			284	295		ug/L		104	80 - 120		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,1,1-Trifluoroethane	104		60 - 140

Lab Sample ID: MB 240-547115/33
Matrix: Water
Analysis Batch: 547115

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			10/14/22 20:39	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	106		60 - 140		10/14/22 20:39	1

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

Lab Sample ID: LCS 240-547115/34
Matrix: Water
Analysis Batch: 547115

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Methane			284	295		ug/L		104	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,1-Trifluoroethane	*103*		*60 - 140*

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 500-679903/1-A
Matrix: Water
Analysis Batch: 680738

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 679903

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14		0.10	0.14	ug/L		10/17/22 09:57	10/21/22 12:05	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*84*		*25 - 130*	*10/17/22 09:57*	*10/21/22 12:05*	*1*

Lab Sample ID: LCS 500-679903/2-A
Matrix: Water
Analysis Batch: 680738

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 679903

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Pentachlorophenol			2.53	2.18		ug/L		86	40 - 122		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCAA	*90*		*25 - 130*

Lab Sample ID: LCSD 500-679903/3-A
Matrix: Water
Analysis Batch: 680738

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 679903

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Pentachlorophenol			2.53	2.29		ug/L		91	40 - 122	5	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCAA	*89*		*25 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 500-680538/1-A
Matrix: Water
Analysis Batch: 680892

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 680538

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		10/20/22 08:43	10/21/22 12:11	1
Copper	<0.50		2.0	0.50	ug/L		10/20/22 08:43	10/21/22 12:11	1
Iron	<46.7		100	46.7	ug/L		10/20/22 08:43	10/21/22 12:11	1
Manganese	<0.79		2.5	0.79	ug/L		10/20/22 08:43	10/21/22 12:11	1

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

Lab Sample ID: MB 500-680538/1-A
Matrix: Water
Analysis Batch: 680892

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 680538

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		10/20/22 08:43	10/21/22 12:11	1

Lab Sample ID: LCS 500-680538/2-A
Matrix: Water
Analysis Batch: 680892

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 680538

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	100	101.0		ug/L		101	80 - 120
Copper	250	267.8		ug/L		107	80 - 120
Iron	1000	1090		ug/L		109	80 - 120
Manganese	500	532.9		ug/L		107	80 - 120
Zinc	500	534.9		ug/L		107	80 - 120

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 500-679146/3
Matrix: Water
Analysis Batch: 679146

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.17		0.20	0.17	mg/L			10/11/22 17:09	1
Nitrate as N	<0.068		0.20	0.068	mg/L			10/11/22 17:09	1
Sulfate	<0.095		0.20	0.095	mg/L			10/11/22 17:09	1

Lab Sample ID: LCS 500-679146/4
Matrix: Water
Analysis Batch: 679146

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	3.00	3.09		mg/L		103	90 - 110
Nitrate as N	2.00	2.15		mg/L		107	90 - 110
Sulfate	5.00	5.16		mg/L		103	90 - 110

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

Lab Sample ID: MB 500-681230/4
Matrix: Water
Analysis Batch: 681230

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 - Duplicates	<0.47		1.0	0.47	mg/L			10/24/22 13:10	1

Lab Sample ID: LCS 500-681230/5
Matrix: Water
Analysis Batch: 681230

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 - Duplicates	10.0	9.71		mg/L		97	86 - 116

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

Lab Sample ID: LCSD 500-681230/6
Matrix: Water
Analysis Batch: 681230

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 - Duplicates			10.0	9.67		mg/L		97	86 - 116	0	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-680042/28
Matrix: Water
Analysis Batch: 680042

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			10/17/22 15:48	1

Lab Sample ID: MB 500-680042/3
Matrix: Water
Analysis Batch: 680042

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			10/17/22 10:46	1

Lab Sample ID: LCS 500-680042/31
Matrix: Water
Analysis Batch: 680042

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Alkalinity			100	108.5		mg/L		108	90 - 110		

Lab Sample ID: LCS 500-680042/4
Matrix: Water
Analysis Batch: 680042

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Alkalinity			100	108.6		mg/L		109	90 - 110		

Lab Chronicle

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

Job ID: 500-223573-1

Client Sample ID: W-221010-TS-26

Lab Sample ID: 500-223573-1

Date Collected: 10/10/22 09:29

Matrix: Water

Date Received: 10/11/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679829	W1T	EET CHI	10/17/22 15:43
Total/NA	Prep	3510C			679616	TS	EET CHI	10/14/22 09:42
Total/NA	Analysis	8270D		1	680404	SS	EET CHI	10/19/22 18:47
Total/NA	Analysis	RSK-175		1	546887	JBN	EET CAN	10/13/22 16:49
Total/NA	Prep	8151A			679903	EC	EET CHI	10/17/22 09:57
Total/NA	Analysis	8151A		1	680687	SB	EET CHI	10/20/22 20:18
Dissolved	Prep	3005A			680538	BDE	EET CHI	10/20/22 08:43 - 10/20/22 09:13 [1]
Dissolved	Analysis	6020A		1	680892	FXG	EET CHI	10/21/22 12:56
Total Recoverable	Prep	3005A			680538	BDE	EET CHI	10/20/22 08:43 - 10/20/22 09:13 [1]
Total Recoverable	Analysis	6020A		1	680892	FXG	EET CHI	10/21/22 12:52
Total Recoverable	Prep	3005A			680538	BDE	EET CHI	10/20/22 08:43 - 10/20/22 09:13 [1]
Total Recoverable	Analysis	SM 2340B		1	680899	FXG	EET CHI	10/21/22 14:47
Total/NA	Analysis	300.0		1	679146	RES	EET CHI	10/11/22 19:53
Total/NA	Analysis	300.0		5	679146	RES	EET CHI	10/11/22 20:06
Total/NA	Analysis	9060A		1	681230	BC	EET CHI	10/24/22 16:51
Total/NA	Analysis	SM 2320B		1	680042	SMO	EET CHI	10/17/22 15:34

Client Sample ID: W-221010-TS-27

Lab Sample ID: 500-223573-2

Date Collected: 10/10/22 09:30

Matrix: Water

Date Received: 10/11/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679829	W1T	EET CHI	10/17/22 16:07
Total/NA	Prep	3510C			679616	TS	EET CHI	10/14/22 09:42
Total/NA	Analysis	8270D		1	680404	SS	EET CHI	10/19/22 19:09
Total/NA	Analysis	RSK-175		1	546887	JBN	EET CAN	10/13/22 17:06
Total/NA	Prep	8151A			679903	EC	EET CHI	10/17/22 09:57
Total/NA	Analysis	8151A		1	680687	SB	EET CHI	10/20/22 20:56
Dissolved	Prep	3005A			680538	BDE	EET CHI	10/20/22 08:43 - 10/20/22 09:13 [1]
Dissolved	Analysis	6020A		1	680892	FXG	EET CHI	10/21/22 13:03
Total Recoverable	Prep	3005A			680538	BDE	EET CHI	10/20/22 08:43 - 10/20/22 09:13 [1]
Total Recoverable	Analysis	6020A		1	680892	FXG	EET CHI	10/21/22 12:59
Total Recoverable	Prep	3005A			680538	BDE	EET CHI	10/20/22 08:43 - 10/20/22 09:13 [1]
Total Recoverable	Analysis	SM 2340B		1	680899	FXG	EET CHI	10/21/22 14:47
Total/NA	Analysis	300.0		1	679146	RES	EET CHI	10/11/22 20:31
Total/NA	Analysis	300.0		5	679146	RES	EET CHI	10/11/22 20:44
Total/NA	Analysis	9060A		1	681230	BC	EET CHI	10/24/22 17:04
Total/NA	Analysis	SM 2320B		1	680042	SMO	EET CHI	10/17/22 15:42

Lab Chronicle

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

Job ID: 500-223573-1

Client Sample ID: W-221010-TS-28

Lab Sample ID: 500-223573-3

Date Collected: 10/10/22 10:18

Matrix: Water

Date Received: 10/11/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679829	W1T	EET CHI	10/17/22 16:30
Total/NA	Prep	3510C			679616	TS	EET CHI	10/14/22 09:42
Total/NA	Analysis	8270D		1	680404	SS	EET CHI	10/19/22 19:30
Total/NA	Analysis	RSK-175		1	546887	JBN	EET CAN	10/13/22 17:23
Total/NA	Prep	8151A			679903	EC	EET CHI	10/17/22 09:57
Total/NA	Analysis	8151A		1	680687	SB	EET CHI	10/20/22 21:14
Dissolved	Prep	3005A			680538	BDE	EET CHI	10/20/22 08:43 - 10/20/22 09:13 [1]
Dissolved	Analysis	6020A		1	680892	FXG	EET CHI	10/21/22 13:10
Total Recoverable	Prep	3005A			680538	BDE	EET CHI	10/20/22 08:43 - 10/20/22 09:13 [1]
Total Recoverable	Analysis	6020A		1	680892	FXG	EET CHI	10/21/22 13:06
Total Recoverable	Prep	3005A			680538	BDE	EET CHI	10/20/22 08:43 - 10/20/22 09:13 [1]
Total Recoverable	Analysis	SM 2340B		1	680899	FXG	EET CHI	10/21/22 14:47
Total/NA	Analysis	300.0		1	679146	RES	EET CHI	10/11/22 21:09
Total/NA	Analysis	300.0		5	679146	RES	EET CHI	10/11/22 21:22
Total/NA	Analysis	300.0		20	679146	RES	EET CHI	10/11/22 21:34
Total/NA	Analysis	9060A		1	681230	BC	EET CHI	10/24/22 17:16
Total/NA	Analysis	SM 2320B		1	680042	SMO	EET CHI	10/17/22 16:03

Client Sample ID: W-221010-TS-29

Lab Sample ID: 500-223573-4

Date Collected: 10/10/22 10:59

Matrix: Water

Date Received: 10/11/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679829	W1T	EET CHI	10/17/22 16:53
Total/NA	Prep	3510C			679616	TS	EET CHI	10/14/22 09:42
Total/NA	Analysis	8270D		1	680404	SS	EET CHI	10/19/22 19:51
Total/NA	Analysis	RSK-175		1	546887	JBN	EET CAN	10/13/22 17:40
Total/NA	Prep	8151A			679903	EC	EET CHI	10/17/22 09:57
Total/NA	Analysis	8151A		1	680687	SB	EET CHI	10/20/22 21:33
Dissolved	Prep	3005A			680538	BDE	EET CHI	10/20/22 08:43 - 10/20/22 09:13 [1]
Dissolved	Analysis	6020A		1	680892	FXG	EET CHI	10/21/22 13:23
Total Recoverable	Prep	3005A			680538	BDE	EET CHI	10/20/22 08:43 - 10/20/22 09:13 [1]
Total Recoverable	Analysis	6020A		1	680892	FXG	EET CHI	10/21/22 13:20
Total Recoverable	Prep	3005A			680538	BDE	EET CHI	10/20/22 08:43 - 10/20/22 09:13 [1]
Total Recoverable	Analysis	SM 2340B		1	680899	FXG	EET CHI	10/21/22 14:47
Total/NA	Analysis	300.0		1	679146	RES	EET CHI	10/11/22 22:12
Total/NA	Analysis	300.0		5	679146	RES	EET CHI	10/11/22 22:25
Total/NA	Analysis	9060A		1	681230	BC	EET CHI	10/24/22 17:29
Total/NA	Analysis	SM 2320B		1	680042	SMO	EET CHI	10/17/22 16:20

Lab Chronicle

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

Job ID: 500-223573-1

Client Sample ID: W-221010-TS-30

Lab Sample ID: 500-223573-5

Date Collected: 10/10/22 11:31

Matrix: Water

Date Received: 10/11/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679829	W1T	EET CHI	10/17/22 17:17
Total/NA	Prep	3510C			679616	TS	EET CHI	10/14/22 09:42
Total/NA	Analysis	8270D		1	680404	SS	EET CHI	10/19/22 20:12
Total/NA	Analysis	RSK-175		1	546887	JBN	EET CAN	10/13/22 17:57
Total/NA	Prep	8151A			679903	EC	EET CHI	10/17/22 09:57
Total/NA	Analysis	8151A		1	680687	SB	EET CHI	10/20/22 21:52
Dissolved	Prep	3005A			680538	BDE	EET CHI	10/20/22 08:43 - 10/20/22 09:13 [1]
Dissolved	Analysis	6020A		1	680892	FXG	EET CHI	10/21/22 13:30
Total Recoverable	Prep	3005A			680538	BDE	EET CHI	10/20/22 08:43 - 10/20/22 09:13 [1]
Total Recoverable	Analysis	6020A		1	680892	FXG	EET CHI	10/21/22 13:27
Total Recoverable	Prep	3005A			680538	BDE	EET CHI	10/20/22 08:43 - 10/20/22 09:13 [1]
Total Recoverable	Analysis	SM 2340B		1	680899	FXG	EET CHI	10/21/22 14:47
Total/NA	Analysis	300.0		1	679146	RES	EET CHI	10/11/22 22:50
Total/NA	Analysis	300.0		5	679146	RES	EET CHI	10/11/22 23:03
Total/NA	Analysis	9060A		1	681230	BC	EET CHI	10/24/22 17:42
Total/NA	Analysis	SM 2320B		1	680042	SMO	EET CHI	10/17/22 16:27

