



Semiannual Report

July through December 2021

Penta Wood Products Superfund Site

Wisconsin Department of Natural Resources

February 04, 2022

GHD

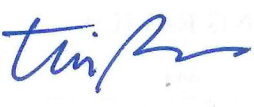
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1. Introduction

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, and the Site plan is shown on Figure 1.2. This Report presents the results of the activities conducted at the Site during July through December 2021 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 2021 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 8, 2021. 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 2021 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 0.0017 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 2021 event, LNAPL was present in monitoring wells MW18, MW19, MW20 and MW29 at measurable thicknesses. LNAPL was present in extraction wells EW03S, EW05S, EW06S, EW07S, EW10S, EW12S, and EW14S with casings screened in the unconfined (upper) aquifer. The general location of LNAPL is consistent with recent monitoring. LNAPL was not detected at any wells in the semiconfined (lower) aquifer during the October 2021 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 0.007 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 11 through 14, 2021 and consisted of collecting groundwater samples from twenty-one (21) monitoring wells (MW1, MW2, MW3, MW4, MW5, MW6S, MW10, MW10S, MW12, MW13, MW14, MW16, MW17, MW21, MW22, MW23, MW25, MW28, MW30, MW31, and MW32) and three (3) extraction wells (EW11D, EW11S, and EW13S). Wells MW20 and MW29 were not sampled due to the presence of LNAPL in the wells. 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 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 metals included arsenic, copper, iron, manganese, and zinc. The 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 TestAmerica (TestAmerica) 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 are included in Appendix A.

2.2.1 Naphthalene and BTEX analytical data

The October 2021 naphthalene and BTEX analytical data are summarized in Table 2.4. Naphthalene and BTEX was not detected at concentrations that exceeded the ESs.

2.2.2 PCP analytical data

The October 2021 PCP analytical data are summarized in Table 2.4. PCP was detected in seven (7) wells (MW5, MW10, MW10S, MW12, MW28, MW30, and EW13S) at concentrations that exceeded the ES (1.0 µg/L). Figure 2.4 shows the PCP concentrations in the unconfined (upper) aquifer wells. Figure 2.5 shows the PCP concentrations in the semiconfined (lower) aquifer wells.

Consistent with monitoring data since prior to shutdown of the remediation system in 2015, elevated PCP concentrations (i.e., greater than 1,000 µg/L) are limited to the immediate vicinity of the LNAPL area in the unconfined and semiconfined aquifers, which indicates the plume has remained stable.

2.2.3 Dissolved arsenic analytical data

The October 2021 dissolved arsenic analytical data are summarized in Table 2.4. Arsenic was not detected at concentrations that exceeded the ES (10 µg/L). Figure 2.6 shows the arsenic concentrations in the unconfined (upper) aquifer wells. Figure 2.7 shows the arsenic concentrations in the semiconfined (lower) aquifer wells.

Consistent with monitoring data since prior to shutdown of the remediation system in 2015, arsenic concentrations (i.e., greater than 1 µg/L) 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 dissolved metals analytical data

The October 2021 dissolved metals analytical data are summarized in Table 2.4. Zinc and copper were not detected at concentrations that exceeded the ESs.

Iron was detected in eight (8) wells at concentrations exceeding the ES (300 µg/L). Manganese was detected in seven (7) wells at concentrations exceeding the ES (50 µg/L). 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 2021, water samples were collected from seven 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 and is currently only used as a supply for sampling equipment decontamination water. The pump within the supply well was not functioning and a sample could not be collected during October 2021.

The residential well and onsite water supply well locations are shown on Figure 3.1. Residential well water samples were collected on October 13, 2021 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. These results are 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 2021. 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 land owners 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
 - 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 8, 2021 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/vegetation were in good condition during this monitoring period and did not require repairs; erosion, subsidence, and ponding water were not observed on the CAMU.

Site well inspections were completed on October 8, 2021 and a copy of the well inspection form is included in Appendix D.

6. Conclusions and Recommendations

Based on the July through December 2021 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
- PCP concentration contours indicate that the plume did not migrate following shutdown of the remediation system in 2015 and indicate overall plume stability.
- Dissolved PCP concentrations greater than 1,000 µg/L are limited to the immediate vicinity of the LNAPL area
- 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 would not likely occur beyond the property boundaries
- The current monitoring well network is sufficient to monitor plume conditions

The above lines of evidence support selection of Monitored Natural Attenuation (MNA) as an effective groundwater remedy at this Site. As compared to the currently selected remedial alternative of active remediation, natural attenuation will achieve performance goals within a reasonable (i.e., comparable) period of time.

Following USEPA's review of the Semiannual Report and Alternate Remedy Recommendation (GHD; March 17, 2020), USEPA, WDNR, and GHD have held discussions regarding potential future remedial actions at the Site. USEPA has requested that a remedial alternatives evaluation be conducted to assess potential future remedial actions. USEPA provided funding to WDNR to conduct the remedial alternatives evaluation, and WDNR and GHD are currently conducting the evaluation.

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
- Annual groundwater sampling during April
- Semiannual residential well sampling during April and October
- Annual report preparation and submittal in January

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

- Conduct groundwater sampling on an annual basis rather than semiannual basis

- Submit reports on an annual basis rather than rather than semiannual basis
- Analyze groundwater samples collected from monitoring and extraction wells for total metals in addition to dissolved metals during future semiannual events
- Exclude groundwater sampling and analysis at the onsite water supply well (DW01) during future semiannual events since the well no longer provides a water supply to the building and the pump is no longer functioning

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

**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	

**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	

**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 quarterly basis in January, April, July, and October in 2020, will change to semiannual basis in April and October 2021.
- 2 Groundwater sampling approved to be conducted on a semiannual basis in April and October; groundwater sampling proposed to be conducted on an annual basis in April
- 3 Groundwater sample laboratory analyses include the following parameters: Pentachlorophenol (PCP); naphthalene; benzene, toluene, ethylbenzene, and xylenes (BTEX); natural attenuation parameters (alkalinity, chloride, hardness, nitrate, sulfate, total organic carbon, and methane); and select dissolved and total metals (arsenic, copper, iron, manganese, and zinc). Field parameter measurements include the following parameters: pH, temperature, specific conductance, dissolved oxygen (DO), oxidation-reduction potential (ORP), iron, and sulfide.
- 4 Groundwater samples will not be collected if LNAPL is present in the well casing.

**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	

**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 quarterly basis in January, April, July, and October in 2020, will change to semiannual basis in April and October 2021.
- 2 Groundwater sampling conducted on a semiannual basis in April and October
- 3 Groundwater sample laboratory analyses include the following parameters: Pentachlorophenol (PCP); naphthalene; benzene, toluene, ethylbenzene, and xylenes (BTEX); natural attenuation parameters (alkalinity, chloride, hardness, nitrate, sulfate, total organic carbon, and methane); and select dissolved and total metals (arsenic, copper, iron, manganese, and zinc). Field parameter measurements include the following parameters: pH, temperature, specific conductance, dissolved oxygen (DO), oxidation-reduction potential (ORP), iron, and sulfide.
- 4 Groundwater samples will not be collected if LNAPL is present in the well casing.

**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	10/8/2021	1129.44	144.58	ND	984.86	NA	0.00
MW4	10/8/2021	1087.72	103.37	ND	984.35	NA	0.00
MW6	10/8/2021	1109.11	124.40	ND	984.71	NA	0.00
MW7	10/8/2021	1096.25	111.75	ND	984.50	NA	0.00
MW8	10/8/2021	1091.13	106.42	ND	984.71	NA	0.00
MW10	10/8/2021	1089.01	104.25	ND	984.76	NA	0.00
MW11	10/8/2021	1085.48	101.38	ND	984.10	NA	0.00
MW12	10/8/2021	1080.91	96.27	ND	984.64	NA	0.00
MW14	10/8/2021	1078.25	93.91	ND	984.34	NA	0.00
MW15	10/8/2021	1127.09	142.04	ND	985.05	NA	0.00
MW17	10/8/2021	1084.43	99.77	ND	984.66	NA	0.00
MW23	10/8/2021	1017.16	32.71	ND	984.45	NA	0.00
EW02D	10/8/2021	1083	98.08	ND	984.92	NA	0.00
EW03D	10/8/2021	1089.48	104.53	ND	984.95	NA	0.00
EW04D	10/8/2021	1101.09	116.07	ND	985.02	NA	0.00
EW05D	10/8/2021	1076.99	92.00	ND	984.99	NA	0.00
EW06D	10/8/2021	1083.39	98.30	ND	985.09	NA	0.00
EW07D	10/8/2021	1087.52	102.34	ND	985.18	NA	0.00
EW10D	10/8/2021	1088.55	103.55	ND	985.00	NA	0.00
EW11D	10/8/2021	1048.19	63.10	ND	985.09	NA	0.00
EW12D	10/8/2021	1086.41	101.38	ND	985.03	NA	0.00
EW13D	10/8/2021	1092.88	107.80	ND	985.08	NA	0.00
EW14D	10/8/2021	1098.28	113.29	ND	984.99	NA	0.00
Unconfined Aquifer (Upper)							
MW1	10/8/2021	1072.27	87.04	ND	985.23	NA	0.00
MW2	10/8/2021	1065.03	79.80	ND	985.23	NA	0.00
MW5	10/8/2021	1071.42	86.52	ND	984.90	NA	0.00
MW6S	10/8/2021	1108.35	123.11	ND	985.24	NA	0.00
MW9	10/8/2021	1019.58	34.34	ND	985.24	NA	0.00
MW10S	10/8/2021	1090.12	105.14	ND	984.98	NA	0.00
MW13	10/8/2021	1005.81	20.69	ND	985.12	NA	0.00
MW16	10/8/2021	1081.95	96.78	ND	985.17	NA	0.00
MW18	10/8/2021	1071.96	87.36	86.77	984.60	985.19	0.59
MW19	10/8/2021	1087.96	103.59	103.06	984.37	984.90	0.53
MW20	10/8/2021	1098.16	114.37	113.60	983.79	984.56	0.77
MW21	10/8/2021	1095.82	110.52	ND	985.30	NA	0.00
MW22	10/8/2021	1084.65	99.44	ND	985.21	NA	0.00
MW24	10/8/2021	1084.04	99.31	ND	984.73	NA	0.00
MW25	10/8/2021	1095.25	110.31	ND	984.94	NA	0.00

**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							
MW26	10/8/2021	1086.87	103.22	ND	983.65	NA	0.00
MW27	10/8/2021	1110.96	125.62	ND	985.34	NA	0.00
MW28	10/8/2021	1083.52	98.21	ND	985.31	NA	0.00
MW29	10/8/2021	1070.24	86.30	84.99	983.94	985.25	1.31
MW30	10/8/2021	1048.98	63.78	ND	985.20	NA	0.00
MW31	10/8/2021	1076.34	91.16	ND	985.18	NA	0.00
MW32	10/8/2021	1021.02	35.95	ND	985.07	NA	0.00
EW02S	10/8/2021	1082.25	97.09	ND	985.16	NA	0.00
EW03S	10/8/2021	1088.66	104.68	103.59	983.98	985.07	1.09
EW04S	10/8/2021	1101.01	115.85	ND	985.16	NA	0.00
EW05S	10/8/2021	1077.04	92.23	91.89	984.81	985.15	0.34
EW06S	10/8/2021	1083.61	102.12	98.50	981.49	985.11	3.62
EW07S	10/8/2021	1087.49	103.02	102.35	984.47	985.14	0.67
EW10S	10/8/2021	1088.72	108.57	103.61	980.15	985.11	4.96
EW11S	10/8/2021	1047.23	62.07	ND	985.16	NA	0.00
EW12S	10/8/2021	1086.31	105.30	101.21	981.01	985.10	4.09
EW13S	10/8/2021	1092.88	107.72	ND	985.16	NA	0.00
EW14S	10/8/2021	1098.32	113.92	113.40	984.40	984.92	0.52

Notes:

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

Table 2.3

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

Location	Date	Sample Identification	Time	Purge Volume (gallons)	pH	Temperature (°C)	Specific	Turbidity (NTU)	Dissolved	ORP (mV)	Total Iron (mg/L)	Total Sulfide (mg/L)
							Conductance (µS)		Oxygen (mg/L)			
MW21	10/11/2021	W-211011-RA-01	11:44	0.0	9.09	11.75	378	0	6.46	245		
	10/11/2021	Sample Time: 12:12	11:49	0.1	8.56	11.65	374	0	6.12	240		
	10/11/2021	Duplicate: W-211011-RA-02	11:53	0.2	8.24	12.18	365	0	6.8	232		
	10/11/2021		12:00	0.2	7.94	12.66	364	0	6.29	235		
	10/11/2021		12:04	0.3	7.74	12.93	366	0.4	6.32	242		
	10/11/2021		12:07	0.4	7.72	12.81	368	0	6.4	246		
	10/11/2021		12:12	0.5	7.71	12.8	367	0	6.37	245	ND	ND
MW1	10/11/2021	W-211011-RA-03	12:43	0.0	7.64	10.47	270	9.7	6.74	287		
	10/11/2021	Sample Time: 12:59	12:48	0.1	7.53	10.37	266	4.7	7.32	287		
	10/11/2021	12:53	0.3	7.57	10.31	265	4.2	6.78	273			
	10/11/2021	12:59	0.4	7.57	10.29	266	2.3	6.98	266	0.5	ND	
MW30	10/11/2021	W-211011-RA-04	13:39	0.0	7.00	10.64	292	145	0	11		
	10/11/2021	Sample Time: 13:54	13:44	0.1	6.94	10.63	292	76.3	0	29		
	10/11/2021	13:49	0.3	6.92	10.61	292	74.8	0	32			
	10/11/2021	13:54	0.4	6.91	10.57	292	75.2	0	34	2	ND	
MW32	10/12/2021	W-211012-RA-06	10:35	0.0	5.47	10.37	92	133	11.33	319		
	10/12/2021	Sample Time: 10:53	10:40	0.1	5.51	10	83	138	10.8	322		
	10/12/2021	10:45	0.2	5.52	9.85	82	178	10.61	334			
	10/12/2021	10:50	0.2	5.49	9.81	82	167	10.45	340			
	10/12/2021	10:53	0.3	5.46	9.65	81	161	10.33	341	0.7	ND	
MW13	10/12/2021	W-211012-RA-07	11:17	0.0	5.55	12.02	129	12.5	4.04	376		
	10/12/2021	Sample Time: 11:27	11:22	0.1	5.56	12.06	131	0	3.94	378		
	10/12/2021	11:27	0.2	5.57	12.08	131	0	3.85	378	6.5	ND	

Table 2.3

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

Location	Date	Sample Identification	Time	Purge Volume	pH	Temperature	Specific	Turbidity	Dissolved	ORP	Total Iron	Total Sulfide
				(gallons)		(°C)	Conductance		Oxygen			
							(µS)	(NTU)	(mg/L)	(mV)	(mg/L)	(mg/L)
MW31	10/12/2021	W-211012-RA-08	11:50	0.0	6.01	11.37	301	0	9.91	378		
	10/12/2021	Sample Time: 12:39	11:56	0.1	6.06	11.47	302	0	8.18	376		
	10/12/2021		12:01	0.3	6.09	11.39	303	0	7.99	370		
	10/12/2021		12:05	0.4	6.13	11.4	303	0	7.91	360		
	10/12/2021		12:09	0.5	6.13	11.4	304	0	7.9	349		
	10/12/2021		12:13	0.7	6.15	11.32	304	0	7.93	330		
	10/12/2021		12:18	0.8	6.17	0	0	0	0	0		
	10/12/2021		12:25	0.9	6.27	11.85	298	0	9.6	331		
	10/12/2021		12:30	1.1	6.22	11.36	301	0	8.14	289		
	10/12/2021		12:35	1.2	6.21	11.53	302	0	7.71	276		
	10/12/2021		12:39	1.3	6.21	11.6	302	0	7.71	279	2	ND
EW11D	10/12/2021	W-211012-RA-09	13:09	0.0	6.42	11.54	185	73.2	0	-121		
	10/12/2021	Sample Time: 13:26	13:14	0.1	6.48	12.12	193	110	0	-137		
	10/12/2021		13:19	0.2	6.52	12.62	208	117	0	-148		
	10/12/2021		13:24	0.2	6.55	12.78	217	119	0	-155		
	10/12/2021		13:26	0.3	6.56	12.78	218	123	0	-156	4	ND
EW11S	10/12/2021	W-211012-RA-10	13:43	0.0	6.11	9.89	292	0	0	109		
	10/12/2021	Sample Time: 13:52	13:48	0.1	6.14	9.87	291	0	0	114		
	10/12/2021		13:52	0.2	6.13	9.87	291	0	0	118	1.5	ND
MW23	10/13/2021	W-211013-RA-11	9:50	0.0	7.13	9.46	569	0	6.06	340		
	10/13/2021	Sample Time: 10:00	9:55	0.1	7.20	9.5	569	0	5.81	339	0.4	ND
RW05	10/13/2021	W-211013-RA-100	9:55	0.0	8.98	13.75	397	0	0	0		
	10/13/2021	Sample Time: 9:55	10:00	0.1	7.23	9.5	569	0	5.79	339	0.2	0
MW17	10/13/2021	W-211013-RA-12	10:19	0.0	7.25	11.27	589	0	10.38	335		
	10/13/2021	Sample Time: 10:34	10:24	0.1	7.26	12.2	603	0	10.36	334		
	10/13/2021		10:29	0.2	7.27	12.3	610	0	10.27	331		
	10/13/2021		10:34	0.3	7.29	12.29	612	0	10.19	328	ND	ND
RW01	10/13/2021	W-211013-RA-101 Sample Time: 10:45	10:45	0.0	7.23	13.1	764	0	0	0	NM	NM

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)
RW02	10/13/2021	W-211013-RA-102 Sample Time: 10:45 Duplicate: W-211013-RA-103	10:45	0.0	7.82	12.47	343	0	0	0	NM	NM
MW25	10/13/2021	W-211013-RA-13 Sample Time: 11:09	10:49	0.0	6.81	11.85	734	0	6.36	323		
	10/13/2021		10:54	0.1	6.71	13.02	730	0	6.9	302		
	10/13/2021		10:59	0.3	6.64	13.36	730	0.4	7.09	290		
	10/13/2021		11:04	0.4	6.58	13.46	728	0	7.16	285		
	10/13/2021		11:09	0.5	6.58	13.46	728	0	7.23	284	ND	ND
RW03	10/13/2021	W-211013-RA-104 Sample Time: 11:15	11:15	0.0	7.94	13.34	239	0	0	0	NM	NM
MW3	10/13/2021	W-211013-RA-14 Sample Time: 11:56	11:26	0.0	6.95	10.82	866	1.1	0	266	1.2	ND
RW04	10/13/2021	W-211013-RA-106 Sample Time: 11:30	11:30	0.0	7.63	13.31	594	0	0	0		
	10/13/2021		11:31	0.1	6.99	12.66	879	2.5	0	118		
	10/13/2021		11:36	0.3	6.97	13.11	891	0.4	0	-23		
	10/13/2021		11:41	0.4	6.93	13.36	899	0	0	-67		
	10/13/2021		11:46	0.5	6.91	13.46	898	0	0	-80		
	10/13/2021		11:51	0.7	6.90	13.56	897	0	0	-87		
	10/13/2021		11:56	0.8	6.89	13.55	893	0	0	-89	NM	NM
RW06	10/13/2021	W-211013-RA-107 Sample Time: 12:00	12:00	0.0	8.15	14.56	221	0	0	0	NM	NM
RW06 shop	10/13/2021	W-211013-RA-108 Sample Time: 12:10	12:10	0.0	7.39	13.1	302	0	0	0	NM	NM
MW4	10/13/2021	W-211013-RA-15 Sample Time: 12:39	12:14	0.0	7.68	10.18	386	0	0	-79		
	10/13/2021		12:19	0.1	7.90	10.92	377	0	0	-142		
	10/13/2021		12:24	0.3	7.99	11.05	377	0	0	-157		
	10/13/2021		12:29	0.4	8.09	11.11	368	0	0	-176		
	10/13/2021		12:34	0.5	8.10	11.12	369	0	0	-178		
	10/13/2021		12:39	0.7	8.13	11.16	369	0	0	-184	0.5	0.1

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	Turbidity (NTU)	Dissolved	ORP (mV)	Total Iron (mg/L)	Total Sulfide (mg/L)
							Conductance (µS)		Oxygen (mg/L)			
MW28	10/13/2021	W-211013-RA-16	12:56	0.0	7.85	11.12	355	0	10.29	-120		
	10/13/2021	Sample Time: 13:46	13:01	0.1	7.82	11.56	358	0	9.47	-163		
	10/13/2021		13:06	0.2	7.81	11.79	360	0	9.69	-182		
	10/13/2021		13:11	0.3	7.76	12.67	366	0	10.05	-205		
	10/13/2021		13:16	0.4	7.72	14.35	366	0	10.29	-230		
	10/13/2021		13:21	0.5	7.68	14.88	364	0	10.12	-243		
	10/13/2021		13:26	0.6	7.66	15.14	364	0	10.23	-256		
	10/13/2021		13:31	0.7	7.65	15.35	364	0	10.17	-266		
	10/13/2021		13:36	0.8	7.63	15.51	365	0	10.25	-275		
	10/13/2021		13:41	1.0	7.62	15.51	362	0	9.91	-281		
	10/13/2021		13:46	1.1	7.61	15.27	363	0	10.33	-282	ND	ND
MW16	10/14/2021	W-211014-RA-17	8:59	0.0	7.06	13.91	217	0	10.64	359		
	10/14/2021	Sample Time: 9:09	9:04	0.1	6.95	14	217	0	10.39	359		
	10/14/2021		9:09	0.2	6.87	14.04	218	0	10.22	358	0.5	ND
MW5	10/14/2021	W-211014-RA-20	9:15	0.0	0.00	0	0	0	0	0	2	ND
		Sample Time: 10:10 Duplicate: W-211014-RA-21										
MW12	10/14/2021	W-211014-RA-18 MS/MSD	9:20	0.0	6.94	12.25	334	0	6.99	349		
	10/14/2021	Sample Time: 9:35	9:25	0.1	6.94	11.58	391	0	0	343		
	10/14/2021		9:30	0.2	6.96	11.57	396	0	0	335		
	10/14/2021		9:35	0.3	6.99	11.55	398	0	0	327		
	10/14/2021		9:35	0.4	6.43	11.45	764	30.7	0	-84		
	10/14/2021		10:00	0.5	6.75	11.47	752	23.5	0	-81	ND	ND
MW10D	10/14/2021	W-211014-RA-19	10:04	0.0	7.17	11.49	359	0	0	-48		
	10/14/2021	Sample Time: 10:24	10:05	0.1	6.75	11.47	753	23.8	0	-81		
	10/14/2021		10:09	0.2	7.14	12.58	358	21	0	-114		
	10/14/2021		10:10	0.3	6.75	11.47	753	23.5	0	-81		
	10/14/2021		10:14	0.5	7.16	13.02	358	11.9	0	-129		
	10/14/2021		10:19	0.6	7.18	13.12	358	10.8	0	-136	2	ND
MW2	10/14/2021	W-211014-RA-23	10:22	0.0	6.83	10.33	186	319	0	-13		
	10/14/2021	Sample Time: 10:22	10:24	0.1	7.20	12.99	359	12.3	0	-135	0.5	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	Turbidity (NTU)	Dissolved	ORP (mV)	Total Iron (mg/L)	Total Sulfide (mg/L)
							Conductance (µS)		Oxygen (mg/L)			
MW10S	10/14/2021	W-211014-RA-26	10:37	0.0	6.10	13.42	812	0	0	36		
	10/14/2021	Sample Time: 10:47	10:42	0.1	5.99	14.21	816	0	0	32		
	10/14/2021		10:47	0.2	5.94	14.17	822	0	0	32	2.5	ND
MW6S	10/14/2021	W-211014-RA-27	11:15	0.0	5.96	14.99	625	0	3.55	283		
	10/14/2021	Sample Time: 11:45	11:20	0.1	5.98	15.63	621	6.9	2.46	313		
	10/14/2021		11:25	0.2	5.97	15.82	622	0	2.17	333		
	10/14/2021		11:30	0.3	5.97	15.62	623	0	3.71	349		
	10/14/2021		11:35	0.4	5.94	15.23	624	0	2.66	375		
	10/14/2021		11:40	0.5	5.93	15.86	625	0	1.93	370		
	10/14/2021		11:45	0.6	5.94	15.92	620	0	0.55	366	0.2	ND
MW22	10/14/2021	W-211014-RA-24	11:50	0.0	6.99	9.79	183	225	0	0	0.5	ND
		Sample Time: 11:50										
MW14	10/14/2021	W-211014-RA-29	12:27	0.0	6.82	10.66	325	0	3.69	306		
	10/14/2021	Sample Time: 12:52	12:32	0.1	7.09	11.05	328	0	3.52	295		
	10/14/2021	Duplicate: W-211014-RA-30	12:37	0.2	7.31	11.2	329	0	3.47	287		
	10/14/2021		12:42	0.3	7.47	11.28	331	0	3.35	279		
	10/14/2021		12:47	0.4	7.49	11.3	331	0	3.55	278		
	10/14/2021		12:52	0.5	7.49	11.3	331	0	3.5	278	NM	NM

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 MW20 and MW29 were not sampled due to the presence of LNAPL

Table 2.4

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

Sample Location	Sample Identification	ES ¹ PAL ² Sample Date	Hardness, carbonate mg/L	Chloride ³ mg/L	Nitrate (as N) mg/L	Sulfate ³ mg/L	TOC averages mg/L	Alkalinity, total (as CaCO3) mg/L	Methane (dissolved) ug/L	Arsenic (dissolved) ug/L	Copper (dissolved) ug/L	Iron (dissolved) ug/L	Manganese (dissolved) ug/L	Zinc (dissolved) ug/L	Pentachlorophenol ug/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L
Semiconfined Aquifer (Lower)																				
EW11D	W-211012-RA-09	10/12/2021	90.8	3.6	1.6	6.1	6.8	83.7	550	0.27 J	1.9 J	23500	692	15.6 J	0.60	0.82 U	0.50 U	0.50 U	0.50 U	1.0 U
MW3	W-211013-RA-14	10/13/2021	380	50.6	1.1	12.5	0.73 J	410	49	0.43 J	1.0 J	1660	25.4	20.0 U	0.096 U	0.74 U	0.50 U	0.50 U	0.50 U	1.0 U
MW4	W-211013-RA-15	10/13/2021	148	54.8	0.17 J	15.0	1.0 U	80.7	20	1.2	2.0 U	62.8 J	38.4	20.0 U	0.11 U	0.80 U	0.50 U	0.50 U	0.50 U	1.0 U
MW10	W-211014-RA-19	10/14/2021	156	23.7	0.20 U	4.8	11.8	139	49	0.85 J	4.7	1280	569	20.0 U	660	1.2	0.50 U	0.36 J	0.34 J	2.6
MW12	W-211014-RA-18	10/14/2021	189	8.4	0.30	15.2	12.3	109	0.20 J	0.75 J	1.7 J	100 U	238	20.0 U	1200	2.6	0.50 U	0.48 J	0.23 J	3.1
MW14	W-211014-RA-29	10/14/2021	152	23.4	4.0	6.2	1.0 U	123	1.0 U	1.2	0.50 J	100 U	2.9	20.0 U	0.096 U	0.78 U	0.50 U	0.50 U	0.50 U	1.0 U
MW14 (Duplicate)	W-211014-RA-30	10/14/2021	148	21.3	1.4	12.4	1.0 U	128	1.0 U	1.2	0.64 J	100 U	3.0	20.0 U	0.096 U	0.82 U	0.50 U	0.50 U	0.50 U	1.0 U
MW17	W-211013-RA-12	10/13/2021	294	7.4	1.4 H	108	1.0 U	196	1.0 U	0.87 J	1.0 J	100 U	1.2 J	20.0 U	0.095 U	0.76 U	0.50 U	0.50 U	0.50 U	1.0 U
MW23	W-211013-RA-11	10/13/2021	249	61.0	1.4 H	5.4	1.0 U	195	1.0 U	0.75 J	2.0 U	100 U	2.5 U	20.0 U	0.095 U	0.75 U	0.50 U	0.50 U	0.50 U	1.0 U
Unconfined Aquifer (Upper)																				
EW11S	W-211012-RA-10	10/12/2021	128	2.8	6.4	15.5	1.5	94.7	0.30 J	1.0 U	15.0	49.7 J	6.1	20.0 U	0.18	0.77 U	0.50 U	0.50 U	0.50 U	1.0 U
EW13S	W-211014-RA-28	10/14/2021	305	35.4	0.20 U	12.6	57.1	290	4.1	7.7	33.3	25400	3340	12.8 J	9400	21	0.50 U	0.93	0.84	18
MW1	W-211011-RA-03	10/11/2021	113	11.4	2.9	5.4	0.50 J	93.6	1.0 U	0.52 J	52.6	100 U	2.5 U	20.0 U	0.10 U	0.81 U	0.50 U	0.50 U	0.50 U	1.0 U
MW2	W-211014-RA-23	10/14/2021	92.7	0.35	0.31	1.7	0.53 J	86.0	1.0 U	1.0 U	2.3	398	13.9	17.7 J	0.12 U	0.77 U	0.50 U	0.50 U	0.50 U	1.0 U
MW5	W-211014-RA-20	10/14/2021	309	24.8	0.20 U	21.4	54.6	282	9.5	0.98 J	1.8 J	12900	7970	20.0 U	2800	38	0.50 U	1.0	0.89	10
MW5 (Duplicate)	W-211014-RA-21	10/14/2021	310	25.4	0.068 J	21.8	55.2	286	8.3	0.87 J	1.6 J	12900	8130	20.0 U	6100	36	0.50 U	0.95	0.89	10
MW6S	W-211014-RA-27	10/14/2021	297	17.2	7.2	12.2	2.8	282	1.0 U	0.35 J	3.5	100 U	2.9	20.0 U	1.1 U	0.82 U	0.50 U	0.50 U	0.50 U	1.0 U
MW10S	W-211014-RA-26	10/14/2021	402	52.3	0.085 J	37.6	61.5	310	0.22 J	0.94 J	3.4	1510	6430	20.0 U	3100	17	0.50 U	0.81	0.16 J	11
MW13	W-211012-RA-07	10/12/2021	55.9	0.51	0.30	2.5	1.9	66.6	1.0 U	0.23 J	6.7	100 U	2.1 J	20.0 U	0.30	0.79 U	0.50 U	0.50 U	0.50 U	1.0 U
MW16	W-211014-RA-17	10/14/2021	77.4	0.63	0.48	4.3	1.0 U	106	1.0 U	0.37 J	1.9 J	100 U	2.5 U	20.0 U	0.095 U	0.83 U	0.50 U	0.50 U	0.50 U	1.0 U
MW21	W-211011-RA-01	10/11/2021	76.6	60.4	2.2	5.3	0.58 J	62.3	1.0 U	0.43 J	2.1	100 U	4.2	20.0 U	0.095 U	0.75 U	0.50 U	0.50 U	0.50 U	1.0 U
MW21 (Duplicate)	W-211011-RA-02	10/11/2021	76.9	59.8	2.2	5.4	0.55 J	63.8	1.0 U	0.41 J	1.8 J	100 U	4.1	20.0 U	0.096 U	0.82 U	0.50 U	0.50 U	0.50 U	1.0 U

Table 2.4

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

Sample Location	Sample Identification	Sample Date	ES ¹ PAL ²	Hardness, carbonate mg/L	Chloride ³ mg/L	Nitrate (as N) mg/L	Sulfate ³ mg/L	TOC averages mg/L	Alkalinity, total (as CaCO3) mg/L	Methane (dissolved) ug/L	Arsenic (dissolved) ug/L	Copper (dissolved) ug/L	Iron (dissolved) ug/L	Manganese (dissolved) ug/L	Zinc (dissolved) ug/L	Pentachlorophenol ug/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L
Unconfined Aquifer (Upper) Cont.																					
MW22	W-211014-RA-24	10/14/2021		83.9	4.0	0.34	1.7	1.0 U	74.5	1.0 U	0.23 J	2.3	307	15.6	11.2 J	0.12 U	0.80 U	0.50 U	0.50 U	0.50 U	1.0 U
MW25	W-211013-RA-13	10/13/2021		369	7.1	1.4	3.4	0.64 J	392	1.0 U	0.51 J	2.0	61.9 J	1.2 J	20.0 U	0.098 U	0.82 U	0.50 U	0.50 U	0.50 U	1.0 U
MW28	W-211013-RA-16	10/13/2021		188	12.6	0.28 H	23.9	1.0 U	165	1.0 U	0.71 J	1.7 J	100 U	239	19.7 J	1600	2.6	0.50 U	0.50 U	0.50 U	1.0 U
MW30	W-211011-RA-04	10/11/2021		139	3.0	0.12 J	5.4	14.9	125	1.0 U	0.42 J	34.2	149	50.7	20.0 U	2100	1.5	0.50 U	0.50 U	0.50 U	1.0 U
MW31	W-211012-RA-08	10/12/2021		148	0.34	0.48	1.2	1.0 U	154	1.0 U	0.24 J	73.8	100 U	1.5 J	20.0 U	0.20	0.76 U	0.50 U	0.50 U	0.50 U	1.0 U
MW32	W-211012-RA-06	10/12/2021		33.4	0.54	0.53	3.6	1.0 U	32.6	5.9	1.0 U	16.0	117	4.0	20.0 U	0.42	0.81 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

☐ - Concentration exceeds the ES

☐ - Concentration exceeds the PAL

Wells MW20 and MW29 were not sampled due to the presence of LNAPL

Table 3.1

**Groundwater Analytical Data - Residential Wells and Onsite Supply Well
Penta Wood Products Superfund Site
Siren, Wisconsin**

Sample Location	Sample Identification	ES ¹ PAL ² Date	Pentachlorophenol	Naphthalene	Benzene	Ethylbenzene	Toluene	Xylenes (total)
			1 0.1 ug/L	100 10 ug/L	5 0.5 ug/L	700 140 ug/L	800 160 ug/L	2000 400 ug/L
1 RW01	W-211013-RA-101	10/13/2021	0.096 U	0.76 U	0.50 U	0.50 U	0.50 U	1.0 U
2 RW02	W-211013-RA-102	10/13/2021	0.097 U	0.76 U	0.50 U	0.50 U	0.50 U	1.0 U
3 RW02 (duplicate)	W-211013-RA-103	10/13/2021	0.095 U	0.81 U	0.50 U	0.50 U	0.50 U	1.0 U
4 RW03	W-211013-RA-104	10/13/2021	0.11 U	0.89 U	0.50 U	0.50 U	0.50 U	1.0 U
5 RW04	W-211013-RA-106	10/13/2021	0.10 U	0.75 U	0.50 U	0.50 U	0.50 U	1.0 U
6 RW05	W-211013-RA-100	10/13/2021	0.099 U	0.77 U	0.50 U	0.50 U	0.50 U	1.0 U
7 RW06	W-211013-RA-107	10/13/2021	0.10 U	0.78 U	0.50 U	0.50 U	0.50 U	1.0 U
8 RW06 SHOP	W-211013-RA-108	10/13/2021	0.097 U	0.81 U	0.50 U	0.50 U	0.50 U	1.0 U

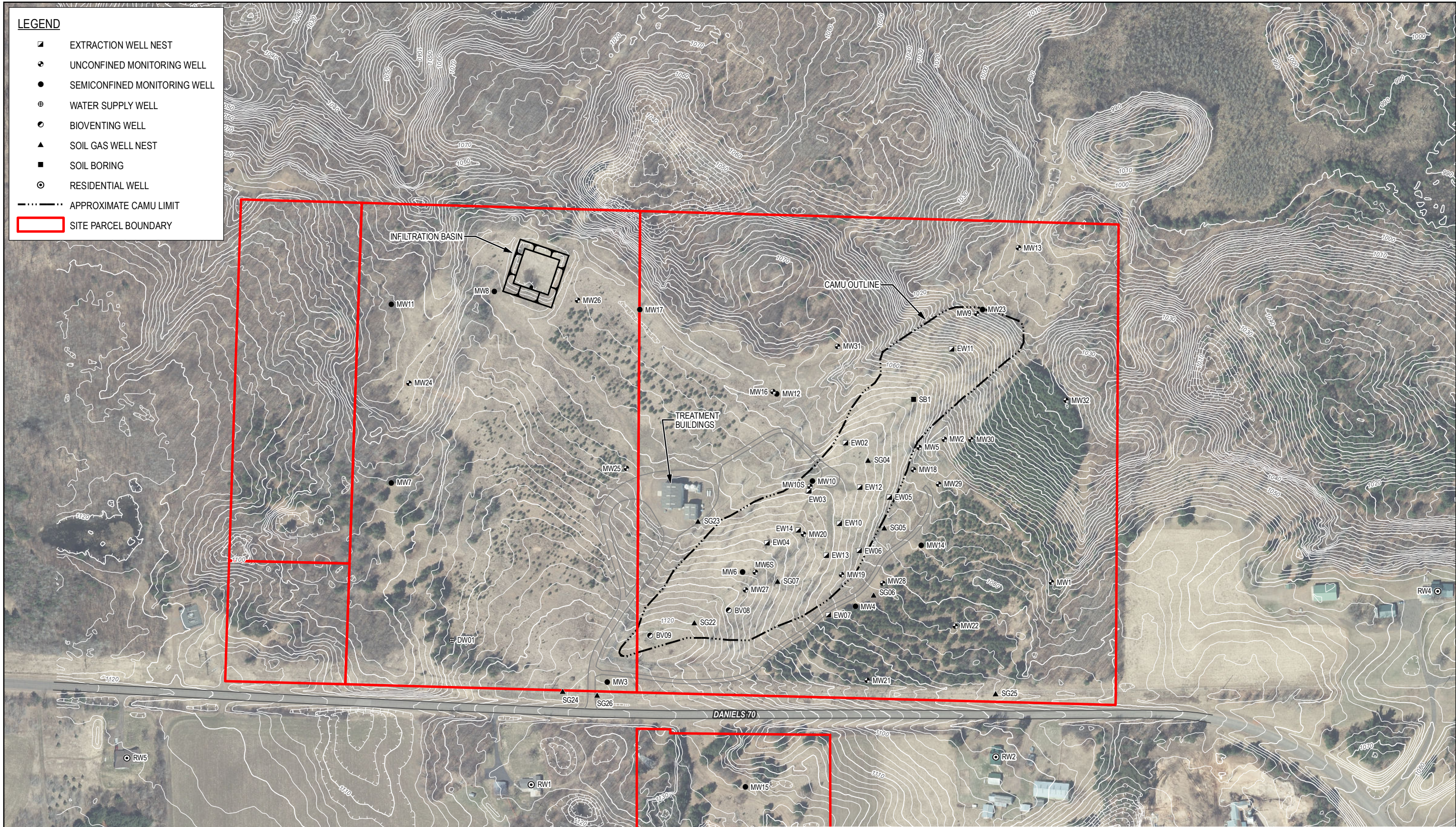
Notes:

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

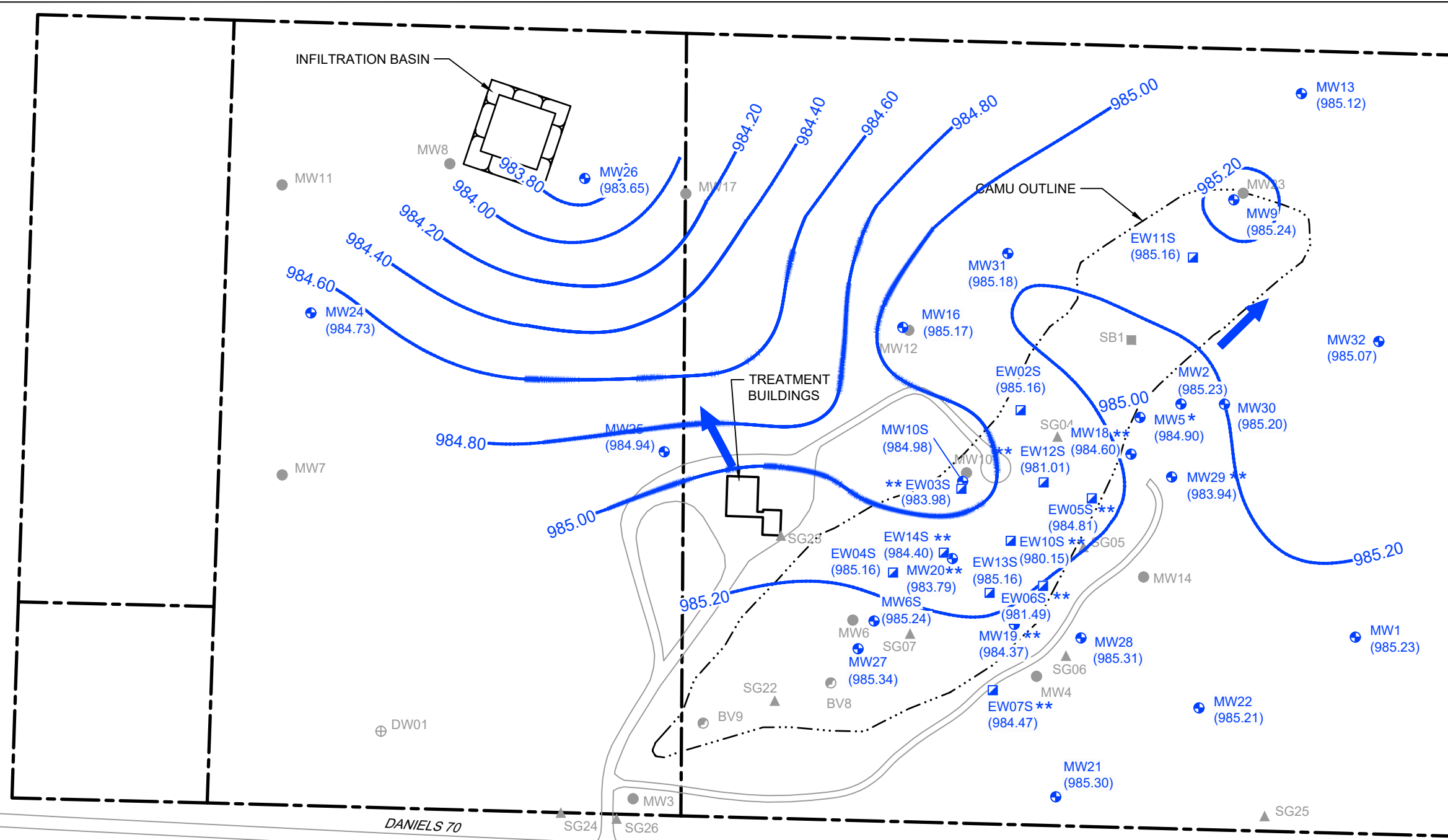
Figures

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



<p>Paper Size ANSI B</p> <p>0 50 100 150 200 250</p> <p>Feet</p> <p>Map Projection: Lambert Conformal Conic Horizontal Datum: North American 1983 HARN Grid: NAD 1983 HARN WISCRS Burnett County Feet</p>			<p>PENTA WOOD PRODUCTS SUPERFUND SITE SIREN, WISCONSIN</p>	<p>Project No. 11222418-01 Revision No. - Date 01/20/2022</p>
<p>SITE PLAN</p>			<p>FIGURE 1.2</p>	



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
- (985.34) GROUNDWATER ELEVATION
- 985.20 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

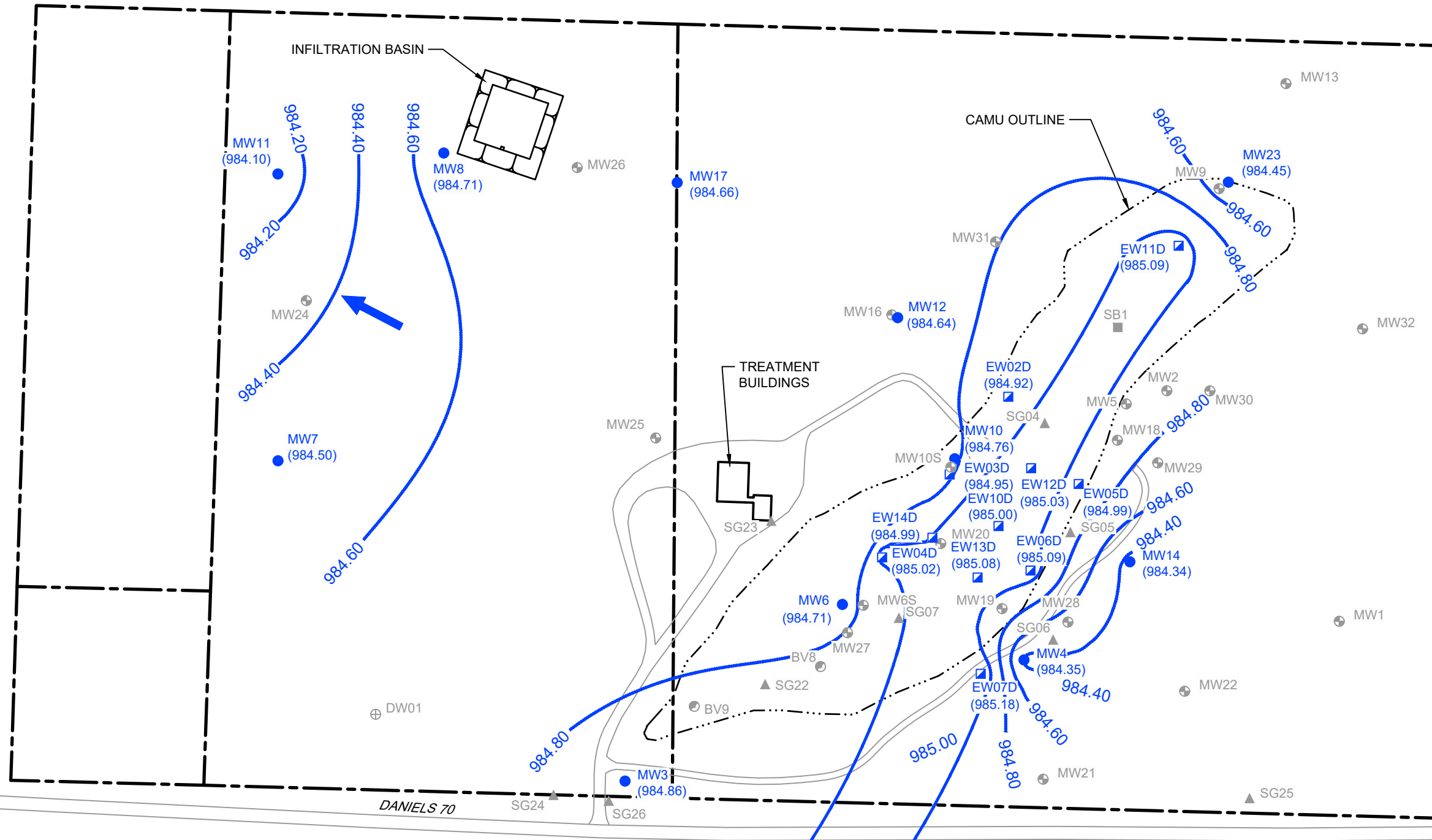
PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

Project No. 11222418
Date January 2022



UNCONFINED (UPPER) AQUIFER
GROUNDWATER CONTOURS
- OCTOBER 2021

FIGURE 2.1



LEGEND

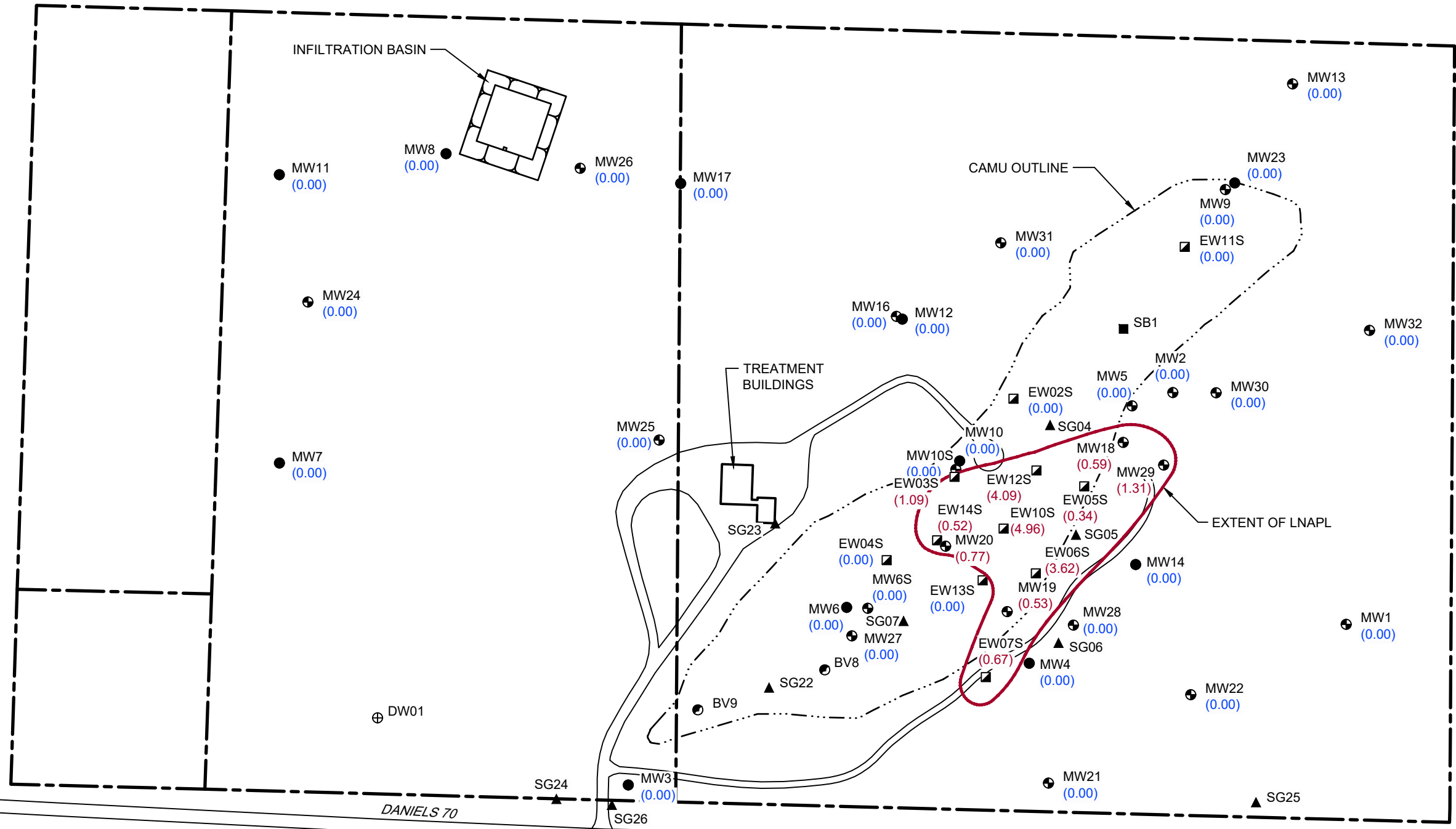
---	PARCEL BOUNDARY
■ EW11	EXTRACTION WELL NEST
● BV09	BIOVENTING WELL
▲ SG05	SOIL GAS WELL NEST
⊕ MW27	UNCONFINED MONITORING WELL LOCATION
● MW7	SEMICONFINED MONITORING WELL LOCATION
⊕ DW01	WATER SUPPLY WELL LOCATION
■ SB1	SOIL BORING LOCATION
⊙ RW1	RESIDENTIAL WELL
(985.74)	GROUNDWATER ELEVATION
985.70	GROUNDWATER ELEVATION CONTOUR
→	GROUNDWATER FLOW DIRECTION

			<p>PENTA WOOD PRODUCTS SUPERFUND SITE SIREN, WISCONSIN</p> <p>SEMICONFINED (LOWER) AQUIFER GROUNDWATER CONTOURS - OCTOBER 2021</p>	<p>Project No. 11222418 Date February 2022</p>
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FIGURE 2.2

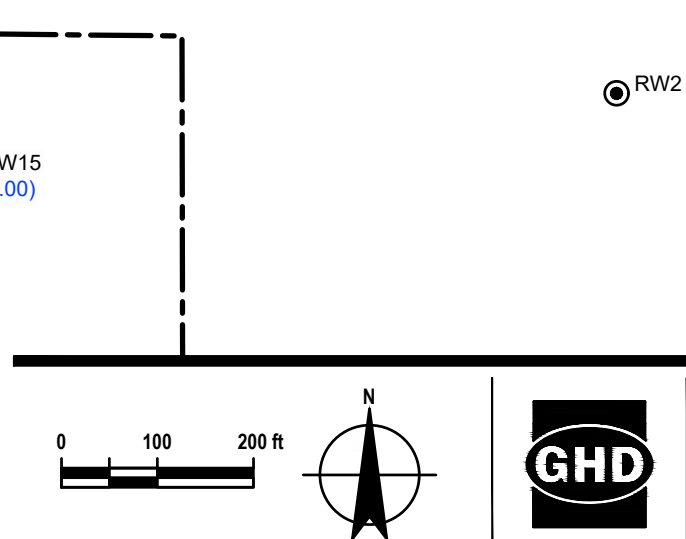
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DATA SOURCE: KEMPER AND ASSOCIATES, INC. SURVEY DATED MAY 2016 (WISCONSIN BURNETT COUNTY COORDINATE SYSTEM NAD83, 1996).



LEGEND

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

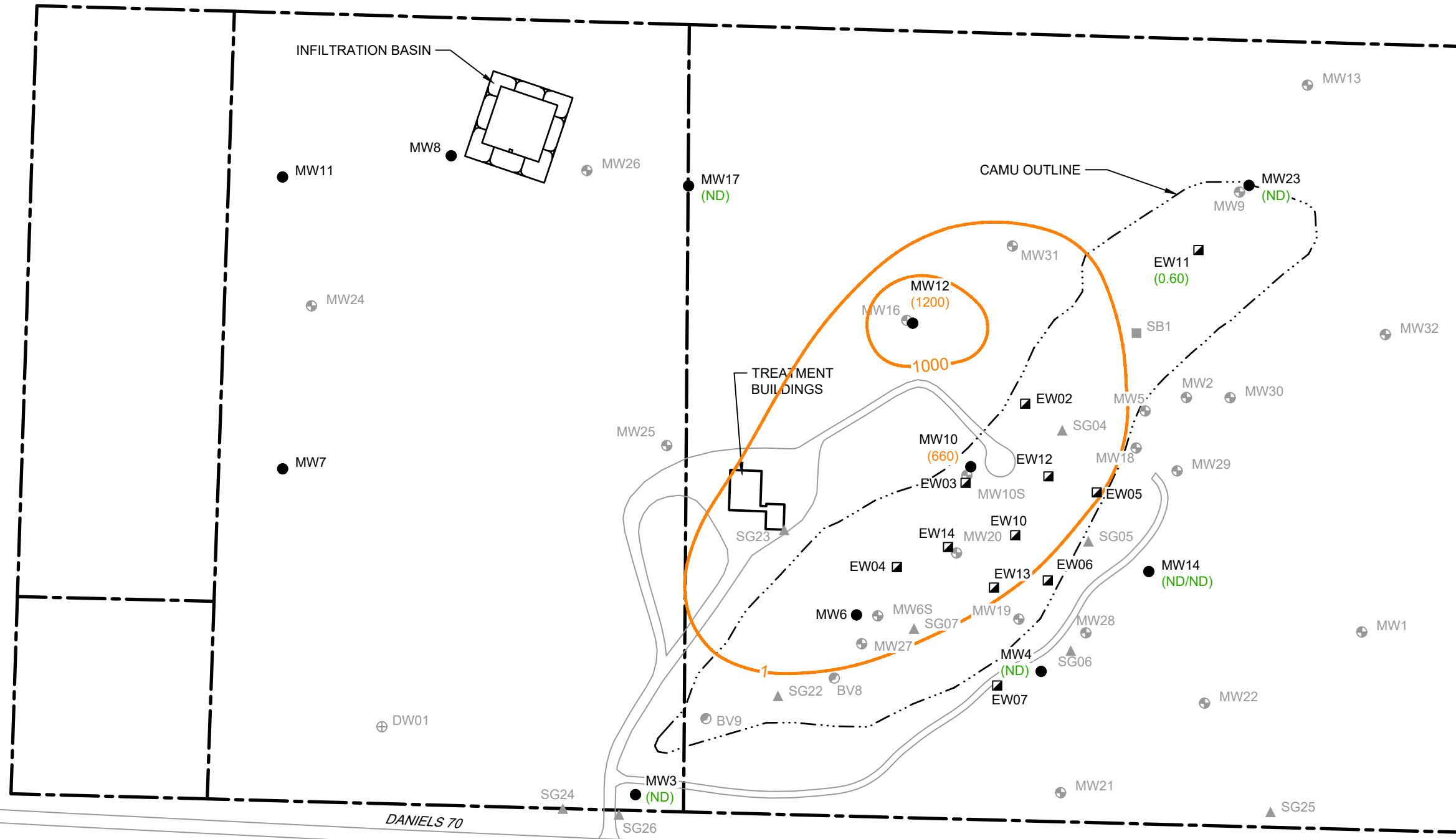


PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

Project No. 11222418
Date January 2022

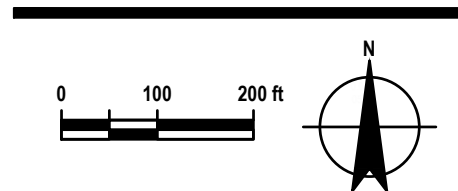
LNAPL THICKNESS - OCTOBER 2021

FIGURE 2.3



LEGEND

- ▬ PARCEL BOUNDARY
- EW11 EXTRACTION WELL NEST
- BV09 BIOVENTING WELL
- ▲ SG05 SOIL GAS WELL NEST
- ⊕ MW27 UNCONFINED MONITORING WELL LOCATION
- MW7 SEMICONFINED MONITORING WELL LOCATION
- ⊕ DW01 WATER SUPPLY WELL LOCATION
- SB1 SOIL BORING LOCATION
- ⊙ RW1 RESIDENTIAL WELL
- (0.30) PENTACHLOROPHENOL CONCENTRATION (µg/L)
- (ND/ND) PENTACHLOROPHENOL / DUPLICATE CONCENTRATION (µg/L)
- 1 — PENTACHLOROPHENOL CONCENTRATION CONTOUR (µg/L)
- (ND) NOT DETECTED
- (0.30) PENTACHLOROPHENOL CONCENTRATION (µg/L) MEETS ENFORCEMENT STANDARD OF 1.0 µg/L
- (1200) PENTACHLOROPHENOL CONCENTRATION (µg/L) EXCEEDS ENFORCEMENT STANDARD OF 1.0 µg/L



PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

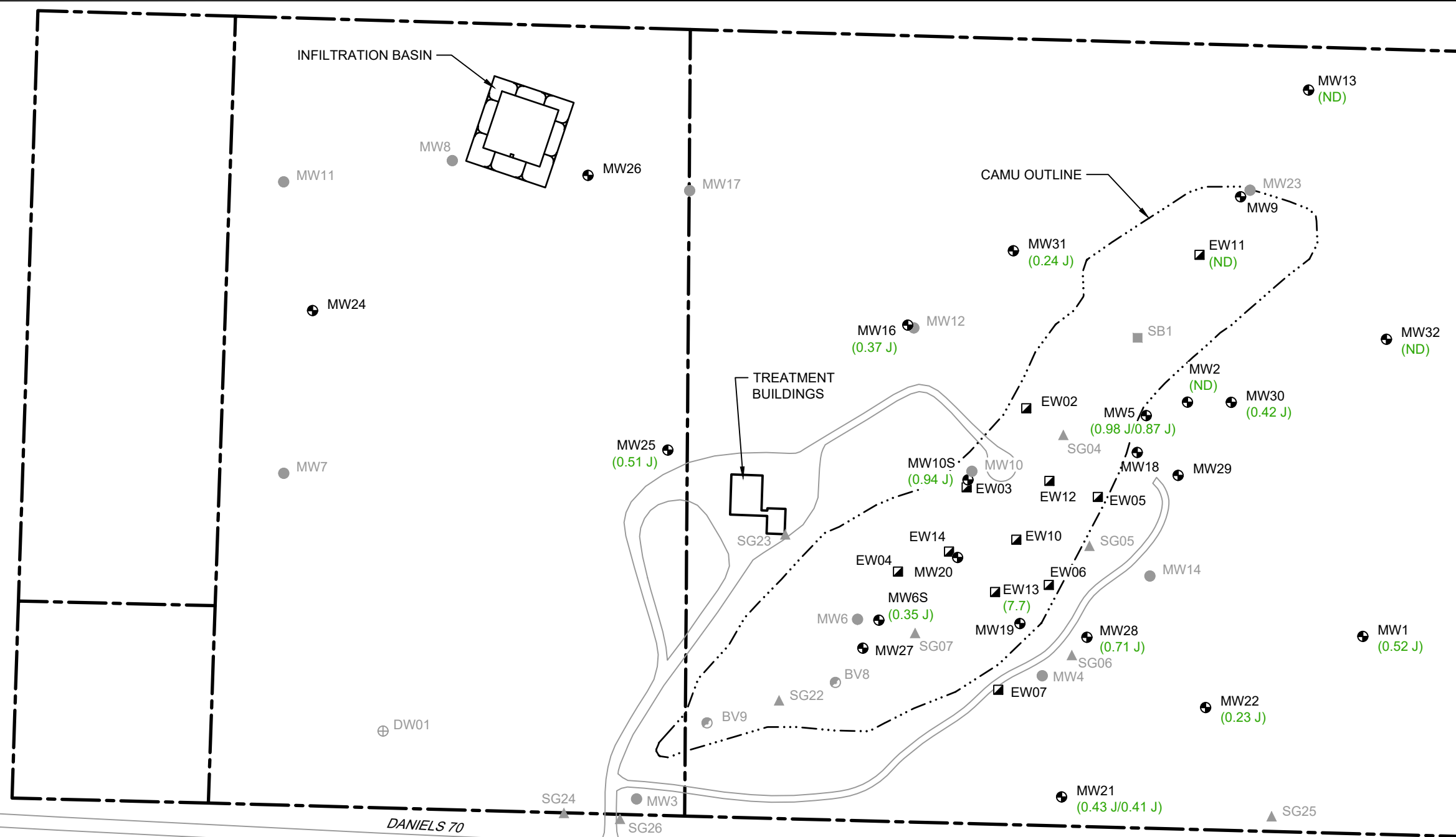
SEMICONFINED (LOWER) AQUIFER
PENTACHLOROPHENOL
CONCENTRATIONS - OCTOBER 2021

Project No. 11222418
Date January 2022

FIGURE 2.5

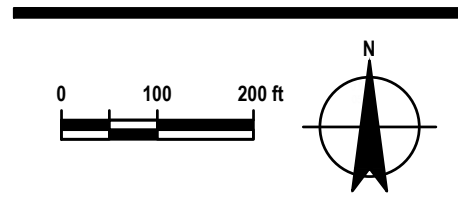
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DATA SOURCE: KEMPER AND ASSOCIATES, INC. SURVEY DATED MAY 2016 (WISCONSIN BURNETT COUNTY COORDINATE SYSTEM NAD83, 1996).



