Bristol
ENVIRONMENTAL
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TECHNICAL MEMORANDUM

DATE: September 23, 2016
TO: Bob Egan, SME, EPA Region 5
FROM: Matt Faust, Project Manager
Bristol Environmental Remediation Services, LLC
RE: EPA Contract No. EP-W-12-009, Task Order (TO) 3012
Tower Standard Site, Lac du Flambeau Reservation, Wisconsin
August 2016 Site Investigation, Rev 0

The U.S. Environmental Protection Agency (EPA) retained Bristol Environmental Remediation Services, LLC (Bristol) to prepare this technical memorandum (tech memo) under EPA Contract EP-W-12-009, Task Order (TO) 3012. This tech memo briefly summarizes site activities conducted in August 2016, at a leaking underground storage tank (LUST) site in Lac du Flambeau, Wisconsin, on the Lac du Flambeau (LDF) Reservation (Figure 1). The site is referred to as the Tower Standard Site.

Unless otherwise noted, all work was performed in compliance with the Quality Assurance Project Plan (Bristol, 2016a), Site Investigation Work Plan (Bristol, 2016b), and Site Safety and Health Plan (Bristol, 2016c).

Figures are included as Attachment 1, field notes and forms are included as Attachment 2, well construction diagrams are included as Attachment 3, tabulated laboratory analytical results are included as Attachment 4, the laboratory analytical report is included as Attachment 5, the data verification report is included as Attachment 6, and waste disposal paperwork is included as Attachment 7.

SITE ACTIVITIES

On August 3, 2016 to August 5, 2016, Bristol subcontractor Coleman Engineering Company (CEC) installed two monitoring wells (MW-16E and MW-21M) using hollow stem auger drilling technology. In order to minimize issues with flowing sands, and because lithology at the site is relatively well established, CEC drilled to depth without collecting soil samples for lithology characterization or laboratory analysis. The wells were installed in monitoring well nests MW16 and MW21 (Figure 2), resulting in two monitoring well nests consisting of three monitoring wells each. Prior to the August 2016 activity, each monitoring well nest consisted of two monitoring wells.

The first well, MW-16E, was installed to a depth of 60 feet below the ground surface (bgs) and the screen was set from 55 to 60 feet bgs (Attachment 3). The second monitoring well, MW-21M, was installed near the MW-21 well nest to a depth of 30 feet bgs; the screen was set from 25 to 30 feet bgs based on consultation with the EPA Subject Matter Expert (Bob Egan) and LDF tribal representative (Kristen Hanson) who were both on site during the site activities.

Following installation, the two new monitoring wells were developed by CEC using a surge and purge technique.

On August 8 and 9, Bristol collected groundwater samples from all six monitoring wells in the MW-16 and MW-21 well nests (including the two new wells and four previously existing wells) using a bladder pump and low flow sampling techniques. Groundwater sampling forms are included in Attachment 2.

Bristol delivered the samples to Pace Analytical Services, Inc. (Pace) in Minneapolis, Minnesota, for analysis of volatile organic compounds (VOCs), ethylene dibromide (EDB), sulfate, sulfide, hydrogen sulfide, nitrate, nitrite and the eight Resource Conservation and

Recovery Act (RCRA) metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) plus iron and manganese. Groundwater sample information is presented in Table 1.

Table 1 Laboratory Analytical Groundwater Sample Information

Date Collected	Time Collected	Well ID	Screen Depth (feet BTOC)	Sample ID
8/8/2016	1055	MW-16	1.4 - 11.4	1608TOWERMW16
8/8/2016	1300	MW-16D	37 – 42	1608TOWERMW16D
8/8/2016	1330			1608TOWERMW18D†
8/9/2016	0900	MW-16E	55 – 60	1608TOWERMW16E
8/9/2016	1120	MW-21	4.5 – 14.5	1608TOWERMW21
8/9/2016	1300	MW-21M	25 – 30	1608TOWERMW21M
8/9/2016	1450	MW-21D	35 - 40	1608TOWERMW21D

Notes:
† = indicates duplicate sample
BTOC = below the top of casing
ID = identification

All soil cuttings and well development and purge water were containerized in 55-gallon drums (four soil drums and 11 water drums) and temporarily staged behind the bait shop (former service station building) located on the site. On August 8, the property owner contacted the EPA to inform them that the drums had been placed on top of a shallow septic system and to request that the drums be moved as soon as possible. Bristol contracted with SGS Environmental Contracting, LLC (SGS) of Merrill, Wisconsin, to transport the drums off site for proper disposal. SGS mobilized to the site on August 9 and transported the drums to their facility to await analytical results. Once analytical results were received, SGS disposed of the soil drums at the Lincoln County Landfill in Merrill. The drums of purge and development water are still staged at SGS's facility along with waste from other projects; once SGS has accumulated sufficient aqueous waste, they will arrange for Covanta

Environmental Solutions of Winneconne, Wisconsin, to dispose of the purge and development water. Waste disposal paperwork for the soil drums is included as Attachment 7.

RESULTS

Select groundwater analytical results are presented on Figure 3 in Attachment 1. Full analytical results are summarized on the table included as Attachment 4, the laboratory analytical report is included as Attachment 5, and the data verification report is included as Attachment 6.

The primary evaluation criteria to which groundwater results were compared were the LDF Tribe's Groundwater Cleanup Standards (LDF, 2008). For analytes for which LDF Groundwater Cleanup Standards are not established, results were compared to EPA Maximum Contaminant Levels (MCLs) established by the Safe Drinking Water Act (EPA, 1974). Preventative Action Limits established by Wisconsin Administrative Code are also presented on figures and tables, for reference purposes only.

Groundwater samples collected in August 2016 exceeded evaluation criteria for benzene, ethylbenzene, naphthalene, toluene, and total trimethylbenzenes.

Benzene was detected in samples collected from all six wells, ranging in concentration from an estimated 0.75 micrograms per liter (µg/L) at MW-16 to 2,150 µg/L at MW-21M. Benzene exceeded evaluation criteria (5 µg/L) in samples collected from five of the six wells (MW-16D, MW-16E, MW-21, MW-21M, and MW-21D).

Ethylbenzene was detected in samples collected from five of the six wells, ranging in concentration from 8.1 µg/L at MW-21D to 1,700 µg/L at MW-21. Ethylbenzene exceeded evaluation criteria (700 µg/L) in samples collected from two of the six wells (MW-21 and MW-21M).

Naphthalene was detected in samples collected from five of the six wells, ranging in concentration from 4.9 µg/L at MW-21D to 703 µg/L at MW-21. Naphthalene exceeded evaluation criteria (40 µg/L) in samples collected from three of the six wells (MW-16D, MW-21, and MW-21M).

Toluene was detected in samples collected from five of the six wells, ranging in concentration from 6.1 µg/L at MW-16E to 3,280 µg/L at MW-21. Toluene exceeded evaluation criteria (1,000 µg/L) in samples collected from two of the six wells (MW-21 and MW-21M).

Trimethylbenzenes were detected in samples collected from five of the six wells. Total trimethylbenzenes ranged in concentration from 38.8 µg/L at MW-21D to 3,664 µg/L at MW-21. Total trimethylbenznes exceeded evaluation criteria (480 µg/L) in samples collected from two of the six wells (MW-21 and MW-21M).

NATURE AND EXTENT OF CONTAMINATION

The groundwater flow direction at the site is generally towards the south-southeast (at the water table) or south-southwest (at depth) (Bristol, 2016d).

As only wells from the MW-16 and MW-21 well nests were sampled in August 2016, it is difficult to make conclusions regarding the lateral extent of groundwater contamination that exceeds evaluation criteria. However, historically samples collected from the MW-17, MW-18, and MW-22 wells nests have been below evaluation criteria, thus the extent of contamination towards the northwest (cross gradient) is fairly well defined. The extent of contamination to the northeast (up-gradient), east (cross gradient), and south (down gradient) remains poorly defined.

At the MW-21 well nest, contaminant concentrations were generally highest in samples collected from MW-21 (screened across the water table from 4.5 to 14.5 feet bgs), followed

by MW-21M (screened from 25 to 30 feet bgs), and lowest in samples collected from MW-21D (the deepest well, screened from 35 to 40 feet bgs). A notable exception to this distribution is benzene, which was detected at the highest concentration in the sample collected from MW-21M and the lowest in the sample collected from MW-21D.

At the MW-16 well nest, contaminant concentrations were generally highest in samples collected from MW-16D (the middle depth well, screened from 37 to 42 feet bgs), followed by MW-16E (screened from 55 to 60 feet bgs), and lowest in samples collected from MW-16 (screened across the water table from 1.4 to 11.4 feet bgs).

Though they were not sampled in August 2016, during previous sampling events at the MW-19 and MW-20 well nests, contaminant concentrations have been higher in the wells screened at depth (35 to 40 and 20 to 25 feet bgs, respectively) than in shallow wells screened across the water table.

RECOMMENDATIONS

The State of Wisconsin's Petroleum Environmental Cleanup Fund Award (PECFA) contractor performed a membrane interface probe/hydraulic profiling tool (MiHpt) investigation at the site between July 11 and 14, 2016. The LDF Tribe performed a laser-induced fluorescence (LIF) investigation at the site on September 7 and 8, 2016. Bristol has contracted with S_2C_2, Inc. of Raritan, New Jersey, to generate a three-dimensional model of the contaminant plume at the site, incorporating data collected during the MiHPT and LIF investigations, as well as soil and groundwater analytical data. Bristol is currently preparing another technical memorandum that will present the results of the modeling activities, as well as recommendations for remedial activities for the site.

Additional site characterization is also recommended for this site. The northern, eastern, and southern extents of the groundwater plume are poorly defined at this time. The results of the

MiHpt study may help define the plume, though it is presumed that a number of additional monitoring wells will be required. Given the nature of the "diving" groundwater plume at the site, well nests should be installed with wells (at least two) screened at multiple depths.

It is likely not possible to define the down gradient extent of the groundwater plume with permanent monitoring wells, as the plume has been shown to extend at least to the shore of Haskell Lake. Potential impacts to Haskell Lake can be investigated by collected pore water samples in the lake sediment. It is recommended that this work be performed in the winter when ice thickness is sufficient to support drilling equipment.

REFERENCES

Bristol Environmental Remediation Services, LLC (Bristol). (2016a). Quality Assurance Project Plan. Revision 0. LUST Sites in Indian Country, EPA Region 5: EPA.

Bristol. (2016b). Site Investigation Work Plan, Tower Standard LUST Site. Revision 1. Task Order 3012. Lac du Flambeau Reservation: EPA.

Bristol. (2016c). Site Safety and Health Plan, Tower Standard LUST Site. Revision 1. Task Order 3012. Lac du Flambeau Reservation: EPA.

