



August 26, 2020

Reference No. 003978

Sheri Bianchin
Remedial Project Manager
EPA Region 5
77 West Jackson Blvd.
Chicago, Illinois 60604-3590

Matt Thompson
Hydrogeologist
Wisconsin Department of Natural Resources
1300 W. Clairemont Avenue
Eau Claire, Wisconsin 54701

Dear Ms. Bianchin and Mr. Thompson:

**Re: Documentation of Additional Monitoring Well Sealing and Abandonment
Wausau Water Supply NPL Site
Wausau, Wisconsin**

Four monitoring wells at the Wausau Water Supply NPL Site were sealed and abandoned on July 29, 2020. The abandonments of WC3, WC4, WC5, and IWD were approved by USEPA in their May 19, 2020 email. Two monitoring wells (FVD-5 and R3S) were abandoned on May 27, 2020, as documented in GHD's July 14, 2020 letter to you.

1. Well Abandonment

The abandonment of WC3, WC4, WC5, and IWD was conducted by Cascade Drilling of Schofield, Wisconsin, in accordance with Wisconsin NR 141.25. Abandonment reports were filed with the WDNR on August 10, 2020. Copies of the abandonment forms are provided in Attachment A.

Attachment B presents photographs documenting the sealing and abandonments.

2. Groundwater Sampling

Prior to the sealing and abandonment of the four wells, a groundwater sample was collected for VOC analysis in accordance with the procedures outlined in the existing Site Monitoring Plan. The laboratory report is provided in Attachment C and the results are summarized in Table 1. No VOCs were detected at WC3, WC4, or WC5. Two VOCs, cis-1,2-dichloroethene and trichloroethene (TCE), were detected at IWD. The TCE concentration of 5.2 µg/L slightly exceeded the Site cleanup standard. This is consistent with historical concentrations at IWD.

Please contact me if you need any additional information.

Sincerely,

GHD

Charles Ahrens

CA/md/4

Encl.

Table 1

**Analytical Results - July 29, 2020
Wausau Water Supply NPL Site
Wausau, Wisconsin**

	Cleanup Standard or MCL	Unit	WC3 7/29/2020	WC4 7/29/2020	WC5 7/29/2020	IWD 7/29/2020	Equipment Blank 7/29/2020
Volatile Organic Compounds							
1,1,2-Trichloroethane		µg/L	<0.35	<0.35	<0.35	<0.35	<0.35
1,1-Dichloroethene		µg/L	<0.39	<0.39	<0.39	<0.39	<0.39
Acetone		µg/L	<1.7	<1.7	<1.7	<1.7	<1.7
Benzene	5	µg/L	<0.15	<0.15	<0.15	<0.15	<0.15
Carbon tetrachloride		µg/L	<0.38	<0.38	<0.38	<0.38	<0.38
Chloroform (Trichloromethane)		µg/L	<0.37	<0.37	<0.37	<0.37	<0.37
cis-1,2-Dichloroethene	70	µg/L	<0.41	<0.41	<0.41	4.5	<0.41
Ethylbenzene	700	µg/L	<0.18	<0.18	<0.18	<0.18	<0.18
Methylene chloride		µg/L	<1.6	<1.6	<1.6	<1.6	<1.6
Tetrachloroethene	5	µg/L	<0.37	<0.37	<0.37	<0.37	<0.37
Toluene	1000	µg/L	<0.15	<0.15	<0.15	<0.15	<0.15
Trichloroethene	5	µg/L	<0.16	<0.16	<0.16	5.2	<0.16
Vinyl chloride	2	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20
Xylenes (total)	10,000	µg/L	<0.22	<0.22	<0.22	<0.22	<0.22

Notes:

MCL -EPA Maximum Contaminant Level for Drinking Water

Attachment A

Well Plugging Records

IW-0

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between \$10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

Verification Only of Fill and Seal

Route to DNR Bureau:
 Drinking Water Watershed/Wastewater Remediation/Redevelopment
 Waste Management Other: _____

1. Well Location Information			2. Facility / Owner Information		
County Marathon	WI Unique Well # of Removed Well	Hicap #	Facility Name USEPA Region 5 Chicago	Facility ID (FID or PWS)	

Latitude / Longitude (see instructions) 44.926760 N -89.629999 W	Format Code <input checked="" type="checkbox"/> DD <input type="checkbox"/> DDM	Method Code <input type="checkbox"/> GPS008 <input type="checkbox"/> SCR002 <input checked="" type="checkbox"/> OTH001	License/Permit/Monitoring #
1/4 1/4 SW SW or Gov't Lot #	Section 24	Township 29 N	Range <input checked="" type="checkbox"/> E <input type="checkbox"/> W

Well Street Address 2001 N River Dr.	Well City/Village or Town Wausau	Well ZIP Code 54401	Original Well Owner
Subdivision Name	Lot #	City of Present Owner	State ZIP Code

Reason for Removal from Service	WI Unique Well # of Replacement Well	4. Pump, Liner, Screen, Casing & Sealing Material	
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3. Filled & Sealed Well / Drillhole / Borehole Information	
<input checked="" type="checkbox"/> Monitoring Well <input type="checkbox"/> Water Well <input type="checkbox"/> Borehole / Drillhole	Original Construction Date (mm/dd/yyyy) 07/27/1988 If a Well Construction Report is available, please attach.