LEGEND

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



PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

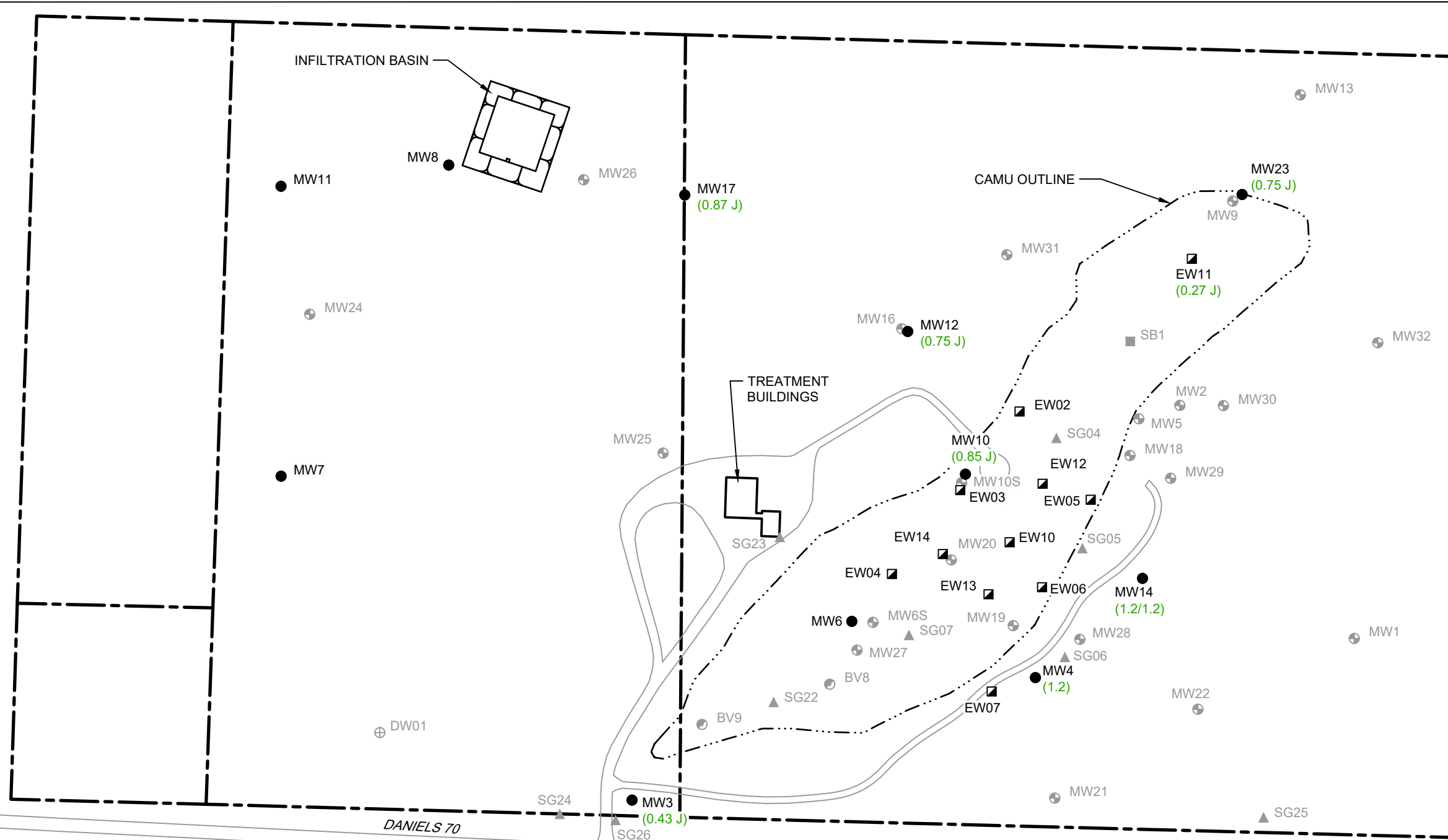
**UNCONFINED (UPPER) AQUIFER
ARSENIC CONCENTRATIONS
- OCTOBER 2021**

Project No. 11222418
Date January 2022

FIGURE 2.6

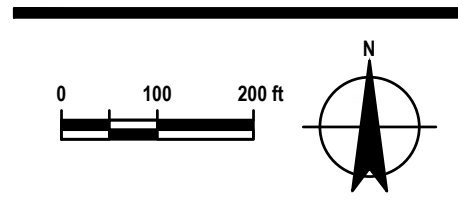
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DATA SOURCE: KEMPER AND ASSOCIATES, INC. SURVEY DATED MAY 2016 (WISCONSIN BURNETT COUNTY COORDINATE SYSTEM NAD83, 1996).



LEGEND

- PARCEL BOUNDARY
- EW11 EXTRACTION WELL NEST
- BV09 BIOVENTING WELL
- ▲ SG05 SOIL GAS WELL NEST
- ⊕ MW27 UNCONFINED MONITORING WELL LOCATION
- MW7 SEMICONFINED MONITORING WELL LOCATION
- ⊕ DW01 WATER SUPPLY WELL LOCATION
- SB1 SOIL BORING LOCATION
- ⊙ RW1 RESIDENTIAL WELL
- (1.1) ARSENIC CONCENTRATION (µg/L)
- (1.0/1.0) ARSENIC / DUPLICATE CONCENTRATION (µg/L)
- (ND) NOT DETECTED
- J CONCENTRATION WAS BETWEEN THE LIMIT OF DETECTION AND LIMIT OF QUANTITATION
- (1.1) ARSENIC CONCENTRATION (µg/L) MEETS ENFORCEMENT STANDARD OF 10 µg/L



PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

**SEMICONFINED (LOWER) AQUIFER
ARSENIC CONCENTRATIONS
- OCTOBER 2021**

Project No. 11222418
Date January 2022

FIGURE 2.7

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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

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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							

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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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	4/5/2016	N		0.095 U								0.14 J	0.50 U	1.0 U	1.0 U	2.0 U							
DW01	10/10/2016	FD		0.024 J								0.20 U	0.50 U	1.0 U	1.0 U	2.0 U							
DW01	10/10/2016	N		0.025 J								0.20 U	0.50 U	1.0 U	1.0 U	2.0 U							
DW01	4/18/2017	FD		0.022 J								0.20 U	0.50 U	1.0 U	1.0 U	2.0 U							
DW01	4/18/2017	N		0.020 J								0.20 U	0.50 U	1.0 U	1.0 U	2.0 U							
DW01	10/20/2017	FD		0.10 U								0.88 U	0.50 U	0.50 U	0.50 U	1.0 U							
DW01	10/20/2017	N		0.10 U								0.83 U	0.50 U	0.50 U	0.50 U	1.0 U							
DW01	6/5/2018	N		0.095 U								0.77 U	0.50 U	0.50 U	0.50 U	1.0 U							
DW01	10/16/2018	N		0.095 U								0.82 U	0.50 U	0.50 U	0.50 U	1.0 U							
DW01	4/22/2019	N		0.099 U								0.26 U	0.15 U	0.18 U	0.15 U	0.22 U							
DW01	10/1/2019	N		0.087 U								0.26 U	0.15 U	0.18 U	0.15 U	0.23 J							
EW02D	8/22/2014	N		52							0.28										2.1 J		
EW02D	4/23/2015	N		17																			
EW02D	4/14/2016	N	0.15 J	370	0.49 J	3.8	299		384	46.7		1.7	0.50 U	1.0 U	1.0 U	2.0 U	55.0	12.1	70.6	0.70		8.7	4.8
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		

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Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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
EW05D	2/3/2015	N		3100							11										2.0 J		
EW05D	4/20/2016	N	0.44 J	7500	2.7 J	8.6	8430		1980	372		19	0.50 U	0.79 J	0.95 J	6.7	145	14.4	171	0.10 U		17.0	36.7
EW06D	8/22/2014	N		910							1.8										1.9 J		
EW06D	2/3/2015	N		4900							12										1.6 J		
EW06D	1/24/2017	N	0.25 J	840	0.35	0.70 J	398		163	15.4 J		1.7	0.28	0.26	0.23	1.2 J	124	12.3	144	1.0		5.9	6.4
EW07D	8/22/2014	N		280							0.68										1.3 J		
EW07D	2/3/2015	N		170							0.28										4.9 U		
EW07D	4/23/2015	N		2400																			
EW07D	4/12/2016	N	0.59	0.31	5.0 U	1.1 J	122		210	20.0 U		0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	127	23.7	174	6.6		8.4	1.2
EW10D	8/22/2014	N		7000							11										11		
EW10D	2/3/2015	N		2800							7.7										4.9 U		
EW10D	4/20/2016	FD	1.3	4800	7.6	12.1	3720		2170	114		19	0.50 U	1.3	1.9	12	136	23.9	184	0.060 J		20.3	41.0
EW10D	4/20/2016	N	1.1	5000	6.5	10.3	3350		2200	81.0		19	0.50 U	1.4	1.8	12	135	25.7	180	0.057 J		21.8	41.8
EW11D	4/14/2016	FD	0.080 J	2.5	5.0 U	2.0 U	825		27.4	55.9		0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	190	12.8	276	2.0		198	1.2
EW11D	4/14/2016	N	0.50 U	3.4	5.0 U	1.1 J	657		22.6	46.4		0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	187	12.7	282	2.0		155	1.0
EW11D	7/19/2016	N	1.1	7.4	5.0 U	2.7	292		54.5	50.0		0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	151	9.1	242	2.2		112	1.9
EW11D	10/10/2016	N	3.2	8.4	5.0 U	0.67 J	793		23.6	20.0 U		0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	190	13.6	272	2.7		159	1.0
EW11D	1/19/2017	N	8.9	0.15	0.35	0.51 J	897		40.4	10.8 J		0.060	0.28	0.26	0.23	0.24	168	12.2	70.0	3.3		129	1.9
EW11D	4/19/2017	N	35	0.13	5.0 U	0.58 J	2930		129	19.0 J		0.22 U	0.50 U	1.0 U	1.0 U	2.0 U	152	11.4	238	5.2		97.3	3.2
EW11D	10/4/2017	N	14	0.18	0.31 J	1.4 J	1290		66.9	11.9 J		0.81 U	0.50 U	0.50 U	0.50 U	1.0 U	159	11.5	220	7.7		79.4	2.5
EW11D	5/31/2018	FD	2.4	0.12	0.35 J	1.2 J	2690		126	10.2 J		0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	137	8.9	204	13.4		51.7	3.4
EW11D	5/31/2018	N	2.5	0.10 U	0.36 J	0.87 J	2600		124	10.2 J		0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	137	9.0	202	13.0		49.5	3.4
EW11D	10/19/2018	N	1.0 U	0.096 U	1.0 U	13.1	144		34.5	20.0 U		0.76 U	0.50 U	0.50 U	0.50 U	0.44 J	131	7.2	121	9.9		40.3	4.3
EW11D	4/24/2019	N	0.17 U	0.20	1.1	7.0	23400		217	282		0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	48.2	0.94	95.1	5.7		19.5 B	5.5
EW11D	10/17/2019	N	0.31 J	2.7	0.24 J	2.1	1260		66.1	15.2 J		0.24 U	0.15 U	0.18 U	0.15 J	0.22 U	149 H	3.9	172	5.4		29.5	6.4
EW11D	4/13/2020	N	0.22 J	0.86	0.30 JB	4.6	2180		162	27.3		0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	44.9	0.46	66.1	3.7		14.2	5.6
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

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Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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
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
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
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

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EW13S	4/20/2017	N	32	5100	13.7	2.2	10600		2260	20.0 U		20	0.50 U	0.96 J	0.90 J	13	240	29.1	294	0.10 U		16.1	37.2
EW13S	10/5/2017	N	52	8700	12.4	0.93 J	10400		2010	20.0 U		16	0.50 U	1.0	1.0	14	276	34.5	276	0.075 J		13.6	34.9
EW13S	6/1/2018	N	24	6000	14.9	3.6	13400		2540	20.0 U		19	0.50 U	0.93	1.0	13	271	34.2	253	0.085 J		13.6	33.8
EW13S	10/19/2018	FD	17	9800	16.3	17.3	16300		2610	20.0 U		33	0.50 U	1.3	1.3	19	241	32.6	255	0.20 U		17.0	34.7
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
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													

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	
MW1	8/6/2002	N4			1.4 U	0.3 U	11 U			2.2 J	2.9 J													
MW1	4/29/2003	N	0.5 U	0.1 U	1 U	14	3160		217	10 U		7.4 U	0.5 U	5 U	5 U	5 U	174	4.3	187	2.6		10	3.2	
MW1	4/29/2003	N2	0.5 U		1 U	1 U	25 U		5 U	10 U														
MW1	9/24/2003	N	0.5 U	0.13	1 J	21	7000 J		416	20 J		1 U	0.25 U	2.5 U	2.5 U	2.5 U	157	3.3	68.25	2.61		2 U	8.4	
MW1	9/24/2003	N2	0.5 U		1 U	1 J	100 J		36	10 U														
MW1	5/4/2004	N	0.863 J	1.06 J	0.346 J	5.73 R	790 R	13900	135 R	7.43 R		5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	147	4.3 R	158	2.1 J		2.0 R	6.37 J	
MW1	5/4/2004	N2			0.190 J	0.785 R	29.9 R		15.0 R	2.74 R														
MW1	9/21/2004	FD	10.0 U	0.442	0.470 J	13.6 J	1210		158	13.4 J		5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	140	2.7 =	1960	1.8 J		4.5 J	7.98	
MW1	9/21/2004	FD2			0.227 J	0.707 J	21.0 J		3.07 J	3.31 J														
MW1	9/21/2004	N	10.0 U	0.348	0.353 J	8.41 J	838		103	17.1 J		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	130	2.7 =	776	1.8 J		5.2 J	6.75	
MW1	9/21/2004	N2			0.218 J	0.605 J	18.0 J		2.60 J	4.06 J														
MW1	5/10/2005	N	2.0 U	0.12	1.0 U	18	3800		360	11 J		0.92 U	0.50 U	5.0 U	5.0 U	5.0 U	110 J	3.6 J	140 J	1.7 J		14 R	3.7 R	
MW1	5/10/2005	N2			1.0 U	10 U	50 U		10 U	20 U														
MW1	9/29/2005	N	2.0 U	0.12	1.0 J	23 J	4800 J		400 J	14 J		1.0 U	0.50 U	5.0 U	5.0 U	5.0 U	110 J	6.2 J	160 J	1.9 J		16 R	2.4 J	
MW1	9/29/2005	N2			1.0 UJ	10 UJ	50 UJ		3.8 J	20 UJ														
MW1	5/31/2006	N	2.0 U	0.049 J	1.0 UJ	10 UJ	50 UJ		10 UJ	20 UJ		1.0 U	0.50 U	5.0 U	5.0 U	5.0 U	110 J	2.3 J	100 J	1.6 J		17	1.7 J	
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	

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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
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
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
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

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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
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
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																					
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

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	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
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
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

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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
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
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
MW5	4/26/2001	N2	0.4		3.9	25 U	7630		11300	25 U													
MW5	9/13/2001	N	10 U	6300	3.7	5.1 J	4100		8500	6.2 J		23	0.44 U	0.54 J	0.78 J	4.3	270	29	240	0.17 J		22	27
MW5	9/13/2001	N2			8.2	100	26000		8500	4.2 J													
MW5	8/7/2002	N		510 J	4.1	28	34500		8130	104		3.2 J	1 U	5 U	5 U	5 U	220	26	4 U	0.15 U		21	25
MW5	8/7/2002	N2			2 J	1.5 J	7900		7840	26.9 J													
MW5	9/25/2003	N	0.47 J	1100	4	50	35100		9450	10 U		2.5	0.25 U	2.5 U	2.5 U	2.5 U	228	22.1	78.48	0.05 U		20	6.2
MW5	9/25/2003	N2	0.47 J		3	7	13400		8320	10 U													
MW5	9/22/2004	N	10.0 UJ	194	0.488 J	17.3 J	30500		7150	13.7 J		5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	250 J	29 J	1490 J	0.01 R		24 R	18.8 R
MW5	9/22/2004	N2		214 E	0.612 J	1.44 J	7480 J		5650 J	5.91 J													
MW5	9/28/2005	N	2.3	1100 =	1.0 UJ	6.0 J	18000 J		7600 J	20 UJ		1.8	0.50 U	5.0 U	5.0 U	5.0 U	260 J	18 J	480 J	0.10 UJ		35 R	7.4 J
MW5	9/28/2005	N2			1.0 UJ	10 UJ	19000 J		7600 J	20 UJ													
MW5	9/26/2006	N	8.7 J	460 =	1.0 UJ	10 UJ	23000 J		8000 J	20 UJ		1.4 U	0.50 U	5.0 U	5.0 U	5.0 U	290 J	16 J	370	0.10 J		27 J	6.6
MW5	9/20/2007	N	9.8	31 J	1.0 UJ	10 UJ	25000		7600	20 UJ		0.74 R	1.0 U	1.0 U	1.0 U	2.0 U	230 J	13	270 J	0.10 U		39 J	4.1 J
MW5	10/22/2008	N	11 J	206	2 UJ	10 UJ	10500 J	31400 J	9700 J	20 UJ		1 U	0.5 U	2.0 U	2.0 U	5.0 U	267 J	8.68	357 J	0.05 U		24.8	30.5
MW5	10/7/2009	N	17 J	33.3 J	2 UJ	10 UJ	6000 J	33600 J	11800 J	20 UJ		0.998 UJ	0.1 UJ	0.4 UJ	0.4 UJ	0.14 J	256 J	8.59 J	344.62 J	0.05 UJ		55.1 J	3.5 J
MW5	10/6/2010	N	4.1	39.8 J	3.36 J	8 U	3030	43600	12600	20 U		1.0 U	0.1 U	0.4 U	0.4 U	1 U	274	11.4 J	437	0.10 UJ		79.4	4.2
MW5	10/19/2011	N	38 J	0.97	1.0 J	2 U	2600	40000 B	11000	20 U		0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	260	15	397.00	0.10 U		150	2.6
MW5	10/17/2012	N	17	0.59 J	0.57 J	10 U	2700	29000 =	7000	20 U		0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	180	11	302	0.10 U H		130 =	1.8

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	10/10/2013	N	19	0.60	0.39 J	10.0 UJ	2200 J	20000 J	4700 J	20 UJ		0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	150 B	9.2 J		0.10 UJ		140 J	1.8
MW5	9/24/2014	FD	10	12	0.42 J	2.0 U	1200		2200	20 U		0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	97	4.3	150	0.12		48	1.0 U
MW5	9/24/2014	N	12	12	0.41 J	2.0 U	1200		2200	20 U		0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	100	4.3	150	0.14		48	2.3
MW5	10/14/2015	N	1.8	64	5.0 U	2.0 U	954		2230	20.0 U		0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	98.7	12.7	159	0.053 J		48.9	3.3
MW5	4/7/2016	FD	4.9	16	5.0 U	2.0 U	940		2070	20.0 U		0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	71.3	12.5	113	0.96		37.6	4.5
MW5	4/7/2016	N	4.3	17	5.0 U	2.0 U	931		1990	20.0 U		0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	72.0	12.7	113	0.97		38.0	4.6
MW5	10/29/2018	N	15	5600	0.71 J	1.5 J	7920		6730	20.0 U		23	0.50 U	0.57	0.53	6.5	249	28.5	292	0.084 J		28.5	39.6
MW5	4/25/2019	N	96	5100	0.79 J	0.97 J	10200		6250	6.9 U		24	0.15 U	0.47 J	0.52	5.8	262	27.0	305	0.068 U		27.7 B	33.3 F1
MW5	10/17/2019	FD	32	5500	0.69 J	0.84 J	21900		6870	6.9 U		20	0.15 U	0.62	0.43 J	6.4	265	25.7	283	0.068 U		24.4	38.4
MW5	10/17/2019	N	34	6000	0.75 J	0.70 J	22300		7140	6.9 U		22	0.15 U	0.62	0.46 J	6.3	452	28.2	273	0.068 U		25.6	38.7
MW5	4/13/2020	N	13	6200	0.92 JB	1.1 J	17000		7190 B	6.9 U		22	0.15 U	0.72	0.6	7	253	27	286	0.068 U		23.8	42.5
MW5	10/8/2020	FD	8.9	4800	1.0	1.3 J	14200		7310	6.9 U		26	0.15 U	0.57	0.57	7.7	244	31.6	283	0.076 JH		29.2	45.8
MW5	10/8/2020	N	9.8	5000	0.93 J	1.5 J	14300		7470	6.9 U		25	0.15 U	0.71	0.62	7.2	242	26.7	296	0.084 JH		24.6	47.0
MW5	4/13/2021	N	9.7	4700	0.70 J	2.1	16100		8010	10.6 JB		35	0.50 U	0.81	0.85	7.7	258	25.2	310	0.069 J		22.6	63.7
MW5	10/14/2021	N	9.5	2800	0.98 J	1.8 J	12900		7970	20.0 U		38	0.50 U	1.0	0.89	10	282	24.8	309	0.20 U		21.4	54.6
MW5	10/14/2021	FD	8.3	6100	0.87 J	1.6 J	12900		8130	20.0 U		36	0.50 U	0.95	0.89	10	286	25.4	310	0.068 J		21.8	55.2
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													
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

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Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	9/20/2007	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
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

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	9/11/2001	N2	10 U	0.13 J	0.29 U	2.2 U	230		4.4	5.2 J		0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	350	24	400	3		10	1.8
MW7	9/11/2001	N3			0.47 J	2.2 U	560		5.7	4.8 J													
MW7	9/11/2001	N4			0.29 U	2.2 U	230		4.6	3.9 J													
MW7	8/7/2002	N	0.01 U	0.03 J	1.5 J	0.3 U	730		6.5 J	2.8 J		5 U	1 U	5 U	5 U	5 U	390	21	450	0.15 U		10	1.5
MW7	8/7/2002	N2			1.4 U	0.3 U	300		4 J	0.98 U													
MW7	9/24/2003	N	4.9	0.044 J	1 U	1 U	280 J		6 J	10 UJ		0.96 U	0.25 U	2.5 U	2.5 U	2.5 U	346	12.2	133.3	2.97		2 U	1.2
MW7	9/24/2003	N2	4.9		1 U	1 U	90 J		5 U	10 UJ													
MW7	9/22/2004	N	10.0 UJ	9.18 E	1.00 UJ	1.09 J	1640 J		9.86 J	4.06 J		5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	300 J	7.2 J	1560 J	3.4 J		6.8 R	1.98 R
MW7	9/22/2004	N2		5.75	0.108 J	0.847 J	25.0 UJ		9.75 J	2.96 J													
MW7	9/27/2005	N	2.0 UJ	0.12 U	1.0 U	10 U	1300		18	20 U		0.91 UJ	0.50 U	5.0 U	5.0 U	5.0 U	260 J	18 J	450	1.8 J		130 J	0.96 J
MW7	9/27/2005	N2			1.0 U	10 U	880		16 J	20 U													
MW7	9/26/2006	N	4.3 J	0.087 J	1.0 U	10 U	50 U		68 J	20 U		0.92 U	0.50 U	5.0 U	5.0 U	5.0 U	280 J	15	390	1.8 =		110 =	2.4
MW7	9/20/2007	N	3.7	0.093 U	1.0 UJ	10 UJ	260		22	5.9 J		0.93 R	1.0 U	1.0 U	1.0 U	2.0 U	270 J	16	370 J	1.5		170 J	1.1 J
MW7	10/22/2008	N	110 J	0.1 U	2 UJ	4 J	926 J	37700 J	41.6 J	20 UJ		1 U	0.5 U	2.0 U	2.0 U	5 U	277 J	14.1	535 J	1.54 J		98.9	4.16
MW7	10/22/2008	N2																					4.41
MW7	10/7/2009	N	2.4 J	0.403 J	2 UJ	10 UJ	687 J	32600 J	109 J	20 UJ		0.999 UJ	0.1 UJ	0.4 UJ	0.4 UJ	0.14 J	245 J	12.2 J	396.43 J	1.91 J		152 J	14.5 J
MW7	10/6/2010	N	28	0.1 U	2 U	8 U	989	38900	63.2	20 U		1.0 U	0.1 U	0.4 U	0.4 U	1 U	226	13.8 J	482	2.24 J		168	10.4
MW7	10/19/2011	N	15	0.098 U	0.48 J	2 U	81	21000 B	21	10 U		0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	230	12	249.00	1.9 J		92	1.5 J
MW7	10/17/2012	N	2.2	0.096 U	2.0 U	10 U	230	21000 =	22	20 U		0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	210	11	254	1.5 H		120 =	0.97 J
MW7	10/9/2013	N	2.2 B	0.094 U	0.34 J	10.0 UJ	10000 J	21000 J	74 J	20 UJ		0.19 U	0.50 U	1.0 U	1.0 U	2.0 U *	200 J	12		1.8 J		120	0.75 J
MW7	10/9/2013	N2																			1.8 J		
MW7	9/23/2014	N	15	0.034 J	0.28 J	2.0 U	260		33	30		0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	200	9.0	240	1.9		110	0.96 J
MW7	10/12/2015	N	6.5	0.094 U	0.88 J	1.6 J	100 U		423	20.0 U		0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	228	8.3	229	1.5		46.2	0.85 J
MW7	4/6/2016	N	13	0.098 U	5.0 U	1.9 J	5270		117	36.2		0.21 U	0.50 U	1.0 U	1.0 U	2.0 U	212	10.3	237	1.7		25.7	0.58 J
MW8	10/14/1997	N	36.5	1 U	2 U	2 U	148		17.8	7.4			0.1 U	1 U	1 U	1 U	170	4.2		1.4		4.5	2.3
MW8	10/14/1997	N2		1 U	2 J	2 U				4.6			0.1 U	1 U	1 U	1 U							
MW8	4/5/2000	N		0.5 U								10 U											
MW8	4/25/2001	N	11.6	0.2	0.99	25 U	829		32	25 U		5 U	0.1 U	1 U	1 U	1 U	154	3.25	181	1.52		7.47	1.46
MW8	4/25/2001	N2	11.6		0.75	25 U	25 U		27	25 U													
MW8	4/25/2001	N3			0.57	25 U	25 U		22	25 U													

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Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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
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
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

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Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	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												
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	

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	9/21/2007	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

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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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	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
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

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Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	4/23/2019	FD	0.17 U	1500	2.1 B	6.0 B	886		3470 B	6.9 U		10	0.15 U	0.36 J	0.28 J	5.9	313	63.6	464	0.073 J		42.5	56.3
MW10S	4/23/2019	N	0.17 U	1400 ^	0.67 JB	8.8 B	861		3450 B	6.9 U		10	0.15 U	0.38 J	0.30 J	6.1	312	64.8	471	0.074 J		43.1	60.9
MW10S	10/16/2019	N	0.31 J	2500	0.49 J	1.8 J	551		3010	6.9 U		13	0.15 U	0.18 U	0.15 U	14	345 B	20.5	379	0.19 J		18.8	27.7
MW10S	4/8/2020	FD	0.17 U	2300	0.57 J	2.8	571		3670	6.9 U		16	0.15 U	0.91	0.26 J	12	301	19.4	341	0.068 U		21.1	34.5
MW10S	4/8/2020	N	0.17 U	2800	0.54 J	2.3	563		3530	6.9 U		17	0.15 U	0.82	0.25 J	11	312	21.7	345	0.068 U		22.6	34
MW10S	10/7/2020	N	0.17 U	2100	1.1	8.2	819		4880	6.9 U		19	0.15 U	0.80	0.22 J	11	344	20.6	388	0.076 J		22.0	29.7
MW10S	4/14/2021	N	0.51 J	2000	0.77 J	2.8	980		6360	20.0 U		15	0.50 U	0.69	0.21 J	10	317	42.7	401	0.20 U		34.8	60.8
MW10S	10/14/2021	N	0.22 J	3100	0.94 J	3.4	1510		6430	20.0 U		17	0.50 U	0.81	0.16 J	11	310	52.3	402	0.085 J		37.6	61.5
MW11	10/15/1997	N	10 U	1 U	2 U	2 U	10 U		2 U	5.3			0.3	1 JB	0.2 J	0.5 J	190	7.5		5		12	1.3
MW11	10/15/1997	N2		1 U	2 J	4.2 U				10.3			0.3	1 J	0.2 J	0.5 J							
MW11	4/4/2000	N		0.6 U								11 U											
MW11	4/24/2001	N	0.1 U	0.1 U	1.4	25 U	58		15 U	25		5.3 U	0.1 U	1 U	1 U	1 U	185	6.16	231	3.59 =		4.57	7.9
MW11	4/24/2001	N2	0.11 U	0.11 U	1.2	25 U	25 U		15 U	20		5.3 U	0.1 U	1 U	1 U	1 U	225	6.25	231	3.59		3.48	4.67
MW11	4/24/2001	N3	0.11 U		1.4	25 U	151		15 U	126		5.4 U								3.74 =			
MW11	4/24/2001	N4			1.3	25 U	25 U		15 U	25 U		5.4 U								3.74			
MW11	9/10/2001	N	10 U	0.091 J	1.4	2.9 J	66 J		1.9	9.1 J		0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	190	8	220	3.1		7.4 U	4.2
MW11	9/10/2001	N2			1.1	2.2 U	35 U		0.45 J	3.7 U													
MW11	8/6/2002	N	0.01 U	0.04 U	4.7	0.83 J	46		2.3 J	6.4 J		5 U	1 U	5 U	5 U	5 U	210	7.8	230	0.15 U		7.6	18
MW11	8/6/2002	N2	0.01 U		1.5 J	0.3 U	11.2 U		1.2 J	8.5 J													
MW11	9/23/2003	N	0.5 U	0.11 U	1 U	2	160		5 U	10 U		0.98 U	0.25 U	2.5 U	2.5 U	2.5 U	187	6.7	72.14	2.94		2 U	2.3
MW11	9/23/2003	N2	0.5 U		1 U	1 U	50 U		5 U	10 U													
MW11	9/21/2004	N	10.0 U	0.0656 J	0.885 J	0.620 J	15.6 J		2.81 J	6.36 J		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	210	9.0 =	1020	3.0 J		6.2 J	14.1
MW11	9/21/2004	N2			0.948 J	0.366 J	6.05 J		1.40 J	4.05 J													
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

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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

Appendix A.1

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	
MW12	9/26/2006	FD	2.0 UJ	2000 =	1.0 UJ	2.5 UJ	46 J		1200 J	20 UJ		1.4	0.50 U	5.0 U	5.0 U	1.7 J	390 J	15 J	370	2.0 J		15 J	10	
MW12	9/26/2006	N	2.0 UJ	3100 =	1.0 UJ	3.2 J	50 UJ		1200 J	16 J		1.5	0.50 U	5.0 U	5.0 U	2.9 J	390 J	14 J	380	1.9 J		15 J	10	
MW12	5/9/2007	N	2.0 UJ	3000 J	1.0 UJ	2.1 J	100 UJ		1100	5.2 J		0.99 J	1.0 UJ	1.0 UJ	1.0 UJ	1.9 J	340 =	13	370	2.4		37 J	7.0 UB	
MW12	9/19/2007	FD	2.0 UJ	1000 J	1.1 J	1.7 J	100 R		790	20 UJ		0.74 J	1.0 U	1.0 U	1.0 U	2.0 U	340	14	350 J	2.2		2.7 J	5.7 J	
MW12	9/19/2007	N	2.0 UJ	1100 J	0.97 J	10 UJ	100 R		820	20 UJ		0.71 J	1.0 U	1.0 U	1.0 U	2.0 U	340	14	330 J	2.8		29 J	5.6 J	
MW12	5/20/2008	FD	2.0 UJ	2200 J	0.61 J	3.8	100 UJ		1000	4.2 J		0.95 U	1.0 UJ	1.0 U	1.0 U	1.6 J	360 =	12	380	2.1		25	4.5 J	
MW12	5/20/2008	N	2.0 UJ	2100 J	0.59 J	3.7	100 UJ		1000	4.6 J		0.96 U	1.0 UJ	1.0 U	1.0 U	1.5 J	360 =	12	350	2.0		25	4.7 J	
MW12	10/21/2008	FD	2.0 UJ	1300.00 J	2.00 U	3.70 J	936	45000	1120	20 U		1.00 U	0.5 U	2.0 U	2.0 U	5.0 U	322	14.50	465 J	2.95 J		31.70	11.80 J	
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	

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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
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													

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Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	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
MW14	10/9/1997	N	10 U	1 U	2 U	2 U	20 U		4 J	4			0.1 U	1 U	1 U	1 U	120	8		1.6		2.4	1 U
MW14	10/9/1997	N2		1 U	2 U	2 U				2 U			0.1 U	1 U	1 U	1 U							
MW14	4/6/2000	N		0.5 U								11 U											
MW14	6/19/2001	N	0.11 U	0.96	1.4	5.4 J	1070		57	25 U		239	0.1 U	1 U	1 U	1 U	104	12	124	2.06		3.48 J	6.41
MW14	6/19/2001	N2	0.11 U		2	25 U	25 U		4.4	25 U										2.06 =			
MW14	1/23/2017	N	0.080	0.12	1.1 J	0.62 J	5.3		1.6 J	6.2		0.061	0.28	0.26	0.23	0.24	129	15.8	146	1.7		6.6	0.51 J
MW14	10/3/2017	FD	0.11 J	0.099 U	1.0	0.74 J	100 U		0.93 J	20.0 U		0.80 U	0.50 U	0.50 U	0.50 U	1.0 U	128	17.1	148	1.9		6.7	1.0 U
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

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	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
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

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	6/2/2009	N	0.8 UJ	0.1 UJ	2 U	10 UJ	301 =	30600 =	10 U	20 U		1.0 UJ	0.5 U	0.21 J	2.0 U	5.0 U	279 J	13.5	375.2114	5.33 J		6.42	1.7 UJ	
MW15	10/7/2009	N	0.83 UJ	0.1 UJ	2 UJ	3 J	293 J	25500 J	10 UJ	5.4 J		0.999 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ	260 J	12.9 J	294.28 J	4.74 J		6.52 J	1.49 J	
MW15	5/18/2010	N	1.3 U	0.1 U	2 UJ	10 UJ	194. J	24400. J	10 UJ	20 UJ		1.0 U	0.5 U	5 U	5 U	5 U	300	10.7	342	4.57 J		6.3	26.7 UB	
MW15	10/7/2010	N	1.3 U	2.32 J	2 U	8 U	311	38400	16.7 U	20 U		1.0 UJ	0.5 UJ	2 UJ	2 UJ	5 UJ	252	13.2 J	430	5.49 J		6.9 J	1.0 U	
MW15	6/28/2011	N	0.9 U	0.1 U	2 UJ	10 U	205	23100	10 U	20 U		0.998 U	0.1 U	0.4 U	0.4 U	1 U	239	12.1 J	307.00	5.2 J		6.91	0.77 J	
MW15	10/18/2011	N	0.50 U	0.10 U	0.70 J	2.7 J+	50 U	24000 B	1.7 J	10 U		0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	240	12	261.00	4.8 J		5.3	1.0 J	
MW15	5/22/2012	N	0.50 U	0.024 J	2.0 U	10 U	50 U	24000 =	10 U	20 U		0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	260	11	266.00	4.6 J		5.1 J	1.2	
MW15	10/16/2012	N	0.50 U	0.094 U	0.97 J	10 U	50 U	24000 =	10 U	20 U		0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	250	12	271	5.3 J		5.0 U	0.69 J	
MW15	5/21/2013	N	0.50 U	0.025 J	2.0 U	10 U	50 U	26000 B	10 U	20 U		0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	280	9.8		4.7 J		5.9	0.82 J	
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														

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Penta Wood Products Superfund Site
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Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	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
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
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 =			

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	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

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	10/15/2019	N	0.17 U	0.087 U	0.55 J	1.0 J	46.7 U		0.79 U	6.9 U		0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	193	13.8	338	2		128	0.47 U
MW17	4/7/2020	N	0.17 U	0.085 U	0.88 J	1.3 J	46.7 U		0.79 U	6.9 U		0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	181	12.6	310	1.8		131	0.47 U
MW17	10/5/2020	N	0.17 U	0.095 U	0.70 J	1.9 J	46.7 U		0.79 U	6.9 U		0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	191	13.1	335	1.8		151	0.68 J
MW17	4/15/2021	N	1.0 U	0.3	0.68 J	1.3 JB	100 U		2.5 U	20.0 U		0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	188	11	317	1.5		113	0.56 J
MW17	10/13/2021	N	1.0 U	0.095 U	0.87 J	1.0 J	100 U		1.2 J	20.0 U		0.76 U	0.50 U	0.50 U	0.50 U	1.0 U	196	7.4	294	1.4 H		108	1.0 U
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

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Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	5/10/2005	N2			1.0 U	15	630		2100	8.4 J													
MW19	9/29/2005	N	2.0 U	13000 =	1.0 UJ	11 J	97 J		2600 J	20 UJ		78	0.50 U	1.2 J	1.1 J	18	140 J	19 J	5 UJ	0.75 J		40 R	32 J
MW19	9/29/2005	N2			1.0 UJ	5.0 J	50 UJ		2700 J	20 UJ													
MW19	6/7/2006	N	2.0 U	17000 J	1.0 UJ	4.4 J	50 UJ		2700 J	20 UJ		59	0.50 U	1.5 J	1.3 J	22	120 J	18 J	360 J	0.76 J		36 =	20 J
MW19	9/27/2006	N	2.0 UJ	8200 J	1.0 U	6.4 J	50 U		3100	20 U		69	0.50 U	1.4 J	1.2 J	19	160 J	14	190	0.66 J		30 =	35
MW19	5/9/2007	N	2.0 UJ	11000 J	1.0 UJ	3.7 J	100 UJ		2600	20 UJ		54 J	1.0 U	1.4	1.5	17	230 =	15	160	0.29		59 J	33 UB
MW19	9/21/2007	N		3500 J	1.0 UJ	4.0 J	100 UJ		3100	20 UJ		47 R	1.0 U	1.8	2.0	21	190 J	17	240 J	0.28		42 J	38 J
MW19	5/20/2008	N	2.0 U	23000 J	1.0 U	3.4	100 UJ		2900	2.3 J		140	1.0 UJ	5.0	4.8	54 J	220 =	16	260	0.44		42	18 J
MW19	10/24/2008	N	2.1 J	27900	2 UJ	5 J	510 J	28700 J	4850 J	20 UJ		120	0.5 U	5.11	5.08 =	50.3	221 J	15.9	373 J	0.04 J		46.2	29.8
MW19	6/2/2009	N	3.9 J	18600 J	2 U	10 UJ	222 =	29900 =	4050 =	20 U		110 J	0.5 U	7.93	6.66	74.6	249 J	12.8	317.6445	0.01 UB		44.7	13
MW19	10/7/2009	N	2 J	31800 J	2 UJ	3.8 J	237 J	27400 J	3190 J	7.2 J		137 J	0.1 UJ	7.62 J	5.77 J	60.7 J	228 J	14.3 J	271.39 J	0.05 UJ		42 J	20.4 J
MW19	5/20/2010	N	1.4	26000.	2 UJ	3.2 J	92.2 UJ	19900. J	1870. J	20 UJ		123.	0.5 U	7.95	5.65	64.3	136	21.5	199	0.05 UJ		32.4	50.4 UB
MW19	10/7/2010	N	1.3 U	4470 J	2 U	2.9 J	114	7130	942	20 U		102 J	0.5 UJ	3.21 J	1.7 J	44.7 J	84	13.6 J	77.8	0.10 UJ		18.7 J	17.4
MW19	6/29/2011	N	0.9 U	8880	2 UJ	14.8 J	131	9550	1300	20 U		42.1	0.1 U	1.12	1.09	22.7	43	16.6 J	90.00	0.26		20.1	85.4
MW19	10/20/2011	N	0.33 J	13000	2.0 U	12 B	52 J+	8600 B	1700	14 J+		2.8	0.84 U	1.1 J	1.0 J	23	57	19	85.40	0.30		17	92
MW19	5/22/2012	N	0.71	5300	2.0 U	7.6 J	50 U	7600 =	1300	20 U		50	2.0 U	0.88 J	0.76 J	16	51	15	76.20	1.1		12	38
MW19	10/17/2012	N	0.50 U	8100	2.0 U	6.9 J	50 U	5800 =	900	20 U		8.4	2.0 U	4.0 U	0.67 J	9.7	36	12	66.3	1.4		11 J	27
MW19	5/22/2013	N	0.84 J	5800	2.0 U	7.3 J	50 U	8700 B	1100 B	20 U		29 J	0.50 U	0.99 J	1.5	19	54	14		1.1 J		11	45
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

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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
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													
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

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	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
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

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Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	10/21/2008	N	2.0 UJ	0.09 UJ	2.60 J	10 UJ	303 J	11100 J	0.01 U	20 U		1.00 U	0.5 U	2.0 U	2.0 U	5.0 U	90	4.69	111 J	1.48 J		6.95	21.10 J
MW22	6/2/2009	N	0.8 UJ	0.1 UJ	2 U	10 UJ	83.1 =	10000 J	10 U	20 U		1.0 UJ	0.5 U	0.22 J	2.0 U	5.0 U	70 J	6.92	99.6098	1.97 J		6.73	1.7 UJ
MW22	10/6/2009	N	0.83 UJ	0.1 UJ	2 UJ	13.1 J	1560 J	11500 J	168 J	6.7 J		0.994 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ	147 J	7 J	106.54 J	5.31 J		7.53 J	8.62 J
MW22	5/18/2010	N	1.3 U	0.1 U									0.5 U	5 U	5 U	5 U	66 UB	9.21		1.9 J		6.9	58.8 UB
MW22	10/6/2010	N	1.3 U	0.13 UB	2 U	4.1 J	74.2 J	3680	16.7 U	20 U		1.0 U	0.1 U	0.4 U	0.4 U	1 U	62	1.8 J	40.9	0.90 J		5.6 J	24.6
MW22	6/29/2011	N	0.9 U	0.1 U	2 UJ	4.5 J	499	3700	27.6	20 U		0.999 U	0.1 U	0.4 U	0.4 U	1 U	32.	0.78 J+	34.10	0.46 J		3.9 J	11
MW22	10/18/2011	N	0.50 U	0.098 U	0.45 J	2.1 J+	50 U	3600 B	2.7 J	10 U		0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	43	1.0 U	37.30	0.50 J		3.5 J	1.0 U
MW22	5/22/2012	N	0.50 U	0.084 J	2.0 U	2.3 J	160	5000 =	13	20 U		0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	49	3.4	50.60	0.76 J		3.9 J	10
MW22	10/16/2012	N	0.50 U	0.096 U	0.59 J	10 U	50 U	5000 =	5.7 J	20 U		0.19 U	2.5 UJ	5.0 UJ	5.0 UJ	10 UJ	48	4.1	53.1	0.48 J		5.0 U	36
MW22	5/22/2013	N	0.50 U	0.11	2.0 U	10 U	50 U	4000 B	10 U	20 U		0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	41	3.7		1.0 J		3.9	15
MW22	10/8/2013	N	0.50 U	0.14	0.24 J	10.0 U	50 U	5200 B	2.8 J	20 U		0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	45	7.2		1.4 J		4.7	10
MW22	5/14/2014	N		0.093 J																			
MW22	9/24/2014	N	0.50 U	0.27	0.22 J	2.0 U	25 J		19	20 U		0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	51	1.7	60	0.69		3.6	0.71 J
MW22	4/21/2015	N	0.50 U	0.072 J	0.60 J	2.8	390		23	20 U		0.21 U	0.50 U	1.0 U	1.0 U	2.0 U	42	1.9	57	0.69		3.7	0.57 J
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
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 =							

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	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
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

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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		
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
MW26	12/6/2000	N	0.65 U	118 J	1.1	21	25 U			94	17			5 U	0.1 U	1 U	1 U	1 U	230	29	350	2.8		540	8
MW26	12/6/2000	N2	0.65 U	115 J	2.8	27	16000			300	35			5 U	0.1 U	1 U	1 U	1 U	270	28	330	2.8		770	6.1
MW26	12/6/2000	N3	0.7 U		4	25 U	25 U			89	25 U			5 U	0.1 U	1 U	1 U	1 U							
MW26	12/6/2000	N4			1.1	25	16000			290	33														
MW26	4/24/2001	N	0.1 U	0.1 U	3	13	6980			132	24			5.4 U	0.1 U	1 U	1 U	1 U	240	22	294	5 =		10	2.79
MW26	4/24/2001	N2	0.1 U		0.24	25 U	36			15 U	19700											5			
MW26	6/18/2001	N	0.1 U	1	1.1	25 U	25 U			15 U	25 U			5 U	0.1 U	1 U	1 U	1 U	230	27	326	30		13	6.67
MW26	6/18/2001	N2	0.1 U		3.6	18	9140			232	28											30 =			
MW26	9/10/2001	N	10 U	0.16 J	1.5	10 U	2300			94	24			0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	260	30	300	3.2		12	0.34 U
MW26	9/10/2001	N2	10 U	0.16 J	0.8 J	4 J	100 J			4 U	3.8 J			0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	260	29	310	3.2		12	2.7
MW26	9/10/2001	N3			0.75 J	2.9 J	55 J			1.5 U	3.7 U														
MW26	9/10/2001	N4			1.6	13	2500			96	24														
MW26	5/14/2002	N		0.1	1.4 J	5 J	1530			57.2	9.7 J			5 U	1 U	5 U	5 U	5 U	260	27	300	3 H		15	5
MW26	5/14/2002	N2			1.4 U	1.2 J	11.2 U			0.73 J	9.3 J											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														

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	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

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Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	10/6/2009	N	0.83 UJ	0.1 UJ	2 UJ	3.8 J	325 J	42900 J	10 UJ	20 UJ		0.997 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ	227 J	20.7 J	491.28 J	1.7 J		212 J	1 UJ
MW26	5/19/2010	N	1.3 U	0.13 J	1.8 J	10 UJ	236. J	39800. J	10 UJ	15. J		1.0 U	0.5 U	5 U	5 U	5 U	230	20.4	486	2.41 J		279	20.1 J
MW26	10/5/2010	N	1.3 U	0.1 UJ	2 U	10 U	376	37900	10 U	20 U		1.0 U	0.1 U	0.4 U	0.4 U	1 U	236	20.0 J	478	1.77		232	0.6 J
MW26	6/29/2011	N	0.9 U	0.1 U	2 UJ	10 U	274	41600	10 U	20 U		0.992 U	0.1 U	0.4 U	0.4 U	1 U	202	18.3 J	463.00	1.83 J		230	1 U
MW26	10/19/2011	N	0.50 U	0.099 U	0.87 J	2 U	50 U	29000 B	10 U	10 U		0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	230	19	329.00	1.6 J		200	0.88 J
MW26	5/22/2012	N	0.50 U	0.10 U	2.0 U	10 U	50 U	28000 =	10 U	20 U		0.19 UJ	0.50 U	1.0 U	1.0 U	2.0 U	200	19	325.00	1.7		210	0.43 J
MW26	10/16/2012	N	0.50 U	0.095 U	0.99 J	10 U	50 U	29000 =	10 U	20 U		0.19 U	0.50 U	1.0 U	1.0 UJ	2.0 U	190	19	344	1.8 J		200 =	0.30 J
MW26	5/22/2013	N	0.50 U	0.094 U	2.0 U	10 U	50 U	25000 B	10 U	20 U		0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	170	18		1.9 J		230	0.55 J
MW26	10/8/2013	N	0.50 U	0.095 U	0.37 J	10.0 U	50 U	26000 B	10 U	20 U		0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	160	18		1.5 J		110 J	1.0 U
MW26	5/14/2014	N		0.095 U																			
MW26	9/24/2014	FD	0.50 U	0.095 U	0.32 J	2.0 U	100 U		5.0 U	20 U		0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	150	17	280	1.2		160	1.0 U
MW26	9/24/2014	N	0.50 U	0.095 U	0.43 J	2.0 U	100 U		5.0 U	20 U		0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	150	17	290	1.2		160	1.0 U
MW26	4/21/2015	FD		0.094 U	0.76 J	2.0 U	100 U		5.0 U	20 U		0.19 U											
MW26	4/21/2015	N	0.50 U	0.094 U	0.71 J	2.0 U	100 U		4.4 J	20 U		0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	160	16	240	2.4		82	1.0 U
MW26	10/13/2015	N	0.50 U	0.096 U	0.76 J	2.0 U	100 U		5.0 U	20.0 U		0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	198	15.3	229	1.9		74.6	0.32 J
MW26	10/13/2015	N	0.50 U	0.096 U	0.50 J	2.0 U	100 U		5.0 U	20.0 U		0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	194	15.5	235	1.9		75.7	0.33 J
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

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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
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
MW29	4/13/2016	N	1.4	14000	5.0 U	6.7	1660		2270	20.0 U		34	0.50 U	0.58 J	0.90 J	7.2	87.0	4.5	120	0.10 U		6.4	70.2
MW29	7/21/2016	FD	0.69	9100	5.0 U	2.1	1250		2740	20.0 U		30	0.50 U	0.83 J	1.2	9.3	83.8	9.2	110	0.10 U		10.5	51.6
MW29	7/21/2016	N	0.67	11000	5.0 U	2.1	1290		2800	20.0 U		35	0.50 U	0.74 J	1.3	9.1	84.0	9.2	110	0.10 U		10.4	50.5
MW29	10/14/2016	N	0.32 J	20000	0.35 J	2.6	1970		3220	20.0 U		32	0.50 U	0.98 J	1.6	11	83.0	15.9	124	0.10 U		16.3	56.9
MW29	1/24/2017	FD	0.37 J	67000	0.35	3.3	1380		3170	6.2		41	0.28	0.90 J	1.3	12	112	4.3	122	0.035		6.9	49.9
MW29	1/24/2017	N	0.40 J	56000	0.35	1.9 J	1400		3290	6.2		40	0.28	0.98 J	1.2	12	113	4.3	120	0.035		6.8	51.4
MW30	4/13/2016	N	0.50 U	0.72	5.0 U	0.81 J	46.1 J		147	20.0 U		0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	42.0	3.2	82.3	3.4		32.8	1.2
MW30	7/21/2016	N	0.50 U	1.7	5.0 U	2.0 U	100 U		52.9	20.0 U		0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	44.5	2.9	82.0	4.0		29.9	1.4
MW30	10/12/2016	N	0.084 J	3.8	5.0 U	1.1 J	13.8 J		67.3	20.0 U		0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	52.2	3.8	86.0	1.6		30.5	
MW30	1/20/2017	N	0.080	5.5	0.35	1.0 J	9.4 J		52.8	6.2		0.060	0.28	0.26	0.23	0.24	45.9	2.4	60.0	0.80		9.9	1.4
MW30	4/21/2017	N	0.50 U	3.6	5.0 U	0.95 J	8.1 J		37.7	20.0 U		0.21 U	0.50 U	1.0 U	1.0 U	2.0 U	46.2	0.57 J	250	1.1		5.4	0.93 J
MW30	10/5/2017	N	0.11 J	2.1	1.0 U	1.1 J	49.4 J		31.5	20.0 U		0.80 U	0.50 U	0.50 U	0.50 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

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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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	
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	
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	
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	
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																				

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Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	5/14/2002	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							

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	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							
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							

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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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	5/13/2014	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							
RW02	10/9/1997	FD		2																			
RW02	10/9/1997	N		0.9 J																			
RW02	10/24/1997	N		1 U																			
RW02	4/8/1998	N		1 U																			
RW02	4/24/2001	N		0.1 U								5.4 U	0.1 U	1 U	1 U	1 U							
RW02	9/11/2001	N		9.5								0.25 U	0.44 U	0.5 U	0.4 U	1.2 U							
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							

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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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	5/4/2004	N		0.0252 UB								5.00 U	0.500 U	5.00 U	5.00 U	5.00 U							
RW02	9/22/2004	N		0.398								5.00 U	0.500 U	5.00 U	5.00 U	5.00 U							
RW02	11/1/2004	N		0.0962 U																			
RW02	5/10/2005	N		0.11 U								0.93 U	0.50 U	5.0 U	5.0 U	5.0 U							
RW02	9/27/2005	N		0.11 U								0.92 UJ	0.50 U	5.0 U	5.0 U	5.0 U							
RW02	5/31/2006	N		0.11 UJ								0.93 U	0.50 U	5.0 U	5.0 U	5.0 U							
RW02	9/25/2006	N		0.11 U								0.93 U	0.50 U	5.0 U	5.0 U	5.0 U							
RW02	5/9/2007	N		0.092 UJ								0.97 R	1.0 U	1.0 U	1.0 U	2.0 U							
RW02	9/18/2007	N		0.093 UJ								0.93 R	1.0 U	1.0 U	1.0 U	2.0 U							
RW02	5/20/2008	N		0.095 UJ								0.95 U	1.0 UJ	1.0 U	1.0 U	2.0 UJ							
RW02	10/23/2008	N										1.33 U											
RW02	12/10/2008	N		0.1 U									0.1 U	0.4 U	0.4 U	1.0 U							
RW02	6/2/2009	N		0.1 UJ								1.0 UJ	0.5 U	2.0 U	2.0 U	5.0 U							
RW02	10/7/2009	N		0.1 UJ								0.997 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ							
RW02	5/19/2010	N		0.1 U								1.0 U	0.4 U	5 U	5 U	5 U							
RW02	10/5/2010	N		0.1 U								1.0 U	0.1 U	0.4 U	0.4 U	1 U							
RW02	6/30/2011	N		0.1 U								0.999 U	0.1 U	0.4 U	0.4 U	1 U							
RW02	10/20/2011	N		0.095 U								0.20 U	0.50 U	1.0 U	1.0 U	2.0 U							
RW02	5/23/2012	N		0.097 U								0.19 U	0.50 U	1.0 U	1.0 U	2.0 U							
RW02	10/17/2012	N		0.037 J								0.19 U	0.50 U	1.0 U	1.0 U	2.0 U							
RW02	10/17/2012	N2		0.057 J																			
RW02	10/17/2012	N3		0.094 UJ																			
RW02	12/3/2012	N		0.095 U																			
RW02	12/3/2012	N2		0.094 UJ																			
RW02	5/21/2013	N		0.097 U								0.19 U	0.50 U	1.0 U	1.0 U	2.0 U							
RW02	10/8/2013	N		0.094 U								0.19 U	0.50 U	1.0 U	1.0 U	2.0 U							
RW02	5/13/2014	N		0.095 U																			
RW02	9/25/2014	N		0.096 U								0.19 U	0.50 U	1.0 U	1.0 U	2.0 U							
RW02	4/21/2015	N		0.095 U								0.19 U	0.50 U	1.0 U	1.0 U	2.0 U							
RW02	10/15/2015	N		0.096 U								0.20 U	0.50 U	1.0 U	1.0 U	2.0 U							
RW02	4/5/2016	N		0.095 U								0.19 U	0.50 U	1.0 U	1.0 U	2.0 U							

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Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	10/10/2016	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							
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							

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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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	10/23/2008	N										1 U											
RW03	12/10/2008	N		0.1 U									0.1 U	0.4 U	0.4 U	1.0 U							
RW03	6/2/2009	N		0.1 UJ								1.0 UJ	0.5 U	2.0 U	2.0 U	5.0 U							
RW03	10/7/2009	N		0.1 UJ								0.997 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ							
RW03	5/19/2010	N		0.1 U								1.0 U	0.4 UJ	5 UJ	5 UJ	5 UJ							
RW03	10/5/2010	N		0.1 U								1.0 U	0.1 U	0.4 U	0.4 U	1 U							
RW03	6/30/2011	N		0.1 U								0.994 U	0.1 U	0.4 U	0.4 U	1 U							
RW03	10/20/2011	N		0.095 U								0.19 U	0.50 U	1.0 U	1.0 U	2.0 U							
RW03	5/23/2012	N		0.097 U								0.19 U	0.50 U	1.0 U	1.0 U	2.0 U							
RW03	10/17/2012	N		0.015 J								0.19 U	0.50 U	1.0 U	1.0 U	2.0 U							
RW03	12/3/2012	N		0.095 U																			
RW03	12/3/2012	N2		0.095 UJ																			
RW03	5/21/2013	N		0.053 J								0.19 U	0.50 U	1.0 U	1.0 U	2.0 U							
RW03	10/8/2013	N		0.096 U								0.19 U	0.50 U	1.0 U	1.0 U	2.0 U							
RW03	5/13/2014	N		0.095 U																			
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							

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	10/9/1997	N		1 U																			
RW04	4/23/2001	N		0.1 U								5 U	0.5 U	5 U	5 U								
RW04	9/11/2001	N		0.073 J								0.25 U	0.44 U	0.5 U	0.4 U	1.2 U							
RW04	9/28/2001	N		0.1 U																			
RW04	9/28/2001	N2		0.05 U																			
RW04	5/14/2002	N		0.13								5 U	1 U	5 U	5 U	5 U							
RW04	8/6/2002	N		0.04 U								5 U	1 U	5 U	5 U	5 U							
RW04	4/29/2003	N		0.11 U								7.4 U	0.5 U	5 U	5 U	5 U							
RW04	9/23/2003	N		0.11 U								0.99 U	0.25 U	2.5 U	2.5 U	2.5 U							
RW04	5/4/2004	N		0.100 U								5.00 U	0.500 U	5.00 U	5.00 U	5.00 U							
RW04	9/22/2004	N		0.266								5.00 U	0.500 U	5.00 U	5.00 U	5.00 U							
RW04	10/1/2004	N		0.0962 R																			
RW04	5/10/2005	N		0.11 U								0.94 U	0.50 U	5.0 U	5.0 U	5.0 U							
RW04	9/27/2005	N		0.11 U								0.91 UJ	0.50 U	5.0 U	5.0 U	5.0 U							
RW04	5/31/2006	N		0.11 UJ								0.97 U	0.50 U	5.0 U	5.0 U	5.0 U							
RW04	9/25/2006	N		0.11 U								0.93 U	0.50 U	5.0 U	5.0 U	5.0 U							
RW04	5/9/2007	N		0.093 UJ								0.96 R	1.0 U	1.0 U	1.0 U	2.0 U							
RW04	9/18/2007	N		0.093 UJ								0.93 R	1.0 U	1.0 U	1.0 U	2.0 U							
RW04	5/20/2008	N		0.093 UJ								0.96 U	1.0 UJ	1.0 U	1.0 U	2.0 UJ							
RW04	10/23/2008	N										1 U											
RW04	12/10/2008	N		0.1 U									0.1 U	0.4 U	0.4 U	1.0 U							
RW04	6/2/2009	N		0.1 UJ								1.0 UJ	0.5 U	2.0 U	2.0 U	5.0 U							
RW04	10/7/2009	N		0.15 J								0.994 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ							
RW04	10/20/2009	N		0.1 UJ																			
RW04	5/19/2010	N		0.1 U								1.0 U	0.4 UJ	5 UJ	5 UJ	5 UJ							
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																			