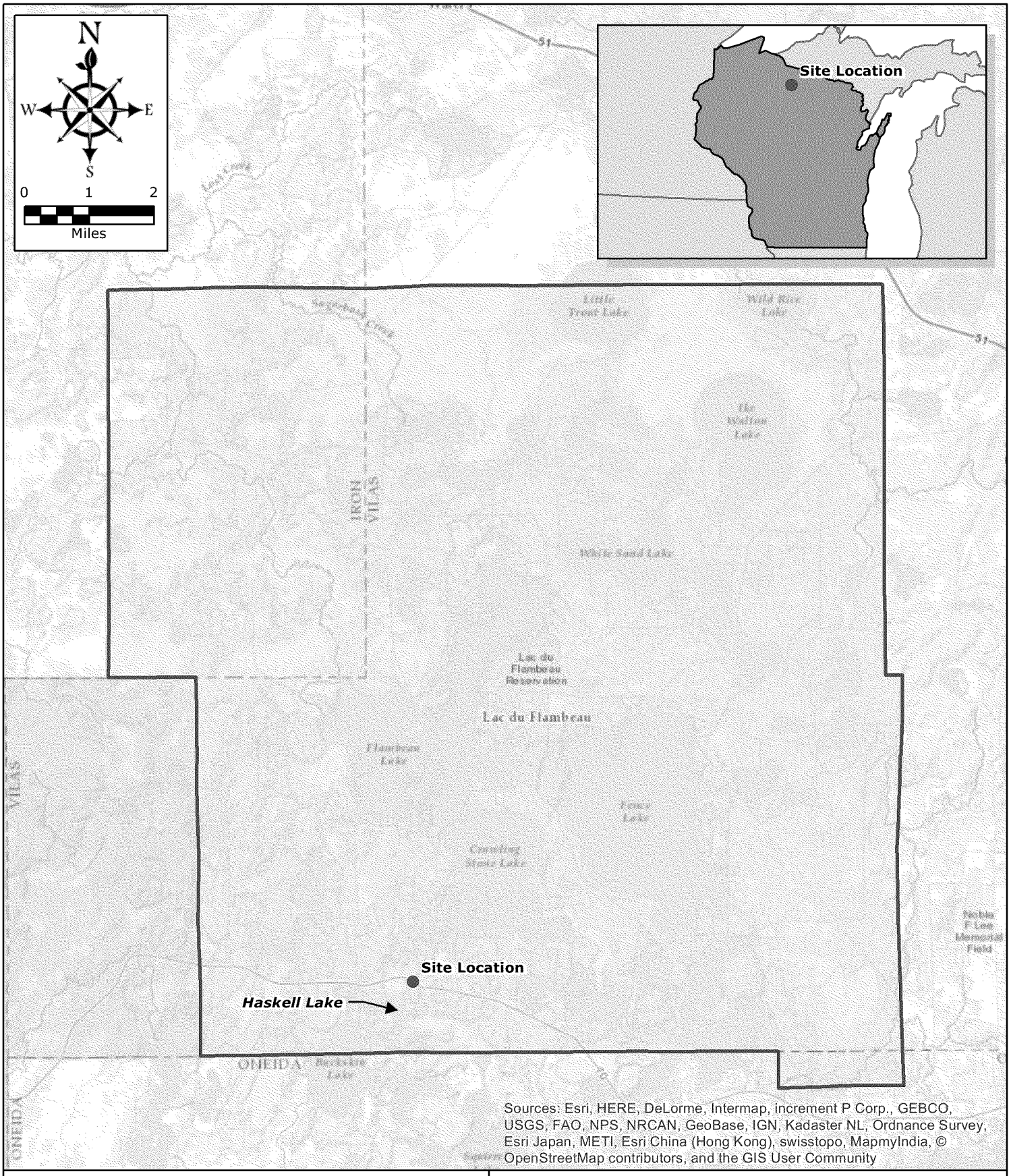
Bristol. (2016d). Tower Standard Site Groundwater Contour Maps. Revision 0. Task Order 2012. Lac du Flambeau Reservation: EPA.

Lac du Flambeau Tribe. (2008). Tribal Code, Section 2, Chapter 200, Hazardous Substance Control Code. Website: https://www.ldftribe.com/Court%20Ordinances.php.

U.S. Environmental Protection Agency (EPA). (1974). Safe Drinking Water Act. 42 United States Code 6A.

ATTACHMENT 1

Figures



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Legend

- Site Location
- Lac du Flambeau Indian Reservation

FIGURE 1
LAC DU FLAMBEAU, WI
EPA TASK ORDER 3012 TOWER STANDARD LUST SITE
LOCATION MAP

Bristol
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DATUM:	Date: 7/28/2016	SHEET 1
NAD83 PROJECTION:	DWN. NAP	of
SP WI ZN FT Project No.	SCALE 1" = 2 mi	1
34170026	APPRVD. MF	

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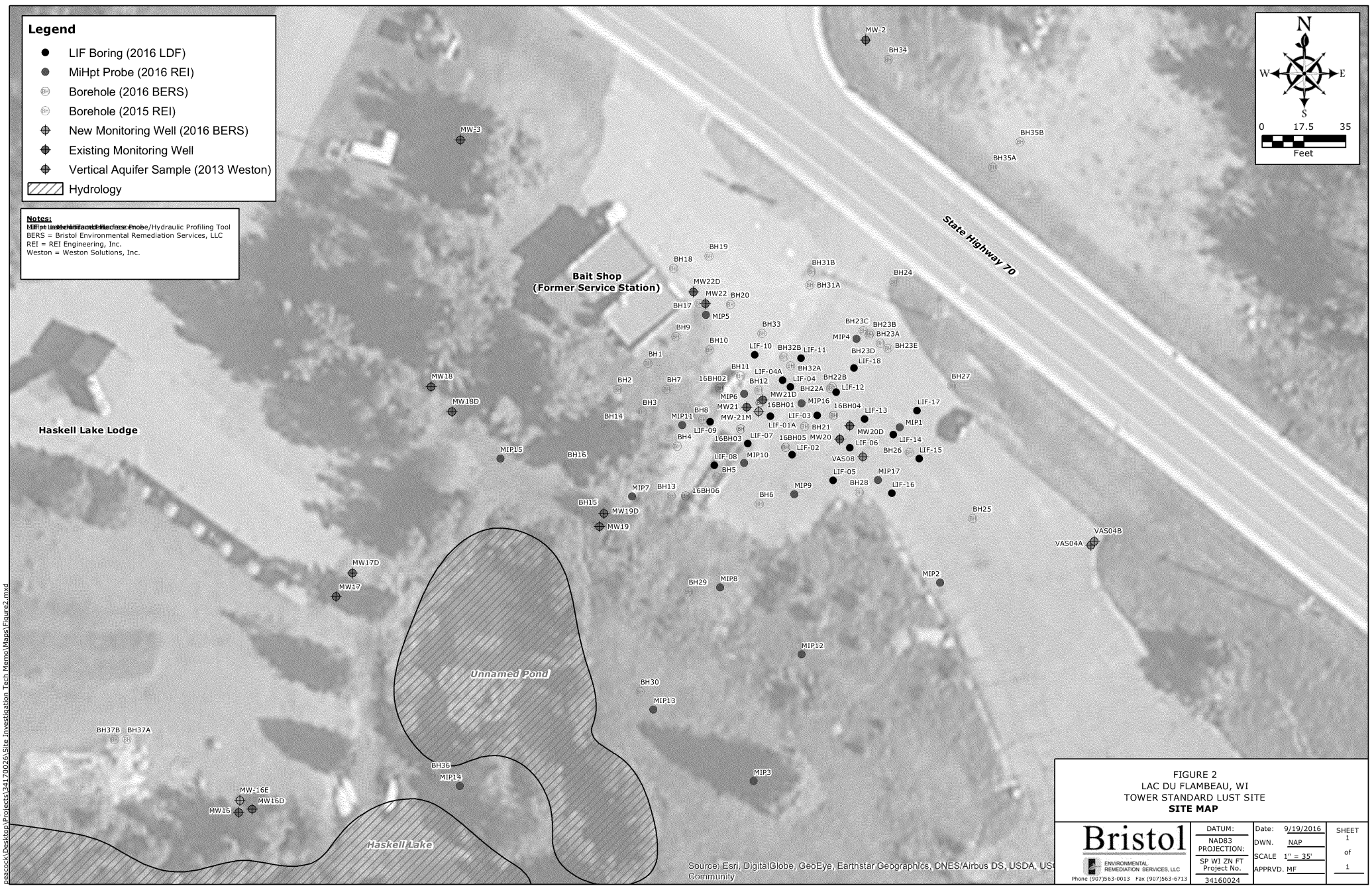

FIGURE 2
LAC DU FLAMBEAU, WI
TOWER STANDARD LUST SITE
SITE MAP

Bristol
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DATUM: NAD83 PROJECTION: SP WI ZN FT Project No. 34160024	Date: 9/19/2016	SHEET 1 of 1
	DWN. NAP	
	SCALE 1" = 35'	
	APPRVD. MF	

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Notes:

[1]The Groundwater Cleanup Standards from Appenedix A of the LDF Tribe's *Hazardous Substances Control Code* are the primary project action levels
[2]When LDF Groundwater Cleanup Standards are not available, EPA MCLs established by the Safe Drinking Water Act apply
[3]Preventative Action Limits from Wisconsin Administrative Code, Chapter NR 140, Groundwater Quality are provided for reference purposes only
All results in ug/L except anions (sulfate, sulfide, nitrate, and nitrite) which are in mg/L
Bolded results exceed project action levels

1,2-DCA = 1,2-dichloroethane
B = Analytical result considered a high estimated value due to contamination present in the blank
bgs = below the ground surface
EDB = ethylene dibromide
EPA = U.S. Environmental Protection Agency
ft = feet
H = Sample was extracted or analyzed outside of hold time
ID = identification
J = Positive result is less than the LOQ and considered an estimate
LDF = Lac du Flambeau
LOD = Limit of detection
LOQ = Limit of quantitation
MCL = Maximum Contaminant Level
mg/L = milligrams per liter
MH = Analytical result is considered a high estimated value due to matrix effects
ML = Analytical result is considered a low estimated value due to matrix effects
MTBE = methyl tertiary-butyl ehter
ND = Analytical result not detected above the LOD (LOQ in parantheses)
NE = not established
PAL = preventative action limit
QH = Analytical result is considered a high estimated value due to laboratory quality control failure
QL = Analytical result is considered a low estimated value due to laboratory quality control failure
RSL = Risk-Based Screening Level
ug/L = micrograms per liter

Project Action Levels			
Analyte	**Groundwater Cleanup Standards [1]**	**EPA MCLs[2]**	**PALs[3]**
Benzene	5	5	0.5
Toluene	1,000	1,000	160
Ethylbenzene	700	700	140
Total Xylenes	10,000	10,000	400
MTBE	60	NE	12
EDB	0.05	NE	0.005
1,2-DCA	5	NE	0.5
Naphthalene	40	NE	10
Sulfate	NE	NE	NE
Sulfide	NE	NE	NE
Nitrate	10,000	NE	2,000
Nitrite	1,000	NE	200
Cadmium	5	5	0.5
Chromium	50	100	10
Iron	NE	NE	NE
Lead	15	NE	1.5
Manganese	NE	NE	60

Monitoring Well:	MW-21
Screen (ft bgs):	4.5-14.5
Sample ID:	1608TOWER
Collection Date:	8/8/2016
Benzene	**458**
Toluene	**3,280 B**
Ethylbenzene	**1,700**
Total Xylenes	9,060
MTBE	0.24 J
EDB	0.0072 J
1,2-DCA	ND (1.0)
Naphthalene	**703**
Sulfate	1.5 J
Sulfide	0.022 J
Nitrate	0.047 J
Nitrite	ND (0.012) H
Cadmium	0.078 J
Chromium	8.5
Iron	19,200
Lead	8.6 B
Manganese	6,550

Monitoring Well:	MW-21D
Screen (ft bgs):	35-40
Sample ID:	1608TOWERM
Collection Date:	8/9/2016
Benzene	**45.9 MH**
Toluene	7.3
Ethylbenzene	8.1
Total Xylenes	64.5
MTBE	ND (1.0)
EDB	ND (0.0099)
1,2-DCA	ND (1.0)
Naphthalene	4.9
Sulfate	1.1 J
Sulfide	0.014 J
Nitrate	0.063
Nitrite	ND (0.012) H
Cadmium	ND (0.080)
Chromium	4.4
Iron	65,700 ML
Lead	0.41 B
Manganese	1,580 ML

Monitoring Well:	MW-16
Screen (ft bgs):	1.4-11.4
Sample ID:	1608TOWER
Collection Date:	8/8/2016
Benzene	0.75 J
Toluene	ND (1.0)
Ethylbenzene	ND (1.0)
Total Xylenes	ND (3.0)
MTBE	ND (1.0)
EDB	ND (0.0097)
1,2-DCA	ND (1.0)
Naphthalene	ND (4.0)
Sulfate	7.2
Sulfide	ND (0.10)
Nitrate	ND (0.058)
Nitrite	ND (0.012) H
Cadmium	ND (0.080)
Chromium	7.3
Iron	17,000
Lead	1.7
Manganese	1,760

Monitoring Well:	MW-16E
Screen (ft bgs):	55-60
Sample ID:	1608TOWERM
Collection Date:	8/9/2016
Benzene	**768**
Toluene	6.1 B
Ethylbenzene	8.9
Total Xylenes	506
MTBE	10.0
EDB	ND (0.0098)
1,2-DCA	ND (1.0)
Naphthalene	28.2
Sulfate	1.2 J
Sulfide	0.024 J
Nitrate	ND (0.058)
Nitrite	0.0044 J H
Cadmium	ND (0.080)
Chromium	2.3
Iron	1,460
Lead	0.29 B
Manganese	1,650