Construction Type: <input checked="" type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug <input type="checkbox"/> Other (specify): _____	Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock	<input type="checkbox"/> Pump and piping removed? Yes No <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Liner(s) removed? Yes No <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Liner(s) perforated? Yes No <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Screen removed? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Casing left in place? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Was casing cut off below surface? Yes No <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Did sealing material rise to surface? Yes No <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Did material settle after 24 hours? Yes No <input type="checkbox"/> N/A If yes, was hole retopped? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> If bentonite chips were used, were they hydrated with water from a known safe source? Yes No <input checked="" type="checkbox"/> N/A
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Total Well Depth From Ground Surface (ft.) 137.5	Casing Diameter (in.) 2	Required Method of Placing Sealing Material <input type="checkbox"/> Conductor Pipe-Gravity <input checked="" type="checkbox"/> Conductor Pipe-Pumped <input type="checkbox"/> Screened & Poured (Bentonite Chips) <input type="checkbox"/> Other (Explain): _____
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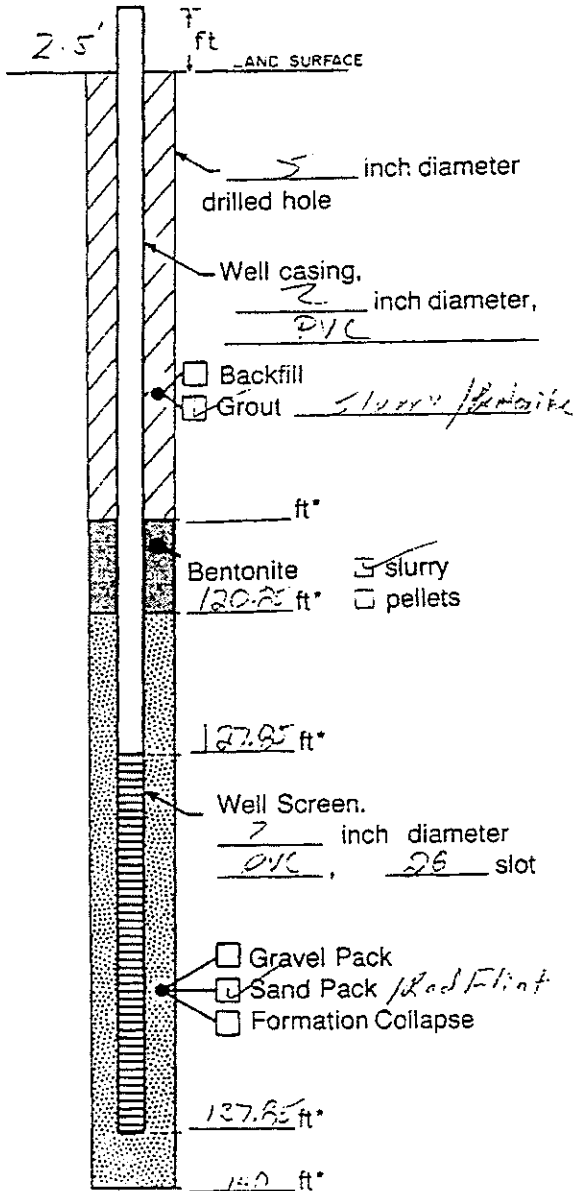
Lower Drillhole Diameter (in.) 6	Casing Depth (ft.)	Sealing Materials <input type="checkbox"/> Neat Cement Grout <input type="checkbox"/> Concrete <input type="checkbox"/> Sand-Cement (Concrete) Grout <input type="checkbox"/> Bentonite Chips
Was well annular space grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	Depth to Water (feet) 1.9'	For Monitoring Wells and Monitoring Well Boreholes Only: <input type="checkbox"/> Bentonite Chips <input checked="" type="checkbox"/> Bentonite - Cement Grout <input type="checkbox"/> Granular Bentonite <input type="checkbox"/> Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole			
Aqua Guard	From (ft.) Surface	To (ft.) 137.5'	No. Yards, Sacks Sealant or Volume (circle one) 25 GAL Mix Ratio or Mud Weight 10.0

6. Comments

7. Supervision of Work			DNR Use Only	
Name of Person or Firm Doing Filling & Sealing Cascade Drilling LP	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy) 07/29/2020	Date Received	Noted By
Street or Route 209 LeMear St.	Telephone Number (320) 632-6552	Comments		
City Little Falls	State MN.	ZIP Code 56345	Signature of Person Doing Work Randy Radtke	Date Signed 7-29-20

WELL CONSTRUCTION LOG
(UNCONSOLIDATED)



Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

Project Wausau Well IWD
Town/City Wausau
County Marathon State WI
Permit No. _____
Land-Surface Elevation TC 3120 = 1192.50
and Datum 3 feet Surveyed
Above River Estimated
Installation Date(s) 7-27-88
Drilling Method Final Tube
Drilling Contractor Layne - Northwest
Drilling Fluid Water & Air

Development Technique(s) and Date(s)

vac lift pump

Fluid Loss During Drilling ? gallons
Water Removed During Development 200 gallons
Static Depth to Water 5.85' feet below M.P.
Pumping Depth to Water _____ feet below M.P.
Pumping Duration 35 min hours
Yield _____ gpm Date _____

Specific Capacity _____ gpm/ft

Well Purpose Monitoring well / Deep well
127.95'

Remarks Back of 190

Prepared by [Signature]

WC-3

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between \$10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

Verification Only of Fill and Seal

Route to DNR Bureau:

Drinking Water Watershed/Wastewater Remediation/Redevelopment

Waste Management Other: _____

1. Well Location Information				2. Facility / Owner Information			
County <i>Marathon</i>	WI Unique Well # of Removed Well	Hicap #		Facility Name <i>Wausau Chemical</i>			
Latitude / Longitude (see instructions) <i>44.972258</i> N <i>-89.630005</i> W	Format Code <input checked="" type="checkbox"/> DD <input type="checkbox"/> DDM	Method Code <input type="checkbox"/> GPS008 <input type="checkbox"/> SCR002 <input checked="" type="checkbox"/> OTH001		Facility ID (FID or PWS)			
1/4 1/4 <i>NW NW</i>	Section <i>25</i>	Township <i>29 N</i>	Range <i>7</i>	License/Permit/Monitoring #			
or Gov't Lot #			<input checked="" type="checkbox"/> E <input type="checkbox"/> W	Original Well Owner			
Well Street Address <i>2001 N. River Ave.</i>				Present Well Owner			
Well (City) Village or Town <i>Wausau</i>				Mailing Address of Present Owner			
Subdivision Name	Lot #			City of Present Owner	State	ZIP Code	

Reason for Removal from Service	WI Unique Well # of Replacement Well	4. Pump, Liner, Screen, Casing & Sealing Material					
		Pump and piping removed?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A		
		Liner(s) removed?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A		
		Liner(s) perforated?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A		
		Screen removed?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A		
		Casing left in place?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A		
		Was casing cut off below surface?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A		
		Did sealing material rise to surface?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A		
		Did material settle after 24 hours?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A		
		If yes, was hole retopped?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A		
		If bentonite chips were used, were they hydrated with water from a known safe source?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A		

3. Filled & Sealed Well / Drillhole / Borehole Information	
<input checked="" type="checkbox"/> Monitoring Well <input type="checkbox"/> Water Well <input type="checkbox"/> Borehole / Drillhole	Original Construction Date (mm/dd/yyyy) <i>03/29/1984</i>
If a Well Construction Report is available, please attach.	
Construction Type: <input checked="" type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug <input type="checkbox"/> Other (specify): _____	
Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock	
Total Well Depth From Ground Surface (ft.) <i>162'</i>	Casing Diameter (in.)
Lower Drillhole Diameter (in.) <i>6"</i>	Casing Depth (ft.)
Was well annular space grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
If yes, to what depth (feet)?	Depth to Water (feet) <i>8.7'</i>

5. Material Used to Fill Well / Drillhole			
<i>Agua Guard</i>	From (ft.) Surface	To (ft.) <i>162'</i>	No. Yards - Sacks Sealant or Volume (circle one) <i>43 GAL.</i>
			Mix Ratio or Mud Weight <i>10.0</i>