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	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			0.10 U^c								0.75 U	0.50 U	0.50 U	0.50 U	1.0 U							
RW05	5/4/2004	N		0.0935 U								5.00 U	0.500 U	5.00 U	5.00 U	5.00 U							
RW05	9/22/2004	N		0.293								5.00 U	0.500 U	5.00 U	5.00 U	5.00 U							
RW05	11/1/2004	N		0.0962 U																			
RW05	5/10/2005	N		0.11 U								0.93 U	0.50 U	5.0 U	5.0 U	5.0 U							
RW05	9/27/2005	N		0.11 U								0.92 UJ	0.50 U	5.0 U	5.0 U	5.0 U							
RW05	5/31/2006	N		0.11 UJ								0.94 U	0.50 U	5.0 U	5.0 U	5.0 U							
RW05	9/25/2006	N		0.11 U								0.93 U	0.50 U	5.0 U	5.0 U	5.0 U							
RW05	5/9/2007	N		0.092 UJ								0.93 R	1.0 U	1.0 U	1.0 U	2.0 U							
RW05	9/18/2007	N		0.093 UJ								1.0 R	1.0 U	1.0 U	1.0 U	2.0 U							
RW05	5/20/2008	N		0.095 UJ								0.95 U	1.0 UJ	1.0 U	1.0 U	2.0 UJ							
RW05	10/23/2008	N										1 U											
RW05	12/10/2008	N		0.1 U									0.1 U	0.4 U	0.4 U	1.0 U							
RW05	6/2/2009	N		0.1 UJ								1.0 UJ	0.5 U	2.0 U	2.0 U	5.0 U							

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	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	N		0.095 UJ																				
RW05	12/4/2012	N2		0.095 U																				
RW05	5/21/2013	N		0.095 U								0.19 U	0.50 U	1.0 U	1.0 U	2.0 U								
RW05	10/8/2013	N		0.098 U								0.19 U	0.50 U	1.0 U	1.0 U	2.0 U								
RW05	5/13/2014	N		0.095 U																				
RW05	9/25/2014	N		0.096 U								0.19 U	0.50 U	1.0 U	1.0 U	2.0 U								
RW05	4/21/2015	N		0.095 U								0.19 U	0.50 U	1.0 U	1.0 U	2.0 U								
RW05	10/15/2015	N		0.10 U								0.19 U	0.50 U	1.0 U	1.0 U	2.0 U								
RW05	4/5/2016	N		0.095 U								0.19 U	0.50 U	1.0 U	1.0 U	2.0 U								
RW05	10/10/2016	N		0.095 U								0.19 U	0.50 U	1.0 U	1.0 U	2.0 U								
RW05	4/17/2017	N		0.097 U								0.19 U	0.50 U	1.0 U	1.0 U	2.0 U								
RW05	10/20/2017	N		0.095 U								0.81 U	0.50 U	0.50 U	0.50 U	1.0 U								
RW05	4/17/2018	FD		0.024 U								0.75 U	0.50 U	0.50 U	0.50 U	1.0 U								
RW05	4/17/2018	N		0.024 U								0.75 U	0.50 U	0.50 U	0.50 U	1.0 U								
RW05	10/15/2018	N		0.16								0.87 U	0.50 U	0.50 U	0.50 U	1.0 U								
RW05	4/22/2019	N		0.085 U								0.25 U	0.15 U	0.18 U	0.15 U	0.22 U								
RW05	10/1/2019	FD		0.091 U								0.26 U	0.15 U	0.18 U	0.15 U	0.22 U								
RW05	10/1/2019	N		0.090 U								0.26 U	0.15 U	0.18 U	0.15 U	0.22 U								
RW05	4/14/2021	N		0.099 U								0.80 U	0.50 U	0.50 U	0.50 U	1.0 U								
RW05	10/13/2021	N		0.099 U								0.77 U	0.50 U	0.50 U	0.50 U	1.0 U								
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								

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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	4/5/2016	N		0.095 U								0.19 U	0.50 U	1.0 U	1.0 U	2.0 U							
RW06	10/10/2016	N		0.095 U								0.19 U	0.50 U	1.0 U	1.0 U	2.0 U							
RW06	4/18/2017	N		0.095 U								0.19 U	0.50 U	1.0 U	1.0 U	2.0 U							
RW06	10/20/2017	N		0.095 U								0.75 U	0.50 U	0.50 U	0.50 U	1.0 U							
RW06	4/17/2018	N		0.024 U								0.83 U	0.50 U	0.50 U	0.50 U	1.0 U							
RW06	10/16/2018	N		0.099 U								0.78 U	0.50 U	0.50 U	0.50 U	1.0 U							
RW06	4/22/2019	N		0.086 U								0.24 U	0.15 U	0.18 U	0.15 U	0.22 U							
RW06	10/1/2019	N		0.086 U								0.24 U	0.15 U	0.18 U	0.15 U	0.22 U							
RW06	4/26/2021	N		0.096 U								0.76 U	0.50 U	0.50 U	0.50 U	1.0 U							
RW06	10/13/2021	N		0.10 U ^c								0.78 U	0.50 U	0.50 U	0.50 U	1.0 U							
RW06 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							

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

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

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
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

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

**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

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

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

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

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

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

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

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

**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	3/10/2015	92.30	91.58	0.72	0.1	Measurements recorded prior to LNAPL removal
EW05	3/26/2015	92.42	91.62	0.80	NA	
EW05	3/31/2015	NM	NM	NM	0.5	
EW05	4/10/2015	92.50	91.71	0.79	NA	
EW05	4/16/2015	92.51	91.69	0.82	NA	
EW05	4/27/2015	NM	NM	NM	1.0	
EW05	5/8/2015	92.03	91.70	0.33	NA	
EW05	5/21/2015	92.34	91.76	0.58	1.0	
EW05	6/3/2015	92.29	91.79	0.50	0.4	
EW05	6/16/2015	92.40	91.86	0.54	0.3	
EW05	7/8/2015	92.34	91.95	0.39	NA	
EW05	7/10/2015	NM	NM	NM	0.5	
EW05	7/21/2015	92.58	91.93	0.65	NA	
EW05	7/23/2015	NM	NM	NM	0.5	
EW05	7/29/2015	92.69	91.96	0.73	NA	
EW05	8/5/2015	92.60	92.04	0.56	NA	
EW05	8/7/2015	NM	NM	NM	0.3	
EW05	8/19/2015	92.45	91.94	0.51	NA	
EW05	8/21/2015	NM	NM	NM	0.3	
EW05	9/4/2015	92.02	91.82	0.20	NA	
EW05	9/11/2015	NM	NM	NM	<0.1	
EW05	9/21/2015	91.67	91.66	0.01	NA	
EW05	10/8/2015	91.87	91.67	0.20	NA	
EW05	10/22/2015	91.66	91.65	0.01	NA	
EW05	11/2/2015	91.51	91.50	0.01	NA	
Total LNAPL Recovered					5.5	
EW06	11/5/2014	111.22	98.06	13.16	12.0	Temporary system shutdown due to alarm condition
EW06	11/12/2014	107.80	98.30	9.50	NA	
EW06	11/17/2014	110.34	98.52	11.82	NA	
EW06	11/24/2014	111.05	98.45	12.60	10.0	
EW06	11/25/2014	105.63	98.55	7.08	NA	
EW06	12/1/2014	108.60	98.53	10.07	NA	
EW06	12/4/2014	109.35	98.48	10.87	NA	
EW06	12/8/2014	101.90	97.89	4.01	NA	
EW06	12/11/2014	111.91	98.01	13.90	NA	
EW06	12/11/2014	100.35	98.40	1.95	12.0	
EW06	12/15/2014	108.40	98.01	10.39	NA	Measurements recorded prior to LNAPL removal Measurements recorded immediately after LNAPL removal, groundwater extraction system shutdown pending carbon change-out
EW06	12/23/2014	109.35	98.01	11.34	NA	
EW06	12/23/2014	99.50	98.35	1.15	13.0	
EW06	12/30/2014	98.59	97.83	0.76	NA	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
EW06	1/8/2015	99.00	97.92	1.08	NA	Groundwater extraction system remained shutdown pending carbon change-out
EW06	1/19/2015	99.54	97.80	1.74	NA	Groundwater extraction system restarted after carbon change-out
EW06	1/22/2015	111.10	98.18	12.92	NA	
EW06	1/23/2015	98.90	98.50	0.40	12.0	Measurements recorded immediately after LNAPL removal
EW06	1/30/2015	109.35	98.22	11.13	NA	
EW06	2/3/2015	112.61	98.22	14.39	12.0	Measurements recorded prior to LNAPL removal
EW06	2/13/2015	112.44	98.22	14.22	14.0	Groundwater extraction pump turned off
EW06	2/17/2015	101.95	98.12	3.83	NA	
EW06	2/20/2015	105.20	98.18	7.02	NA	
EW06	2/24/2015	105.37	98.02	7.35	8.0	Measurements recorded prior to LNAPL removal
EW06	3/10/2015	108.36	98.22	10.14	8.0	Measurements recorded prior to LNAPL removal
EW06	3/24/2015	NM	NM	NM	8.0	Not measured due to equipment breakdown
EW06	3/26/2015	105.87	98.21	7.66	NA	
EW06	4/10/2015	105.55	98.39	7.16	10.0	
EW06	4/16/2015	106.02	98.36	7.66	10.0	
EW06	4/30/2015	106.33	98.47	7.86	8.0	Groundwater extraction rate increased to 6 gpm
EW06	5/8/2015	100.72	98.32	2.40	4.0	
EW06	5/21/2015	106.84	98.27	8.57	10.0	
EW06	6/3/2015	106.55	98.41	8.14	NA	
EW06	6/4/2015	NM	NM	NM	10.0	
EW06	6/16/2015	105.85	98.49	7.36	7.0	
EW06	7/8/2015	107.10	98.42	8.68	20.0	
EW06	7/10/2015	107.10	98.60	8.50	17.0	
EW06	7/21/2015	107.90	98.54	9.36	17.0	
EW06	7/29/2015	105.87	98.59	7.28	NA	Groundwater extraction rate decreased to 3 gpm
EW06	8/5/2015	105.98	98.65	7.33	14.0	
EW06	8/7/2015	NM	NM	NM	14.0	
EW06	8/19/2015	103.95	98.51	5.44	10.0	
EW06	9/4/2015	105.31	98.31	7.00	10.0	
EW06	9/21/2015	104.49	98.28	6.21	10.0	
EW06	10/8/2015	100.38	98.25	2.13	5.0	
EW06	10/22/2015	105.54	98.23	7.31	8.0	
EW06	11/2/2015	105.15	98.05	7.10	NA	
EW06	11/5/2015	NM	NM	NM	8.0	
EW06	11/23/2015	NM	NM	NM	NA	Groundwater extraction pump turned off for pilot study
Total LNAPL Recovered					301.0	
EW10	11/4/2014	108.20	103.92	4.28	NA	
EW10	11/5/2014	108.77	104.70	4.07	4.0	
EW10	11/18/2014	107.60	104.35	3.25	NA	
EW10	11/24/2014	107.45	103.94	3.51	0.0	LNAPL pump inoperable, unable to recover LNAPL
EW10	11/25/2014	107.50	103.91	3.59	NA	

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

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

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

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

**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	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

Appendix B

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

ANALYTICAL REPORT

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

Laboratory Job ID: 500-206581-1
Client Project/Site: Penta Wood 11222418

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

Attn: Mr. Grant Anderson

Jodie Bracken

Authorized for release by:
10/26/2021 4:58:32 PM
Jodie Bracken, Project Management Assistant II
Jodie.Bracken@Eurofinset.com

Designee for
Richard Wright, Senior Project Manager
(708)746-0045
Richard.Wright@Eurofinset.com

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

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

Job ID: 500-206581-1

Job ID: 500-206581-1

Laboratory: Eurofins TestAmerica, Chicago

Narrative

Job Narrative 500-206581-1

Receipt

The samples were received on 10/12/2021 9:45 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 2.1° C, 3.8° C, 4.3° C and 5.1° C.

GC/MS VOA

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

GC/MS Semi VOA

Method 8270D: Perylene-d12 Internal standard (ISTD) response for the following samples was outside of acceptance limits: W-211011-RA-04 (500-206581-4). Analytes associated to this internal standard are not being reported from this run.

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 500-624310 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 impacted are: W-211011-RA-01 (500-206581-1), W-211011-RA-02 (500-206581-2), W-211011-RA-03 (500-206581-3) and (CCV 500-624310/19).

Method 8151A: The following samples required a dilution due to the nature of the sample matrix: W-211011-RA-04 (500-206581-4). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

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

Metals

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

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: 500-206581-1

Client Sample ID: W-211011-RA-01

Lab Sample ID: 500-206581-1

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.43	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	2.1		2.0	0.50	ug/L	1		6020A	Dissolved
Manganese	4.2		2.5	0.79	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	76.6		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	60.4		4.0	3.4	mg/L	20		300.0	Total/NA
Nitrate as N	2.2		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	5.3		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.58	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	62.3		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-211011-RA-02

Lab Sample ID: 500-206581-2

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.41	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	1.8	J	2.0	0.50	ug/L	1		6020A	Dissolved
Manganese	4.1		2.5	0.79	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	76.9		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	59.8		4.0	3.4	mg/L	20		300.0	Total/NA
Nitrate as N	2.2		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	5.4		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.55	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	63.8		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-211011-RA-03

Lab Sample ID: 500-206581-3

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.52	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	52.6		2.0	0.50	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	113		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	11.4	F1	1.0	0.85	mg/L	5		300.0	Total/NA
Nitrate as N	2.9		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	5.4		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.50	J F1	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	93.6		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-211011-RA-04

Lab Sample ID: 500-206581-4

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Naphthalene	1.5		0.81	0.25	ug/L	1		8270D	Total/NA
Pentachlorophenol	2100		400	580	ug/L	4000		8151A	Total/NA
Arsenic	0.42	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	34.2		2.0	0.50	ug/L	1		6020A	Dissolved
Iron	149		100	46.7	ug/L	1		6020A	Dissolved
Manganese	50.7		2.5	0.79	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	139		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	3.0		0.20	0.17	mg/L	1		300.0	Total/NA
Nitrate as N	0.12	J	0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	5.4		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	14.9		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	125		5.0	3.7	mg/L	1		SM 2320B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

Detection Summary

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

Job ID: 500-206581-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-206581-5

No Detections.

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This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

Method Summary

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

Job ID: 500-206581-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CHI
RSK-175	Dissolved Gases (GC)	RSK	TAL CAN
8151A	Herbicides (GC)	SW846	TAL CHI
6020A	Metals (ICP/MS)	SW846	TAL CHI
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	TAL CHI
300.0	Anions, Ion Chromatography	MCAWW	TAL CHI
9060A	Organic Carbon, Total (TOC)	SW846	TAL CHI
SM 2320B	Alkalinity	SM	TAL CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CHI
3010A	Preparation, Total Metals	SW846	TAL CHI
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL CHI
5030B	Purge and Trap	SW846	TAL CHI
8151A	Extraction (Herbicides)	SW846	TAL 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:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TAL CHI = Eurofins TestAmerica, 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: 500-206581-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-206581-1	W-211011-RA-01	Water	10/11/21 12:07	10/12/21 09:45
500-206581-2	W-211011-RA-02	Water	10/11/21 12:07	10/12/21 09:45
500-206581-3	W-211011-RA-03	Water	10/11/21 12:59	10/12/21 09:45
500-206581-4	W-211011-RA-04	Water	10/11/21 13:54	10/12/21 09:45
500-206581-5	Trip Blank	Water	10/11/21 00:00	10/12/21 09:45

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Client Sample Results

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

Job ID: 500-206581-1

Client Sample ID: W-211011-RA-01

Lab Sample ID: 500-206581-1

Date Collected: 10/11/21 12:07

Matrix: Water

Date Received: 10/12/21 09:45

Method: 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			10/19/21 04:54	1
Toluene	<0.15		0.50	0.15	ug/L			10/19/21 04:54	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/19/21 04:54	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/19/21 04:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		75 - 126		10/19/21 04:54	1
Toluene-d8 (Surr)	95		75 - 120		10/19/21 04:54	1
4-Bromofluorobenzene (Surr)	81		72 - 124		10/19/21 04:54	1
Dibromofluoromethane	99		75 - 120		10/19/21 04:54	1

Method: 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		10/13/21 06:23	10/14/21 15:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	77		36 - 120	10/13/21 06:23	10/14/21 15:56	1
2-Fluorobiphenyl (Surr)	84		34 - 110	10/13/21 06:23	10/14/21 15:56	1
Terphenyl-d14 (Surr)	109		40 - 145	10/13/21 06:23	10/14/21 15:56	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			10/18/21 17:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	106		60 - 140		10/18/21 17:59	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14	^c	0.095	0.14	ug/L		10/18/21 09:26	10/19/21 17:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	80		25 - 130	10/18/21 09:26	10/19/21 17:03	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.43	J	1.0	0.23	ug/L		10/18/21 08:53	10/18/21 19:23	1
Copper	2.1		2.0	0.50	ug/L		10/18/21 08:53	10/18/21 19:23	1
Iron	<46.7		100	46.7	ug/L		10/18/21 08:53	10/18/21 19:23	1
Manganese	4.2		2.5	0.79	ug/L		10/18/21 08:53	10/18/21 19:23	1
Zinc	<6.9		20.0	6.9	ug/L		10/18/21 08:53	10/18/21 19:23	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	76.6		0.91	0.46	mg/L		10/13/21 09:05	10/15/21 10:28	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	60.4		4.0	3.4	mg/L			10/12/21 18:32	20
Nitrate as N	2.2		0.20	0.068	mg/L			10/12/21 12:49	1
Sulfate	5.3		0.20	0.095	mg/L			10/12/21 12:49	1
Total Organic Carbon - Duplicates	0.58	J	1.0	0.47	mg/L			10/19/21 22:39	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-206581-1

Client Sample ID: W-211011-RA-01

Lab Sample ID: 500-206581-1

Date Collected: 10/11/21 12:07

Matrix: Water

Date Received: 10/12/21 09:45

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	62.3		5.0	3.7	mg/L			10/14/21 14:16	1

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Client Sample Results

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

Job ID: 500-206581-1

Client Sample ID: W-211011-RA-02

Lab Sample ID: 500-206581-2

Date Collected: 10/11/21 12:07

Matrix: Water

Date Received: 10/12/21 09:45

Method: 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			10/19/21 05:22	1
Toluene	<0.15		0.50	0.15	ug/L			10/19/21 05:22	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/19/21 05:22	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/19/21 05:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		75 - 126		10/19/21 05:22	1
Toluene-d8 (Surr)	95		75 - 120		10/19/21 05:22	1
4-Bromofluorobenzene (Surr)	82		72 - 124		10/19/21 05:22	1
Dibromofluoromethane	99		75 - 120		10/19/21 05:22	1

Method: 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		10/13/21 06:23	10/14/21 16:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	76		36 - 120	10/13/21 06:23	10/14/21 16:20	1
2-Fluorobiphenyl (Surr)	85		34 - 110	10/13/21 06:23	10/14/21 16:20	1
Terphenyl-d14 (Surr)	106		40 - 145	10/13/21 06:23	10/14/21 16:20	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			10/18/21 18:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	105		60 - 140		10/18/21 18:16	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14	^c	0.096	0.14	ug/L		10/18/21 09:26	10/19/21 17:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	82		25 - 130	10/18/21 09:26	10/19/21 17:22	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.41	J	1.0	0.23	ug/L		10/18/21 08:53	10/18/21 19:26	1
Copper	1.8	J	2.0	0.50	ug/L		10/18/21 08:53	10/18/21 19:26	1
Iron	<46.7		100	46.7	ug/L		10/18/21 08:53	10/18/21 19:26	1
Manganese	4.1		2.5	0.79	ug/L		10/18/21 08:53	10/18/21 19:26	1
Zinc	<6.9		20.0	6.9	ug/L		10/18/21 08:53	10/18/21 19:26	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	76.9		0.91	0.46	mg/L		10/13/21 09:05	10/15/21 10:28	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	59.8		4.0	3.4	mg/L			10/12/21 18:45	20
Nitrate as N	2.2		0.20	0.068	mg/L			10/12/21 13:01	1
Sulfate	5.4		0.20	0.095	mg/L			10/12/21 13:01	1
Total Organic Carbon - Duplicates	0.55	J	1.0	0.47	mg/L			10/19/21 23:02	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-206581-1

Client Sample ID: W-211011-RA-02

Lab Sample ID: 500-206581-2

Date Collected: 10/11/21 12:07

Matrix: Water

Date Received: 10/12/21 09:45

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	63.8		5.0	3.7	mg/L			10/14/21 14:23	1

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Client Sample Results

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

Job ID: 500-206581-1

Client Sample ID: W-211011-RA-03

Lab Sample ID: 500-206581-3

Date Collected: 10/11/21 12:59

Matrix: Water

Date Received: 10/12/21 09:45

Method: 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			10/19/21 05:49	1
Toluene	<0.15		0.50	0.15	ug/L			10/19/21 05:49	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/19/21 05:49	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/19/21 05:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		75 - 126		10/19/21 05:49	1
Toluene-d8 (Surr)	94		75 - 120		10/19/21 05:49	1
4-Bromofluorobenzene (Surr)	83		72 - 124		10/19/21 05:49	1
Dibromofluoromethane	99		75 - 120		10/19/21 05:49	1

Method: 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		10/13/21 06:23	10/14/21 16:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	76		36 - 120	10/13/21 06:23	10/14/21 16:43	1
2-Fluorobiphenyl (Surr)	85		34 - 110	10/13/21 06:23	10/14/21 16:43	1
Terphenyl-d14 (Surr)	106		40 - 145	10/13/21 06:23	10/14/21 16:43	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			10/15/21 19:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	106		60 - 140		10/15/21 19:53	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14	^c	0.10	0.14	ug/L		10/18/21 09:26	10/19/21 17:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	85		25 - 130	10/18/21 09:26	10/19/21 17:42	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.52	J	1.0	0.23	ug/L		10/18/21 08:53	10/18/21 19:30	1
Copper	52.6		2.0	0.50	ug/L		10/18/21 08:53	10/18/21 19:30	1
Iron	<46.7		100	46.7	ug/L		10/18/21 08:53	10/18/21 19:30	1
Manganese	<0.79		2.5	0.79	ug/L		10/18/21 08:53	10/18/21 19:30	1
Zinc	<6.9		20.0	6.9	ug/L		10/18/21 08:53	10/18/21 19:30	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	113		0.91	0.46	mg/L		10/13/21 09:05	10/15/21 10:28	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11.4	F1	1.0	0.85	mg/L			10/12/21 18:57	5
Nitrate as N	2.9		0.20	0.068	mg/L			10/12/21 13:14	1
Sulfate	5.4		0.20	0.095	mg/L			10/12/21 13:14	1
Total Organic Carbon - Duplicates	0.50	J F1	1.0	0.47	mg/L			10/19/21 23:25	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-206581-1

Client Sample ID: W-211011-RA-03

Lab Sample ID: 500-206581-3

Date Collected: 10/11/21 12:59

Matrix: Water

Date Received: 10/12/21 09:45

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	93.6		5.0	3.7	mg/L			10/14/21 14:29	1

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Client Sample Results

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

Job ID: 500-206581-1

Client Sample ID: W-211011-RA-04

Lab Sample ID: 500-206581-4

Date Collected: 10/11/21 13:54

Matrix: Water

Date Received: 10/12/21 09:45

Method: 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			10/19/21 06:16	1
Toluene	<0.15		0.50	0.15	ug/L			10/19/21 06:16	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/19/21 06:16	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/19/21 06:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		75 - 126		10/19/21 06:16	1
Toluene-d8 (Surr)	94		75 - 120		10/19/21 06:16	1
4-Bromofluorobenzene (Surr)	81		72 - 124		10/19/21 06:16	1
Dibromofluoromethane	102		75 - 120		10/19/21 06:16	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	1.5		0.81	0.25	ug/L		10/13/21 06:23	10/14/21 17:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	75		36 - 120	10/13/21 06:23	10/14/21 17:07	1
2-Fluorobiphenyl (Surr)	69		34 - 110	10/13/21 06:23	10/14/21 17:07	1
Terphenyl-d14 (Surr)	104		40 - 145	10/13/21 06:23	10/14/21 17:07	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			10/18/21 18:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	104		60 - 140		10/18/21 18:33	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	2100		400	580	ug/L		10/18/21 09:26	10/20/21 11:19	4000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	0	D	25 - 130	10/18/21 09:26	10/20/21 11:19	4000

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.42	J	1.0	0.23	ug/L		10/18/21 08:53	10/18/21 19:47	1
Copper	34.2		2.0	0.50	ug/L		10/18/21 08:53	10/18/21 19:47	1
Iron	149		100	46.7	ug/L		10/18/21 08:53	10/18/21 19:47	1
Manganese	50.7		2.5	0.79	ug/L		10/18/21 08:53	10/18/21 19:47	1
Zinc	<6.9		20.0	6.9	ug/L		10/18/21 08:53	10/18/21 19:47	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	139		0.91	0.46	mg/L		10/13/21 09:05	10/15/21 10:28	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.0		0.20	0.17	mg/L			10/12/21 13:53	1
Nitrate as N	0.12	J	0.20	0.068	mg/L			10/12/21 13:53	1
Sulfate	5.4		0.20	0.095	mg/L			10/12/21 13:53	1
Total Organic Carbon - Duplicates	14.9		1.0	0.47	mg/L			10/20/21 00:21	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-206581-1

Client Sample ID: W-211011-RA-04

Lab Sample ID: 500-206581-4

Date Collected: 10/11/21 13:54

Matrix: Water

Date Received: 10/12/21 09:45

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	125		5.0	3.7	mg/L			10/20/21 10:20	1

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Client Sample Results

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

Job ID: 500-206581-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-206581-5

Date Collected: 10/11/21 00:00

Matrix: Water

Date Received: 10/12/21 09:45

Method: 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			10/18/21 23:54	1
Toluene	<0.15		0.50	0.15	ug/L			10/18/21 23:54	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/18/21 23:54	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/18/21 23:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		75 - 126		10/18/21 23:54	1
Toluene-d8 (Surr)	94		75 - 120		10/18/21 23:54	1
4-Bromofluorobenzene (Surr)	82		72 - 124		10/18/21 23:54	1
Dibromofluoromethane	95		75 - 120		10/18/21 23:54	1

Definitions/Glossary

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

Job ID: 500-206581-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D.

Metals

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

General Chemistry

Qualifier	Qualifier Description
E	Result exceeded calibration range.
F1	MS and/or MSD recovery exceeds control limits.
J	Reported value was between the limit of detection and the limit of quantitation.

Glossary

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

QC Association Summary

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

Job ID: 500-206581-1

GC/MS VOA

Analysis Batch: 624125

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206581-1	W-211011-RA-01	Total/NA	Water	8260B	
500-206581-2	W-211011-RA-02	Total/NA	Water	8260B	
500-206581-3	W-211011-RA-03	Total/NA	Water	8260B	
500-206581-4	W-211011-RA-04	Total/NA	Water	8260B	
500-206581-5	Trip Blank	Total/NA	Water	8260B	
MB 500-624125/5	Method Blank	Total/NA	Water	8260B	
LCS 500-624125/23	Lab Control Sample	Total/NA	Water	8260B	
500-206581-3 MS	W-211011-RA-03	Total/NA	Water	8260B	
500-206581-3 MSD	W-211011-RA-03	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 623180

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206581-1	W-211011-RA-01	Total/NA	Water	3510C	
500-206581-2	W-211011-RA-02	Total/NA	Water	3510C	
500-206581-3	W-211011-RA-03	Total/NA	Water	3510C	
500-206581-4	W-211011-RA-04	Total/NA	Water	3510C	
MB 500-623180/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-623180/2-A	Lab Control Sample	Total/NA	Water	3510C	
500-206581-3 MS	W-211011-RA-03	Total/NA	Water	3510C	
500-206581-3 MSD	W-211011-RA-03	Total/NA	Water	3510C	

Analysis Batch: 623430

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206581-1	W-211011-RA-01	Total/NA	Water	8270D	623180
500-206581-2	W-211011-RA-02	Total/NA	Water	8270D	623180
500-206581-3	W-211011-RA-03	Total/NA	Water	8270D	623180
500-206581-4	W-211011-RA-04	Total/NA	Water	8270D	623180
MB 500-623180/1-A	Method Blank	Total/NA	Water	8270D	623180
LCS 500-623180/2-A	Lab Control Sample	Total/NA	Water	8270D	623180
500-206581-3 MS	W-211011-RA-03	Total/NA	Water	8270D	623180
500-206581-3 MSD	W-211011-RA-03	Total/NA	Water	8270D	623180

GC VOA

Analysis Batch: 508477

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206581-3	W-211011-RA-03	Total/NA	Water	RSK-175	
MB 240-508477/3	Method Blank	Total/NA	Water	RSK-175	
LCS 240-508477/4	Lab Control Sample	Total/NA	Water	RSK-175	
500-206581-3 MS	W-211011-RA-03	Total/NA	Water	RSK-175	
500-206581-3 MSD	W-211011-RA-03	Total/NA	Water	RSK-175	

Analysis Batch: 508722

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206581-1	W-211011-RA-01	Total/NA	Water	RSK-175	
500-206581-2	W-211011-RA-02	Total/NA	Water	RSK-175	
500-206581-4	W-211011-RA-04	Total/NA	Water	RSK-175	
MB 240-508722/3	Method Blank	Total/NA	Water	RSK-175	
LCS 240-508722/4	Lab Control Sample	Total/NA	Water	RSK-175	

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QC Association Summary

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

Job ID: 500-206581-1

GC Semi VOA

Prep Batch: 624036

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206581-1	W-211011-RA-01	Total/NA	Water	8151A	
500-206581-2	W-211011-RA-02	Total/NA	Water	8151A	
500-206581-3	W-211011-RA-03	Total/NA	Water	8151A	
500-206581-4	W-211011-RA-04	Total/NA	Water	8151A	
MB 500-624036/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-624036/2-A	Lab Control Sample	Total/NA	Water	8151A	
500-206581-3 MS	W-211011-RA-03	Total/NA	Water	8151A	
500-206581-3 MSD	W-211011-RA-03	Total/NA	Water	8151A	

Analysis Batch: 624310

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206581-1	W-211011-RA-01	Total/NA	Water	8151A	624036
500-206581-2	W-211011-RA-02	Total/NA	Water	8151A	624036
500-206581-3	W-211011-RA-03	Total/NA	Water	8151A	624036
MB 500-624036/1-A	Method Blank	Total/NA	Water	8151A	624036
LCS 500-624036/2-A	Lab Control Sample	Total/NA	Water	8151A	624036
500-206581-3 MS	W-211011-RA-03	Total/NA	Water	8151A	624036
500-206581-3 MSD	W-211011-RA-03	Total/NA	Water	8151A	624036

Analysis Batch: 624405

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206581-4	W-211011-RA-04	Total/NA	Water	8151A	624036
MB 500-624036/1-A	Method Blank	Total/NA	Water	8151A	624036
LCS 500-624036/2-A	Lab Control Sample	Total/NA	Water	8151A	624036

Metals

Prep Batch: 623258

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206581-1	W-211011-RA-01	Total/NA	Water	3010A	
500-206581-2	W-211011-RA-02	Total/NA	Water	3010A	
500-206581-3	W-211011-RA-03	Total/NA	Water	3010A	
500-206581-4	W-211011-RA-04	Total/NA	Water	3010A	

Analysis Batch: 623707

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206581-1	W-211011-RA-01	Total/NA	Water	SM 2340B	623258
500-206581-2	W-211011-RA-02	Total/NA	Water	SM 2340B	623258
500-206581-3	W-211011-RA-03	Total/NA	Water	SM 2340B	623258
500-206581-4	W-211011-RA-04	Total/NA	Water	SM 2340B	623258

Prep Batch: 624029

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206581-1	W-211011-RA-01	Dissolved	Water	3005A	
500-206581-2	W-211011-RA-02	Dissolved	Water	3005A	
500-206581-3	W-211011-RA-03	Dissolved	Water	3005A	
500-206581-4	W-211011-RA-04	Dissolved	Water	3005A	
MB 500-624029/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-624029/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
500-206581-3 MS	W-211011-RA-03	Dissolved	Water	3005A	
500-206581-3 MSD	W-211011-RA-03	Dissolved	Water	3005A	

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QC Association Summary

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

Job ID: 500-206581-1

Metals (Continued)

Prep Batch: 624029 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206581-3 DU	W-211011-RA-03	Dissolved	Water	3005A	

Analysis Batch: 624274

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206581-1	W-211011-RA-01	Dissolved	Water	6020A	624029
500-206581-2	W-211011-RA-02	Dissolved	Water	6020A	624029
500-206581-3	W-211011-RA-03	Dissolved	Water	6020A	624029
500-206581-4	W-211011-RA-04	Dissolved	Water	6020A	624029
MB 500-624029/1-A	Method Blank	Total Recoverable	Water	6020A	624029
LCS 500-624029/2-A	Lab Control Sample	Total Recoverable	Water	6020A	624029
500-206581-3 MS	W-211011-RA-03	Dissolved	Water	6020A	624029
500-206581-3 MSD	W-211011-RA-03	Dissolved	Water	6020A	624029
500-206581-3 DU	W-211011-RA-03	Dissolved	Water	6020A	624029

General Chemistry

Analysis Batch: 623062

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206581-1	W-211011-RA-01	Total/NA	Water	300.0	
500-206581-1	W-211011-RA-01	Total/NA	Water	300.0	
500-206581-2	W-211011-RA-02	Total/NA	Water	300.0	
500-206581-2	W-211011-RA-02	Total/NA	Water	300.0	
500-206581-3	W-211011-RA-03	Total/NA	Water	300.0	
500-206581-3	W-211011-RA-03	Total/NA	Water	300.0	
500-206581-4	W-211011-RA-04	Total/NA	Water	300.0	
MB 500-623062/3	Method Blank	Total/NA	Water	300.0	
LCS 500-623062/4	Lab Control Sample	Total/NA	Water	300.0	
500-206581-3 MS	W-211011-RA-03	Total/NA	Water	300.0	
500-206581-3 MS	W-211011-RA-03	Total/NA	Water	300.0	
500-206581-3 MSD	W-211011-RA-03	Total/NA	Water	300.0	
500-206581-3 MSD	W-211011-RA-03	Total/NA	Water	300.0	

Analysis Batch: 623626

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206581-1	W-211011-RA-01	Total/NA	Water	SM 2320B	
500-206581-2	W-211011-RA-02	Total/NA	Water	SM 2320B	
500-206581-3	W-211011-RA-03	Total/NA	Water	SM 2320B	
MB 500-623626/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-623626/4	Lab Control Sample	Total/NA	Water	SM 2320B	
500-206581-3 DU	W-211011-RA-03	Total/NA	Water	SM 2320B	

Analysis Batch: 624553

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206581-4	W-211011-RA-04	Total/NA	Water	SM 2320B	
MB 500-624553/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-624553/4	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 624555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206581-1	W-211011-RA-01	Total/NA	Water	9060A	
500-206581-2	W-211011-RA-02	Total/NA	Water	9060A	

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QC Association Summary

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

Job ID: 500-206581-1

General Chemistry (Continued)

Analysis Batch: 624555 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206581-3	W-211011-RA-03	Total/NA	Water	9060A	
500-206581-4	W-211011-RA-04	Total/NA	Water	9060A	
MB 500-624555/31	Method Blank	Total/NA	Water	9060A	
LCS 500-624555/32	Lab Control Sample	Total/NA	Water	9060A	
500-206581-3 MS	W-211011-RA-03	Total/NA	Water	9060A	
500-206581-3 MSD	W-211011-RA-03	Total/NA	Water	9060A	

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

Surrogate Summary

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

Job ID: 500-206581-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-126)	TOL (75-120)	BFB (72-124)	DBFM (75-120)
500-206581-1	W-211011-RA-01	105	95	81	99
500-206581-2	W-211011-RA-02	108	95	82	99
500-206581-3	W-211011-RA-03	106	94	83	99
500-206581-3 MS	W-211011-RA-03	106	95	83	103
500-206581-3 MSD	W-211011-RA-03	108	96	82	105
500-206581-4	W-211011-RA-04	109	94	81	102
500-206581-5	Trip Blank	105	94	82	95
LCS 500-624125/23	Lab Control Sample	98	99	80	97
MB 500-624125/5	Method Blank	107	94	80	97

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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		NBZ (36-120)	FBP (34-110)	TPHL (40-145)
500-206581-1	W-211011-RA-01	77	84	109
500-206581-2	W-211011-RA-02	76	85	106
500-206581-3	W-211011-RA-03	76	85	106
500-206581-3 MS	W-211011-RA-03	81	87	96
500-206581-3 MSD	W-211011-RA-03	82	86	96
500-206581-4	W-211011-RA-04	75	69	104
LCS 500-623180/2-A	Lab Control Sample	88	89	106
MB 500-623180/1-A	Method Blank	80	88	106

Surrogate Legend

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

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		TFE1 (60-140)
500-206581-1	W-211011-RA-01	106
500-206581-2	W-211011-RA-02	105
500-206581-3	W-211011-RA-03	106
500-206581-3 MS	W-211011-RA-03	100
500-206581-3 MSD	W-211011-RA-03	100
500-206581-4	W-211011-RA-04	104
LCS 240-508477/4	Lab Control Sample	104
LCS 240-508722/4	Lab Control Sample	102
MB 240-508477/3	Method Blank	109

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Surrogate Summary

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

Job ID: 500-206581-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TFE1 (60-140)
MB 240-508722/3	Method Blank	107

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	DCPAA2 (25-130)
500-206581-1	W-211011-RA-01	80
500-206581-2	W-211011-RA-02	82
500-206581-3	W-211011-RA-03	85
500-206581-3 MS	W-211011-RA-03	87
500-206581-3 MSD	W-211011-RA-03	87
500-206581-4	W-211011-RA-04	0 D
LCS 500-624036/2-A	Lab Control Sample	85
LCS 500-624036/2-A	Lab Control Sample	100
MB 500-624036/1-A	Method Blank	88
MB 500-624036/1-A	Method Blank	101

Surrogate Legend

DCPAA = DCAA

QC Sample Results

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

Job ID: 500-206581-1

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

Lab Sample ID: MB 500-624125/5
Matrix: Water
Analysis Batch: 624125

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

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	<0.15		0.50	0.15	ug/L			10/18/21 23:26	1
Toluene	<0.15		0.50	0.15	ug/L			10/18/21 23:26	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/18/21 23:26	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/18/21 23:26	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	107		75 - 126		10/18/21 23:26	1
Toluene-d8 (Surr)	94		75 - 120		10/18/21 23:26	1
4-Bromofluorobenzene (Surr)	80		72 - 124		10/18/21 23:26	1
Dibromofluoromethane	97		75 - 120		10/18/21 23:26	1

Lab Sample ID: LCS 500-624125/23
Matrix: Water
Analysis Batch: 624125

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

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Benzene	50.0	41.8		ug/L		84	70 - 120
Toluene	50.0	44.1		ug/L		88	70 - 125
Ethylbenzene	50.0	47.8		ug/L		96	70 - 123
Xylenes, Total	100	100		ug/L		100	70 - 125

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	98		75 - 126
Toluene-d8 (Surr)	99		75 - 120
4-Bromofluorobenzene (Surr)	80		72 - 124
Dibromofluoromethane	97		75 - 120

Lab Sample ID: 500-206581-3 MS
Matrix: Water
Analysis Batch: 624125

Client Sample ID: W-211011-RA-03
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits
				Result	Qualifier				
Benzene	<0.15		50.0	46.9		ug/L		94	70 - 120
Toluene	<0.15		50.0	46.3		ug/L		93	70 - 125
Ethylbenzene	<0.18		50.0	49.4		ug/L		99	70 - 123
Xylenes, Total	<0.22		100	105		ug/L		105	70 - 125

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	106		75 - 126
Toluene-d8 (Surr)	95		75 - 120
4-Bromofluorobenzene (Surr)	83		72 - 124
Dibromofluoromethane	103		75 - 120

QC Sample Results

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

Job ID: 500-206581-1

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

Lab Sample ID: 500-206581-3 MSD
Matrix: Water
Analysis Batch: 624125

Client Sample ID: W-211011-RA-03
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<0.15		50.0	48.3		ug/L		97	70 - 120	3	20
Toluene	<0.15		50.0	47.7		ug/L		95	70 - 125	3	20
Ethylbenzene	<0.18		50.0	50.3		ug/L		101	70 - 123	2	20
Xylenes, Total	<0.22		100	107		ug/L		107	70 - 125	2	20

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
1,2-Dichloroethane-d4 (Surr)	108		75 - 126
Toluene-d8 (Surr)	96		75 - 120
4-Bromofluorobenzene (Surr)	82		72 - 124
Dibromofluoromethane	105		75 - 120

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

Lab Sample ID: MB 500-623180/1-A
Matrix: Water
Analysis Batch: 623430

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 623180

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.80	0.25	ug/L		10/13/21 06:23	10/14/21 13:08	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	80		36 - 120	10/13/21 06:23	10/14/21 13:08	1
2-Fluorobiphenyl (Surr)	88		34 - 110	10/13/21 06:23	10/14/21 13:08	1
Terphenyl-d14 (Surr)	106		40 - 145	10/13/21 06:23	10/14/21 13:08	1

Lab Sample ID: LCS 500-623180/2-A
Matrix: Water
Analysis Batch: 623430

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 623180

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	32.0	23.2		ug/L		73	36 - 110

Surrogate	LCS %Recovery	LCS Qualifier	LCS Limits
Nitrobenzene-d5 (Surr)	88		36 - 120
2-Fluorobiphenyl (Surr)	89		34 - 110
Terphenyl-d14 (Surr)	106		40 - 145

Lab Sample ID: 500-206581-3 MS
Matrix: Water
Analysis Batch: 623430

Client Sample ID: W-211011-RA-03
Prep Type: Total/NA
Prep Batch: 623180

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	<0.25		31.3	21.2		ug/L		68	36 - 110

Surrogate	MS %Recovery	MS Qualifier	MS Limits
Nitrobenzene-d5 (Surr)	81		36 - 120
2-Fluorobiphenyl (Surr)	87		34 - 110

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QC Sample Results

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

Job ID: 500-206581-1

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

Lab Sample ID: 500-206581-3 MS
Matrix: Water
Analysis Batch: 623430

Client Sample ID: W-211011-RA-03
Prep Type: Total/NA
Prep Batch: 623180

	<i>MS</i>	<i>MS</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Terphenyl-d14 (Surr)	96		40 - 145

Lab Sample ID: 500-206581-3 MSD
Matrix: Water
Analysis Batch: 623430

Client Sample ID: W-211011-RA-03
Prep Type: Total/NA
Prep Batch: 623180

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>	<i>RPD</i>	<i>Limit</i>
Naphthalene	<0.25		31.2	21.1		ug/L		68	36 - 110	1	20

	<i>MSD</i>	<i>MSD</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Nitrobenzene-d5 (Surr)	82		36 - 120
2-Fluorobiphenyl (Surr)	86		34 - 110
Terphenyl-d14 (Surr)	96		40 - 145

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 240-508477/3
Matrix: Water
Analysis Batch: 508477

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

<i>Analyte</i>	<i>MB Result</i>	<i>MB Qualifier</i>	<i>LOQ</i>	<i>LOD</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Methane	<0.17		1.0	0.17	ug/L			10/15/21 15:11	1

	<i>MB</i>	<i>MB</i>		<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			
1,1,1-Trifluoroethane	109		60 - 140		10/15/21 15:11	1

Lab Sample ID: LCS 240-508477/4
Matrix: Water
Analysis Batch: 508477

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

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>
Methane	284	304		ug/L		107	80 - 120

	<i>LCS</i>	<i>LCS</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
1,1,1-Trifluoroethane	104		60 - 140

Lab Sample ID: 500-206581-3 MS
Matrix: Water
Analysis Batch: 508477

Client Sample ID: W-211011-RA-03
Prep Type: Total/NA

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MS Result</i>	<i>MS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>
Methane	<0.17		284	284		ug/L		100	50 - 150

	<i>MS</i>	<i>MS</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
1,1,1-Trifluoroethane	100		60 - 140

QC Sample Results

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

Job ID: 500-206581-1

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

Lab Sample ID: 500-206581-3 MSD
Matrix: Water
Analysis Batch: 508477

Client Sample ID: W-211011-RA-03
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	284		ug/L		100	50 - 150	0	30
Surrogate	%Recovery	MSD Qualifier	MSD Limits								
1,1,1-Trifluoroethane	100		60 - 140								

Lab Sample ID: MB 240-508722/3
Matrix: Water
Analysis Batch: 508722

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			10/18/21 15:58	1	
Surrogate	%Recovery	MB Qualifier	MB Limits							
1,1,1-Trifluoroethane	107		60 - 140							
				Prepared	Analyzed	Dil Fac				
				10/18/21 15:58	10/18/21 15:58	1				

Lab Sample ID: LCS 240-508722/4
Matrix: Water
Analysis Batch: 508722

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane	284	272		ug/L		96	80 - 120
Surrogate	%Recovery	LCS Qualifier	LCS Limits				
1,1,1-Trifluoroethane	102		60 - 140				

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 500-624036/1-A
Matrix: Water
Analysis Batch: 624310

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 624036

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac	
Pentachlorophenol	<0.14		0.10	0.14	ug/L		10/18/21 09:26	10/19/21 14:48	1	
Surrogate	%Recovery	MB Qualifier	MB Limits							
DCAA	88		25 - 130							
				Prepared	Analyzed	Dil Fac				
				10/18/21 09:26	10/19/21 14:48	1				

Lab Sample ID: MB 500-624036/1-A
Matrix: Water
Analysis Batch: 624405

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 624036

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac	
Pentachlorophenol	<0.14		0.10	0.14	ug/L		10/18/21 09:26	10/20/21 09:38	1	
Surrogate	%Recovery	MB Qualifier	MB Limits							
DCAA	101		25 - 130							
				Prepared	Analyzed	Dil Fac				
				10/18/21 09:26	10/20/21 09:38	1				

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QC Sample Results

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

Job ID: 500-206581-1

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

Lab Sample ID: LCS 500-624036/2-A
Matrix: Water
Analysis Batch: 624310

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 624036

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Pentachlorophenol	2.50	1.60		ug/L		64	40 - 122
Surrogate	%Recovery	LCS Qualifier	Limits				
DCAA	85		25 - 130				

Lab Sample ID: LCS 500-624036/2-A
Matrix: Water
Analysis Batch: 624405

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 624036

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Pentachlorophenol	2.50	1.72		ug/L		69	40 - 122
Surrogate	%Recovery	LCS Qualifier	Limits				
DCAA	100		25 - 130				

Lab Sample ID: 500-206581-3 MS
Matrix: Water
Analysis Batch: 624310

Client Sample ID: W-211011-RA-03
Prep Type: Total/NA
Prep Batch: 624036

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Pentachlorophenol	<0.14	^c	2.44	1.81		ug/L		74	40 - 122
Surrogate	%Recovery	MS Qualifier	Limits						
DCAA	87		25 - 130						

Lab Sample ID: 500-206581-3 MSD
Matrix: Water
Analysis Batch: 624310

Client Sample ID: W-211011-RA-03
Prep Type: Total/NA
Prep Batch: 624036

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Pentachlorophenol	<0.14	^c	2.40	1.90		ug/L		79	40 - 122	5	20
Surrogate	%Recovery	MSD Qualifier	Limits								
DCAA	87		25 - 130								

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 500-624029/1-A
Matrix: Water
Analysis Batch: 624274

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 624029

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		10/18/21 08:53	10/18/21 19:16	1
Copper	<0.50		2.0	0.50	ug/L		10/18/21 08:53	10/18/21 19:16	1
Iron	<46.7		100	46.7	ug/L		10/18/21 08:53	10/18/21 19:16	1
Manganese	<0.79		2.5	0.79	ug/L		10/18/21 08:53	10/18/21 19:16	1
Zinc	<6.9		20.0	6.9	ug/L		10/18/21 08:53	10/18/21 19:16	1

Eurofins TestAmerica, Chicago

QC Sample Results

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

Job ID: 500-206581-1

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

Lab Sample ID: LCS 500-624029/2-A
Matrix: Water
Analysis Batch: 624274

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 624029

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	98.50		ug/L		98	80 - 120
Copper	250	252.7		ug/L		101	80 - 120
Iron	1000	1015		ug/L		101	80 - 120
Manganese	500	506.3		ug/L		101	80 - 120
Zinc	500	515.5		ug/L		103	80 - 120

Lab Sample ID: 500-206581-3 MS
Matrix: Water
Analysis Batch: 624274

Client Sample ID: W-211011-RA-03
Prep Type: Dissolved
Prep Batch: 624029

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.52	J	100	99.70		ug/L		99	75 - 125
Copper	52.6		250	315.5		ug/L		105	75 - 125
Iron	<46.7		1000	1028		ug/L		103	75 - 125
Manganese	<0.79		500	511.3		ug/L		102	75 - 125
Zinc	<6.9		500	523.4		ug/L		105	75 - 125

Lab Sample ID: 500-206581-3 MSD
Matrix: Water
Analysis Batch: 624274

Client Sample ID: W-211011-RA-03
Prep Type: Dissolved
Prep Batch: 624029

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.52	J	100	99.77		ug/L		99	75 - 125	0	20
Copper	52.6		250	305.8		ug/L		101	75 - 125	3	20
Iron	<46.7		1000	1016		ug/L		102	75 - 125	1	20
Manganese	<0.79		500	505.3		ug/L		101	75 - 125	1	20
Zinc	<6.9		500	525.3		ug/L		105	75 - 125	0	20

Lab Sample ID: 500-206581-3 DU
Matrix: Water
Analysis Batch: 624274

Client Sample ID: W-211011-RA-03
Prep Type: Dissolved
Prep Batch: 624029

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	0.52	J	0.616	J	ug/L		17	20
Copper	52.6		52.85		ug/L		0.5	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 500-623062/3
Matrix: Water
Analysis Batch: 623062

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			10/12/21 09:50	1
Nitrate as N	<0.068		0.20	0.068	mg/L			10/12/21 09:50	1
Sulfate	<0.095		0.20	0.095	mg/L			10/12/21 09:50	1

Eurofins TestAmerica, Chicago

QC Sample Results

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

Job ID: 500-206581-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 500-623062/4
Matrix: Water
Analysis Batch: 623062

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	3.21		mg/L		107	90 - 110
Nitrate as N	2.00	1.95		mg/L		98	90 - 110
Sulfate	5.00	5.18		mg/L		104	90 - 110

Lab Sample ID: 500-206581-3 MS
Matrix: Water
Analysis Batch: 623062

Client Sample ID: W-211011-RA-03
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	2.9		1.00	4.02	E	mg/L		111	80 - 120
Sulfate	5.4		2.50	8.01		mg/L		104	80 - 120

Lab Sample ID: 500-206581-3 MS
Matrix: Water
Analysis Batch: 623062

Client Sample ID: W-211011-RA-03
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	11.4	F1	5.00	17.50	F1	mg/L		123	80 - 120

Lab Sample ID: 500-206581-3 MSD
Matrix: Water
Analysis Batch: 623062

Client Sample ID: W-211011-RA-03
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Nitrate as N	2.9		1.00	4.05	E	mg/L		115	80 - 120	1	20
Nitrate as N	2.9		1.00	4.05	E	mg/L		115	80 - 120	1	20
Sulfate	5.4		2.50	8.11		mg/L		108	80 - 120	1	20
Sulfate	5.4		2.50	8.11		mg/L		108	80 - 120	1	20

Lab Sample ID: 500-206581-3 MSD
Matrix: Water
Analysis Batch: 623062

Client Sample ID: W-211011-RA-03
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Chloride	11.4	F1	5.00	17.41	F1	mg/L		121	80 - 120	0	20
Chloride	11.4	F1	5.00	17.41	F1	mg/L		121	80 - 120	0	20

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

Lab Sample ID: MB 500-624555/31
Matrix: Water
Analysis Batch: 624555

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			10/19/21 17:59	1

QC Sample Results

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

Job ID: 500-206581-1

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

Lab Sample ID: LCS 500-624555/32
Matrix: Water
Analysis Batch: 624555

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	11.02		mg/L		110	86 - 116

Lab Sample ID: 500-206581-3 MS
Matrix: Water
Analysis Batch: 624555

Client Sample ID: W-211011-RA-03
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	0.50	J F1	10.0	13.39	F1	mg/L		129	75 - 125

Lab Sample ID: 500-206581-3 MSD
Matrix: Water
Analysis Batch: 624555

Client Sample ID: W-211011-RA-03
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	0.50	J F1	10.0	13.13	F1	mg/L		126	75 - 125	2	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-623626/3
Matrix: Water
Analysis Batch: 623626

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			10/14/21 11:38	1

Lab Sample ID: LCS 500-623626/4
Matrix: Water
Analysis Batch: 623626

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	100	101.0		mg/L		101	90 - 110

Lab Sample ID: 500-206581-3 DU
Matrix: Water
Analysis Batch: 623626

Client Sample ID: W-211011-RA-03
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	93.6		94.24		mg/L		0.7	20

Lab Sample ID: MB 500-624553/3
Matrix: Water
Analysis Batch: 624553

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			10/20/21 10:08	1

QC Sample Results

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

Job ID: 500-206581-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCS 500-624553/4
Matrix: Water
Analysis Batch: 624553

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	100	94.79		mg/L		95	90 - 110

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

Lab Chronicle

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

Job ID: 500-206581-1

Client Sample ID: W-211011-RA-01

Lab Sample ID: 500-206581-1

Date Collected: 10/11/21 12:07

Matrix: Water

Date Received: 10/12/21 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	624125	10/19/21 04:54	STW	TAL CHI
Total/NA	Prep	3510C			623180	10/13/21 06:23	DAK	TAL CHI
Total/NA	Analysis	8270D		1	623430	10/14/21 15:56	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	508722	10/18/21 17:59	JBN	TAL CAN
Total/NA	Prep	8151A			624036	10/18/21 09:26	DAK	TAL CHI
Total/NA	Analysis	8151A		1	624310	10/19/21 17:03	JBK	TAL CHI
Dissolved	Prep	3005A			624029	10/18/21 08:53	BDE	TAL CHI
Dissolved	Analysis	6020A		1	624274	10/18/21 19:23	FXG	TAL CHI
Total/NA	Prep	3010A			623258	10/13/21 09:05	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	623707	10/15/21 10:28	FXG	TAL CHI
Total/NA	Analysis	300.0		1	623062	10/12/21 12:49	EAT	TAL CHI
Total/NA	Analysis	300.0		20	623062	10/12/21 18:32	EAT	TAL CHI
Total/NA	Analysis	9060A		1	624555	10/19/21 22:39	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	623626	10/14/21 14:16	SMO	TAL CHI

Client Sample ID: W-211011-RA-02

Lab Sample ID: 500-206581-2

Date Collected: 10/11/21 12:07

Matrix: Water

Date Received: 10/12/21 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	624125	10/19/21 05:22	STW	TAL CHI
Total/NA	Prep	3510C			623180	10/13/21 06:23	DAK	TAL CHI
Total/NA	Analysis	8270D		1	623430	10/14/21 16:20	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	508722	10/18/21 18:16	JBN	TAL CAN
Total/NA	Prep	8151A			624036	10/18/21 09:26	DAK	TAL CHI
Total/NA	Analysis	8151A		1	624310	10/19/21 17:22	JBK	TAL CHI
Dissolved	Prep	3005A			624029	10/18/21 08:53	BDE	TAL CHI
Dissolved	Analysis	6020A		1	624274	10/18/21 19:26	FXG	TAL CHI
Total/NA	Prep	3010A			623258	10/13/21 09:05	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	623707	10/15/21 10:28	FXG	TAL CHI
Total/NA	Analysis	300.0		1	623062	10/12/21 13:01	EAT	TAL CHI
Total/NA	Analysis	300.0		20	623062	10/12/21 18:45	EAT	TAL CHI
Total/NA	Analysis	9060A		1	624555	10/19/21 23:02	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	623626	10/14/21 14:23	SMO	TAL CHI

Client Sample ID: W-211011-RA-03

Lab Sample ID: 500-206581-3

Date Collected: 10/11/21 12:59

Matrix: Water

Date Received: 10/12/21 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	624125	10/19/21 05:49	STW	TAL CHI
Total/NA	Prep	3510C			623180	10/13/21 06:23	DAK	TAL CHI
Total/NA	Analysis	8270D		1	623430	10/14/21 16:43	SS	TAL CHI

Eurofins TestAmerica, Chicago

Lab Chronicle

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

Job ID: 500-206581-1

Client Sample ID: W-211011-RA-03

Lab Sample ID: 500-206581-3

Date Collected: 10/11/21 12:59

Matrix: Water

Date Received: 10/12/21 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	RSK-175		1	508477	10/15/21 19:53	JBN	TAL CAN
Total/NA	Prep	8151A			624036	10/18/21 09:26	DAK	TAL CHI
Total/NA	Analysis	8151A		1	624310	10/19/21 17:42	JBK	TAL CHI
Dissolved	Prep	3005A			624029	10/18/21 08:53	BDE	TAL CHI
Dissolved	Analysis	6020A		1	624274	10/18/21 19:30	FXG	TAL CHI
Total/NA	Prep	3010A			623258	10/13/21 09:05	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	623707	10/15/21 10:28	FXG	TAL CHI
Total/NA	Analysis	300.0		1	623062	10/12/21 13:14	EAT	TAL CHI
Total/NA	Analysis	300.0		5	623062	10/12/21 18:57	EAT	TAL CHI
Total/NA	Analysis	9060A		1	624555	10/19/21 23:25	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	623626	10/14/21 14:29	SMO	TAL CHI

Client Sample ID: W-211011-RA-04

Lab Sample ID: 500-206581-4

Date Collected: 10/11/21 13:54

Matrix: Water

Date Received: 10/12/21 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	624125	10/19/21 06:16	STW	TAL CHI
Total/NA	Prep	3510C			623180	10/13/21 06:23	DAK	TAL CHI
Total/NA	Analysis	8270D		1	623430	10/14/21 17:07	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	508722	10/18/21 18:33	JBN	TAL CAN
Total/NA	Prep	8151A			624036	10/18/21 09:26	DAK	TAL CHI
Total/NA	Analysis	8151A		4000	624405	10/20/21 11:19	JBK	TAL CHI
Dissolved	Prep	3005A			624029	10/18/21 08:53	BDE	TAL CHI
Dissolved	Analysis	6020A		1	624274	10/18/21 19:47	FXG	TAL CHI
Total/NA	Prep	3010A			623258	10/13/21 09:05	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	623707	10/15/21 10:28	FXG	TAL CHI
Total/NA	Analysis	300.0		1	623062	10/12/21 13:53	EAT	TAL CHI
Total/NA	Analysis	9060A		1	624555	10/20/21 00:21	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	624553	10/20/21 10:20	SMO	TAL CHI

Client Sample ID: Trip Blank

Lab Sample ID: 500-206581-5

Date Collected: 10/11/21 00:00

Matrix: Water

Date Received: 10/12/21 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	624125	10/18/21 23:54	STW	TAL CHI

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

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

Accreditation/Certification Summary

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

Job ID: 500-206581-1

Laboratory: Eurofins TestAmerica, Chicago

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

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-22

Laboratory: Eurofins TestAmerica, 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	02-23-22
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-22
Georgia	State	4062	02-23-22
Illinois	NELAP	200004	07-31-22
Iowa	State	421	06-01-23
Kansas	NELAP	E-10336	04-30-22
Kentucky (UST)	State	112225	02-23-22
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-22
New York	NELAP	10975	03-31-22
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-22
Texas	NELAP	T104704517-18-10	08-31-22
Virginia	NELAP	11570	09-14-22
Washington	State	C971	01-12-22
West Virginia DEP	State	210	12-31-21

Chain of Custody Record

545093


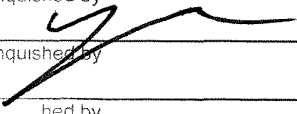


Environment Testing
TestAmerica

TAL-8210

Address _____

Regulatory Program: DW NPDES RCRA Other

Client Contact		Project Manager Ree		Site Contact		Date:		COC No	
Company Name GH		Tel/Email Tina.Ree@GH.com		Lab Contact		Carrier		1 of 1 COCs	
Address 900 Long Lake Rd		Analysis Turnaround Time		Filtered Sample (Y/N) Perform MS / MSD (Y/N) PCP STEX Graphitene Dissolved Metals Alk: Anions Tot. Metals / Heavy TOC Methane		500-206581 COC 		Sampler	
City/State/Zip St. Paul		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below _____						For Lab Use Only	
Phone 651639 0913		<input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day						Walk-in Client	
Project Name Petalwood								Lab Sampling	
Site 11222418-01-04								Job / SDG No	
P O #								500-206581	
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sample Specific Notes		
1	W-211011-RA-01	10/11/21	1207	G	6	15	Dissolved Metals were field filtered		
2	W-211011-RA-02		1207			15			
3	W-211011-RA-03		1259			45			
4	W-211011-RA-04		1354			15			
5	trip blank								
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)			
Possible Hazard Identification. Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample						<input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months			
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown									
Special Instructions/QC Requirements & Comments:						2.1, 3.8 → 3.7, 4.3, 5.1			
Custody Seals Intact <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No		Cooler Temp (°C) Obs'd _____ Corr'd _____		Therm ID No _____			
Relinquished by 		Company GH		Date/Time 10/11/21 1300		Received by		Company	
Relinquished by		Company		Date/Time		Received by		Company	
Received by		Company		Date/Time		Received in Laboratory by Stephanie Hemond		Company ETA GH	
								Date/Time 10/12/21 0945	

FedEx Express *Package* **US Airbill**

FedEx Tracking Number **8166 8556 3440**

Form ID No. **0200**

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2 Your Internal Billing Reference

3 To

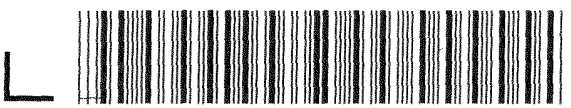
Recipient's Name _____ Phone _____

Company _____

Address _____ Dept./Floor/Suite/Room _____

Address _____ Dept./Floor/Suite/Room _____

City _____ State _____ ZIP _____



8166 8556 3440

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

FedEx 2Day A.M.
Second business morning Saturday Delivery NOT available.