Client Sample ID: W-221010-TS-31

Lab Sample ID: 500-223573-6

Date Collected: 10/10/22 12:31

Matrix: Water

Date Received: 10/11/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679829	W1T	EET CHI	10/17/22 17:40
Total/NA	Prep	3510C			679616	TS	EET CHI	10/14/22 09:42
Total/NA	Analysis	8270D		1	680404	SS	EET CHI	10/19/22 20:33
Total/NA	Analysis	RSK-175		1	546887	JBN	EET CAN	10/13/22 18:14
Total/NA	Prep	8151A			679903	EC	EET CHI	10/17/22 09:57
Total/NA	Analysis	8151A		1	680687	SB	EET CHI	10/20/22 22:11
Dissolved	Prep	3005A			680538	BDE	EET CHI	10/20/22 08:43 - 10/20/22 09:13 [1]
Dissolved	Analysis	6020A		1	680892	FXG	EET CHI	10/21/22 13:37
Total Recoverable	Prep	3005A			680538	BDE	EET CHI	10/20/22 08:43 - 10/20/22 09:13 [1]
Total Recoverable	Analysis	6020A		1	680892	FXG	EET CHI	10/21/22 13:34
Total Recoverable	Prep	3005A			680538	BDE	EET CHI	10/20/22 08:43 - 10/20/22 09:13 [1]
Total Recoverable	Analysis	SM 2340B		1	680899	FXG	EET CHI	10/21/22 14:47
Total/NA	Analysis	300.0		1	679146	RES	EET CHI	10/11/22 23:28
Total/NA	Analysis	300.0		5	679146	RES	EET CHI	10/11/22 23:41
Total/NA	Analysis	9060A		1	681230	BC	EET CHI	10/24/22 17:54
Total/NA	Analysis	SM 2320B		1	680042	SMO	EET CHI	10/17/22 16:33

Lab Chronicle

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

Job ID: 500-223573-1

Client Sample ID: W-221010-TS-32

Lab Sample ID: 500-223573-7

Date Collected: 10/10/22 13:30

Matrix: Water

Date Received: 10/11/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679829	W1T	EET CHI	10/17/22 18:04
Total/NA	Prep	3510C			679616	TS	EET CHI	10/14/22 09:42
Total/NA	Analysis	8270D		1	680628	SS	EET CHI	10/20/22 19:17
Total/NA	Analysis	RSK-175		1	547115	JBN	EET CAN	10/14/22 23:29
Total/NA	Prep	8151A			679903	EC	EET CHI	10/17/22 09:57
Total/NA	Analysis	8151A		1	680687	SB	EET CHI	10/20/22 22:30
Dissolved	Prep	3005A			680538	BDE	EET CHI	10/20/22 08:43 - 10/20/22 09:13 [1]
Dissolved	Analysis	6020A		1	680892	FXG	EET CHI	10/21/22 13:44
Total Recoverable	Prep	3005A			680538	BDE	EET CHI	10/20/22 08:43 - 10/20/22 09:13 [1]
Total Recoverable	Analysis	6020A		1	680892	FXG	EET CHI	10/21/22 13:41
Total Recoverable	Prep	3005A			680538	BDE	EET CHI	10/20/22 08:43 - 10/20/22 09:13 [1]
Total Recoverable	Analysis	SM 2340B		1	680899	FXG	EET CHI	10/21/22 14:47
Total/NA	Analysis	300.0		1	679146	RES	EET CHI	10/12/22 00:06
Total/NA	Analysis	300.0		5	679146	RES	EET CHI	10/12/22 00:44
Total/NA	Analysis	9060A		1	681230	BC	EET CHI	10/24/22 18:13
Total/NA	Analysis	SM 2320B		1	680042	SMO	EET CHI	10/17/22 16:44

Client Sample ID: W-221010-TS-33

Lab Sample ID: 500-223573-8

Date Collected: 10/10/22 14:36

Matrix: Water

Date Received: 10/11/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679829	W1T	EET CHI	10/17/22 18:28
Total/NA	Prep	3510C			679616	TS	EET CHI	10/14/22 09:42
Total/NA	Analysis	8270D		1	680404	SS	EET CHI	10/19/22 21:16
Total/NA	Analysis	RSK-175		1	547115	JBN	EET CAN	10/14/22 23:47
Total/NA	Prep	8151A			679903	EC	EET CHI	10/17/22 09:57
Total/NA	Analysis	8151A		1	680687	SB	EET CHI	10/20/22 22:48
Dissolved	Prep	3005A			680538	BDE	EET CHI	10/20/22 08:43 - 10/20/22 09:13 [1]
Dissolved	Analysis	6020A		1	680892	FXG	EET CHI	10/21/22 13:51
Total Recoverable	Prep	3005A			680538	BDE	EET CHI	10/20/22 08:43 - 10/20/22 09:13 [1]
Total Recoverable	Analysis	6020A		1	680892	FXG	EET CHI	10/21/22 13:47
Total Recoverable	Prep	3005A			680538	BDE	EET CHI	10/20/22 08:43 - 10/20/22 09:13 [1]
Total Recoverable	Analysis	SM 2340B		1	680899	FXG	EET CHI	10/21/22 14:47
Total/NA	Analysis	300.0		1	679146	RES	EET CHI	10/12/22 00:57
Total/NA	Analysis	300.0		2	679146	RES	EET CHI	10/12/22 01:09
Total/NA	Analysis	300.0		20	679146	RES	EET CHI	10/12/22 01:22
Total/NA	Analysis	9060A		1	681230	BC	EET CHI	10/24/22 18:50
Total/NA	Analysis	SM 2320B		1	680042	SMO	EET CHI	10/17/22 16:52

Lab Chronicle

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

Job ID: 500-223573-1

Client Sample ID: Trip Blank

Date Collected: 10/10/22 00:00
Date Received: 10/11/22 10:00

Lab Sample ID: 500-223573-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679829	W1T	EET CHI	10/17/22 18:51

[1] Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Laboratory References:

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

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

Accreditation/Certification Summary

Client: GHD Services Inc.
Job ID: 500-223573-1
Project/Site: Penta Wood 11222418

Laboratory: Eurofins Chicago

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

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-23

Laboratory: Eurofins Canton

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	02-27-23
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23
Kentucky (WW)	State	KY98016	12-31-22
Minnesota	NELAP	039-999-348	12-31-22
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-23
Ohio VAP	State	CL0024	02-27-23
Oregon	NELAP	4062	02-27-23
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
Washington	State	C971	01-12-23
West Virginia DEP	State	210	12-31-22

Chain of Custody Record

545095

eurofins | Environment Testing TestAmerica

Address: _____

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other: TAL-8210

Client Contact	Project Manager: TIM REE	Site Contact:	Date: 10/10/22	COC No:
Company Name: GHD	Tel/Email: TIM.REE@GHD.COM	Lab Contact:	Carrier: FEDEX	1 of 1 COCs
Address: 900 LONG LAKE ROAD	Analysis Turnaround Time			Sampler: NICK SOLBERG
City/State/Zip: ST PAUL / MN / 55112	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 612 - 213 - 7152	TAT if different from Below _____			Walk-in Client:
Fax:	☐ 2 weeks			Lab Sampling:
Project Name: PENTA WOOD	☐ 1 week			
Site: 11222418	☐ 2 days			Job / SDG No.: 500-223573
PO#	☐ 1 day			

500-223573 COC

	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 ANIONS	PCP	BTEX	NAPHTHALENE	DISS METALS	TOTAL METALS	TOC	METHANE	Sample Specific Notes:
1	W-221010-TS-26	10/10	9:29	G	GW	15	N	N	X	X	X	X	X	X	X	X	
2	W-221010-TS-27	10/10	9:30						X	X	X	X	X	X	X	X	
3	W-221010-TS-28	10/10	10:16						X	X	X	X	X	X	X	X	
4	W-221010-TS-29	10/10	10:59						X	X	X	X	X	X	X	X	
5	W-221010-TS-30	10/10	11:31						X	X	X	X	X	X	X	X	
6	W-221010-TS-31	10/10	12:31						X	X	X	X	X	X	X	X	
7	W-221010-TS-32	10/10	13:30						X	X	X	X	X	X	X	X	
8	W-221010-TS-33	10/10	14:36						X	X	X	X	X	X	X	X	
9	TRIP BLANK										X						

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.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

1.8+2.8, 1.2+0.7, 0.6+1.6, 1.6+2.6

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____ Corr'd: _____		Therm ID No.: _____
Relinquished by:	Company: GHD	Date/Time: 10/10 3:15	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: Stephanie Hernandez	Company: EETA	Date/Time: 10/11/22 1000

FedEx Express **Package US Airbill**

FedEx Tracking Number **8153 4005 6786**

Form ID No. **0200**

500-223573 Waybi

1 From

Date

Sender's Name _____ Phone _____

Company

Address _____ Dept./Floor/Suite/Room

City _____ State _____ ZIP

2 Your Internal Billing Reference

3 To

Recipient's Name _____ Phone _____

Company

Address _____ Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City _____ State _____ ZIP

Hold Weekday
FedEx location address REQUIRED. **NOT available for** FedEx First Overnight.

Hold Saturday
FedEx location address REQUIRED. **Available ONLY for** FedEx Priority Overnight and FedEx 2Day to select locations.

8153 4005 6786

4 Express Package Service * To most locations.

Packages up to 150 lbs.
For packages over 150 lbs., use the FedEx Express Freight US Airbill.

2A

Next Business Day

- FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

- FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.
- FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

FedEx Envelope* | FedEx Pak* | FedEx Box | FedEx Tube | Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide

Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Express Saver.

- No Signature Required — Package may be left without obtaining a signature for delivery.
- Direct Signature — Someone at recipient's address may sign for delivery.
- Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?

No | Yes — As per attached Shipper's Declaration. | Yes — Shipper's Declaration not required. | Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Restrictions apply for dangerous goods — see the current FedEx Service Guide.

Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below.

Sender — Acct. No. in Section 1 will be billed. | Recipient | Third Party | Credit Card | Cash/Check

Total Packages _____ Total Weight _____ lbs.

Credit Card Auth.

†Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

644

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fedex.com 1800 GoFedEx 1800 463.3339

FedEx Express **Package US Airbill**

FedEx Tracking Number 8174 6502 3522

Form ID No. 0215

1 From

Date

Sender's Name _____ Phone _____

Company _____

Address _____

Dept./Floor/Suite/Room

City _____ State _____ ZIP _____

2 Your Internal Billing Reference

3 To

Recipient's Name _____ Phone _____

Company _____

Address _____

We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room

Address _____

Use this line for the HOLD location address or for continuation of your shipping address.

City _____ State _____ ZIP _____

☐ Hold Weekday
FedEx location address REQUIRED. **NOT available for** FedEx First Overnight.

☐ Hold Saturday
FedEx location address REQUIRED. **Available ONLY for** FedEx Priority Overnight and FedEx 2Day to select locations.

8174 6502 3522

4 Express Package Service * To most locations.

Packages up to 150 lbs.
For packages over 150 lbs. use the FedEx Express Freight US Airbill.

Next Business Day

☐ FedEx First Overnight
Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

☐ FedEx Priority Overnight
Next business morning. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

☐ FedEx Standard Overnight
Next business afternoon. Saturday Delivery NOT available.

2 or 3 Business Days

☐ FedEx 2Day A.M.
Second business morning.* Saturday Delivery NOT available.

☐ FedEx 2Day
Second business afternoon.* Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.

☐ FedEx Express Saver
Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

☐ FedEx Envelope* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☐ Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.

☐ Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Express Saver.

☐ No Signature Required
Package may be left without obtaining a signature for delivery.

☐ Direct Signature
Someone at recipient's address may sign for delivery.

☐ Indirect Signature
If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?

One box must be checked.

☐ No ☐ Yes As per attached Shipper's Declaration. ☐ Yes Shipper's Declaration not required. ☐ Dry Ice Dry Ice, 9, UN 1845 x _____ kg

Restrictions apply for dangerous goods — see the current FedEx Service Guide. Cargo Aircraft Only

7 Payment ***Bill to:***

Enter FedEx Acct. No. below

☐ Sender Acct. No. in Section 1 will be billed. ☐ Recipient ☐ Third Party ☐ Obtain Rec. A/c No.

Total Packages _____ Total Weight _____ lbs.

†Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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fedex.com 1.800.GoFedEx 1.800.463.3339

FedEx Express Package US Airbill

FedEx Tracking Number 8131 9058 0427

Form ID No. 0200

1 From

Date

Sender's Name Phone

Company

Address

Dept./Floor/Suite/Room

City State ZIP

2 Your Internal Billing Reference

3 To

Recipient's Name Phone

Company

Address

We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City State ZIP

Hold Weekday
FedEx location address REQUIRED. **NOT available for** FedEx First Overnight.

Hold Saturday
FedEx location address REQUIRED. **Available ONLY for** FedEx Priority Overnight and FedEx 2Day to select locations.

8131 9058 0427

4 Express Package Service * To most locations.

Packages up to 150 lbs.
For packages over 150 lbs., use the FedEx Express Freight US Airbill.

Next Business Day

- FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Standard Overnight — Next business afternoon.* *Saturday Delivery NOT available.*

2 or 3 Business Days

- FedEx 2Day A.M — Second business morning.* Saturday Delivery NOT available.
- FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

FedEx Envelope* FedEx Pak* FedEx Box FedEx Tube Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.

Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Express Saver.

No Signature Required — Package may be left without obtaining a signature for delivery.

Direct Signature — Someone at recipient's address may sign for delivery.

Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?

One box must be checked.

No

Yes — As per attached Shipper's Declaration.

Yes — Shipper's Declaration not required.

Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Restrictions apply for dangerous goods — see the current FedEx Service Guide.

Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below. Obtain Acct No

Sender — Acct. No. in Section 1 will be billed. Recipient Third Party Credit Card Cash/Check

Total Packages Total Weight

____ ____ lbs.

Credit Card Auth.

____

†Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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FedEx Express Package US Airbill

FedEx Tracking Number 8131 9058 0817

Form ID No. 0200

1 From

Date

Sender's Name Phone

Company

Address

Dept./Floor/Suite/Room

City State ZIP

2 Your Internal Billing Reference

3 To

Recipient's Name Phone

Company

Address

We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City State ZIP

Hold Weekday
FedEx location address REQUIRED. **NOT available for** FedEx First Overnight.

Hold Saturday
FedEx location address REQUIRED. **Available ONLY for** FedEx Priority Overnight and FedEx 2Day to select locations.

8131 9058 0817

4 Express Package Service * To most locations.

Packages up to 150 lbs.
For packages over 150 lbs., use the FedEx Express Freight US Airbill.

Next Business Day

- FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

- FedEx 2Day A.M — Second business morning.* Saturday Delivery NOT available.
- FedEx 2Day — Second business afternoon. Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

FedEx Envelope* | FedEx Pak* | FedEx Box | FedEx Tube | Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.

Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Express Saver

No Signature Required — Package may be left without obtaining a signature for delivery.

Direct Signature — Someone at recipient's address may sign for delivery.

Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?

One box must be checked.

No | Yes — As per attached Shipper's Declaration. | Yes — Shipper's Declaration not required. | Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Restrictions apply for dangerous goods — see the current FedEx Service Guide. Cargo Aircraft Only

7 Payment ***Bill to:***

Enter FedEx Acct. No. or Credit Card No. below. Obtain rec'p. Acct. No

Sender Acct. No. in Section 1 will be billed. | Recipient | Third Party | Credit Card | Cash/Check

Total Packages Total Weight lbs. Credit Card Auth.

†Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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Eurofins Chicago
2417 Bond Street
University Park, IL 60484
Phone: 708-534-5200 Fax: 708-534-5211

2.0/2.7

Chain of Custody Record

eurofins Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Wright, Richard	Carrier Tracking No(s):	COC No: 500-165990.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Richard.Wright@et.eurofinsus.com	State of Origin: Wisconsin	Page: Page 1 of 1
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): State Program - Wisconsin		Job #: 500-223573-1
Address: 180 S. Van Buren Avenue,	Due Date Requested: 10/24/2022	Analysis Requested		Preservation Codes:
City: Barberton	TAT Requested (days):			
State, Zip: OH, 44203				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Penta Wood 11222418	Project #: 50013796			
Site:	SSOW#:			

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, 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)

Other:

RSK

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_175/ (MOD) Methane	Total Number of containers	Special Instructions/Note:
				Preservation Code:					
W-221010-TS-26 (500-223573-1)	10/10/22	09:29 Central		Water			X	3	WI
W-221010-TS-27 (500-223573-2)	10/10/22	09:30 Central		Water			X	3	WI
W-221010-TS-28 (500-223573-3)	10/10/22	10:18 Central		Water			X	3	WI
W-221010-TS-29 (500-223573-4)	10/10/22	10:59 Central		Water			X	3	WI
W-221010-TS-30 (500-223573-5)	10/10/22	11:31 Central		Water			X	3	WI
W-221010-TS-31 (500-223573-6)	10/10/22	12:31 Central		Water			X	3	WI
W-221010-TS-32 (500-223573-7)	10/10/22	13:30 Central		Water			X	3	WI
W-221010-TS-33 (500-223573-8)	10/10/22	14:36 Central		Water			X	3	WI

Note: Since laboratory accreditations are subject to change, Eurofins Chicago places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/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 complicance to Eurofins Chicago.

Possible Hazard Identification *Unconfirmed*		*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)* ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For ____ Months*	
Deliverable Requested: I, II, III, IV, Other (specify)	Primary Deliverable Rank: 2	Special Instructions/QC Requirements:	
Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: [signature]	Date/Time: 10/11/22 1445	Company: EETA	Received by: [signature] · Date/Time: 10-12-22 1020 · Company: [signature]
Relinquished by:	Date/Time:	Company	Received by: · Date/Time: · Company
Relinquished by:	Date/Time:	Company	Received by: · Date/Time: · Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:

Eurofins - Canton Sample Receipt Form/Narrative **Login # :** _____
Barberton Facility

Client ETA Chicago Site Name _____ Cooler unpacked by: Brandon

Cooler Received on 10-12-22 Opened on 10-12-22

FedEx: 1st Grd (Exp) UPS FAS Clipper Client Drop Off Eurofins Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # 10 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# IR-13 (CF +0.7 °C) Observed Cooler Temp. 2.0 °C Corrected Cooler Temp. 2.7 °C

IR GUN #IR-15 (CF 0.0°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °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)?	(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# **HC286797**
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

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

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: 500-223573-1

Login Number: 223573
List Number: 1
Creator: Hernandez, Stephanie

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	2.8,0.7,1.6,2.6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	False	
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	

eurofins | Environment Testing

ANALYTICAL REPORT

Eurofins Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

Laboratory Job ID: 500-223652-1
Client Project/Site: Penta Wood 11222418

For:
GHD Services Inc.
900 Long Lake Road
Suite 200
New Brighton, Minnesota 55112

Attn: Mr. Grant Anderson

Authorized for release by:
10/27/2022 8:16:47 AM

Richard Wright, Senior Project Manager
(708)746-0045
Richard.Wright@et.eurofinsus.com

Table of Contents

Job ID: 500-223652-1

Laboratory: Eurofins Chicago

Narrative

Job Narrative
500-223652-1

Receipt
The samples were received on 10/12/2022 10:00 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 2.9º C, 3.0º C and 5.0º 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 8270D: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 500-679382 and analytical batch 500-679617 recovered outside control limits for the following analytes: Naphthalene.

Method 8270D: The continuing calibration verification (CCV) analyzed in batch 500-679628 was outside the method criteria for the following analyte(s): 2,4,6-Tribromophenol (Surr). A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method 8270D: The following samples were diluted due to the nature of the sample matrix: W-221011-TS-37 (500-223652-4) and W-221011-TS-38 (500-223652-5). Elevated reporting limits (RLs) are provided.

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

GC VOA
Method RSK-175: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 240-547115.

No additional analytical or quality issues were noted, other than those described above or 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 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: 500-223652-1

Client Sample ID: W-221011-TS-34 — Lab Sample ID: 500-223652-1

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.58	J	1.0	0.23	ug/L	1		6020A	Total Recoverable
Arsenic	0.58	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	5.3		2.0	0.50	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	170		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Chloride	58.5		2.0	1.7	mg/L	10		300.0	Total/NA
Nitrate as N	2.3		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	8.5		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.72	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	190		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-221011-TS-35 — Lab Sample ID: 500-223652-2

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.29	J	1.0	0.23	ug/L	1		6020A	Total Recoverable
Copper	3.4		2.0	0.50	ug/L	1		6020A	Total Recoverable
Manganese	1.8	J	2.5	0.79	ug/L	1		6020A	Total Recoverable
Arsenic	0.30	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	3.1		2.0	0.50	ug/L	1		6020A	Dissolved
Manganese	1.7	J	2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	147		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Chloride	13.4		1.0	0.85	mg/L	5		300.0	Total/NA
Nitrate as N	4.0		1.0	0.34	mg/L	5		300.0	Total/NA
Sulfate	11.8		0.40	0.19	mg/L	2		300.0	Total/NA
Total Organic Carbon - Duplicates	3.3		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	213		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-221011-TS-36 — Lab Sample ID: 500-223652-3

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Copper	2.4		2.0	0.50	ug/L	1		6020A	Total Recoverable

Client Sample ID: W-221011-TS-37 — Lab Sample ID: 500-223652-4

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Toluene	1.0		0.50	0.15	ug/L	1		8260B	Total/NA
Ethylbenzene	1.1		0.50	0.18	ug/L	1		8260B	Total/NA
Xylenes, Total	17		1.0	0.22	ug/L	1		8260B	Total/NA
Naphthalene	31	*	4.3	1.3	ug/L	5		8270D	Total/NA
Methane	0.19	J	1.0	0.17	ug/L	1		RSK-175	Total/NA
Arsenic	5.4		1.0	0.23	ug/L	1		6020A	Total Recoverable
Copper	3.7		2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	29300		100	46.7	ug/L	1		6020A	Total Recoverable
Manganese	4610		2.5	0.79	ug/L	1		6020A	Total Recoverable
Arsenic	4.2		1.0	0.23	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: 500-223652-1

Client Sample ID: W-221011-TS-37 (Continued) — Lab Sample ID: 500-223652-4

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Copper	1.1	J	2.0	0.50	ug/L	1		6020A	Dissolved
Iron	26100		100	46.7	ug/L	1		6020A	Dissolved
Manganese	4420		2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	196		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Chloride	36.4		2.0	1.7	mg/L	10		300.0	Total/NA
Sulfate	19.3		2.0	0.95	mg/L	10		300.0	Total/NA
Total Organic Carbon - Duplicates	37.3		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	257		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-221011-TS-38 — Lab Sample ID: 500-223652-5

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	1.1		0.50	0.18	ug/L	1		8260B	Total/NA
Xylenes, Total	8.0		1.0	0.22	ug/L	1		8260B	Total/NA
Naphthalene	9.1	*	4.1	1.3	ug/L	5		8270D	Total/NA
Methane	18		1.0	0.17	ug/L	1		RSK-175	Total/NA
Arsenic	1.3		1.0	0.23	ug/L	1		6020A	Total Recoverable
Copper	8.8		2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	1140		100	46.7	ug/L	1		6020A	Total Recoverable
Manganese	1110		2.5	0.79	ug/L	1		6020A	Total Recoverable
Arsenic	1.2		1.0	0.23	ug/L	1		6020A	Dissolved
Copper	2.0		2.0	0.50	ug/L	1		6020A	Dissolved
Iron	760		100	46.7	ug/L	1		6020A	Dissolved
Manganese	1140		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
Chloride	25.3		1.0	0.85	mg/L	5		300.0	Total/NA
Sulfate	10.3		1.0	0.48	mg/L	5		300.0	Total/NA
Total Organic Carbon - Duplicates	21.6		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	155		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 500-223652-6

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

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

Job ID: 500-223652-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	EET CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	EET CHI
RSK-175	Dissolved Gases (GC)	RSK	EET CAN
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	MCAWW	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:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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 CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

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: 500-223652-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-223652-1	W-221011-TS-34	Water	10/11/22 09:43	10/12/22 10:00
500-223652-2	W-221011-TS-35	Water	10/11/22 10:50	10/12/22 10:00
500-223652-3	W-221011-TS-36	Water	10/11/22 10:33	10/12/22 10:00
500-223652-4	W-221011-TS-37	Water	10/11/22 11:14	10/12/22 10:00
500-223652-5	W-221011-TS-38	Water	10/11/22 12:05	10/12/22 10:00
500-223652-6	Trip Blank	Water	10/11/22 00:00	10/12/22 10:00

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

Job ID: 500-223652-1

Client Sample ID: W-221011-TS-34

Date Collected: 10/11/22 09:43
Date Received: 10/12/22 10:00

Lab Sample ID: 500-223652-1

Matrix: Water

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			10/17/22 12:59	1
Toluene	<0.15		0.50	0.15	ug/L			10/17/22 12:59	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/17/22 12:59	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/17/22 12:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 126*		*10/17/22 12:59*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*10/17/22 12:59*	*1*
4-Bromofluorobenzene (Surr)	*111*		*72 - 124*		*10/17/22 12:59*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*10/17/22 12:59*	*1*

Method: SW846 8270D - 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		10/13/22 07:59	10/14/22 20:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*79*		*36 - 120*	*10/13/22 07:59*	*10/14/22 20:14*	*1*
2-Fluorobiphenyl (Surr)	*100*		*34 - 110*	*10/13/22 07:59*	*10/14/22 20:14*	*1*
Terphenyl-d14 (Surr)	*140*		*40 - 145*	*10/13/22 07:59*	*10/14/22 20:14*	*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			10/15/22 00:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,1-Trifluoroethane	*101*		*60 - 140*		*10/15/22 00:21*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14		0.099	0.14	ug/L		10/17/22 09:57	10/20/22 23:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*76*		*25 - 130*	*10/17/22 09:57*	*10/20/22 23:07*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.58**	**J**	1.0	0.23	ug/L		10/20/22 16:21	10/21/22 13:23	1
Copper	<0.50		2.0	0.50	ug/L		10/20/22 16:21	10/21/22 13:23	1
Iron	<46.7		100	46.7	ug/L		10/20/22 16:21	10/21/22 13:23	1
Manganese	<0.79		2.5	0.79	ug/L		10/20/22 16:21	10/21/22 13:23	1
Zinc	<6.9		20.0	6.9	ug/L		10/20/22 16:21	10/21/22 13:23	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.58**	**J**	1.0	0.23	ug/L		10/20/22 16:21	10/21/22 13:26	1
Copper	**5.3**		2.0	0.50	ug/L		10/20/22 16:21	10/21/22 13:26	1
Iron	<46.7		100	46.7	ug/L		10/20/22 16:21	10/21/22 13:26	1
Manganese	<0.79		2.5	0.79	ug/L		10/20/22 16:21	10/21/22 13:26	1
Zinc	<6.9		20.0	6.9	ug/L		10/20/22 16:21	10/21/22 13:26	1