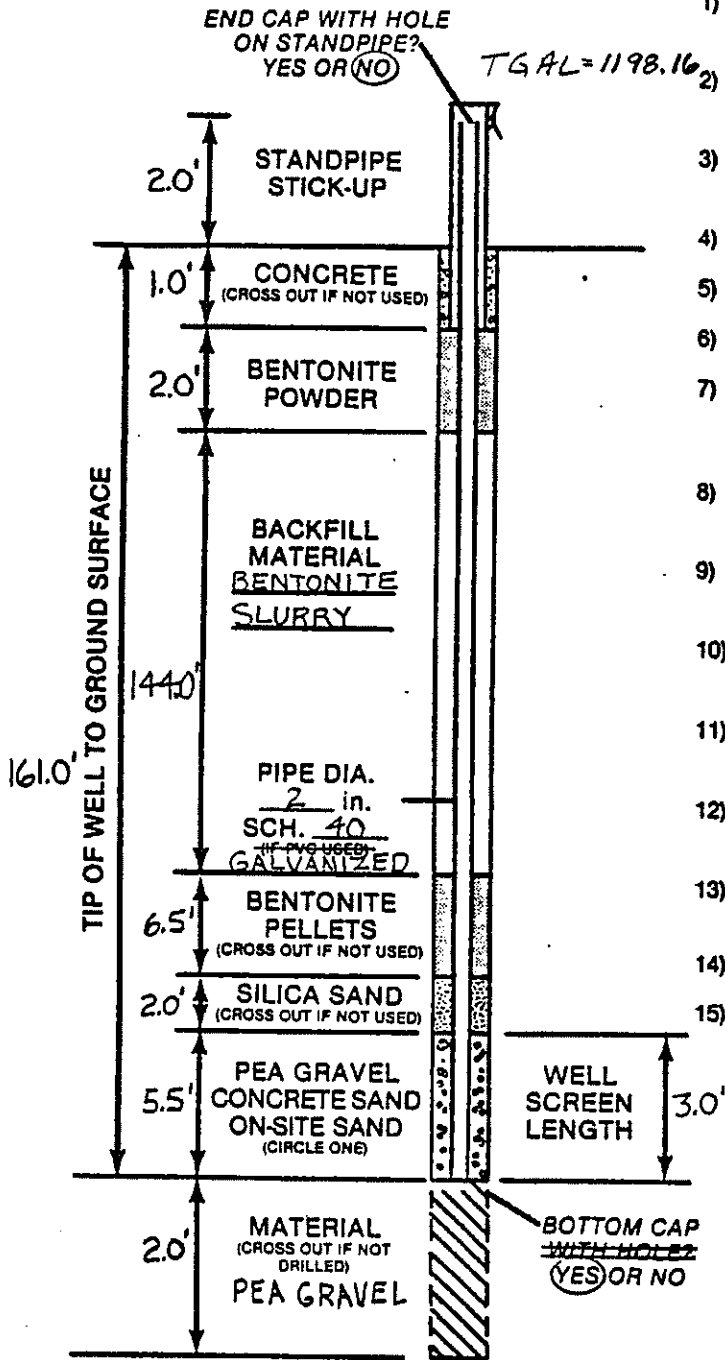
6. Comments

7. Supervision of Work			DNR Use Only	
Name of Person or Firm Doing Filling & Sealing <i>Cascade Drilling & P</i>	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy) <i>07/29/2020</i>	Date Received	Noted By
Street or Route <i>209 LeMieux St.</i>	Telephone Number <i>(320) 632-6552</i>	Comments		
City <i>Little Falls</i>	State <i>MN</i>	ZIP Code <i>56345</i>	Signature of Person Doing Work <i>Randy Realk</i>	Date Signed <i>07/29/2020</i>



STS Consultants Ltd.

FIELD WELL INSTALLATION DIAGRAM



- 1) TYPE OF PIPE?
PVC, GALVANIZED, STAINLESS, OTHER _____
- 2) TYPE OF PIPE JOINTS?
BELLED, COUPLINGS, THREADED, OTHER _____
- 3) TYPE OF WELL SCREEN
PVC, GALVANIZED, STAINLESS, OTHER _____
- 4) SCREEN SIZE .020
- 5) INSTALLED PROTECTOR PIPE W/LOCK? YES OR NO
- 6) WAS SOLVENT USED? YES OR NO
- 7) WAS DRILLING MUD USED?
SOLID AUGER, HOLLOW STEM AUGER,
WATER, REVERT, BENTONITE
- 8) DID STANDPIPE COME UP WHEN CASING WAS PULLED?
YES OR NO
- 9) HOW WAS WELL DEVELOPED?
BAILING, PUMPING, SURGING, COMPRESSED AIR
- 10) TIME SPENT FOR WELL DEVELOPMENT?
5 min., 15 min., 30 min., OTHER 60 MIN
- 11) APPROXIMATE WATER VOLUME REMOVED OR ADDED?
5 gal., 10 gal., 15 gal., OTHER 300 GAL.
5 GPM
- 12) WATER CLARITY BEFORE DEVELOPMENT?
CLEAR, TURBID, OPAQUE
- 13) WATER CLARITY AFTER DEVELOPMENT?
CLEAR, TURBID, OPAQUE
- 14) DID THE WATER SMELL? YES OR NO
- 15) WATER LEVEL SUMMARY

1) DEPTH FROM T. STANDPIPE AFTER DEVELOPMENT?
_____ Ft. or DRY

2) OTHER MEASUREMENTS:

DATE _____, _____ Ft. FROM T, ST. PIPE

DATE _____, _____ Ft. FROM T, ST. PIPE

DATE _____, _____ Ft. FROM T, ST. PIPE

DATE _____, _____ Ft. FROM T, ST. PIPE

Well No. WC3 B-3 DATE INSTALLED 3-29-84-3-30-84 DRILL RIG DR-2

DRILLER EVH DRILL CREW WRZ

JOB/CLIENT WAUSAU CHEMICAL STS JOB No. 12776

WC-4

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between \$10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

Verification Only of Fill and Seal

Route to DNR Bureau:

Drinking Water Watershed/Wastewater Remediation/Redevelopment

Waste Management Other: _____

1. Well Location Information				2. Facility / Owner Information			
County <u>Marathon</u>		WI Unique Well # of Removed Well		Hicap #		Facility Name <u>Wausau Chemical</u>	
Latitude / Longitude (see instructions) <u>44.922595</u> N <u>-89.630732</u> W		Format Code <input checked="" type="checkbox"/> DD <input type="checkbox"/> DDM		Method Code <input type="checkbox"/> GPS008 <input type="checkbox"/> SCR002 <input checked="" type="checkbox"/> OTH001		Facility ID (FID or PWS)	
1/4 1/4 <u>NE NE</u>		Section <u>26</u>		Township <u>29 N</u>		Range <input checked="" type="checkbox"/> E <input type="checkbox"/> W	
or Gov't Lot #		Well Street Address <u>2001 N. River Dr.</u>		Well ZIP Code <u>54401</u>		Mailing Address of Present Owner	
Subdivision Name		Well City/Village or Town <u>Wausau</u>		Lot #		City of Present Owner State ZIP Code	

Reason for Removal from Service		WI Unique Well # of Replacement Well	
3. Filled & Sealed Well / Drillhole / Borehole Information			
<input checked="" type="checkbox"/> Monitoring Well <input type="checkbox"/> Water Well <input type="checkbox"/> Borehole / Drillhole		Original Construction Date (mm/dd/yyyy) <u>09/26/1984</u>	
If a Well Construction Report is available, please attach.			