FedEx 2Day
Second business afternoon will be delivered on Monday unless Saturday Delivery is selected.

FedEx Express S
Third business day.* Saturday Delivery NOT available.

500-206581 Wayb

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. Fed. Ex. Ac. Nr.

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. Rev. Date 3/21 • Part #167002 • ©2012-2021 FedEx • PRINTED IN U.S.A. **644**

fedex.com 1800.GoFedEx 1800.463.3339

FedEx Express *Package US Airbill*

FedEx Tracking Number **8166 8556 3428**

Form ID No. **0200**

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 _____ 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.



8166 8556 3428

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 rec. FedEx Acct. No.

Sender Acct. No. in Section 4 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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Package US Airbill

FedEx Tracking Number

8166 8556 3450

Form ID No. 0200

1A
1B
1C

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 _____ 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.



8166 8556 3450

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?

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.p. 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 Package
Express US Airbill

FedEx Tracking Number 8166 8556 3439

Form ID No. 0200

fedex.com 1800 GoFedEx 1800 463.3339

fedex.com 1800 GoFedEx 1800 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 _____

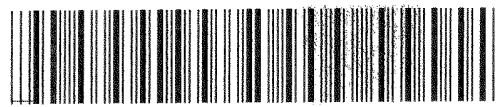
Address _____
We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room _____

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.



8166 8556 3439

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	2 or 3 Business Days
<input type="checkbox"/> FedEx First Overnight Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.	<input type="checkbox"/> FedEx 2Day A.M. Second business morning.* Saturday Delivery NOT available.
<input type="checkbox"/> FedEx Priority Overnight Next business morning.* Friday shipments will be delivered on Monday unless Saturday Delivery is selected.	<input type="checkbox"/> FedEx 2Day Second business afternoon.* Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.
<input type="checkbox"/> FedEx Standard Overnight Next business afternoon.* Saturday Delivery NOT available.	<input type="checkbox"/> 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
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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.

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 Fee for Ac

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 TestAmerica, Chicago

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

Chain of Custody Record

0.2/0.3



Environment Testing
America

Client Information (Sub Contract Lab)		Sampler:		Lab PM: Wright, Richard		Carrier Tracking No(s):		COC No: 500-153278.1																																															
Client Contact: Shipping/Receiving		Phone:		E-Mail: Richard.Wright@Eurofinset.com		State of Origin: Wisconsin		Page: Page 1 of 1																																															
Company: TestAmerica Laboratories, Inc.				Accreditations Required (See note): State Program - Wisconsin				Job # 500-206581-1																																															
Address: 4101 Shuffel Street NW, City: North Canton State, Zip: OH, 44720 Phone: 330-497-9396(Tel) 330-497-0772(Fax) Email:		Due Date Requested: 10/25/2021 TAT Requested (days):		<table border="1"> <thead> <tr> <th colspan="10">Analysis Requested</th> <th rowspan="4">Total Number of containers</th> </tr> </thead> <tbody> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table>						Analysis Requested										Total Number of containers																																		Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify) Other:	
Analysis Requested										Total Number of containers																																													
Project Name: Penta Wood 11222418 Site:		Project #: 50013796 SSOW#:		PO #:		WO #:		Special Instructions/Note: 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	Preservation Code:		Total Number of containers	Special Instructions/Note:																																											
W-211011-RA-01 (500-206581-1)		10/11/21	12:07 Central		Water		X				3	WI																																											
W-211011-RA-02 (500-206581-2)		10/11/21	12:07 Central		Water		X				3	WI																																											
W-211011-RA-03 (500-206581-3)		10/11/21	12:59 Central		Water		X				3	WI																																											
W-211011-RA-03 (500-206581-3MS)		10/11/21	12:59 Central	MS	Water		X				3	WI																																											
W-211011-RA-03 (500-206581-3MSD)		10/11/21	12:59 Central	MSD	Water		X				3	WI																																											
W-211011-RA-04 (500-206581-4)		10/11/21	13:54 Central		Water		X				3	WI																																											

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.

Possible Hazard Identification		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
Unconfirmed		<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> 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: <i>[Signature]</i>		Date/Time: 10/12/21 1400	Company: <i>[Signature]</i>	Received by: <i>[Signature]</i>	
Relinquished by:		Date/Time:	Company:	Date/Time: 10-13-21 1030	
Relinquished by:		Date/Time:	Company:	Date/Time:	

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

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10/26/2021



Eurofins TestAmerica Canton Sample Receipt Form/Narrative

Login # : _____

Canton Facility

Client ETA Site Name _____ Cooler unpacked by: [Signature]

Cooler Received on 10-13-21 Opened on 10-13-21

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # 1A 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-14 (CF +0.1 °C) Observed Cooler Temp. 0.2 °C Corrected Cooler Temp. 0.3 °C
 IR GUN #IR-15 (CF +0.2°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
 -Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
 -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA
 -Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes No NA
 4. Did custody papers accompany the sample(s)? Yes No NA
 5. Were the custody papers relinquished & signed in the appropriate place? Yes No NA
 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No NA
 7. Did all bottles arrive in good condition (Unbroken)? Yes No NA
 8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No NA
 9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No NA
 10. Were correct bottle(s) used for the test(s) indicated? Yes No NA
 11. Sufficient quantity received to perform indicated analyses? Yes No NA
 12. Are these work share samples and all listed on the COC? Yes No NA

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# HC157842
 14. Were VOAs on the COC? Yes No NA
 15. Were air bubbles >6 mm in any VOA vials? Yes No NA **●** ← Larger than this.
 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No NA
 17. Was a LL Hg or Me Hg trip blank present? _____ Yes No NA

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: _____

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

1
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Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-206581-1

Login Number: 206581

List Source: Eurofins TestAmerica, Chicago

List Number: 1

Creator: Hernandez, Stephanie

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.1,3.7,4.3,5.1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



ANALYTICAL REPORT

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

Laboratory Job ID: 500-206666-1
Client Project/Site: Penta Wood 11222418

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

Attn: Mr. Grant Anderson

Jodie Bracken

Authorized for release by:
10/27/2021 8:14:09 AM
Jodie Bracken, Project Management Assistant II
Jodie.Bracken@Eurofinset.com

Designee for
Richard Wright, Senior Project Manager
(708)746-0045
Richard.Wright@Eurofinset.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

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

Job ID: 500-206666-1

Job ID: 500-206666-1

Laboratory: Eurofins TestAmerica, Chicago

Narrative

Job Narrative 500-206666-1

Receipt

The samples were received on 10/13/2021 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 2.1° C, 2.9° C, 3.3° C and 4.6° C.

Receipt Exceptions

Received two coolers on 10/13 at 0955. Received complete sample for #3 (-07) and #4(-08). Received all BTEX, Methane, and TOC for all samples. Missing rest of sample #1 (-05), #2 (-06),#5 (-09), and #6 (-10). Placed missing sample analysis on hold.

*Received missing coolers on 10/14/21 at 1000. Coolers received within temp. Set methods to active.

GC/MS VOA

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

GC/MS Semi VOA

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

GC VOA

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

GC Semi VOA

Method 8151A: The following samples were reported from the primary column due to Pentachlorophenol recovering outside control limits for the continuing calibration verification (CCV) on the secondary column; therefore, the higher of the two results have been reported.

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: 500-206666-1

Client Sample ID: W-211012-RA-05

Lab Sample ID: 500-206666-1

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	2.4		0.21	0.30	ug/L	2		8151A	Total/NA

Client Sample ID: W-211012-RA-06

Lab Sample ID: 500-206666-2

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methane	5.9		1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	0.42		0.10	0.15	ug/L	1		8151A	Total/NA
Copper	16.0		2.0	0.50	ug/L	1		6020A	Dissolved
Iron	117		100	46.7	ug/L	1		6020A	Dissolved
Manganese	4.0		2.5	0.79	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	33.4		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	0.54		0.20	0.17	mg/L	1		300.0	Total/NA
Nitrate as N	0.53		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	3.6		0.20	0.095	mg/L	1		300.0	Total/NA
Alkalinity	32.6		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-211012-RA-07

Lab Sample ID: 500-206666-3

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.30		0.099	0.14	ug/L	1		8151A	Total/NA
Arsenic	0.23	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	6.7		2.0	0.50	ug/L	1		6020A	Dissolved
Manganese	2.1	J	2.5	0.79	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	55.9		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	0.51		0.20	0.17	mg/L	1		300.0	Total/NA
Nitrate as N	0.30		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	2.5		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	1.9		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	66.6		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-211012-RA-08

Lab Sample ID: 500-206666-4

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.20		0.095	0.14	ug/L	1		8151A	Total/NA
Arsenic	0.24	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	73.8		2.0	0.50	ug/L	1		6020A	Dissolved
Manganese	1.5	J	2.5	0.79	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	148		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	0.34		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	1.2		0.20	0.095	mg/L	1		300.0	Total/NA
Alkalinity	154		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-211012-RA-09

Lab Sample ID: 500-206666-5

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methane	550		1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	0.60		0.10	0.15	ug/L	1		8151A	Total/NA
Arsenic	0.27	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	1.9	J	2.0	0.50	ug/L	1		6020A	Dissolved
Iron	23500		100	46.7	ug/L	1		6020A	Dissolved
Manganese	692		2.5	0.79	ug/L	1		6020A	Dissolved
Zinc	15.6	J	20.0	6.9	ug/L	1		6020A	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

Detection Summary

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

Job ID: 500-206666-1

Client Sample ID: W-211012-RA-09 (Continued)

Lab Sample ID: 500-206666-5

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Hardness as calcium carbonate	90.8		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	3.6		0.20	0.17	mg/L	1		300.0	Total/NA
Nitrate as N	1.6		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	6.1		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	6.8		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	83.7		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-211012-RA-10

Lab Sample ID: 500-206666-6

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methane	0.30	J	1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	0.18		0.10	0.15	ug/L	1		8151A	Total/NA
Copper	15.0		2.0	0.50	ug/L	1		6020A	Dissolved
Iron	49.7	J	100	46.7	ug/L	1		6020A	Dissolved
Manganese	6.1		2.5	0.79	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	128		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	2.8		0.20	0.17	mg/L	1		300.0	Total/NA
Nitrate as N	6.4		1.0	0.34	mg/L	5		300.0	Total/NA
Sulfate	15.5		1.0	0.48	mg/L	5		300.0	Total/NA
Total Organic Carbon - Duplicates	1.5		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	94.7		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: Trip Blank

Lab Sample ID: 500-206666-7

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

Method Summary

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

Job ID: 500-206666-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CHI
RSK-175	Dissolved Gases (GC)	RSK	TAL CAN
8151A	Herbicides (GC)	SW846	TAL CHI
6020A	Metals (ICP/MS)	SW846	TAL CHI
SM 2340B	Total Hardness (as CaCO ₃) by calculation	SM	TAL CHI
300.0	Anions, Ion Chromatography	MCAWW	TAL CHI
9060A	Organic Carbon, Total (TOC)	SW846	TAL CHI
SM 2320B	Alkalinity	SM	TAL CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CHI
3010A	Preparation, Total Metals	SW846	TAL CHI
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL CHI
5030B	Purge and Trap	SW846	TAL CHI
8151A	Extraction (Herbicides)	SW846	TAL 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:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TAL CHI = Eurofins TestAmerica, 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: 500-206666-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-206666-1	W-211012-RA-05	Water	10/12/21 10:00	10/13/21 09:55
500-206666-2	W-211012-RA-06	Water	10/12/21 10:53	10/13/21 09:55
500-206666-3	W-211012-RA-07	Water	10/12/21 11:27	10/13/21 09:55
500-206666-4	W-211012-RA-08	Water	10/12/21 12:13	10/13/21 09:55
500-206666-5	W-211012-RA-09	Water	10/12/21 13:26	10/13/21 09:55
500-206666-6	W-211012-RA-10	Water	10/12/21 13:52	10/13/21 09:55
500-206666-7	Trip Blank	Water	10/12/21 00:00	10/13/21 09:55

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Client Sample Results

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

Job ID: 500-206666-1

Client Sample ID: W-211012-RA-05

Lab Sample ID: 500-206666-1

Date Collected: 10/12/21 10:00

Matrix: Water

Date Received: 10/13/21 09:55

Method: 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			10/21/21 18:16	1
Toluene	<0.15		0.50	0.15	ug/L			10/21/21 18:16	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/21/21 18:16	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/21/21 18:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	123		75 - 126		10/21/21 18:16	1
Toluene-d8 (Surr)	84		75 - 120		10/21/21 18:16	1
4-Bromofluorobenzene (Surr)	99		72 - 124		10/21/21 18:16	1
Dibromofluoromethane	107		75 - 120		10/21/21 18:16	1

Method: 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		10/14/21 13:53	10/16/21 12:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	59		36 - 120	10/14/21 13:53	10/16/21 12:32	1
2-Fluorobiphenyl (Surr)	64		34 - 110	10/14/21 13:53	10/16/21 12:32	1
Terphenyl-d14 (Surr)	108		40 - 145	10/14/21 13:53	10/16/21 12:32	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	2.4		0.21	0.30	ug/L		10/18/21 09:26	10/20/21 11:38	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	104		25 - 130	10/18/21 09:26	10/20/21 11:38	2

Method: 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		10/19/21 09:25	10/19/21 19:02	1
Copper	<0.50		2.0	0.50	ug/L		10/19/21 09:25	10/19/21 19:02	1
Iron	<46.7		100	46.7	ug/L		10/19/21 09:25	10/19/21 19:02	1
Manganese	<0.79		2.5	0.79	ug/L		10/19/21 09:25	10/19/21 19:02	1
Zinc	<6.9		20.0	6.9	ug/L		10/19/21 09:25	10/19/21 19:02	1

Client Sample Results

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

Job ID: 500-206666-1

Client Sample ID: W-211012-RA-06

Lab Sample ID: 500-206666-2

Date Collected: 10/12/21 10:53

Matrix: Water

Date Received: 10/13/21 09:55

Method: 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			10/21/21 18:41	1
Toluene	<0.15		0.50	0.15	ug/L			10/21/21 18:41	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/21/21 18:41	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/21/21 18:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	120		75 - 126		10/21/21 18:41	1
Toluene-d8 (Surr)	87		75 - 120		10/21/21 18:41	1
4-Bromofluorobenzene (Surr)	98		72 - 124		10/21/21 18:41	1
Dibromofluoromethane	103		75 - 120		10/21/21 18:41	1

Method: 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		10/14/21 13:53	10/16/21 12:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	81		36 - 120	10/14/21 13:53	10/16/21 12:56	1
2-Fluorobiphenyl (Surr)	81		34 - 110	10/14/21 13:53	10/16/21 12:56	1
Terphenyl-d14 (Surr)	108		40 - 145	10/14/21 13:53	10/16/21 12:56	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	5.9		1.0	0.17	ug/L			10/18/21 19:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	106		60 - 140		10/18/21 19:43	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.42		0.10	0.15	ug/L		10/18/21 09:26	10/20/21 11:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	126		25 - 130	10/18/21 09:26	10/20/21 11:57	1

Method: 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		10/19/21 09:25	10/19/21 19:19	1
Copper	16.0		2.0	0.50	ug/L		10/19/21 09:25	10/19/21 19:19	1
Iron	117		100	46.7	ug/L		10/19/21 09:25	10/19/21 19:19	1
Manganese	4.0		2.5	0.79	ug/L		10/19/21 09:25	10/19/21 19:19	1
Zinc	<6.9		20.0	6.9	ug/L		10/19/21 09:25	10/19/21 19:19	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	33.4		0.91	0.46	mg/L		10/18/21 08:49	10/21/21 15:35	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.54		0.20	0.17	mg/L			10/14/21 10:32	1
Nitrate as N	0.53		0.20	0.068	mg/L			10/14/21 10:32	1
Sulfate	3.6		0.20	0.095	mg/L			10/14/21 10:32	1
Total Organic Carbon - Duplicates	<0.47		1.0	0.47	mg/L			10/25/21 23:26	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-206666-1

Client Sample ID: W-211012-RA-06

Lab Sample ID: 500-206666-2

Date Collected: 10/12/21 10:53

Matrix: Water

Date Received: 10/13/21 09:55

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	32.6		5.0	3.7	mg/L			10/22/21 11:13	1

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Client Sample Results

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

Job ID: 500-206666-1

Client Sample ID: W-211012-RA-07

Lab Sample ID: 500-206666-3

Date Collected: 10/12/21 11:27

Matrix: Water

Date Received: 10/13/21 09:55

Method: 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			10/21/21 19:06	1
Toluene	<0.15		0.50	0.15	ug/L			10/21/21 19:06	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/21/21 19:06	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/21/21 19:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	122		75 - 126		10/21/21 19:06	1
Toluene-d8 (Surr)	84		75 - 120		10/21/21 19:06	1
4-Bromofluorobenzene (Surr)	96		72 - 124		10/21/21 19:06	1
Dibromofluoromethane	107		75 - 120		10/21/21 19:06	1

Method: 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		10/14/21 13:53	10/16/21 13:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	84		36 - 120	10/14/21 13:53	10/16/21 13:20	1
2-Fluorobiphenyl (Surr)	89		34 - 110	10/14/21 13:53	10/16/21 13:20	1
Terphenyl-d14 (Surr)	108		40 - 145	10/14/21 13:53	10/16/21 13:20	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			10/18/21 20:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	104		60 - 140		10/18/21 20:00	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.30		0.099	0.14	ug/L		10/18/21 09:26	10/20/21 12:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	123		25 - 130	10/18/21 09:26	10/20/21 12:17	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.23	J	1.0	0.23	ug/L		10/19/21 09:25	10/19/21 19:23	1
Copper	6.7		2.0	0.50	ug/L		10/19/21 09:25	10/19/21 19:23	1
Iron	<46.7		100	46.7	ug/L		10/19/21 09:25	10/19/21 19:23	1
Manganese	2.1	J	2.5	0.79	ug/L		10/19/21 09:25	10/19/21 19:23	1
Zinc	<6.9		20.0	6.9	ug/L		10/19/21 09:25	10/19/21 19:23	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	55.9		0.91	0.46	mg/L		10/14/21 09:44	10/15/21 10:30	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.51		0.20	0.17	mg/L			10/13/21 15:33	1
Nitrate as N	0.30		0.20	0.068	mg/L			10/13/21 15:33	1
Sulfate	2.5		0.20	0.095	mg/L			10/13/21 15:33	1
Total Organic Carbon - Duplicates	1.9		1.0	0.47	mg/L			10/25/21 23:49	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-206666-1

Client Sample ID: W-211012-RA-07

Lab Sample ID: 500-206666-3

Date Collected: 10/12/21 11:27

Matrix: Water

Date Received: 10/13/21 09:55

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	66.6		5.0	3.7	mg/L			10/22/21 11:23	1

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Client Sample Results

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

Job ID: 500-206666-1

Client Sample ID: W-211012-RA-08

Lab Sample ID: 500-206666-4

Date Collected: 10/12/21 12:13

Matrix: Water

Date Received: 10/13/21 09:55

Method: 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			10/21/21 19:31	1
Toluene	<0.15		0.50	0.15	ug/L			10/21/21 19:31	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/21/21 19:31	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/21/21 19:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	121		75 - 126		10/21/21 19:31	1
Toluene-d8 (Surr)	86		75 - 120		10/21/21 19:31	1
4-Bromofluorobenzene (Surr)	99		72 - 124		10/21/21 19:31	1
Dibromofluoromethane	106		75 - 120		10/21/21 19:31	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.23		0.76	0.23	ug/L		10/14/21 13:53	10/16/21 13:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	85		36 - 120	10/14/21 13:53	10/16/21 13:44	1
2-Fluorobiphenyl (Surr)	91		34 - 110	10/14/21 13:53	10/16/21 13:44	1
Terphenyl-d14 (Surr)	110		40 - 145	10/14/21 13:53	10/16/21 13:44	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			10/18/21 20:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	105		60 - 140		10/18/21 20:17	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.20		0.095	0.14	ug/L		10/18/21 09:26	10/20/21 12:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	110		25 - 130	10/18/21 09:26	10/20/21 12:55	1

Method: 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		10/19/21 09:25	10/19/21 19:26	1
Copper	73.8		2.0	0.50	ug/L		10/19/21 09:25	10/19/21 19:26	1
Iron	<46.7		100	46.7	ug/L		10/19/21 09:25	10/19/21 19:26	1
Manganese	1.5	J	2.5	0.79	ug/L		10/19/21 09:25	10/19/21 19:26	1
Zinc	<6.9		20.0	6.9	ug/L		10/19/21 09:25	10/19/21 19:26	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	148		0.91	0.46	mg/L		10/14/21 09:44	10/15/21 10:31	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.34		0.20	0.17	mg/L			10/13/21 15:59	1
Nitrate as N	0.48		0.20	0.068	mg/L			10/13/21 15:59	1
Sulfate	1.2		0.20	0.095	mg/L			10/13/21 15:59	1
Total Organic Carbon - Duplicates	<0.47		1.0	0.47	mg/L			10/26/21 00:12	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-206666-1

Client Sample ID: W-211012-RA-08

Lab Sample ID: 500-206666-4

Date Collected: 10/12/21 12:13

Matrix: Water

Date Received: 10/13/21 09:55

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	154		5.0	3.7	mg/L			10/22/21 11:30	1

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

Client Sample Results

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

Job ID: 500-206666-1

Client Sample ID: W-211012-RA-09

Lab Sample ID: 500-206666-5

Date Collected: 10/12/21 13:26

Matrix: Water

Date Received: 10/13/21 09:55

Method: 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			10/21/21 19:55	1
Toluene	<0.15		0.50	0.15	ug/L			10/21/21 19:55	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/21/21 19:55	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/21/21 19:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	120		75 - 126		10/21/21 19:55	1
Toluene-d8 (Surr)	82		75 - 120		10/21/21 19:55	1
4-Bromofluorobenzene (Surr)	98		72 - 124		10/21/21 19:55	1
Dibromofluoromethane	108		75 - 120		10/21/21 19:55	1

Method: 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		10/14/21 13:53	10/16/21 14:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	81		36 - 120	10/14/21 13:53	10/16/21 14:08	1
2-Fluorobiphenyl (Surr)	85		34 - 110	10/14/21 13:53	10/16/21 14:08	1
Terphenyl-d14 (Surr)	106		40 - 145	10/14/21 13:53	10/16/21 14:08	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	550		1.0	0.17	ug/L			10/18/21 20:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	103		60 - 140		10/18/21 20:34	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.60		0.10	0.15	ug/L		10/18/21 09:26	10/20/21 13:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	116		25 - 130	10/18/21 09:26	10/20/21 13:14	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.27	J	1.0	0.23	ug/L		10/19/21 09:25	10/19/21 19:36	1
Copper	1.9	J	2.0	0.50	ug/L		10/19/21 09:25	10/19/21 19:36	1
Iron	23500		100	46.7	ug/L		10/19/21 09:25	10/19/21 19:36	1
Manganese	692		2.5	0.79	ug/L		10/19/21 09:25	10/19/21 19:36	1
Zinc	15.6	J	20.0	6.9	ug/L		10/19/21 09:25	10/19/21 19:36	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	90.8		0.91	0.46	mg/L		10/18/21 08:49	10/21/21 15:35	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.6		0.20	0.17	mg/L			10/14/21 10:45	1
Nitrate as N	1.6		0.20	0.068	mg/L			10/14/21 10:45	1
Sulfate	6.1		0.20	0.095	mg/L			10/14/21 10:45	1
Total Organic Carbon - Duplicates	6.8		1.0	0.47	mg/L			10/26/21 00:35	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-206666-1

Client Sample ID: W-211012-RA-09

Lab Sample ID: 500-206666-5

Date Collected: 10/12/21 13:26

Matrix: Water

Date Received: 10/13/21 09:55

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	83.7		5.0	3.7	mg/L			10/22/21 10:52	1

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

Client Sample Results

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

Job ID: 500-206666-1

Client Sample ID: W-211012-RA-10

Lab Sample ID: 500-206666-6

Date Collected: 10/12/21 13:52

Matrix: Water

Date Received: 10/13/21 09:55

Method: 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			10/21/21 20:21	1
Toluene	<0.15		0.50	0.15	ug/L			10/21/21 20:21	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/21/21 20:21	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/21/21 20:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	122		75 - 126		10/21/21 20:21	1
Toluene-d8 (Surr)	85		75 - 120		10/21/21 20:21	1
4-Bromofluorobenzene (Surr)	102		72 - 124		10/21/21 20:21	1
Dibromofluoromethane	107		75 - 120		10/21/21 20:21	1

Method: 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		10/14/21 13:53	10/16/21 14:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	82		36 - 120	10/14/21 13:53	10/16/21 14:32	1
2-Fluorobiphenyl (Surr)	88		34 - 110	10/14/21 13:53	10/16/21 14:32	1
Terphenyl-d14 (Surr)	109		40 - 145	10/14/21 13:53	10/16/21 14:32	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	0.30	J	1.0	0.17	ug/L			10/18/21 20:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	105		60 - 140		10/18/21 20:52	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.18		0.10	0.15	ug/L		10/18/21 09:26	10/20/21 13:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	118		25 - 130	10/18/21 09:26	10/20/21 13:34	1

Method: 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		10/19/21 09:25	10/19/21 19:40	1
Copper	15.0		2.0	0.50	ug/L		10/19/21 09:25	10/19/21 19:40	1
Iron	49.7	J	100	46.7	ug/L		10/19/21 09:25	10/19/21 19:40	1
Manganese	6.1		2.5	0.79	ug/L		10/19/21 09:25	10/19/21 19:40	1
Zinc	<6.9		20.0	6.9	ug/L		10/19/21 09:25	10/19/21 19:40	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	128		0.91	0.46	mg/L		10/18/21 08:49	10/22/21 11:26	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2.8		0.20	0.17	mg/L		10/14/21 10:57		1
Nitrate as N	6.4		1.0	0.34	mg/L		10/14/21 11:12		5
Sulfate	15.5		1.0	0.48	mg/L		10/14/21 11:12		5
Total Organic Carbon - Duplicates	1.5		1.0	0.47	mg/L		10/26/21 02:32		1

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Client Sample Results

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

Job ID: 500-206666-1

Client Sample ID: W-211012-RA-10

Lab Sample ID: 500-206666-6

Date Collected: 10/12/21 13:52

Matrix: Water

Date Received: 10/13/21 09:55

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	94.7		5.0	3.7	mg/L			10/22/21 11:37	1

1

2

3

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Client Sample Results

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

Job ID: 500-206666-1

Client Sample ID: Trip Blank
Date Collected: 10/12/21 00:00
Date Received: 10/13/21 09:55

Lab Sample ID: 500-206666-7
Matrix: Water

Method: 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			10/21/21 16:45	1
Toluene	<0.15		0.50	0.15	ug/L			10/21/21 16:45	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/21/21 16:45	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/21/21 16:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		75 - 126		10/21/21 16:45	1
Toluene-d8 (Surr)	100		75 - 120		10/21/21 16:45	1
4-Bromofluorobenzene (Surr)	97		72 - 124		10/21/21 16:45	1
Dibromofluoromethane	91		75 - 120		10/21/21 16:45	1



Definitions/Glossary

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

Job ID: 500-206666-1

Qualifiers

GC VOA

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

Metals

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

Glossary

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

QC Association Summary

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

Job ID: 500-206666-1

GC/MS VOA

Analysis Batch: 624651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206666-1	W-211012-RA-05	Total/NA	Water	8260B	
500-206666-2	W-211012-RA-06	Total/NA	Water	8260B	
500-206666-3	W-211012-RA-07	Total/NA	Water	8260B	
500-206666-4	W-211012-RA-08	Total/NA	Water	8260B	
500-206666-5	W-211012-RA-09	Total/NA	Water	8260B	
500-206666-6	W-211012-RA-10	Total/NA	Water	8260B	
MB 500-624651/7	Method Blank	Total/NA	Water	8260B	
LCS 500-624651/5	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 624738

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206666-7	Trip Blank	Total/NA	Water	8260B	
MB 500-624738/7	Method Blank	Total/NA	Water	8260B	
LCS 500-624738/31	Lab Control Sample	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 623543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206666-1	W-211012-RA-05	Total/NA	Water	3510C	
500-206666-2	W-211012-RA-06	Total/NA	Water	3510C	
500-206666-3	W-211012-RA-07	Total/NA	Water	3510C	
500-206666-4	W-211012-RA-08	Total/NA	Water	3510C	
500-206666-5	W-211012-RA-09	Total/NA	Water	3510C	
500-206666-6	W-211012-RA-10	Total/NA	Water	3510C	
MB 500-623543/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-623543/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 500-623543/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 623859

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206666-1	W-211012-RA-05	Total/NA	Water	8270D	623543
500-206666-2	W-211012-RA-06	Total/NA	Water	8270D	623543
500-206666-3	W-211012-RA-07	Total/NA	Water	8270D	623543
500-206666-4	W-211012-RA-08	Total/NA	Water	8270D	623543
500-206666-5	W-211012-RA-09	Total/NA	Water	8270D	623543
500-206666-6	W-211012-RA-10	Total/NA	Water	8270D	623543
MB 500-623543/1-A	Method Blank	Total/NA	Water	8270D	623543
LCS 500-623543/2-A	Lab Control Sample	Total/NA	Water	8270D	623543
LCS 500-623543/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	623543

GC VOA

Analysis Batch: 508722

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206666-2	W-211012-RA-06	Total/NA	Water	RSK-175	
500-206666-3	W-211012-RA-07	Total/NA	Water	RSK-175	
500-206666-4	W-211012-RA-08	Total/NA	Water	RSK-175	
500-206666-5	W-211012-RA-09	Total/NA	Water	RSK-175	
500-206666-6	W-211012-RA-10	Total/NA	Water	RSK-175	
MB 240-508722/3	Method Blank	Total/NA	Water	RSK-175	
LCS 240-508722/4	Lab Control Sample	Total/NA	Water	RSK-175	

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QC Association Summary

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

Job ID: 500-206666-1

GC Semi VOA

Prep Batch: 624036

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206666-1	W-211012-RA-05	Total/NA	Water	8151A	
500-206666-2	W-211012-RA-06	Total/NA	Water	8151A	
500-206666-3	W-211012-RA-07	Total/NA	Water	8151A	
500-206666-4	W-211012-RA-08	Total/NA	Water	8151A	
500-206666-5	W-211012-RA-09	Total/NA	Water	8151A	
500-206666-6	W-211012-RA-10	Total/NA	Water	8151A	
MB 500-624036/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-624036/2-A	Lab Control Sample	Total/NA	Water	8151A	

Analysis Batch: 624405

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206666-1	W-211012-RA-05	Total/NA	Water	8151A	624036
500-206666-2	W-211012-RA-06	Total/NA	Water	8151A	624036
500-206666-3	W-211012-RA-07	Total/NA	Water	8151A	624036
500-206666-4	W-211012-RA-08	Total/NA	Water	8151A	624036
500-206666-5	W-211012-RA-09	Total/NA	Water	8151A	624036
500-206666-6	W-211012-RA-10	Total/NA	Water	8151A	624036
MB 500-624036/1-A	Method Blank	Total/NA	Water	8151A	624036
LCS 500-624036/2-A	Lab Control Sample	Total/NA	Water	8151A	624036

Metals

Prep Batch: 623454

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206666-3	W-211012-RA-07	Total/NA	Water	3010A	
500-206666-4	W-211012-RA-08	Total/NA	Water	3010A	

Analysis Batch: 623710

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206666-3	W-211012-RA-07	Total/NA	Water	SM 2340B	623454
500-206666-4	W-211012-RA-08	Total/NA	Water	SM 2340B	623454

Prep Batch: 624026

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206666-2	W-211012-RA-06	Total/NA	Water	3010A	
500-206666-5	W-211012-RA-09	Total/NA	Water	3010A	
500-206666-6	W-211012-RA-10	Total/NA	Water	3010A	

Prep Batch: 624265

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206666-1	W-211012-RA-05	Dissolved	Water	3005A	
500-206666-2	W-211012-RA-06	Dissolved	Water	3005A	
500-206666-3	W-211012-RA-07	Dissolved	Water	3005A	
500-206666-4	W-211012-RA-08	Dissolved	Water	3005A	
500-206666-5	W-211012-RA-09	Dissolved	Water	3005A	
500-206666-6	W-211012-RA-10	Dissolved	Water	3005A	
MB 500-624265/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-624265/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
500-206666-1 MS	W-211012-RA-05	Dissolved	Water	3005A	
500-206666-1 MSD	W-211012-RA-05	Dissolved	Water	3005A	
500-206666-1 DU	W-211012-RA-05	Dissolved	Water	3005A	

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QC Association Summary

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

Job ID: 500-206666-1

Metals

Analysis Batch: 624494

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206666-1	W-211012-RA-05	Dissolved	Water	6020A	624265
500-206666-2	W-211012-RA-06	Dissolved	Water	6020A	624265
500-206666-3	W-211012-RA-07	Dissolved	Water	6020A	624265
500-206666-4	W-211012-RA-08	Dissolved	Water	6020A	624265
500-206666-5	W-211012-RA-09	Dissolved	Water	6020A	624265
500-206666-6	W-211012-RA-10	Dissolved	Water	6020A	624265
MB 500-624265/1-A	Method Blank	Total Recoverable	Water	6020A	624265
LCS 500-624265/2-A	Lab Control Sample	Total Recoverable	Water	6020A	624265
500-206666-1 MS	W-211012-RA-05	Dissolved	Water	6020A	624265
500-206666-1 MSD	W-211012-RA-05	Dissolved	Water	6020A	624265
500-206666-1 DU	W-211012-RA-05	Dissolved	Water	6020A	624265

Analysis Batch: 624795

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206666-2	W-211012-RA-06	Total/NA	Water	SM 2340B	624026
500-206666-5	W-211012-RA-09	Total/NA	Water	SM 2340B	624026
500-206666-6	W-211012-RA-10	Total/NA	Water	SM 2340B	624026

General Chemistry

Analysis Batch: 623340

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206666-3	W-211012-RA-07	Total/NA	Water	300.0	
500-206666-4	W-211012-RA-08	Total/NA	Water	300.0	
MB 500-623340/3	Method Blank	Total/NA	Water	300.0	
LCS 500-623340/4	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 623499

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206666-2	W-211012-RA-06	Total/NA	Water	300.0	
500-206666-5	W-211012-RA-09	Total/NA	Water	300.0	
500-206666-6	W-211012-RA-10	Total/NA	Water	300.0	
500-206666-6	W-211012-RA-10	Total/NA	Water	300.0	
MB 500-623499/3	Method Blank	Total/NA	Water	300.0	
LCS 500-623499/4	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 624965

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206666-2	W-211012-RA-06	Total/NA	Water	SM 2320B	
500-206666-3	W-211012-RA-07	Total/NA	Water	SM 2320B	
500-206666-4	W-211012-RA-08	Total/NA	Water	SM 2320B	
500-206666-5	W-211012-RA-09	Total/NA	Water	SM 2320B	
500-206666-6	W-211012-RA-10	Total/NA	Water	SM 2320B	
MB 500-624965/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-624965/4	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 625488

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206666-2	W-211012-RA-06	Total/NA	Water	9060A	
500-206666-3	W-211012-RA-07	Total/NA	Water	9060A	
500-206666-4	W-211012-RA-08	Total/NA	Water	9060A	

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QC Association Summary

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

Job ID: 500-206666-1

General Chemistry (Continued)

Analysis Batch: 625488 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206666-5	W-211012-RA-09	Total/NA	Water	9060A	
500-206666-6	W-211012-RA-10	Total/NA	Water	9060A	
MB 500-625488/31	Method Blank	Total/NA	Water	9060A	
MB 500-625488/7	Method Blank	Total/NA	Water	9060A	
LCS 500-625488/32	Lab Control Sample	Total/NA	Water	9060A	
LCS 500-625488/8	Lab Control Sample	Total/NA	Water	9060A	

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

Surrogate Summary

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

Job ID: 500-206666-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-126)	TOL (75-120)	BFB (72-124)	DBFM (75-120)
500-206666-1	W-211012-RA-05	123	84	99	107
500-206666-2	W-211012-RA-06	120	87	98	103
500-206666-3	W-211012-RA-07	122	84	96	107
500-206666-4	W-211012-RA-08	121	86	99	106
500-206666-5	W-211012-RA-09	120	82	98	108
500-206666-6	W-211012-RA-10	122	85	102	107
500-206666-7	Trip Blank	102	100	97	91
LCS 500-624651/5	Lab Control Sample	113	87	88	104
LCS 500-624738/31	Lab Control Sample	103	97	93	95
MB 500-624651/7	Method Blank	119	82	92	103
MB 500-624738/7	Method Blank	106	99	98	93

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)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		NBZ (36-120)	FBP (34-110)	TPHL (40-145)
500-206666-1	W-211012-RA-05	59	64	108
500-206666-2	W-211012-RA-06	81	81	108
500-206666-3	W-211012-RA-07	84	89	108
500-206666-4	W-211012-RA-08	85	91	110
500-206666-5	W-211012-RA-09	81	85	106
500-206666-6	W-211012-RA-10	82	88	109
LCS 500-623543/2-A	Lab Control Sample	79	76	92
LCS 500-623543/3-A	Lab Control Sample Dup	80	74	93
MB 500-623543/1-A	Method Blank	69	69	92

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)

Lab Sample ID	Client Sample ID	TFE1
		(60-140)
500-206666-2	W-211012-RA-06	106
500-206666-3	W-211012-RA-07	104
500-206666-4	W-211012-RA-08	105
500-206666-5	W-211012-RA-09	103
500-206666-6	W-211012-RA-10	105
LCS 240-508722/4	Lab Control Sample	102

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Surrogate Summary

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

Job ID: 500-206666-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TFE1 (60-140)
MB 240-508722/3	Method Blank	107

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	DCPAA2 (25-130)
500-206666-1	W-211012-RA-05	104
500-206666-2	W-211012-RA-06	126
500-206666-3	W-211012-RA-07	123
500-206666-4	W-211012-RA-08	110
500-206666-5	W-211012-RA-09	116
500-206666-6	W-211012-RA-10	118
LCS 500-624036/2-A	Lab Control Sample	100
MB 500-624036/1-A	Method Blank	101

Surrogate Legend

DCPAA = DCAA

QC Sample Results

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

Job ID: 500-206666-1

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

Lab Sample ID: MB 500-624651/7
Matrix: Water
Analysis Batch: 624651

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

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	<0.15		0.50	0.15	ug/L			10/21/21 11:12	1
Toluene	<0.15		0.50	0.15	ug/L			10/21/21 11:12	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/21/21 11:12	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/21/21 11:12	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	119		75 - 126		10/21/21 11:12	1
Toluene-d8 (Surr)	82		75 - 120		10/21/21 11:12	1
4-Bromofluorobenzene (Surr)	92		72 - 124		10/21/21 11:12	1
Dibromofluoromethane	103		75 - 120		10/21/21 11:12	1

Lab Sample ID: LCS 500-624651/5
Matrix: Water
Analysis Batch: 624651

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

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Benzene	50.0	45.7		ug/L		91	70 - 120
Toluene	50.0	39.1		ug/L		78	70 - 125
Ethylbenzene	50.0	41.0		ug/L		82	70 - 123
Xylenes, Total	100	89.6		ug/L		90	70 - 125

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	113		75 - 126
Toluene-d8 (Surr)	87		75 - 120
4-Bromofluorobenzene (Surr)	88		72 - 124
Dibromofluoromethane	104		75 - 120

Lab Sample ID: MB 500-624738/7
Matrix: Water
Analysis Batch: 624738

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

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	<0.15		0.50	0.15	ug/L			10/21/21 14:58	1
Toluene	<0.15		0.50	0.15	ug/L			10/21/21 14:58	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/21/21 14:58	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/21/21 14:58	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	106		75 - 126		10/21/21 14:58	1
Toluene-d8 (Surr)	99		75 - 120		10/21/21 14:58	1
4-Bromofluorobenzene (Surr)	98		72 - 124		10/21/21 14:58	1
Dibromofluoromethane	93		75 - 120		10/21/21 14:58	1

QC Sample Results

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

Job ID: 500-206666-1

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

Lab Sample ID: LCS 500-624738/31
Matrix: Water
Analysis Batch: 624738

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	47.2		ug/L		94	70 - 120
Toluene	50.0	46.3		ug/L		93	70 - 125
Ethylbenzene	50.0	49.1		ug/L		98	70 - 123
Xylenes, Total	100	91.2		ug/L		91	70 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	103		75 - 126
Toluene-d8 (Surr)	97		75 - 120
4-Bromofluorobenzene (Surr)	93		72 - 124
Dibromofluoromethane	95		75 - 120

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

Lab Sample ID: MB 500-623543/1-A
Matrix: Water
Analysis Batch: 623859

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 623543

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.80	0.25	ug/L		10/14/21 13:53	10/16/21 12:08	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	69		36 - 120	10/14/21 13:53	10/16/21 12:08	1
2-Fluorobiphenyl (Surr)	69		34 - 110	10/14/21 13:53	10/16/21 12:08	1
Terphenyl-d14 (Surr)	92		40 - 145	10/14/21 13:53	10/16/21 12:08	1

Lab Sample ID: LCS 500-623543/2-A
Matrix: Water
Analysis Batch: 623859

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 623543

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	32.0	18.5		ug/L		58	36 - 110

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Nitrobenzene-d5 (Surr)	79		36 - 120
2-Fluorobiphenyl (Surr)	76		34 - 110
Terphenyl-d14 (Surr)	92		40 - 145

Lab Sample ID: LCSD 500-623543/3-A
Matrix: Water
Analysis Batch: 623859

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 623543

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Naphthalene	32.0	19.5		ug/L		61	36 - 110	6	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Nitrobenzene-d5 (Surr)	80		36 - 120
2-Fluorobiphenyl (Surr)	74		34 - 110

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QC Sample Results

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

Job ID: 500-206666-1

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

Lab Sample ID: LCSD 500-623543/3-A
Matrix: Water
Analysis Batch: 623859

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 623543

Surrogate	LCS D %Recovery	LCS D Qualifier	Limits
Terphenyl-d14 (Surr)	93		40 - 145

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 240-508722/3
Matrix: Water
Analysis Batch: 508722

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			10/18/21 15:58	1
Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac			
1,1,1-Trifluoroethane	107		60 - 140		10/18/21 15:58	1			

Lab Sample ID: LCS 240-508722/4
Matrix: Water
Analysis Batch: 508722

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane	284	272		ug/L		96	80 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,1,1-Trifluoroethane	102		60 - 140				

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 500-624036/1-A
Matrix: Water
Analysis Batch: 624405

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 624036

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14		0.10	0.14	ug/L		10/18/21 09:26	10/20/21 09:38	1
Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac			
DCAA	101		25 - 130	10/18/21 09:26	10/20/21 09:38	1			

Lab Sample ID: LCS 500-624036/2-A
Matrix: Water
Analysis Batch: 624405

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 624036

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Pentachlorophenol	2.50	1.72		ug/L		69	40 - 122
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
DCAA	100		25 - 130				

QC Sample Results

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

Job ID: 500-206666-1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 500-624265/1-A
Matrix: Water
Analysis Batch: 624494

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 624265

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	<0.23		1.0	0.23	ug/L		10/19/21 09:25	10/19/21 18:55	1
Copper	<0.50		2.0	0.50	ug/L		10/19/21 09:25	10/19/21 18:55	1
Iron	<46.7		100	46.7	ug/L		10/19/21 09:25	10/19/21 18:55	1
Manganese	<0.79		2.5	0.79	ug/L		10/19/21 09:25	10/19/21 18:55	1
Zinc	<6.9		20.0	6.9	ug/L		10/19/21 09:25	10/19/21 18:55	1

Lab Sample ID: LCS 500-624265/2-A
Matrix: Water
Analysis Batch: 624494

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 624265

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	250	255.1		ug/L		102	80 - 120
Iron	1000	1030		ug/L		103	80 - 120
Manganese	500	512.2		ug/L		102	80 - 120
Zinc	500	508.2		ug/L		102	80 - 120

Lab Sample ID: 500-206666-1 MS
Matrix: Water
Analysis Batch: 624494

Client Sample ID: W-211012-RA-05
Prep Type: Dissolved
Prep Batch: 624265

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	<0.50		250	252.1		ug/L		101	75 - 125
Iron	<46.7		1000	1016		ug/L		102	75 - 125
Manganese	<0.79		500	507.4		ug/L		101	75 - 125
Zinc	<6.9		500	497.6		ug/L		100	75 - 125

Lab Sample ID: 500-206666-1 MSD
Matrix: Water
Analysis Batch: 624494

Client Sample ID: W-211012-RA-05
Prep Type: Dissolved
Prep Batch: 624265

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Copper	<0.50		250	254.0		ug/L		102	75 - 125	1	20
Iron	<46.7		1000	1008		ug/L		101	75 - 125	1	20
Manganese	<0.79		500	504.8		ug/L		101	75 - 125	1	20
Zinc	<6.9		500	502.9		ug/L		101	75 - 125	1	20

Lab Sample ID: 500-206666-1 DU
Matrix: Water
Analysis Batch: 624494

Client Sample ID: W-211012-RA-05
Prep Type: Dissolved
Prep Batch: 624265

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Copper	<0.50		<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

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QC Sample Results

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

Job ID: 500-206666-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 500-623340/3
Matrix: Water
Analysis Batch: 623340

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			10/13/21 12:10	1
Nitrate as N	<0.068		0.20	0.068	mg/L			10/13/21 12:10	1
Sulfate	<0.095		0.20	0.095	mg/L			10/13/21 12:10	1

Lab Sample ID: LCS 500-623340/4
Matrix: Water
Analysis Batch: 623340

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	2.00		mg/L		100	90 - 110
Sulfate	5.00	4.92		mg/L		98	90 - 110

Lab Sample ID: MB 500-623499/3
Matrix: Water
Analysis Batch: 623499

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			10/14/21 08:23	1
Nitrate as N	<0.068		0.20	0.068	mg/L			10/14/21 08:23	1
Sulfate	<0.095		0.20	0.095	mg/L			10/14/21 08:23	1

Lab Sample ID: LCS 500-623499/4
Matrix: Water
Analysis Batch: 623499

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	3.10		mg/L		103	90 - 110
Nitrate as N	2.00	1.91		mg/L		95	90 - 110
Sulfate	5.00	4.87		mg/L		97	90 - 110

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

Lab Sample ID: MB 500-625488/31
Matrix: Water
Analysis Batch: 625488

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			10/26/21 01:18	1

Lab Sample ID: MB 500-625488/7
Matrix: Water
Analysis Batch: 625488

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			10/25/21 17:38	1

QC Sample Results

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

Job ID: 500-206666-1

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

Lab Sample ID: LCS 500-625488/32
Matrix: Water
Analysis Batch: 625488

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	10.14		mg/L		101	86 - 116

Lab Sample ID: LCS 500-625488/8
Matrix: Water
Analysis Batch: 625488

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	10.90		mg/L		109	86 - 116

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-624965/3
Matrix: Water
Analysis Batch: 624965

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			10/22/21 09:49	1

Lab Sample ID: LCS 500-624965/4
Matrix: Water
Analysis Batch: 624965

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	100	98.45		mg/L		98	90 - 110

Lab Chronicle

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

Job ID: 500-206666-1

Client Sample ID: W-211012-RA-05

Lab Sample ID: 500-206666-1

Date Collected: 10/12/21 10:00

Matrix: Water

Date Received: 10/13/21 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	624651	10/21/21 18:16	STW	TAL CHI
Total/NA	Prep	3510C			623543	10/14/21 13:53	DAK	TAL CHI
Total/NA	Analysis	8270D		1	623859	10/16/21 12:32	SS	TAL CHI
Total/NA	Prep	8151A			624036	10/18/21 09:26	DAK	TAL CHI
Total/NA	Analysis	8151A		2	624405	10/20/21 11:38	JBj	TAL CHI
Dissolved	Prep	3005A			624265	10/19/21 09:25	BDE	TAL CHI
Dissolved	Analysis	6020A		1	624494	10/19/21 19:02	FXG	TAL CHI

Client Sample ID: W-211012-RA-06

Lab Sample ID: 500-206666-2

Date Collected: 10/12/21 10:53

Matrix: Water

Date Received: 10/13/21 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	624651	10/21/21 18:41	STW	TAL CHI
Total/NA	Prep	3510C			623543	10/14/21 13:53	DAK	TAL CHI
Total/NA	Analysis	8270D		1	623859	10/16/21 12:56	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	508722	10/18/21 19:43	JBN	TAL CAN
Total/NA	Prep	8151A			624036	10/18/21 09:26	DAK	TAL CHI
Total/NA	Analysis	8151A		1	624405	10/20/21 11:57	JBj	TAL CHI
Dissolved	Prep	3005A			624265	10/19/21 09:25	BDE	TAL CHI
Dissolved	Analysis	6020A		1	624494	10/19/21 19:19	FXG	TAL CHI
Total/NA	Prep	3010A			624026	10/18/21 08:49	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	624795	10/21/21 15:35	JJB	TAL CHI
Total/NA	Analysis	300.0		1	623499	10/14/21 10:32	EAT	TAL CHI
Total/NA	Analysis	9060A		1	625488	10/25/21 23:26	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	624965	10/22/21 11:13	SMO	TAL CHI

Client Sample ID: W-211012-RA-07

Lab Sample ID: 500-206666-3

Date Collected: 10/12/21 11:27

Matrix: Water

Date Received: 10/13/21 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	624651	10/21/21 19:06	STW	TAL CHI
Total/NA	Prep	3510C			623543	10/14/21 13:53	DAK	TAL CHI
Total/NA	Analysis	8270D		1	623859	10/16/21 13:20	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	508722	10/18/21 20:00	JBN	TAL CAN
Total/NA	Prep	8151A			624036	10/18/21 09:26	DAK	TAL CHI
Total/NA	Analysis	8151A		1	624405	10/20/21 12:17	JBj	TAL CHI
Dissolved	Prep	3005A			624265	10/19/21 09:25	BDE	TAL CHI
Dissolved	Analysis	6020A		1	624494	10/19/21 19:23	FXG	TAL CHI
Total/NA	Prep	3010A			623454	10/14/21 09:44	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	623710	10/15/21 10:30	FXG	TAL CHI
Total/NA	Analysis	300.0		1	623340	10/13/21 15:33	EAT	TAL CHI
Total/NA	Analysis	9060A		1	625488	10/25/21 23:49	TMS	TAL CHI

Eurofins TestAmerica, Chicago

Lab Chronicle

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

Job ID: 500-206666-1

Client Sample ID: W-211012-RA-07

Lab Sample ID: 500-206666-3

Date Collected: 10/12/21 11:27

Matrix: Water

Date Received: 10/13/21 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2320B		1	624965	10/22/21 11:23	SMO	TAL CHI

Client Sample ID: W-211012-RA-08

Lab Sample ID: 500-206666-4

Date Collected: 10/12/21 12:13

Matrix: Water

Date Received: 10/13/21 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	624651	10/21/21 19:31	STW	TAL CHI
Total/NA	Prep	3510C			623543	10/14/21 13:53	DAK	TAL CHI
Total/NA	Analysis	8270D		1	623859	10/16/21 13:44	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	508722	10/18/21 20:17	JBN	TAL CAN
Total/NA	Prep	8151A			624036	10/18/21 09:26	DAK	TAL CHI
Total/NA	Analysis	8151A		1	624405	10/20/21 12:55	JBK	TAL CHI
Dissolved	Prep	3005A			624265	10/19/21 09:25	BDE	TAL CHI
Dissolved	Analysis	6020A		1	624494	10/19/21 19:26	FXG	TAL CHI
Total/NA	Prep	3010A			623454	10/14/21 09:44	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	623710	10/15/21 10:31	FXG	TAL CHI
Total/NA	Analysis	300.0		1	623340	10/13/21 15:59	EAT	TAL CHI
Total/NA	Analysis	9060A		1	625488	10/26/21 00:12	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	624965	10/22/21 11:30	SMO	TAL CHI

Client Sample ID: W-211012-RA-09

Lab Sample ID: 500-206666-5

Date Collected: 10/12/21 13:26

Matrix: Water

Date Received: 10/13/21 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	624651	10/21/21 19:55	STW	TAL CHI
Total/NA	Prep	3510C			623543	10/14/21 13:53	DAK	TAL CHI
Total/NA	Analysis	8270D		1	623859	10/16/21 14:08	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	508722	10/18/21 20:34	JBN	TAL CAN
Total/NA	Prep	8151A			624036	10/18/21 09:26	DAK	TAL CHI
Total/NA	Analysis	8151A		1	624405	10/20/21 13:14	JBK	TAL CHI
Dissolved	Prep	3005A			624265	10/19/21 09:25	BDE	TAL CHI
Dissolved	Analysis	6020A		1	624494	10/19/21 19:36	FXG	TAL CHI
Total/NA	Prep	3010A			624026	10/18/21 08:49	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	624795	10/21/21 15:35	JJB	TAL CHI
Total/NA	Analysis	300.0		1	623499	10/14/21 10:45	EAT	TAL CHI
Total/NA	Analysis	9060A		1	625488	10/26/21 00:35	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	624965	10/22/21 10:52	SMO	TAL CHI

Lab Chronicle

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

Job ID: 500-206666-1

Client Sample ID: W-211012-RA-10

Lab Sample ID: 500-206666-6

Date Collected: 10/12/21 13:52

Matrix: Water

Date Received: 10/13/21 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	624651	10/21/21 20:21	STW	TAL CHI
Total/NA	Prep	3510C			623543	10/14/21 13:53	DAK	TAL CHI
Total/NA	Analysis	8270D		1	623859	10/16/21 14:32	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	508722	10/18/21 20:52	JBN	TAL CAN
Total/NA	Prep	8151A			624036	10/18/21 09:26	DAK	TAL CHI
Total/NA	Analysis	8151A		1	624405	10/20/21 13:34	JBK	TAL CHI
Dissolved	Prep	3005A			624265	10/19/21 09:25	BDE	TAL CHI
Dissolved	Analysis	6020A		1	624494	10/19/21 19:40	FXG	TAL CHI
Total/NA	Prep	3010A			624026	10/18/21 08:49	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	624795	10/22/21 11:26	JJB	TAL CHI
Total/NA	Analysis	300.0		1	623499	10/14/21 10:57	EAT	TAL CHI
Total/NA	Analysis	300.0		5	623499	10/14/21 11:12	EAT	TAL CHI
Total/NA	Analysis	9060A		1	625488	10/26/21 02:32	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	624965	10/22/21 11:37	SMO	TAL CHI

Client Sample ID: Trip Blank

Lab Sample ID: 500-206666-7

Date Collected: 10/12/21 00:00

Matrix: Water

Date Received: 10/13/21 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	624738	10/21/21 16:45	STW	TAL CHI

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

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

Accreditation/Certification Summary

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

Job ID: 500-206666-1

Laboratory: Eurofins TestAmerica, Chicago

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

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-22

Laboratory: Eurofins TestAmerica, 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	02-23-22
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-22
Georgia	State	4062	02-23-22
Illinois	NELAP	200004	07-31-22
Iowa	State	421	06-01-23
Kansas	NELAP	E-10336	04-30-22
Kentucky (UST)	State	112225	02-23-22
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-22
New York	NELAP	10975	03-31-22
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-22
Texas	NELAP	T104704517-18-10	08-31-22
Virginia	NELAP	11570	09-14-22
Washington	State	C971	01-12-22
West Virginia DEP	State	210	12-31-21

Chain of Custody Record

547037



Environment Testing
TestAmerica

Address _____

Regulatory Program: DW NPDES RCRA Other _____

TAL-8210

Client Contact Company Name <u>GHD</u> Address <u>900 Long Lake Rd Suite 200</u> City/State/Zip <u>St Paul MN 55112</u> Phone <u>651 639-0913</u> Fax _____ Project Name <u>Pontawood</u> Site <u>11222418</u> P O # _____		Project Manager <u>Tim Ree</u> Tel/Email <u>Tim.Ree@GHD.com</u> Analysis Turnaround Time <input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below _____ <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Site Contact Lab Contact _____ Date _____ Carrier _____		COC No _____ of _____ COCs Sampler _____ For Lab Use Only Walk-in Client _____ Lab Sampling _____ Job / SDG No <u>500-2066666</u> Sample Specific Notes _____									
		500-206666 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)	PCP	STEX	Naphthalene	Dissolved Metals	Alk: Anion	Total Metals, Halides	TUC	Methane
1 <u>W-211012-RA-05</u>	<u>8/10/14</u>	<u>1006</u>	<u>G</u>	<u>6W</u>	<u>8</u>			X	X	X	X				
2 <u>W-211012-RA-06</u>		<u>1053</u>			<u>15</u>			X	X	X	X	X	X	X	X
3 <u>W-211012-RA-07</u>		<u>1127</u>			<u>15</u>			X	X	X	X	X	X	X	X
4 <u>W-211012-RA-08</u>		<u>1213</u>			<u>15</u>			X	X	X	X	X	X	X	X
5 <u>W-211012-RA-09</u>		<u>1326</u>			<u>15</u>			X	X	X	X	X	X	X	X
6 <u>W-211012-RA-10</u>		<u>1400</u> <u>1552</u>			<u>15</u>			X	X	X	X	X	X	X	X
7 <u>trip blank</u>															
Preservation Used: 1=Ice, 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Other _____							Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample. <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown								
							Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months								
Special Instructions/QC Requirements & Comments: <div style="text-align: right; font-size: 24pt; font-weight: bold;">3, 3, 4, 6</div>															
Custody Seals Intact <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No _____		Cooler Temp (°C) Obs'd _____ Corr'd _____		Therm ID No _____									
Relinquished by <u>[Signature]</u>		Company <u>GHD</u>		Date/Time <u>10/11/14 1500</u>		Received by _____		Company _____		Date/Time _____					
Relinquished by _____		Company _____		Date/Time _____		Received by _____		Company _____		Date/Time _____					
Relinquished by _____		Company _____		Date/Time _____		Received in Laboratory by <u>Stephanie Hernandez</u>		Company <u>ETA-GHI</u>		Date/Time <u>10/11/14 1000</u>					



fedEx
Express **Package US Airbill**

FedEx Tracking Number **8166 8556 3406**

From [Redacted]
Date 11/1
Sender's Name _____ **Phone** _____
Company _____
Address _____
Dept./Floor/Suite/Room
City _____ **State** AZ **ZIP** 11<

FedEx
TRK# 8166 8556 3406
0200
NA JOTA
WED - 13 OCT AA
PRIORITY OVERNIGHT
60484
IL-US
ORD
802045 120ct2021 JOTA 56DG2/0778/1823
8166 8556 3406



4 Express Package Service *To most locations.

Next Business Day <input type="checkbox"/> FedEx First Overnight <small>Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.</small> <input type="checkbox"/> FedEx Priority Overnight <small>Next business morning.* Friday shipments will be delivered on Monday unless Saturday Delivery is selected.</small> <input type="checkbox"/> FedEx Standard Overnight <small>Next business afternoon.* Saturday Delivery NOT available.</small>	2 or 3 Business Days 500-206666 Wayb <input type="checkbox"/> FedEx 2Day A.M. <small>Second business morning.* Saturday Delivery NOT available.</small> <input type="checkbox"/> FedEx 2Day <small>Second business afternoon.* Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.</small> <input type="checkbox"/> FedEx Express Saver <small>Third business day.* Saturday Delivery NOT available.</small>
---	---

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. Obl. recip. FedEx Acct. IN

Sender Recpt. 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 1800 GoFedEx 1800 4633339

644



Package
US Airbill

FedEx
Tracking
Number

8166 8556 3417

From [Redacted]
 Date [Redacted]
 Sender's Name [Redacted] Phone [Redacted]
 Company [Redacted]
 Address [Redacted] Dept./Floor/Suite/Room [Redacted]
 City [Redacted] State [Redacted] ZIP [Redacted]

Do Not Lift Using This Tag

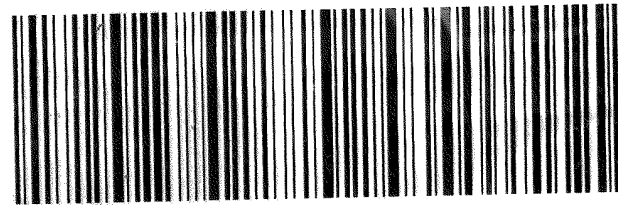


TRK#
0200 8166 8556 3417

WED - 13 OCT AA
PRIORITY OVERNIGHT

NA JOTA

60484
IL-US
ORD



802045 120ct2021 JOTA 56DG2/0778/1B23

Form
ID No. 0200

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

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
- Cargo Aircraft Only

Payment Bill to:

Enter FedEx Acct. No. below. Obtain Rec. FedEx Acct. No.