Monitoring Well:	MW-16D	
Screen (ft bgs):	37-42	
Sample ID:	1608TOWERM	1608TOWERM
Collection Date:	8/8/2016	8/8/2016
Benzene	**1,240**	**1,300**
Toluene	22.2	23.0
Ethylbenzene	61.8	65.3
Total Xylenes	1,610	1,410
MTBE	1.9	2.3
EDB	ND (0.0098)	ND (0.010)
1,2-DCA	ND (1.0)	ND (1.0)
Naphthalene	**109**	**114**
Sulfate	ND (3.5)	ND (3.5)
Sulfide	ND (0.10)	0.40
Nitrate	ND (0.058)	ND (0.058)
Nitrite	ND (0.012) H	ND (0.012) H
Cadmium	ND (0.080)	ND (0.080)
Chromium	2.5	2.3
Iron	7,220	7,200
Lead	0.41	0.42
Manganese	2,260	2,250

Monitoring Well:	MW-21M
Screen (ft bgs):	25-30
Sample ID:	1608TOWERM
Collection Date:	8/9/2016
Benzene	**2,150**
Toluene	**1,320 B**
Ethylbenzene	**1,660**
Total Xylenes	4,340
MTBE	7.4
EDB	0.011
1,2-DCA	ND (1.0)
Naphthalene	**470**
Sulfate	ND (3.5)
Sulfide	ND (0.10)
Nitrate	0.12
Nitrite	ND (0.012) H
Cadmium	0.057 J
Chromium	9.5
Iron	8,830
Lead	2.8 B
Manganese	3,170

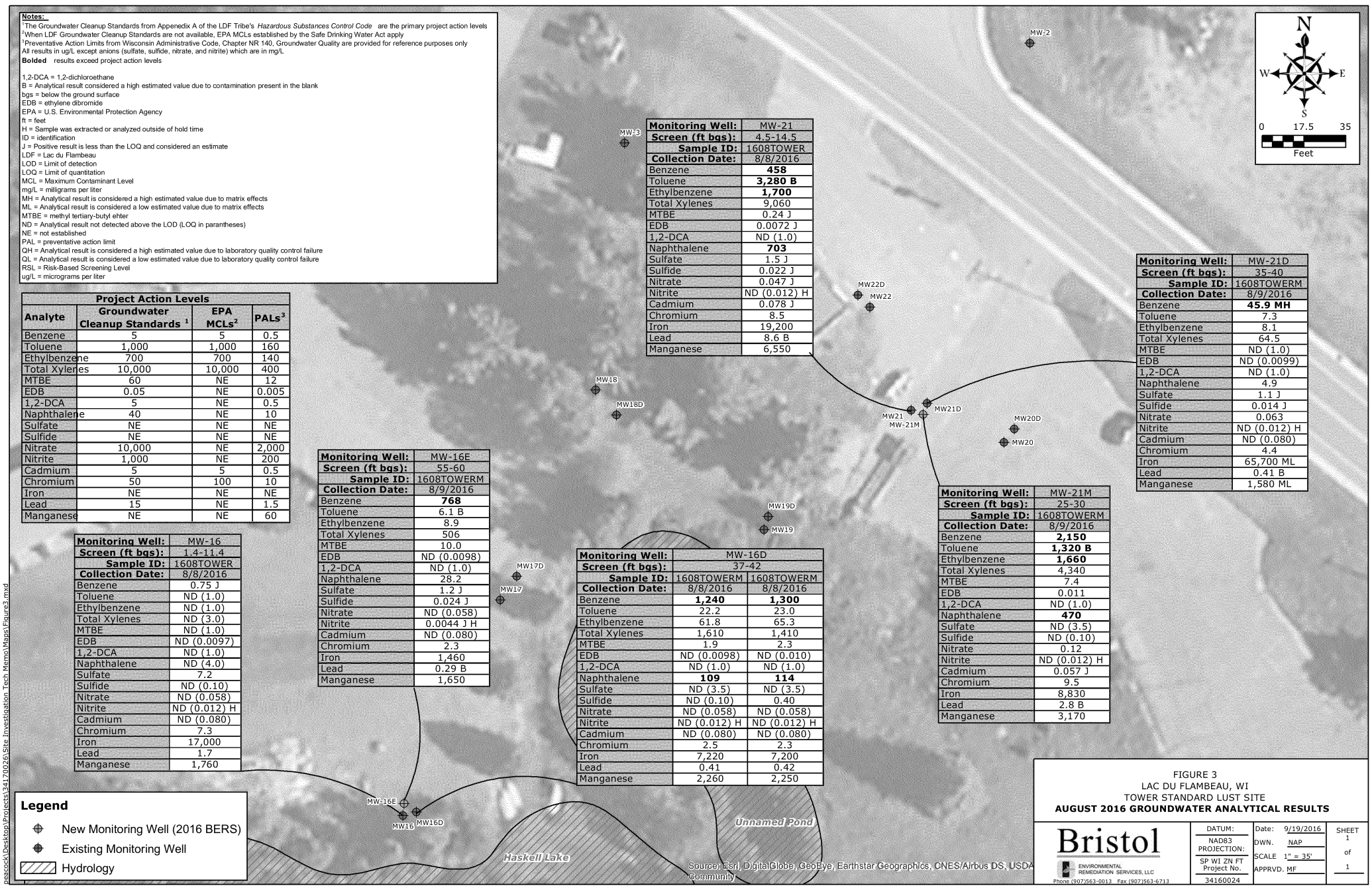

FIGURE 3
LAC DU FLAMBEAU, WI
TOWER STANDARD LUST SITE
AUGUST 2016 GROUNDWATER ANALYTICAL RESULTS

Bristol
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DATUM:	Date: 9/19/2016	SHEET
NAD83 PROJECTION:	DWN. NAP	1
SP WI ZN FT Project No.	SCALE 1" = 35'	of
34160024	APPRVD. MF	1

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ATTACHMENT 2

Field Book and Field Forms

INCH

Rite in the Rain®
ALL-WEATHER WRITING PAPER

Name Robert Beckman
Bristol Environmental
Address 111 W. 10th Ave
Anchorage, AK 99501
Phone 907-830-7105

Project EPA Tower Standard Site
Lac du Flambeau, Wisconsin
EPA Contract # EP.W.12-009
TO 3012 Bristol PA 34170024

Clear Vinyl Protective Slipcovers (Item No. 30) are available for this style of notebook. Helps protect your notebook from wear & tear. Contact your dealer or JL Darling LLC.

CONTENTS

PAGE	REFERENCE	DATE

P# 341700216
TOWER

August 2, 2016 R. Beckman

0315 - @ Anchorage Airport, flying to Minneapolis, MN then driving to Minocqua, WI to install 2 MW's & sample 4 MW's.

1400 - (MN time) picked up rental car, headed to Minocqua.

1930 - Checked into Quality Inn, meeting drillers onsite between 1030-1100, tomorrow, 8/3/16.

End of day.

KB 8/2/16.

R. Beckman P# 341700216
TOWER

75°F, sunny August 3, 2016

0915 - Gathering supplies, headed to site to locate well locations, wait for drillers.

0945 - Introduced self to lodge operators, found well locations, waiting for subs. USTS & Kristen Hansen w/ GAF tribe onsite.

1015 - Toured site w/ Kristen, located wells & proposed well locations.

1045 - Walked site w/ drillers (CEC). Will start w/ less contaminated well (assumed MW16E) ~ 60' bgs, to top of bedrock.

1215 - Setting up @ MW16E

1245 - Began drilling
0-5 - Sand /w organics & some cobble.
5-10 - Sandy, Gravel. Brown. dry.

KB 8/3/16

Rite in the Rain

8/3/14

Tower

P# 34170024

0-10 - Sandy, moist w/ occasional gravel. Brown
8-10' slight refusal
10-15' = Sand w/ gravel, wet. Brownish-grey.
15'-20' - Sand w/ gravel. wet, brown. w/ cobbles / boulders (?) Drilling slowed, hitting refusal.
@ 20' hit refusal.
20-25' = Sandy w/ gravel, moist, greybrown.
25-30' = Same, as ↑. Broke second "Key", first one broke @ ~15' bgs.
"Key" = drive key

1510 - Ordered from CEC additional drive keys, will be down today. Only 2 keys left onsite. Pulling auger, replacing bit. Will see if less aggressive bit will drill through boulders better.

TK 8/3/14

P# 34170024

Tower

8/3/14

1630 - Pulled auger, large rock stuck in bit. Approaching end of day. Will re-drill 30' of auger in existing boring and finish well in the a.m.

1800 - End of day, will cont. drilling @ 30' bgs in the a.m.

RK 8/3/14

Rite in the Rain

PI# 341700226 R Rockman

August 4, 2014 TOWER Cloudy, 70°F

0700- Onsite, calibrated YSI #1, w/in range. See equipment log for details

0730- Continuing to drill @ MW14E.
30-35' = Sandy, w/ gravel moist. Very Rocky
35-40' = same ↑, very little cuttings produced. Mostly cobbles / boulders (assumed).
40-45' = Mostly rock, no cuttings

0735- Bob Egan onsite.
45'-50' = mostly rock, no cuttings
50'-55' = ⇑ same ⇑
55'-60' = ⇑ same ⇑
60-65' = ⇑ same ⇑

0920 - @ 65.2' (±) hit assumed bedrock, drill will not advance further. Prepping to set well. Completing with 5' screen. ☆ No cuttings produced from this well today.

1040- Thunder & rain. Stop work until weather

RR 8/4/14

PI# 341700226

Tower 8/4/14

lets up. Per Kristen, thunder storm warning in effect for next 3 hours.

1230- ~10' of fill @ bottom of well, using split spoon to remove sand @ bottom of well. Split spoon recovered ~2.5' of coarse sand.

1300- Two full split spoons removed, sand keeps filling holes. drillers flushing hole w/ water to remove sediment. Proposed flushing 50 gallons of water.

1405- Split spoon stuck ~5' from bottom of hole. CEC attempting to dislodge.

1630- Got split spoon removed w/ flattened PVC + ~10 gallons of water.

RR 8/4/14

Rite in the Rain

8

8/4/14

P# 34170026

Tower

Currently 60' of auger in the ground ~ w/ 3' of sand in the bottom of the auger.

1740- Flushed out sand from well and was able to push out plate @ bottom (which had been pushed up ~ 3'). ~200 gallons flushed.

1930- Set well @ 60' bgs, placed sand and some bentonite chips. Will mix grout tomorrow morning and complete well. Produced ~ 250 gallons of IDW water installing well. End of day.

RB 8/4/14

R Beckman P# 34170026

9

Sunny, 65°F Tower 8/5/14

0645- Crash. Driller arrive @ 0700. Will begin grouting this morning.

0730- Cannot get grout rod down past 47' bgs, driller pulling auger up, hoping sand slides down.

0835- Pulled 5' of auger up and included sand fell out of auger.

1045- All auger pieces removed, well grouted. Will complete w/ flush mount finish after MW-21 is installed.

1115- Moving north to ~~MW21D~~ MW21M location.

1200- Kristen taking drillers to refill water tank up.

1330- Drillers back onsite, filled 500 gallon water tank. Setting up @ MW21M

1405- Began drilling. 0-5' = ~~sandy gravel~~ gravelly sand, dry, Brown

RB 8/5/14

10

P#34170026

8/5/16 Tower 8/5/16

5'-10' = ~~Gravelly~~ sandy gravel, dry, red-brown,
@ 8-10' => fine sand, dry, brown.
10-15' => Gravelly sand w/ fines, light brown, ~~dr~~ moist. Mod. HC odor.
KB 8/5
@12-15' silty sand, grey brown
15'-20' => silty sand w/ gravel grey-brown.
@19-20 = more grey. strong odor, HC.
20'-25' => 20-23 = silty sand, moist, grey.
23'-25' = silty sand, ~~saturated~~ wet, brown.
25'-30' => silty sand w/ gravel. Brown. Wet. HC odor
1545 - Setting well. Placing screen from 25'-30' bgs, per request of Kristen Hanusch.

KB 8/5/16

P#34170026

TOWER 8/5/16

1700 - Well placed, and grouted in place. Will allow both wells to sit for @ least 12 hours before developing. Will develop wells on 8/6/16.
1735 - CEC decoming augers and cleaning up site. Left site.