Construction Type: <input checked="" type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug <input type="checkbox"/> Other (specify): _____		Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock	
Total Well Depth From Ground Surface (ft.) <u>54'</u>		Casing Diameter (in.) <u>2</u>	
Lower Drillhole Diameter (in.) <u>6</u>		Casing Depth (ft.)	
Was well annular space grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown		If yes, to what depth (feet)? Depth to Water (feet) <u>9.1'</u>	

4. Pump, Liner, Screen, Casing & Sealing Material			
Pump and piping removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		Liner(s) removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Liner(s) perforated? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		Screen removed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Casing left in place? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		Was casing cut off below surface? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Did sealing material rise to surface? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		Did material settle after 24 hours? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
If yes, was hole retopped? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		If bentonite chips were used, were they hydrated with water from a known safe source? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Required Method of Placing Sealing Material <input type="checkbox"/> Conductor Pipe-Gravity <input checked="" type="checkbox"/> Conductor Pipe-Pumped <input type="checkbox"/> Screened & Poured (Bentonite Chips) <input type="checkbox"/> Other (Explain): _____			
Sealing Materials <input type="checkbox"/> Neat Cement Grout <input type="checkbox"/> Concrete <input type="checkbox"/> Sand-Cement (Concrete) Grout <input type="checkbox"/> Bentonite Chips			
For Monitoring Wells and Monitoring Well Boreholes Only: <input type="checkbox"/> Bentonite Chips <input checked="" type="checkbox"/> Bentonite - Cement Grout <input type="checkbox"/> Granular Bentonite <input type="checkbox"/> Bentonite - Sand Slurry			

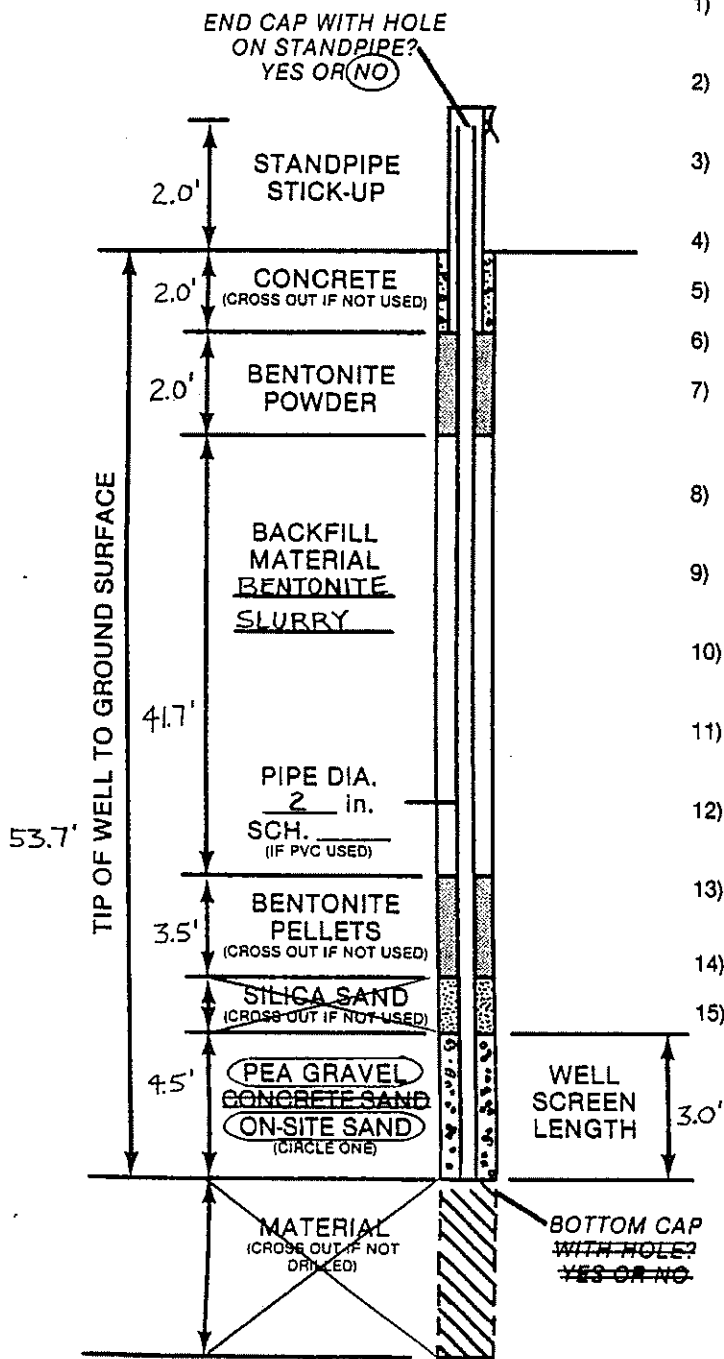
5. Material Used to Fill Well / Drillhole					
<u>Aqua Guard</u>		From (ft.) Surface	To (ft.) <u>54'</u>	No. Yards, Sacks Sealant or Volume (circle one) <u>10 gal.</u>	Mix Ratio or Mud Weight <u>10-0</u>

7. Supervision of Work			DNR Use Only		
Name of Person or Firm Doing Filling & Sealing <u>Cascade Drilling LP</u>		License #	Date of Filling & Sealing or Verification (mm/dd/yyyy) <u>07/29/2020</u>	Date Received	Noted By
Street or Route 1 <u>209 LeMieux St</u>		Telephone Number <u>(320) 632-6552</u>		Comments	
City <u>Little Falls</u>	State <u>MN</u>	ZIP Code <u>56345</u>	Signature of Person Doing Work <u>Randy Redhe</u>		Date Signed <u>7-29-20</u>



STS Consultants Ltd.

FIELD WELL INSTALLATION DIAGRAM



- 1) TYPE OF PIPE?
PVC, GALVANIZED STAINLESS, OTHER _____
- 2) TYPE OF PIPE JOINTS?
BELLED, COUPLINGS THREADED, OTHER _____
- 3) TYPE OF WELL SCREEN
PVC, GALVANIZED STAINLESS, OTHER _____
- 4) SCREEN SIZE 60 GAUZE
- 5) INSTALLED PROTECTOR PIPE W/LOCK? YES OR NO
- 6) WAS SOLVENT USED? YES OR NO
- 7) WAS DRILLING MUD USED? YES
SOLID AUGER, HOLLOW STEM AUGER,
WATER, REVERT, BENTONITE
- 8) DID STANDPIPE COME UP WHEN CASING WAS PULLED?
YES OR NO
- 9) HOW WAS WELL DEVELOPED?
BAILING, PUMPING, SURGING, COMPRESSED AIR
- 10) TIME SPENT FOR WELL DEVELOPMENT?
5 min., 15 min., 30 min., OTHER _____
- 11) APPROXIMATE WATER VOLUME REMOVED OR ADDED?
5 gal., 10 gal., 15 gal., OTHER 210 GAL.
- 12) WATER CLARITY BEFORE DEVELOPMENT?
CLEAR, TURBID, OPAQUE
- 13) WATER CLARITY AFTER DEVELOPMENT?
CLEAR, TURBID, OPAQUE
- 14) DID THE WATER SMELL? YES OR NO
- 15) WATER LEVEL SUMMARY

1) DEPTH FROM T. STANDPIPE AFTER DEVELOPMENT?
11.0 Ft. or DRY

2) OTHER MEASUREMENTS:

DATE _____, _____ Ft. FROM T, ST. PIPE

DATE _____, _____ Ft. FROM T, ST. PIPE

DATE _____, _____ Ft. FROM T, ST. PIPE

DATE _____, _____ Ft. FROM T, ST. PIPE

Well No. W24 B-4 DATE INSTALLED 9-26-84 DRILL RIG DR-2

DRILLER EVH DRILL CREW WRZ

JOB/CLIENT WAUSAU CHEMICAL STS JOB No. 12770-A

WC-5

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

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Verification Only of Fill and Seal

Route to DNR Bureau:

Drinking Water Watershed/Wastewater Remediation/Redevelopment

Waste Management Other: _____

1. Well Location Information **2. Facility / Owner Information**

County Marathon		WI Unique Well # of Removed Well		Hicap #		Facility Name Wausau Chemical	
Latitude / Longitude (see instructions) 44.972946 N -89.629750 W		Format Code <input checked="" type="checkbox"/> DD <input type="checkbox"/> DDM		Method Code <input type="checkbox"/> GPS008 <input type="checkbox"/> SCR002 <input checked="" type="checkbox"/> OTH001		Facility ID (FID or PWS)	
1/4 1/4 NW 1/4 NW or Gov't Lot #		Section 25		Township 29 N		Range <input checked="" type="checkbox"/> E <input type="checkbox"/> W	
Well Street Address 2001 N. River Dr.				Present Well Owner			
Well City/Village or Town Wausau				Mailing Address of Present Owner			
Subdivision Name				Lot #		City of Present Owner	
						State	
						ZIP Code	

3. Filled & Sealed Well / Drillhole / Borehole Information **4. Pump, Liner, Screen, Casing & Sealing Material**

Reason for Removal from Service		WI Unique Well # of Replacement Well		<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
<input checked="" type="checkbox"/> Monitoring Well <input type="checkbox"/> Water Well <input type="checkbox"/> Borehole / Drillhole		Original Construction Date (mm/dd/yyyy) 09/27/1984		<input type="checkbox"/> Conductor Pipe-Gravity <input checked="" type="checkbox"/> Conductor Pipe-Pumped <input type="checkbox"/> Screened & Poured (Bentonite Chips) <input type="checkbox"/> Other (Explain): _____			
Construction Type: <input checked="" type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug <input type="checkbox"/> Other (specify): _____		If a Well Construction Report is available, please attach.		Sealing Materials <input type="checkbox"/> Neat Cement Grout <input type="checkbox"/> Concrete <input type="checkbox"/> Sand-Cement (Concrete) Grout <input type="checkbox"/> Bentonite Chips For Monitoring Wells and Monitoring Well Boreholes Only: <input type="checkbox"/> Bentonite Chips <input checked="" type="checkbox"/> Bentonite - Cement Grout <input type="checkbox"/> Granular Bentonite <input type="checkbox"/> Bentonite - Sand Slurry			
Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock		Total Well Depth From Ground Surface (ft.) 54'		Required Method of Placing Sealing Material <input type="checkbox"/> Neat Cement Grout <input type="checkbox"/> Concrete <input type="checkbox"/> Sand-Cement (Concrete) Grout <input type="checkbox"/> Bentonite Chips			
Lower Drillhole Diameter (in.) 6		Casing Diameter (in.)		From (ft.) To (ft.) No. Yards, Sacks Sealant or Volume (circle one) Mix Ratio or Mud Weight Surface 54' 10 Gal. 10.0			
Casing Depth (ft.)		Was well annular space grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown					
If yes, to what depth (feet)?		Depth to Water (feet) 9'					

5. Material Used to Fill Well / Drillhole

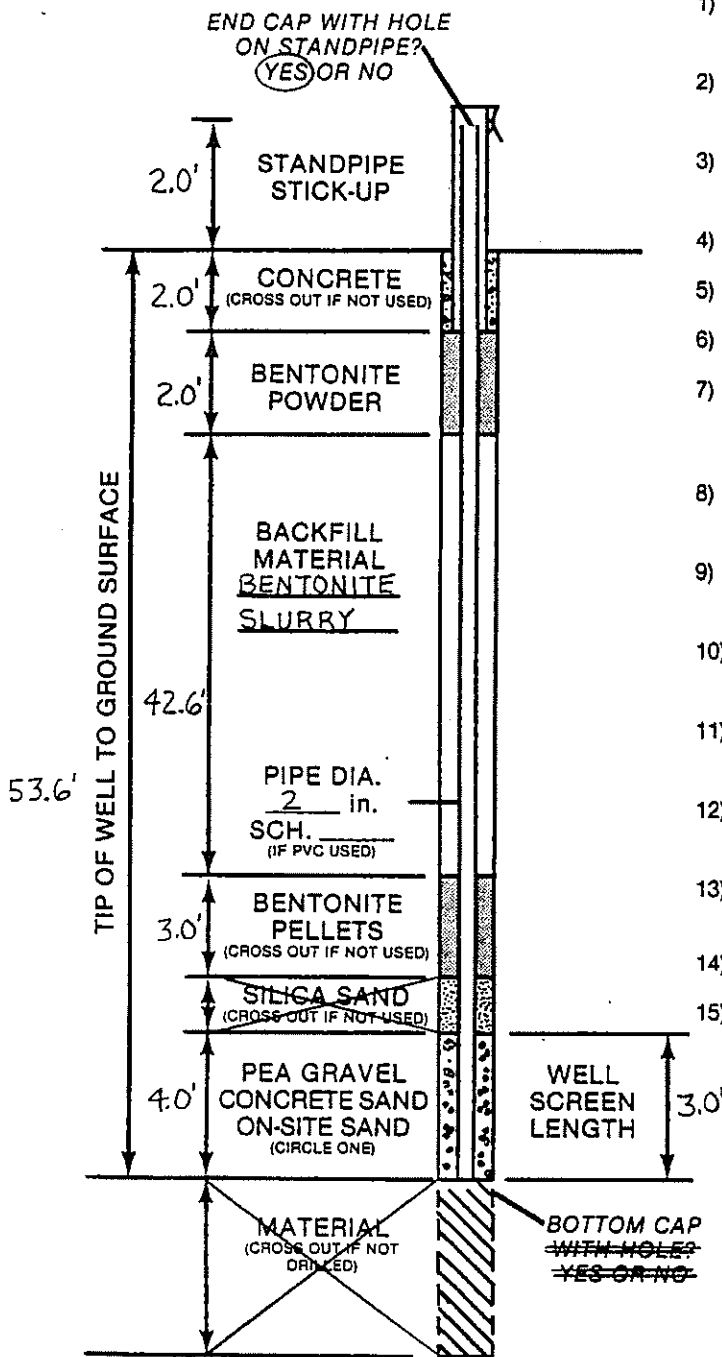
6. Comments

7. Supervision of Work			DNR Use Only		
Name of Person or Firm Doing Filling & Sealing Cascade Drilling LP		License #	Date of Filling & Sealing or Verification (mm/dd/yyyy) 07/29/2020	Date Received	Noted By
Street or Route 209 LeMieux St.		Telephone Number (320) 632-6552		Comments	
City Little Falls	State MN.	ZIP Code 56345	Signature of Person Doing Work Randy Rasche		Date Signed 7-29-20



STS Consultants Ltd.