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

Total Packages [Redacted] Total Weight [Redacted] lbs.

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 **8166 8556 3380**

Form ID No. **0200**

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

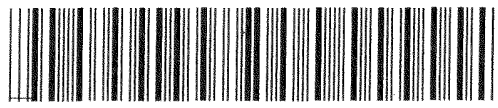
Recipient's Name _____ Phone _____

Company _____

Address _____ 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 _____



8166 8556 3380

4 Express Package Service * To most locations.

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 / Second business day (Saturday Delivery) **500-206666 Wayb**
- 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.



is the ill.

2A
2B

5 Packaging * Declared value limit \$500.

- FedEx Envelope*
- FedEx Box*
- FedEx Tube*
- FedEx Mailer*
- Other _____

FedEx
TRK# **0200 8166 8556 3380**

AA
PRIORITY OVERNIGHT

AC JOTA

60484
IL-US
ORD



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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1
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Package
US Airbill

FedEx Tracking Number 8166 8556 3391

Form ID No. 0200

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 _____ Dept./Floor/Suite/Room _____

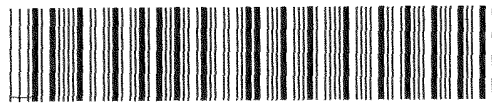
Address _____

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.



8166 8556 3391

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

2 or 3 Business Days

- 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.

- 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 **WED - 13 OCT AA**
PRIORITY OVERNIGHT

- Saturday Delivery**
NOT available for FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Priority Overnight.
- No Signature Required**
Package may be left without obtaining a signature for delivery.
- Direct Sign**
Someone at recipient's address may sign for delivery.

Does this shipment contain dangerous goods?

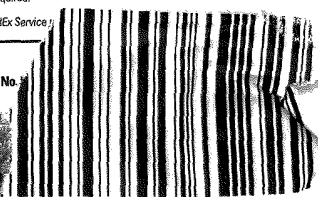
- No**
- Yes**
As per attached Shipper's Declaration.
- Yes**
Shipper's Declaration not required.

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

7 Payment Bill to:

- Sender**
Account No. in Section 1 will be billed.
- Recipient**

Total Packages _____ Total Weight _____ lbs.



60484
IL-US
ORD

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

fedex.com 1.800.GoFedEx 1.800.463.3339

Chain of Custody Record



Client Information (Sub Contract Lab)		Sampler: Lab PM: Wright, Richard	Carrier Tracking No(s):	COC No: 500-153321.1
Client Contact: Shipping/Receiving		Phone: Richard.Wright@Eurofins.com	State of Origin: Wisconsin	Page: 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Wisconsin		
Address: 4101 Shuffel Street NW, North Canton, OH, 44720		Job #: 500-206666-1		
Phone: 330-497-9396(Tel) 330-497-0772(Fax)		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:		
Project Name: Penta Wood 11222418		M - Hexane N - None O - AsNaO2 P - Na2OAS Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)		
Site:		Total Number of containers: <i>RSK</i>		
Sample Identification - Client ID (Lab ID)		Special Instructions/Note:		
Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Water, Solid, Other)	Field Filtered Sample (Yes or No)
10/12/21	10:53 Central		Water	X
10/12/21	11:27 Central		Water	X
10/12/21	12:13 Central		Water	X
10/12/21	13:26 Central		Water	X
10/12/21	13:52 Central		Water	X
Due Date Requested: 10/26/2021		Perform MS/MSD (Yes or No)		
TAT Requested (days):		RSK_175/(MOD) Methane		
PO #:	WO #:	Special Instructions/Note:		
50013796		Special Instructions/Note:		
SSOW#:		Special Instructions/Note:		
<p>Possible Hazard Identification</p> <p><i>Unconfirmed</i></p> <p>Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2</p> <p>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months</p> <p>Special Instructions/QC Requirements:</p>				
<p>Empty Kit Relinquished by: <i>Alvin Scott</i> Date: 10/13/21 Time: 1400</p> <p>Relinquished by: <i>Alvin Scott</i> Date/Time: 10/13/21 10:30 Company: <i>TA</i></p> <p>Relinquished by: Date/Time: Company:</p> <p>Relinquished by: Date/Time: Company:</p> <p>Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.: Cooler Temperature(s) °C and Other Remarks:</p>				

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Eurofins TestAmerica Canton Sample Receipt Form/Narrative		Login # : _____
Canton Facility		
Client <u>EPA Chicago</u>	Site Name _____	Cooler unpacked by: <u>Brandon</u>
Cooler Received on <u>10-17-21</u>	Opened on <u>10-17-21</u>	
FedEx: 1 st Grd Exp <input checked="" type="checkbox"/> UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____		
Receipt After-hours Drop-off Date/Time		Storage Location
TestAmerica Cooler # <u>FD</u>	Foam Box _____	Client Cooler Box _____
Packing material used: <u>Bubble Wrap</u>	Foam _____	Plastic Bag _____
COOLANT: <u>Wet Ice</u>	Blue Ice _____	Dry Ice _____
	Water _____	None _____
1. Cooler temperature upon receipt <input checked="" type="checkbox"/> See Multiple Cooler Form IR GUN# IR-14 (CF +0.1 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C IR GUN #IR-15 (CF +0.2 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C		
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity _____ -Were the seals on the outside of the cooler(s) signed & dated? -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? -Were tamper/custody seals intact and uncompromised?		Yes No Yes No NA Yes No Yes No NA
3. Shippers' packing slip attached to the cooler(s)?		Yes No
4. Did custody papers accompany the sample(s)?		Yes No
5. Were the custody papers relinquished & signed in the appropriate place?		Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC?		Yes No
7. Did all bottles arrive in good condition (Unbroken)?		Yes No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?		Yes No
9. For each sample, does the COC specify preservatives (Y/N) # of containers (Y/N), and sample type of grab/comp (Y/N)?		Yes No
10. Were correct bottle(s) used for the test(s) indicated?		Yes No
11. Sufficient quantity received to perform indicated analyses?		Yes No
12. Are these work share samples and all listed on the COC?		Yes No
If yes, Questions 13-17 have been checked at the originating laboratory.		
13. Were all preserved sample(s) at the correct pH upon receipt?		Yes No NA pH Strip Lot# <u>HC157842</u>
14. Were VOAs on the COC?		Yes No
15. Were air bubbles >6 mm in any VOA vials? ← Larger than this		Yes No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____		Yes No
17. Was a LL Hg or Me Hg trip blank present? _____		Yes No
Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____		
Concerning _____		

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page

Samples processed by: _____

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

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

Client ETA Cedar Falls Site Name _____ Cooler unpacked by: Brandon
Cooler Received on 10-14-21 Opened on 10-14-21
FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Receipt After-hours Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # FA 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-14 (CF +0.1 °C) Observed Cooler Temp. 2.7 °C Corrected Cooler Temp. 2.8 °C
IR GUN #IR-15 (CF +0.2°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 NA
-Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No
10. Were correct bottle(s) used for the test(s) indicated? Yes No
11. Sufficient quantity received to perform indicated analyses? Yes No
12. Are these work share samples and all listed on the COC? Yes No
If yes, Questions 13-17 have been checked at the originating laboratory.

13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC157842
14. Were VOAs on the COC? Yes No
15. Were air bubbles >6 mm in any VOA vials? Yes ← Larger than this Yes No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
17. Was a LL Hg or Me Hg trip blank present? Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____
Concerning _____

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

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

19. SAMPLE CONDITION
Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION
Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____
VOA Sample Preservation - Date/Time VOAs Frozen: _____

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-206666-1

Login Number: 206666

List Source: Eurofins TestAmerica, Chicago

List Number: 1

Creator: Scott, Sherri L

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.1,2.9,3.3,4.6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



ANALYTICAL REPORT

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

Laboratory Job ID: 500-206796-1
Client Project/Site: Penta Wood 11222418

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

Attn: Mr. Grant Anderson

Jodie Bracken

Authorized for release by:
10/29/2021 3:24:17 PM
Jodie Bracken, Project Management Assistant II
Jodie.Bracken@Eurofinset.com

Designee for
Richard Wright, Senior Project Manager
(708)746-0045
Richard.Wright@Eurofinset.com

LINKS

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results through
TotalAccess

Have a Question?



Visit us at:
www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

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

Job ID: 500-206796-1

Job ID: 500-206796-1

Laboratory: Eurofins TestAmerica, Chicago

Narrative

Job Narrative 500-206796-1

Receipt

The samples were received on 10/15/2021 10:15 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 1.8° C, 1.9° C and 2.3° C.

Receipt Exceptions

The following sample(s) was received with less than 2 days remaining on the holding time or less than one shift (8 hours) remaining on a test with a holding time of 48 hours or less. As such, the laboratory had insufficient time remaining to perform the analysis within holding time: Sample #1 "W-211013-RA-11" and #2"W-211013-RA-12".

GC/MS VOA

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

GC/MS Semi VOA

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

GC VOA

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

GC Semi VOA

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

Metals

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

General Chemistry

Method 300.0: The IC 8 following samples was received with less than 2 days remaining on the holding time or less than one shift (8 hours) remaining on a test with a holding time of 48 hours or less for analyte Nitrate as N. As such, the laboratory had insufficient time remaining to perform the analysis within holding time: W-211013-RA-11 (500-206796-1) and W-211013-RA-12 (500-206796-2).

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: 500-206796-1

Client Sample ID: W-211013-RA-11

Lab Sample ID: 500-206796-1

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.75	J	1.0	0.23	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	249		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	61.0		2.0	1.7	mg/L	10		300.0	Total/NA
Nitrate as N	1.4	H	0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	5.4		0.20	0.095	mg/L	1		300.0	Total/NA
Alkalinity	195		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-211013-RA-12

Lab Sample ID: 500-206796-2

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.87	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	1.0	J	2.0	0.50	ug/L	1		6020A	Dissolved
Manganese	1.2	J	2.5	0.79	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	294		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	7.4		1.0	0.85	mg/L	5		300.0	Total/NA
Nitrate as N	1.4	H	0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	108		4.0	1.9	mg/L	20		300.0	Total/NA
Alkalinity	196		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-211013-RA-13

Lab Sample ID: 500-206796-3

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.51	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	2.0		2.0	0.50	ug/L	1		6020A	Dissolved
Iron	61.9	J	100	46.7	ug/L	1		6020A	Dissolved
Manganese	1.2	J	2.5	0.79	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	369		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	7.1		0.20	0.17	mg/L	1		300.0	Total/NA
Nitrate as N	1.4		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	0.64	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	392		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-211013-RA-14

Lab Sample ID: 500-206796-4

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methane	49		1.0	0.17	ug/L	1		RSK-175	Total/NA
Arsenic	0.43	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	1.0	J	2.0	0.50	ug/L	1		6020A	Dissolved
Iron	1660		100	46.7	ug/L	1		6020A	Dissolved
Manganese	25.4		2.5	0.79	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	380		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	50.6		2.0	1.7	mg/L	10		300.0	Total/NA
Nitrate as N	1.1		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	12.5		2.0	0.95	mg/L	10		300.0	Total/NA
Total Organic Carbon - Duplicates	0.73	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	410		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-211013-RA-15

Lab Sample ID: 500-206796-5

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methane	20		1.0	0.17	ug/L	1		RSK-175	Total/NA
Arsenic	1.2		1.0	0.23	ug/L	1		6020A	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

Detection Summary

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

Job ID: 500-206796-1

Client Sample ID: W-211013-RA-15 (Continued)

Lab Sample ID: 500-206796-5

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Iron	62.8	J	100	46.7	ug/L	1		6020A	Dissolved
Manganese	38.4		2.5	0.79	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	148		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	54.8		2.0	1.7	mg/L	10		300.0	Total/NA
Nitrate as N	0.17	J	0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	15.0		2.0	0.95	mg/L	10		300.0	Total/NA
Alkalinity	80.7		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: Trip Blank

Lab Sample ID: 500-206796-6

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

Method Summary

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

Job ID: 500-206796-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CHI
RSK-175	Dissolved Gases (GC)	RSK	TAL CAN
8151A	Herbicides (GC)	SW846	TAL CHI
6020A	Metals (ICP/MS)	SW846	TAL CHI
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	TAL CHI
300.0	Anions, Ion Chromatography	MCAWW	TAL CHI
9060A	Organic Carbon, Total (TOC)	SW846	TAL CHI
SM 2320B	Alkalinity	SM	TAL CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CHI
3010A	Preparation, Total Metals	SW846	TAL CHI
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL CHI
5030B	Purge and Trap	SW846	TAL CHI
8151A	Extraction (Herbicides)	SW846	TAL 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:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TAL CHI = Eurofins TestAmerica, 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: 500-206796-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-206796-1	W-211013-RA-11	Water	10/13/21 10:00	10/15/21 10:15
500-206796-2	W-211013-RA-12	Water	10/13/21 10:34	10/15/21 10:15
500-206796-3	W-211013-RA-13	Water	10/13/21 11:09	10/15/21 10:15
500-206796-4	W-211013-RA-14	Water	10/13/21 11:56	10/15/21 10:15
500-206796-5	W-211013-RA-15	Water	10/13/21 12:39	10/15/21 10:15
500-206796-6	Trip Blank	Water	10/13/21 00:00	10/15/21 10:15

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Client Sample Results

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

Job ID: 500-206796-1

Client Sample ID: W-211013-RA-11

Lab Sample ID: 500-206796-1

Date Collected: 10/13/21 10:00

Matrix: Water

Date Received: 10/15/21 10:15

Method: 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			10/25/21 13:39	1
Toluene	<0.15		0.50	0.15	ug/L			10/25/21 13:39	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/25/21 13:39	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/25/21 13:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		75 - 126		10/25/21 13:39	1
Toluene-d8 (Surr)	102		75 - 120		10/25/21 13:39	1
4-Bromofluorobenzene (Surr)	90		72 - 124		10/25/21 13:39	1
Dibromofluoromethane	92		75 - 120		10/25/21 13:39	1

Method: 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		10/17/21 07:35	10/18/21 16:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	71		36 - 120	10/17/21 07:35	10/18/21 16:06	1
2-Fluorobiphenyl (Surr)	77		34 - 110	10/17/21 07:35	10/18/21 16:06	1
Terphenyl-d14 (Surr)	96		40 - 145	10/17/21 07:35	10/18/21 16:06	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			10/23/21 11:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	103		60 - 140		10/23/21 11:34	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14		0.095	0.14	ug/L		10/18/21 09:26	10/20/21 13:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	101		25 - 130	10/18/21 09:26	10/20/21 13:53	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.75	J	1.0	0.23	ug/L		10/21/21 09:52	10/21/21 21:17	1
Copper	<0.50		2.0	0.50	ug/L		10/21/21 09:52	10/21/21 21:17	1
Iron	<46.7		100	46.7	ug/L		10/21/21 09:52	10/21/21 21:17	1
Manganese	<0.79		2.5	0.79	ug/L		10/21/21 09:52	10/21/21 21:17	1
Zinc	<6.9		20.0	6.9	ug/L		10/21/21 09:52	10/21/21 21:17	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	249		0.91	0.46	mg/L		10/18/21 08:51	10/25/21 09:31	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	61.0		2.0	1.7	mg/L			10/15/21 17:41	10
Nitrate as N	1.4	H	0.20	0.068	mg/L			10/15/21 11:45	1
Sulfate	5.4		0.20	0.095	mg/L			10/15/21 11:45	1
Total Organic Carbon - Duplicates	<0.47		1.0	0.47	mg/L			10/26/21 23:32	1

Euofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-206796-1

Client Sample ID: W-211013-RA-11

Lab Sample ID: 500-206796-1

Date Collected: 10/13/21 10:00

Matrix: Water

Date Received: 10/15/21 10:15

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	195		5.0	3.7	mg/L			10/26/21 12:40	1

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

Client Sample Results

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

Job ID: 500-206796-1

Client Sample ID: W-211013-RA-12

Lab Sample ID: 500-206796-2

Date Collected: 10/13/21 10:34

Matrix: Water

Date Received: 10/15/21 10:15

Method: 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			10/25/21 14:01	1
Toluene	<0.15		0.50	0.15	ug/L			10/25/21 14:01	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/25/21 14:01	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/25/21 14:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		75 - 126		10/25/21 14:01	1
Toluene-d8 (Surr)	102		75 - 120		10/25/21 14:01	1
4-Bromofluorobenzene (Surr)	90		72 - 124		10/25/21 14:01	1
Dibromofluoromethane	92		75 - 120		10/25/21 14:01	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.23		0.76	0.23	ug/L		10/17/21 07:35	10/18/21 14:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	74		36 - 120	10/17/21 07:35	10/18/21 14:55	1
2-Fluorobiphenyl (Surr)	71		34 - 110	10/17/21 07:35	10/18/21 14:55	1
Terphenyl-d14 (Surr)	92		40 - 145	10/17/21 07:35	10/18/21 14:55	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			10/21/21 04:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	107		60 - 140		10/21/21 04:26	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14		0.095	0.14	ug/L		10/18/21 09:26	10/20/21 14:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	104		25 - 130	10/18/21 09:26	10/20/21 14:13	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.87	J	1.0	0.23	ug/L		10/21/21 09:52	10/21/21 21:20	1
Copper	1.0	J	2.0	0.50	ug/L		10/21/21 09:52	10/21/21 21:20	1
Iron	<46.7		100	46.7	ug/L		10/21/21 09:52	10/21/21 21:20	1
Manganese	1.2	J	2.5	0.79	ug/L		10/21/21 09:52	10/21/21 21:20	1
Zinc	<6.9		20.0	6.9	ug/L		10/21/21 09:52	10/21/21 21:20	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	294		0.91	0.46	mg/L		10/18/21 08:51	10/25/21 09:31	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.4		1.0	0.85	mg/L			10/15/21 17:53	5
Nitrate as N	1.4	H	0.20	0.068	mg/L			10/15/21 11:57	1
Sulfate	108		4.0	1.9	mg/L			10/15/21 18:06	20
Total Organic Carbon - Duplicates	<0.47		1.0	0.47	mg/L			10/26/21 23:55	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-206796-1

Client Sample ID: W-211013-RA-12

Lab Sample ID: 500-206796-2

Date Collected: 10/13/21 10:34

Matrix: Water

Date Received: 10/15/21 10:15

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	196		5.0	3.7	mg/L			10/26/21 12:54	1

1

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Client Sample Results

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

Job ID: 500-206796-1

Client Sample ID: W-211013-RA-13

Lab Sample ID: 500-206796-3

Date Collected: 10/13/21 11:09

Matrix: Water

Date Received: 10/15/21 10:15

Method: 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			10/25/21 14:23	1
Toluene	<0.15		0.50	0.15	ug/L			10/25/21 14:23	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/25/21 14:23	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/25/21 14:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		75 - 126					10/25/21 14:23	1
Toluene-d8 (Surr)	101		75 - 120					10/25/21 14:23	1
4-Bromofluorobenzene (Surr)	91		72 - 124					10/25/21 14:23	1
Dibromofluoromethane	91		75 - 120					10/25/21 14:23	1

Method: 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		10/17/21 07:35	10/18/21 15:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	77		36 - 120				10/17/21 07:35	10/18/21 15:19	1
2-Fluorobiphenyl (Surr)	75		34 - 110				10/17/21 07:35	10/18/21 15:19	1
Terphenyl-d14 (Surr)	90		40 - 145				10/17/21 07:35	10/18/21 15:19	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			10/23/21 11:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	103		60 - 140					10/23/21 11:51	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14		0.098	0.14	ug/L		10/18/21 09:26	10/20/21 14:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	99		25 - 130				10/18/21 09:26	10/20/21 14:32	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.51	J	1.0	0.23	ug/L		10/21/21 09:52	10/21/21 21:24	1
Copper	2.0		2.0	0.50	ug/L		10/21/21 09:52	10/21/21 21:24	1
Iron	61.9	J	100	46.7	ug/L		10/21/21 09:52	10/21/21 21:24	1
Manganese	1.2	J	2.5	0.79	ug/L		10/21/21 09:52	10/21/21 21:24	1
Zinc	<6.9		20.0	6.9	ug/L		10/21/21 09:52	10/21/21 21:24	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	369		0.91	0.46	mg/L		10/18/21 08:51	10/25/21 09:31	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.1		0.20	0.17	mg/L			10/15/21 10:41	1
Nitrate as N	1.4		0.20	0.068	mg/L			10/15/21 10:41	1
Sulfate	3.4		0.20	0.095	mg/L			10/15/21 10:41	1
Total Organic Carbon - Duplicates	0.64	J	1.0	0.47	mg/L			10/27/21 00:38	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-206796-1

Client Sample ID: W-211013-RA-13

Lab Sample ID: 500-206796-3

Date Collected: 10/13/21 11:09

Matrix: Water

Date Received: 10/15/21 10:15

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	392		5.0	3.7	mg/L			10/26/21 13:03	1

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

Client Sample Results

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

Job ID: 500-206796-1

Client Sample ID: W-211013-RA-14

Lab Sample ID: 500-206796-4

Date Collected: 10/13/21 11:56

Matrix: Water

Date Received: 10/15/21 10:15

Method: 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			10/25/21 14:45	1
Toluene	<0.15		0.50	0.15	ug/L			10/25/21 14:45	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/25/21 14:45	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/25/21 14:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		75 - 126		10/25/21 14:45	1
Toluene-d8 (Surr)	101		75 - 120		10/25/21 14:45	1
4-Bromofluorobenzene (Surr)	89		72 - 124		10/25/21 14:45	1
Dibromofluoromethane	95		75 - 120		10/25/21 14:45	1

Method: 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		10/17/21 07:35	10/18/21 15:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	71		36 - 120	10/17/21 07:35	10/18/21 15:42	1
2-Fluorobiphenyl (Surr)	70		34 - 110	10/17/21 07:35	10/18/21 15:42	1
Terphenyl-d14 (Surr)	87		40 - 145	10/17/21 07:35	10/18/21 15:42	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	49		1.0	0.17	ug/L			10/23/21 12:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	102		60 - 140		10/23/21 12:08	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14		0.096	0.14	ug/L		10/18/21 09:26	10/20/21 14:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	90		25 - 130	10/18/21 09:26	10/20/21 14:51	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.43	J	1.0	0.23	ug/L		10/21/21 09:52	10/21/21 21:27	1
Copper	1.0	J	2.0	0.50	ug/L		10/21/21 09:52	10/21/21 21:27	1
Iron	1660		100	46.7	ug/L		10/21/21 09:52	10/21/21 21:27	1
Manganese	25.4		2.5	0.79	ug/L		10/21/21 09:52	10/21/21 21:27	1
Zinc	<6.9		20.0	6.9	ug/L		10/21/21 09:52	10/21/21 21:27	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	380		0.91	0.46	mg/L		10/18/21 08:51	10/25/21 09:31	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	50.6		2.0	1.7	mg/L			10/15/21 17:15	10
Nitrate as N	1.1		0.20	0.068	mg/L			10/15/21 10:54	1
Sulfate	12.5		2.0	0.95	mg/L			10/15/21 17:15	10
Total Organic Carbon - Duplicates	0.73	J	1.0	0.47	mg/L			10/27/21 01:01	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-206796-1

Client Sample ID: W-211013-RA-14

Lab Sample ID: 500-206796-4

Date Collected: 10/13/21 11:56

Matrix: Water

Date Received: 10/15/21 10:15

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	410		5.0	3.7	mg/L			10/27/21 12:22	1

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

Client Sample Results

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

Job ID: 500-206796-1

Client Sample ID: W-211013-RA-15

Lab Sample ID: 500-206796-5

Date Collected: 10/13/21 12:39

Matrix: Water

Date Received: 10/15/21 10:15

Method: 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			10/25/21 15:06	1
Toluene	<0.15		0.50	0.15	ug/L			10/25/21 15:06	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/25/21 15:06	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/25/21 15:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		75 - 126		10/25/21 15:06	1
Toluene-d8 (Surr)	99		75 - 120		10/25/21 15:06	1
4-Bromofluorobenzene (Surr)	89		72 - 124		10/25/21 15:06	1
Dibromofluoromethane	94		75 - 120		10/25/21 15:06	1

Method: 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		10/17/21 07:35	10/18/21 16:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	71		36 - 120	10/17/21 07:35	10/18/21 16:30	1
2-Fluorobiphenyl (Surr)	71		34 - 110	10/17/21 07:35	10/18/21 16:30	1
Terphenyl-d14 (Surr)	84		40 - 145	10/17/21 07:35	10/18/21 16:30	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	20		1.0	0.17	ug/L			10/23/21 12:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	102		60 - 140		10/23/21 12:25	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.16		0.11	0.16	ug/L		10/18/21 09:26	10/20/21 15:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	99		25 - 130	10/18/21 09:26	10/20/21 15:11	1

Method: 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		10/21/21 09:52	10/21/21 21:31	1
Copper	<0.50		2.0	0.50	ug/L		10/21/21 09:52	10/21/21 21:31	1
Iron	62.8	J	100	46.7	ug/L		10/21/21 09:52	10/21/21 21:31	1
Manganese	38.4		2.5	0.79	ug/L		10/21/21 09:52	10/21/21 21:31	1
Zinc	<6.9		20.0	6.9	ug/L		10/21/21 09:52	10/21/21 21:31	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	148		0.91	0.46	mg/L		10/18/21 08:51	10/25/21 09:31	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	54.8		2.0	1.7	mg/L			10/15/21 17:28	10
Nitrate as N	0.17	J	0.20	0.068	mg/L			10/15/21 11:07	1
Sulfate	15.0		2.0	0.95	mg/L			10/15/21 17:28	10
Total Organic Carbon - Duplicates	<0.47		1.0	0.47	mg/L			10/27/21 01:24	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-206796-1

Client Sample ID: W-211013-RA-15

Lab Sample ID: 500-206796-5

Date Collected: 10/13/21 12:39

Matrix: Water

Date Received: 10/15/21 10:15

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	80.7		5.0	3.7	mg/L			10/27/21 12:28	1

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

Client Sample Results

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

Job ID: 500-206796-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-206796-6

Date Collected: 10/13/21 00:00

Matrix: Water

Date Received: 10/15/21 10:15

Method: 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			10/25/21 13:17	1
Toluene	<0.15		0.50	0.15	ug/L			10/25/21 13:17	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/25/21 13:17	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/25/21 13:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		75 - 126		10/25/21 13:17	1
Toluene-d8 (Surr)	103		75 - 120		10/25/21 13:17	1
4-Bromofluorobenzene (Surr)	90		72 - 124		10/25/21 13:17	1
Dibromofluoromethane	90		75 - 120		10/25/21 13:17	1

Definitions/Glossary

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

Job ID: 500-206796-1

Qualifiers

Metals

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

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
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

QC Association Summary

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

Job ID: 500-206796-1

GC/MS VOA

Analysis Batch: 625133

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206796-1	W-211013-RA-11	Total/NA	Water	8260B	
500-206796-2	W-211013-RA-12	Total/NA	Water	8260B	
500-206796-3	W-211013-RA-13	Total/NA	Water	8260B	
500-206796-4	W-211013-RA-14	Total/NA	Water	8260B	
500-206796-5	W-211013-RA-15	Total/NA	Water	8260B	
500-206796-6	Trip Blank	Total/NA	Water	8260B	
MB 500-625133/9	Method Blank	Total/NA	Water	8260B	
LCS 500-625133/7	Lab Control Sample	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 623890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206796-1	W-211013-RA-11	Total/NA	Water	3510C	
500-206796-2	W-211013-RA-12	Total/NA	Water	3510C	
500-206796-3	W-211013-RA-13	Total/NA	Water	3510C	
500-206796-4	W-211013-RA-14	Total/NA	Water	3510C	
500-206796-5	W-211013-RA-15	Total/NA	Water	3510C	
MB 500-623890/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-623890/2-A	Lab Control Sample	Total/NA	Water	3510C	

Analysis Batch: 624079

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206796-1	W-211013-RA-11	Total/NA	Water	8270D	623890
500-206796-2	W-211013-RA-12	Total/NA	Water	8270D	623890
500-206796-3	W-211013-RA-13	Total/NA	Water	8270D	623890
500-206796-4	W-211013-RA-14	Total/NA	Water	8270D	623890
500-206796-5	W-211013-RA-15	Total/NA	Water	8270D	623890
MB 500-623890/1-A	Method Blank	Total/NA	Water	8270D	623890
LCS 500-623890/2-A	Lab Control Sample	Total/NA	Water	8270D	623890

GC VOA

Analysis Batch: 509132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206796-2	W-211013-RA-12	Total/NA	Water	RSK-175	
MB 240-509132/32	Method Blank	Total/NA	Water	RSK-175	
LCS 240-509132/33	Lab Control Sample	Total/NA	Water	RSK-175	

Analysis Batch: 509577

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206796-1	W-211013-RA-11	Total/NA	Water	RSK-175	
500-206796-3	W-211013-RA-13	Total/NA	Water	RSK-175	
500-206796-4	W-211013-RA-14	Total/NA	Water	RSK-175	
500-206796-5	W-211013-RA-15	Total/NA	Water	RSK-175	
MB 240-509577/3	Method Blank	Total/NA	Water	RSK-175	
LCS 240-509577/4	Lab Control Sample	Total/NA	Water	RSK-175	

QC Association Summary

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

Job ID: 500-206796-1

GC Semi VOA

Prep Batch: 624036

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206796-1	W-211013-RA-11	Total/NA	Water	8151A	
500-206796-2	W-211013-RA-12	Total/NA	Water	8151A	
500-206796-3	W-211013-RA-13	Total/NA	Water	8151A	
500-206796-4	W-211013-RA-14	Total/NA	Water	8151A	
500-206796-5	W-211013-RA-15	Total/NA	Water	8151A	
MB 500-624036/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-624036/2-A	Lab Control Sample	Total/NA	Water	8151A	

Analysis Batch: 624405

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206796-1	W-211013-RA-11	Total/NA	Water	8151A	624036
500-206796-2	W-211013-RA-12	Total/NA	Water	8151A	624036
500-206796-3	W-211013-RA-13	Total/NA	Water	8151A	624036
500-206796-4	W-211013-RA-14	Total/NA	Water	8151A	624036
500-206796-5	W-211013-RA-15	Total/NA	Water	8151A	624036
MB 500-624036/1-A	Method Blank	Total/NA	Water	8151A	624036
LCS 500-624036/2-A	Lab Control Sample	Total/NA	Water	8151A	624036

Metals

Prep Batch: 624027

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206796-1	W-211013-RA-11	Total/NA	Water	3010A	
500-206796-2	W-211013-RA-12	Total/NA	Water	3010A	
500-206796-3	W-211013-RA-13	Total/NA	Water	3010A	
500-206796-4	W-211013-RA-14	Total/NA	Water	3010A	
500-206796-5	W-211013-RA-15	Total/NA	Water	3010A	

Prep Batch: 624718

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206796-1	W-211013-RA-11	Dissolved	Water	3005A	
500-206796-2	W-211013-RA-12	Dissolved	Water	3005A	
500-206796-3	W-211013-RA-13	Dissolved	Water	3005A	
500-206796-4	W-211013-RA-14	Dissolved	Water	3005A	
500-206796-5	W-211013-RA-15	Dissolved	Water	3005A	
MB 500-624718/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-624718/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 624927

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206796-1	W-211013-RA-11	Dissolved	Water	6020A	624718
500-206796-2	W-211013-RA-12	Dissolved	Water	6020A	624718
500-206796-3	W-211013-RA-13	Dissolved	Water	6020A	624718
500-206796-4	W-211013-RA-14	Dissolved	Water	6020A	624718
500-206796-5	W-211013-RA-15	Dissolved	Water	6020A	624718
MB 500-624718/1-A	Method Blank	Total Recoverable	Water	6020A	624718
LCS 500-624718/2-A	Lab Control Sample	Total Recoverable	Water	6020A	624718

Analysis Batch: 625222

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206796-1	W-211013-RA-11	Total/NA	Water	SM 2340B	624027

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QC Association Summary

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

Job ID: 500-206796-1

Metals (Continued)

Analysis Batch: 625222 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206796-2	W-211013-RA-12	Total/NA	Water	SM 2340B	624027
500-206796-3	W-211013-RA-13	Total/NA	Water	SM 2340B	624027
500-206796-4	W-211013-RA-14	Total/NA	Water	SM 2340B	624027
500-206796-5	W-211013-RA-15	Total/NA	Water	SM 2340B	624027

General Chemistry

Analysis Batch: 623755

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206796-1	W-211013-RA-11	Total/NA	Water	300.0	
500-206796-1	W-211013-RA-11	Total/NA	Water	300.0	
500-206796-2	W-211013-RA-12	Total/NA	Water	300.0	
500-206796-2	W-211013-RA-12	Total/NA	Water	300.0	
500-206796-2	W-211013-RA-12	Total/NA	Water	300.0	
500-206796-3	W-211013-RA-13	Total/NA	Water	300.0	
500-206796-4	W-211013-RA-14	Total/NA	Water	300.0	
500-206796-4	W-211013-RA-14	Total/NA	Water	300.0	
500-206796-5	W-211013-RA-15	Total/NA	Water	300.0	
500-206796-5	W-211013-RA-15	Total/NA	Water	300.0	
MB 500-623755/6	Method Blank	Total/NA	Water	300.0	
LCS 500-623755/7	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 625534

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206796-1	W-211013-RA-11	Total/NA	Water	SM 2320B	
500-206796-2	W-211013-RA-12	Total/NA	Water	SM 2320B	
500-206796-3	W-211013-RA-13	Total/NA	Water	SM 2320B	
MB 500-625534/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-625534/4	Lab Control Sample	Total/NA	Water	SM 2320B	
500-206796-1 DU	W-211013-RA-11	Total/NA	Water	SM 2320B	

Analysis Batch: 625722

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206796-1	W-211013-RA-11	Total/NA	Water	9060A	
500-206796-2	W-211013-RA-12	Total/NA	Water	9060A	
500-206796-3	W-211013-RA-13	Total/NA	Water	9060A	
500-206796-4	W-211013-RA-14	Total/NA	Water	9060A	
500-206796-5	W-211013-RA-15	Total/NA	Water	9060A	
MB 500-625722/7	Method Blank	Total/NA	Water	9060A	
LCS 500-625722/8	Lab Control Sample	Total/NA	Water	9060A	

Analysis Batch: 625766

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206796-4	W-211013-RA-14	Total/NA	Water	SM 2320B	
500-206796-5	W-211013-RA-15	Total/NA	Water	SM 2320B	
MB 500-625766/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-625766/4	Lab Control Sample	Total/NA	Water	SM 2320B	

Surrogate Summary

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

Job ID: 500-206796-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-126)	TOL (75-120)	BFB (72-124)	DBFM (75-120)
500-206796-1	W-211013-RA-11	84	102	90	92
500-206796-2	W-211013-RA-12	85	102	90	92
500-206796-3	W-211013-RA-13	84	101	91	91
500-206796-4	W-211013-RA-14	87	101	89	95
500-206796-5	W-211013-RA-15	88	99	89	94
500-206796-6	Trip Blank	85	103	90	90
LCS 500-625133/7	Lab Control Sample	85	102	91	92
MB 500-625133/9	Method Blank	82	102	89	90

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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		NBZ (36-120)	FBP (34-110)	TPHL (40-145)
500-206796-1	W-211013-RA-11	71	77	96
500-206796-2	W-211013-RA-12	74	71	92
500-206796-3	W-211013-RA-13	77	75	90
500-206796-4	W-211013-RA-14	71	70	87
500-206796-5	W-211013-RA-15	71	71	84
LCS 500-623890/2-A	Lab Control Sample	82	84	94
MB 500-623890/1-A	Method Blank	79	73	97

Surrogate Legend

NBZ = Nitrobenzene-d5 (Surr)

FBP = 2-Fluorobiphenyl (Surr)

TPHL = Terphenyl-d14 (Surr)

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		TFE1 (60-140)
500-206796-1	W-211013-RA-11	103
500-206796-2	W-211013-RA-12	107
500-206796-3	W-211013-RA-13	103
500-206796-4	W-211013-RA-14	102
500-206796-5	W-211013-RA-15	102
LCS 240-509132/33	Lab Control Sample	104
LCS 240-509577/4	Lab Control Sample	102
MB 240-509132/32	Method Blank	110
MB 240-509577/3	Method Blank	108

Surrogate Legend

TFE = 1,1,1-Trifluoroethane

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Surrogate Summary

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

Job ID: 500-206796-1

Method: 8151A - Herbicides (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA2 (25-130)
500-206796-1	W-211013-RA-11	101
500-206796-2	W-211013-RA-12	104
500-206796-3	W-211013-RA-13	99
500-206796-4	W-211013-RA-14	90
500-206796-5	W-211013-RA-15	99
LCS 500-624036/2-A	Lab Control Sample	100
MB 500-624036/1-A	Method Blank	101

Surrogate Legend

DCPAA = DCAA

QC Sample Results

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

Job ID: 500-206796-1

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

Lab Sample ID: MB 500-625133/9
Matrix: Water
Analysis Batch: 625133

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

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	<0.15		0.50	0.15	ug/L			10/25/21 12:56	1
Toluene	<0.15		0.50	0.15	ug/L			10/25/21 12:56	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/25/21 12:56	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/25/21 12:56	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	82		75 - 126		10/25/21 12:56	1
Toluene-d8 (Surr)	102		75 - 120		10/25/21 12:56	1
4-Bromofluorobenzene (Surr)	89		72 - 124		10/25/21 12:56	1
Dibromofluoromethane	90		75 - 120		10/25/21 12:56	1

Lab Sample ID: LCS 500-625133/7
Matrix: Water
Analysis Batch: 625133

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Toluene	50.0	52.9		ug/L		106	70 - 125
Ethylbenzene	50.0	55.4		ug/L		111	70 - 123
Xylenes, Total	100	107		ug/L		107	70 - 125

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	85		75 - 126
Toluene-d8 (Surr)	102		75 - 120
4-Bromofluorobenzene (Surr)	91		72 - 124
Dibromofluoromethane	92		75 - 120

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

Lab Sample ID: MB 500-623890/1-A
Matrix: Water
Analysis Batch: 624079

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 623890

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Naphthalene	<0.25		0.80	0.25	ug/L		10/17/21 07:35	10/18/21 14:31	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Nitrobenzene-d5 (Surr)	79		36 - 120	10/17/21 07:35	10/18/21 14:31	1
2-Fluorobiphenyl (Surr)	73		34 - 110	10/17/21 07:35	10/18/21 14:31	1
Terphenyl-d14 (Surr)	97		40 - 145	10/17/21 07:35	10/18/21 14:31	1

Lab Sample ID: LCS 500-623890/2-A
Matrix: Water
Analysis Batch: 624079

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 623890

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

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QC Sample Results

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

Job ID: 500-206796-1

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

Lab Sample ID: LCS 500-623890/2-A
Matrix: Water
Analysis Batch: 624079

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 623890

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Nitrobenzene-d5 (Surr)	82		36 - 120
2-Fluorobiphenyl (Surr)	84		34 - 110
Terphenyl-d14 (Surr)	94		40 - 145

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 240-509132/32
Matrix: Water
Analysis Batch: 509132

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			10/20/21 22:58	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,1,1-Trifluoroethane	110		60 - 140		10/20/21 22:58	1

Lab Sample ID: LCS 240-509132/33
Matrix: Water
Analysis Batch: 509132

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane	284	271		ug/L		95	80 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,1,1-Trifluoroethane	104		60 - 140

Lab Sample ID: MB 240-509577/3
Matrix: Water
Analysis Batch: 509577

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			10/23/21 09:51	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,1,1-Trifluoroethane	108		60 - 140		10/23/21 09:51	1

Lab Sample ID: LCS 240-509577/4
Matrix: Water
Analysis Batch: 509577

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		104	80 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,1,1-Trifluoroethane	102		60 - 140

QC Sample Results

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

Job ID: 500-206796-1

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 500-624036/1-A
Matrix: Water
Analysis Batch: 624405

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 624036

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Pentachlorophenol	<0.14		0.10	0.14	ug/L		10/18/21 09:26	10/20/21 09:38	1
Surrogate	%Recovery	MB Qualifier	Limits						
DCAA	101		25 - 130						
							Prepared	Analyzed	Dil Fac
							10/18/21 09:26	10/20/21 09:38	1

Lab Sample ID: LCS 500-624036/2-A
Matrix: Water
Analysis Batch: 624405

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 624036

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Pentachlorophenol	2.50	1.72		ug/L		69	40 - 122		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
DCAA	100		25 - 130						

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 500-624718/1-A
Matrix: Water
Analysis Batch: 624927

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 624718

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	<0.23		1.0	0.23	ug/L		10/21/21 09:52	10/21/21 19:47	1
Copper	<0.50		2.0	0.50	ug/L		10/21/21 09:52	10/21/21 19:47	1
Iron	<46.7		100	46.7	ug/L		10/21/21 09:52	10/21/21 19:47	1
Manganese	<0.79		2.5	0.79	ug/L		10/21/21 09:52	10/21/21 19:47	1
Zinc	<6.9		20.0	6.9	ug/L		10/21/21 09:52	10/21/21 19:47	1

Lab Sample ID: LCS 500-624718/2-A
Matrix: Water
Analysis Batch: 624927

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 624718

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Arsenic	100	100.3		ug/L		100	80 - 120		
Copper	250	258.8		ug/L		104	80 - 120		
Iron	1000	1041		ug/L		104	80 - 120		
Manganese	500	513.5		ug/L		103	80 - 120		
Zinc	500	518.6		ug/L		104	80 - 120		

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 500-623755/6
Matrix: Water
Analysis Batch: 623755

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

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	<0.17		0.20	0.17	mg/L			10/15/21 11:19	1
Nitrate as N	<0.068		0.20	0.068	mg/L			10/15/21 11:19	1
Sulfate	<0.095		0.20	0.095	mg/L			10/15/21 11:19	1

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QC Sample Results

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

Job ID: 500-206796-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: LCS 500-623755/7
Matrix: Water
Analysis Batch: 623755

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	3.27		mg/L		109	90 - 110
Nitrate as N	2.00	1.98		mg/L		99	90 - 110
Sulfate	5.00	4.93		mg/L		99	90 - 110

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

Lab Sample ID: MB 500-625722/7
Matrix: Water
Analysis Batch: 625722

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			10/26/21 20:42	1

Lab Sample ID: LCS 500-625722/8
Matrix: Water
Analysis Batch: 625722

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	10.97		mg/L		110	86 - 116

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-625534/3
Matrix: Water
Analysis Batch: 625534

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			10/26/21 10:52	1

Lab Sample ID: LCS 500-625534/4
Matrix: Water
Analysis Batch: 625534

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	100	102.7		mg/L		103	90 - 110

Lab Sample ID: 500-206796-1 DU
Matrix: Water
Analysis Batch: 625534

Client Sample ID: W-211013-RA-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	195		185.6		mg/L		5	20

Lab Sample ID: MB 500-625766/3
Matrix: Water
Analysis Batch: 625766

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			10/27/21 10:25	1

Eurofins TestAmerica, Chicago

QC Sample Results

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

Job ID: 500-206796-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCS 500-625766/4
Matrix: Water
Analysis Batch: 625766

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	100	105.3		mg/L		105	90 - 110

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Lab Chronicle

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

Job ID: 500-206796-1

Client Sample ID: W-211013-RA-11

Lab Sample ID: 500-206796-1

Date Collected: 10/13/21 10:00

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625133	10/25/21 13:39	STW	TAL CHI
Total/NA	Prep	3510C			623890	10/17/21 07:35	FRG	TAL CHI
Total/NA	Analysis	8270D		1	624079	10/18/21 16:06	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	509577	10/23/21 11:34	BPM	TAL CAN
Total/NA	Prep	8151A			624036	10/18/21 09:26	DAK	TAL CHI
Total/NA	Analysis	8151A		1	624405	10/20/21 13:53	JBK	TAL CHI
Dissolved	Prep	3005A			624718	10/21/21 09:52	BDE	TAL CHI
Dissolved	Analysis	6020A		1	624927	10/21/21 21:17	FXG	TAL CHI
Total/NA	Prep	3010A			624027	10/18/21 08:51	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	625222	10/25/21 09:31	DAJ	TAL CHI
Total/NA	Analysis	300.0		1	623755	10/15/21 11:45	EAT	TAL CHI
Total/NA	Analysis	300.0		10	623755	10/15/21 17:41	EAT	TAL CHI
Total/NA	Analysis	9060A		1	625722	10/26/21 23:32	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	625534	10/26/21 12:40	SMO	TAL CHI

Client Sample ID: W-211013-RA-12

Lab Sample ID: 500-206796-2

Date Collected: 10/13/21 10:34

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625133	10/25/21 14:01	STW	TAL CHI
Total/NA	Prep	3510C			623890	10/17/21 07:35	FRG	TAL CHI
Total/NA	Analysis	8270D		1	624079	10/18/21 14:55	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	509132	10/21/21 04:26	JBN	TAL CAN
Total/NA	Prep	8151A			624036	10/18/21 09:26	DAK	TAL CHI
Total/NA	Analysis	8151A		1	624405	10/20/21 14:13	JBK	TAL CHI
Dissolved	Prep	3005A			624718	10/21/21 09:52	BDE	TAL CHI
Dissolved	Analysis	6020A		1	624927	10/21/21 21:20	FXG	TAL CHI
Total/NA	Prep	3010A			624027	10/18/21 08:51	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	625222	10/25/21 09:31	DAJ	TAL CHI
Total/NA	Analysis	300.0		1	623755	10/15/21 11:57	EAT	TAL CHI
Total/NA	Analysis	300.0		5	623755	10/15/21 17:53	EAT	TAL CHI
Total/NA	Analysis	300.0		20	623755	10/15/21 18:06	EAT	TAL CHI
Total/NA	Analysis	9060A		1	625722	10/26/21 23:55	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	625534	10/26/21 12:54	SMO	TAL CHI

Client Sample ID: W-211013-RA-13

Lab Sample ID: 500-206796-3

Date Collected: 10/13/21 11:09

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625133	10/25/21 14:23	STW	TAL CHI

Lab Chronicle

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

Job ID: 500-206796-1

Client Sample ID: W-211013-RA-13

Lab Sample ID: 500-206796-3

Date Collected: 10/13/21 11:09

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			623890	10/17/21 07:35	FRG	TAL CHI
Total/NA	Analysis	8270D		1	624079	10/18/21 15:19	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	509577	10/23/21 11:51	BPM	TAL CAN
Total/NA	Prep	8151A			624036	10/18/21 09:26	DAK	TAL CHI
Total/NA	Analysis	8151A		1	624405	10/20/21 14:32	JBj	TAL CHI
Dissolved	Prep	3005A			624718	10/21/21 09:52	BDE	TAL CHI
Dissolved	Analysis	6020A		1	624927	10/21/21 21:24	FXG	TAL CHI
Total/NA	Prep	3010A			624027	10/18/21 08:51	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	625222	10/25/21 09:31	DAJ	TAL CHI
Total/NA	Analysis	300.0		1	623755	10/15/21 10:41	EAT	TAL CHI
Total/NA	Analysis	9060A		1	625722	10/27/21 00:38	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	625534	10/26/21 13:03	SMO	TAL CHI

Client Sample ID: W-211013-RA-14

Lab Sample ID: 500-206796-4

Date Collected: 10/13/21 11:56

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625133	10/25/21 14:45	STW	TAL CHI
Total/NA	Prep	3510C			623890	10/17/21 07:35	FRG	TAL CHI
Total/NA	Analysis	8270D		1	624079	10/18/21 15:42	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	509577	10/23/21 12:08	BPM	TAL CAN
Total/NA	Prep	8151A			624036	10/18/21 09:26	DAK	TAL CHI
Total/NA	Analysis	8151A		1	624405	10/20/21 14:51	JBj	TAL CHI
Dissolved	Prep	3005A			624718	10/21/21 09:52	BDE	TAL CHI
Dissolved	Analysis	6020A		1	624927	10/21/21 21:27	FXG	TAL CHI
Total/NA	Prep	3010A			624027	10/18/21 08:51	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	625222	10/25/21 09:31	DAJ	TAL CHI
Total/NA	Analysis	300.0		1	623755	10/15/21 10:54	EAT	TAL CHI
Total/NA	Analysis	300.0		10	623755	10/15/21 17:15	EAT	TAL CHI
Total/NA	Analysis	9060A		1	625722	10/27/21 01:01	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	625766	10/27/21 12:22	SMO	TAL CHI

Client Sample ID: W-211013-RA-15

Lab Sample ID: 500-206796-5

Date Collected: 10/13/21 12:39

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625133	10/25/21 15:06	STW	TAL CHI
Total/NA	Prep	3510C			623890	10/17/21 07:35	FRG	TAL CHI
Total/NA	Analysis	8270D		1	624079	10/18/21 16:30	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	509577	10/23/21 12:25	BPM	TAL CAN
Total/NA	Prep	8151A			624036	10/18/21 09:26	DAK	TAL CHI
Total/NA	Analysis	8151A		1	624405	10/20/21 15:11	JBj	TAL CHI

Eurofins TestAmerica, Chicago

Lab Chronicle

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

Job ID: 500-206796-1

Client Sample ID: W-211013-RA-15

Lab Sample ID: 500-206796-5

Date Collected: 10/13/21 12:39

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			624718	10/21/21 09:52	BDE	TAL CHI
Dissolved	Analysis	6020A		1	624927	10/21/21 21:31	FXG	TAL CHI
Total/NA	Prep	3010A			624027	10/18/21 08:51	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	625222	10/25/21 09:31	DAJ	TAL CHI
Total/NA	Analysis	300.0		1	623755	10/15/21 11:07	EAT	TAL CHI
Total/NA	Analysis	300.0		10	623755	10/15/21 17:28	EAT	TAL CHI
Total/NA	Analysis	9060A		1	625722	10/27/21 01:24	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	625766	10/27/21 12:28	SMO	TAL CHI

Client Sample ID: Trip Blank

Lab Sample ID: 500-206796-6

Date Collected: 10/13/21 00:00

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625133	10/25/21 13:17	STW	TAL CHI

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

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

Accreditation/Certification Summary

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

Job ID: 500-206796-1

Laboratory: Eurofins TestAmerica, Chicago

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

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-22

Laboratory: Eurofins TestAmerica, 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	02-23-22
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-22
Georgia	State	4062	02-23-22
Illinois	NELAP	200004	07-31-22
Iowa	State	421	06-01-23
Kansas	NELAP	E-10336	04-30-22
Kentucky (UST)	State	112225	02-23-22
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-22
New York	NELAP	10975	03-31-22
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-22
Texas	NELAP	T104704517-18-10	08-31-22
Virginia	NELAP	11570	09-14-22
Washington	State	C971	01-12-22
West Virginia DEP	State	210	12-31-21

Chain of Custody Record

545C94



Environment Testing
TestAmerica

Address _____

Regulatory Program: DW NPDES RCRA Other _____

TAL-8210

Client Contact		Project Manager Jim Ree		Site Contact		Date		COC No	
Company Name GHD		Tel/Email Jim.Ree@ghd.com		Lab Contact		Carrier		1 of 1 COCs	
Address 900 Long Lake Rd		Analysis Turnaround Time <input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS		Filtered Sample (Y/N)		Perform MS/MSD (Y/N)		500-206796 COC	
City/State Zip St Paul MN 55102									
Phone 651 679 0943		TAT if different from Below _____		P.P. BTEX Naphthalene Disinfectants Metals Alk: Aromatics Total Metals Hachings TC methane				Sampler	
Fax _____		<input type="checkbox"/> 2 weeks						For Lab Use Only	
Project Name Petalwood		<input type="checkbox"/> 1 week						Walk-in Client <input type="checkbox"/>	
Site 1122248-01-04		<input type="checkbox"/> 2 days						Lab Sampling <input type="checkbox"/>	
P O # _____		<input type="checkbox"/> 1 day						Job / SDG No 500-206796	
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sample Specific Notes		
1	W-211013-PA-11	10/17	1000	G	GL	15	Dissolved & metals		
2	W-211013-PA-12		1034			15	were field filtered		
3	W-211013-PA-13		1109			15			
4	W-211013-PA-14		1156			15			
5	W-211013-PA-15		1239			15			
6	trip blank								
Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)			
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample						<input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months			
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown									
Special Instructions/QC Requirements & Comments: <p style="text-align: right; font-size: 24pt; font-weight: bold;">23, 1-9, 1-8</p>									
Custody Seals Intact <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No		Cooler Temp (°C) Obs'd _____		Corr'd _____		Therm ID No _____	
Relinquished by		Company GHD		Date/Time 10/17/21 1500		Received by		Company	
Relinquished by		Company		Date/Time		Received by		Company	
Relinquished by		Company		Date/Time		Received in Laboratory by Stephanie Hernandez		Company ETA cat	
								Date/Time 10/15/21 1015	

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Do Not Lift Using This Tag

FedEx

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AC JOTA

THU - 14 OCT AA
PRIORITY OVERNIGHT

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IL-US
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500-206796 Wayb

Do Not Lift Using This Tag

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Eurofins TestAmerica, Chicago

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

Chain of Custody Record

2-4/2-3



Environment Testing America

Client Information (Sub Contract Lab)		Sampler:		Lab PM: Wright, Richard		Carrier Tracking No(s):		COC No: 500-153405.1			
Client Contact: Shipping/Receiving		Phone:		E-Mail: Richard.Wright@Eurofinset.com		State of Origin: Wisconsin		Page: Page 1 of 1			
Company: TestAmerica Laboratories, Inc.				Accreditations Required (See note): State Program - Wisconsin				Job #: 500-206796-1			
Address: 4101 Shuffel Street NW.		Due Date Requested: 10/28/2021		Analysis Requested						Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify)	
City: North Canton		TAT Requested (days):									
State, Zip: OH, 44720		PO #:		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Total Number of containers		Other: RSK	
Phone: 330-497-9396(Tel) 330-497-0772(Fax)		WO #:									
Email:		Project #: 50013796		RSK_175 (MOD) Methane						Special Instructions/Note:	
Project Name: Penta Wood 11222418		SSOW#:									
Site:											
Sample Identification - Client ID (Lab ID)		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=soil, BT=Soil, A=Air)		Preservation Code:	
W-211013-RA-11 (500-206796-1)		10/13/21		10:00 Central		Water		Water		X	
W-211013-RA-12 (500-206796-2)		10/13/21		10:34 Central		Water		Water		X	
W-211013-RA-13 (500-206796-3)		10/13/21		11:09 Central		Water		Water		X	
W-211013-RA-14 (500-206796-4)		10/13/21		11:56 Central		Water		Water		X	
W-211013-RA-15 (500-206796-5)		10/13/21		12:39 Central		Water		Water		X	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.

Possible Hazard Identification		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
Unconfirmed		<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/QC Requirements:	

Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:	
Relinquished by: <i>Shirley Scott</i>		Date/Time: <i>10/15/21 1600</i>		Company: <i>ETA-ERT</i>		Received by: <i>Tracy Haver</i>	
Relinquished by:		Date/Time:		Company:		Received by:	
Relinquished by:		Date/Time:		Company:		Received by:	

Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:	
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Eurofins TestAmerica Canton Sample Receipt Form/Narrative Login # : _____

Canton Facility

Client ETA Site Name _____ Cooler unpacked by: [Signature]

Cooler Received on 10-16-21 Opened on 10-16-21

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # ETA 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-14 (CF +0.1 °C) Observed Cooler Temp. 22 °C Corrected Cooler Temp. 23 °C
 IR GUN #IR-15 (CF +0.2°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 NA
 -Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes No
 4. Did custody papers accompany the sample(s)? Yes No
 5. Were the custody papers relinquished & signed in the appropriate place? Yes No
 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
 7. Did all bottles arrive in good condition (Unbroken)? Yes No
 8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
 9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No
 10. Were correct bottle(s) used for the test(s) indicated? Yes No
 11. Sufficient quantity received to perform indicated analyses? Yes No
 12. Are these work share samples and all listed on the COC? Yes No
 If yes, Questions 13-17 have been checked at the originating laboratory.

13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC157842
 14. Were VOAs on the COC? Yes No
 15. Were air bubbles >6 mm in any VOA vials? Larger than this. Yes No NA
 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
 17. Was a LL Hg or Me Hg trip blank present? Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____

Concerning _____

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

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

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
 Sample(s) _____ were received in a broken container.
 Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
 Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-206796-1

Login Number: 206796

List Source: Eurofins TestAmerica, Chicago

List Number: 1

Creator: Scott, Sherri L

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.3,1.9,1.8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	False	
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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



ANALYTICAL REPORT

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

Laboratory Job ID: 500-206857-1
Client Project/Site: Penta Wood 11222418

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

Attn: Mr. Grant Anderson

Jodie Bracken

Authorized for release by:
10/27/2021 6:24:25 PM
Jodie Bracken, Project Management Assistant II
Jodie.Bracken@Eurofinset.com

Designee for
Richard Wright, Senior Project Manager
(708)746-0045
Richard.Wright@Eurofinset.com

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

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

Job ID: 500-206857-1

Job ID: 500-206857-1

Laboratory: Eurofins TestAmerica, Chicago

Narrative

Job Narrative 500-206857-1

Receipt

The samples were received on 10/14/2021 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 5 coolers at receipt time were 0.4° C, 2.8° C, 3.5° C, 3.9° C and 4.7° C.

GC/MS VOA

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

GC/MS Semi VOA

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

GC Semi VOA

Method 8151A: The continuing calibration verification (CCV) associated with batch 500-624762 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-211013-RA-106 (500-206857-7), W-211013-RA-107 (500-206857-8) and (CCV 500-624762/23).

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: 500-206857-1

Client Sample ID: W-211013-RA-100	Lab Sample ID: 500-206857-1
<input type="checkbox"/> No Detections.	
Client Sample ID: W-211013-RA-101	Lab Sample ID: 500-206857-2
<input type="checkbox"/> No Detections.	
Client Sample ID: W-211013-RA-102	Lab Sample ID: 500-206857-3
<input type="checkbox"/> No Detections.	
Client Sample ID: W-211013-RA-103	Lab Sample ID: 500-206857-4
<input type="checkbox"/> No Detections.	
Client Sample ID: W-211013-RA-104	Lab Sample ID: 500-206857-5
<input type="checkbox"/> No Detections.	
Client Sample ID: W-211013-RA-105	Lab Sample ID: 500-206857-6
<input type="checkbox"/> No Detections.	
Client Sample ID: W-211013-RA-106	Lab Sample ID: 500-206857-7
<input type="checkbox"/> No Detections.	
Client Sample ID: W-211013-RA-107	Lab Sample ID: 500-206857-8
<input type="checkbox"/> No Detections.	
Client Sample ID: W-211013-RA-108	Lab Sample ID: 500-206857-9
<input type="checkbox"/> No Detections.	
Client Sample ID: Trip Blank	Lab Sample ID: 500-206857-10
<input type="checkbox"/> No Detections.	