Client Sample Results

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

Job ID: 500-223652-1

Client Sample ID: W-221011-TS-34

Date Collected: 10/11/22 09:43
Date Received: 10/12/22 10:00

Lab Sample ID: 500-223652-1

Matrix: Water

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	170		0.50	0.25	mg/L		10/20/22 16:21	10/25/22 15:40	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	58.5		2.0	1.7	mg/L			10/12/22 20:40	10
Nitrate as N (MCAWW 300.0)	2.3		0.20	0.068	mg/L			10/12/22 14:31	1
Sulfate (MCAWW 300.0)	8.5		0.20	0.095	mg/L			10/12/22 14:31	1
Total Organic Carbon - Duplicates (SW846 9060A)	0.72	J	1.0	0.47	mg/L			10/24/22 20:25	1
Alkalinity (SM 2320B)	190		5.0	3.7	mg/L			10/17/22 17:00	1

Client Sample ID: W-221011-TS-35

Date Collected: 10/11/22 10:50
Date Received: 10/12/22 10:00

Lab Sample ID: 500-223652-2

Matrix: Water

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			10/17/22 13:22	1
Toluene	<0.15		0.50	0.15	ug/L			10/17/22 13:22	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/17/22 13:22	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/17/22 13:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 126*		*10/17/22 13:22*	*1*
Toluene-d8 (Surr)	*96*		*75 - 120*		*10/17/22 13:22*	*1*
4-Bromofluorobenzene (Surr)	*111*		*72 - 124*		*10/17/22 13:22*	*1*
Dibromofluoromethane	*98*		*75 - 120*		*10/17/22 13:22*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.24	*	0.78	0.24	ug/L		10/13/22 07:59	10/14/22 20:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*75*		*36 - 120*	*10/13/22 07:59*	*10/14/22 20:38*	*1*
2-Fluorobiphenyl (Surr)	*93*		*34 - 110*	*10/13/22 07:59*	*10/14/22 20:38*	*1*
Terphenyl-d14 (Surr)	*134*		*40 - 145*	*10/13/22 07:59*	*10/14/22 20:38*	*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			10/15/22 00:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,1-Trifluoroethane	*100*		*60 - 140*		*10/15/22 00:38*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14		0.10	0.14	ug/L		10/17/22 09:57	10/20/22 23:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*80*		*25 - 130*	*10/17/22 09:57*	*10/20/22 23:26*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.29**	**J**	1.0	0.23	ug/L		10/20/22 16:21	10/21/22 13:29	1
Copper	**3.4**		2.0	0.50	ug/L		10/20/22 16:21	10/21/22 13:29	1
Iron	<46.7		100	46.7	ug/L		10/20/22 16:21	10/21/22 13:29	1
Manganese	**1.8**	**J**	2.5	0.79	ug/L		10/20/22 16:21	10/21/22 13:29	1
Zinc	<6.9		20.0	6.9	ug/L		10/20/22 16:21	10/21/22 13:29	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.30**	**J**	1.0	0.23	ug/L		10/20/22 16:21	10/21/22 13:33	1
Copper	**3.1**		2.0	0.50	ug/L		10/20/22 16:21	10/21/22 13:33	1
Iron	<46.7		100	46.7	ug/L		10/20/22 16:21	10/21/22 13:33	1
Manganese	**1.7**	**J**	2.5	0.79	ug/L		10/20/22 16:21	10/21/22 13:33	1
Zinc	<6.9		20.0	6.9	ug/L		10/20/22 16:21	10/21/22 13:33	1

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

Job ID: 500-223652-1

Client Sample ID: W-221011-TS-35

Date Collected: 10/11/22 10:50
Date Received: 10/12/22 10:00

Lab Sample ID: 500-223652-2

Matrix: Water

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	147		0.50	0.25	mg/L		10/20/22 16:21	10/25/22 15:40	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	13.4		1.0	0.85	mg/L			10/13/22 09:17	5
Nitrate as N (MCAWW 300.0)	4.0		1.0	0.34	mg/L			10/13/22 09:17	5
Sulfate (MCAWW 300.0)	11.8		0.40	0.19	mg/L			10/12/22 20:53	2
Total Organic Carbon - Duplicates (SW846 9060A)	3.3		1.0	0.47	mg/L			10/24/22 21:23	1
Alkalinity (SM 2320B)	213		5.0	3.7	mg/L			10/17/22 17:07	1

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

Job ID: 500-223652-1

Client Sample ID: W-221011-TS-36

Date Collected: 10/11/22 10:33
Date Received: 10/12/22 10:00

Lab Sample ID: 500-223652-3

Matrix: Water

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			10/17/22 13:46	1
Toluene	<0.15		0.50	0.15	ug/L			10/17/22 13:46	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/17/22 13:46	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/17/22 13:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 126*		*10/17/22 13:46*	*1*
Toluene-d8 (Surr)	*99*		*75 - 120*		*10/17/22 13:46*	*1*
4-Bromofluorobenzene (Surr)	*110*		*72 - 124*		*10/17/22 13:46*	*1*
Dibromofluoromethane	*100*		*75 - 120*		*10/17/22 13:46*	*1*

Method: SW846 8270D - 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		10/13/22 07:59	10/14/22 21:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*67*		*36 - 120*	*10/13/22 07:59*	*10/14/22 21:01*	*1*
2-Fluorobiphenyl (Surr)	*84*		*34 - 110*	*10/13/22 07:59*	*10/14/22 21:01*	*1*
Terphenyl-d14 (Surr)	*129*		*40 - 145*	*10/13/22 07:59*	*10/14/22 21:01*	*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			10/15/22 00:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,1-Trifluoroethane	*105*		*60 - 140*		*10/15/22 00:55*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14		0.10	0.14	ug/L		10/17/22 09:57	10/20/22 23:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*88*		*25 - 130*	*10/17/22 09:57*	*10/20/22 23:45*	*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		10/20/22 16:21	10/21/22 13:36	1
Copper	**2.4**		2.0	0.50	ug/L		10/20/22 16:21	10/21/22 13:36	1
Iron	<46.7		100	46.7	ug/L		10/20/22 16:21	10/21/22 13:36	1
Manganese	<0.79		2.5	0.79	ug/L		10/20/22 16:21	10/21/22 13:36	1
Zinc	<6.9		20.0	6.9	ug/L		10/20/22 16:21	10/21/22 13:36	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		10/20/22 16:21	10/21/22 14:00	1
Copper	<0.50		2.0	0.50	ug/L		10/20/22 16:21	10/21/22 14:00	1
Iron	<46.7		100	46.7	ug/L		10/20/22 16:21	10/21/22 14:00	1
Manganese	<0.79		2.5	0.79	ug/L		10/20/22 16:21	10/21/22 14:00	1
Zinc	<6.9		20.0	6.9	ug/L		10/20/22 16:21	10/21/22 14:00	1

Client Sample Results

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

Job ID: 500-223652-1

Client Sample ID: W-221011-TS-36

Date Collected: 10/11/22 10:33
Date Received: 10/12/22 10:00

Lab Sample ID: 500-223652-3

Matrix: Water

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		10/20/22 16:21	10/25/22 15:40	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	<0.17		0.20	0.17	mg/L			10/12/22 14:59	1
Nitrate as N (MCAWW 300.0)	<0.068		0.20	0.068	mg/L			10/12/22 14:59	1
Sulfate (MCAWW 300.0)	<0.095		0.20	0.095	mg/L			10/12/22 14:59	1
Total Organic Carbon - Duplicates (SW846 9060A)	<0.47		1.0	0.47	mg/L			10/24/22 21:36	1
Alkalinity (SM 2320B)	<3.7		5.0	3.7	mg/L			10/20/22 13:10	1

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

Job ID: 500-223652-1

Client Sample ID: W-221011-TS-37

Date Collected: 10/11/22 11:14
Date Received: 10/12/22 10:00

Lab Sample ID: 500-223652-4

Matrix: Water

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			10/17/22 14:09	1
Toluene	**1.0**		0.50	0.15	ug/L			10/17/22 14:09	1
Ethylbenzene	**1.1**		0.50	0.18	ug/L			10/17/22 14:09	1
Xylenes, Total	**17**		1.0	0.22	ug/L			10/17/22 14:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 126*		*10/17/22 14:09*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*10/17/22 14:09*	*1*
4-Bromofluorobenzene (Surr)	*108*		*72 - 124*		*10/17/22 14:09*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*10/17/22 14:09*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**31**	*	4.3	1.3	ug/L		10/13/22 07:59	10/14/22 21:25	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*78*		*36 - 120*	*10/13/22 07:59*	*10/14/22 21:25*	*5*
2-Fluorobiphenyl (Surr)	*87*		*34 - 110*	*10/13/22 07:59*	*10/14/22 21:25*	*5*
Terphenyl-d14 (Surr)	*126*		*40 - 145*	*10/13/22 07:59*	*10/14/22 21:25*	*5*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**0.19**	J	1.0	0.17	ug/L			10/15/22 01:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,1-Trifluoroethane	*102*		*60 - 140*		*10/15/22 01:12*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.15		0.11	0.15	ug/L		10/17/22 09:57	10/21/22 00:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*126*		*25 - 130*	*10/17/22 09:57*	*10/21/22 00:23*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**5.4**		1.0	0.23	ug/L		10/20/22 16:21	10/21/22 14:04	1
Copper	**3.7**		2.0	0.50	ug/L		10/20/22 16:21	10/21/22 14:04	1
Iron	**29300**		100	46.7	ug/L		10/20/22 16:21	10/21/22 14:04	1
Manganese	**4610**		2.5	0.79	ug/L		10/20/22 16:21	10/21/22 14:04	1
Zinc	<6.9		20.0	6.9	ug/L		10/20/22 16:21	10/21/22 14:04	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**4.2**		1.0	0.23	ug/L		10/20/22 16:21	10/21/22 14:07	1
Copper	**1.1**	J	2.0	0.50	ug/L		10/20/22 16:21	10/21/22 14:07	1
Iron	**26100**		100	46.7	ug/L		10/20/22 16:21	10/21/22 14:07	1
Manganese	**4420**		2.5	0.79	ug/L		10/20/22 16:21	10/21/22 14:07	1
Zinc	<6.9		20.0	6.9	ug/L		10/20/22 16:21	10/21/22 14:07	1

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

Job ID: 500-223652-1

Client Sample ID: W-221011-TS-37
Date Collected: 10/11/22 11:14
Date Received: 10/12/22 10:00

Lab Sample ID: 500-223652-4
Matrix: Water

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	196		0.50	0.25	mg/L		10/20/22 16:21	10/25/22 15:40	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	36.4		2.0	1.7	mg/L			10/12/22 21:07	10
Nitrate as N (MCAWW 300.0)	<0.068		0.20	0.068	mg/L			10/12/22 15:13	1
Sulfate (MCAWW 300.0)	19.3		2.0	0.95	mg/L			10/12/22 21:07	10
Total Organic Carbon - Duplicates (SW846 9060A)	37.3		1.0	0.47	mg/L			10/24/22 21:55	1
Alkalinity (SM 2320B)	257		5.0	3.7	mg/L			10/20/22 11:47	1

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

Job ID: 500-223652-1

Client Sample ID: W-221011-TS-38

Date Collected: 10/11/22 12:05
Date Received: 10/12/22 10:00

Lab Sample ID: 500-223652-5

Matrix: Water

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			10/17/22 14:33	1
Toluene	**1.1**		0.50	0.15	ug/L			10/17/22 14:33	1
Ethylbenzene	**1.1**		0.50	0.18	ug/L			10/17/22 14:33	1
Xylenes, Total	**8.0**		1.0	0.22	ug/L			10/17/22 14:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 126*		*10/17/22 14:33*	*1*
Toluene-d8 (Surr)	*99*		*75 - 120*		*10/17/22 14:33*	*1*
4-Bromofluorobenzene (Surr)	*108*		*72 - 124*		*10/17/22 14:33*	*1*
Dibromofluoromethane	*97*		*75 - 120*		*10/17/22 14:33*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**9.1**	*	4.1	1.3	ug/L		10/13/22 07:59	10/14/22 21:49	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*69*		*36 - 120*	*10/13/22 07:59*	*10/14/22 21:49*	*5*
2-Fluorobiphenyl (Surr)	*66*		*34 - 110*	*10/13/22 07:59*	*10/14/22 21:49*	*5*
Terphenyl-d14 (Surr)	*127*		*40 - 145*	*10/13/22 07:59*	*10/14/22 21:49*	*5*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**18**		1.0	0.17	ug/L			10/15/22 01:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,1-Trifluoroethane	*104*		*60 - 140*		*10/15/22 01:29*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14		0.099	0.14	ug/L		10/17/22 09:57	10/21/22 00:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*50*		*25 - 130*	*10/17/22 09:57*	*10/21/22 00:41*	*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		10/20/22 16:21	10/21/22 14:11	1
Copper	**8.8**		2.0	0.50	ug/L		10/20/22 16:21	10/21/22 14:11	1
Iron	**1140**		100	46.7	ug/L		10/20/22 16:21	10/21/22 14:11	1
Manganese	**1110**		2.5	0.79	ug/L		10/20/22 16:21	10/21/22 14:11	1
Zinc	<6.9		20.0	6.9	ug/L		10/20/22 16:21	10/21/22 14:11	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**1.2**		1.0	0.23	ug/L		10/20/22 16:21	10/21/22 14:14	1
Copper	**2.0**		2.0	0.50	ug/L		10/20/22 16:21	10/21/22 14:14	1
Iron	**760**		100	46.7	ug/L		10/20/22 16:21	10/21/22 14:14	1
Manganese	**1140**		2.5	0.79	ug/L		10/20/22 16:21	10/21/22 14:14	1
Zinc	<6.9		20.0	6.9	ug/L		10/20/22 16:21	10/21/22 14:14	1