FIELD WELL INSTALLATION DIAGRAM



- 1) TYPE OF PIPE? PVC, GALVANIZED, STAINLESS, OTHER _____
- 2) TYPE OF PIPE JOINTS? BELLED, COUPLINGS, THREADED, OTHER _____
- 3) TYPE OF WELL SCREEN PVC, GALVANIZED, STAINLESS, OTHER _____
- 4) SCREEN SIZE 60 GAUZE
- 5) INSTALLED PROTECTOR PIPE W/LOCK? YES OR NO
- 6) WAS SOLVENT USED? YES OR NO
- 7) WAS DRILLING MUD USED? YES
SOLID AUGER, HOLLOW STEM AUGER, WATER, REVERT, BENTONITE
- 8) DID STANDPIPE COME UP WHEN CASING WAS PULLED? YES OR NO
- 9) HOW WAS WELL DEVELOPED? BAILING, PUMPING, SURGING, COMPRESSED AIR
- 10) TIME SPENT FOR WELL DEVELOPMENT? 5 min., 15 min., 30 min., OTHER _____
- 11) APPROXIMATE WATER VOLUME REMOVED OR ADDED? 5 gal., 10 gal., 15 gal., OTHER _____
- 12) WATER CLARITY BEFORE DEVELOPMENT? CLEAR, TURBID, OPAQUE
- 13) WATER CLARITY AFTER DEVELOPMENT? CLEAR, TURBID, OPAQUE
- 14) DID THE WATER SMELL? YES OR NO
- 15) WATER LEVEL SUMMARY

1) DEPTH FROM T. STANDPIPE AFTER DEVELOPMENT? _____ Ft. or DRY

2) OTHER MEASUREMENTS:

DATE _____, _____ Ft. FROM T, ST. PIPE

DATE _____, _____ Ft. FROM T, ST. PIPE

DATE _____, _____ Ft. FROM T, ST. PIPE

DATE _____, _____ Ft. FROM T, ST. PIPE

Well No. WLS B-5 DATE INSTALLED 9-27-84 DRILL RIG DR-2

DRILLER EVH DRILL CREW WRZ

JOB/CLIENT WAUSAU CHEMICAL STS JOB No. 12776-A

Attachment B Photographs



Photo 1 - CW3 grouting via tremie



Site Photographs



Photo 2 - CW3 casing removal





Photo 3 - CW4 after sealing (CW4A to the left)



Site Photographs



Photo 4 - CW5 after sealing (CW5A in background)





Photo 5 - IWD after sealing



Site Photographs

Attachment C Laboratory Reports

ANALYTICAL REPORT

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

Laboratory Job ID: 500-185774-1

Client Project/Site: Wausau Superfund Site - 003978

For:

GHD Services Inc.
1801 Old Highway 8 NW
Suite 114
St. Paul, Minnesota 55112

Attn: Mr. Grant Anderson



Authorized for release by:
8/13/2020 11:00:20 AM

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

LINKS

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results through
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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: Wausau Superfund Site - 003978

Job ID: 500-185774-1

Job ID: 500-185774-1

Laboratory: Eurofins TestAmerica, Chicago

Narrative

Job Narrative
500-185774-1

Receipt

The samples were received on 7/31/2020 9:45 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.5° C.

GC/MS VOA

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

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

Detection Summary

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

Job ID: 500-185774-1

Client Sample ID: W-200729-KJ-001

Lab Sample ID: 500-185774-1

No Detections.

Client Sample ID: W-200729-KJ-002

Lab Sample ID: 500-185774-2

No Detections.

Client Sample ID: W-200729-KJ-003

Lab Sample ID: 500-185774-3

No Detections.

Client Sample ID: W-200729-KJ-004

Lab Sample ID: 500-185774-4

No Detections.

Client Sample ID: W-200729-KJ-005

Lab Sample ID: 500-185774-5

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	4.5		1.0	0.41	ug/L	1		8260B	Total/NA
Trichloroethene	5.2		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: Trip Blank-01

Lab Sample ID: 500-185774-6

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

Method Summary

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

Job ID: 500-185774-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
5030B	Purge and Trap	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: Wausau Superfund Site - 003978

Job ID: 500-185774-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
500-185774-1	W-200729-KJ-001	Water	07/29/20 08:50	07/31/20 09:45	
500-185774-2	W-200729-KJ-002	Water	07/29/20 09:35	07/31/20 09:45	
500-185774-3	W-200729-KJ-003	Water	07/29/20 09:50	07/31/20 09:45	
500-185774-4	W-200729-KJ-004	Water	07/29/20 10:40	07/31/20 09:45	
500-185774-5	W-200729-KJ-005	Water	07/29/20 16:10	07/31/20 09:45	
500-185774-6	Trip Blank-01	Water	07/29/20 00:00	07/31/20 09:45	

Client Sample Results

Client: GHD Services Inc.
 Project/Site: Wausau Superfund Site - 003978

Job ID: 500-185774-1

Client Sample ID: W-200729-KJ-001

Lab Sample ID: 500-185774-1

Date Collected: 07/29/20 08:50

Matrix: Water

Date Received: 07/31/20 09:45

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		10	1.7	ug/L			08/12/20 12:34	1
Benzene	<0.15		0.50	0.15	ug/L			08/12/20 12:34	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			08/12/20 12:34	1
Chloroform	<0.37		2.0	0.37	ug/L			08/12/20 12:34	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			08/12/20 12:34	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			08/12/20 12:34	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			08/12/20 12:34	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			08/12/20 12:34	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			08/12/20 12:34	1
Toluene	<0.15		0.50	0.15	ug/L			08/12/20 12:34	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			08/12/20 12:34	1
Trichloroethene	<0.16		0.50	0.16	ug/L			08/12/20 12:34	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			08/12/20 12:34	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			08/12/20 12:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		72 - 124		08/12/20 12:34	1
Dibromofluoromethane	94		75 - 120		08/12/20 12:34	1
1,2-Dichloroethane-d4 (Surr)	107		75 - 126		08/12/20 12:34	1
Toluene-d8 (Surr)	96		75 - 120		08/12/20 12:34	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

Job ID: 500-185774-1

Client Sample ID: W-200729-KJ-002

Lab Sample ID: 500-185774-2

Date Collected: 07/29/20 09:35

Matrix: Water

Date Received: 07/31/20 09:45

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		10	1.7	ug/L			08/12/20 13:28	1
Benzene	<0.15		0.50	0.15	ug/L			08/12/20 13:28	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			08/12/20 13:28	1
Chloroform	<0.37		2.0	0.37	ug/L			08/12/20 13:28	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			08/12/20 13:28	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			08/12/20 13:28	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			08/12/20 13:28	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			08/12/20 13:28	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			08/12/20 13:28	1
Toluene	<0.15		0.50	0.15	ug/L			08/12/20 13:28	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			08/12/20 13:28	1
Trichloroethene	<0.16		0.50	0.16	ug/L			08/12/20 13:28	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			08/12/20 13:28	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			08/12/20 13:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		72 - 124		08/12/20 13:28	1
Dibromofluoromethane	94		75 - 120		08/12/20 13:28	1
1,2-Dichloroethane-d4 (Surr)	107		75 - 126		08/12/20 13:28	1
Toluene-d8 (Surr)	95		75 - 120		08/12/20 13:28	1

Client Sample Results

Client: GHD Services Inc.
 Project/Site: Wausau Superfund Site - 003978

Job ID: 500-185774-1

Client Sample ID: W-200729-KJ-003

Lab Sample ID: 500-185774-3

Date Collected: 07/29/20 09:50

Matrix: Water

Date Received: 07/31/20 09:45

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		10	1.7	ug/L			08/12/20 13:55	1
Benzene	<0.15		0.50	0.15	ug/L			08/12/20 13:55	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			08/12/20 13:55	1
Chloroform	<0.37		2.0	0.37	ug/L			08/12/20 13:55	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			08/12/20 13:55	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			08/12/20 13:55	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			08/12/20 13:55	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			08/12/20 13:55	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			08/12/20 13:55	1
Toluene	<0.15		0.50	0.15	ug/L			08/12/20 13:55	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			08/12/20 13:55	1
Trichloroethene	<0.16		0.50	0.16	ug/L			08/12/20 13:55	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			08/12/20 13:55	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			08/12/20 13:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		72 - 124		08/12/20 13:55	1
Dibromofluoromethane	94		75 - 120		08/12/20 13:55	1
1,2-Dichloroethane-d4 (Surr)	110		75 - 126		08/12/20 13:55	1
Toluene-d8 (Surr)	95		75 - 120		08/12/20 13:55	1