8/5/16
KB

Rite in the Rain

12

P# 341700216 Sunny, 70°F

8/6/16 Tower R. Beckman

0650 - Onsite, drillers arrive @ 0700. Will begin developing wells installed yesterday. MW16E = TD = 58.65' DTW = 2.66'

0745 - Began purge / surge of MW16E. Water dark brown.

0750 - DTW = 5.5' btoc water cleared significantly in first 5 minutes, will continue cycle for a minimum of 25 more minutes. 20 gallons purged so far.

0735 - DTW = 4.52 btoc. Purged 5 minutes.

0810 - Water clear, while surging + purging. Pumped 20 gallons.

0815 - Surging well. DTW = 4.46' btoc

0820 - Purged 20 gallons, water clear for all 20 gallons. Development complete @ MW16E.

RB 8/6/16

P# 341700216

13

Tower 8/6/16

0830 - @ MW21N. TD = 30.5' btoc DTW = 7.41' btoc Surging well.

0835 - began purging, water orange, semi-turbid.

0840 - DTW = 5.23' btoc Purged 20 gallons. Surging for ~2-5 minutes.

0845 - Water still turbid, red. DTW = 5.02' btoc. Began purging.

0850 - Purged 10 gallons, still red, turbid. Surging.

0855 - Began purging.

0905 - Purged 20 gallons, still red, turbid. Surging.

0910 - Purging. Slightly turbid, orange.

0915 - Surging well, still orange + turbid. Clearing up.

0930 - 10 gallons purged. DTW = 5.15' btoc.

RB 8/6/16

Rite in the Rain

EPA-R5-2017-010506_0002338

p# 341700026

8/6/14 TOWER

0940 - Surging well. Water light orange, slightly turbid.

0945 - Purged 15 gallons. Clear, slightly turbid. Surging not generating additional turbidity. ΔTW = 6.89' btoc. Continuing purging.

0955 - Almost clear, purged 10 gallons.

1005 - Purged 10 gallons, clear. Finished developing.
MW11E = TD = 59.50' Final (BTOC)
ΔTW = 5.38' Final
MW21M = TD = 39.38', Final
ΔTW = 9.73' Final.
Development water from both wells smells of HCs, MW21M = strong, MW11E = moderate.
MW11E = 60 gallons purged
MW21M = 95 gallons purged.

8/6/14
RVS

p# 341700026

TOWER 8/6/14

1230 - All wells installed, CEC packed up equipment + left site. NRC begin sampling on 8/8/14. See bore logs for details.

NRC
8/6/14

Rite in the Rain

65°F Sunny p#34170026
16
8/8/16 Tower R. Beckman

0650- Onsite, calibrated YSI #1 & turbidity meter w/in range, see equipment log for details. Waiting for surveyor to arrive. Should be onsite @ 0730.

0740- Surveyor onsite, setting up to sample MW16 wells.

0950- Began purging MW16.

1115- Collected samples from MW16. Purged 1 hour w/out turbidity meeting criteria.
Sample ID = 1608TOWERMW16
Date/Time = 8/8/16 / 1055-

1125- Purging MW16D

1320- Collected samples from MW16D.
Sample ID = 1608TOWERMW16D
Date/Time = 8/8/16 / 1300.
Dup ID = 1608TOWERMW18D
Date/Time = 8/8/16 / 1330.
Collected the following

RB 8/8/16

p#34170026
17
TOWER 8/8/16

from all samples:
• VOCs • Metals • Nitrite
• GRO • Sulfate • Sulfide
• EDB • Nitrate

1420- Decomming pump, cleaning up site. Only have 1 trip blank set, will hold VOCs until final shipment.
Will pack up samples and ship to Pace in MN.

1625- Samples FedEx to Pace.

1700 End of day

RB 8/8/16

Rite in the Rain

18

PA 341700216

8/9/14 Tower R. Beckman

0700 Onsite, setting up @ MW1UE.

0750 Began purging.

0930 - Collected sample. All parameters stable but turbidity, purged 1 hour. Sample ID = 1608TOWERMW1UE Date/Time = 8/9/14 / 0900. Decoming pump, headed to MW21 well next.

0930 Collected Equipment blank. Blank ID = 1608TOFREQBS Date/Time = 8/9/14 / 0930

1010 - @ MW21, began purging.

1130 - Collected samples. Purged 1 hour, all parameters stable but turbidity. Sample ID = 1608TOWERMW21 Date/Time = 8/9/14 / 1120. Decanned pump.

1150 - Began purging MW21M.

1300 - Collecting sample: Sample ID = 1608TOWERMW21M Date/Time = 8/9/14 / 1300.

KB 8/9/14

19

PA 341700216

TOWER 8/9/14

1315 - Decanned pump, will sample MW21D next.

1340 - Began purging MW21D.

1355 - Landowner onsite. 55-gallon drums from well installation + sampling are on owners septic system. EPA/Bristol working to find contractor to move drums. 15 drums onsite.

1450 - Collected samples, plus MS/MSD. Sample ID = 1608TOWERMW21D Date/Time = 8/9/14 / 1450. Collected following parameters from all wells:

- VOCs
- EDB
- Sulfide
- Metals
- Nitrate/Nitrite
- GRO
- Sulfate

1530 - Decanned pump, packing up equipment. Will review samples, ship KB

Rite in the Rain 8/9/14

8/9/14 PA 341700216
Tower

pump, then come back to site to meet PA contractor to move drums.

1730 - SBS onsite, moving drums to septic system. Landowner onsite also.

1800 - leaving site. Will drive samples to Pace Minneapolis tomorrow morning.

Note: Soil IDW sample collected on 8/5/14 from MW21M cuttings. Sample ID = 1608TOWERIDWSS Date/Time: 8/5/14 | 1430. Collected for lead (6020) & BTEX (8260). Will drop off w/ groundwater samples tomorrow.

RPB 8/9/14

Sunny, 70°F PA341700216
R. Beckman Tower 8/10/14

0700 - Samples re-iced, 8, 1-gallon bags, 2 wet ice in each cooler (2 coolers total). Headed to Minneapolis, MN. Checked out of hotel.

1230 - In Minneapolis, dropping samples @ Pace.

1435 - Dropped rental car @ airport, checked in for flight to Anchorage, AK. Plane leaves ~1800.

2000 - In Anchorage, AK. Called out home.

RPB 8/10/14

Rain on the Rain

GROUNDWATER SAMPLING REPORT

CLIENT: EPA
SITE: Tower
DATE: 8/8/16
MONITORING WELL ID: MW16
SHEET 1 OF 1

1 in = 0.083 ft; 2 in = 0.167 ft; 3 in = 0.25 ft; 4 in = 0.333 ft

SAMPLER(S) NAME: Robert Bedoman
WEATHER: Cloudy ~ 75°F
SAMPLE ID ON COC: 16081TOWERMW16
PURGE METHOD: low flow
SAMPLE METHOD: low flow
PRODUCT PRESENT: no
WATER LEVEL MEASURING DEVICE: Interface probe
TYPE OF PUMP: Bladder
WELL INTEGRITY: good
REQUIRED REPAIRS: none
PUMP INTAKE DEPTH: ~ 9' btoc

DIAMETER OF WELL: 0.167 (FT)
RADIUS OF WELL (R): 0.083 (FT)
TOTAL DEPTH OF WELL BELOW MEASURING POINT (D): 11.69 (FT)
DEPTH TO GW BELOW MEASURING POINT (d): 2.28 (FT)
LENGTH OF WATER COLUMN (L): (D-d)= 9.41 (FT)
VOLUME OF WATER COLUMN (V): (3.14xRxRxL) 0.20 (CUBIC FT)
WELL VOLUME: (7.48xV)= 1.5 (GAL) X 3= 4.5 (GAL)
Min Purge Volume — Max Purge Volume

Note: Groundwater volumes above were calculated in the field and used for approximate purge volumes; rounded values are shown for informational purposes only.

TIME	VOLUME (GAL)	WATER LEVEL (ft BTOC)	pH	TEMP (deg C)	ORP (mV)	DO (mg/L)	SPECIFIC COND. (uS/cm)	TURBIDITY (NTU)	VISUAL APPEARANCE OF WATER	STABILIZATION ACHIEVED (YES/NO) (1)
Start = 0945			—	—	—	—	—	—	—	—
0950	1.25	2.35	6.85	15.02	-65.7	0.87	511	580	Brown	N
0955	1.50	2.38	6.85	15.54	-64.4	1.68	519	418	" "	N
1000	1.75	2.36	6.86	15.15	-64.1	1.32	515	316	Light Brn	N
1005	2.00	2.36	6.88	15.18	-75.1	0.62	523	96	Milky	N
1010	2.25	2.36	6.90	15.19	-84.7	0.86	537	15	Clear	N
1015	2.50	2.35	6.89	15.25	-86.8	0.93	541	29	Clear	N
1020	2.75	2.36	6.87	15.28	-86.8	0.88	539	29	Clear	N
1025	3.00	2.36	6.87	15.29	-87.4	0.90	540	18	Clear	N
1030	3.25	2.38	6.87	15.31	-87.7	0.91	547	18	" "	N
1035	3.50	2.36	6.87	15.45	-85.9	0.92	550	27	" "	N
1040	3.75	2.36	6.87	15.50	-85.0	0.90	552	17	" "	N
1045	4.00	2.34	6.87	15.51	-85.3	0.95	556	15	" "	Y

(1) STABILIZATION is achieved when three (3) consecutive readings of field indicator parameters collected in 3 to 5 minute intervals meet the following criteria:

- ±0.1 standard units for pH
- ±10% for temperature
- ±3% for specific conductance (conductivity)
- ±10 mV for ORP or ±10% if between -100 mV and +100 mV
- ±10% for DO > 0.50 mg/L. Three DO readings < 0.50 mg/L can be considered stabile.
- ±10% for turbidity > 10 ntu. Three turbidity readings < 10 NTU can be considered stabile.

Purge Until All Parameters Stablize or after 3 Well Volumes Are Removed for Low-Flow Minimal Drawdown Procedure

TOTAL VOLUME PURGED: 4.0 (GAL) FLOW RATE (desired range is 100 to 500 mL/min): 252 mL/min.

SAMPLE TIME: 1055

QC SAMPLES COLLECTED: —

ANALYSIS (fill in correct method if not provided and the number of bottles collected for each parameter)

VOCs (in water) by SW8260B X	Lead by SW6010B or SW6020 ____ (metals)	Sulfate by E300.0 X
BTEX only by SW8260B ____	TOC by SW9020 ____	Chloride by E300.0 X RB
PAHs by SW8310 or SW8270 ____	DOC by SW9020 ____	Nitrate/Nitrite by E353.1 X
GRO by WDNR X	MEE by RSK-175 or Lab SOP ____	Other (Specify) EDB
DRO by WDNR ____	Alkalinity by E310.1 ____	Other (Specify) Sulfide

COMMENTS:

Purged 1 hour

Stability criteria and purging criteria established by EPA Low-flow (Minimal Drawdown) Ground-water Sampling Procedures. Robert W. Puls and Michael J Barcelona. EPA/540/S-95/504. April 1996.

GROUNDWATER SAMPLING REPORT

CLIENT: EPA
SITE: Tower
DATE: 8/8/16
MONITORING WELL ID: MW16D
SHEET 1 OF 2

1 in = 0.083 ft; 2 in = 0.167 ft; 3 in = 0.25 ft; 4 in = 0.333 ft

SAMPLER(S) NAME: Robert Beckman
WEATHER: Cloudy, ~75°F
SAMPLE ID ON COC: 1608TOWERMW16D
PURGE METHOD: low flow
SAMPLE METHOD: low flow
PRODUCT PRESENT: No
WATER LEVEL MEASURING DEVICE: Interface Probe
TYPE OF PUMP: Bladder
WELL INTEGRITY: Good
REQUIRED REPAIRS: none
PUMP INTAKE DEPTH: ~38' btoc

DIAMETER OF WELL: 0.167 (FT)
RADIUS OF WELL (R): 0.083 (FT)
TOTAL DEPTH OF WELL BELOW MEASURING POINT (D): 41.25 (FT)
DEPTH TO GW BELOW MEASURING POINT (d): 2.10 (FT)
LENGTH OF WATER COLUMN (L): (D-d)= 39.15 (FT)
VOLUME OF WATER COLUMN (V): (3.14xRxRxL) 0.85 (CUBIC FT)
WELL VOLUME: (7.48xV)= 6.33 (GAL) X 3= 19.00 (GAL)
Min Purge Volume — Max Purge Volume

Note: Groundwater volumes above were calculated in the field and used for approximate purge volumes; rounded values are shown for informational purposes only.