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

Job ID: 500-223652-1

Client Sample ID: W-221011-TS-38
Date Collected: 10/11/22 12:05
Date Received: 10/12/22 10:00

Lab Sample ID: 500-223652-5
Matrix: Water

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		10/20/22 16:21	10/25/22 15:40	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	25.3		1.0	0.85	mg/L			10/12/22 21:21	5
Nitrate as N (MCAWW 300.0)	<0.068		0.20	0.068	mg/L			10/12/22 15:26	1
Sulfate (MCAWW 300.0)	10.3		1.0	0.48	mg/L			10/12/22 21:21	5
Total Organic Carbon - Duplicates (SW846 9060A)	21.6		1.0	0.47	mg/L			10/24/22 22:13	1
Alkalinity (SM 2320B)	155		5.0	3.7	mg/L			10/20/22 12:37	1

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

Job ID: 500-223652-1

Client Sample ID: Trip Blank

Date Collected: 10/11/22 00:00
Date Received: 10/12/22 10:00

Lab Sample ID: 500-223652-6

Matrix: Water

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			10/17/22 11:49	1
Toluene	<0.15		0.50	0.15	ug/L			10/17/22 11:49	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/17/22 11:49	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/17/22 11:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*75 - 126*		*10/17/22 11:49*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*10/17/22 11:49*	*1*
4-Bromofluorobenzene (Surr)	*112*		*72 - 124*		*10/17/22 11:49*	*1*
Dibromofluoromethane	*98*		*75 - 120*		*10/17/22 11:49*	*1*

Definitions/Glossary

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

Job ID: 500-223652-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
*	RPD of the LCS and LCSD exceeds the control limits

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
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)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

GC/MS VOA

Analysis Batch: 679829

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223652-1	W-221011-TS-34	Total/NA	Water	8260B	
500-223652-2	W-221011-TS-35	Total/NA	Water	8260B	
500-223652-3	W-221011-TS-36	Total/NA	Water	8260B	
500-223652-4	W-221011-TS-37	Total/NA	Water	8260B	
500-223652-5	W-221011-TS-38	Total/NA	Water	8260B	
500-223652-6	Trip Blank	Total/NA	Water	8260B	
MB 500-679829/6	Method Blank	Total/NA	Water	8260B	
LCS 500-679829/4	Lab Control Sample	Total/NA	Water	8260B	
500-223652-5 MS	W-221011-TS-38	Total/NA	Water	8260B	
500-223652-5 MSD	W-221011-TS-38	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 679382

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223652-1	W-221011-TS-34	Total/NA	Water	3510C	
500-223652-2	W-221011-TS-35	Total/NA	Water	3510C	
500-223652-3	W-221011-TS-36	Total/NA	Water	3510C	
500-223652-4	W-221011-TS-37	Total/NA	Water	3510C	
500-223652-5	W-221011-TS-38	Total/NA	Water	3510C	
MB 500-679382/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-679382/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-679382/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 679617

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-679382/1-A	Method Blank	Total/NA	Water	8270D	679382
LCS 500-679382/2-A	Lab Control Sample	Total/NA	Water	8270D	679382
LCSD 500-679382/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	679382

Analysis Batch: 679628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223652-1	W-221011-TS-34	Total/NA	Water	8270D	679382
500-223652-2	W-221011-TS-35	Total/NA	Water	8270D	679382
500-223652-3	W-221011-TS-36	Total/NA	Water	8270D	679382
500-223652-4	W-221011-TS-37	Total/NA	Water	8270D	679382
500-223652-5	W-221011-TS-38	Total/NA	Water	8270D	679382

GC VOA

Analysis Batch: 547115

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223652-1	W-221011-TS-34	Total/NA	Water	RSK-175	
500-223652-2	W-221011-TS-35	Total/NA	Water	RSK-175	
500-223652-3	W-221011-TS-36	Total/NA	Water	RSK-175	
500-223652-4	W-221011-TS-37	Total/NA	Water	RSK-175	
500-223652-5	W-221011-TS-38	Total/NA	Water	RSK-175	
MB 240-547115/33	Method Blank	Total/NA	Water	RSK-175	
LCS 240-547115/34	Lab Control Sample	Total/NA	Water	RSK-175	

GC Semi VOA

Prep Batch: 679903

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223652-1	W-221011-TS-34	Total/NA	Water	8151A	
500-223652-2	W-221011-TS-35	Total/NA	Water	8151A	
500-223652-3	W-221011-TS-36	Total/NA	Water	8151A	
500-223652-4	W-221011-TS-37	Total/NA	Water	8151A	
500-223652-5	W-221011-TS-38	Total/NA	Water	8151A	
MB 500-679903/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-679903/2-A	Lab Control Sample	Total/NA	Water	8151A	
LCSD 500-679903/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	

Analysis Batch: 680687

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223652-1	W-221011-TS-34	Total/NA	Water	8151A	679903
500-223652-2	W-221011-TS-35	Total/NA	Water	8151A	679903
500-223652-3	W-221011-TS-36	Total/NA	Water	8151A	679903
500-223652-4	W-221011-TS-37	Total/NA	Water	8151A	679903
500-223652-5	W-221011-TS-38	Total/NA	Water	8151A	679903

Analysis Batch: 680738

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-679903/1-A	Method Blank	Total/NA	Water	8151A	679903
LCS 500-679903/2-A	Lab Control Sample	Total/NA	Water	8151A	679903
LCSD 500-679903/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	679903

Metals

Prep Batch: 680713

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223652-1	W-221011-TS-34	Dissolved	Water	3005A	
500-223652-1	W-221011-TS-34	Total Recoverable	Water	3005A	
500-223652-2	W-221011-TS-35	Dissolved	Water	3005A	
500-223652-2	W-221011-TS-35	Total Recoverable	Water	3005A	
500-223652-3	W-221011-TS-36	Dissolved	Water	3005A	
500-223652-3	W-221011-TS-36	Total Recoverable	Water	3005A	
500-223652-4	W-221011-TS-37	Dissolved	Water	3005A	
500-223652-4	W-221011-TS-37	Total Recoverable	Water	3005A	
500-223652-5	W-221011-TS-38	Dissolved	Water	3005A	
500-223652-5	W-221011-TS-38	Total Recoverable	Water	3005A	
MB 500-680713/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-680713/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
500-223652-3 MS	W-221011-TS-36	Total Recoverable	Water	3005A	
500-223652-3 MSD	W-221011-TS-36	Total Recoverable	Water	3005A	
500-223652-3 DU	W-221011-TS-36	Total Recoverable	Water	3005A	

Analysis Batch: 681267

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223652-1	W-221011-TS-34	Dissolved	Water	6020A	680713
500-223652-1	W-221011-TS-34	Total Recoverable	Water	6020A	680713
500-223652-2	W-221011-TS-35	Dissolved	Water	6020A	680713
500-223652-2	W-221011-TS-35	Total Recoverable	Water	6020A	680713
500-223652-3	W-221011-TS-36	Dissolved	Water	6020A	680713
500-223652-3	W-221011-TS-36	Total Recoverable	Water	6020A	680713

Metals (Continued)

Analysis Batch: 681267 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223652-4	W-221011-TS-37	Dissolved	Water	6020A	680713
500-223652-4	W-221011-TS-37	Total Recoverable	Water	6020A	680713
500-223652-5	W-221011-TS-38	Dissolved	Water	6020A	680713
500-223652-5	W-221011-TS-38	Total Recoverable	Water	6020A	680713
MB 500-680713/1-A	Method Blank	Total Recoverable	Water	6020A	680713
LCS 500-680713/2-A	Lab Control Sample	Total Recoverable	Water	6020A	680713
500-223652-3 MS	W-221011-TS-36	Total Recoverable	Water	6020A	680713
500-223652-3 MSD	W-221011-TS-36	Total Recoverable	Water	6020A	680713
500-223652-3 DU	W-221011-TS-36	Total Recoverable	Water	6020A	680713

Analysis Batch: 681303

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223652-1	W-221011-TS-34	Total Recoverable	Water	SM 2340B	680713
500-223652-2	W-221011-TS-35	Total Recoverable	Water	SM 2340B	680713
500-223652-3	W-221011-TS-36	Total Recoverable	Water	SM 2340B	680713
500-223652-4	W-221011-TS-37	Total Recoverable	Water	SM 2340B	680713
500-223652-5	W-221011-TS-38	Total Recoverable	Water	SM 2340B	680713

General Chemistry

Analysis Batch: 679346

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223652-1	W-221011-TS-34	Total/NA	Water	300.0	
500-223652-1	W-221011-TS-34	Total/NA	Water	300.0	
500-223652-2	W-221011-TS-35	Total/NA	Water	300.0	
500-223652-3	W-221011-TS-36	Total/NA	Water	300.0	
500-223652-4	W-221011-TS-37	Total/NA	Water	300.0	
500-223652-4	W-221011-TS-37	Total/NA	Water	300.0	
500-223652-5	W-221011-TS-38	Total/NA	Water	300.0	
500-223652-5	W-221011-TS-38	Total/NA	Water	300.0	
MB 500-679346/3	Method Blank	Total/NA	Water	300.0	
LCS 500-679346/4	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 679550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223652-2	W-221011-TS-35	Total/NA	Water	300.0	
MB 500-679550/3	Method Blank	Total/NA	Water	300.0	
LCS 500-679550/4	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 680042

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223652-1	W-221011-TS-34	Total/NA	Water	SM 2320B	
500-223652-2	W-221011-TS-35	Total/NA	Water	SM 2320B	
MB 500-680042/28	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-680042/31	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 680721

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223652-3	W-221011-TS-36	Total/NA	Water	SM 2320B	
500-223652-4	W-221011-TS-37	Total/NA	Water	SM 2320B	
500-223652-5	W-221011-TS-38	Total/NA	Water	SM 2320B	

General Chemistry (Continued)

Analysis Batch: 680721 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-680721/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-680721/4	Lab Control Sample	Total/NA	Water	SM 2320B	
500-223652-3 DU	W-221011-TS-36	Total/NA	Water	SM 2320B	

Analysis Batch: 681230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-223652-1	W-221011-TS-34	Total/NA	Water	9060A	
500-223652-2	W-221011-TS-35	Total/NA	Water	9060A	
500-223652-3	W-221011-TS-36	Total/NA	Water	9060A	
500-223652-4	W-221011-TS-37	Total/NA	Water	9060A	
500-223652-5	W-221011-TS-38	Total/NA	Water	9060A	
MB 500-681230/4	Method Blank	Total/NA	Water	9060A	
LCS 500-681230/5	Lab Control Sample	Total/NA	Water	9060A	
LCSD 500-681230/6	Lab Control Sample Dup	Total/NA	Water	9060A	
500-223652-1 MS	W-221011-TS-34	Total/NA	Water	9060A	
500-223652-1 MSD	W-221011-TS-34	Total/NA	Water	9060A	

Surrogate Summary

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

Job ID: 500-223652-1

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	TOL	BFB	DBFM
Lab Sample ID	Client Sample ID	(75-126)	(75-120)	(72-124)	(75-120)
500-223652-1	W-221011-TS-34	94	97	111	99
500-223652-2	W-221011-TS-35	94	96	111	98
500-223652-3	W-221011-TS-36	97	99	110	100
500-223652-4	W-221011-TS-37	94	98	108	99
500-223652-5	W-221011-TS-38	94	99	108	97
500-223652-5 MS	W-221011-TS-38	90	98	99	98
500-223652-5 MSD	W-221011-TS-38	92	96	100	98
500-223652-6	Trip Blank	89	100	112	98
LCS 500-679829/4	Lab Control Sample	90	98	102	96
MB 500-679829/6	Method Blank	94	99	112	98

Surrogate Legend

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

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		NBZ	FBP	TPHL
Lab Sample ID	Client Sample ID	(36-120)	(34-110)	(40-145)
500-223652-1	W-221011-TS-34	79	100	140
500-223652-2	W-221011-TS-35	75	93	134
500-223652-3	W-221011-TS-36	67	84	129
500-223652-4	W-221011-TS-37	78	87	126
500-223652-5	W-221011-TS-38	69	66	127
LCS 500-679382/2-A	Lab Control Sample	83	89	105
LCSD 500-679382/3-A	Lab Control Sample Dup	92	103	108
MB 500-679382/1-A	Method Blank	77	87	115