Client Sample Results

Client: GHD Services Inc.
 Project/Site: Wausau Superfund Site - 003978

Job ID: 500-185774-1

Client Sample ID: W-200729-KJ-004

Lab Sample ID: 500-185774-4

Date Collected: 07/29/20 10:40

Matrix: Water

Date Received: 07/31/20 09:45

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		10	1.7	ug/L			08/12/20 14:22	1
Benzene	<0.15		0.50	0.15	ug/L			08/12/20 14:22	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			08/12/20 14:22	1
Chloroform	<0.37		2.0	0.37	ug/L			08/12/20 14:22	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			08/12/20 14:22	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			08/12/20 14:22	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			08/12/20 14:22	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			08/12/20 14:22	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			08/12/20 14:22	1
Toluene	<0.15		0.50	0.15	ug/L			08/12/20 14:22	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			08/12/20 14:22	1
Trichloroethene	<0.16		0.50	0.16	ug/L			08/12/20 14:22	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			08/12/20 14:22	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			08/12/20 14:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		72 - 124		08/12/20 14:22	1
Dibromofluoromethane	96		75 - 120		08/12/20 14:22	1
1,2-Dichloroethane-d4 (Surr)	110		75 - 126		08/12/20 14:22	1
Toluene-d8 (Surr)	95		75 - 120		08/12/20 14:22	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

Job ID: 500-185774-1

Client Sample ID: W-200729-KJ-005

Lab Sample ID: 500-185774-5

Date Collected: 07/29/20 16:10

Matrix: Water

Date Received: 07/31/20 09:45

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		10	1.7	ug/L			08/12/20 14:48	1
Benzene	<0.15		0.50	0.15	ug/L			08/12/20 14:48	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			08/12/20 14:48	1
Chloroform	<0.37		2.0	0.37	ug/L			08/12/20 14:48	1
cis-1,2-Dichloroethene	4.5		1.0	0.41	ug/L			08/12/20 14:48	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			08/12/20 14:48	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			08/12/20 14:48	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			08/12/20 14:48	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			08/12/20 14:48	1
Toluene	<0.15		0.50	0.15	ug/L			08/12/20 14:48	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			08/12/20 14:48	1
Trichloroethene	5.2		0.50	0.16	ug/L			08/12/20 14:48	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			08/12/20 14:48	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			08/12/20 14:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		72 - 124		08/12/20 14:48	1
Dibromofluoromethane	94		75 - 120		08/12/20 14:48	1
1,2-Dichloroethane-d4 (Surr)	110		75 - 126		08/12/20 14:48	1
Toluene-d8 (Surr)	95		75 - 120		08/12/20 14:48	1

Client Sample Results

Client: GHD Services Inc.
 Project/Site: Wausau Superfund Site - 003978

Job ID: 500-185774-1

Client Sample ID: Trip Blank-01

Lab Sample ID: 500-185774-6

Date Collected: 07/29/20 00:00

Matrix: Water

Date Received: 07/31/20 09:45

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		10	1.7	ug/L			08/12/20 11:14	1
Benzene	<0.15		0.50	0.15	ug/L			08/12/20 11:14	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			08/12/20 11:14	1
Chloroform	<0.37		2.0	0.37	ug/L			08/12/20 11:14	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			08/12/20 11:14	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			08/12/20 11:14	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			08/12/20 11:14	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			08/12/20 11:14	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			08/12/20 11:14	1
Toluene	<0.15		0.50	0.15	ug/L			08/12/20 11:14	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			08/12/20 11:14	1
Trichloroethene	<0.16		0.50	0.16	ug/L			08/12/20 11:14	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			08/12/20 11:14	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			08/12/20 11:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		72 - 124					08/12/20 11:14	1
Dibromofluoromethane	92		75 - 120					08/12/20 11:14	1
1,2-Dichloroethane-d4 (Surr)	106		75 - 126					08/12/20 11:14	1
Toluene-d8 (Surr)	97		75 - 120					08/12/20 11:14	1

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

Job ID: 500-185774-1

Glossary

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

QC Association Summary

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

Job ID: 500-185774-1

GC/MS VOA

Analysis Batch: 556381

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-185774-1	W-200729-KJ-001	Total/NA	Water	8260B	
500-185774-2	W-200729-KJ-002	Total/NA	Water	8260B	
500-185774-3	W-200729-KJ-003	Total/NA	Water	8260B	
500-185774-4	W-200729-KJ-004	Total/NA	Water	8260B	
500-185774-5	W-200729-KJ-005	Total/NA	Water	8260B	
500-185774-6	Trip Blank-01	Total/NA	Water	8260B	
MB 500-556381/6	Method Blank	Total/NA	Water	8260B	
LCS 500-556381/4	Lab Control Sample	Total/NA	Water	8260B	

Surrogate Summary

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

Job ID: 500-185774-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB	DBFM	DCA	TOL
		(72-124)	(75-120)	(75-126)	(75-120)
500-185774-1	W-200729-KJ-001	94	94	107	96
500-185774-2	W-200729-KJ-002	95	94	107	95
500-185774-3	W-200729-KJ-003	95	94	110	95
500-185774-4	W-200729-KJ-004	94	96	110	95
500-185774-5	W-200729-KJ-005	95	94	110	95
500-185774-6	Trip Blank-01	96	92	106	97
LCS 500-556381/4	Lab Control Sample	89	96	107	98
MB 500-556381/6	Method Blank	93	94	109	96

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane

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

TOL = Toluene-d8 (Surr)

QC Sample Results

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

Job ID: 500-185774-1

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

Lab Sample ID: MB 500-556381/6
Matrix: Water
Analysis Batch: 556381

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		10	1.7	ug/L			08/12/20 10:47	1
Benzene	<0.15		0.50	0.15	ug/L			08/12/20 10:47	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			08/12/20 10:47	1
Chloroform	<0.37		2.0	0.37	ug/L			08/12/20 10:47	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			08/12/20 10:47	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			08/12/20 10:47	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			08/12/20 10:47	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			08/12/20 10:47	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			08/12/20 10:47	1
Toluene	<0.15		0.50	0.15	ug/L			08/12/20 10:47	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			08/12/20 10:47	1
Trichloroethene	<0.16		0.50	0.16	ug/L			08/12/20 10:47	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			08/12/20 10:47	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			08/12/20 10:47	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		72 - 124		08/12/20 10:47	1
Dibromofluoromethane	94		75 - 120		08/12/20 10:47	1
1,2-Dichloroethane-d4 (Surr)	109		75 - 126		08/12/20 10:47	1
Toluene-d8 (Surr)	96		75 - 120		08/12/20 10:47	1