TIME	VOLUME (GAL)	WATER LEVEL (ft BTOC)	pH	TEMP (deg C)	ORP (mV)	DO (mg/L)	SPECIFIC COND. (uS/cm)	TURBIDITY (NTU)	VISUAL APPEARANCE OF WATER	STABILIZATION ACHIEVED (YES/NO) (1)
1025	Start									
1030	0.25	2.31	7.09	12.57	-105.7	4.44	655	>1000	Pink	N
stopped	Pumping		@ 1035,	Began	again	@ 1150				—
1035	0.50	2.20	7.29	11.79	-136.3	0.51	717	>1000	Pink	N
1100	0.75	2.20	7.27	12.07	-130.5	0.37	718	>1000	" "	N
1205	1.00	2.18	7.28	12.03	-117.5	0.31	713	345	light Pink	N
1210	1.25	2.18	7.28	11.88	-116.3	0.28	710	239	" "	N
1215	1.50	2.21	7.26	11.63	-117.7	0.24	708	147	" "	N
1220	1.75	2.20	7.25	11.63	-113.3	0.23	706	112	" "	N
1225	2.00	2.21	7.24	11.55	-115.0	0.22	705	89	Clear	N
1230	2.25	2.21	7.23	11.50	-111.4	0.23	704	75	Clear	N
1235	2.50	2.20	7.21	11.46	-111.9	0.23	705	71	" "	N
1240	2.75	2.21	7.21	11.43	-112.5	0.20	703	69	" "	N

(1) STABILIZATION is achieved when three (3) consecutive readings of field indicator parameters collected in 3 to 5 minute intervals meet the following criteria:

- ±0.1 standard units for pH
- ±10% for temperature
- ±3% for specific conductance (conductivity)
- ±10 mV for ORP or ±10% if between -100 mV and +100 mV
- ±10% for DO > 0.50 mg/L. Three DO readings < 0.50 mg/L can be considered stabile.
- ±10% for turbidity > 10 ntu. Three turbidity readings < 10 NTU can be considered stabile.

Purge Until All Parameters Stablize or after 3 Well Volumes Are Removed for Low-Flow Minimal Drawdown Procedure

TOTAL VOLUME PURGED: 3.50 (GAL) FLOW RATE (desired range is 100 to 500 mL/min): 220 ml/min

SAMPLE TIME: 1300

QC SAMPLES COLLECTED: 1608TOWERMW18D = duplicate @ 1330

ANALYSIS (fill in correct method if not provided and the number of bottles collected for each parameter)

VOCs (in water) by SW8260B X
BTEX only by SW8260B ____
PAHs by SW8310 or SW8270 ____
GRO by WDNR X
DRO by WDNR ____

Lead by SW6010B or SW6020 X Metals
TOC by SW9020 ____
DOC by SW9020 ____
MEE by RSK-175 or Lab SOP ____
Alkalinity by E310.1 ____

Sulfate by E300.0 X
Chloride by E300.0 ____
Nitrate/Nitrite by E353.1 X
Other (Specify) Sulfide
Other (Specify) EDB

COMMENTS:

Moderate HC odor, Purged 1 hour

Stability criteria and purging criteria established by EPA Low-flow (Minimal Drawdown) Ground-water Sampling Procedures. Robert W. Puls and Michael J Barcelona. EPA/540/S-95/504. April 1996.

GROUNDWATER SAMPLING REPORT

CLIENT: EPA
SITE: TOWE
DATE: 8/8/14
MONITORING WELL ID: MW14A
SHEET 2 OF 2

1 in = 0.083 ft; 2 in = 0.167 ft; 3 in = 0.25 ft; 4 in = 0.333 ft

SAMPLER(S) NAME: Robert Beckman
WEATHER: Cloudy, 75°F
SAMPLE ID ON COC: 1608 TOWERMW14A
PURGE METHOD: low flow
SAMPLE METHOD: low flow
PRODUCT PRESENT: no
WATER LEVEL MEASURING DEVICE: Interface
TYPE OF PUMP: Bladder
WELL INTEGRITY: good
REQUIRED REPAIRS: none
PUMP INTAKE DEPTH: ~38' btoc

DIAMETER OF WELL: 0.167 (FT)
RADIUS OF WELL (R): 0.083 (FT)
TOTAL DEPTH OF WELL BELOW MEASURING POINT (D): 41.25 (FT)
DEPTH TO GW BELOW MEASURING POINT (d): 2.10 (FT)
LENGTH OF WATER COLUMN (L): (D-d)= 39.15 (FT)
VOLUME OF WATER COLUMN (V): (3.14xRxRxL) 0.85 (CUBIC FT)
WELL VOLUME: (7.48xV)= 6.33 (GAL) X 3= 19.00 (GAL)
Min Purge Volume — Max Purge Volume

Note: Groundwater volumes above were calculated in the field and used for approximate purge volumes; rounded values are shown for informational purposes only.

TIME	VOLUME (GAL)	WATER LEVEL (ft BTOC)	pH	TEMP (deg C)	ORP (mV)	DO (mg/L)	SPECIFIC COND. (uS/cm)	TURBIDITY (NTU)	VISUAL APPEARANCE OF WATER	STABILIZATION ACHIEVED (YES/NO) (1)
1245	3.0	2.21	7.21	11.48	-116.2	0.21	705	62	Clear	N
1250	3.25	2.21	7.24	11.72	-114.2	0.20	710	58	Clear	N
1255	3.50	2.20	7.25	11.52	-119.4	0.19	706	55	Clear	Y

(1) STABILIZATION is achieved when three (3) consecutive readings of field indicator parameters collected in 3 to 5 minute intervals meet the following criteria:

- ±0.1 standard units for pH
- ±10% for temperature
- ±3% for specific conductance (conductivity)
- ±10 mV for ORP or ±10% if between -100 mV and +100 mV
- ±10% for DO > 0.50 mg/L. Three DO readings < 0.50 mg/L can be considered stabile.
- ±10% for turbidity > 10 ntu. Three turbidity readings < 10 NTU can be considered stabile.

Purge Until All Parameters Stablize or after 3 Well Volumes Are Removed for Low-Flow Minimal Drawdown Procedure

TOTAL VOLUME PURGED: 3.50 (GAL) FLOW RATE (desired range is 100 to 500 mL/min): 220 ml/min

SAMPLE TIME: 1300

QC SAMPLES COLLECTED: 1608TOWERMW18D = duplicate @ 1330

ANALYSIS (fill in correct method if not provided and the number of bottles collected for each parameter)

VOCs (in water) by SW8260B X
BTEX only by SW8260B ____
PAHs by SW8310 or SW8270 ____
GRO by WDNR X
DRO by WDNR ____

~~Lead~~ metals by SW6010B or SW6020 X
TOC by SW9020 ____
DOC by SW9020 ____
MEE by RSK-175 or Lab SOP ____
Alkalinity by E310.1 ____

Sulfate by E300.0 X
Chloride by E300.0 ____
Nitrate/Nitrite by E353.1 X
Other (Specify) Sulfide
Other (Specify) EDB

COMMENTS:

Purged 1 hr

Stability criteria and purging criteria established by EPA Low-flow (Minimal Drawdown) Ground-water Sampling Procedures. Robert W. Puls and Michael J Barcelona. EPA/540/S-95/504. April 1996.

GROUNDWATER SAMPLING REPORT

CLIENT: EPA
SITE: Tower
DATE: 8/9/16
MONITORING WELL ID: MW16E
SHEET 1 OF 1

1 in = 0.083 ft; 2 in = 0.167 ft; 3 in = 0.25 ft; 4 in = 0.333 ft

SAMPLER(S) NAME: Robert Beckman
WEATHER: Cloudy, 70°F
SAMPLE ID ON COC: 16008TOWERMW16E
PURGE METHOD: Low flow
SAMPLE METHOD: low flow
PRODUCT PRESENT: No
WATER LEVEL MEASURING DEVICE: Interface probe
TYPE OF PUMP: Bladder
WELL INTEGRITY: Good
REQUIRED REPAIRS: none
PUMP INTAKE DEPTH: ~56'

DIAMETER OF WELL: 0.167 (FT)
RADIUS OF WELL (R): 0.083 (FT)
TOTAL DEPTH OF WELL BELOW MEASURING POINT (D): 59.50 (FT)
DEPTH TO GW BELOW MEASURING POINT (d): 2.73 (FT)
LENGTH OF WATER COLUMN (L): (D-d)= 56.77 (FT)
VOLUME OF WATER COLUMN (V): (3.14xRxRxL) 1.23 (CUBIC FT)
WELL VOLUME: (7.48xV)= 9.2 (GAL) X 3= 27.56 (GAL)
Min Purge Volume — Max Purge Volume

Note: Groundwater volumes above were calculated in the field and used for approximate purge volumes; rounded values are shown for informational purposes only.

TIME	VOLUME (GAL)	WATER LEVEL (ft BTOC)	pH	TEMP (deg C)	ORP (mV)	DO (mg/L)	SPECIFIC COND. (uS/cm)	TURBIDITY (NTU)	VISUAL APPEARANCE OF WATER	STABILIZATION ACHIEVED (YES/NO) (1)
0750	0.25	2.72	6.42	13.71	57.3	3.42	723	249	Clear	N
0755	0.50	2.81	6.24	12.38	-27.2	2.14	914	438	Clear	N
0800	0.75	2.80	6.61	12.04	-115.3	0.69	944	337	Clear	N
0805	1.00	2.80	6.80	12.41	-157.1	0.36	971	253	Clear	N
0810	1.25	2.80	6.78	12.14	-159.2	0.33	988	136	Clear	N
0815	1.50	2.80	6.88	12.49	-164.9	0.31	1013	88	Clear	N
0820	1.75	2.81	7.01	12.56	-175.1	0.28	1030	73	Clear	N
0825	2.00	2.80	7.10	12.91	-179.3	0.28	1049	65	Clear	N
0830	2.50	2.81	7.04	12.12	-192.3	0.23	1045	54	Clear	N
0835	2.75	2.81	7.09	12.64	-193.0	0.23	1072	42	Clear	N
0840	3.00	2.80	7.18	12.79	-203.0	0.25	1089	38	Clear	N
0845	3.50	2.80	7.21	12.70	-166.9	0.27	1086	25	Clear	N
0850	3.75	2.80	7.24	12.81	-155.0	0.24	1113	20	Clear	Y

(1) STABILIZATION is achieved when three (3) consecutive readings of field indicator parameters collected in 3 to 5 minute intervals meet the following criteria:

- ±0.1 standard units for pH
- ±10% for temperature
- ±3% for specific conductance (conductivity)
- ±10 mV for ORP or ±10% if between -100 mV and +100 mV
- ±10% for DO > 0.50 mg/L. Three DO readings < 0.50 mg/L can be considered stabile.
- ±10% for turbidity > 10 ntu. Three turbidity readings < 10 NTU can be considered stabile.

Purge Until All Parameters Stablize or after 3 Well Volumes Are Removed for Low-Flow Minimal Drawdown Procedure

TOTAL VOLUME PURGED: 3.75 (GAL) FLOW RATE (desired range is 100 to 500 mL/min): 236 ml/min.

SAMPLE TIME: 0900

QC SAMPLES COLLECTED:

ANALYSIS (fill in correct method if not provided and the number of bottles collected for each parameter)

VOCs (in water) by SW8260B X
BTEX only by SW8260B ____
PAHs by SW8310 or SW8270 ____
GRO by WDNR X
DRO by WDNR X
~~Lead~~ Metals by SW6010B or SW6020 ____
TOC by SW9020 ____
DOC by SW9020 ____
MEE by RSK-175 or Lab SOP ____
Alkalinity by E310.1 ____
Sulfate by E300.0 X
Chloride by E300.0 ____
Nitrate/Nitrite by E353.1 X
Other (Specify) Sulfide
Other (Specify) EDB

COMMENTS:
Purged 1 hour.
mild HC odor

Stability criteria and purging criteria established by EPA Low-flow (Minimal Drawdown) Ground-water Sampling Procedures. Robert W. Puls and Michael J Barcelona. EPA/540/S-95/504. April 1996.