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**

		Percent Surrogate Recovery (Acceptance Limits)
		TFE1
Lab Sample ID	Client Sample ID	(60-140)
500-223652-1	W-221011-TS-34	101
500-223652-2	W-221011-TS-35	100
500-223652-3	W-221011-TS-36	105
500-223652-4	W-221011-TS-37	102
500-223652-5	W-221011-TS-38	104
LCS 240-547115/34	Lab Control Sample	103
MB 240-547115/33	Method Blank	106

Surrogate Legend

Surrogate Summary

Client: GHD Services Inc.
Job ID: 500-223652-1
Project/Site: Penta Wood 11222418

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)
500-223652-1	W-221011-TS-34	76
500-223652-2	W-221011-TS-35	80
500-223652-3	W-221011-TS-36	88
500-223652-4	W-221011-TS-37	126
500-223652-5	W-221011-TS-38	50
LCS 500-679903/2-A	Lab Control Sample	90
LCSD 500-679903/3-A	Lab Control Sample Dup	89
MB 500-679903/1-A	Method Blank	84

Surrogate Legend

DCPAA = DCAA

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

Lab Sample ID: MB 500-679829/6
Matrix: Water
Analysis Batch: 679829

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			10/17/22 11:04	1
Toluene	<0.15		0.50	0.15	ug/L			10/17/22 11:04	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/17/22 11:04	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/17/22 11:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 126*		*10/17/22 11:04*	*1*
Toluene-d8 (Surr)	*99*		*75 - 120*		*10/17/22 11:04*	*1*
4-Bromofluorobenzene (Surr)	*112*		*72 - 124*		*10/17/22 11:04*	*1*
Dibromofluoromethane	*98*		*75 - 120*		*10/17/22 11:04*	*1*

Lab Sample ID: LCS 500-679829/4
Matrix: Water
Analysis Batch: 679829

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	43.0		ug/L		86	70 - 120
Toluene	50.0	44.5		ug/L		89	70 - 125
Ethylbenzene	50.0	46.4		ug/L		93	70 - 123
Xylenes, Total	100	95.0		ug/L		95	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*90*		*75 - 126*
Toluene-d8 (Surr)	*98*		*75 - 120*
4-Bromofluorobenzene (Surr)	*102*		*72 - 124*
Dibromofluoromethane	*96*		*75 - 120*

Lab Sample ID: 500-223652-5 MS
Matrix: Water
Analysis Batch: 679829

Client Sample ID: W-221011-TS-38
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.15		50.0	42.8		ug/L		86	70 - 120
Toluene	1.1		50.0	44.8		ug/L		87	70 - 125
Ethylbenzene	1.1		50.0	47.8		ug/L		93	70 - 123
Xylenes, Total	8.0		100	103		ug/L		95	70 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*90*		*75 - 126*
Toluene-d8 (Surr)	*98*		*75 - 120*
4-Bromofluorobenzene (Surr)	*99*		*72 - 124*
Dibromofluoromethane	*98*		*75 - 120*

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

Lab Sample ID: 500-223652-5 MSD
Matrix: Water
Analysis Batch: 679829

Client Sample ID: W-221011-TS-38
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	44.1		ug/L		88	70 - 120	3	20
Toluene	1.1		50.0	44.8		ug/L		87	70 - 125	0	20
Ethylbenzene	1.1		50.0	47.7		ug/L		93	70 - 123	0	20
Xylenes, Total	8.0		100	104		ug/L		96	70 - 125	1	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*92*		*75 - 126*
Toluene-d8 (Surr)	*96*		*75 - 120*
4-Bromofluorobenzene (Surr)	*100*		*72 - 124*
Dibromofluoromethane	*98*		*75 - 120*

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

Lab Sample ID: MB 500-679382/1-A
Matrix: Water
Analysis Batch: 679617

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 679382

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.80	0.25	ug/L		10/13/22 07:59	10/14/22 10:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*77*		*36 - 120*	*10/13/22 07:59*	*10/14/22 10:23*	*1*
2-Fluorobiphenyl (Surr)	*87*		*34 - 110*	*10/13/22 07:59*	*10/14/22 10:23*	*1*
Terphenyl-d14 (Surr)	*115*		*40 - 145*	*10/13/22 07:59*	*10/14/22 10:23*	*1*

Lab Sample ID: LCS 500-679382/2-A
Matrix: Water
Analysis Batch: 679617

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 679382

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Naphthalene			32.0	22.5		ug/L		70	36 - 110		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*83*		*36 - 120*
2-Fluorobiphenyl (Surr)	*89*		*34 - 110*
Terphenyl-d14 (Surr)	*105*		*40 - 145*

Lab Sample ID: LCSD 500-679382/3-A
Matrix: Water
Analysis Batch: 679617

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 679382

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Naphthalene			32.0	29.9	*	ug/L		93	36 - 110	28	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*92*		*36 - 120*
2-Fluorobiphenyl (Surr)	*103*		*34 - 110*

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

Lab Sample ID: LCSD 500-679382/3-A
Matrix: Water
Analysis Batch: 679617

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 679382

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Terphenyl-d14 (Surr)	108		40 - 145

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 240-547115/33
Matrix: Water
Analysis Batch: 547115

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			10/14/22 20:39	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	106		60 - 140		10/14/22 20:39	1

Lab Sample ID: LCS 240-547115/34
Matrix: Water
Analysis Batch: 547115

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Methane			284	295		ug/L		104	80 - 120		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,1,1-Trifluoroethane	103		60 - 140

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 500-679903/1-A
Matrix: Water
Analysis Batch: 680738

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 679903

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14		0.10	0.14	ug/L		10/17/22 09:57	10/21/22 12:05	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	84		25 - 130	10/17/22 09:57	10/21/22 12:05	1

Lab Sample ID: LCS 500-679903/2-A
Matrix: Water
Analysis Batch: 680738

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 679903

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Pentachlorophenol			2.53	2.18		ug/L		86	40 - 122		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCAA	90		25 - 130

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

Lab Sample ID: LCSD 500-679903/3-A
Matrix: Water
Analysis Batch: 680738

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 679903

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Pentachlorophenol			2.53	2.29		ug/L		91	40 - 122	5	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCAA	*89*		*25 - 130*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 500-680713/1-A
Matrix: Water
Analysis Batch: 681267

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 680713

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		10/20/22 16:21	10/21/22 13:16	1
Copper	<0.50		2.0	0.50	ug/L		10/20/22 16:21	10/21/22 13:16	1
Iron	<46.7		100	46.7	ug/L		10/20/22 16:21	10/21/22 13:16	1
Manganese	<0.79		2.5	0.79	ug/L		10/20/22 16:21	10/21/22 13:16	1
Zinc	<6.9		20.0	6.9	ug/L		10/20/22 16:21	10/21/22 13:16	1

Lab Sample ID: LCS 500-680713/2-A
Matrix: Water
Analysis Batch: 681267

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 680713

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Arsenic			100	101.4		ug/L		101	80 - 120		
Copper			250	256.5		ug/L		103	80 - 120		
Iron			1000	989.8		ug/L		99	80 - 120		
Manganese			500	498.9		ug/L		100	80 - 120		
Zinc			500	515.4		ug/L		103	80 - 120		

Lab Sample ID: 500-223652-3 MS
Matrix: Water
Analysis Batch: 681267

Client Sample ID: W-221011-TS-36
Prep Type: Total Recoverable
Prep Batch: 680713

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Arsenic	<0.23		100	100.3		ug/L		100	75 - 125		
Copper	2.4		250	253.7		ug/L		101	75 - 125		
Iron	<46.7		1000	969.7		ug/L		97	75 - 125		
Manganese	<0.79		500	502.9		ug/L		101	75 - 125		
Zinc	<6.9		500	506.6		ug/L		101	75 - 125		

Lab Sample ID: 500-223652-3 MSD
Matrix: Water
Analysis Batch: 681267

Client Sample ID: W-221011-TS-36
Prep Type: Total Recoverable
Prep Batch: 680713

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	<0.23		100	99.28		ug/L		99	75 - 125	1	20
Copper	2.4		250	252.3		ug/L		100	75 - 125	1	20
Iron	<46.7		1000	965.2		ug/L		97	75 - 125	0	20
Manganese	<0.79		500	494.2		ug/L		99	75 - 125	2	20

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

Lab Sample ID: 500-223652-3 MSD
Matrix: Water
Analysis Batch: 681267

Client Sample ID: W-221011-TS-36
Prep Type: Total Recoverable
Prep Batch: 680713

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Zinc	<6.9		500	507.2		ug/L		101	75 - 125	0	20

Lab Sample ID: 500-223652-3 DU
Matrix: Water
Analysis Batch: 681267

Client Sample ID: W-221011-TS-36
Prep Type: Total Recoverable
Prep Batch: 680713

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	<0.23		<0.23		ug/L		NC	20
Copper	2.4		<0.50		ug/L		NC	20
Iron	<46.7		<46.7		ug/L		NC	20
Manganese	<0.79		<0.79		ug/L		NC	20
Zinc	<6.9		<6.9		ug/L		NC	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 500-679346/3
Matrix: Water
Analysis Batch: 679346

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.17		0.20	0.17	mg/L			10/12/22 13:54	1
Nitrate as N	<0.068		0.20	0.068	mg/L			10/12/22 13:54	1
Sulfate	<0.095		0.20	0.095	mg/L			10/12/22 13:54	1

Lab Sample ID: LCS 500-679346/4
Matrix: Water
Analysis Batch: 679346

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	3.00	2.94		mg/L		98	90 - 110
Nitrate as N	2.00	2.11		mg/L		106	90 - 110
Sulfate	5.00	5.15		mg/L		103	90 - 110

Lab Sample ID: MB 500-679550/3
Matrix: Water
Analysis Batch: 679550

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.17		0.20	0.17	mg/L			10/13/22 08:50	1
Nitrate as N	<0.068		0.20	0.068	mg/L			10/13/22 08:50	1

Lab Sample ID: LCS 500-679550/4
Matrix: Water
Analysis Batch: 679550

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	3.00	2.88		mg/L		96	90 - 110
Nitrate as N	2.00	2.03		mg/L		101	90 - 110

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

Lab Sample ID: MB 500-681230/4
Matrix: Water
Analysis Batch: 681230

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 - Duplicates	<0.47		1.0	0.47	mg/L			10/24/22 13:10	1

Lab Sample ID: LCS 500-681230/5
Matrix: Water
Analysis Batch: 681230

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 - Duplicates	10.0	9.71		mg/L		97	86 - 116

Lab Sample ID: LCSD 500-681230/6
Matrix: Water
Analysis Batch: 681230

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 - Duplicates	10.0	9.67		mg/L		97	86 - 116	0	20

Lab Sample ID: 500-223652-1 MS
Matrix: Water
Analysis Batch: 681230

Client Sample ID: W-221011-TS-34
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon - Duplicates	0.72	J	10.0	10.48		mg/L		98	75 - 125

Lab Sample ID: 500-223652-1 MSD
Matrix: Water
Analysis Batch: 681230

Client Sample ID: W-221011-TS-34
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 - Duplicates	0.72	J	10.0	10.36		mg/L		96	75 - 125	1	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-680042/28
Matrix: Water
Analysis Batch: 680042

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			10/17/22 15:48	1

Lab Sample ID: LCS 500-680042/31
Matrix: Water
Analysis Batch: 680042

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	100	108.5		mg/L		108	90 - 110

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: MB 500-680721/3
Matrix: Water
Analysis Batch: 680721

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			10/20/22 10:36	1

Lab Sample ID: LCS 500-680721/4
Matrix: Water
Analysis Batch: 680721

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	100	108.7		mg/L		109	90 - 110

Lab Sample ID: 500-223652-3 DU
Matrix: Water
Analysis Batch: 680721

Client Sample ID: W-221011-TS-36
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: 500-223652-1

Client Sample ID: W-221011-TS-34

Lab Sample ID: 500-223652-1

Date Collected: 10/11/22 09:43

Matrix: Water

Date Received: 10/12/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679829	W1T	EET CHI	10/17/22 12:59
Total/NA	Prep	3510C			679382	TS	EET CHI	10/13/22 07:59
Total/NA	Analysis	8270D		1	679628	JSB	EET CHI	10/14/22 20:14
Total/NA	Analysis	RSK-175		1	547115	JBN	EET CAN	10/15/22 00:21
Total/NA	Prep	8151A			679903	EC	EET CHI	10/17/22 09:57
Total/NA	Analysis	8151A		1	680687	SB	EET CHI	10/20/22 23:07
Dissolved	Prep	3005A			680713	LMB	EET CHI	10/20/22 16:21 - 10/20/22 16:51 [1]
Dissolved	Analysis	6020A		1	681267	FXG	EET CHI	10/21/22 13:26
Total Recoverable	Prep	3005A			680713	LMB	EET CHI	10/20/22 16:21 - 10/20/22 16:51 [1]
Total Recoverable	Analysis	6020A		1	681267	FXG	EET CHI	10/21/22 13:23
Total Recoverable	Prep	3005A			680713	LMB	EET CHI	10/20/22 16:21 - 10/20/22 16:51 [1]
Total Recoverable	Analysis	SM 2340B		1	681303	FXG	EET CHI	10/25/22 15:40
Total/NA	Analysis	300.0		1	679346	RES	EET CHI	10/12/22 14:31
Total/NA	Analysis	300.0		10	679346	RES	EET CHI	10/12/22 20:40
Total/NA	Analysis	9060A		1	681230	BC	EET CHI	10/24/22 20:25
Total/NA	Analysis	SM 2320B		1	680042	SMO	EET CHI	10/17/22 17:00