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

Method Summary

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

Job ID: 500-206857-1

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

Protocol References:

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

Laboratory References:

TAL CHI = Eurofins TestAmerica, 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: 500-206857-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-206857-1	W-211013-RA-100	Water	10/13/21 09:55	10/15/21 10:15
500-206857-2	W-211013-RA-101	Water	10/13/21 10:30	10/15/21 10:15
500-206857-3	W-211013-RA-102	Water	10/13/21 10:45	10/15/21 10:15
500-206857-4	W-211013-RA-103	Water	10/13/21 10:45	10/15/21 10:15
500-206857-5	W-211013-RA-104	Water	10/13/21 11:15	10/15/21 10:15
500-206857-6	W-211013-RA-105	Water	10/13/21 11:00	10/15/21 10:15
500-206857-7	W-211013-RA-106	Water	10/13/21 11:30	10/14/21 10:00
500-206857-8	W-211013-RA-107	Water	10/13/21 12:00	10/15/21 10:15
500-206857-9	W-211013-RA-108	Water	10/13/21 12:10	10/14/21 10:00
500-206857-10	Trip Blank	Water	10/13/21 00:00	10/15/21 10:15

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

Client Sample Results

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

Job ID: 500-206857-1

Client Sample ID: W-211013-RA-100

Lab Sample ID: 500-206857-1

Date Collected: 10/13/21 09:55

Matrix: Water

Date Received: 10/15/21 10:15

Method: 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			10/25/21 16:20	1
Toluene	<0.15		0.50	0.15	ug/L			10/25/21 16:20	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/25/21 16:20	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/25/21 16:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	120		75 - 126		10/25/21 16:20	1
Toluene-d8 (Surr)	84		75 - 120		10/25/21 16:20	1
4-Bromofluorobenzene (Surr)	92		72 - 124		10/25/21 16:20	1
Dibromofluoromethane	106		75 - 120		10/25/21 16:20	1

Method: 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		10/17/21 07:35	10/18/21 18:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	74		36 - 120	10/17/21 07:35	10/18/21 18:05	1
2-Fluorobiphenyl (Surr)	73		34 - 110	10/17/21 07:35	10/18/21 18:05	1
Terphenyl-d14 (Surr)	94		40 - 145	10/17/21 07:35	10/18/21 18:05	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14		0.099	0.14	ug/L		10/20/21 10:07	10/21/21 13:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	83		25 - 130	10/20/21 10:07	10/21/21 13:34	1

Client Sample Results

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

Job ID: 500-206857-1

Client Sample ID: W-211013-RA-101

Lab Sample ID: 500-206857-2

Date Collected: 10/13/21 10:30

Matrix: Water

Date Received: 10/15/21 10:15

Method: 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			10/25/21 16:45	1
Toluene	<0.15		0.50	0.15	ug/L			10/25/21 16:45	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/25/21 16:45	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/25/21 16:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	121		75 - 126		10/25/21 16:45	1
Toluene-d8 (Surr)	85		75 - 120		10/25/21 16:45	1
4-Bromofluorobenzene (Surr)	96		72 - 124		10/25/21 16:45	1
Dibromofluoromethane	105		75 - 120		10/25/21 16:45	1

Method: 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		10/17/21 07:35	10/18/21 18:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	69		36 - 120	10/17/21 07:35	10/18/21 18:29	1
2-Fluorobiphenyl (Surr)	68		34 - 110	10/17/21 07:35	10/18/21 18:29	1
Terphenyl-d14 (Surr)	87		40 - 145	10/17/21 07:35	10/18/21 18:29	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14		0.096	0.14	ug/L		10/20/21 10:07	10/21/21 13:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	35		25 - 130	10/20/21 10:07	10/21/21 13:53	1

Client Sample Results

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

Job ID: 500-206857-1

Client Sample ID: W-211013-RA-102

Lab Sample ID: 500-206857-3

Date Collected: 10/13/21 10:45

Matrix: Water

Date Received: 10/15/21 10:15

Method: 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			10/25/21 17:10	1
Toluene	<0.15		0.50	0.15	ug/L			10/25/21 17:10	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/25/21 17:10	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/25/21 17:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	121		75 - 126		10/25/21 17:10	1
Toluene-d8 (Surr)	84		75 - 120		10/25/21 17:10	1
4-Bromofluorobenzene (Surr)	96		72 - 124		10/25/21 17:10	1
Dibromofluoromethane	105		75 - 120		10/25/21 17:10	1

Method: 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		10/17/21 07:35	10/18/21 20:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	72		36 - 120	10/17/21 07:35	10/18/21 20:04	1
2-Fluorobiphenyl (Surr)	68		34 - 110	10/17/21 07:35	10/18/21 20:04	1
Terphenyl-d14 (Surr)	92		40 - 145	10/17/21 07:35	10/18/21 20:04	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14		0.097	0.14	ug/L		10/20/21 10:07	10/21/21 14:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	83		25 - 130	10/20/21 10:07	10/21/21 14:51	1

Client Sample Results

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

Job ID: 500-206857-1

Client Sample ID: W-211013-RA-103

Lab Sample ID: 500-206857-4

Date Collected: 10/13/21 10:45

Matrix: Water

Date Received: 10/15/21 10:15

Method: 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			10/25/21 17:35	1
Toluene	<0.15		0.50	0.15	ug/L			10/25/21 17:35	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/25/21 17:35	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/25/21 17:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	118		75 - 126		10/25/21 17:35	1
Toluene-d8 (Surr)	85		75 - 120		10/25/21 17:35	1
4-Bromofluorobenzene (Surr)	97		72 - 124		10/25/21 17:35	1
Dibromofluoromethane	103		75 - 120		10/25/21 17:35	1

Method: 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		10/17/21 07:35	10/18/21 20:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	77		36 - 120	10/17/21 07:35	10/18/21 20:27	1
2-Fluorobiphenyl (Surr)	73		34 - 110	10/17/21 07:35	10/18/21 20:27	1
Terphenyl-d14 (Surr)	91		40 - 145	10/17/21 07:35	10/18/21 20:27	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14		0.095	0.14	ug/L		10/20/21 10:07	10/21/21 15:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	95		25 - 130	10/20/21 10:07	10/21/21 15:11	1

Client Sample Results

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

Job ID: 500-206857-1

Client Sample ID: W-211013-RA-104

Lab Sample ID: 500-206857-5

Date Collected: 10/13/21 11:15

Matrix: Water

Date Received: 10/15/21 10:15

Method: 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			10/25/21 17:59	1
Toluene	<0.15		0.50	0.15	ug/L			10/25/21 17:59	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/25/21 17:59	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/25/21 17:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	119		75 - 126		10/25/21 17:59	1
Toluene-d8 (Surr)	86		75 - 120		10/25/21 17:59	1
4-Bromofluorobenzene (Surr)	97		72 - 124		10/25/21 17:59	1
Dibromofluoromethane	103		75 - 120		10/25/21 17:59	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.27		0.89	0.27	ug/L		10/17/21 07:35	10/18/21 20:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	72		36 - 120	10/17/21 07:35	10/18/21 20:51	1
2-Fluorobiphenyl (Surr)	68		34 - 110	10/17/21 07:35	10/18/21 20:51	1
Terphenyl-d14 (Surr)	90		40 - 145	10/17/21 07:35	10/18/21 20:51	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.15		0.11	0.15	ug/L		10/20/21 10:07	10/21/21 15:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	90		25 - 130	10/20/21 10:07	10/21/21 15:30	1

Client Sample Results

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

Job ID: 500-206857-1

Client Sample ID: W-211013-RA-105

Lab Sample ID: 500-206857-6

Date Collected: 10/13/21 11:00

Matrix: Water

Date Received: 10/15/21 10:15

Method: 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			10/25/21 18:24	1
Toluene	<0.15		0.50	0.15	ug/L			10/25/21 18:24	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/25/21 18:24	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/25/21 18:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	120		75 - 126		10/25/21 18:24	1
Toluene-d8 (Surr)	86		75 - 120		10/25/21 18:24	1
4-Bromofluorobenzene (Surr)	98		72 - 124		10/25/21 18:24	1
Dibromofluoromethane	107		75 - 120		10/25/21 18:24	1

Method: 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		10/17/21 07:35	10/18/21 21:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	75		36 - 120	10/17/21 07:35	10/18/21 21:15	1
2-Fluorobiphenyl (Surr)	77		34 - 110	10/17/21 07:35	10/18/21 21:15	1
Terphenyl-d14 (Surr)	94		40 - 145	10/17/21 07:35	10/18/21 21:15	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.15		0.10	0.15	ug/L		10/20/21 10:07	10/21/21 15:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	91		25 - 130	10/20/21 10:07	10/21/21 15:49	1

Client Sample Results

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

Job ID: 500-206857-1

Client Sample ID: W-211013-RA-106

Lab Sample ID: 500-206857-7

Date Collected: 10/13/21 11:30

Matrix: Water

Date Received: 10/14/21 10:00

Method: 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			10/25/21 18:49	1
Toluene	<0.15		0.50	0.15	ug/L			10/25/21 18:49	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/25/21 18:49	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/25/21 18:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	119		75 - 126		10/25/21 18:49	1
Toluene-d8 (Surr)	85		75 - 120		10/25/21 18:49	1
4-Bromofluorobenzene (Surr)	100		72 - 124		10/25/21 18:49	1
Dibromofluoromethane	104		75 - 120		10/25/21 18:49	1

Method: 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		10/17/21 07:35	10/18/21 21:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	70		36 - 120	10/17/21 07:35	10/18/21 21:39	1
2-Fluorobiphenyl (Surr)	68		34 - 110	10/17/21 07:35	10/18/21 21:39	1
Terphenyl-d14 (Surr)	94		40 - 145	10/17/21 07:35	10/18/21 21:39	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.15	^c	0.10	0.15	ug/L		10/20/21 10:07	10/21/21 16:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	89		25 - 130	10/20/21 10:07	10/21/21 16:28	1

Client Sample Results

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

Job ID: 500-206857-1

Client Sample ID: W-211013-RA-107

Lab Sample ID: 500-206857-8

Date Collected: 10/13/21 12:00

Matrix: Water

Date Received: 10/15/21 10:15

Method: 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			10/25/21 19:13	1
Toluene	<0.15		0.50	0.15	ug/L			10/25/21 19:13	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/25/21 19:13	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/25/21 19:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	121		75 - 126		10/25/21 19:13	1
Toluene-d8 (Surr)	85		75 - 120		10/25/21 19:13	1
4-Bromofluorobenzene (Surr)	96		72 - 124		10/25/21 19:13	1
Dibromofluoromethane	106		75 - 120		10/25/21 19:13	1

Method: 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		10/17/21 07:35	10/18/21 22:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	73		36 - 120	10/17/21 07:35	10/18/21 22:02	1
2-Fluorobiphenyl (Surr)	73		34 - 110	10/17/21 07:35	10/18/21 22:02	1
Terphenyl-d14 (Surr)	96		40 - 145	10/17/21 07:35	10/18/21 22:02	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.15	^c	0.10	0.15	ug/L		10/20/21 10:07	10/21/21 16:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	81		25 - 130	10/20/21 10:07	10/21/21 16:47	1

Client Sample Results

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

Job ID: 500-206857-1

Client Sample ID: W-211013-RA-108

Lab Sample ID: 500-206857-9

Date Collected: 10/13/21 12:10

Matrix: Water

Date Received: 10/14/21 10:00

Method: 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			10/25/21 19:38	1
Toluene	<0.15		0.50	0.15	ug/L			10/25/21 19:38	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/25/21 19:38	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/25/21 19:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	120		75 - 126		10/25/21 19:38	1
Toluene-d8 (Surr)	85		75 - 120		10/25/21 19:38	1
4-Bromofluorobenzene (Surr)	96		72 - 124		10/25/21 19:38	1
Dibromofluoromethane	105		75 - 120		10/25/21 19:38	1

Method: 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		10/17/21 07:35	10/18/21 22:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	69		36 - 120	10/17/21 07:35	10/18/21 22:26	1
2-Fluorobiphenyl (Surr)	66		34 - 110	10/17/21 07:35	10/18/21 22:26	1
Terphenyl-d14 (Surr)	83		40 - 145	10/17/21 07:35	10/18/21 22:26	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14		0.097	0.14	ug/L		10/20/21 10:07	10/22/21 09:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	83		25 - 130	10/20/21 10:07	10/22/21 09:21	1

Client Sample Results

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

Job ID: 500-206857-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-206857-10

Date Collected: 10/13/21 00:00

Matrix: Water

Date Received: 10/15/21 10:15

Method: 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			10/25/21 11:47	1
Toluene	<0.15		0.50	0.15	ug/L			10/25/21 11:47	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/25/21 11:47	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/25/21 11:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	118		75 - 126		10/25/21 11:47	1
Toluene-d8 (Surr)	84		75 - 120		10/25/21 11:47	1
4-Bromofluorobenzene (Surr)	95		72 - 124		10/25/21 11:47	1
Dibromofluoromethane	105		75 - 120		10/25/21 11:47	1

Definitions/Glossary

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

Job ID: 500-206857-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.

Glossary

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

QC Association Summary

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

Job ID: 500-206857-1

GC/MS VOA

Analysis Batch: 625167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206857-1	W-211013-RA-100	Total/NA	Water	8260B	
500-206857-2	W-211013-RA-101	Total/NA	Water	8260B	
500-206857-3	W-211013-RA-102	Total/NA	Water	8260B	
500-206857-4	W-211013-RA-103	Total/NA	Water	8260B	
500-206857-5	W-211013-RA-104	Total/NA	Water	8260B	
500-206857-6	W-211013-RA-105	Total/NA	Water	8260B	
500-206857-7	W-211013-RA-106	Total/NA	Water	8260B	
500-206857-8	W-211013-RA-107	Total/NA	Water	8260B	
500-206857-9	W-211013-RA-108	Total/NA	Water	8260B	
500-206857-10	Trip Blank	Total/NA	Water	8260B	
MB 500-625167/7	Method Blank	Total/NA	Water	8260B	
LCS 500-625167/5	Lab Control Sample	Total/NA	Water	8260B	
500-206857-2 MS	W-211013-RA-101	Total/NA	Water	8260B	
500-206857-2 MSD	W-211013-RA-101	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 623890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206857-1	W-211013-RA-100	Total/NA	Water	3510C	
500-206857-2	W-211013-RA-101	Total/NA	Water	3510C	
500-206857-3	W-211013-RA-102	Total/NA	Water	3510C	
500-206857-4	W-211013-RA-103	Total/NA	Water	3510C	
500-206857-5	W-211013-RA-104	Total/NA	Water	3510C	
500-206857-6	W-211013-RA-105	Total/NA	Water	3510C	
500-206857-7	W-211013-RA-106	Total/NA	Water	3510C	
500-206857-8	W-211013-RA-107	Total/NA	Water	3510C	
500-206857-9	W-211013-RA-108	Total/NA	Water	3510C	
MB 500-623890/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-623890/2-A	Lab Control Sample	Total/NA	Water	3510C	
500-206857-2 MS	W-211013-RA-101	Total/NA	Water	3510C	
500-206857-2 MSD	W-211013-RA-101	Total/NA	Water	3510C	

Analysis Batch: 624079

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206857-1	W-211013-RA-100	Total/NA	Water	8270D	623890
500-206857-2	W-211013-RA-101	Total/NA	Water	8270D	623890
500-206857-3	W-211013-RA-102	Total/NA	Water	8270D	623890
500-206857-4	W-211013-RA-103	Total/NA	Water	8270D	623890
500-206857-5	W-211013-RA-104	Total/NA	Water	8270D	623890
500-206857-6	W-211013-RA-105	Total/NA	Water	8270D	623890
500-206857-7	W-211013-RA-106	Total/NA	Water	8270D	623890
500-206857-8	W-211013-RA-107	Total/NA	Water	8270D	623890
500-206857-9	W-211013-RA-108	Total/NA	Water	8270D	623890
MB 500-623890/1-A	Method Blank	Total/NA	Water	8270D	623890
LCS 500-623890/2-A	Lab Control Sample	Total/NA	Water	8270D	623890
500-206857-2 MS	W-211013-RA-101	Total/NA	Water	8270D	623890
500-206857-2 MSD	W-211013-RA-101	Total/NA	Water	8270D	623890

QC Association Summary

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

Job ID: 500-206857-1

GC Semi VOA

Prep Batch: 624497

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206857-1	W-211013-RA-100	Total/NA	Water	8151A	
500-206857-2	W-211013-RA-101	Total/NA	Water	8151A	
500-206857-3	W-211013-RA-102	Total/NA	Water	8151A	
500-206857-4	W-211013-RA-103	Total/NA	Water	8151A	
500-206857-5	W-211013-RA-104	Total/NA	Water	8151A	
500-206857-6	W-211013-RA-105	Total/NA	Water	8151A	
500-206857-7	W-211013-RA-106	Total/NA	Water	8151A	
500-206857-8	W-211013-RA-107	Total/NA	Water	8151A	
500-206857-9	W-211013-RA-108	Total/NA	Water	8151A	
MB 500-624497/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-624497/2-A	Lab Control Sample	Total/NA	Water	8151A	
500-206857-2 MS	W-211013-RA-101	Total/NA	Water	8151A	
500-206857-2 MSD	W-211013-RA-101	Total/NA	Water	8151A	

Analysis Batch: 624762

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206857-1	W-211013-RA-100	Total/NA	Water	8151A	624497
500-206857-2	W-211013-RA-101	Total/NA	Water	8151A	624497
500-206857-3	W-211013-RA-102	Total/NA	Water	8151A	624497
500-206857-4	W-211013-RA-103	Total/NA	Water	8151A	624497
500-206857-5	W-211013-RA-104	Total/NA	Water	8151A	624497
500-206857-6	W-211013-RA-105	Total/NA	Water	8151A	624497
500-206857-7	W-211013-RA-106	Total/NA	Water	8151A	624497
500-206857-8	W-211013-RA-107	Total/NA	Water	8151A	624497
MB 500-624497/1-A	Method Blank	Total/NA	Water	8151A	624497
LCS 500-624497/2-A	Lab Control Sample	Total/NA	Water	8151A	624497
500-206857-2 MS	W-211013-RA-101	Total/NA	Water	8151A	624497
500-206857-2 MSD	W-211013-RA-101	Total/NA	Water	8151A	624497

Analysis Batch: 624838

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206857-9	W-211013-RA-108	Total/NA	Water	8151A	624497
MB 500-624497/1-A	Method Blank	Total/NA	Water	8151A	624497
LCS 500-624497/2-A	Lab Control Sample	Total/NA	Water	8151A	624497

Surrogate Summary

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

Job ID: 500-206857-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-126)	TOL (75-120)	BFB (72-124)	DBFM (75-120)
500-206857-1	W-211013-RA-100	120	84	92	106
500-206857-2	W-211013-RA-101	121	85	96	105
500-206857-2 MS	W-211013-RA-101	116	93	87	108
500-206857-2 MSD	W-211013-RA-101	117	89	86	106
500-206857-3	W-211013-RA-102	121	84	96	105
500-206857-4	W-211013-RA-103	118	85	97	103
500-206857-5	W-211013-RA-104	119	86	97	103
500-206857-6	W-211013-RA-105	120	86	98	107
500-206857-7	W-211013-RA-106	119	85	100	104
500-206857-8	W-211013-RA-107	121	85	96	106
500-206857-9	W-211013-RA-108	120	85	96	105
500-206857-10	Trip Blank	118	84	95	105
LCS 500-625167/5	Lab Control Sample	115	92	85	104
MB 500-625167/7	Method Blank	119	84	90	101

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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		NBZ (36-120)	FBP (34-110)	TPHL (40-145)
500-206857-1	W-211013-RA-100	74	73	94
500-206857-2	W-211013-RA-101	69	68	87
500-206857-2 MS	W-211013-RA-101	81	82	89
500-206857-2 MSD	W-211013-RA-101	71	72	84
500-206857-3	W-211013-RA-102	72	68	92
500-206857-4	W-211013-RA-103	77	73	91
500-206857-5	W-211013-RA-104	72	68	90
500-206857-6	W-211013-RA-105	75	77	94
500-206857-7	W-211013-RA-106	70	68	94
500-206857-8	W-211013-RA-107	73	73	96
500-206857-9	W-211013-RA-108	69	66	83
LCS 500-623890/2-A	Lab Control Sample	82	84	94
MB 500-623890/1-A	Method Blank	79	73	97

Surrogate Legend

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

Surrogate Summary

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

Job ID: 500-206857-1

Method: 8151A - Herbicides (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA2 (25-130)
500-206857-1	W-211013-RA-100	83
500-206857-2	W-211013-RA-101	35
500-206857-2 MS	W-211013-RA-101	93
500-206857-2 MSD	W-211013-RA-101	97
500-206857-3	W-211013-RA-102	83
500-206857-4	W-211013-RA-103	95
500-206857-5	W-211013-RA-104	90
500-206857-6	W-211013-RA-105	91
500-206857-7	W-211013-RA-106	89
500-206857-8	W-211013-RA-107	81
500-206857-9	W-211013-RA-108	83
LCS 500-624497/2-A	Lab Control Sample	88
LCS 500-624497/2-A	Lab Control Sample	83
MB 500-624497/1-A	Method Blank	87
MB 500-624497/1-A	Method Blank	85

Surrogate Legend

DCPAA = DCAA

QC Sample Results

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

Job ID: 500-206857-1

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

Lab Sample ID: MB 500-625167/7
Matrix: Water
Analysis Batch: 625167

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

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	<0.15		0.50	0.15	ug/L			10/25/21 11:22	1
Toluene	<0.15		0.50	0.15	ug/L			10/25/21 11:22	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/25/21 11:22	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/25/21 11:22	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	119		75 - 126		10/25/21 11:22	1
Toluene-d8 (Surr)	84		75 - 120		10/25/21 11:22	1
4-Bromofluorobenzene (Surr)	90		72 - 124		10/25/21 11:22	1
Dibromofluoromethane	101		75 - 120		10/25/21 11:22	1

Lab Sample ID: LCS 500-625167/5
Matrix: Water
Analysis Batch: 625167

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

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Benzene	50.0	51.6		ug/L		103	70 - 120
Toluene	50.0	45.5		ug/L		91	70 - 125
Ethylbenzene	50.0	46.7		ug/L		93	70 - 123
Xylenes, Total	100	104		ug/L		104	70 - 125

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	115		75 - 126
Toluene-d8 (Surr)	92		75 - 120
4-Bromofluorobenzene (Surr)	85		72 - 124
Dibromofluoromethane	104		75 - 120

Lab Sample ID: 500-206857-2 MS
Matrix: Water
Analysis Batch: 625167

Client Sample ID: W-211013-RA-101
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits
				Result	Qualifier				
Benzene	<0.15		50.0	51.4		ug/L		103	70 - 120
Toluene	<0.15		50.0	45.1		ug/L		90	70 - 125
Ethylbenzene	<0.18		50.0	45.9		ug/L		92	70 - 123
Xylenes, Total	<0.22		100	102		ug/L		102	70 - 125

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	116		75 - 126
Toluene-d8 (Surr)	93		75 - 120
4-Bromofluorobenzene (Surr)	87		72 - 124
Dibromofluoromethane	108		75 - 120

QC Sample Results

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

Job ID: 500-206857-1

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

Lab Sample ID: 500-206857-2 MSD
Matrix: Water
Analysis Batch: 625167

Client Sample ID: W-211013-RA-101
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	49.2		ug/L		98	70 - 120	4	20
Toluene	<0.15		50.0	41.9		ug/L		84	70 - 125	7	20
Ethylbenzene	<0.18		50.0	44.1		ug/L		88	70 - 123	4	20
Xylenes, Total	<0.22		100	97.3		ug/L		97	70 - 125	5	20
MSD MSD											
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	117		75 - 126								
Toluene-d8 (Surr)	89		75 - 120								
4-Bromofluorobenzene (Surr)	86		72 - 124								
Dibromofluoromethane	106		75 - 120								

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

Lab Sample ID: MB 500-623890/1-A
Matrix: Water
Analysis Batch: 624079

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 623890

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.80	0.25	ug/L		10/17/21 07:35	10/18/21 14:31	1
MB MB									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	79		36 - 120				10/17/21 07:35	10/18/21 14:31	1
2-Fluorobiphenyl (Surr)	73		34 - 110				10/17/21 07:35	10/18/21 14:31	1
Terphenyl-d14 (Surr)	97		40 - 145				10/17/21 07:35	10/18/21 14:31	1

Lab Sample ID: LCS 500-623890/2-A
Matrix: Water
Analysis Batch: 624079

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 623890

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	32.0	20.0		ug/L		63	36 - 110
LCS LCS							
Surrogate	%Recovery	Qualifier	Limits				
Nitrobenzene-d5 (Surr)	82		36 - 120				
2-Fluorobiphenyl (Surr)	84		34 - 110				
Terphenyl-d14 (Surr)	94		40 - 145				

Lab Sample ID: 500-206857-2 MS
Matrix: Water
Analysis Batch: 624079

Client Sample ID: W-211013-RA-101
Prep Type: Total/NA
Prep Batch: 623890

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	<0.24		31.9	21.5		ug/L		67	36 - 110
MS MS									
Surrogate	%Recovery	Qualifier	Limits						
Nitrobenzene-d5 (Surr)	81		36 - 120						
2-Fluorobiphenyl (Surr)	82		34 - 110						

Eurofins TestAmerica, Chicago

QC Sample Results

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

Job ID: 500-206857-1

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

Lab Sample ID: 500-206857-2 MS
Matrix: Water
Analysis Batch: 624079

Client Sample ID: W-211013-RA-101
Prep Type: Total/NA
Prep Batch: 623890

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
Terphenyl-d14 (Surr)	89		40 - 145

Lab Sample ID: 500-206857-2 MSD
Matrix: Water
Analysis Batch: 624079

Client Sample ID: W-211013-RA-101
Prep Type: Total/NA
Prep Batch: 623890

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier						
Naphthalene	<0.24		32.9	18.8		ug/L		57	36 - 110	13	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
Nitrobenzene-d5 (Surr)	71		36 - 120
2-Fluorobiphenyl (Surr)	72		34 - 110
Terphenyl-d14 (Surr)	84		40 - 145

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 500-624497/1-A
Matrix: Water
Analysis Batch: 624762

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 624497

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Pentachlorophenol	<0.14		0.10	0.14	ug/L		10/20/21 10:07	10/21/21 12:55	1

	MB	MB		Prepared	Analyzed	Dil Fac
Surrogate	%Recovery	Qualifier	Limits			
DCAA	87		25 - 130	10/20/21 10:07	10/21/21 12:55	1

Lab Sample ID: MB 500-624497/1-A
Matrix: Water
Analysis Batch: 624838

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 624497

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Pentachlorophenol	<0.14		0.10	0.14	ug/L		10/20/21 10:07	10/22/21 08:42	1

	MB	MB		Prepared	Analyzed	Dil Fac
Surrogate	%Recovery	Qualifier	Limits			
DCAA	85		25 - 130	10/20/21 10:07	10/22/21 08:42	1

Lab Sample ID: LCS 500-624497/2-A
Matrix: Water
Analysis Batch: 624762

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 624497

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec.	Limits
		Result	Qualifier					
Pentachlorophenol	2.50	1.62		ug/L		65	40 - 122	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
DCAA	88		25 - 130

QC Sample Results

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

Job ID: 500-206857-1

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

Lab Sample ID: LCS 500-624497/2-A
Matrix: Water
Analysis Batch: 624838

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 624497

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Pentachlorophenol	2.50	1.70		ug/L		68	40 - 122
Surrogate	%Recovery	LCS Qualifier	Limits				
DCAA	83		25 - 130				

Lab Sample ID: 500-206857-2 MS
Matrix: Water
Analysis Batch: 624762

Client Sample ID: W-211013-RA-101
Prep Type: Total/NA
Prep Batch: 624497

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Pentachlorophenol	<0.14		2.40	1.53		ug/L		64	40 - 122
Surrogate	%Recovery	MS Qualifier	Limits						
DCAA	93		25 - 130						

Lab Sample ID: 500-206857-2 MSD
Matrix: Water
Analysis Batch: 624762

Client Sample ID: W-211013-RA-101
Prep Type: Total/NA
Prep Batch: 624497

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Pentachlorophenol	<0.14		2.41	1.58		ug/L		65	40 - 122	3	20
Surrogate	%Recovery	MSD Qualifier	Limits								
DCAA	97		25 - 130								

Lab Chronicle

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

Job ID: 500-206857-1

Client Sample ID: W-211013-RA-100

Lab Sample ID: 500-206857-1

Date Collected: 10/13/21 09:55

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625167	10/25/21 16:20	STW	TAL CHI
Total/NA	Prep	3510C			623890	10/17/21 07:35	FRG	TAL CHI
Total/NA	Analysis	8270D		1	624079	10/18/21 18:05	SS	TAL CHI
Total/NA	Prep	8151A			624497	10/20/21 10:07	DAK	TAL CHI
Total/NA	Analysis	8151A		1	624762	10/21/21 13:34	JBj	TAL CHI

Client Sample ID: W-211013-RA-101

Lab Sample ID: 500-206857-2

Date Collected: 10/13/21 10:30

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625167	10/25/21 16:45	STW	TAL CHI
Total/NA	Prep	3510C			623890	10/17/21 07:35	FRG	TAL CHI
Total/NA	Analysis	8270D		1	624079	10/18/21 18:29	SS	TAL CHI
Total/NA	Prep	8151A			624497	10/20/21 10:07	DAK	TAL CHI
Total/NA	Analysis	8151A		1	624762	10/21/21 13:53	JBj	TAL CHI

Client Sample ID: W-211013-RA-102

Lab Sample ID: 500-206857-3

Date Collected: 10/13/21 10:45

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625167	10/25/21 17:10	STW	TAL CHI
Total/NA	Prep	3510C			623890	10/17/21 07:35	FRG	TAL CHI
Total/NA	Analysis	8270D		1	624079	10/18/21 20:04	SS	TAL CHI
Total/NA	Prep	8151A			624497	10/20/21 10:07	DAK	TAL CHI
Total/NA	Analysis	8151A		1	624762	10/21/21 14:51	JBj	TAL CHI

Client Sample ID: W-211013-RA-103

Lab Sample ID: 500-206857-4

Date Collected: 10/13/21 10:45

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625167	10/25/21 17:35	STW	TAL CHI
Total/NA	Prep	3510C			623890	10/17/21 07:35	FRG	TAL CHI
Total/NA	Analysis	8270D		1	624079	10/18/21 20:27	SS	TAL CHI
Total/NA	Prep	8151A			624497	10/20/21 10:07	DAK	TAL CHI
Total/NA	Analysis	8151A		1	624762	10/21/21 15:11	JBj	TAL CHI

Client Sample ID: W-211013-RA-104

Lab Sample ID: 500-206857-5

Date Collected: 10/13/21 11:15

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625167	10/25/21 17:59	STW	TAL CHI

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Lab Chronicle

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

Job ID: 500-206857-1

Client Sample ID: W-211013-RA-104

Lab Sample ID: 500-206857-5

Date Collected: 10/13/21 11:15

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			623890	10/17/21 07:35	FRG	TAL CHI
Total/NA	Analysis	8270D		1	624079	10/18/21 20:51	SS	TAL CHI
Total/NA	Prep	8151A			624497	10/20/21 10:07	DAK	TAL CHI
Total/NA	Analysis	8151A		1	624762	10/21/21 15:30	JBJ	TAL CHI

Client Sample ID: W-211013-RA-105

Lab Sample ID: 500-206857-6

Date Collected: 10/13/21 11:00

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625167	10/25/21 18:24	STW	TAL CHI
Total/NA	Prep	3510C			623890	10/17/21 07:35	FRG	TAL CHI
Total/NA	Analysis	8270D		1	624079	10/18/21 21:15	SS	TAL CHI
Total/NA	Prep	8151A			624497	10/20/21 10:07	DAK	TAL CHI
Total/NA	Analysis	8151A		1	624762	10/21/21 15:49	JBJ	TAL CHI

Client Sample ID: W-211013-RA-106

Lab Sample ID: 500-206857-7

Date Collected: 10/13/21 11:30

Matrix: Water

Date Received: 10/14/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625167	10/25/21 18:49	STW	TAL CHI
Total/NA	Prep	3510C			623890	10/17/21 07:35	FRG	TAL CHI
Total/NA	Analysis	8270D		1	624079	10/18/21 21:39	SS	TAL CHI
Total/NA	Prep	8151A			624497	10/20/21 10:07	DAK	TAL CHI
Total/NA	Analysis	8151A		1	624762	10/21/21 16:28	JBJ	TAL CHI

Client Sample ID: W-211013-RA-107

Lab Sample ID: 500-206857-8

Date Collected: 10/13/21 12:00

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625167	10/25/21 19:13	STW	TAL CHI
Total/NA	Prep	3510C			623890	10/17/21 07:35	FRG	TAL CHI
Total/NA	Analysis	8270D		1	624079	10/18/21 22:02	SS	TAL CHI
Total/NA	Prep	8151A			624497	10/20/21 10:07	DAK	TAL CHI
Total/NA	Analysis	8151A		1	624762	10/21/21 16:47	JBJ	TAL CHI

Client Sample ID: W-211013-RA-108

Lab Sample ID: 500-206857-9

Date Collected: 10/13/21 12:10

Matrix: Water

Date Received: 10/14/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625167	10/25/21 19:38	STW	TAL CHI

Lab Chronicle

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

Job ID: 500-206857-1

Client Sample ID: W-211013-RA-108

Lab Sample ID: 500-206857-9

Date Collected: 10/13/21 12:10

Matrix: Water

Date Received: 10/14/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			623890	10/17/21 07:35	FRG	TAL CHI
Total/NA	Analysis	8270D		1	624079	10/18/21 22:26	SS	TAL CHI
Total/NA	Prep	8151A			624497	10/20/21 10:07	DAK	TAL CHI
Total/NA	Analysis	8151A		1	624838	10/22/21 09:21	JB	TAL CHI

Client Sample ID: Trip Blank

Lab Sample ID: 500-206857-10

Date Collected: 10/13/21 00:00

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625167	10/25/21 11:47	STW	TAL CHI

Laboratory References:

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



Accreditation/Certification Summary

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

Job ID: 500-206857-1

Laboratory: Eurofins TestAmerica, Chicago

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

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-22

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

Chain of Custody Record

545096



Environment Testing
TestAmerica

Address: _____

Client Contact Company Name: GHQ Address: 900 Long Lake Rd #200 City/State/Zip: Shelby MN 55112 Phone: 651 639 0913 Fax: _____ Project Name: Penta Lead Site: 1122248-01-05 P.O.#: _____		Regulatory Program: <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other Project Manager: Tim Rice Tel/Email: Tim.Rice@ghq.com Analysis Turnaround Time: <input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below: <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Site Contact: _____ Date: _____ Lab Contact: _____ Date: _____ COC No: _____ of _____ COCs Sampler: _____ For Lab Use Only: Walk-in Client: _____ Lab Sampling: _____ Job / SDG No.: 500-706457 Sample Specific Notes: _____	
---	--	---	--	---	--



Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Other
1 W-211013-RT-100	10/13	955	G	GW	7			X X X
2 W-211013-RT-101		1030			7			Y X X
3 W-211013-RT-102		1045			7			X X X
4 W-211013-RT-103		1045			7			Y X X
5 W-211013-RT-104		1115			7			Y X X
6 W-211013-RT-105		1100			7			Y X X
7 W-211013-RT-106		1130			7			Y X X
8 W-211013-RT-107		1200			7			Y X X
9 W-211013-RT-108		1210			7			Y X X
10 Appendix								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: **4.8 → 4.7**

Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.:	Cooler Temp. (°C):	Obs'd:	Corr'd:	Therm ID No.:
Relinquished by: [Signature]	Company: GHQ	Date/Time: 10/13/21 150	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: ETA-GH	Date/Time: 10/14/21 1000

Chain of Custody Record

545096


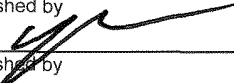


Environment Testing
TestAmerica

TAL-8210

Address _____

Regulatory Program: DW NPDES RCRA Other

Client Contact		Project Manager: Tim Ree			Site Contact		Date		COC No		
Comp ny Name: GHD		Tel/Email: Tim.Ree@GHD.com			Lab Contact		Carrier		1 of 1 COCs		
Address: 900 Long Lake Rd #200		Analysis Turnaround Time			Filtered Sample (Y/N) Perform MS / MSD (Y/N) PCP Aroclor Naphthalene BTEX		 500-206857 COC		Sampler		
City/State/Zip: Shelburne MN 55112		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below _____							For Lab Use Only		
Phone: 651 639 0913		<input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day							Walk-in Client		
Project Name: Penta Wood									Lab Sampling		
Site: 1122418-01-05							Job / SDG No		500-206857		
P O #									Sample Specific Notes		
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)			
1	W-211013-RA-100	10/13	955	G	GW	7	Y	X	X		
2	W-211013-RA-101		1030			7	Y	X	X		
3	W-211013-RA-102		1045			7	Y	X	X		
4	W-211013-RA-103		1045			7	Y	X	X		
5	W-211013-RA-104		1115			7	Y	X	X		
6	W-211013-RA-105		1100			7	Y	X	X		
7	W-211013-RA-106		1130			7	Y	X	X		
8	W-211013-RA-107		1200			7	Y	X	X		
9	W-211013-RA-108		1210			7	Y	X	X		
10	trip deck								X		
Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other							Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)				
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample							<input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months				
<input type="checkbox"/> Non Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown											
Special Instructions/QC Requirements & Comments:							1.4 → 0.4, 3.6 → 3.5, 4.0 → 3.9, 2.9 → 2.8				
Custody Seals Intact <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No			Cooler Temp (°C) Obs'd _____ Corr'd _____		Therm ID No _____				
Relinquished by 		Company: GHD		Date/Time: 10/13/21 1500		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: ETA-CHI		Date/Time: 10/15/21 1015	



Package
US Airbill

FedEx
Tracking
Number

8166 8556 5442

Form
ID No. 0200

From [Redacted]
 Date [Redacted]
 Sender's Name [Redacted] Phone [Redacted]
 Company [Redacted]
 Address [Redacted] Dept./Floor/Suite/Room [Redacted]
 City [Redacted] State [Redacted] ZIP [Redacted]

Your Internal Billing Reference

Do Not Lift Using This Tag

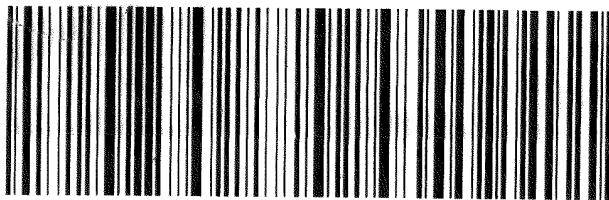


TRK#
0200 8166 8556 5442

THU - 14 OCT AA
PRIORITY OVERNIGHT

AC JOTA

60484
IL-US
ORD



882045 130ct2021 JDTA 56DG2/0778/1B23

4 Express Package Service * To most locations.

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
Second business morning Saturday Delivery!
- FedEx 2Day
Second business day will be delivered on Delivery is selected.
- FedEx Express Saver
Third business day.* Saturday Delivery NOT available.



500-206857 Wayb

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
- Cargo Aircraft Only

7 Payment Bill to:

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

Total Packages Total Weight

*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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644

fedex.com 1.800.GoFedEx 1.800.463.3339

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-206857-1

Login Number: 206857

List Source: Eurofins TestAmerica, Chicago

List Number: 1

Creator: Hernandez, Stephanie

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.7,0.4,3.5,3.9,2.8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	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	



ANALYTICAL REPORT

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

Laboratory Job ID: 500-206895-1
Client Project/Site: Penta Wood 11222418

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

Attn: Mr. Grant Anderson

Jodie Bracken

Authorized for release by:
10/29/2021 4:47:51 PM
Jodie Bracken, Project Management Assistant II
Jodie.Bracken@Eurofinset.com

Designee for
Richard Wright, Senior Project Manager
(708)746-0045
Richard.Wright@Eurofinset.com

LINKS

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results through
TotalAccess

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www.eurofinsus.com/Env

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

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

Job ID: 500-206895-1

Job ID: 500-206895-1

Laboratory: Eurofins TestAmerica, Chicago

Narrative

Job Narrative 500-206895-1

Receipt

The samples were received on 10/15/2021 10:15 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 10 coolers at receipt time were 1.3° C, 1.4° C, 1.5° C, 2.0° C, 2.0° C, 2.4° C, 3.2° C, 4.1° C, 4.4° C and 9.4° C.

Receipt Exceptions

Only received the VOA & TOC vials for samples 1 & 3 MSD, missing a cooler. Received 3 VOA vial for samples 15, COC has 1.

The following sample was submitted for analysis; however, it was not listed on the Chain-of-Custody (COC): W-211014-RA-30 (500-206895-16) Added to COC and logged in.

The following samples were received at the laboratory outside the required temperature criteria: W-211013-RA-16 (500-206895-1) and W-211014-RA-18 (500-206895-3[MSD]). The client was contacted regarding this issue, and the laboratory was instructed to proceed with analysis. Received the metals, 500ml unpreserved, 250ml ambers and the 1L ambers out of temp.

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: Perylene-d12 Internal standard (ISTD) response for the following samples was outside of acceptance limits: W-211014-RA-18 (500-206895-3), W-211014-RA-20 (500-206895-5), W-211014-RA-21 (500-206895-6), W-211014-RA-26 (500-206895-11), W-211014-RA-28 (500-206895-13) and W-211014-RA-29 (500-206895-14). Analytes associated to this internal standard are not being reported from this run.

Method 8270D: The following samples contained one base surrogate outside acceptance limits: W-211013-RA-16 (500-206895-1), W-211014-RA-18 (500-206895-3), W-211014-RA-20 (500-206895-5), W-211014-RA-21 (500-206895-6), W-211014-RA-22 (500-206895-7), W-211014-RA-23 (500-206895-8), W-211014-RA-24 (500-206895-9), W-211014-RA-25 (500-206895-10), W-211014-RA-26 (500-206895-11), W-211014-RA-27 (500-206895-12), W-211014-RA-28 (500-206895-13), W-211014-RA-29 (500-206895-14), W-211014-RA-30 (500-206895-16) and (MB 500-624257/1-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.

Method 8270D: The following LCS contained one acid and one base surrogate outside acceptance limits: (LCS 500-624257/2-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

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

GC Semi VOA

Method 8151A: The following sample was diluted due to the nature of the sample matrix: W-211014-RA-27 (500-206895-12). Elevated reporting limits (RLs) are provided.

Method 8151A: The following samples required a dilution due to the nature of the sample matrix: W-211013-RA-16 (500-206895-1), W-211014-RA-26 (500-206895-11) and W-211014-RA-28 (500-206895-13). 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 continuing calibration verification (CCV) associated with batch 500-625000 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-211014-RA-17 (500-206895-2), (CCV 500-625000/9) and (CCV 500-625000/1).

Case Narrative

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

Job ID: 500-206895-1

Job ID: 500-206895-1 (Continued)

Laboratory: Eurofins TestAmerica, Chicago (Continued)

Method 8151A: The following samples required a dilution due to the nature of the sample matrix: W-211014-RA-18 (500-206895-3), W-211014-RA-18 (500-206895-3[MS]), W-211014-RA-18 (500-206895-3[MSD]), W-211014-RA-19 (500-206895-4), W-211014-RA-20 (500-206895-5) and W-211014-RA-21 (500-206895-6). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method 8151A: The following samples were diluted due to the abundance of target analytes : W-211014-RA-18 (500-206895-3), W-211014-RA-18 (500-206895-3[MS]) and W-211014-RA-18 (500-206895-3[MSD]). Because of this dilution, the surrogate spike and matrix 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 reported from the primary column due to Pentachlorophenol recovering outside control limits for the continuing calibration verification (CCV) on the secondary column; therefore, the higher of the two results have been reported.

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 following sample was received outside of holding time for analyte Nitrate as N: W-211013-RA-16 (500-206895-1).

Method 300.0: The laboratory control sample (LCS) for analytical batch 500-623755 recovered outside control limits for the following analytes: Nitrate as N. These analytes were biased low in the LCS and were short hold in nature in the associated samples; therefore, the data have been reported. It is believed the LCS was spiked low, due to all anion results have similar recoveries. All bracketing QC(CCQ) were within control limits. The samples were reanalyzed outside of holding time and the results were confirmed.

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: 500-206895-1

Client Sample ID: W-211013-RA-16

Lab Sample ID: 500-206895-1

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Naphthalene	2.6		0.75	0.23	ug/L	1		8270D	Total/NA
Pentachlorophenol	1600		110	160	ug/L	1000		8151A	Total/NA
Arsenic	0.71	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	1.7	J	2.0	0.50	ug/L	1		6020A	Dissolved
Manganese	239		2.5	0.79	ug/L	1		6020A	Dissolved
Zinc	19.7	J	20.0	6.9	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	188		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	12.6		1.0	0.85	mg/L	5		300.0	Total/NA
Nitrate as N	0.28	H	0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	23.9		1.0	0.48	mg/L	5		300.0	Total/NA
Alkalinity	165		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-211014-RA-17

Lab Sample ID: 500-206895-2

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.37	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	1.9	J	2.0	0.50	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	77.4		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	0.63		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	4.3		0.20	0.095	mg/L	1		300.0	Total/NA
Alkalinity	106		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-211014-RA-18

Lab Sample ID: 500-206895-3

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.23	J	0.50	0.15	ug/L	1		8260B	Total/NA
Ethylbenzene	0.48	J	0.50	0.18	ug/L	1		8260B	Total/NA
Xylenes, Total	3.1		1.0	0.22	ug/L	1		8260B	Total/NA
Naphthalene	2.6	F2	0.83	0.26	ug/L	1		8270D	Total/NA
Methane	0.20	J	1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	1200		99	140	ug/L	1000		8151A	Total/NA
Arsenic	0.75	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	1.7	J	2.0	0.50	ug/L	1		6020A	Dissolved
Manganese	238	F1 F2	2.5	0.79	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	189		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	8.4	F1	1.0	0.85	mg/L	5		300.0	Total/NA
Nitrate as N	0.30		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	15.2	F1	1.0	0.48	mg/L	5		300.0	Total/NA
Total Organic Carbon - Duplicates	12.3		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	109		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-211014-RA-19

Lab Sample ID: 500-206895-4

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.34	J	0.50	0.15	ug/L	1		8260B	Total/NA
Ethylbenzene	0.36	J	0.50	0.18	ug/L	1		8260B	Total/NA
Xylenes, Total	2.6		1.0	0.22	ug/L	1		8260B	Total/NA
Naphthalene	1.2		0.78	0.24	ug/L	1		8270D	Total/NA
Methane	49		1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	660		98	140	ug/L	1000		8151A	Total/NA
Arsenic	0.85	J	1.0	0.23	ug/L	1		6020A	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

Detection Summary

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-19 (Continued)

Lab Sample ID: 500-206895-4

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Copper	4.7		2.0	0.50	ug/L	1		6020A	Dissolved
Iron	1280		100	46.7	ug/L	1		6020A	Dissolved
Manganese	569		2.5	0.79	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	156		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	23.7		1.0	0.85	mg/L	5		300.0	Total/NA
Sulfate	4.8		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	11.8		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	139		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-211014-RA-20

Lab Sample ID: 500-206895-5

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.89		0.50	0.15	ug/L	1		8260B	Total/NA
Ethylbenzene	1.0		0.50	0.18	ug/L	1		8260B	Total/NA
Xylenes, Total	10		1.0	0.22	ug/L	1		8260B	Total/NA
Naphthalene	38		0.87	0.27	ug/L	1		8270D	Total/NA
Methane	9.5		1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	2800		200	290	ug/L	2000		8151A	Total/NA
Arsenic	0.98	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	1.8	J	2.0	0.50	ug/L	1		6020A	Dissolved
Iron	12900		100	46.7	ug/L	1		6020A	Dissolved
Manganese	7970		12.5	4.0	ug/L	5		6020A	Dissolved
Hardness as calcium carbonate	309		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	24.8		1.0	0.85	mg/L	5		300.0	Total/NA
Sulfate	21.4		1.0	0.48	mg/L	5		300.0	Total/NA
Total Organic Carbon - Duplicates	54.6		8.0	3.8	mg/L	8		9060A	Total/NA
Alkalinity	282		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-211014-RA-21

Lab Sample ID: 500-206895-6

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.89		0.50	0.15	ug/L	1		8260B	Total/NA
Ethylbenzene	0.95		0.50	0.18	ug/L	1		8260B	Total/NA
Xylenes, Total	10		1.0	0.22	ug/L	1		8260B	Total/NA
Naphthalene	36		0.81	0.25	ug/L	1		8270D	Total/NA
Methane	8.3		1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	6100		200	290	ug/L	2000		8151A	Total/NA
Arsenic	0.87	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	1.6	J	2.0	0.50	ug/L	1		6020A	Dissolved
Iron	12900		100	46.7	ug/L	1		6020A	Dissolved
Manganese	8130		12.5	4.0	ug/L	5		6020A	Dissolved
Hardness as calcium carbonate	310		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	25.4		1.0	0.85	mg/L	5		300.0	Total/NA
Nitrate as N	0.068	J	0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	21.8		1.0	0.48	mg/L	5		300.0	Total/NA
Total Organic Carbon - Duplicates	55.2		8.0	3.8	mg/L	8		9060A	Total/NA
Alkalinity	286		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-211014-RA-22

Lab Sample ID: 500-206895-7

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

Detection Summary

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-23

Lab Sample ID: 500-206895-8

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Copper	2.3		2.0	0.50	ug/L	1		6020A	Dissolved
Iron	398		100	46.7	ug/L	1		6020A	Dissolved
Manganese	13.9		2.5	0.79	ug/L	1		6020A	Dissolved
Zinc	17.7	J	20.0	6.9	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	92.7		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	0.35		0.20	0.17	mg/L	1		300.0	Total/NA
Nitrate as N	0.31		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	1.7		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.53	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	86.0		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-211014-RA-24

Lab Sample ID: 500-206895-9

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.23	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	2.3		2.0	0.50	ug/L	1		6020A	Dissolved
Iron	307		100	46.7	ug/L	1		6020A	Dissolved
Manganese	15.6		2.5	0.79	ug/L	1		6020A	Dissolved
Zinc	11.2	J	20.0	6.9	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	83.9		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	4.0		0.20	0.17	mg/L	1		300.0	Total/NA
Nitrate as N	0.34		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	1.7		0.20	0.095	mg/L	1		300.0	Total/NA
Alkalinity	74.5		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-211014-RA-25

Lab Sample ID: 500-206895-10

No Detections.

Client Sample ID: W-211014-RA-26

Lab Sample ID: 500-206895-11

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.16	J	0.50	0.15	ug/L	1		8260B	Total/NA
Ethylbenzene	0.81		0.50	0.18	ug/L	1		8260B	Total/NA
Xylenes, Total	11		1.0	0.22	ug/L	1		8260B	Total/NA
Naphthalene	17		0.77	0.24	ug/L	1		8270D	Total/NA
Methane	0.22	J	1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	3100		490	710	ug/L	5000		8151A	Total/NA
Arsenic	0.94	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	3.4		2.0	0.50	ug/L	1		6020A	Dissolved
Iron	1510		100	46.7	ug/L	1		6020A	Dissolved
Manganese	6430		12.5	4.0	ug/L	5		6020A	Dissolved
Hardness as calcium carbonate	402		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	52.3		4.0	3.4	mg/L	20		300.0	Total/NA
Nitrate as N	0.085	J	0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	37.6		4.0	1.9	mg/L	20		300.0	Total/NA
Total Organic Carbon - Duplicates	61.5		4.0	1.9	mg/L	4		9060A	Total/NA
Alkalinity	310		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-211014-RA-27

Lab Sample ID: 500-206895-12

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.35	J	1.0	0.23	ug/L	1		6020A	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

Detection Summary

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-27 (Continued)

Lab Sample ID: 500-206895-12

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Copper	3.5		2.0	0.50	ug/L	1		6020A	Dissolved
Manganese	2.9		2.5	0.79	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	297		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	17.2		1.0	0.85	mg/L	5		300.0	Total/NA
Nitrate as N	7.2		1.0	0.34	mg/L	5		300.0	Total/NA
Sulfate	12.2		1.0	0.48	mg/L	5		300.0	Total/NA
Total Organic Carbon - Duplicates	2.8		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	282		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-211014-RA-28

Lab Sample ID: 500-206895-13

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.84		0.50	0.15	ug/L	1		8260B	Total/NA
Ethylbenzene	0.93		0.50	0.18	ug/L	1		8260B	Total/NA
Xylenes, Total	18		1.0	0.22	ug/L	1		8260B	Total/NA
Naphthalene	21		0.81	0.25	ug/L	1		8270D	Total/NA
Methane	4.1		1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	9400		1100	1600	ug/L	10000		8151A	Total/NA
Arsenic	7.7		1.0	0.23	ug/L	1		6020A	Dissolved
Copper	33.3		2.0	0.50	ug/L	1		6020A	Dissolved
Iron	25400		100	46.7	ug/L	1		6020A	Dissolved
Manganese	3340		2.5	0.79	ug/L	1		6020A	Dissolved
Zinc	12.8	J	20.0	6.9	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	305		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	35.4		1.0	0.85	mg/L	5		300.0	Total/NA
Sulfate	12.6		1.0	0.48	mg/L	5		300.0	Total/NA
Total Organic Carbon - Duplicates	57.1		4.0	1.9	mg/L	4		9060A	Total/NA
Alkalinity	290		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-211014-RA-29

Lab Sample ID: 500-206895-14

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.2		1.0	0.23	ug/L	1		6020A	Dissolved
Copper	0.50	J	2.0	0.50	ug/L	1		6020A	Dissolved
Manganese	2.9		2.5	0.79	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	152		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	23.4		1.0	0.85	mg/L	5		300.0	Total/NA
Nitrate as N	4.0	*	0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	6.2		0.20	0.095	mg/L	1		300.0	Total/NA
Alkalinity	123		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: Trip Blank

Lab Sample ID: 500-206895-15

No Detections.