GROUNDWATER SAMPLING REPORT

CLIENT: EPA
SITE: TOWER
DATE: 8/9/16
MONITORING WELL ID: MW21
SHEET 1 OF 1
1 in = 0.083 ft; 2 in = 0.167 ft; 3 in = 0.25 ft; 4 in = 0.333 ft

SAMPLER(S) NAME: Robert Beckman
WEATHER: Partial Sun, ~75°F
SAMPLE ID ON COC: 1608TOWERMW21
PURGE METHOD: low flow
SAMPLE METHOD: low flow
PRODUCT PRESENT: no
WATER LEVEL MEASURING DEVICE: Interface Probe
TYPE OF PUMP: Bladder
WELL INTEGRITY: Good
REQUIRED REPAIRS: needs new cover seal
PUMP INTAKE DEPTH:

DIAMETER OF WELL: 0.167 (FT)
RADIUS OF WELL (R): 0.083 (FT)
TOTAL DEPTH OF WELL BELOW MEASURING POINT (D): 14.88 (FT)
DEPTH TO GW BELOW MEASURING POINT (d): 7.23 (FT)
LENGTH OF WATER COLUMN (L): (D-d)= 7.65 (FT)
VOLUME OF WATER COLUMN (V): (3.14xRxRxL) 0.165 (CUBIC FT)
WELL VOLUME: (7.48xV)= 1.23 (GAL) X 3= 3.71 (GAL)
Min Purge Volume Max Purge Volume

Note: Groundwater volumes above were calculated in the field and used for approximate purge volumes; rounded values are shown for informational purposes only.

TIME	VOLUME (GAL)	WATER LEVEL (ft BTOC)	pH	TEMP (deg C)	ORP (mV)	DO (mg/L)	SPECIFIC COND. (uS/cm)	TURBIDITY (NTU)	VISUAL APPEARANCE OF WATER	STABILIZATION ACHIEVED (YES/NO) (1)
1010	0.25	7.48	6.20	17.31	-38.9	0.34	365	>1000	Red/Brn	N
1015	0.50	7.52	6.16	16.41	-38.0	0.44	355	>1000	" "	N
1020	0.75	7.54	6.12	16.12	-37.7	0.25	349	378	Ltg. brn	N
1025	1.00	7.55	6.18	15.83	-42.3	0.22	341	224	" "	N
1030	1.50	7.55	6.23	15.66	-45.8	0.22	336	142	" "	N
1035	1.75	7.55	6.23	15.51	-45.4	0.20	334	112	Clear	N
1040	2.00	7.55	6.27	15.50	-46.4	0.17	332	70	Clear	N
1045	2.25	7.54	6.28	15.49	-47.8	0.18	332	56	Clear	N
1050	2.50	7.55	6.29	15.43	-48.4	0.18	332	46	Clear	N
1055	2.75	7.54	6.27	15.46	-47.2	0.15	331	38	Clear	N
1100	3.00	7.55	6.29	15.54	-48.8	0.14	333	31	Clear	N
1105	3.50	7.53	6.31	15.53	-50.0	0.13	333	24	Clear	N
1110	3.75	7.54	6.30	15.44	-48.4	0.14	333	19	Clear	N

(1) STABILIZATION is achieved when three (3) consecutive readings of field indicator parameters collected in 3 to 5 minute intervals meet the following criteria:

- ±0.1 standard units for pH
- ±10% for temperature
- ±3% for specific conductance (conductivity)
- ±10 mV for ORP or ±10% if between -100 mV and +100 mV
- ±10% for DO > 0.50 mg/L. Three DO readings < 0.50 mg/L can be considered stabile.
- ±10% for turbidity > 10 ntu. Three turbidity readings < 10 NTU can be considered stabile.

Purge Until All Parameters Stablize or after 3 Well Volumes Are Removed for Low-Flow Minimal Drawdown Procedure

TOTAL VOLUME PURGED: 3.75 (GAL) FLOW RATE (desired range is 100 to 500 mL/min): 250 ml/minute

SAMPLE TIME: 1120

QC SAMPLES COLLECTED: —

ANALYSIS (fill in correct method if not provided and the number of bottles collected for each parameter)

VOCs (in water) by SW8260B X
BTEX only by SW8260B ____
PAHs by SW8310 or SW8270 ____
GRO by WDNR X
DRO by WDNR ____

Lead by SW6010B or SW6020 ____ Metals
TOC by SW9020 ____
DOC by SW9020 ____
MEE by RSK-175 or Lab SOP ____
Alkalinity by E310.1 ____

Sulfate by E300.0 X
Chloride by E300.0 ____
Nitrate/Nitrite by E353.1 X
Other (Specify) Sulfide
Other (Specify) EDB

COMMENTS:

HC odor, Purged 1 hour gallon positive

Stability criteria and purging criteria established by EPA Low-flow (Minimal Drawdown) Ground-water Sampling Procedures. Robert W. Puls and Michael J Barcelona. EPA/540/S-95/504. April 1996.

GROUNDWATER SAMPLING REPORT

CLIENT: EPA
SITE: TOWER
DATE: 8/9/14
MONITORING WELL ID: MW21M
SHEET 1 OF 1
1 in = 0.083 ft; 2 in = 0.167 ft; 3 in = 0.25 ft; 4 in = 0.333 ft

SAMPLER(S) NAME: Robert Beckman
WEATHER: Cloudy, 75°F
SAMPLE ID ON COC: ~~1608MW21E~~ RRB 8/9/14 1608TOWERMW21M
PURGE METHOD: low flow
SAMPLE METHOD: low flow
PRODUCT PRESENT: no
WATER LEVEL MEASURING DEVICE: Interface Probe
TYPE OF PUMP: Bladder
WELL INTEGRITY: Good
REQUIRED REPAIRS: none
PUMP INTAKE DEPTH: ~27' bloc

DIAMETER OF WELL: 0.167 (FT)
RADIUS OF WELL (R): 0.083 (FT)
TOTAL DEPTH OF WELL BELOW MEASURING POINT (D): 30.16 (FT)
DEPTH TO GW BELOW MEASURING POINT (d): 7.49 (FT)
LENGTH OF WATER COLUMN (L): (D-d)= 22.67 (FT)
VOLUME OF WATER COLUMN (V): (3.14xRxRxL) 0.49 (CUBIC FT)
WELL VOLUME: (7.48xV)= 3.67 (GAL) X 3= 11 (GAL)
Min Purge Volume — Max Purge Volume

Note: Groundwater volumes above were calculated in the field and used for approximate purge volumes; rounded values are shown for informational purposes only.

TIME	VOLUME (GAL)	WATER LEVEL (ft BTOC)	pH	TEMP (deg C)	ORP (mV)	DO (mg/L)	SPECIFIC COND. (uS/cm)	TURBIDITY (NTU)	VISUAL APPEARANCE OF WATER	STABILIZATION ACHIEVED (YES/NO) (1)
1150	0.25	7.51	6.50	17.05	-15.3	4.00	341	835	Pink	N
1155	0.50	7.52	5.97	14.83	3.0	0.65	351	>1000	Pink	N
1200	0.75	7.54	5.91	14.60	1.3	0.41	354	970	Pink	N
1205	1.00	7.53	6.07	14.83	-13.1	0.32	369	791	Pink	N
1210	1.25	7.52	6.13	14.35	-17.7	0.84	384	528	Pink	N
1215	1.50	7.53	6.17	14.77	-21.6	0.32	392	386	Pink	N
1220	1.75	7.51	6.20	15.06	-24.1	0.23	398	323	Pink	N
1225	2.00	7.51	6.20	15.24	-22.9	0.20	410	260	Pink	N
1230	2.25	7.51	6.21	15.20	-24.7	0.20	415	204	Pink	N
1235	2.50	7.52	6.22	15.49	-25.2	0.17	424	154	Clear	N
1240	2.75	7.51	6.22	15.39	-25.9	0.18	426	136	Clear	N
1245	3.00	7.51	6.23	15.34	-26.5	0.18	426	120	Clear	N
1250	3.50	7.52	6.23	15.40	-28.3	0.17	428	98	Clear	Y

(1) STABILIZATION is achieved when three (3) consecutive readings of field indicator parameters collected in 3 to 5 minute intervals meet the following criteria:

- ±0.1 standard units for pH
- ±10% for temperature
- ±3% for specific conductance (conductivity)
- ±10 mV for ORP or ±10% if between -100 mV and +100 mV
- ±10% for DO > 0.50 mg/L. Three DO readings < 0.50 mg/L can be considered stabile.
- ±10% for turbidity > 10 ntu. Three turbidity readings < 10 NTU can be considered stabile.

Purge Until All Parameters Stablize or after 3 Well Volumes Are Removed for Low-Flow Minimal Drawdown Procedure

TOTAL VOLUME PURGED: 3.50 (GAL) FLOW RATE (desired range is 100 to 500 mL/min): 220 ml/min

SAMPLE TIME: 1300

QC SAMPLES COLLECTED:

ANALYSIS (fill in correct method if not provided and the number of bottles collected for each parameter)

VOCs (in water) by SW8260B X	Lead by SW6010B or SW6020 X (Metals)	Sulfate by E300.0 X
BTEX only by SW8260B ____	TOC by SW9020 ____	Chloride by E300.0 ____
PAHs by SW8310 or SW8270 ____	DOC by SW9020 ____	Nitrate/Nitrite by E353.1 X
GRO by WDNR X	MEE by RSK-175 or Lab SOP ____	Other (Specify) ____
DRO by WDNR ____	Alkalinity by E310.1 ____	Other (Specify) ____

COMMENTS:

Mild HC odor. Purged for 1 hour.

Stability criteria and purging criteria established by EPA Low-flow (Minimal Drawdown) Ground-water Sampling Procedures. Robert W. Puls and Michael J Barcelona. EPA/540/S-95/504. April 1996.

GROUNDWATER SAMPLING REPORT

CLIENT: BP EPA
SITE: TOWER
DATE: 8/9/16
MONITORING WELL ID: MW21D
SHEET 1 OF 1
1 in = 0.083 ft; 2 in = 0.167 ft; 3 in = 0.25 ft; 4 in = 0.333 ft

SAMPLER(S) NAME: Robert Beckman
WEATHER: Cloudy, ~75°F
SAMPLE ID ON COC: 1608TOWERMW21D
PURGE METHOD: low flow
SAMPLE METHOD: low flow
PRODUCT PRESENT: NO
WATER LEVEL MEASURING DEVICE: Interface probe
TYPE OF PUMP: Bladder
WELL INTEGRITY: good
REQUIRED REPAIRS: NO
PUMP INTAKE DEPTH: ~36'

DIAMETER OF WELL: 0.167 (FT)
RADIUS OF WELL (R): 0.083 (FT)
TOTAL DEPTH OF WELL BELOW MEASURING POINT (D): 39.34 (FT)
DEPTH TO GW BELOW MEASURING POINT (d): 7.62 (FT)
LENGTH OF WATER COLUMN (L): (D-d)= 31.72 (FT)
VOLUME OF WATER COLUMN (V): (3.14xRxRxL) 0.69 (CUBIC FT)
WELL VOLUME: (7.48xV)= 5.13 (GAL) X 3= 15.40 (GAL)
Min Purge Volume — Max Purge Volume

Note: Groundwater volumes above were calculated in the field and used for approximate purge volumes; rounded values are shown for informational purposes only.

TIME	VOLUME (GAL)	WATER LEVEL (ft BTOC)	pH	TEMP (deg C)	ORP (mV)	DO (mg/L)	SPECIFIC COND. (uS/cm)	TURBIDITY (NTU)	VISUAL APPEARANCE OF WATER	STABILIZATION ACHIEVED (YES/NO) (1)
1340	0.25	7.62	6.43	18.60	-54.3	5.36	1426	>1000	Brown	N
1345	0.50	7.63	6.41	12.64	-43.4	0.49	1414	>1000	" "	N
1350	0.75	7.64	10.38	12.98	-43.3	0.19	1604	872	light BRN	N
1355	1.00	7.65	6.52	15.93	-50.0	0.19	1580	735	" "	N
1400	1.25	7.65	6.52	16.03	-52.1	0.25	1588	128	" "	N
1405	1.50	7.66	6.55	12.25	-50.2	0.15	1477	126	" "	N
1410	2.00	7.66	6.41	12.10	-46.1	0.13	1483	111	" "	N
1415	2.25	7.65	6.49	12.16	-50.9	0.12	1499	58	Clear	N
1420	2.50	7.65	6.50	12.13	-52.6	0.16	1503	46	" "	N
1425	2.75	7.65	6.52	12.08	-52.4	0.14	1504	39	" "	N
1430	3.25	7.65	6.52	11.97	-53.8	0.10	1501	31	" "	N
1435	3.50	7.66	6.51	12.17	-54.3	0.13	1504	22	" "	N
1440	4.00	7.65	6.52	12.20	-55.1	0.10	1509	20	" "	Y

(1) STABILIZATION is achieved when three (3) consecutive readings of field indicator parameters collected in 3 to 5 minute intervals meet the following criteria:

- ±0.1 standard units for pH
- ±10% for temperature
- ±3% for specific conductance (conductivity)
- ±10 mV for ORP or ±10% if between -100 mV and +100 mV
- ±10% for DO > 0.50 mg/L. Three DO readings < 0.50 mg/L can be considered stabile.
- ±10% for turbidity > 10 ntu. Three turbidity readings < 10 NTU can be considered stabile.