Lab Sample ID: LCS 500-556381/4
Matrix: Water
Analysis Batch: 556381

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	42.2		ug/L		84	40 - 143
Benzene	50.0	48.8		ug/L		98	70 - 120
Carbon tetrachloride	50.0	52.4		ug/L		105	59 - 133
Chloroform	50.0	47.6		ug/L		95	70 - 120
cis-1,2-Dichloroethene	50.0	46.2		ug/L		92	70 - 125
1,1-Dichloroethene	50.0	46.2		ug/L		92	67 - 122
Ethylbenzene	50.0	52.4		ug/L		105	70 - 123
Methylene Chloride	50.0	42.2		ug/L		84	69 - 125
Tetrachloroethene	50.0	54.1		ug/L		108	70 - 128
Toluene	50.0	49.0		ug/L		98	70 - 125
1,1,2-Trichloroethane	50.0	42.0		ug/L		84	71 - 130
Trichloroethene	50.0	51.1		ug/L		102	70 - 125
Vinyl chloride	50.0	50.2		ug/L		100	64 - 126
Xylenes, Total	100	105		ug/L		105	70 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	89		72 - 124
Dibromofluoromethane	96		75 - 120
1,2-Dichloroethane-d4 (Surr)	107		75 - 126
Toluene-d8 (Surr)	98		75 - 120

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

Job ID: 500-185774-1

Client Sample ID: W-200729-KJ-001

Date Collected: 07/29/20 08:50

Date Received: 07/31/20 09:45

Lab Sample ID: 500-185774-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	556381	08/12/20 12:34	STW	TAL CHI

Client Sample ID: W-200729-KJ-002

Date Collected: 07/29/20 09:35

Date Received: 07/31/20 09:45

Lab Sample ID: 500-185774-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	556381	08/12/20 13:28	STW	TAL CHI

Client Sample ID: W-200729-KJ-003

Date Collected: 07/29/20 09:50

Date Received: 07/31/20 09:45

Lab Sample ID: 500-185774-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	556381	08/12/20 13:55	STW	TAL CHI

Client Sample ID: W-200729-KJ-004

Date Collected: 07/29/20 10:40

Date Received: 07/31/20 09:45

Lab Sample ID: 500-185774-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	556381	08/12/20 14:22	STW	TAL CHI

Client Sample ID: W-200729-KJ-005

Date Collected: 07/29/20 16:10

Date Received: 07/31/20 09:45

Lab Sample ID: 500-185774-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	556381	08/12/20 14:48	STW	TAL CHI

Client Sample ID: Trip Blank-01

Date Collected: 07/29/20 00:00

Date Received: 07/31/20 09:45

Lab Sample ID: 500-185774-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	556381	08/12/20 11:14	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: Wausau Superfund Site - 003978

Job ID: 500-185774-1

Laboratory: Eurofins TestAmerica, Chicago

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

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-20

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



GOLDENROD ROVERS & ASSOCIATES
GHD Services

CHAIN OF CUSTODY RECORD

1801 Old Highway 8 Northwest, Suite 114
St. Paul, Minnesota 55112 United States
Phone: (651) 639-0913 Fax: (651) 639-0923

500-185774

COC NO.: **SP-02978**

PAGE 1 OF 1

(See Reverse Side for Instructions)

Project No/ Phase/Task Code: 003978-xxx				Laboratory Name: Eurofins TA				Lab Location: University Park, IL				SSOW ID:																																																							
Project Name: Wausau NPL				Lab Contact:				Lab Quote No:				Cooler No:																																																							
Project Location: Wausau, WI				<table border="1"> <thead> <tr> <th colspan="2">SAMPLE TYPE</th> <th colspan="8">CONTAINER QUANTITY & PRESERVATION</th> <th colspan="8">ANALYSIS REQUESTED (See Back of COC for Definitions)</th> </tr> <tr> <th>Matrix Code (see back of COC)</th> <th>Grab (G) or Comp (C)</th> <th>Unpreserved</th> <th>Hydrochloric Acid (HCl)</th> <th>Nitric Acid (HNO₃)</th> <th>Sulfuric Acid (H₂SO₄)</th> <th>Sodium Hydroxide (NaOH)</th> <th>Methanol/Water (Soil VOC)</th> <th>EnCores 3x5-g, 1x25-g</th> <th>Other:</th> <th>Total Containers/Sample</th> <th colspan="8">MS/MSD Request</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>3</td> <td colspan="8">VOC Site List per SSOW 003978-008</td> </tr> </tbody> </table>				SAMPLE TYPE		CONTAINER QUANTITY & PRESERVATION								ANALYSIS REQUESTED (See Back of COC for Definitions)								Matrix Code (see back of COC)	Grab (G) or Comp (C)	Unpreserved	Hydrochloric Acid (HCl)	Nitric Acid (HNO ₃)	Sulfuric Acid (H ₂ SO ₄)	Sodium Hydroxide (NaOH)	Methanol/Water (Soil VOC)	EnCores 3x5-g, 1x25-g	Other:	Total Containers/Sample	MS/MSD Request											X							3	VOC Site List per SSOW 003978-008								Carrier:			
SAMPLE TYPE		CONTAINER QUANTITY & PRESERVATION								ANALYSIS REQUESTED (See Back of COC for Definitions)																																																									
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			X							3	VOC Site List per SSOW 003978-008																																																								
Chemistry Contact: Grant Anderson				500-185774 COC				Airbill No:				Date Shipped: 7-30-20																																																							
Sampler(s): K. Jenkin, C. Ahrens								COMMENTS/SPECIAL INSTRUCTIONS:																																																											
Item	SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)			DATE (mm/dd/yy)	TIME (hh:mm)	Matrix Code	Grab (G) or Comp (C)	Unpreserved	Hydrochloric Acid (HCl)	Nitric Acid (HNO ₃)	Sulfuric Acid (H ₂ SO ₄)	Sodium Hydroxide (NaOH)	Methanol/Water (Soil VOC)	EnCores 3x5-g, 1x25-g	Other:	Total Containers/Sample	MS/MSD Request																																																		
1	W-200729-KJ-001			7-29-20	850	WG	G		X							3	Standard TAT																																																		
2	↓ -002			↓	935	↓	↓		X							↓																																																			
3	↓ -003			↓	950	↓	↓		X							↓																																																			
4	↓ -004			↓	1040	↓	↓		X							↓																																																			
5	↓ -005			↓	1610	↓	↓		X							↓																																																			
6	Trip Blank-01															2	X																																																		
7	Temp. Blank															1																																																			
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TAT Required in business days (use separate COCs for different TATs):								Total Number of Containers: 18				Notes/ Special Requirements:																																																							
<input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Days <input type="checkbox"/> 3 Days <input type="checkbox"/> 1 Week <input type="checkbox"/> 2 Week <input type="checkbox"/> Other:								All Samples in Cooler must be on COC				temp: 1.5→2.5																																																							
RELINQUISHED BY				COMPANY		DATE		TIME		RECEIVED BY				COMPANY		DATE		TIME																																																	
1. <i>[Signature]</i>				GHD		7/30/20		11:45		1. Stephanie Hernandez				TA-CHI		7/31/20		0945																																																	
2.										2.																																																									
3.										3.																																																									

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT - ALL FIELDS MUST BE COMPLETED ACCURATELY

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-185774-1

Login Number: 185774

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	2.5
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").	False	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	