Client Sample ID: W-211014-RA-30

Lab Sample ID: 500-206895-16

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.2		1.0	0.23	ug/L	1		6020A	Dissolved
Copper	0.64	J	2.0	0.50	ug/L	1		6020A	Dissolved
Manganese	3.0		2.5	0.79	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	148		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	21.3		1.0	0.85	mg/L	5		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

Detection Summary

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-30 (Continued)

Lab Sample ID: 500-206895-16

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	12.4		1.0	0.48	mg/L	5		300.0	Total/NA
Alkalinity	128		5.0	3.7	mg/L	1		SM 2320B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

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Method Summary

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

Job ID: 500-206895-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CHI
RSK-175	Dissolved Gases (GC)	RSK	TAL CAN
8151A	Herbicides (GC)	SW846	TAL CHI
6020A	Metals (ICP/MS)	SW846	TAL CHI
SM 2340B	Total Hardness (as CaCO ₃) by calculation	SM	TAL CHI
300.0	Anions, Ion Chromatography	MCAWW	TAL CHI
9060A	Organic Carbon, Total (TOC)	SW846	TAL CHI
SM 2320B	Alkalinity	SM	TAL CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CHI
3010A	Preparation, Total Metals	SW846	TAL CHI
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL CHI
5030B	Purge and Trap	SW846	TAL CHI
8151A	Extraction (Herbicides)	SW846	TAL 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:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TAL CHI = Eurofins TestAmerica, 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: 500-206895-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-206895-1	W-211013-RA-16	Water	10/13/21 13:46	10/15/21 10:15
500-206895-2	W-211014-RA-17	Water	10/14/21 09:09	10/15/21 10:15
500-206895-3	W-211014-RA-18	Water	10/14/21 09:35	10/15/21 10:15
500-206895-4	W-211014-RA-19	Water	10/14/21 10:24	10/15/21 10:15
500-206895-5	W-211014-RA-20	Water	10/14/21 10:20	10/15/21 10:15
500-206895-6	W-211014-RA-21	Water	10/14/21 10:20	10/15/21 10:15
500-206895-7	W-211014-RA-22	Water	10/14/21 11:00	10/15/21 10:15
500-206895-8	W-211014-RA-23	Water	10/14/21 11:30	10/15/21 10:15
500-206895-9	W-211014-RA-24	Water	10/14/21 11:50	10/15/21 10:15
500-206895-10	W-211014-RA-25	Water	10/14/21 10:30	10/15/21 10:15
500-206895-11	W-211014-RA-26	Water	10/14/21 10:47	10/15/21 10:15
500-206895-12	W-211014-RA-27	Water	10/14/21 11:45	10/15/21 10:15
500-206895-13	W-211014-RA-28	Water	10/14/21 12:10	10/15/21 10:15
500-206895-14	W-211014-RA-29	Water	10/14/21 12:52	10/15/21 10:15
500-206895-15	Trip Blank	Water	10/14/21 00:00	10/15/21 10:15
500-206895-16	W-211014-RA-30	Water	10/14/21 00:00	10/15/21 10:15

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Client Sample Results

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

Job ID: 500-206895-1

Client Sample ID: W-211013-RA-16

Lab Sample ID: 500-206895-1

Date Collected: 10/13/21 13:46

Matrix: Water

Date Received: 10/15/21 10:15

Method: 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			10/24/21 14:58	1
Toluene	<0.15		0.50	0.15	ug/L			10/24/21 14:58	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/24/21 14:58	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/24/21 14:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	118		75 - 126		10/24/21 14:58	1
Toluene-d8 (Surr)	83		75 - 120		10/24/21 14:58	1
4-Bromofluorobenzene (Surr)	96		72 - 124		10/24/21 14:58	1
Dibromofluoromethane	106		75 - 120		10/24/21 14:58	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	2.6		0.75	0.23	ug/L		10/19/21 08:55	10/27/21 13:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	85		36 - 120	10/19/21 08:55	10/27/21 13:35	1
2-Fluorobiphenyl (Surr)	71		34 - 110	10/19/21 08:55	10/27/21 13:35	1
Terphenyl-d14 (Surr)	172	^c X	40 - 145	10/19/21 08:55	10/27/21 13:35	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			10/23/21 12:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	103		60 - 140		10/23/21 12:42	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	1600		110	160	ug/L		10/20/21 15:53	10/22/21 09:59	1000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	0	D	25 - 130	10/20/21 15:53	10/22/21 09:59	1000

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.71	J	1.0	0.23	ug/L		10/21/21 09:52	10/21/21 19:54	1
Copper	1.7	J	2.0	0.50	ug/L		10/21/21 09:52	10/21/21 19:54	1
Iron	<46.7		100	46.7	ug/L		10/21/21 09:52	10/21/21 19:54	1
Manganese	239		2.5	0.79	ug/L		10/21/21 09:52	10/21/21 19:54	1
Zinc	19.7	J	20.0	6.9	ug/L		10/21/21 09:52	10/21/21 19:54	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	188		0.91	0.46	mg/L		10/19/21 09:23	10/25/21 09:43	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	12.6		1.0	0.85	mg/L			10/19/21 16:03	5
Nitrate as N	0.28	H	0.20	0.068	mg/L			10/19/21 15:49	1
Sulfate	23.9		1.0	0.48	mg/L			10/19/21 16:03	5
Total Organic Carbon - Duplicates	<0.47		1.0	0.47	mg/L			10/27/21 01:47	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-206895-1

Client Sample ID: W-211013-RA-16

Lab Sample ID: 500-206895-1

Date Collected: 10/13/21 13:46

Matrix: Water

Date Received: 10/15/21 10:15

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	165		5.0	3.7	mg/L			10/27/21 12:36	1

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Client Sample Results

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-17

Lab Sample ID: 500-206895-2

Date Collected: 10/14/21 09:09

Matrix: Water

Date Received: 10/15/21 10:15

Method: 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			10/24/21 15:23	1
Toluene	<0.15		0.50	0.15	ug/L			10/24/21 15:23	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/24/21 15:23	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/24/21 15:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	122		75 - 126					10/24/21 15:23	1
Toluene-d8 (Surr)	82		75 - 120					10/24/21 15:23	1
4-Bromofluorobenzene (Surr)	94		72 - 124					10/24/21 15:23	1
Dibromofluoromethane	107		75 - 120					10/24/21 15:23	1

Method: 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		10/19/21 08:55	10/27/21 13:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	45		36 - 120				10/19/21 08:55	10/27/21 13:59	1
2-Fluorobiphenyl (Surr)	45		34 - 110				10/19/21 08:55	10/27/21 13:59	1
Terphenyl-d14 (Surr)	86	^c	40 - 145				10/19/21 08:55	10/27/21 13:59	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			10/21/21 04:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	104		60 - 140					10/21/21 04:43	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14	^c	0.095	0.14	ug/L		10/21/21 13:06	10/22/21 19:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	64		25 - 130				10/21/21 13:06	10/22/21 19:44	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.37	J	1.0	0.23	ug/L		10/21/21 09:52	10/21/21 19:58	1
Copper	1.9	J	2.0	0.50	ug/L		10/21/21 09:52	10/21/21 19:58	1
Iron	<46.7		100	46.7	ug/L		10/21/21 09:52	10/21/21 19:58	1
Manganese	<0.79		2.5	0.79	ug/L		10/21/21 09:52	10/21/21 19:58	1
Zinc	<6.9		20.0	6.9	ug/L		10/21/21 09:52	10/21/21 19:58	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	77.4		0.91	0.46	mg/L		10/19/21 09:23	10/25/21 09:43	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.63		0.20	0.17	mg/L			10/15/21 14:55	1
Nitrate as N	0.48		0.20	0.068	mg/L			10/15/21 14:55	1
Sulfate	4.3		0.20	0.095	mg/L			10/15/21 14:55	1
Total Organic Carbon - Duplicates	<0.47		1.0	0.47	mg/L			10/27/21 02:10	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-17

Lab Sample ID: 500-206895-2

Date Collected: 10/14/21 09:09

Matrix: Water

Date Received: 10/15/21 10:15

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	106		5.0	3.7	mg/L			10/27/21 12:42	1

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Client Sample Results

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-18

Lab Sample ID: 500-206895-3

Date Collected: 10/14/21 09:35

Matrix: Water

Date Received: 10/15/21 10:15

Method: 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			10/24/21 15:49	1
Toluene	0.23	J	0.50	0.15	ug/L			10/24/21 15:49	1
Ethylbenzene	0.48	J	0.50	0.18	ug/L			10/24/21 15:49	1
Xylenes, Total	3.1		1.0	0.22	ug/L			10/24/21 15:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	119		75 - 126		10/24/21 15:49	1
Toluene-d8 (Surr)	82		75 - 120		10/24/21 15:49	1
4-Bromofluorobenzene (Surr)	92		72 - 124		10/24/21 15:49	1
Dibromofluoromethane	108		75 - 120		10/24/21 15:49	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	2.6	F2	0.83	0.26	ug/L		10/19/21 08:55	10/27/21 20:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	96		36 - 120	10/19/21 08:55	10/27/21 20:15	1
2-Fluorobiphenyl (Surr)	85		34 - 110	10/19/21 08:55	10/27/21 20:15	1
Terphenyl-d14 (Surr)	229	^c X	40 - 145	10/19/21 08:55	10/27/21 20:15	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	0.20	J	1.0	0.17	ug/L			10/23/21 12:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	102		60 - 140		10/23/21 12:59	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	1200		99	140	ug/L		10/21/21 13:06	10/26/21 16:37	1000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	0	D	25 - 130	10/21/21 13:06	10/26/21 16:37	1000

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.75	J	1.0	0.23	ug/L		10/21/21 09:52	10/21/21 20:01	1
Copper	1.7	J	2.0	0.50	ug/L		10/21/21 09:52	10/21/21 20:01	1
Iron	<46.7		100	46.7	ug/L		10/21/21 09:52	10/21/21 20:01	1
Manganese	238	F1 F2	2.5	0.79	ug/L		10/21/21 09:52	10/21/21 20:01	1
Zinc	<6.9		20.0	6.9	ug/L		10/21/21 09:52	10/21/21 20:01	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	189		0.91	0.46	mg/L		10/19/21 09:23	10/25/21 09:43	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.4	F1	1.0	0.85	mg/L			10/22/21 23:21	5
Nitrate as N	0.30		0.20	0.068	mg/L			10/15/21 15:08	1
Sulfate	15.2	F1	1.0	0.48	mg/L			10/22/21 23:21	5
Total Organic Carbon - Duplicates	12.3		1.0	0.47	mg/L			10/27/21 02:33	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-18

Lab Sample ID: 500-206895-3

Date Collected: 10/14/21 09:35

Matrix: Water

Date Received: 10/15/21 10:15

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	109		5.0	3.7	mg/L			10/27/21 12:49	1

Client Sample Results

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-19

Lab Sample ID: 500-206895-4

Date Collected: 10/14/21 10:24

Matrix: Water

Date Received: 10/15/21 10:15

Method: 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			10/24/21 16:13	1
Toluene	0.34	J	0.50	0.15	ug/L			10/24/21 16:13	1
Ethylbenzene	0.36	J	0.50	0.18	ug/L			10/24/21 16:13	1
Xylenes, Total	2.6		1.0	0.22	ug/L			10/24/21 16:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	118		75 - 126		10/24/21 16:13	1
Toluene-d8 (Surr)	81		75 - 120		10/24/21 16:13	1
4-Bromofluorobenzene (Surr)	93		72 - 124		10/24/21 16:13	1
Dibromofluoromethane	108		75 - 120		10/24/21 16:13	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	1.2		0.78	0.24	ug/L		10/19/21 08:55	10/27/21 15:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	61		36 - 120	10/19/21 08:55	10/27/21 15:32	1
2-Fluorobiphenyl (Surr)	36		34 - 110	10/19/21 08:55	10/27/21 15:32	1
Terphenyl-d14 (Surr)	128	^c	40 - 145	10/19/21 08:55	10/27/21 15:32	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	49		1.0	0.17	ug/L			10/23/21 13:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	104		60 - 140		10/23/21 13:50	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	660		98	140	ug/L		10/21/21 13:06	10/26/21 18:14	1000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	0	D	25 - 130	10/21/21 13:06	10/26/21 18:14	1000

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.85	J	1.0	0.23	ug/L		10/21/21 09:52	10/21/21 20:18	1
Copper	4.7		2.0	0.50	ug/L		10/21/21 09:52	10/21/21 20:18	1
Iron	1280		100	46.7	ug/L		10/21/21 09:52	10/21/21 20:18	1
Manganese	569		2.5	0.79	ug/L		10/21/21 09:52	10/21/21 20:18	1
Zinc	<6.9		20.0	6.9	ug/L		10/21/21 09:52	10/21/21 20:18	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	156		0.91	0.46	mg/L		10/19/21 09:23	10/25/21 09:43	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	23.7		1.0	0.85	mg/L			10/15/21 22:33	5
Nitrate as N	<0.068		0.20	0.068	mg/L			10/15/21 15:21	1
Sulfate	4.8		0.20	0.095	mg/L			10/15/21 15:21	1
Total Organic Carbon - Duplicates	11.8		1.0	0.47	mg/L			10/27/21 03:16	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-19

Lab Sample ID: 500-206895-4

Date Collected: 10/14/21 10:24

Matrix: Water

Date Received: 10/15/21 10:15

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	139		5.0	3.7	mg/L			10/27/21 08:04	1

- 1
- 2
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- 11
- 12
- 13
- 14
- 15

Client Sample Results

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-20

Lab Sample ID: 500-206895-5

Date Collected: 10/14/21 10:20

Matrix: Water

Date Received: 10/15/21 10:15

Method: 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			10/24/21 16:38	1
Toluene	0.89		0.50	0.15	ug/L			10/24/21 16:38	1
Ethylbenzene	1.0		0.50	0.18	ug/L			10/24/21 16:38	1
Xylenes, Total	10		1.0	0.22	ug/L			10/24/21 16:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	121		75 - 126					10/24/21 16:38	1
Toluene-d8 (Surr)	82		75 - 120					10/24/21 16:38	1
4-Bromofluorobenzene (Surr)	87		72 - 124					10/24/21 16:38	1
Dibromofluoromethane	112		75 - 120					10/24/21 16:38	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	38		0.87	0.27	ug/L		10/19/21 08:55	10/27/21 15:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	79		36 - 120				10/19/21 08:55	10/27/21 15:56	1
2-Fluorobiphenyl (Surr)	47		34 - 110				10/19/21 08:55	10/27/21 15:56	1
Terphenyl-d14 (Surr)	205	^c X	40 - 145				10/19/21 08:55	10/27/21 15:56	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	9.5		1.0	0.17	ug/L			10/21/21 05:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	103		60 - 140					10/21/21 05:00	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	2800		200	290	ug/L		10/21/21 13:06	10/26/21 18:33	2000
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	0	D	25 - 130				10/21/21 13:06	10/26/21 18:33	2000

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.98	J	1.0	0.23	ug/L		10/21/21 09:52	10/21/21 20:29	1
Copper	1.8	J	2.0	0.50	ug/L		10/21/21 09:52	10/21/21 20:29	1
Iron	12900		100	46.7	ug/L		10/21/21 09:52	10/21/21 20:29	1
Manganese	7970		12.5	4.0	ug/L		10/21/21 09:52	10/25/21 14:36	5
Zinc	<6.9		20.0	6.9	ug/L		10/21/21 09:52	10/21/21 20:29	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	309		0.91	0.46	mg/L		10/19/21 09:23	10/25/21 09:43	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	24.8		1.0	0.85	mg/L			10/15/21 22:45	5
Nitrate as N	<0.068		0.20	0.068	mg/L			10/15/21 15:33	1
Sulfate	21.4		1.0	0.48	mg/L			10/15/21 22:45	5
Total Organic Carbon - Duplicates	54.6		8.0	3.8	mg/L			10/27/21 03:39	8

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-20

Lab Sample ID: 500-206895-5

Date Collected: 10/14/21 10:20

Matrix: Water

Date Received: 10/15/21 10:15

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	282		5.0	3.7	mg/L			10/27/21 08:04	1

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

Client Sample Results

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-21

Lab Sample ID: 500-206895-6

Date Collected: 10/14/21 10:20

Matrix: Water

Date Received: 10/15/21 10:15

Method: 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			10/24/21 17:04	1
Toluene	0.89		0.50	0.15	ug/L			10/24/21 17:04	1
Ethylbenzene	0.95		0.50	0.18	ug/L			10/24/21 17:04	1
Xylenes, Total	10		1.0	0.22	ug/L			10/24/21 17:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	121		75 - 126		10/24/21 17:04	1
Toluene-d8 (Surr)	80		75 - 120		10/24/21 17:04	1
4-Bromofluorobenzene (Surr)	87		72 - 124		10/24/21 17:04	1
Dibromofluoromethane	110		75 - 120		10/24/21 17:04	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	36		0.81	0.25	ug/L		10/19/21 08:55	10/27/21 16:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	78		36 - 120	10/19/21 08:55	10/27/21 16:20	1
2-Fluorobiphenyl (Surr)	44		34 - 110	10/19/21 08:55	10/27/21 16:20	1
Terphenyl-d14 (Surr)	211	^c X	40 - 145	10/19/21 08:55	10/27/21 16:20	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	8.3		1.0	0.17	ug/L			10/23/21 14:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	104		60 - 140		10/23/21 14:24	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	6100		200	290	ug/L		10/21/21 13:06	10/26/21 19:12	2000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	0	D	25 - 130	10/21/21 13:06	10/26/21 19:12	2000

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.87	J	1.0	0.23	ug/L		10/21/21 09:52	10/21/21 20:32	1
Copper	1.6	J	2.0	0.50	ug/L		10/21/21 09:52	10/21/21 20:32	1
Iron	12900		100	46.7	ug/L		10/21/21 09:52	10/21/21 20:32	1
Manganese	8130		12.5	4.0	ug/L		10/21/21 09:52	10/25/21 14:39	5
Zinc	<6.9		20.0	6.9	ug/L		10/21/21 09:52	10/21/21 20:32	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	310		0.91	0.46	mg/L		10/19/21 09:23	10/25/21 09:43	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	25.4		1.0	0.85	mg/L			10/15/21 22:58	5
Nitrate as N	0.068	J	0.20	0.068	mg/L			10/15/21 15:46	1
Sulfate	21.8		1.0	0.48	mg/L			10/15/21 22:58	5
Total Organic Carbon - Duplicates	55.2		8.0	3.8	mg/L			10/27/21 16:17	8

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-21

Lab Sample ID: 500-206895-6

Date Collected: 10/14/21 10:20

Matrix: Water

Date Received: 10/15/21 10:15

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	286		5.0	3.7	mg/L			10/27/21 08:04	1

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Client Sample Results

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-22

Lab Sample ID: 500-206895-7

Date Collected: 10/14/21 11:00

Matrix: Water

Date Received: 10/15/21 10:15

Method: 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			10/24/21 17:28	1
Toluene	<0.15		0.50	0.15	ug/L			10/24/21 17:28	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/24/21 17:28	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/24/21 17:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	120		75 - 126		10/24/21 17:28	1
Toluene-d8 (Surr)	85		75 - 120		10/24/21 17:28	1
4-Bromofluorobenzene (Surr)	95		72 - 124		10/24/21 17:28	1
Dibromofluoromethane	105		75 - 120		10/24/21 17:28	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.26		0.85	0.26	ug/L		10/19/21 08:55	10/27/21 16:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	84		36 - 120	10/19/21 08:55	10/27/21 16:43	1
2-Fluorobiphenyl (Surr)	98		34 - 110	10/19/21 08:55	10/27/21 16:43	1
Terphenyl-d14 (Surr)	183	^c X	40 - 145	10/19/21 08:55	10/27/21 16:43	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14		0.097	0.14	ug/L		10/21/21 13:06	10/26/21 19:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	81		25 - 130	10/21/21 13:06	10/26/21 19:51	1

Method: 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		10/21/21 09:52	10/21/21 20:35	1
Copper	<0.50		2.0	0.50	ug/L		10/21/21 09:52	10/21/21 20:35	1
Iron	<46.7		100	46.7	ug/L		10/21/21 09:52	10/21/21 20:35	1
Manganese	<0.79		2.5	0.79	ug/L		10/21/21 09:52	10/21/21 20:35	1
Zinc	<6.9		20.0	6.9	ug/L		10/21/21 09:52	10/21/21 20:35	1

Client Sample Results

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-23

Lab Sample ID: 500-206895-8

Date Collected: 10/14/21 11:30

Matrix: Water

Date Received: 10/15/21 10:15

Method: 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			10/24/21 17:54	1
Toluene	<0.15		0.50	0.15	ug/L			10/24/21 17:54	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/24/21 17:54	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/24/21 17:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	119		75 - 126		10/24/21 17:54	1
Toluene-d8 (Surr)	83		75 - 120		10/24/21 17:54	1
4-Bromofluorobenzene (Surr)	95		72 - 124		10/24/21 17:54	1
Dibromofluoromethane	108		75 - 120		10/24/21 17:54	1

Method: 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		10/19/21 08:55	10/27/21 17:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	68		36 - 120	10/19/21 08:55	10/27/21 17:07	1
2-Fluorobiphenyl (Surr)	83		34 - 110	10/19/21 08:55	10/27/21 17:07	1
Terphenyl-d14 (Surr)	155	^c X	40 - 145	10/19/21 08:55	10/27/21 17:07	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			10/23/21 14:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	107		60 - 140		10/23/21 14:41	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.18		0.12	0.18	ug/L		10/21/21 13:06	10/26/21 20:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	99		25 - 130	10/21/21 13:06	10/26/21 20:10	1

Method: 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		10/21/21 09:52	10/21/21 20:39	1
Copper	2.3		2.0	0.50	ug/L		10/21/21 09:52	10/21/21 20:39	1
Iron	398		100	46.7	ug/L		10/21/21 09:52	10/21/21 20:39	1
Manganese	13.9		2.5	0.79	ug/L		10/21/21 09:52	10/21/21 20:39	1
Zinc	17.7	J	20.0	6.9	ug/L		10/21/21 09:52	10/21/21 20:39	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	92.7		0.91	0.46	mg/L		10/19/21 09:23	10/25/21 09:43	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.35		0.20	0.17	mg/L			10/15/21 15:59	1
Nitrate as N	0.31		0.20	0.068	mg/L			10/15/21 15:59	1
Sulfate	1.7		0.20	0.095	mg/L			10/15/21 15:59	1
Total Organic Carbon - Duplicates	0.53	J	1.0	0.47	mg/L			10/27/21 16:40	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-23

Lab Sample ID: 500-206895-8

Date Collected: 10/14/21 11:30

Matrix: Water

Date Received: 10/15/21 10:15

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	86.0		5.0	3.7	mg/L			10/27/21 12:56	1

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Client Sample Results

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-24

Lab Sample ID: 500-206895-9

Date Collected: 10/14/21 11:50

Matrix: Water

Date Received: 10/15/21 10:15

Method: 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			10/24/21 18:19	1
Toluene	<0.15		0.50	0.15	ug/L			10/24/21 18:19	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/24/21 18:19	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/24/21 18:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	121		75 - 126		10/24/21 18:19	1
Toluene-d8 (Surr)	82		75 - 120		10/24/21 18:19	1
4-Bromofluorobenzene (Surr)	95		72 - 124		10/24/21 18:19	1
Dibromofluoromethane	110		75 - 120		10/24/21 18:19	1

Method: 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		10/19/21 08:55	10/27/21 17:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	76		36 - 120	10/19/21 08:55	10/27/21 17:30	1
2-Fluorobiphenyl (Surr)	91		34 - 110	10/19/21 08:55	10/27/21 17:30	1
Terphenyl-d14 (Surr)	164	^c X	40 - 145	10/19/21 08:55	10/27/21 17:30	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			10/23/21 14:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	105		60 - 140		10/23/21 14:58	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.18		0.12	0.18	ug/L		10/21/21 13:06	10/26/21 20:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	82		25 - 130	10/21/21 13:06	10/26/21 20:29	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.23	J	1.0	0.23	ug/L		10/21/21 09:52	10/21/21 20:42	1
Copper	2.3		2.0	0.50	ug/L		10/21/21 09:52	10/21/21 20:42	1
Iron	307		100	46.7	ug/L		10/21/21 09:52	10/21/21 20:42	1
Manganese	15.6		2.5	0.79	ug/L		10/21/21 09:52	10/21/21 20:42	1
Zinc	11.2	J	20.0	6.9	ug/L		10/21/21 09:52	10/21/21 20:42	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	83.9		0.91	0.46	mg/L		10/19/21 09:23	10/25/21 09:43	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.0		0.20	0.17	mg/L			10/15/21 16:12	1
Nitrate as N	0.34		0.20	0.068	mg/L			10/15/21 16:12	1
Sulfate	1.7		0.20	0.095	mg/L			10/15/21 16:12	1
Total Organic Carbon - Duplicates	<0.47		1.0	0.47	mg/L			10/27/21 17:03	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-24

Lab Sample ID: 500-206895-9

Date Collected: 10/14/21 11:50

Matrix: Water

Date Received: 10/15/21 10:15

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	74.5		5.0	3.7	mg/L			10/27/21 13:07	1

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Client Sample Results

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-25

Lab Sample ID: 500-206895-10

Date Collected: 10/14/21 10:30

Matrix: Water

Date Received: 10/15/21 10:15

Method: 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			10/24/21 18:44	1
Toluene	<0.15		0.50	0.15	ug/L			10/24/21 18:44	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/24/21 18:44	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/24/21 18:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	122		75 - 126		10/24/21 18:44	1
Toluene-d8 (Surr)	84		75 - 120		10/24/21 18:44	1
4-Bromofluorobenzene (Surr)	96		72 - 124		10/24/21 18:44	1
Dibromofluoromethane	107		75 - 120		10/24/21 18:44	1

Method: 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		10/19/21 08:55	10/27/21 17:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	78		36 - 120	10/19/21 08:55	10/27/21 17:54	1
2-Fluorobiphenyl (Surr)	91		34 - 110	10/19/21 08:55	10/27/21 17:54	1
Terphenyl-d14 (Surr)	183	^c X	40 - 145	10/19/21 08:55	10/27/21 17:54	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14		0.096	0.14	ug/L		10/21/21 13:06	10/26/21 20:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	82		25 - 130	10/21/21 13:06	10/26/21 20:48	1

Method: 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		10/21/21 09:52	10/21/21 20:46	1
Copper	<0.50		2.0	0.50	ug/L		10/21/21 09:52	10/21/21 20:46	1
Iron	<46.7		100	46.7	ug/L		10/21/21 09:52	10/21/21 20:46	1
Manganese	<0.79		2.5	0.79	ug/L		10/21/21 09:52	10/21/21 20:46	1
Zinc	<6.9		20.0	6.9	ug/L		10/21/21 09:52	10/21/21 20:46	1

Client Sample Results

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-26

Lab Sample ID: 500-206895-11

Date Collected: 10/14/21 10:47

Matrix: Water

Date Received: 10/15/21 10:15

Method: 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			10/24/21 19:09	1
Toluene	0.16	J	0.50	0.15	ug/L			10/24/21 19:09	1
Ethylbenzene	0.81		0.50	0.18	ug/L			10/24/21 19:09	1
Xylenes, Total	11		1.0	0.22	ug/L			10/24/21 19:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	121		75 - 126		10/24/21 19:09	1
Toluene-d8 (Surr)	80		75 - 120		10/24/21 19:09	1
4-Bromofluorobenzene (Surr)	90		72 - 124		10/24/21 19:09	1
Dibromofluoromethane	109		75 - 120		10/24/21 19:09	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	17		0.77	0.24	ug/L		10/19/21 08:55	10/27/21 18:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	72		36 - 120	10/19/21 08:55	10/27/21 18:17	1
2-Fluorobiphenyl (Surr)	55		34 - 110	10/19/21 08:55	10/27/21 18:17	1
Terphenyl-d14 (Surr)	194	^c X	40 - 145	10/19/21 08:55	10/27/21 18:17	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	0.22	J	1.0	0.17	ug/L			10/23/21 15:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	102		60 - 140		10/23/21 15:15	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	3100		490	710	ug/L		10/20/21 10:07	10/22/21 10:38	5000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	0	D	25 - 130	10/20/21 10:07	10/22/21 10:38	5000

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.94	J	1.0	0.23	ug/L		10/21/21 09:52	10/21/21 20:49	1
Copper	3.4		2.0	0.50	ug/L		10/21/21 09:52	10/21/21 20:49	1
Iron	1510		100	46.7	ug/L		10/21/21 09:52	10/21/21 20:49	1
Manganese	6430		12.5	4.0	ug/L		10/21/21 09:52	10/21/21 20:53	5
Zinc	<6.9		20.0	6.9	ug/L		10/21/21 09:52	10/21/21 20:49	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	402		0.91	0.46	mg/L		10/19/21 09:23	10/25/21 09:43	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	52.3		4.0	3.4	mg/L			10/15/21 23:11	20
Nitrate as N	0.085	J	0.20	0.068	mg/L			10/15/21 16:50	1
Sulfate	37.6		4.0	1.9	mg/L			10/15/21 23:11	20
Total Organic Carbon - Duplicates	61.5		4.0	1.9	mg/L			10/27/21 17:34	4

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-26

Lab Sample ID: 500-206895-11

Date Collected: 10/14/21 10:47

Matrix: Water

Date Received: 10/15/21 10:15

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	310		5.0	3.7	mg/L			10/27/21 08:04	1

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

Client Sample Results

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-27

Lab Sample ID: 500-206895-12

Date Collected: 10/14/21 11:45

Matrix: Water

Date Received: 10/15/21 10:15

Method: 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			10/24/21 19:33	1
Toluene	<0.15		0.50	0.15	ug/L			10/24/21 19:33	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/24/21 19:33	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/24/21 19:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	122		75 - 126		10/24/21 19:33	1
Toluene-d8 (Surr)	84		75 - 120		10/24/21 19:33	1
4-Bromofluorobenzene (Surr)	97		72 - 124		10/24/21 19:33	1
Dibromofluoromethane	108		75 - 120		10/24/21 19:33	1

Method: 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		10/19/21 08:55	10/27/21 18:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	73		36 - 120	10/19/21 08:55	10/27/21 18:41	1
2-Fluorobiphenyl (Surr)	82		34 - 110	10/19/21 08:55	10/27/21 18:41	1
Terphenyl-d14 (Surr)	172	^c X	40 - 145	10/19/21 08:55	10/27/21 18:41	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			10/21/21 05:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	103		60 - 140		10/21/21 05:17	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<1.5		1.1	1.5	ug/L		10/20/21 10:07	10/22/21 10:57	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	98		25 - 130	10/20/21 10:07	10/22/21 10:57	10

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.35	J	1.0	0.23	ug/L		10/21/21 09:52	10/21/21 20:56	1
Copper	3.5		2.0	0.50	ug/L		10/21/21 09:52	10/21/21 20:56	1
Iron	<46.7		100	46.7	ug/L		10/21/21 09:52	10/21/21 20:56	1
Manganese	2.9		2.5	0.79	ug/L		10/21/21 09:52	10/21/21 20:56	1
Zinc	<6.9		20.0	6.9	ug/L		10/21/21 09:52	10/21/21 20:56	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	297		0.91	0.46	mg/L		10/19/21 09:23	10/25/21 09:43	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	17.2		1.0	0.85	mg/L			10/15/21 23:23	5
Nitrate as N	7.2		1.0	0.34	mg/L			10/15/21 23:23	5
Sulfate	12.2		1.0	0.48	mg/L			10/15/21 23:23	5
Total Organic Carbon - Duplicates	2.8		1.0	0.47	mg/L			10/27/21 17:57	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-27

Lab Sample ID: 500-206895-12

Date Collected: 10/14/21 11:45

Matrix: Water

Date Received: 10/15/21 10:15

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	282		5.0	3.7	mg/L			10/27/21 13:15	1

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Client Sample Results

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-28

Lab Sample ID: 500-206895-13

Date Collected: 10/14/21 12:10

Matrix: Water

Date Received: 10/15/21 10:15

Method: 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			10/24/21 19:58	1
Toluene	0.84		0.50	0.15	ug/L			10/24/21 19:58	1
Ethylbenzene	0.93		0.50	0.18	ug/L			10/24/21 19:58	1
Xylenes, Total	18		1.0	0.22	ug/L			10/24/21 19:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	122		75 - 126		10/24/21 19:58	1
Toluene-d8 (Surr)	85		75 - 120		10/24/21 19:58	1
4-Bromofluorobenzene (Surr)	90		72 - 124		10/24/21 19:58	1
Dibromofluoromethane	108		75 - 120		10/24/21 19:58	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	21		0.81	0.25	ug/L		10/19/21 08:55	10/27/21 19:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	76		36 - 120	10/19/21 08:55	10/27/21 19:04	1
2-Fluorobiphenyl (Surr)	50		34 - 110	10/19/21 08:55	10/27/21 19:04	1
Terphenyl-d14 (Surr)	208	^c X	40 - 145	10/19/21 08:55	10/27/21 19:04	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	4.1		1.0	0.17	ug/L			10/23/21 15:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	104		60 - 140		10/23/21 15:32	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	9400		1100	1600	ug/L		10/20/21 10:07	10/22/21 11:55	10000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	0	D	25 - 130	10/20/21 10:07	10/22/21 11:55	10000

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	7.7		1.0	0.23	ug/L		10/21/21 09:52	10/21/21 21:00	1
Copper	33.3		2.0	0.50	ug/L		10/21/21 09:52	10/21/21 21:00	1
Iron	25400		100	46.7	ug/L		10/21/21 09:52	10/21/21 21:00	1
Manganese	3340		2.5	0.79	ug/L		10/21/21 09:52	10/21/21 21:00	1
Zinc	12.8 J		20.0	6.9	ug/L		10/21/21 09:52	10/21/21 21:00	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	305		0.91	0.46	mg/L		10/19/21 09:23	10/25/21 09:43	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	35.4		1.0	0.85	mg/L			10/19/21 14:09	5
Nitrate as N	<0.068	*	0.20	0.068	mg/L			10/16/21 01:30	1
Sulfate	12.6		1.0	0.48	mg/L			10/19/21 14:09	5
Total Organic Carbon - Duplicates	57.1		4.0	1.9	mg/L			10/27/21 18:40	4

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-28

Lab Sample ID: 500-206895-13

Date Collected: 10/14/21 12:10

Matrix: Water

Date Received: 10/15/21 10:15

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	290		5.0	3.7	mg/L			10/27/21 08:04	1

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Client Sample Results

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-29

Lab Sample ID: 500-206895-14

Date Collected: 10/14/21 12:52

Matrix: Water

Date Received: 10/15/21 10:15

Method: 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			10/24/21 20:23	1
Toluene	<0.15		0.50	0.15	ug/L			10/24/21 20:23	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/24/21 20:23	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/24/21 20:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	121		75 - 126		10/24/21 20:23	1
Toluene-d8 (Surr)	84		75 - 120		10/24/21 20:23	1
4-Bromofluorobenzene (Surr)	96		72 - 124		10/24/21 20:23	1
Dibromofluoromethane	109		75 - 120		10/24/21 20:23	1

Method: 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		10/19/21 08:55	10/27/21 19:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	75		36 - 120	10/19/21 08:55	10/27/21 19:28	1
2-Fluorobiphenyl (Surr)	91		34 - 110	10/19/21 08:55	10/27/21 19:28	1
Terphenyl-d14 (Surr)	199	^c X	40 - 145	10/19/21 08:55	10/27/21 19:28	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			10/23/21 15:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	106		60 - 140		10/23/21 15:49	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14		0.096	0.14	ug/L		10/20/21 10:07	10/22/21 12:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	71		25 - 130	10/20/21 10:07	10/22/21 12:14	1

Method: 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		10/21/21 09:52	10/21/21 21:10	1
Copper	0.50	J	2.0	0.50	ug/L		10/21/21 09:52	10/21/21 21:10	1
Iron	<46.7		100	46.7	ug/L		10/21/21 09:52	10/21/21 21:10	1
Manganese	2.9		2.5	0.79	ug/L		10/21/21 09:52	10/21/21 21:10	1
Zinc	<6.9		20.0	6.9	ug/L		10/21/21 09:52	10/21/21 21:10	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	152		0.91	0.46	mg/L		10/19/21 09:23	10/25/21 09:43	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	23.4		1.0	0.85	mg/L			10/19/21 14:36	5
Nitrate as N	4.0	*	0.20	0.068	mg/L			10/16/21 01:43	1
Sulfate	6.2		0.20	0.095	mg/L			10/19/21 14:23	1
Total Organic Carbon - Duplicates	<0.47		1.0	0.47	mg/L			10/27/21 19:23	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-29

Lab Sample ID: 500-206895-14

Date Collected: 10/14/21 12:52

Matrix: Water

Date Received: 10/15/21 10:15

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	123		5.0	3.7	mg/L			10/27/21 13:22	1

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

Client Sample Results

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

Job ID: 500-206895-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-206895-15

Date Collected: 10/14/21 00:00

Matrix: Water

Date Received: 10/15/21 10:15

Method: 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			10/24/21 14:08	1
Toluene	<0.15		0.50	0.15	ug/L			10/24/21 14:08	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/24/21 14:08	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/24/21 14:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	120		75 - 126		10/24/21 14:08	1
Toluene-d8 (Surr)	84		75 - 120		10/24/21 14:08	1
4-Bromofluorobenzene (Surr)	96		72 - 124		10/24/21 14:08	1
Dibromofluoromethane	107		75 - 120		10/24/21 14:08	1

Client Sample Results

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-30

Lab Sample ID: 500-206895-16

Date Collected: 10/14/21 00:00

Matrix: Water

Date Received: 10/15/21 10:15

Method: 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			10/24/21 20:48	1
Toluene	<0.15		0.50	0.15	ug/L			10/24/21 20:48	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/24/21 20:48	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/24/21 20:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	119		75 - 126		10/24/21 20:48	1
Toluene-d8 (Surr)	88		75 - 120		10/24/21 20:48	1
4-Bromofluorobenzene (Surr)	98		72 - 124		10/24/21 20:48	1
Dibromofluoromethane	104		75 - 120		10/24/21 20:48	1

Method: 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		10/19/21 08:55	10/27/21 19:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	79		36 - 120	10/19/21 08:55	10/27/21 19:51	1
2-Fluorobiphenyl (Surr)	94		34 - 110	10/19/21 08:55	10/27/21 19:51	1
Terphenyl-d14 (Surr)	185	^c X	40 - 145	10/19/21 08:55	10/27/21 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			10/23/21 16:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	106		60 - 140		10/23/21 16:06	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14		0.096	0.14	ug/L		10/20/21 10:07	10/22/21 12:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	71		25 - 130	10/20/21 10:07	10/22/21 12:34	1

Method: 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		10/21/21 09:52	10/21/21 21:13	1
Copper	0.64	J	2.0	0.50	ug/L		10/21/21 09:52	10/21/21 21:13	1
Iron	<46.7		100	46.7	ug/L		10/21/21 09:52	10/21/21 21:13	1
Manganese	3.0		2.5	0.79	ug/L		10/21/21 09:52	10/21/21 21:13	1
Zinc	<6.9		20.0	6.9	ug/L		10/21/21 09:52	10/21/21 21:13	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	148		0.91	0.46	mg/L		10/19/21 09:23	10/25/21 09:43	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	21.3		1.0	0.85	mg/L			10/19/21 15:08	5
Nitrate as N	1.4	*	0.20	0.068	mg/L			10/16/21 01:56	1
Sulfate	12.4		1.0	0.48	mg/L			10/19/21 15:08	5
Total Organic Carbon - Duplicates	<0.47		1.0	0.47	mg/L			10/27/21 19:54	1

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Client Sample Results

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-30

Lab Sample ID: 500-206895-16

Date Collected: 10/14/21 00:00

Matrix: Water

Date Received: 10/15/21 10:15

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	128		5.0	3.7	mg/L			10/27/21 13:42	1

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Definitions/Glossary

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

Job ID: 500-206895-1

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
*	ISTD response or retention time outside acceptable limits
^c	CCV Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
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.
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.
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D.

Metals

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
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.
F1	MS and/or MSD recovery exceeds control limits.
H	Sample was prepped or analyzed beyond the specified holding time
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

Definitions/Glossary

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

Job ID: 500-206895-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Association Summary

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

Job ID: 500-206895-1

GC/MS VOA

Analysis Batch: 625079

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206895-1	W-211013-RA-16	Total/NA	Water	8260B	
500-206895-2	W-211014-RA-17	Total/NA	Water	8260B	
500-206895-3	W-211014-RA-18	Total/NA	Water	8260B	
500-206895-4	W-211014-RA-19	Total/NA	Water	8260B	
500-206895-5	W-211014-RA-20	Total/NA	Water	8260B	
500-206895-6	W-211014-RA-21	Total/NA	Water	8260B	
500-206895-7	W-211014-RA-22	Total/NA	Water	8260B	
500-206895-8	W-211014-RA-23	Total/NA	Water	8260B	
500-206895-9	W-211014-RA-24	Total/NA	Water	8260B	
500-206895-10	W-211014-RA-25	Total/NA	Water	8260B	
500-206895-11	W-211014-RA-26	Total/NA	Water	8260B	
500-206895-12	W-211014-RA-27	Total/NA	Water	8260B	
500-206895-13	W-211014-RA-28	Total/NA	Water	8260B	
500-206895-14	W-211014-RA-29	Total/NA	Water	8260B	
500-206895-15	Trip Blank	Total/NA	Water	8260B	
500-206895-16	W-211014-RA-30	Total/NA	Water	8260B	
MB 500-625079/7	Method Blank	Total/NA	Water	8260B	
LCS 500-625079/5	Lab Control Sample	Total/NA	Water	8260B	
500-206895-3 MS	W-211014-RA-18	Total/NA	Water	8260B	
500-206895-3 MSD	W-211014-RA-18	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 624257

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206895-1	W-211013-RA-16	Total/NA	Water	3510C	
500-206895-2	W-211014-RA-17	Total/NA	Water	3510C	
500-206895-3	W-211014-RA-18	Total/NA	Water	3510C	
500-206895-4	W-211014-RA-19	Total/NA	Water	3510C	
500-206895-5	W-211014-RA-20	Total/NA	Water	3510C	
500-206895-6	W-211014-RA-21	Total/NA	Water	3510C	
500-206895-7	W-211014-RA-22	Total/NA	Water	3510C	
500-206895-8	W-211014-RA-23	Total/NA	Water	3510C	
500-206895-9	W-211014-RA-24	Total/NA	Water	3510C	
500-206895-10	W-211014-RA-25	Total/NA	Water	3510C	
500-206895-11	W-211014-RA-26	Total/NA	Water	3510C	
500-206895-12	W-211014-RA-27	Total/NA	Water	3510C	
500-206895-13	W-211014-RA-28	Total/NA	Water	3510C	
500-206895-14	W-211014-RA-29	Total/NA	Water	3510C	
500-206895-16	W-211014-RA-30	Total/NA	Water	3510C	
MB 500-624257/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-624257/2-A	Lab Control Sample	Total/NA	Water	3510C	
500-206895-3 MS	W-211014-RA-18	Total/NA	Water	3510C	
500-206895-3 MSD	W-211014-RA-18	Total/NA	Water	3510C	

Analysis Batch: 625708

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206895-1	W-211013-RA-16	Total/NA	Water	8270D	624257
500-206895-2	W-211014-RA-17	Total/NA	Water	8270D	624257
500-206895-3	W-211014-RA-18	Total/NA	Water	8270D	624257
500-206895-4	W-211014-RA-19	Total/NA	Water	8270D	624257

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QC Association Summary

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

Job ID: 500-206895-1

GC/MS Semi VOA (Continued)

Analysis Batch: 625708 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206895-5	W-211014-RA-20	Total/NA	Water	8270D	624257
500-206895-6	W-211014-RA-21	Total/NA	Water	8270D	624257
500-206895-7	W-211014-RA-22	Total/NA	Water	8270D	624257
500-206895-8	W-211014-RA-23	Total/NA	Water	8270D	624257
500-206895-9	W-211014-RA-24	Total/NA	Water	8270D	624257
500-206895-10	W-211014-RA-25	Total/NA	Water	8270D	624257
500-206895-11	W-211014-RA-26	Total/NA	Water	8270D	624257
500-206895-12	W-211014-RA-27	Total/NA	Water	8270D	624257
500-206895-13	W-211014-RA-28	Total/NA	Water	8270D	624257
500-206895-14	W-211014-RA-29	Total/NA	Water	8270D	624257
500-206895-16	W-211014-RA-30	Total/NA	Water	8270D	624257
MB 500-624257/1-A	Method Blank	Total/NA	Water	8270D	624257
LCS 500-624257/2-A	Lab Control Sample	Total/NA	Water	8270D	624257
500-206895-3 MS	W-211014-RA-18	Total/NA	Water	8270D	624257
500-206895-3 MSD	W-211014-RA-18	Total/NA	Water	8270D	624257

GC VOA

Analysis Batch: 509132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206895-2	W-211014-RA-17	Total/NA	Water	RSK-175	
500-206895-5	W-211014-RA-20	Total/NA	Water	RSK-175	
500-206895-12	W-211014-RA-27	Total/NA	Water	RSK-175	
MB 240-509132/32	Method Blank	Total/NA	Water	RSK-175	
LCS 240-509132/33	Lab Control Sample	Total/NA	Water	RSK-175	

Analysis Batch: 509577

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206895-1	W-211013-RA-16	Total/NA	Water	RSK-175	
500-206895-3	W-211014-RA-18	Total/NA	Water	RSK-175	
500-206895-4	W-211014-RA-19	Total/NA	Water	RSK-175	
500-206895-6	W-211014-RA-21	Total/NA	Water	RSK-175	
500-206895-8	W-211014-RA-23	Total/NA	Water	RSK-175	
500-206895-9	W-211014-RA-24	Total/NA	Water	RSK-175	
500-206895-11	W-211014-RA-26	Total/NA	Water	RSK-175	
500-206895-13	W-211014-RA-28	Total/NA	Water	RSK-175	
500-206895-14	W-211014-RA-29	Total/NA	Water	RSK-175	
500-206895-16	W-211014-RA-30	Total/NA	Water	RSK-175	
MB 240-509577/3	Method Blank	Total/NA	Water	RSK-175	
LCS 240-509577/4	Lab Control Sample	Total/NA	Water	RSK-175	
500-206895-3 MS	W-211014-RA-18	Total/NA	Water	RSK-175	
500-206895-3 MSD	W-211014-RA-18	Total/NA	Water	RSK-175	

GC Semi VOA

Prep Batch: 624497

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206895-1	W-211013-RA-16	Total/NA	Water	8151A	
500-206895-11	W-211014-RA-26	Total/NA	Water	8151A	
500-206895-12	W-211014-RA-27	Total/NA	Water	8151A	
500-206895-13	W-211014-RA-28	Total/NA	Water	8151A	
500-206895-14	W-211014-RA-29	Total/NA	Water	8151A	

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QC Association Summary

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

Job ID: 500-206895-1

GC Semi VOA (Continued)

Prep Batch: 624497 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206895-16	W-211014-RA-30	Total/NA	Water	8151A	
MB 500-624497/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-624497/2-A	Lab Control Sample	Total/NA	Water	8151A	

Prep Batch: 624765

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206895-2	W-211014-RA-17	Total/NA	Water	8151A	
500-206895-3	W-211014-RA-18	Total/NA	Water	8151A	
500-206895-4	W-211014-RA-19	Total/NA	Water	8151A	
500-206895-5	W-211014-RA-20	Total/NA	Water	8151A	
500-206895-6	W-211014-RA-21	Total/NA	Water	8151A	
500-206895-7	W-211014-RA-22	Total/NA	Water	8151A	
500-206895-8	W-211014-RA-23	Total/NA	Water	8151A	
500-206895-9	W-211014-RA-24	Total/NA	Water	8151A	
500-206895-10	W-211014-RA-25	Total/NA	Water	8151A	
MB 500-624765/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-624765/2-A	Lab Control Sample	Total/NA	Water	8151A	
500-206895-3 MS	W-211014-RA-18	Total/NA	Water	8151A	
500-206895-3 MSD	W-211014-RA-18	Total/NA	Water	8151A	

Analysis Batch: 624838

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206895-1	W-211013-RA-16	Total/NA	Water	8151A	624497
500-206895-11	W-211014-RA-26	Total/NA	Water	8151A	624497
500-206895-12	W-211014-RA-27	Total/NA	Water	8151A	624497
500-206895-13	W-211014-RA-28	Total/NA	Water	8151A	624497
500-206895-14	W-211014-RA-29	Total/NA	Water	8151A	624497
500-206895-16	W-211014-RA-30	Total/NA	Water	8151A	624497
MB 500-624497/1-A	Method Blank	Total/NA	Water	8151A	624497
LCS 500-624497/2-A	Lab Control Sample	Total/NA	Water	8151A	624497

Analysis Batch: 625000

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206895-2	W-211014-RA-17	Total/NA	Water	8151A	624765
MB 500-624765/1-A	Method Blank	Total/NA	Water	8151A	624765
LCS 500-624765/2-A	Lab Control Sample	Total/NA	Water	8151A	624765

Analysis Batch: 625439

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206895-3	W-211014-RA-18	Total/NA	Water	8151A	624765
500-206895-4	W-211014-RA-19	Total/NA	Water	8151A	624765
500-206895-5	W-211014-RA-20	Total/NA	Water	8151A	624765
500-206895-6	W-211014-RA-21	Total/NA	Water	8151A	624765
500-206895-7	W-211014-RA-22	Total/NA	Water	8151A	624765
500-206895-8	W-211014-RA-23	Total/NA	Water	8151A	624765
500-206895-9	W-211014-RA-24	Total/NA	Water	8151A	624765
500-206895-10	W-211014-RA-25	Total/NA	Water	8151A	624765
MB 500-624765/1-A	Method Blank	Total/NA	Water	8151A	624765
LCS 500-624765/2-A	Lab Control Sample	Total/NA	Water	8151A	624765
500-206895-3 MS	W-211014-RA-18	Total/NA	Water	8151A	624765
500-206895-3 MSD	W-211014-RA-18	Total/NA	Water	8151A	624765

Eurofins TestAmerica, Chicago

QC Association Summary

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

Job ID: 500-206895-1

Metals

Prep Batch: 624264

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206895-1	W-211013-RA-16	Total/NA	Water	3010A	
500-206895-2	W-211014-RA-17	Total/NA	Water	3010A	
500-206895-3	W-211014-RA-18	Total/NA	Water	3010A	
500-206895-4	W-211014-RA-19	Total/NA	Water	3010A	
500-206895-5	W-211014-RA-20	Total/NA	Water	3010A	
500-206895-6	W-211014-RA-21	Total/NA	Water	3010A	
500-206895-8	W-211014-RA-23	Total/NA	Water	3010A	
500-206895-9	W-211014-RA-24	Total/NA	Water	3010A	
500-206895-11	W-211014-RA-26	Total/NA	Water	3010A	
500-206895-12	W-211014-RA-27	Total/NA	Water	3010A	
500-206895-13	W-211014-RA-28	Total/NA	Water	3010A	
500-206895-14	W-211014-RA-29	Total/NA	Water	3010A	
500-206895-16	W-211014-RA-30	Total/NA	Water	3010A	

Prep Batch: 624718

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206895-1	W-211013-RA-16	Dissolved	Water	3005A	
500-206895-2	W-211014-RA-17	Dissolved	Water	3005A	
500-206895-3	W-211014-RA-18	Dissolved	Water	3005A	
500-206895-4	W-211014-RA-19	Dissolved	Water	3005A	
500-206895-5	W-211014-RA-20	Dissolved	Water	3005A	
500-206895-6	W-211014-RA-21	Dissolved	Water	3005A	
500-206895-7	W-211014-RA-22	Dissolved	Water	3005A	
500-206895-8	W-211014-RA-23	Dissolved	Water	3005A	
500-206895-9	W-211014-RA-24	Dissolved	Water	3005A	
500-206895-10	W-211014-RA-25	Dissolved	Water	3005A	
500-206895-11	W-211014-RA-26	Dissolved	Water	3005A	
500-206895-12	W-211014-RA-27	Dissolved	Water	3005A	
500-206895-13	W-211014-RA-28	Dissolved	Water	3005A	
500-206895-14	W-211014-RA-29	Dissolved	Water	3005A	
500-206895-16	W-211014-RA-30	Dissolved	Water	3005A	
MB 500-624718/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-624718/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
500-206895-3 MS	W-211014-RA-18	Dissolved	Water	3005A	
500-206895-3 MSD	W-211014-RA-18	Dissolved	Water	3005A	
500-206895-3 DU	W-211014-RA-18	Dissolved	Water	3005A	

Analysis Batch: 624927

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206895-1	W-211013-RA-16	Dissolved	Water	6020A	624718
500-206895-2	W-211014-RA-17	Dissolved	Water	6020A	624718
500-206895-3	W-211014-RA-18	Dissolved	Water	6020A	624718
500-206895-4	W-211014-RA-19	Dissolved	Water	6020A	624718
500-206895-5	W-211014-RA-20	Dissolved	Water	6020A	624718
500-206895-6	W-211014-RA-21	Dissolved	Water	6020A	624718
500-206895-7	W-211014-RA-22	Dissolved	Water	6020A	624718
500-206895-8	W-211014-RA-23	Dissolved	Water	6020A	624718
500-206895-9	W-211014-RA-24	Dissolved	Water	6020A	624718
500-206895-10	W-211014-RA-25	Dissolved	Water	6020A	624718
500-206895-11	W-211014-RA-26	Dissolved	Water	6020A	624718
500-206895-11	W-211014-RA-26	Dissolved	Water	6020A	624718

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QC Association Summary

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

Job ID: 500-206895-1

Metals (Continued)

Analysis Batch: 624927 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206895-12	W-211014-RA-27	Dissolved	Water	6020A	624718
500-206895-13	W-211014-RA-28	Dissolved	Water	6020A	624718
500-206895-14	W-211014-RA-29	Dissolved	Water	6020A	624718
500-206895-16	W-211014-RA-30	Dissolved	Water	6020A	624718
MB 500-624718/1-A	Method Blank	Total Recoverable	Water	6020A	624718
LCS 500-624718/2-A	Lab Control Sample	Total Recoverable	Water	6020A	624718
500-206895-3 MS	W-211014-RA-18	Dissolved	Water	6020A	624718
500-206895-3 MSD	W-211014-RA-18	Dissolved	Water	6020A	624718
500-206895-3 DU	W-211014-RA-18	Dissolved	Water	6020A	624718

Analysis Batch: 625225

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206895-1	W-211013-RA-16	Total/NA	Water	SM 2340B	624264
500-206895-2	W-211014-RA-17	Total/NA	Water	SM 2340B	624264
500-206895-3	W-211014-RA-18	Total/NA	Water	SM 2340B	624264
500-206895-4	W-211014-RA-19	Total/NA	Water	SM 2340B	624264
500-206895-5	W-211014-RA-20	Total/NA	Water	SM 2340B	624264
500-206895-6	W-211014-RA-21	Total/NA	Water	SM 2340B	624264
500-206895-8	W-211014-RA-23	Total/NA	Water	SM 2340B	624264
500-206895-9	W-211014-RA-24	Total/NA	Water	SM 2340B	624264
500-206895-11	W-211014-RA-26	Total/NA	Water	SM 2340B	624264
500-206895-12	W-211014-RA-27	Total/NA	Water	SM 2340B	624264
500-206895-13	W-211014-RA-28	Total/NA	Water	SM 2340B	624264
500-206895-14	W-211014-RA-29	Total/NA	Water	SM 2340B	624264
500-206895-16	W-211014-RA-30	Total/NA	Water	SM 2340B	624264

Analysis Batch: 625440

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206895-5	W-211014-RA-20	Dissolved	Water	6020A	624718
500-206895-6	W-211014-RA-21	Dissolved	Water	6020A	624718

General Chemistry

Analysis Batch: 623755

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206895-2	W-211014-RA-17	Total/NA	Water	300.0	
500-206895-3	W-211014-RA-18	Total/NA	Water	300.0	
500-206895-4	W-211014-RA-19	Total/NA	Water	300.0	
500-206895-4	W-211014-RA-19	Total/NA	Water	300.0	
500-206895-5	W-211014-RA-20	Total/NA	Water	300.0	
500-206895-5	W-211014-RA-20	Total/NA	Water	300.0	
500-206895-6	W-211014-RA-21	Total/NA	Water	300.0	
500-206895-6	W-211014-RA-21	Total/NA	Water	300.0	
500-206895-8	W-211014-RA-23	Total/NA	Water	300.0	
500-206895-9	W-211014-RA-24	Total/NA	Water	300.0	
500-206895-11	W-211014-RA-26	Total/NA	Water	300.0	
500-206895-11	W-211014-RA-26	Total/NA	Water	300.0	
500-206895-12	W-211014-RA-27	Total/NA	Water	300.0	
500-206895-13	W-211014-RA-28	Total/NA	Water	300.0	
500-206895-14	W-211014-RA-29	Total/NA	Water	300.0	
500-206895-16	W-211014-RA-30	Total/NA	Water	300.0	

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QC Association Summary

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

Job ID: 500-206895-1

General Chemistry (Continued)

Analysis Batch: 623755 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-623755/59	Method Blank	Total/NA	Water	300.0	
MB 500-623755/6	Method Blank	Total/NA	Water	300.0	
LCS 500-623755/60	Lab Control Sample	Total/NA	Water	300.0	
LCS 500-623755/7	Lab Control Sample	Total/NA	Water	300.0	
500-206895-2 MS	W-211014-RA-17	Total/NA	Water	300.0	
500-206895-2 MSD	W-211014-RA-17	Total/NA	Water	300.0	
500-206895-3 MS	W-211014-RA-18	Total/NA	Water	300.0	
500-206895-3 MSD	W-211014-RA-18	Total/NA	Water	300.0	

Analysis Batch: 624164

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206895-1	W-211013-RA-16	Total/NA	Water	300.0	
500-206895-1	W-211013-RA-16	Total/NA	Water	300.0	
500-206895-13	W-211014-RA-28	Total/NA	Water	300.0	
500-206895-14	W-211014-RA-29	Total/NA	Water	300.0	
500-206895-14	W-211014-RA-29	Total/NA	Water	300.0	
500-206895-16	W-211014-RA-30	Total/NA	Water	300.0	
MB 500-624164/3	Method Blank	Total/NA	Water	300.0	
LCS 500-624164/4	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 624955

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206895-3	W-211014-RA-18	Total/NA	Water	300.0	
MB 500-624955/35	Method Blank	Total/NA	Water	300.0	
LCS 500-624955/36	Lab Control Sample	Total/NA	Water	300.0	
500-206895-3 MS	W-211014-RA-18	Total/NA	Water	300.0	
500-206895-3 MSD	W-211014-RA-18	Total/NA	Water	300.0	

Analysis Batch: 625653

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206895-4	W-211014-RA-19	Total/NA	Water	SM 2320B	
500-206895-5	W-211014-RA-20	Total/NA	Water	SM 2320B	
500-206895-6	W-211014-RA-21	Total/NA	Water	SM 2320B	
500-206895-11	W-211014-RA-26	Total/NA	Water	SM 2320B	
500-206895-13	W-211014-RA-28	Total/NA	Water	SM 2320B	

Analysis Batch: 625722

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206895-1	W-211013-RA-16	Total/NA	Water	9060A	
500-206895-2	W-211014-RA-17	Total/NA	Water	9060A	
500-206895-3	W-211014-RA-18	Total/NA	Water	9060A	
500-206895-4	W-211014-RA-19	Total/NA	Water	9060A	
500-206895-5	W-211014-RA-20	Total/NA	Water	9060A	
MB 500-625722/7	Method Blank	Total/NA	Water	9060A	
LCS 500-625722/8	Lab Control Sample	Total/NA	Water	9060A	
500-206895-3 MS	W-211014-RA-18	Total/NA	Water	9060A	
500-206895-3 MSD	W-211014-RA-18	Total/NA	Water	9060A	

Analysis Batch: 625766

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206895-1	W-211013-RA-16	Total/NA	Water	SM 2320B	

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QC Association Summary

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

Job ID: 500-206895-1

General Chemistry (Continued)

Analysis Batch: 625766 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206895-2	W-211014-RA-17	Total/NA	Water	SM 2320B	
500-206895-3	W-211014-RA-18	Total/NA	Water	SM 2320B	
500-206895-8	W-211014-RA-23	Total/NA	Water	SM 2320B	
500-206895-9	W-211014-RA-24	Total/NA	Water	SM 2320B	
500-206895-12	W-211014-RA-27	Total/NA	Water	SM 2320B	
500-206895-14	W-211014-RA-29	Total/NA	Water	SM 2320B	
500-206895-16	W-211014-RA-30	Total/NA	Water	SM 2320B	
MB 500-625766/28	Method Blank	Total/NA	Water	SM 2320B	
MB 500-625766/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-625766/29	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 500-625766/4	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 625979

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-206895-6	W-211014-RA-21	Total/NA	Water	9060A	
500-206895-8	W-211014-RA-23	Total/NA	Water	9060A	
500-206895-9	W-211014-RA-24	Total/NA	Water	9060A	
500-206895-11	W-211014-RA-26	Total/NA	Water	9060A	
500-206895-12	W-211014-RA-27	Total/NA	Water	9060A	
500-206895-13	W-211014-RA-28	Total/NA	Water	9060A	
500-206895-14	W-211014-RA-29	Total/NA	Water	9060A	
500-206895-16	W-211014-RA-30	Total/NA	Water	9060A	
MB 500-625979/7	Method Blank	Total/NA	Water	9060A	
LCS 500-625979/8	Lab Control Sample	Total/NA	Water	9060A	
500-206895-12 MS	W-211014-RA-27	Total/NA	Water	9060A	
500-206895-12 MSD	W-211014-RA-27	Total/NA	Water	9060A	

Surrogate Summary

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

Job ID: 500-206895-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-126)	TOL (75-120)	BFB (72-124)	DBFM (75-120)
500-206895-1	W-211013-RA-16	118	83	96	106
500-206895-2	W-211014-RA-17	122	82	94	107
500-206895-3	W-211014-RA-18	119	82	92	108
500-206895-3 MS	W-211014-RA-18	117	88	87	106
500-206895-3 MSD	W-211014-RA-18	117	87	87	108
500-206895-4	W-211014-RA-19	118	81	93	108
500-206895-5	W-211014-RA-20	121	82	87	112
500-206895-6	W-211014-RA-21	121	80	87	110
500-206895-7	W-211014-RA-22	120	85	95	105
500-206895-8	W-211014-RA-23	119	83	95	108
500-206895-9	W-211014-RA-24	121	82	95	110
500-206895-10	W-211014-RA-25	122	84	96	107
500-206895-11	W-211014-RA-26	121	80	90	109
500-206895-12	W-211014-RA-27	122	84	97	108
500-206895-13	W-211014-RA-28	122	85	90	108
500-206895-14	W-211014-RA-29	121	84	96	109
500-206895-15	Trip Blank	120	84	96	107
500-206895-16	W-211014-RA-30	119	88	98	104
LCS 500-625079/5	Lab Control Sample	112	91	84	106
MB 500-625079/7	Method Blank	120	83	94	106

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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		NBZ (36-120)	FBP (34-110)	TPHL (40-145)
500-206895-1	W-211013-RA-16	85	71	172 ^c X
500-206895-2	W-211014-RA-17	45	45	86 ^c
500-206895-3	W-211014-RA-18	96	85	229 ^c X
500-206895-3 MS	W-211014-RA-18	74	68	141
500-206895-3 MSD	W-211014-RA-18	72	77	136
500-206895-4	W-211014-RA-19	61	36	128 ^c
500-206895-5	W-211014-RA-20	79	47	205 ^c X
500-206895-6	W-211014-RA-21	78	44	211 ^c X
500-206895-7	W-211014-RA-22	84	98	183 ^c X
500-206895-8	W-211014-RA-23	68	83	155 ^c X
500-206895-9	W-211014-RA-24	76	91	164 ^c X
500-206895-10	W-211014-RA-25	78	91	183 ^c X
500-206895-11	W-211014-RA-26	72	55	194 ^c X
500-206895-12	W-211014-RA-27	73	82	172 ^c X
500-206895-13	W-211014-RA-28	76	50	208 ^c X
500-206895-14	W-211014-RA-29	75	91	199 ^c X
500-206895-16	W-211014-RA-30	79	94	185 ^c X

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Surrogate Summary

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

Job ID: 500-206895-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	NBZ (36-120)	FBP (34-110)	TPHL (40-145)
LCS 500-624257/2-A	Lab Control Sample	92	93	160 X
MB 500-624257/1-A	Method Blank	94 *	104 *	184 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)

Lab Sample ID	Client Sample ID	TFE1 (60-140)
500-206895-1	W-211013-RA-16	103
500-206895-2	W-211014-RA-17	104
500-206895-3	W-211014-RA-18	102
500-206895-3 MS	W-211014-RA-18	98
500-206895-3 MSD	W-211014-RA-18	97
500-206895-4	W-211014-RA-19	104
500-206895-5	W-211014-RA-20	103
500-206895-6	W-211014-RA-21	104
500-206895-8	W-211014-RA-23	107
500-206895-9	W-211014-RA-24	105
500-206895-11	W-211014-RA-26	102
500-206895-12	W-211014-RA-27	103
500-206895-13	W-211014-RA-28	104
500-206895-14	W-211014-RA-29	106
500-206895-16	W-211014-RA-30	106
LCS 240-509132/33	Lab Control Sample	104
LCS 240-509577/4	Lab Control Sample	102
MB 240-509132/32	Method Blank	110
MB 240-509577/3	Method Blank	108

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	DCPAA2 (25-130)
500-206895-1	W-211013-RA-16	0 D
500-206895-3	W-211014-RA-18	0 D
500-206895-3 MS	W-211014-RA-18	0 D
500-206895-3 MSD	W-211014-RA-18	0 D
500-206895-4	W-211014-RA-19	0 D
500-206895-5	W-211014-RA-20	0 D
500-206895-6	W-211014-RA-21	0 D
500-206895-7	W-211014-RA-22	81
500-206895-8	W-211014-RA-23	99

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Surrogate Summary

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

Job ID: 500-206895-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA2 (25-130)
500-206895-9	W-211014-RA-24	82
500-206895-10	W-211014-RA-25	82
500-206895-11	W-211014-RA-26	0 D
500-206895-12	W-211014-RA-27	98
500-206895-13	W-211014-RA-28	0 D
500-206895-14	W-211014-RA-29	71
500-206895-16	W-211014-RA-30	71
LCS 500-624497/2-A	Lab Control Sample	83
LCS 500-624765/2-A	Lab Control Sample	94
MB 500-624497/1-A	Method Blank	85
MB 500-624765/1-A	Method Blank	92

Surrogate Legend

DCPAA = DCAA

Method: 8151A - Herbicides (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (25-130)
500-206895-2	W-211014-RA-17	64
LCS 500-624765/2-A	Lab Control Sample	63
MB 500-624765/1-A	Method Blank	68

Surrogate Legend

DCPAA = DCAA

QC Sample Results

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

Job ID: 500-206895-1

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

Lab Sample ID: MB 500-625079/7
Matrix: Water
Analysis Batch: 625079

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

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	<0.15		0.50	0.15	ug/L			10/24/21 13:43	1
Toluene	<0.15		0.50	0.15	ug/L			10/24/21 13:43	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/24/21 13:43	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/24/21 13:43	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	120		75 - 126		10/24/21 13:43	1
Toluene-d8 (Surr)	83		75 - 120		10/24/21 13:43	1
4-Bromofluorobenzene (Surr)	94		72 - 124		10/24/21 13:43	1
Dibromofluoromethane	106		75 - 120		10/24/21 13:43	1