Purge Until All Parameters Stablize or after 3 Well Volumes Are Removed for Low-Flow Minimal Drawdown Procedure

TOTAL VOLUME PURGED: 4.00 (GAL) FLOW RATE (desired range is 100 to 500 mL/min): 252 ml/min.

SAMPLE TIME: 1450

QC SAMPLES COLLECTED: MS/MSD

ANALYSIS (fill in correct method if not provided and the number of bottles collected for each parameter)

VOCs (in water) by SW8260B X	Lead by SW6010B or SW6020 X (metals)	Sulfate by E300.0 X
BTEX only by SW8260B ____	TOC by SW9020 ____	Chloride by E300.0 ____
PAHs by SW8310 or SW8270 ____	DOC by SW9020 ____	Nitrate/Nitrite by E353.1 X
GRO by WDNR X	MEE by RSK-175 or Lab SOP ____	Other (Specify) EDB
DRO by WDNR ____	Alkalinity by E310.1 ____	Other (Specify) Sulfide

COMMENTS:

Mod. HC odor. Purged 1 hour.

Stability criteria and purging criteria established by EPA Low-flow (Minimal Drawdown) Ground-water Sampling Procedures. Robert W. Puls and Michael J Barcelona. EPA/540/S-95/504. April 1996.

ATTACHMENT 3

Well Construction Diagrams

Bristol
ENVIRONMENTAL REMEDIATION SERVICES, LLC

WELL CONSTRUCTION DIAGRAM

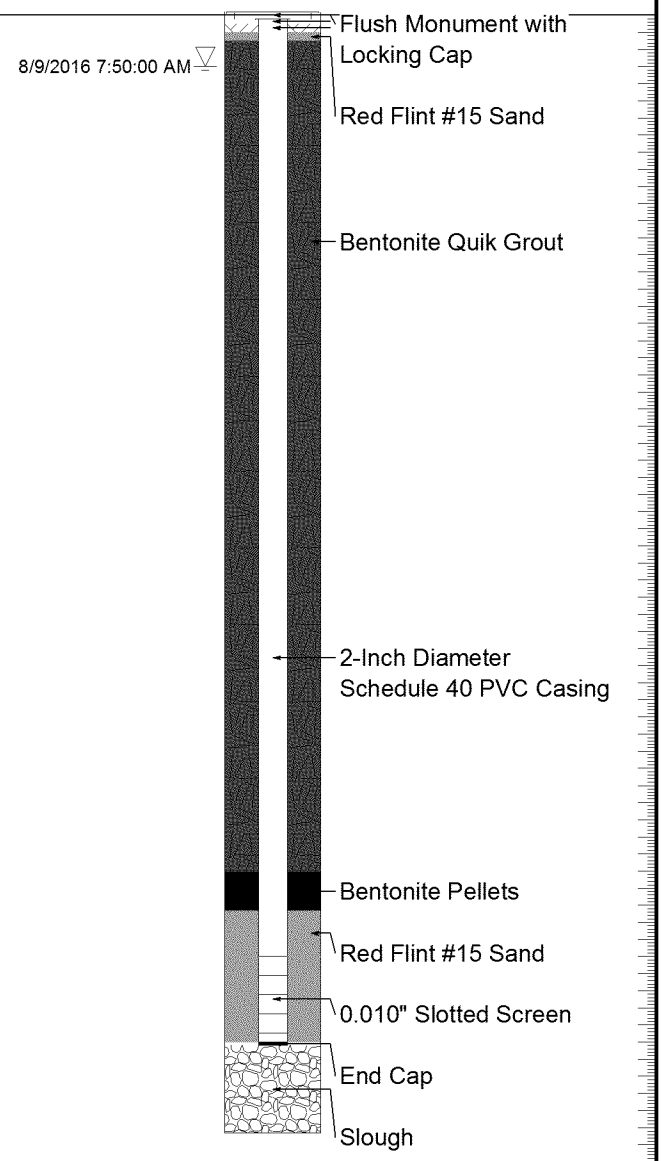
SHEET 1 OF 1 SHEETS

BOREHOLE LOCATION N 1982979.9, E 1727927.9		DRILLING COMPANY Coleman Engineering Company
COORDINATE SYSTEM AND DATUM WTM, NAD 83		DRILL RIG Diedrich D-120
ELEVATION AT TOP OF HOLE 1570.0 feet		DRILLING METHOD Hollow Stem Auger
ELEVATION AT TOP OF CASING 1569.73 feet		DRILLER Craig Reidmer
ELEVATION DATUM Mean Sea Level		BOREHOLE DIAMETER 8 inches
TOTAL DEPTH 65.3 feet	DEPTH TO WATER 3 feet	LOGGED BY Robert Beckman
GROUNDWATER ELEVATION 1567 feet		DATE HOLE STARTED 8/3/2016 COMPLETED 8/5/2016

PROJECT: Task Order 3012
CLIENT: U.S. EPA
JOB NUMBER: 34170026
SITE: Tower Standard
LOCATION: Lac du Flambeau, Wisconsin

DEPTH (FEET)	GRAPHIC LOG	USCS	SAMPLE INTERVAL	BLOW COUNT	RECOVERY	PID (ppm)	ANALYTICAL SAMPLE
0.0–5.0		SW					
5.0–6.0		SW					
6.0–10.0		SW					
10.0–15.0		SW					
15.0–20.0		SW					
20.0–25.0		SW					
25.0–30.0		SW					
30.0–35.0		SW					
35.0–65.2		GW					

WELL CONSTRUCTION DETAILS



BERS Well Construction Diagram Version: 0413

PROJECT: Task Order 3012

WELL NO.: MW-16E

Bristol
ENVIRONMENTAL REMEDIATION SERVICES, LLC

WELL CONSTRUCTION DIAGRAM

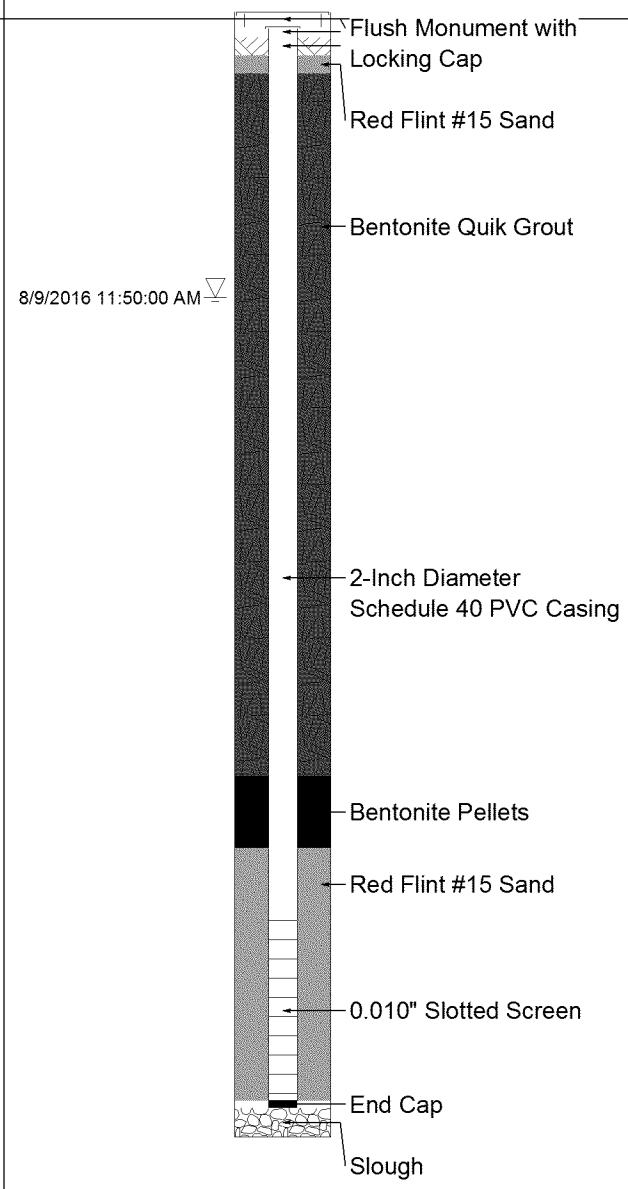
SHEET 1 OF 1 SHEETS

BOREHOLE LOCATION N 1983142.6, E 1728145.1		DRILLING COMPANY Coleman Engineering Company
COORDINATE SYSTEM AND DATUM WTM, NAD 83		DRILL RIG Diedrich D-120
ELEVATION AT TOP OF HOLE 1575.6 feet		DRILLING METHOD Hollow Stem Auger
ELEVATION AT TOP OF CASING 1575.37 feet		DRILLER Craig Reidmer
ELEVATION DATUM Mean Sea Level		BOREHOLE DIAMETER 8 inches
TOTAL DEPTH 31 feet	DEPTH TO WATER 7.72 feet	LOGGED BY Robert Beckman
GROUNDWATER ELEVATION 1567.88 feet		DATE HOLE: STARTED 8/5/2016, COMPLETED 8/5/2016

PROJECT: Task Order 3012
CLIENT: U.S. EPA
JOB NUMBER: 34170026
SITE: Tower Standard
LOCATION: Lac du Flambeau, Wisconsin

DEPTH (FEET)	GRAPHIC LOG	USCS	SAMPLE INTERVAL	BLOW COUNT	RECOVERY	PID (ppm)	ANALYTICAL SAMPLE
0.0–5.0		SW					
5.0–8.0		GW					
8.0–10.0		SP					
10.0–12.0		SW					
12.0–15.0		SM					
15.0–19.0		SM					
19.0–20.0		SM					
20.0–23.0		SM					
23.0–25.0		SM					
25.0–30.0		Sm					

WELL CONSTRUCTION DETAILS



BERS Well Construction Diagram Version: 0413

PROJECT: Task Order 3012

WELL NO. MW-21M

ATTACHMENT 4

Tabulated Analytical Results

Attachment 4 Tabulated Analytical Results from August 2016 Sampling Event
Tower Standard Site, Lac du Flambeau, WI