Client Sample ID: W-221011-TS-35

Lab Sample ID: 500-223652-2

Date Collected: 10/11/22 10:50

Matrix: Water

Date Received: 10/12/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679829	W1T	EET CHI	10/17/22 13:22
Total/NA	Prep	3510C			679382	TS	EET CHI	10/13/22 07:59
Total/NA	Analysis	8270D		1	679628	JSB	EET CHI	10/14/22 20:38
Total/NA	Analysis	RSK-175		1	547115	JBN	EET CAN	10/15/22 00:38
Total/NA	Prep	8151A			679903	EC	EET CHI	10/17/22 09:57
Total/NA	Analysis	8151A		1	680687	SB	EET CHI	10/20/22 23:26
Dissolved	Prep	3005A			680713	LMB	EET CHI	10/20/22 16:21 - 10/20/22 16:51 [1]
Dissolved	Analysis	6020A		1	681267	FXG	EET CHI	10/21/22 13:33
Total Recoverable	Prep	3005A			680713	LMB	EET CHI	10/20/22 16:21 - 10/20/22 16:51 [1]
Total Recoverable	Analysis	6020A		1	681267	FXG	EET CHI	10/21/22 13:29
Total Recoverable	Prep	3005A			680713	LMB	EET CHI	10/20/22 16:21 - 10/20/22 16:51 [1]
Total Recoverable	Analysis	SM 2340B		1	681303	FXG	EET CHI	10/25/22 15:40
Total/NA	Analysis	300.0		5	679550	RES	EET CHI	10/13/22 09:17
Total/NA	Analysis	300.0		2	679346	RES	EET CHI	10/12/22 20:53
Total/NA	Analysis	9060A		1	681230	BC	EET CHI	10/24/22 21:23
Total/NA	Analysis	SM 2320B		1	680042	SMO	EET CHI	10/17/22 17:07

Lab Chronicle

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

Job ID: 500-223652-1

Client Sample ID: W-221011-TS-36

Lab Sample ID: 500-223652-3

Date Collected: 10/11/22 10:33
Matrix: Water
Date Received: 10/12/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679829	W1T	EET CHI	10/17/22 13:46
Total/NA	Prep	3510C			679382	TS	EET CHI	10/13/22 07:59
Total/NA	Analysis	8270D		1	679628	JSB	EET CHI	10/14/22 21:01
Total/NA	Analysis	RSK-175		1	547115	JBN	EET CAN	10/15/22 00:55
Total/NA	Prep	8151A			679903	EC	EET CHI	10/17/22 09:57
Total/NA	Analysis	8151A		1	680687	SB	EET CHI	10/20/22 23:45
Dissolved	Prep	3005A			680713	LMB	EET CHI	10/20/22 16:21 - 10/20/22 16:51 [1]
Dissolved	Analysis	6020A		1	681267	FXG	EET CHI	10/21/22 14:00
Total Recoverable	Prep	3005A			680713	LMB	EET CHI	10/20/22 16:21 - 10/20/22 16:51 [1]
Total Recoverable	Analysis	6020A		1	681267	FXG	EET CHI	10/21/22 13:36
Total Recoverable	Prep	3005A			680713	LMB	EET CHI	10/20/22 16:21 - 10/20/22 16:51 [1]
Total Recoverable	Analysis	SM 2340B		1	681303	FXG	EET CHI	10/25/22 15:40
Total/NA	Analysis	300.0		1	679346	RES	EET CHI	10/12/22 14:59
Total/NA	Analysis	9060A		1	681230	BC	EET CHI	10/24/22 21:36
Total/NA	Analysis	SM 2320B		1	680721	SMO	EET CHI	10/20/22 13:10

Client Sample ID: W-221011-TS-37

Lab Sample ID: 500-223652-4

Date Collected: 10/11/22 11:14
Matrix: Water
Date Received: 10/12/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679829	W1T	EET CHI	10/17/22 14:09
Total/NA	Prep	3510C			679382	TS	EET CHI	10/13/22 07:59
Total/NA	Analysis	8270D		5	679628	JSB	EET CHI	10/14/22 21:25
Total/NA	Analysis	RSK-175		1	547115	JBN	EET CAN	10/15/22 01:12
Total/NA	Prep	8151A			679903	EC	EET CHI	10/17/22 09:57
Total/NA	Analysis	8151A		1	680687	SB	EET CHI	10/21/22 00:23
Dissolved	Prep	3005A			680713	LMB	EET CHI	10/20/22 16:21 - 10/20/22 16:51 [1]
Dissolved	Analysis	6020A		1	681267	FXG	EET CHI	10/21/22 14:07
Total Recoverable	Prep	3005A			680713	LMB	EET CHI	10/20/22 16:21 - 10/20/22 16:51 [1]
Total Recoverable	Analysis	6020A		1	681267	FXG	EET CHI	10/21/22 14:04
Total Recoverable	Prep	3005A			680713	LMB	EET CHI	10/20/22 16:21 - 10/20/22 16:51 [1]
Total Recoverable	Analysis	SM 2340B		1	681303	FXG	EET CHI	10/25/22 15:40
Total/NA	Analysis	300.0		1	679346	RES	EET CHI	10/12/22 15:13
Total/NA	Analysis	300.0		10	679346	RES	EET CHI	10/12/22 21:07
Total/NA	Analysis	9060A		1	681230	BC	EET CHI	10/24/22 21:55
Total/NA	Analysis	SM 2320B		1	680721	SMO	EET CHI	10/20/22 11:47

Client Sample ID: W-221011-TS-38

Lab Sample ID: 500-223652-5

Date Collected: 10/11/22 12:05
Matrix: Water
Date Received: 10/12/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679829	W1T	EET CHI	10/17/22 14:33

Lab Chronicle

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

Job ID: 500-223652-1

Client Sample ID: W-221011-TS-38

Lab Sample ID: 500-223652-5

Date Collected: 10/11/22 12:05

Matrix: Water

Date Received: 10/12/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			679382	TS	EET CHI	10/13/22 07:59
Total/NA	Analysis	8270D		5	679628	JSB	EET CHI	10/14/22 21:49
Total/NA	Analysis	RSK-175		1	547115	JBN	EET CAN	10/15/22 01:29
Total/NA	Prep	8151A			679903	EC	EET CHI	10/17/22 09:57
Total/NA	Analysis	8151A		1	680687	SB	EET CHI	10/21/22 00:41
Dissolved	Prep	3005A			680713	LMB	EET CHI	10/20/22 16:21 - 10/20/22 16:51 [1]
Dissolved	Analysis	6020A		1	681267	FXG	EET CHI	10/21/22 14:14
Total Recoverable	Prep	3005A			680713	LMB	EET CHI	10/20/22 16:21 - 10/20/22 16:51 [1]
Total Recoverable	Analysis	6020A		1	681267	FXG	EET CHI	10/21/22 14:11
Total Recoverable	Prep	3005A			680713	LMB	EET CHI	10/20/22 16:21 - 10/20/22 16:51 [1]
Total Recoverable	Analysis	SM 2340B		1	681303	FXG	EET CHI	10/25/22 15:40
Total/NA	Analysis	300.0		1	679346	RES	EET CHI	10/12/22 15:26
Total/NA	Analysis	300.0		5	679346	RES	EET CHI	10/12/22 21:21
Total/NA	Analysis	9060A		1	681230	BC	EET CHI	10/24/22 22:13
Total/NA	Analysis	SM 2320B		1	680721	SMO	EET CHI	10/20/22 12:37

Client Sample ID: Trip Blank

Lab Sample ID: 500-223652-6

Date Collected: 10/11/22 00:00

Matrix: Water

Date Received: 10/12/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	679829	W1T	EET CHI	10/17/22 11:49

[1] Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Laboratory References:

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

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

Accreditation/Certification Summary

Client: GHD Services Inc.
Job ID: 500-223652-1
Project/Site: Penta Wood 11222418

Laboratory: Eurofins Chicago

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

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-23

Laboratory: Eurofins Canton

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	02-27-23
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23
Kentucky (WW)	State	KY98016	12-31-22
Minnesota	NELAP	039-999-348	12-31-22
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-23
Ohio VAP	State	CL0024	02-27-23
Oregon	NELAP	4062	02-27-23
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
Washington	State	C971	01-12-23
West Virginia DEP	State	210	12-31-22

Chain of Custody Record

524987

eurofins | Environment Testing TestAmerica

Address: _____

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TAL-8210

Client Contact	Project Manager: TIM REE	Site Contact:	Date: 10/11/22	COC No:
Company Name: GHD	Tel/Email: TIM.REE@GHD.COM	Lab Contact:	Carrier: FEDEX	1 of 1 COCs
Address: 900 LONG LAKE RD	Analysis Turnaround Time			Sampler: THAD SCHRING
City/State/Zip: ST PAUL / MN / 55112	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 612 216 7152	TAT if different from Below _____			Walk-in Client:
Fax:	☐ 2 weeks			Lab Sampling:
Project Name: DEAIA WOOD	☐ 1 week			
Site: 11277118	☐ 2 days			PO/ SDG No.: 500-223652
P.O #	☐ 1 day			

500-223652 COC

	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, ANIONS	PCP	BTEX	NAPHTHALENE	DISS METALS	TOTAL METALS	TOC	METHANE	Sample Specific Notes:
1	W-221011-TS-34	10/11	9:43	G	GW	15	N	N	X	X	X	X	X	X	X	X	
2	W-221011-TS-35	↓	10:50	↓	↓	↓	↓	↓	X	X	X	X	X	X	X	X	
3	W-221011-TS-36		10 33						X	X	X	X	X	X	X	X	
4	W-221011-TS-37		11 14						X	X	X	X	X	X	X	X	
5	W-221011-TS-38		12 05				↓	↓	X	X	X	X	X	X	X	X	
6	TRIP BLANK										X						

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.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

2.9+3.1.6.0+5.0, 3.9+2.9

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temp. (°C): Obs'd: _____ Corr'd: _____	Therm ID No.: _____

	Company	Date/Time		Company	Date/Time
Relinquished by: Thad Schring	GHD	10/11 1245	Received by:		
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: Stephanie Hernandez	Company: EETA	Date/Time: 10/12/22 1000

FedEx Express Package US Airbill

FedEx Tracking Number 8142 1800 4354

Form ID No. 0200

500-223652 Waybi

1 From

Date

Sender's Name Phone

Company

Address

Dept./Floor/Suite/Room

City State ZIP

2 Your Internal Billing Reference

3 To

Recipient's Name Phone

Company

Address

We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City State ZIP

Hold Weekday
FedEx location address REQUIRED. **NOT available for** FedEx First Overnight.

Hold Saturday
FedEx location address REQUIRED. **Available ONLY for** FedEx Priority Overnight and FedEx 2Day to select locations.

8142 1800 4354

4 Express Package Service * To most locations.

Packages up to 150 lbs.
For packages over 150 lbs. use the FedEx Express Freight US Airbill.

Next Business Day

- FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

- FedEx 2Day A.M — Second business morning.* Saturday Delivery NOT available.
- FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

FedEx Envelope* FedEx Pak* FedEx Box FedEx Tube Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.

Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Express Saver

No Signature Required — Package may be left without obtaining a signature for delivery.
Direct Signature — Someone at recipient's address may sign for delivery.
Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?

One box must be checked.

No
Yes — As per attached Shipper's Declaration.
Yes — Shipper's Declaration not required.
Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Restrictions apply for dangerous goods — see the current FedEx Service Guide.

Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below.

Obta rec p Acct. No

Sender Acct. No. in Section 1 will be billed. Recipient Third Party Credit Card Cash/Check

Total Packages Total Weight lbs. Credit Card Auth.

†Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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fedex.com 1.800.GoFedEx 1.800.463.3339

48qt

FedEx Express **Package US Airbill**

FedEx Tracking Number **8142 1800 3760**

Form ID No. **0200**

1 From

Date

Sender's Name Phone

Company

Address

Dept./Floor/Suite/Room

City State ZIP

2 Your Internal Billing Reference

3 To

Recipient's Name Phone

Company

Address

We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City State ZIP

Hold Weekday
FedEx location address REQUIRED. **NOT available for** FedEx First Overnight.

Hold Saturday
FedEx location address REQUIRED. **Available ONLY for** FedEx Priority Overnight and FedEx 2Day to select locations.

8142 1800 3760

4 Express Package Service * To most locations.

Packages up to 150 lbs.
For packages over 150 lbs. use the FedEx Express Freight US Airbill.

Next Business Day

- FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Priority Overnight — *Next business morning.* Friday shipments will be* delivered on Monday unless Saturday Delivery is selected.
- FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

- FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.
- FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Express Saver — *Third business day.** Saturday Delivery NOT available.

5 Packaging * *Declared value limit $500.*

FedEx Envelope* FedEx Pak* FedEx Box FedEx Tube Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.

Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Express Saver

No Signature Required — Package may be left without obtaining a signature for delivery.

Direct Signature — Someone at recipient's address may sign for delivery.

Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?

One box must be checked.