Lab Sample ID: LCS 500-625079/5
Matrix: Water
Analysis Batch: 625079

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

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Benzene	50.0	55.0		ug/L		110	70 - 120
Toluene	50.0	47.9		ug/L		96	70 - 125
Ethylbenzene	50.0	49.9		ug/L		100	70 - 123
Xylenes, Total	100	112		ug/L		112	70 - 125

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	112		75 - 126
Toluene-d8 (Surr)	91		75 - 120
4-Bromofluorobenzene (Surr)	84		72 - 124
Dibromofluoromethane	106		75 - 120

Lab Sample ID: 500-206895-3 MS
Matrix: Water
Analysis Batch: 625079

Client Sample ID: W-211014-RA-18
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits
				Result	Qualifier				
Benzene	<0.15		50.0	57.7		ug/L		115	70 - 120
Toluene	0.23	J	50.0	50.3		ug/L		100	70 - 125
Ethylbenzene	0.48	J	50.0	53.3		ug/L		106	70 - 123
Xylenes, Total	3.1		100	119		ug/L		116	70 - 125

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	117		75 - 126
Toluene-d8 (Surr)	88		75 - 120
4-Bromofluorobenzene (Surr)	87		72 - 124
Dibromofluoromethane	106		75 - 120

QC Sample Results

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

Job ID: 500-206895-1

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

Lab Sample ID: 500-206895-3 MSD
Matrix: Water
Analysis Batch: 625079

Client Sample ID: W-211014-RA-18
Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Benzene	<0.15		50.0	54.1		ug/L		108	70 - 120	6	20
Toluene	0.23	J	50.0	45.5		ug/L		91	70 - 125	10	20
Ethylbenzene	0.48	J	50.0	49.8		ug/L		99	70 - 123	7	20
Xylenes, Total	3.1		100	112		ug/L		109	70 - 125	6	20
MSD MSD											
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	117		75 - 126								
Toluene-d8 (Surr)	87		75 - 120								
4-Bromofluorobenzene (Surr)	87		72 - 124								
Dibromofluoromethane	108		75 - 120								

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

Lab Sample ID: MB 500-624257/1-A
Matrix: Water
Analysis Batch: 625708

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 624257

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Naphthalene	<0.25	*	0.80	0.25	ug/L		10/19/21 08:55	10/27/21 12:48	1
MB MB									
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
Nitrobenzene-d5 (Surr)	94	*	36 - 120			10/19/21 08:55	10/27/21 12:48	1	
2-Fluorobiphenyl (Surr)	104	*	34 - 110			10/19/21 08:55	10/27/21 12:48	1	
Terphenyl-d14 (Surr)	184	X*	40 - 145			10/19/21 08:55	10/27/21 12:48	1	

Lab Sample ID: LCS 500-624257/2-A
Matrix: Water
Analysis Batch: 625708

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 624257

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec.
		Result	Qualifier				Limits
Naphthalene	32.0	26.3		ug/L		82	36 - 110
LCS LCS							
Surrogate	%Recovery	Qualifier	Limits				
Nitrobenzene-d5 (Surr)	92		36 - 120				
2-Fluorobiphenyl (Surr)	93		34 - 110				
Terphenyl-d14 (Surr)	160	X	40 - 145				

Lab Sample ID: 500-206895-3 MS
Matrix: Water
Analysis Batch: 625708

Client Sample ID: W-211014-RA-18
Prep Type: Total/NA
Prep Batch: 624257

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				Limits
Naphthalene	2.6	F2	30.7	21.1		ug/L		60	36 - 110
MS MS									
Surrogate	%Recovery	Qualifier	Limits						
Nitrobenzene-d5 (Surr)	74		36 - 120						
2-Fluorobiphenyl (Surr)	68		34 - 110						

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QC Sample Results

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

Job ID: 500-206895-1

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

Lab Sample ID: 500-206895-3 MS
Matrix: Water
Analysis Batch: 625708

Client Sample ID: W-211014-RA-18
Prep Type: Total/NA
Prep Batch: 624257

Surrogate	%Recovery	MS MS Qualifier	Limits
Terphenyl-d14 (Surr)	141		40 - 145

Lab Sample ID: 500-206895-3 MSD
Matrix: Water
Analysis Batch: 625708

Client Sample ID: W-211014-RA-18
Prep Type: Total/NA
Prep Batch: 624257

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec. RPD			
				Result	Qualifier				Limits	RPD	Limit	
Naphthalene	2.6	F2	29.5	16.8	F2	ug/L		48	36 - 110	23	20	
Surrogate	%Recovery	MSD MSD Qualifier	Limits									
Nitrobenzene-d5 (Surr)	72		36 - 120									
2-Fluorobiphenyl (Surr)	77		34 - 110									
Terphenyl-d14 (Surr)	136		40 - 145									

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 240-509132/32
Matrix: Water
Analysis Batch: 509132

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			10/20/21 22:58	1	
Surrogate	%Recovery	MB MB Qualifier	Limits	Prepared Analyzed Dil Fac						
1,1,1-Trifluoroethane	110		60 - 140	10/20/21 22:58 1						

Lab Sample ID: LCS 240-509132/33
Matrix: Water
Analysis Batch: 509132

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

Analyte	Spike Added	LCS LCS Result Qualifier	Unit	D	%Rec	%Rec. Limits			
						Limits			
Methane	284	271	ug/L		95	80 - 120			
Surrogate	%Recovery	LCS LCS Qualifier	Limits						
1,1,1-Trifluoroethane	104		60 - 140						

Lab Sample ID: MB 240-509577/3
Matrix: Water
Analysis Batch: 509577

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			10/23/21 09:51	1	
Surrogate	%Recovery	MB MB Qualifier	Limits	Prepared Analyzed Dil Fac						
1,1,1-Trifluoroethane	108		60 - 140	10/23/21 09:51 1						

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QC Sample Results

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

Job ID: 500-206895-1

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

Lab Sample ID: LCS 240-509577/4
Matrix: Water
Analysis Batch: 509577

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		104	80 - 120
Surrogate	%Recovery	LCS Qualifier	Limits				
1,1,1-Trifluoroethane	102		60 - 140				

Lab Sample ID: 500-206895-3 MS
Matrix: Water
Analysis Batch: 509577

Client Sample ID: W-211014-RA-18
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane	0.20	J	284	290		ug/L		102	50 - 150
Surrogate	%Recovery	MS Qualifier	Limits						
1,1,1-Trifluoroethane	98		60 - 140						

Lab Sample ID: 500-206895-3 MSD
Matrix: Water
Analysis Batch: 509577

Client Sample ID: W-211014-RA-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	0.20	J	284	291		ug/L		102	50 - 150	0	30
Surrogate	%Recovery	MSD Qualifier	Limits								
1,1,1-Trifluoroethane	97		60 - 140								

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 500-624497/1-A
Matrix: Water
Analysis Batch: 624838

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 624497

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.14		0.10	0.14	ug/L		10/20/21 10:07	10/22/21 08:42	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	85		25 - 130				10/20/21 10:07	10/22/21 08:42	1

Lab Sample ID: LCS 500-624497/2-A
Matrix: Water
Analysis Batch: 624838

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 624497

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Pentachlorophenol	2.50	1.70		ug/L		68	40 - 122
Surrogate	%Recovery	LCS Qualifier	Limits				
DCAA	83		25 - 130				

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QC Sample Results

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

Job ID: 500-206895-1

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

Lab Sample ID: MB 500-624765/1-A
Matrix: Water
Analysis Batch: 625000

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 624765

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac	
	Result	Qualifier								
Pentachlorophenol	<0.14		0.10	0.14	ug/L		10/21/21 13:06	10/22/21 19:06	1	
Surrogate	%Recovery	Qualifier	Limits							
DCAA	68		25 - 130							
							Prepared	Analyzed	Dil Fac	
							10/21/21 13:06	10/22/21 19:06	1	

Lab Sample ID: MB 500-624765/1-A
Matrix: Water
Analysis Batch: 625439

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 624765

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac	
	Result	Qualifier								
Pentachlorophenol	<0.14		0.10	0.14	ug/L		10/21/21 13:06	10/26/21 14:22	1	
Surrogate	%Recovery	Qualifier	Limits							
DCAA	92		25 - 130							
							Prepared	Analyzed	Dil Fac	
							10/21/21 13:06	10/26/21 14:22	1	

Lab Sample ID: LCS 500-624765/2-A
Matrix: Water
Analysis Batch: 625000

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 624765

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
								Pentachlorophenol
Surrogate	%Recovery	Qualifier	Limits					
DCAA	63		25 - 130					

Lab Sample ID: LCS 500-624765/2-A
Matrix: Water
Analysis Batch: 625439

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 624765

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
								Pentachlorophenol
Surrogate	%Recovery	Qualifier	Limits					
DCAA	94		25 - 130					

Lab Sample ID: 500-206895-3 MS
Matrix: Water
Analysis Batch: 625439

Client Sample ID: W-211014-RA-18
Prep Type: Total/NA
Prep Batch: 624765

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
	Pentachlorophenol	1200			2.41				
Surrogate	%Recovery	Qualifier	Limits						
DCAA	0	D	25 - 130						

QC Sample Results

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

Job ID: 500-206895-1

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

Lab Sample ID: 500-206895-3 MSD
Matrix: Water
Analysis Batch: 625439

Client Sample ID: W-211014-RA-18
Prep Type: Total/NA
Prep Batch: 624765

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.		RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD		
Pentachlorophenol	1200		2.41	<140	4	ug/L		0	40 - 122	NC		20
Surrogate	MSD	MSD										
DCAA	0	D		25 - 130								

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 500-624718/1-A
Matrix: Water
Analysis Batch: 624927

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 624718

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	<0.23		1.0	0.23	ug/L		10/21/21 09:52	10/21/21 19:47	1
Copper	<0.50		2.0	0.50	ug/L		10/21/21 09:52	10/21/21 19:47	1
Iron	<46.7		100	46.7	ug/L		10/21/21 09:52	10/21/21 19:47	1
Manganese	<0.79		2.5	0.79	ug/L		10/21/21 09:52	10/21/21 19:47	1
Zinc	<6.9		20.0	6.9	ug/L		10/21/21 09:52	10/21/21 19:47	1

Lab Sample ID: LCS 500-624718/2-A
Matrix: Water
Analysis Batch: 624927

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 624718

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	
							Limits	RPD
Arsenic	100	100.3		ug/L		100	80 - 120	
Copper	250	258.8		ug/L		104	80 - 120	
Iron	1000	1041		ug/L		104	80 - 120	
Manganese	500	513.5		ug/L		103	80 - 120	
Zinc	500	518.6		ug/L		104	80 - 120	

Lab Sample ID: 500-206895-3 MS
Matrix: Water
Analysis Batch: 624927

Client Sample ID: W-211014-RA-18
Prep Type: Dissolved
Prep Batch: 624718

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD
Arsenic	0.75	J	100	103.0		ug/L		102	75 - 125	
Copper	1.7	J	250	260.4		ug/L		103	75 - 125	
Iron	<46.7		1000	1025		ug/L		103	75 - 125	
Manganese	238	F1 F2	500	737.4		ug/L		100	75 - 125	
Zinc	<6.9		500	518.0		ug/L		104	75 - 125	

Lab Sample ID: 500-206895-3 MSD
Matrix: Water
Analysis Batch: 624927

Client Sample ID: W-211014-RA-18
Prep Type: Dissolved
Prep Batch: 624718

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.		RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD		
Arsenic	0.75	J	100	102.0		ug/L		101	75 - 125	1	20	
Copper	1.7	J	250	259.7		ug/L		103	75 - 125	0	20	
Iron	<46.7		1000	1037		ug/L		104	75 - 125	1	20	
Manganese	238	F1 F2	500	514.2	F1 F2	ug/L		55	75 - 125	36	20	

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QC Sample Results

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

Job ID: 500-206895-1

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

Lab Sample ID: 500-206895-3 MSD
Matrix: Water
Analysis Batch: 624927

Client Sample ID: W-211014-RA-18
Prep Type: Dissolved
Prep Batch: 624718

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Zinc	<6.9		500	517.0		ug/L		103	75 - 125	0	20

Lab Sample ID: 500-206895-3 DU
Matrix: Water
Analysis Batch: 624927

Client Sample ID: W-211014-RA-18
Prep Type: Dissolved
Prep Batch: 624718

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	0.75	J	0.736	J	ug/L		1	20
Copper	1.7	J	1.71	J	ug/L		0.2	20
Iron	<46.7		<46.7		ug/L		NC	20
Manganese	238	F1 F2	242.8		ug/L		2	20
Zinc	<6.9		<6.9		ug/L		NC	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 500-623755/59
Matrix: Water
Analysis Batch: 623755

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			10/15/21 23:36	1

Lab Sample ID: MB 500-623755/6
Matrix: Water
Analysis Batch: 623755

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			10/15/21 11:19	1
Nitrate as N	<0.068		0.20	0.068	mg/L			10/15/21 11:19	1
Sulfate	<0.095		0.20	0.095	mg/L			10/15/21 11:19	1

Lab Sample ID: LCS 500-623755/60
Matrix: Water
Analysis Batch: 623755

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	1.34	*	mg/L		67	90 - 110

Lab Sample ID: LCS 500-623755/7
Matrix: Water
Analysis Batch: 623755

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	3.27		mg/L		109	90 - 110
Nitrate as N	2.00	1.98		mg/L		99	90 - 110
Sulfate	5.00	4.93		mg/L		99	90 - 110

QC Sample Results

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

Job ID: 500-206895-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 500-206895-2 MS
Matrix: Water
Analysis Batch: 623755

Client Sample ID: W-211014-RA-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	0.63		1.00	1.63		mg/L		100	80 - 120
Nitrate as N	0.48		1.00	1.46		mg/L		99	80 - 120
Sulfate	4.3		2.50	6.74		mg/L		99	80 - 120

Lab Sample ID: 500-206895-2 MSD
Matrix: Water
Analysis Batch: 623755

Client Sample ID: W-211014-RA-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	0.63		1.00	1.65		mg/L		102	80 - 120	1	20
Nitrate as N	0.48		1.00	1.49		mg/L		102	80 - 120	2	20
Sulfate	4.3		2.50	6.83		mg/L		102	80 - 120	1	20

Lab Sample ID: 500-206895-3 MS
Matrix: Water
Analysis Batch: 623755

Client Sample ID: W-211014-RA-18
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.30		1.00	1.29		mg/L		100	80 - 120

Lab Sample ID: 500-206895-3 MSD
Matrix: Water
Analysis Batch: 623755

Client Sample ID: W-211014-RA-18
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	0.30		1.00	1.31		mg/L		101	80 - 120	1	20

Lab Sample ID: MB 500-624164/3
Matrix: Water
Analysis Batch: 624164

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			10/19/21 10:17	1
Nitrate as N	<0.068		0.20	0.068	mg/L			10/19/21 10:17	1
Sulfate	<0.095		0.20	0.095	mg/L			10/19/21 10:17	1

Lab Sample ID: LCS 500-624164/4
Matrix: Water
Analysis Batch: 624164

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	3.30		mg/L		110	90 - 110
Nitrate as N	2.00	2.10		mg/L		105	90 - 110
Sulfate	5.00	5.04		mg/L		101	90 - 110

QC Sample Results

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

Job ID: 500-206895-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 500-624955/35
Matrix: Water
Analysis Batch: 624955

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			10/22/21 15:44	1
Sulfate	<0.095		0.20	0.095	mg/L			10/22/21 15:44	1

Lab Sample ID: LCS 500-624955/36
Matrix: Water
Analysis Batch: 624955

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	3.26		mg/L		109	90 - 110
Sulfate	5.00	4.99		mg/L		100	90 - 110

Lab Sample ID: 500-206895-3 MS
Matrix: Water
Analysis Batch: 624955

Client Sample ID: W-211014-RA-18
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	8.4	F1	10.0	17.73		mg/L		93	80 - 120
Sulfate	15.2	F1	25.0	36.93		mg/L		87	80 - 120

Lab Sample ID: 500-206895-3 MSD
Matrix: Water
Analysis Batch: 624955

Client Sample ID: W-211014-RA-18
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Chloride	8.4	F1	10.0	17.96		mg/L		96	80 - 120	1	20
Sulfate	15.2	F1	25.0	37.64		mg/L		90	80 - 120	2	20

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

Lab Sample ID: MB 500-625722/7
Matrix: Water
Analysis Batch: 625722

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			10/26/21 20:42	1

Lab Sample ID: LCS 500-625722/8
Matrix: Water
Analysis Batch: 625722

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	10.97		mg/L		110	86 - 116

Lab Sample ID: 500-206895-3 MS
Matrix: Water
Analysis Batch: 625722

Client Sample ID: W-211014-RA-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	12.3		10.0	21.61		mg/L		94	75 - 125

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QC Sample Results

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

Job ID: 500-206895-1

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

Lab Sample ID: 500-206895-3 MSD
Matrix: Water
Analysis Batch: 625722

Client Sample ID: W-211014-RA-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	12.3		10.0	21.49		mg/L		92	75 - 125	1	20

Lab Sample ID: MB 500-625979/7
Matrix: Water
Analysis Batch: 625979

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			10/27/21 15:44	1

Lab Sample ID: LCS 500-625979/8
Matrix: Water
Analysis Batch: 625979

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	10.88		mg/L		109	86 - 116

Lab Sample ID: 500-206895-12 MS
Matrix: Water
Analysis Batch: 625979

Client Sample ID: W-211014-RA-27
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	2.8		10.0	13.60		mg/L		108	75 - 125

Lab Sample ID: 500-206895-12 MSD
Matrix: Water
Analysis Batch: 625979

Client Sample ID: W-211014-RA-27
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	2.8		10.0	13.68		mg/L		109	75 - 125	1	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-625766/28
Matrix: Water
Analysis Batch: 625766

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			10/27/21 13:28	1

Lab Sample ID: MB 500-625766/3
Matrix: Water
Analysis Batch: 625766

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			10/27/21 10:25	1

Eurofins TestAmerica, Chicago

QC Sample Results

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

Job ID: 500-206895-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCS 500-625766/29
Matrix: Water
Analysis Batch: 625766

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	100	105.4		mg/L		105	90 - 110

Lab Sample ID: LCS 500-625766/4
Matrix: Water
Analysis Batch: 625766

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	100	105.3		mg/L		105	90 - 110

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

Lab Chronicle

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

Job ID: 500-206895-1

Client Sample ID: W-211013-RA-16

Lab Sample ID: 500-206895-1

Date Collected: 10/13/21 13:46

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625079	10/24/21 14:58	STW	TAL CHI
Total/NA	Prep	3510C			624257	10/19/21 08:55	FRG	TAL CHI
Total/NA	Analysis	8270D		1	625708	10/27/21 13:35	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	509577	10/23/21 12:42	BPM	TAL CAN
Total/NA	Prep	8151A			624497	10/20/21 15:53	DAK	TAL CHI
Total/NA	Analysis	8151A		1000	624838	10/22/21 09:59	JBK	TAL CHI
Dissolved	Prep	3005A			624718	10/21/21 09:52	BDE	TAL CHI
Dissolved	Analysis	6020A		1	624927	10/21/21 19:54	FXG	TAL CHI
Total/NA	Prep	3010A			624264	10/19/21 09:23	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	625225	10/25/21 09:43	DAJ	TAL CHI
Total/NA	Analysis	300.0		1	624164	10/19/21 15:49	PSP	TAL CHI
Total/NA	Analysis	300.0		5	624164	10/19/21 16:03	PSP	TAL CHI
Total/NA	Analysis	9060A		1	625722	10/27/21 01:47	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	625766	10/27/21 12:36	SMO	TAL CHI

Client Sample ID: W-211014-RA-17

Lab Sample ID: 500-206895-2

Date Collected: 10/14/21 09:09

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625079	10/24/21 15:23	STW	TAL CHI
Total/NA	Prep	3510C			624257	10/19/21 08:55	FRG	TAL CHI
Total/NA	Analysis	8270D		1	625708	10/27/21 13:59	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	509132	10/21/21 04:43	JBN	TAL CAN
Total/NA	Prep	8151A			624765	10/21/21 13:06	DAK	TAL CHI
Total/NA	Analysis	8151A		1	625000	10/22/21 19:44	JBK	TAL CHI
Dissolved	Prep	3005A			624718	10/21/21 09:52	BDE	TAL CHI
Dissolved	Analysis	6020A		1	624927	10/21/21 19:58	FXG	TAL CHI
Total/NA	Prep	3010A			624264	10/19/21 09:23	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	625225	10/25/21 09:43	DAJ	TAL CHI
Total/NA	Analysis	300.0		1	623755	10/15/21 14:55	EAT	TAL CHI
Total/NA	Analysis	9060A		1	625722	10/27/21 02:10	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	625766	10/27/21 12:42	SMO	TAL CHI

Client Sample ID: W-211014-RA-18

Lab Sample ID: 500-206895-3

Date Collected: 10/14/21 09:35

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625079	10/24/21 15:49	STW	TAL CHI
Total/NA	Prep	3510C			624257	10/19/21 08:55	FRG	TAL CHI
Total/NA	Analysis	8270D		1	625708	10/27/21 20:15	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	509577	10/23/21 12:59	BPM	TAL CAN

Eurofins TestAmerica, Chicago

Lab Chronicle

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-18

Lab Sample ID: 500-206895-3

Date Collected: 10/14/21 09:35

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			624765	10/21/21 13:06	DAK	TAL CHI
Total/NA	Analysis	8151A		1000	625439	10/26/21 16:37	JBK	TAL CHI
Dissolved	Prep	3005A			624718	10/21/21 09:52	BDE	TAL CHI
Dissolved	Analysis	6020A		1	624927	10/21/21 20:01	FXG	TAL CHI
Total/NA	Prep	3010A			624264	10/19/21 09:23	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	625225	10/25/21 09:43	DAJ	TAL CHI
Total/NA	Analysis	300.0		1	623755	10/15/21 15:08	EAT	TAL CHI
Total/NA	Analysis	300.0		5	624955	10/22/21 23:21	EAT	TAL CHI
Total/NA	Analysis	9060A		1	625722	10/27/21 02:33	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	625766	10/27/21 12:49	SMO	TAL CHI

Client Sample ID: W-211014-RA-19

Lab Sample ID: 500-206895-4

Date Collected: 10/14/21 10:24

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625079	10/24/21 16:13	STW	TAL CHI
Total/NA	Prep	3510C			624257	10/19/21 08:55	FRG	TAL CHI
Total/NA	Analysis	8270D		1	625708	10/27/21 15:32	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	509577	10/23/21 13:50	BPM	TAL CAN
Total/NA	Prep	8151A			624765	10/21/21 13:06	DAK	TAL CHI
Total/NA	Analysis	8151A		1000	625439	10/26/21 18:14	JBK	TAL CHI
Dissolved	Prep	3005A			624718	10/21/21 09:52	BDE	TAL CHI
Dissolved	Analysis	6020A		1	624927	10/21/21 20:18	FXG	TAL CHI
Total/NA	Prep	3010A			624264	10/19/21 09:23	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	625225	10/25/21 09:43	DAJ	TAL CHI
Total/NA	Analysis	300.0		1	623755	10/15/21 15:21	EAT	TAL CHI
Total/NA	Analysis	300.0		5	623755	10/15/21 22:33	EAT	TAL CHI
Total/NA	Analysis	9060A		1	625722	10/27/21 03:16	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	625653	10/27/21 08:04	SMO	TAL CHI

Client Sample ID: W-211014-RA-20

Lab Sample ID: 500-206895-5

Date Collected: 10/14/21 10:20

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625079	10/24/21 16:38	STW	TAL CHI
Total/NA	Prep	3510C			624257	10/19/21 08:55	FRG	TAL CHI
Total/NA	Analysis	8270D		1	625708	10/27/21 15:56	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	509132	10/21/21 05:00	JBN	TAL CAN
Total/NA	Prep	8151A			624765	10/21/21 13:06	DAK	TAL CHI
Total/NA	Analysis	8151A		2000	625439	10/26/21 18:33	JBK	TAL CHI
Dissolved	Prep	3005A			624718	10/21/21 09:52	BDE	TAL CHI
Dissolved	Analysis	6020A		1	624927	10/21/21 20:29	FXG	TAL CHI

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Lab Chronicle

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-20

Lab Sample ID: 500-206895-5

Date Collected: 10/14/21 10:20

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			624718	10/21/21 09:52	BDE	TAL CHI
Dissolved	Analysis	6020A		5	625440	10/25/21 14:36	FXG	TAL CHI
Total/NA	Prep	3010A			624264	10/19/21 09:23	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	625225	10/25/21 09:43	DAJ	TAL CHI
Total/NA	Analysis	300.0		1	623755	10/15/21 15:33	EAT	TAL CHI
Total/NA	Analysis	300.0		5	623755	10/15/21 22:45	EAT	TAL CHI
Total/NA	Analysis	9060A		8	625722	10/27/21 03:39	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	625653	10/27/21 08:04	SMO	TAL CHI

Client Sample ID: W-211014-RA-21

Lab Sample ID: 500-206895-6

Date Collected: 10/14/21 10:20

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625079	10/24/21 17:04	STW	TAL CHI
Total/NA	Prep	3510C			624257	10/19/21 08:55	FRG	TAL CHI
Total/NA	Analysis	8270D		1	625708	10/27/21 16:20	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	509577	10/23/21 14:24	BPM	TAL CAN
Total/NA	Prep	8151A			624765	10/21/21 13:06	DAK	TAL CHI
Total/NA	Analysis	8151A		2000	625439	10/26/21 19:12	JBj	TAL CHI
Dissolved	Prep	3005A			624718	10/21/21 09:52	BDE	TAL CHI
Dissolved	Analysis	6020A		1	624927	10/21/21 20:32	FXG	TAL CHI
Dissolved	Prep	3005A			624718	10/21/21 09:52	BDE	TAL CHI
Dissolved	Analysis	6020A		5	625440	10/25/21 14:39	FXG	TAL CHI
Total/NA	Prep	3010A			624264	10/19/21 09:23	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	625225	10/25/21 09:43	DAJ	TAL CHI
Total/NA	Analysis	300.0		1	623755	10/15/21 15:46	EAT	TAL CHI
Total/NA	Analysis	300.0		5	623755	10/15/21 22:58	EAT	TAL CHI
Total/NA	Analysis	9060A		8	625979	10/27/21 16:17	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	625653	10/27/21 08:04	SMO	TAL CHI

Client Sample ID: W-211014-RA-22

Lab Sample ID: 500-206895-7

Date Collected: 10/14/21 11:00

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625079	10/24/21 17:28	STW	TAL CHI
Total/NA	Prep	3510C			624257	10/19/21 08:55	FRG	TAL CHI
Total/NA	Analysis	8270D		1	625708	10/27/21 16:43	SS	TAL CHI
Total/NA	Prep	8151A			624765	10/21/21 13:06	DAK	TAL CHI
Total/NA	Analysis	8151A		1	625439	10/26/21 19:51	JBj	TAL CHI
Dissolved	Prep	3005A			624718	10/21/21 09:52	BDE	TAL CHI
Dissolved	Analysis	6020A		1	624927	10/21/21 20:35	FXG	TAL CHI

Lab Chronicle

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-23

Lab Sample ID: 500-206895-8

Date Collected: 10/14/21 11:30

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625079	10/24/21 17:54	STW	TAL CHI
Total/NA	Prep	3510C			624257	10/19/21 08:55	FRG	TAL CHI
Total/NA	Analysis	8270D		1	625708	10/27/21 17:07	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	509577	10/23/21 14:41	BPM	TAL CAN
Total/NA	Prep	8151A			624765	10/21/21 13:06	DAK	TAL CHI
Total/NA	Analysis	8151A		1	625439	10/26/21 20:10	JBj	TAL CHI
Dissolved	Prep	3005A			624718	10/21/21 09:52	BDE	TAL CHI
Dissolved	Analysis	6020A		1	624927	10/21/21 20:39	FXG	TAL CHI
Total/NA	Prep	3010A			624264	10/19/21 09:23	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	625225	10/25/21 09:43	DAJ	TAL CHI
Total/NA	Analysis	300.0		1	623755	10/15/21 15:59	EAT	TAL CHI
Total/NA	Analysis	9060A		1	625979	10/27/21 16:40	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	625766	10/27/21 12:56	SMO	TAL CHI

Client Sample ID: W-211014-RA-24

Lab Sample ID: 500-206895-9

Date Collected: 10/14/21 11:50

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625079	10/24/21 18:19	STW	TAL CHI
Total/NA	Prep	3510C			624257	10/19/21 08:55	FRG	TAL CHI
Total/NA	Analysis	8270D		1	625708	10/27/21 17:30	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	509577	10/23/21 14:58	BPM	TAL CAN
Total/NA	Prep	8151A			624765	10/21/21 13:06	DAK	TAL CHI
Total/NA	Analysis	8151A		1	625439	10/26/21 20:29	JBj	TAL CHI
Dissolved	Prep	3005A			624718	10/21/21 09:52	BDE	TAL CHI
Dissolved	Analysis	6020A		1	624927	10/21/21 20:42	FXG	TAL CHI
Total/NA	Prep	3010A			624264	10/19/21 09:23	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	625225	10/25/21 09:43	DAJ	TAL CHI
Total/NA	Analysis	300.0		1	623755	10/15/21 16:12	EAT	TAL CHI
Total/NA	Analysis	9060A		1	625979	10/27/21 17:03	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	625766	10/27/21 13:07	SMO	TAL CHI

Client Sample ID: W-211014-RA-25

Lab Sample ID: 500-206895-10

Date Collected: 10/14/21 10:30

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625079	10/24/21 18:44	STW	TAL CHI
Total/NA	Prep	3510C			624257	10/19/21 08:55	FRG	TAL CHI
Total/NA	Analysis	8270D		1	625708	10/27/21 17:54	SS	TAL CHI
Total/NA	Prep	8151A			624765	10/21/21 13:06	DAK	TAL CHI
Total/NA	Analysis	8151A		1	625439	10/26/21 20:48	JBj	TAL CHI

Eurofins TestAmerica, Chicago

Lab Chronicle

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-25

Lab Sample ID: 500-206895-10

Date Collected: 10/14/21 10:30

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			624718	10/21/21 09:52	BDE	TAL CHI
Dissolved	Analysis	6020A		1	624927	10/21/21 20:46	FXG	TAL CHI

Client Sample ID: W-211014-RA-26

Lab Sample ID: 500-206895-11

Date Collected: 10/14/21 10:47

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625079	10/24/21 19:09	STW	TAL CHI
Total/NA	Prep	3510C			624257	10/19/21 08:55	FRG	TAL CHI
Total/NA	Analysis	8270D		1	625708	10/27/21 18:17	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	509577	10/23/21 15:15	BPM	TAL CAN
Total/NA	Prep	8151A			624497	10/20/21 10:07	DAK	TAL CHI
Total/NA	Analysis	8151A		5000	624838	10/22/21 10:38	JBj	TAL CHI
Dissolved	Prep	3005A			624718	10/21/21 09:52	BDE	TAL CHI
Dissolved	Analysis	6020A		1	624927	10/21/21 20:49	FXG	TAL CHI
Dissolved	Prep	3005A			624718	10/21/21 09:52	BDE	TAL CHI
Dissolved	Analysis	6020A		5	624927	10/21/21 20:53	FXG	TAL CHI
Total/NA	Prep	3010A			624264	10/19/21 09:23	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	625225	10/25/21 09:43	DAJ	TAL CHI
Total/NA	Analysis	300.0		1	623755	10/15/21 16:50	EAT	TAL CHI
Total/NA	Analysis	300.0		20	623755	10/15/21 23:11	EAT	TAL CHI
Total/NA	Analysis	9060A		4	625979	10/27/21 17:34	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	625653	10/27/21 08:04	SMO	TAL CHI

Client Sample ID: W-211014-RA-27

Lab Sample ID: 500-206895-12

Date Collected: 10/14/21 11:45

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625079	10/24/21 19:33	STW	TAL CHI
Total/NA	Prep	3510C			624257	10/19/21 08:55	FRG	TAL CHI
Total/NA	Analysis	8270D		1	625708	10/27/21 18:41	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	509132	10/21/21 05:17	JBN	TAL CAN
Total/NA	Prep	8151A			624497	10/20/21 10:07	DAK	TAL CHI
Total/NA	Analysis	8151A		10	624838	10/22/21 10:57	JBj	TAL CHI
Dissolved	Prep	3005A			624718	10/21/21 09:52	BDE	TAL CHI
Dissolved	Analysis	6020A		1	624927	10/21/21 20:56	FXG	TAL CHI
Total/NA	Prep	3010A			624264	10/19/21 09:23	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	625225	10/25/21 09:43	DAJ	TAL CHI
Total/NA	Analysis	300.0		5	623755	10/15/21 23:23	EAT	TAL CHI
Total/NA	Analysis	9060A		1	625979	10/27/21 17:57	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	625766	10/27/21 13:15	SMO	TAL CHI

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Lab Chronicle

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-28

Lab Sample ID: 500-206895-13

Date Collected: 10/14/21 12:10

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625079	10/24/21 19:58	STW	TAL CHI
Total/NA	Prep	3510C			624257	10/19/21 08:55	FRG	TAL CHI
Total/NA	Analysis	8270D		1	625708	10/27/21 19:04	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	509577	10/23/21 15:32	BPM	TAL CAN
Total/NA	Prep	8151A			624497	10/20/21 10:07	DAK	TAL CHI
Total/NA	Analysis	8151A		10000	624838	10/22/21 11:55	JBK	TAL CHI
Dissolved	Prep	3005A			624718	10/21/21 09:52	BDE	TAL CHI
Dissolved	Analysis	6020A		1	624927	10/21/21 21:00	FXG	TAL CHI
Total/NA	Prep	3010A			624264	10/19/21 09:23	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	625225	10/25/21 09:43	DAJ	TAL CHI
Total/NA	Analysis	300.0		5	624164	10/19/21 14:09	PSP	TAL CHI
Total/NA	Analysis	300.0		1	623755	10/16/21 01:30	EAT	TAL CHI
Total/NA	Analysis	9060A		4	625979	10/27/21 18:40	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	625653	10/27/21 08:04	SMO	TAL CHI

Client Sample ID: W-211014-RA-29

Lab Sample ID: 500-206895-14

Date Collected: 10/14/21 12:52

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625079	10/24/21 20:23	STW	TAL CHI
Total/NA	Prep	3510C			624257	10/19/21 08:55	FRG	TAL CHI
Total/NA	Analysis	8270D		1	625708	10/27/21 19:28	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	509577	10/23/21 15:49	BPM	TAL CAN
Total/NA	Prep	8151A			624497	10/20/21 10:07	DAK	TAL CHI
Total/NA	Analysis	8151A		1	624838	10/22/21 12:14	JBK	TAL CHI
Dissolved	Prep	3005A			624718	10/21/21 09:52	BDE	TAL CHI
Dissolved	Analysis	6020A		1	624927	10/21/21 21:10	FXG	TAL CHI
Total/NA	Prep	3010A			624264	10/19/21 09:23	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	625225	10/25/21 09:43	DAJ	TAL CHI
Total/NA	Analysis	300.0		1	624164	10/19/21 14:23	PSP	TAL CHI
Total/NA	Analysis	300.0		5	624164	10/19/21 14:36	PSP	TAL CHI
Total/NA	Analysis	300.0		1	623755	10/16/21 01:43	EAT	TAL CHI
Total/NA	Analysis	9060A		1	625979	10/27/21 19:23	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	625766	10/27/21 13:22	SMO	TAL CHI

Client Sample ID: Trip Blank

Lab Sample ID: 500-206895-15

Date Collected: 10/14/21 00:00

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625079	10/24/21 14:08	STW	TAL CHI

Lab Chronicle

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

Job ID: 500-206895-1

Client Sample ID: W-211014-RA-30

Lab Sample ID: 500-206895-16

Date Collected: 10/14/21 00:00

Matrix: Water

Date Received: 10/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	625079	10/24/21 20:48	STW	TAL CHI
Total/NA	Prep	3510C			624257	10/19/21 08:55	FRG	TAL CHI
Total/NA	Analysis	8270D		1	625708	10/27/21 19:51	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	509577	10/23/21 16:06	BPM	TAL CAN
Total/NA	Prep	8151A			624497	10/20/21 10:07	DAK	TAL CHI
Total/NA	Analysis	8151A		1	624838	10/22/21 12:34	JBK	TAL CHI
Dissolved	Prep	3005A			624718	10/21/21 09:52	BDE	TAL CHI
Dissolved	Analysis	6020A		1	624927	10/21/21 21:13	FXG	TAL CHI
Total/NA	Prep	3010A			624264	10/19/21 09:23	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	625225	10/25/21 09:43	DAJ	TAL CHI
Total/NA	Analysis	300.0		5	624164	10/19/21 15:08	PSP	TAL CHI
Total/NA	Analysis	300.0		1	623755	10/16/21 01:56	EAT	TAL CHI
Total/NA	Analysis	9060A		1	625979	10/27/21 19:54	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	625766	10/27/21 13:42	SMO	TAL CHI

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

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



Accreditation/Certification Summary

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

Job ID: 500-206895-1

Laboratory: Eurofins TestAmerica, Chicago

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

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-22

Laboratory: Eurofins TestAmerica, 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	02-23-22
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-22
Georgia	State	4062	02-23-22
Illinois	NELAP	200004	07-31-22
Iowa	State	421	06-01-23
Kansas	NELAP	E-10336	04-30-22
Kentucky (UST)	State	112225	02-23-22
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-22
New York	NELAP	10975	03-31-22
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-22
Texas	NELAP	T104704517-18-10	08-31-22
Virginia	NELAP	11570	09-14-22
Washington	State	C971	01-12-22
West Virginia DEP	State	210	12-31-21

Chain of Custody Record

547C34



Environment Testing
TestAmerica

TAL-8210

Address _____

Regulatory Program: DW NPDES RCRA Other _____

Client Contact		Project Manager <i>Tim Reece</i>		Site Contact		Date		COC No			
Company Name <i>GHD</i>		Tel/Email <i>Tim.Reece@GHD.com</i>		Lab Contact		Carrier		_____ of _____ COCs			
Address <i>900 Long Lake Rd</i>		Analysis Turnaround Time									
City/State/Zip <i>St Paul MN 55112</i>		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS		Filtered Sample (Y/N) Perform MS / MSD (Y/N) <i>PCP</i> <i>BTEX</i> <i>Naphthalene</i> <i>Dissolved metals</i> <i>Al, Fe, Ar, Si, Mn</i> <i>Total Metals</i> <i>Hexanes</i> <i>Toluene</i> <i>Methane</i>						Sampler	
Phone <i>651 639 0913</i>		TAT if different from Below _____								For Lab Use Only	
Fax _____		<input type="checkbox"/> 2 weeks								Walk-in Client	
Project Name <i>Pentawood</i>		<input type="checkbox"/> 1 week								Lab Sampling	
Site <i>11222 418-01-09</i>		<input type="checkbox"/> 2 days								Job / SDG No	
P O # _____		<input type="checkbox"/> 1 day		_____		Sample Specific Notes					
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.					
<i>13</i>	<i>W-211014-RA-28</i>	<i>10/14</i>	<i>1210</i>	<i>G</i>	<i>GW</i>	<i>15</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>dissolved metals</i>	
<i>14</i>	<i>W-211014-RA-29</i>	<i>10/14</i>	<i>1252</i>	<i>G</i>	<i>GW</i>	<i>15</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>were field filtered</i>	
<i>15</i>	<i>Traps blank</i>					<i>1</i>		<i>X</i>			
<i>16</i>	<i>W-211014-RA-30</i>	<i>10/14</i>					<i>X</i>	<i>X</i>	<i>X</i>	<i>Added by RA</i>	
Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other _____											
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample <input type="checkbox"/> Non Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown					Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months						
Special Instructions/QC Requirements & Comments: _____											
Custody Seals Intact <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No _____		Cooler Temp (°C) Obs'd _____ Corr'd _____		Therm ID No _____					
Relinquished by <i>[Signature]</i>		Company <i>GHD</i>		Date/Time <i>10/14/21 1500</i>		Received by _____		Company _____		Date/Time _____	
Relinquished by _____		Company _____		Date/Time _____		Received by _____		Company _____		Date/Time _____	
Relinquished by _____		Company _____		Date/Time _____		Received in Laboratory by <i>[Signature]</i>		Company <i>BDA-CRI</i>		Date/Time <i>10/15/21 1015</i>	



Chain of Custody Record

547039



Environment Testing
TestAmerica

TAL-8210

Address: _____

Regulatory Program: DW NPDES RCRA Other: _____

Client Contact		Project Manager: <u>Tim Ree</u>		Site Contact:		Date		COC No	
Company Name: <u>GHD</u>		Tel/Email: <u>Tim.Ree@GHD.com</u>		Lab Contact:		Carrier:		1 of 2 COCs	
Address: <u>900 Long Lake Rd</u>		Analysis Turnaround Time		Filtered Sample (Y/N) Perform MS / MSD (Y/N) <u>PCP</u> <u>STEX</u> <u>Naphthalene</u> <u>Dissolved Metals</u> <u>Alk: Anions</u> <u>Total Metals/Hardness</u> <u>TUC</u> <u>methane</u>		500-206895 COC		Sampler	
City/State/Zip: <u>St Paul MN 55112</u>		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below _____						For Lab Use Only	
Phone: <u>6516390913</u>		<input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day						Walk-in Client <input type="checkbox"/>	
Project Name: <u>Dentalwood 2</u>								Lab Sampling <input type="checkbox"/>	
Site: <u>11222418-01-04</u>								Job / SDG No <u>500-206895</u>	
P O #								Sample Specific Notes	
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)		
1 W-211013-PA-16	10/10/21	1346	G	6W	15		X X X X X X X X	Dissolved metals were field filtered.	
2 W-211014-PA-17	01/14/21	1156	G		15		X X X X X X X X		
3 W-211014-PA-18		6	935		45	Y	X X X X X X X X		
4 W-211014-PA-19			1024		15		X X X X X X X X		
5 W-211014-PA-20			1020		15		X X X X X X X X		
6 W-211014-PA-21			1020		15		X X X X X X X X		
7 W-211014-PA-22			1100		8		X X X X		
8 W-211014-PA-23			1130		15		X X X X X X X X		
9 W-211014-PA-24			1150		15		X X X X X X X X		
10 W-211014-PA-25			1030		8		X X X X		
11 W-211014-PA-26			1047		15		X X X X X X X X		
12 W-211014-PA-27			1145		15		X X X X X X 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						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)			
<input type="checkbox"/> Non-Hazardous <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown						<input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months			
Special Instructions/QC Requirements & Comments:						2,0,2,4,1,3,4,1,4,5-4,4,1,4,20,3,2,1,5,9,4			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No		Cooler Temp (°C) Obs'd _____ Corr'd _____		Therm ID No. _____			
Relinquished by:		Company: <u>GHD</u>		Date/Time: <u>10/14/21 1500</u>		Received by:		Company: _____ Date/Time: _____	
Relinquished by:		Company:		Date/Time:		Received by:		Company: _____ Date/Time: _____	
Relinquished by:		Company:		Date/Time:		Received in Laboratory by:		Company: <u>ETA-CHE</u> Date/Time: <u>10/15/21 1015</u>	

Chain of Custody Record

547C34



Environment Testing
TestAmerica

TAL-8210

Address _____

Regulatory Program: DW NPDES RCRA Other: _____

Client Contact		Project Manager: <u>Tim Rea</u>		Site Contact:		Date:		COC No			
Company Name <u>GHD</u>		Tel/Email: <u>Tim.Rea@GHD.com</u>		Lab Contact:		Carrier:		____ of ____ COCs			
Address <u>900 Long Lake Rd</u>		Analysis Turnaround Time									
City/State/Zip <u>St Paul MN 55112</u>		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS		Filtered Sample (Y/N) Perform MS / MSD (Y/N) <u>PCP</u> <u>BTEX</u> <u>Naphthalene</u> <u>Dissolved metals</u> <u>Asbestos</u> <u>Total metals</u> <u>Hexane</u> <u>Methane</u>						Sampler	
Phone <u>651 639 0913</u>		TAT if different from Below _____								For Lab Use Only	
Fax _____		<input type="checkbox"/> 2 weeks								Walk-in Client	
Project Name <u>Pentawood</u>		<input type="checkbox"/> 1 week								Lab Sampling	
Site <u>11222 418-01-04</u>		<input type="checkbox"/> 2 days								Job / SDG No	
P O # _____		<input type="checkbox"/> 1 day		<u>500-206895</u>							
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sample Specific Notes				
<u>13 W-211014-RA-28</u>		<u>10/14</u>	<u>1210</u>	<u>G</u>	<u>GW</u>	<u>15</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>dissolved metals</u>	
<u>14 W-211014-RA-29</u>		<u>10/14</u>	<u>1252</u>	<u>G</u>	<u>GW</u>	<u>15</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>were field filtered</u>	
<u>15 Trip blank</u>						<u>1</u>					
<u>16 W-211014-RA-30</u>		<u>10/14</u>					<u>X</u>	<u>X</u>	<u>X</u>	<u>Added by RA</u>	

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other _____

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

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 <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No _____		Cooler Temp (°C) Obs'd _____ Corr'd _____		Therm ID No. _____	
Relinquished by: <u>[Signature]</u>	Company: <u>GHD</u>	Date/Time: <u>10/14/21 1500</u>	Received by:	Company:	Date/Time:		
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:		
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: <u>[Signature]</u>	Company: <u>BTA-CAL</u>	Date/Time: <u>10/15/21</u>	<u>10/15</u>	

143 MSD [Signature] BTA-CAL 10/18/21 1020
Page 79 of 83 10/29/2021



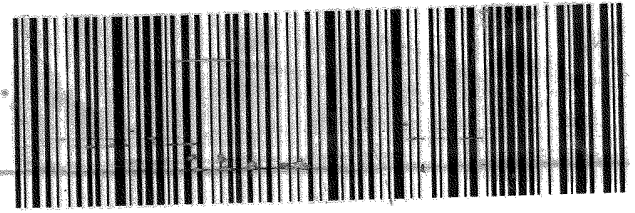
500-206895 Wayb

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PRIORITY OVERNIGHT

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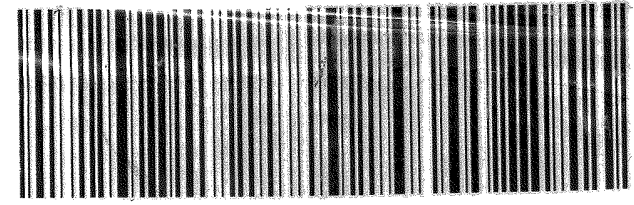
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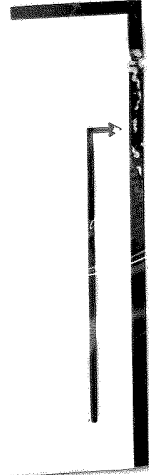
PRIORITY OVERNIGHT

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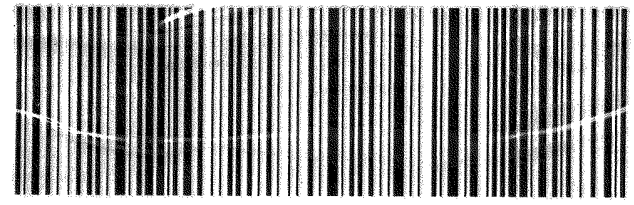


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PRIORITY OVERNIGHT

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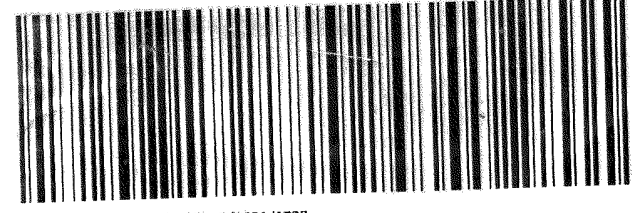


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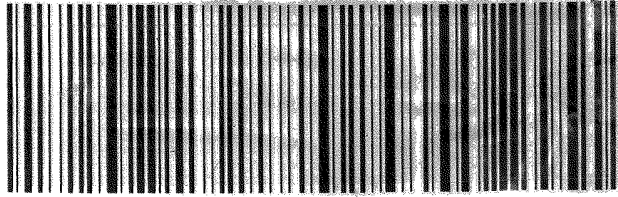
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PRIORITY OVERNIGHT

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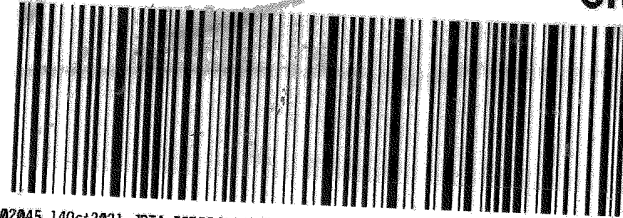
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Do Not Lift Using This Tag

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PRIORITY OVERNIGHT

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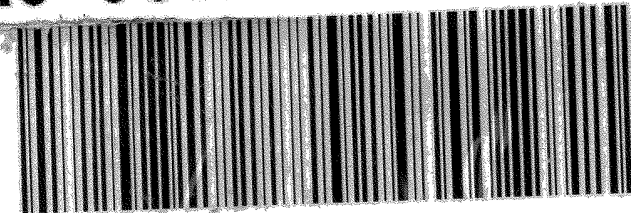
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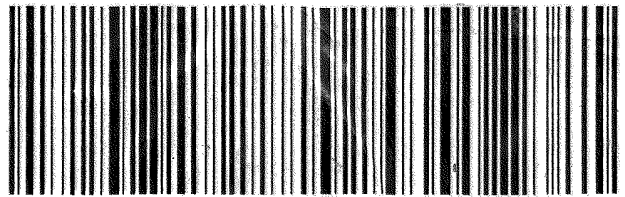
Keep This Tag

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PRIORITY OVERNIGHT

AC JOTA

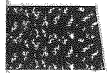
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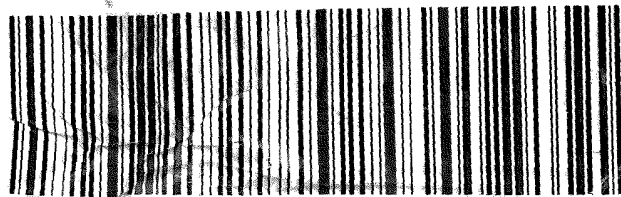


500-206895 Wayb

~~TRK# 0166 8556 5372~~ **PRIORITY OVERNIGHT**

AC JOTA

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Eurofins TestAmerica, Chicago

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

Chain of Custody Record



2.2/2.3

Client Information (Sub Contract Lab)				Sampler: Wright, Richard		Lab PM: Wright, Richard		Carrier Tracking No(s):		COC No: 500-153406.1	
Client Contact: Shipping/Receiving				Phone:		E-Mail: Richard.Wright@Eurofinset.com		State of Origin: Wisconsin		Page: 1 of 2	
Company: TestAmerica Laboratories, Inc.				Accreditations Required (See note): State Program - Wisconsin		Job #:		500-206895-1			
Address: 4101 Shuffel Street NW		Due Date Requested: 10/28/2021		Analysis Requested						Preservation Codes:	
City: North Canton		TAT Requested (days):									
State, Zip: OH, 44720		PO #:		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		RSK_175/ (MOD) Methane		Total Number of containers	
Phone: 330-497-9396(Tel) 330-497-0772(Fax)		WO #:									
Email:		Project #:		Special Instructions/Note:		Rsk		Other:		A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify)	
Project Name: Penta Wood 11222418		SSOW#:									
Site:		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=Trace, A=Air)		Preservation Code:	
Sample Identification - Client ID (Lab ID)											
W-211013-RA-16 (500-206895-1)		10/13/21		13:46 Central		Water		Water		3	
W-211014-RA-17 (500-206895-2)		10/14/21		09:09 Central		Water		Water		3	
W-211014-RA-18 (500-206895-3)		10/14/21		09:35 Central		Water		Water		3	
W-211014-RA-18 (500-206895-3MS)		10/14/21		09:35 Central		MS		Water		3	
W-211014-RA-18 (500-206895-3MSD)		10/14/21		09:35 Central		MSD		Water		3	
W-211014-RA-19 (500-206895-4)		10/14/21		10:24 Central		Water		Water		3	
W-211014-RA-20 (500-206895-5)		10/14/21		10:20 Central		Water		Water		3	
W-211014-RA-21 (500-206895-6)		10/14/21		10:20 Central		Water		Water		3	
W-211014-RA-23 (500-206895-8)		10/14/21		11:30 Central		Water		Water		3	
<p>Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica 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 TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.</p>											
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)					
Unconfirmed						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> 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: <i>Shirley Smith</i>		Date/Time: 10/15/21 1600		Company: BACHTE		Received by: <i>Jenny Hagen</i>		Date/Time: 10-16-21 1030		Company: BTA	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:							

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10/29/2021



Eurofins TestAmerica, Chicago

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

Chain of Custody Record

2.2/2.3



Client Information (Sub Contract Lab)		Sampler:		Lab PM: Wright, Richard		Carrier Tracking No(s):		COC No: 500-153406.2			
Client Contact: Shipping/Receiving		Phone:		E-Mail: Richard.Wright@Eurofinset.com		State of Origin: Wisconsin		Page: Page 2 of 2			
Company: TestAmerica Laboratories, Inc.				Accreditations Required (See note): State Program - Wisconsin				Job #: 500-206895-1			
Address: 4101 Shuffel Street NW.		Due Date Requested: 10/28/2021		Analysis Requested				Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify)			
City: North Canton		TAT Requested (days):									
State, Zip: OH, 44720		PO #:		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		RSK_175 (MOD) Methane		Total Number of containers	
Phone: 330-497-9396(Tel) 330-497-0772(Fax)		WO #:									
Email:		Project #: 50013796		Special Instructions/Note: RSK							
Project Name: Penta Wood 11222418		SSOW#:									
Site:											
Sample Identification - Client ID (Lab ID)		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (Water, Solid, Overstabil, BT-Tissue, AAM)		Preservation Code:	
W-211014-RA-24 (500-206895-9)		10/14/21		11:50 Central		Water		Water		3	
W-211014-RA-26 (500-206895-11)		10/14/21		10:47 Central		Water		Water		3	
W-211014-RA-27 (500-206895-12)		10/14/21		11:45 Central		Water		Water		3	
W-211014-RA-28 (500-206895-13)		10/14/21		12:10 Central		Water		Water		3	
W-211014-RA-29 (500-206895-14)		10/14/21		12:52 Central		Water		Water		3	
W-211014-RA-30 (500-206895-16)		10/14/21		Central		Water		Water		3	
<p>Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica 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 TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.</p>											
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)					
Unconfirmed						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> 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: <i>Shirley Scott</i>		Date/Time: 10/15/21 1600		Company: <i>ETA-CAT</i>		Received by: <i>Tammy Boyer</i>		Date/Time: 10-16-21 1030		Company: <i>ETA</i>	
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:					

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10/29/2021



Eurofins TestAmerica Canton Sample Receipt Form/Narrative

Login # : _____

Canton Facility

Client ETA Site Name _____

Cooler unpacked by: Nancy Rojas

Cooler Received on 10-16-21 Opened on 10-16-21

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica 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-14 (CF +0.1 °C) Observed Cooler Temp. 22 °C Corrected Cooler Temp. 2-3 °C
IR GUN #IR-15 (CF +0.2°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
-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA
-Were tamper/custody seals intact and uncompromised? Yes No NA

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

3. Shippers' packing slip attached to the cooler(s)? Yes No

4. Did custody papers accompany the sample(s)? Yes No

5. Were the custody papers relinquished & signed in the appropriate place? Yes No

6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No

7. Did all bottles arrive in good condition (Unbroken)? Yes No

8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No

9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No

10. Were correct bottle(s) used for the test(s) indicated? Yes No

11. Sufficient quantity received to perform indicated analyses? Yes No

12. Are these work share samples and all listed on the COC? Yes No

If yes, Questions 13-17 have been checked at the originating laboratory.

13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC157842

14. Were VOAs on the COC? Yes No

15. Were air bubbles >6 mm in any VOA vials?  ← Larger than this. Yes No NA

16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No

17. Was a LL Hg or Me Hg trip blank present? _____ Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page

Samples processed by: _____

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-206895-1

Login Number: 206895

List Source: Eurofins TestAmerica, Chicago

List Number: 1

Creator: Scott, Sherri L

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	
Cooler Temperature is acceptable.	False	
Cooler Temperature is recorded.	True	2.0,2.4,1.3,4.1,4.4,1.4,2.0,3.2,1.5,9.4
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)	False	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	False	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Appendix C

**Residential Well and Onsite Supply Well
Water Sample Data Validation**

Technical Memorandum

January 20, 2022

To	Tim Ree, GHD		
Copy to	Ryan Aamot, GHD		
From	Grant Anderson/mg/2	Tel	+1 612-524-6836
Subject	Analytical Results and Reduced Data Validation Residential Water Sampling Event Penta Wood Products Superfund Site Siren, Wisconsin October 2021	Project no.	11222418

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 2021. Samples were submitted to Eurofins TestAmerica (TestAmerica) 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 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 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 (LCS) 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 relative percent difference (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.

7.1 Trip Blank Sample Analysis

To evaluate contamination from sample collection, transportation, storage, and analytical activities, one trip blank was submitted to the laboratory for BTEX analysis. All results were non-detect for the compounds of interest.

7.2 Field Blank Sample Analysis

To assess ambient conditions at the site and cleanliness of sample containers, a field blank was submitted for analysis, as identified in Table 1. All results were non-detect for the analytes of interest.

7.3 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 Site
Siren, Wisconsin
October 2021**

Analysis/Parameters

Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters			Comments
					BTEX	Naphthalene	Pentachlorophenol	
W-211013-RA-100	RW05	water	10/13/2021	09:55	X	X	X	
W-211013-RA-101	RW01	water	10/13/2021	10:30	X	X	X	MS/MSD
W-211013-RA-102	RW02	water	10/13/2021	10:45	X	X	X	
W-211013-RA-103	RW02	water	10/13/2021	10:45	X	X	X	Duplicate (RA-102)
W-211013-RA-104	RW03	water	10/13/2021	11:15	X	X	X	
W-211013-RA-105	RW03	water	10/13/2021	11:00	X	X	X	Field Blank
W-211013-RA-106	RW04	water	10/13/2021	11:30	X	X	X	
W-211013-RA-107	RW06	water	10/13/2021	12:00	X	X	X	
W-211013-RA-108	RW06 SHOP	water	10/13/2021	12:10	X	X	X	
Trip Blank	Lab	water	10/13/2021	00:00	X			Trip Blank

Notes:

MS/MSD - Matrix spike/matrix spike duplicate

BTEX - Benzene, toluene, ethylbenzene, and xylenes (total)

**Validated Analytical Results Summary
Residential Water Sampling Event
Penta Wood Site
Siren, Wisconsin
October 2021**

Location ID:	RW01	RW02	RW02	RW03	RW04	RW05	RW06	RW06 SHOP	
Sample Name:	W-211013-RA-101	W-211013-RA-102	W-211013-RA-103	W-211013-RA-104	W-211013-RA-106	W-211013-RA-100	W-211013-RA-107	W-211013-RA-108	
Sample Date:	10/13/2021	10/13/2021	10/13/2021 Duplicate	10/13/2021	10/13/2021	10/13/2021	10/13/2021	10/13/2021	
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	0.50 U
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	1.0 U
Semivolatile Organic Compounds									
Naphthalene	µg/L	0.76 U	0.76 U	0.81 U	0.89 U	0.75 U	0.77 U	0.78 U	0.81 U
Herbicides									
Pentachlorophenol	µg/L	0.096 U	0.097 U	0.095 U	0.11 U	0.10 U	0.099 U	0.10 U	0.097 U

Note:

U – Not detected at the associated reporting limit

Table 3

**Analytical Methods and Holding Time Criteria
Residential Water Sampling Event
Penta Wood Site
Siren, Wisconsin
October 2021**

Parameter	Method	Matrix	Holding Time	
			Collection to Extraction (Days)	Collection or Extraction to Analysis (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
- CAMU signage is present/visible at all fence gates
- CAMU surface soil condition is satisfactory and does not require erosion/settlement repairs
- Perimeter area fence is satisfactory and does not require repairs
- Perimeter signage is present/visible
- Site access is limited and all perimeter fence locks in working order
- NaOH tank condition is satisfactory with no signs of leaks
- FeSO4 tank condition is satisfactory with no signs of leaks

x	
x	
x	
x	
x	
x	
x	
x	

Verify situations have not and are not occurring

- Removal of the existing barrier or cover
- Replacement with another barrier or cover
- Excavating or grading of the land surface
- Filling on covered or paved areas
- Plowing for agricultural cultivation
- Construction or placement of a building or other structure
- Change in use or occupancy of the property

x	
x	
x	
x	
x	
x	
x	

Inspected By: RA

Date: 10/8/2021



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