No Yes *As per attached* Shipper's Declaration. Yes Shipper's Declaration not required. Dry Ice Dry Ice, 9, UN 1845 ____ x ____ kg

Restrictions apply for dangerous goods — see the current *FedEx Service Guide.* Cargo Aircraft Only

7 Payment ***Bill to:***

Enter FedEx Acct. No. or Credit Card No. below. Obtain rec'p. Acct. No

Sender Acct. No. in Section 1 will be billed. Recipient Third Party Credit Card Cash/Check

Total Packages Total Weight Credit Card Auth.

lbs.

†Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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fedex.com 1.800.GoFedEx 1.800.463.3339

48qt

FedEx Express **Package US Airbill**

FedEx Tracking Number **8142 3193 7016**

Form ID No. **0200**

1 From

Date

Sender's Name _____ Phone _____

Company

Address _____ Dept./Floor/Suite/Room

City _____ State _____ ZIP

2 Your Internal Billing Reference

3 To

Recipient's Name _____ Phone _____

Company

Address _____ Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City _____ State _____ ZIP

☐ Hold Weekday — FedEx location address REQUIRED. **NOT available for** FedEx First Overnight.

☐ Hold Saturday — FedEx location address REQUIRED. **Available ONLY for** FedEx Priority Overnight and FedEx 2Day to select locations.

8142 3193 7016

4 Express Package Service * To most locations.

Packages up to 150 lbs.
For packages over 150 lbs., use the FedEx Express Freight US Airbill.

Next Business Day

☐ FedEx First Overnight
Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

☐ FedEx Priority Overnight
Next business morning.* Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

☐ FedEx Standard Overnight
Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

☐ FedEx 2Day A.M.
Second business morning.* Saturday Delivery NOT available.

☐ FedEx 2Day
Second business afternoon.* Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.

☐ FedEx Express Saver
Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

☐ FedEx Envelope* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☐ Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.

☐ Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Express Saver

☐ No Signature Required
Package may be left without obtaining a signature for delivery.

☐ Direct Signature
Someone at recipient's address may sign for delivery.

☐ Indirect Signature
If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?

One box must be checked.

☐ No ☐ Yes As per attached Shipper's Declaration. ☐ Yes Shipper's Declaration not required. ☐ Dry Ice Dry ice, 9, UN 1845 _____ x _____ kg

Restrictions apply for dangerous goods — see the current FedEx Service Guide. ☐ Cargo Aircraft Only

7 Payment ***Bill to:***

Enter FedEx Acct. No. or Credit Card No. below. Obtain recip Acct. No ☐

☐ Sender Acct. No. in Section 1 will be billed. ☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check

Total Packages _____ Total Weight _____ lbs. Credit Card Auth. _____

†Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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fedex.com 1.800.GoFedEx 1.800.463.3339

48qt

Eurofins Chicago
2417 Bond Street
University Park, IL 60484
Phone: 708-534-5200 Fax: 708-534-5211

2.7/2.7

Chain of Custody Record

eurofins Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Wright, Richard	Carrier Tracking No(s):	COC No: 500-166037.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Richard.Wright@et.eurofinsus.com	State of Origin: Wisconsin	Page: Page 1 of 1
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): State Program - Wisconsin		Job #: 500-223652-1
Address: 180 S. Van Buren Avenue,	Due Date Requested: 10/25/2022			
City: Barberton	TAT Requested (days):			
State, Zip: OH, 44203				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Penta Wood 11222418	Project #: 50013796			
Site:	SSOW#:			

Analysis Requested

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
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)
Other:

RSK

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_175/ (MOD) Methane	Total Number of containers	Special Instructions/Note:
				Preservation Code:					
W-221011-TS-34 (500-223652-1)	10/11/22	09:43 Central		Water			X	3	WI
W-221011-TS-35 (500-223652-2)	10/11/22	10:50 Central		Water			X	3	WI
W-221011-TS-36 (500-223652-3)	10/11/22	10:33 Central		Water			X	3	WI
W-221011-TS-37 (500-223652-4)	10/11/22	11:14 Central		Water			X	3	WI
W-221011-TS-38 (500-223652-5)	10/11/22	12:05 Central		Water			X	3	WI

Note: Since laboratory accreditations are subject to change, Eurofins Chicago places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/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 complicance to Eurofins Chicago.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ______ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) — Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 10/12/22 1410	Company: EETA	Received by: [signature]	Date/Time: 10-13-22 945	Company: EETNC
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

Eurofins - Canton Sample Receipt Form/Narrative **Login # :** _____
Barberton Facility

Client EIA Site Name _____ Cooler unpacked by: Nancy Reyes

Cooler Received on 10-13-22 Opened on 10-13-22

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other

Receipt After-hours: Drop-off Date/Time Storage Location

Eurofins Cooler # TA 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# IR-13 (CF +0.7 °C) Observed Cooler Temp. 2.7 °C Corrected Cooler Temp. 2.7 °C
   IR GUN #IR-15 (CF 0.0°C) Observed Cooler Temp. 2.7 °C Corrected Cooler Temp. 2.7 °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)?		
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# HC286797
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

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

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: _____

WI-NC-099

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-223652-1

Login Number: 223652
List Number: 1
Creator: Scott, Sherri L

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	3.1,5.0,2.9
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	

Appendix C

Residential Well and Onsite Supply Well Water Sample Data Validation

Technical Memorandum

November 29, 2022

To	Tim Ree, GHD		
Copy to	Thor Solberg, GHD		
From	Grant Anderson/kg/5	**Tel**	612-524-6836
Subject	Analytical Results and Reduced Data Validation Residential Water Sampling Event Penta Wood Products Superfund Site Siren, Wisconsin October 2022	**Project no.**	11222418-03-05

1. Introduction

This document details a reduced validation of analytical results for residential water samples collected at the Penta Wood Products Superfund Site during October 2022. Samples were submitted to Eurofins Environment Testing America (EETA) located in University Park, Illinois. A sample collection and analysis summary is presented in Table 1. The validated analytical results are summarized in Table 2. A summary of the analytical methodology is presented in Table 3.

Standard GHD Services, Inc. (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 form, finished report forms, method blank data, recovery data from surrogate spikes, 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:

i. "Quality Assurance Project Plan, Long Term Response Action", Rev. II, February 2005 with addendums

ii. "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", USEPA 540/R-99/008, October 1999

Item ii. will subsequently be referred to as the "Guidelines" in this Memorandum.

2. Sample Holding Time and Preservation

The sample holding time criteria and sample preservation requirements for the analyses are summarized in Table 3. The sample chain of custody document and analytical report were used to determine sample holding times. All samples were prepared and analyzed within the required holding times.

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.

All method blank results were non-detect, indicating that laboratory contamination was not a factor for this investigation.

4. Surrogate Spike Recoveries

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, and xylenes (BTEX), naphthalene, and pentachlorophenol analyses were spiked with the appropriate number of surrogate compounds prior to sample extraction and/or analysis.

Each individual surrogate compound is expected to meet the laboratory control limits with the exception of semi-volatile organic compound (SVOC) analyses. According to the "Guidelines" for SVOC analyses, up to one outlying surrogate in the base/neutral or acid fractions is acceptable as long as the recovery is at least 10 percent.

Surrogate recoveries were assessed against laboratory control limits. All surrogate recoveries met the above criteria.

5. Laboratory Control Sample Analyses

LCS are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects.

LCS were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

The LCS contained all compounds of interest. All LCS recoveries were within the laboratory 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 a known concentration of the analyte of concern and analyzed as MS/MSD samples. The RPD between the MS and MSD is used to assess analytical precision.

MS/MSD analyses were performed as specified in Table 1.

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.

7. Field QA/QC Samples

The field QA/QC consisted of one trip blank sample, one field blank sample and one field duplicate sample set.

Trip Blank Sample Analysis

To evaluate contamination from sample collection, transportation, storage, and analytical activities, two 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 a field blank was submitted for analysis, as identified in Table 1. All results were non-detect for the analytes of interest.

Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, one field duplicate sample set was collected and submitted "blind" to the laboratory, as specified in Table 1. 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 were within acceptable agreement, demonstrating acceptable sampling and analytical precision.

8. Analyte Reporting

The laboratory reported detected results down to the laboratory's method detection limit (MDL) for each analyte. Positive analyte detections less than the RL but greater than the MDL are qualified as estimated (J) in Table 2 unless qualified otherwise in this memorandum. Non-detect results are presented as non-detect at the RL in Table 2.

9. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Table 2 are acceptable without qualification.

Regards,

Grant Anderson
Chemist

Encl.

Table 1

Sample Collection and Analysis Summary
Residential Water Sampling Event
Penta Wood Products Superfund Site
Siren, Wisconsin
October 2022

Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters: BTEX	Naphthalene	Pentachlorophenol	Comments
W-221003-TS-01	RW03	water	10/03/2022	12:00	X	X	X	
W-221003-TS-02	RW03	water	10/03/2022	12:08	X	X	X	Duplicate (TS-01)
W-221003-TS-03	RW04	water	10/03/2022	12:19	X	X	X	
W-221003-TS-04	RW01	water	10/03/2022	13:35	X	X	X	
W-221003-TS-05	RW05	water	10/03/2022	13:50	X	X	X	
W-221003-TS-06	RW02	water	10/03/2022	13:58	X	X	X	
W-221003-TS-07	RW06	water	10/03/2022	14:55	X	X	X	MS/MSD
W-221003-TS-08	RW06 SHOP	water	10/03/2022	15:03	X	X	X	
W-221003-TS-09	RW06 SHOP	water	10/03/2022	15:03	X	X	X	Field Blank
Trip Blank	Lab	water	10/03/2022	00:00	X			Trip Blank

Notes:

MS/MSD - Matrix spike/matrix spike duplicate
BTEX - Benzene, toluene, ethylbenzene, and xylenes (total)

Table 2

Validated Analytical Results Summary
Residential Water Sampling Event
Penta Wood Products Superfund Site
Siren, Wisconsin
October 2022

Location ID:		RW01	RW02	RW03	RW03	RW04	RW05	RW06	RW06 SHOP
Sample Name:		W-221003-TS-04	W-221003-TS-06	W-221003-TS-01	W-221003-TS-02	W-221003-TS-03	W-221003-TS-05	W-221003-TS-07	W-221003-TS-08
Sample Date:		10/03/2022	10/03/2022	10/03/2022	10/03/2022 Duplicate	10/03/2022	10/03/2022	10/03/2022	10/03/2022
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
Ethylbenzene	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
Toluene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.17 J
Xylenes (total)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.33 J
Semivolatile Organic Compounds									
Naphthalene	µg/L	0.81 U	0.76 U	0.77 U	0.77 U	0.74 U	0.79 U	0.75 U	0.84 U
Herbicides									
Pentachlorophenol	µg/L	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.096 U	0.097 U	0.11 U

Notes:
U - Not detected at the asssociated reporting limit
J - Estimated concentration

Table 3

Analytical Methods and Holding Time Criteria
Residential Water Sampling Event
Penta Wood Products Superfund Site
Siren, Wisconsin
October 2022

			Holding Time	
			Collection to Extraction	Collection or Extraction to Analysis
Parameter	**Method**	**Matrix**	**(Days)**	**(Days)**
BTEX	SW 8260B	Water	-	14
Naphthalene	SW 8270D	Water	7	40
Pentachlorophenol	SW 8151A	Water	7	40

Notes:

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

Appendix D

Site Inspection Forms

Continuing Obligations Inspection Form
Penta Wood Products Superfund Site
Siren, Wisconsin

11222418

	Verified	Notes
Verify Site Conditions		
CAMU area fence condition is satisfactory	X	
CAMU signage is present/visible at all fence gates	X	
CAMU surface soil condition is satifactory and does not require erosion/settlement repairs	X	
Perimeter area fence is satisfactory and does not require repairs	X	
Perimeter signage is present/visible	X	
Site access is limited and all perimeter fence locks in working order	X	
NaOH tank condition is satisfactory with no signs of leaks	X	
FeSO4 tank condition is satisfactory with no signs of leaks	X	
Verify situations have not and are not occuring		
Removal of the existing barrier or cover	X	
Replacement with another barrier or cover	X	
Excavating or grading of the land surface	X	
Filling on covered or paved areas	X	
Plowing for agricultural cultivation	X	
Construction or placement of a building or other structure	X	
Change in use or occupancy of the property	X	

Inspected By: TS

Date: 10/3/2022

Well Inspection Form
Penta Wood Products Superfund Site
Siren, Wisconsin

11222418

Monitoring Wells

	Protective Casing	Lock & Cover	J-Plug	Well Casing	Ground Surface	Notes
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	Overgrown Trail
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	No more subsidence than April '22
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	
MW25	X	X	X	X	X	
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	Minor Leak in tubing

Extraction Wells

	Vault & Cover	Well Casings	Ground Surface	Notes
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	
EW12	X	X	X	
EW13	X	X	X	
EW14	X	X	X	

Gas Probes

	Protective Casing	Lock & Cover	Ground Surface	Inner Casing/Tubing	Notes
SG-04DIS	X	X	X		
SG-05DIS	X	X	X		
SG-06DIS	X	X	X		
SG-07DIS	X	X	X		
SG-22	X	X	X		Rusty Lock
SG-23	X	X	X		
SG-24	X	X	X		
SG-25	X	X	X		
SG-26	X	X	X		

Inspected By: Thor Solberg

Date: ########

Additonal Notes: Most wells could use new labels

Trees/veg needs control, encroaching on roads

Particularly along fences (downhill on N end of site)

And in the pine area SE of CAMU