			Monitoring Well			MW-16	MW-16D		MW-16E	MW-21	MW-21D	MW-21M
			Sample ID			1608TOWERMW16	1608TOWERMW16D†	1608TOWERMW18D†	1608TOWERMW16E	1608TOWERMW21	1608TOWERMW21D	1608TOWERMW21M
			Laboratory ID			10358621001	10358621002	10358621003	10358621004	10358621005	10358621007	10358621006
			Collection Date			8/8/2016	8/8/2016	8/8/2016	8/9/2016	8/8/2016	8/9/2016	8/9/2016
Analysis Method	**Analytes**	**Units**	**Groundwater Cleanup Standards[1]**	**EPA MCLs[2]**	**PALs[3]**							
Volatile Organic Compounds												
EPA 8260B	1,1,1,2-Tetrachloroethane	µg/L	70	NE	7	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)
EPA 8260B	1,1,1-Trichloroethane	µg/L	200	NE	40	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
EPA 8260B	1,1,2,2-Tetrachloroethane	µg/L	0.2	NE	0.02	*ND (1.0)*	*ND (1.0)*	*ND (1.0)*	*ND (1.0)*	*ND (1.0)*	*ND (1.0)*	*ND (1.0)*
EPA 8260B	1,1,2-Trichloroethane	µg/L	5	NE	0.5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
EPA 8260B	1,1,2-Trichlorotrifluoroethane	µg/L	NE	NE	NE	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
EPA 8260B	1,1-Dichloroethane	µg/L	850	NE	85	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (1.0)	ND (4.0)
EPA 8260B	1,1-Dichloroethene	µg/L	7	NE	0.7	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
EPA 8260B	1,1-Dichloropropene	µg/L	NE	NE	NE	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
EPA 8260B	1,2,3-Trichlorobenzene	µg/L	NE	NE	NE	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
EPA 8260B	1,2,3-Trichloropropane	µg/L	60	NE	12	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)
EPA 8260B	1,2,4-Trichlorobenzene	µg/L	70	NE	14	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
EPA 8260B	1,2,4-Trimethylbenzene	µg/L	NE	NE	NE	ND (1.0)	367	336	96.6	2,920	30.6 MH	1,310
EPA 8260B	1,3,5-Trimethylbenzene	µg/L	NE	NE	NE	ND (1.0)	79.5	84.3	16.9	744	8.2	480
EPA 8260B	Total Trimethylbenzenes	µg/L	480	NE	96	ND (2.0)	446.5	420.3	113.5	**3,664**	38.8	**1,790**
EPA 8260B	1,2-Dibromo-3-chloropropane	µg/L	0.2	NE	0.02	*ND (10.0)*	*ND (10.0)*	*ND (10.0)*	*ND (10.0)*	*ND (10.0)*	*ND (10.0)*	*ND (10.0)*
EPA 8260B	1,2-Dibromoethane (EDB)	µg/L	0.05	NE	0.005	*ND (1.0)*	*ND (1.0)*	*ND (1.0)*	*ND (1.0)*	*ND (1.0)*	*ND (1.0)*	*ND (1.0)*
EPA 8260B	1,2-Dichlorobenzene	µg/L	600	NE	60	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
EPA 8260B	1,2-Dichloroethane (1,2-DCA)	µg/L	5	NE	0.5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
EPA 8260B	1,2-Dichloropropane	µg/L	5	NE	0.5	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)
EPA 8260B	1,3-Dichlorobenzene	µg/L	1,250	NE	120	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
EPA 8260B	1,3-Dichloropropane	µg/L	NE	NE	NE	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
EPA 8260B	1,4-Dichlorobenzene	µg/L	75	NE	15	ND (1.0)	ND (1.0)	ND (1.0)	0.28 J	ND (1.0)	ND (1.0)	ND (1.0)
EPA 8260B	2,2-Dichloropropane	µg/L	NE	NE	NE	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)
EPA 8260B	2-Butanone (MEK)	µg/L	460	NE	0.8	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
EPA 8260B	2-Chlorotoluene	µg/L	NE	NE	NE	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
EPA 8260B	4-Chlorotoluene	µg/L	NE	NE	NE	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
EPA 8260B	4-Methyl-2-pentanone (MIBK)	µg/L	500	NE	50	ND (5.0)	0.69 J	0.72 J	ND (5.0)	9.4	ND (5.0)	2.6 J
EPA 8260B	Acetone	µg/L	1,000	NE	1,800	2.4 J B	ND (20.0)	ND (20.0)	10.0 J B	37.3 B	2.2 J	32.1 B
EPA 8260B	Allyl chloride	µg/L	NE	NE	NE	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)
EPA 8260B	Benzene	µg/L	5	5	0.5	0.75 J	**1,240**	**1,300**	**768**	**458**	**45.9 MH**	**2,150**
EPA 8260B	Bromobenzene	µg/L	NE	NE	NE	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
EPA 8260B	Bromochloromethane	µg/L	NE	NE	NE	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
EPA 8260B	Bromodichloromethane	µg/L	NE	80	0.06	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
EPA 8260B	Bromoform	µg/L	NE	80	0.44	ND (10.0) QL	ND (10.0) QL	ND (10.0) QL	ND (10.0) QL	ND (10.0) QL	ND (4.0)	ND (10.0) QL
EPA 8260B	Bromomethane	µg/L	NE	NE	1	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)
EPA 8260B	Carbon tetrachloride	µg/L	5	5	0.5	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)
EPA 8260B	Chlorobenzene	µg/L	NE	100	NE	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
EPA 8260B	Chloroethane	µg/L	400	NE	80	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (1.0)	ND (4.0)
EPA 8260B	Chloroform	µg/L	6	80	0.6	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
EPA 8260B	Chloromethane	µg/L	3	NE	3	*ND (4.0)*	*ND (4.0)*	*ND (4.0)*	*ND (4.0)*	*ND (4.0)*	*ND (4.0)*	*ND (4.0)*
EPA 8260B	cis-1,2-Dichloroethene	µg/L	70	70	7	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
EPA 8260B	cis-1,3-Dichloropropene	µg/L	0.2	NE	0.04	*ND (4.0)*	*ND (4.0)*	*ND (4.0)*	*ND (4.0)*	*ND (4.0)*	*ND (4.0)*	*ND (4.0)*
EPA 8260B	Dibromochloromethane	µg/L	NE	80	6	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)
EPA 8260B	Dibromomethane	µg/L	NE	NE	NE	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)
EPA 8260B	Dichlorodifluoromethane	µg/L	1,000	NE	200	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)

Attachment 4 Tabulated Analytical Results from August 2016 Sampling Event
Tower Standard Site, Lac du Flambeau, WI

			Monitoring Well			MW-16	MW-16D		MW-16E	MW-21	MW-21D	MW-21M
			Sample ID			1608TOWERMW16	1608TOWERMW16D[†]	1608TOWERMW18D[†]	1608TOWERMW16E	1608TOWERMW21	1608TOWERMW21D	1608TOWERMW21M
			Laboratory ID			10358621001	10358621002	10358621003	10358621004	10358621005	10358621007	10358621006
			Collection Date			8/8/2016	8/8/2016	8/8/2016	8/9/2016	8/8/2016	8/9/2016	8/9/2016
Analysis Method	**Analytes**	**Units**	**Groundwater Cleanup Standards[1]**	**EPA MCLs[2]**	**PALs[3]**							
Volatile Organic Compounds (Continued)												
EPA 8260B	Diethyl ether (Ethyl ether)	µg/L	NE	NE	100	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)
EPA 8260B	Ethylbenzene	µg/L	700	700	140	ND (1.0)	61.8	65.3	8.9	**1,700**	8.1	**1,660**
EPA 8260B	Hexachloro-1,3-butadiene	µg/L	NE	NE	NE	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (1.0)	ND (4.0)
EPA 8260B	Isopropylbenzene (Cumene)	µg/L	NE	NE	NE	ND (1.0)	26.0	26.7	9.9	111	1.2	81.1
EPA 8260B	Methylene Chloride	µg/L	5	5	0.5	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)
EPA 8260B	Methyl tertiary-butyl ether (MTBE)	µg/L	60	NE	12	ND (1.0)	1.9	2.3	10.0	0.24 J	ND (1.0)	7.4
EPA 8260B	Naphthalene	µg/L	40	NE	10	ND (4.0)	**109**	**114**	28.2	**703**	4.9	**470**
EPA 8260B	n-Butylbenzene	µg/L	NE	NE	NE	ND (1.0)	3.3	3.5	0.59 J	52.4	1.8	29.3
EPA 8260B	n-Propylbenzene	µg/L	NE	NE	NE	ND (1.0)	66.9	69.5	18.4	268	5.3 MH	238
EPA 8260B	p-Isopropyltoluene	µg/L	NE	NE	NE	ND (1.0)	1.6	1.7	0.52 J	15.9	0.44 J MH	8.0
EPA 8260B	sec-Butylbenzene	µg/L	NE	NE	NE	ND (1.0)	4.0	4.3	1.3	21.6	0.69 J	16.2
EPA 8260B	Styrene	µg/L	100	100	10	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	12.5	ND (1.0)	5.9
EPA 8260B	tert-Butylbenzene	µg/L	NE	NE	NE	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
EPA 8260B	Tetrachloroethene	µg/L	NE	5	0.5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
EPA 8260B	Tetrahydrofuran	µg/L	50	NE	10	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)
EPA 8260B	Toluene	µg/L	1,000	1,000	160	ND (1.0)	22.2	23.0	6.1 B	**3,280 B**	7.3	**1,320 B**
EPA 8260B	trans-1,2-Dichloroethene	µg/L	100	NE	20	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
EPA 8260B	trans-1,3-Dichloropropene	µg/L	0.2	NE	0.04	*ND (4.0)*	*ND (4.0)*	*ND (4.0)*	*ND (4.0)*	*ND (4.0)*	*ND (4.0)*	*ND (4.0)*
EPA 8260B	Trichloroethene	µg/L	5	NE	0.5	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)
EPA 8260B	Trichlorofluoromethane	µg/L	3,490	NE	NE	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
EPA 8260B	Vinyl chloride	µg/L	0.2	NE	0.02	*ND (0.40)*	*ND (0.40)*	*ND (0.40)*	*ND (0.40)*	*ND (0.40)*	*ND (1.0)*	*ND (0.40)*
EPA 8260B	Xylene (Total)	µg/L	10,000	10,000	400	ND (3.0)	1,610	1,410	506	9,060	64.5	4,340
Ethylene Dibromide												
EPA 8011	1,2-Dibromoethane (EDB)	µg/L	0.05	NE	0.005	ND (0.0097)	ND (0.0098)	ND (0.010)	ND (0.0098)	0.0072 J	ND (0.0099)	0.011
Anions												
ASTM D516	Sulfate	mg/L	NE	NE	NE	7.2	ND (3.5)	ND (3.5)	1.2 J	1.5 J	1.1 J	ND (3.5)
SM 4500-S2-D	Sulfide	mg/L	NE	NE	NE	ND (0.10)	ND (0.10)	0.40	0.024 J	0.022 J	0.014 J	ND (0.10)
SM 4500-S H	Sulfide as Hydrogen Sulfide	mg/L	NE	NE	NE	ND (0.10)	ND (0.10)	0.11	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
SM 4500-NO3 H	Nitrate as N	mg/L	10,000	NE	2,000	ND (0.058)	ND (0.058)	ND (0.058)	ND (0.058)	0.047 J	0.063	0.12
SM 4500-NO2 B	Nitrite as N	mg/L	1,000	NE	200	ND (0.012) H	ND (0.012) H	ND (0.012) H	0.0044 J H	ND (0.012) H	ND (0.012) H	ND (0.012) H
SM 4500-NO3 H	Nitrogen, NO2 plus NO3	mg/L	10,000	NE	2,000	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.17)	0.063 J ML	0.12 J

Attachment 4 Tabulated Analytical Results from August 2016 Sampling Event
Tower Standard Site, Lac du Flambeau, WI

			Monitoring Well			MW-16	MW-16D		MW-16E	MW-21	MW-21D	MW-21M
			Sample ID			1608TOWERMW16	1608TOWERMW16D[†]	1608TOWERMW18D[†]	1608TOWERMW16E	1608TOWERMW21	1608TOWERMW21D	1608TOWERMW21M
			Laboratory ID			10358621001	10358621002	10358621003	10358621004	10358621005	10358621007	10358621006
			Collection Date			8/8/2016	8/8/2016	8/8/2016	8/9/2016	8/8/2016	8/9/2016	8/9/2016
Analysis Method	**Analytes**	**Units**	**Groundwater Cleanup Standards[1]**	**EPA MCLs[2]**	**PALs[3]**							
Metals												
EPA 6020B	Arsenic	µg/L	10	10	1	1.4	0.55	0.58	0.59	2.3	0.43 J	1.5
EPA 6020B	Barium	µg/L	2,000	2,000	400	181	173	172	205 B	95.9 B	299 B	80.9 B
EPA 6020B	Cadmium	µg/L	5	5	0.5	ND (0.080)	ND (0.080)	ND (0.080)	ND (0.080)	0.078 J	ND (0.080)	0.057 J
EPA 6020B	Chromium	µg/L	50	100	10	7.3	2.5	2.3	2.3	8.5	4.4	9.5
EPA 6020B	Iron	µg/L	NE	NE	NE	17,000	7,220	7,200	1,460	19,200	65,700 ML	8,830
EPA 6020B	Lead	µg/L	15	NE	1.5	1.7	0.41	0.42	0.29 B	8.6 B	0.41 B	2.8 B
EPA 6020B	Manganese	µg/L	NE	NE	60	1,760	2,260	2,250	1,650	6,550	1,580 ML	3,170
EPA 245.1	Mercury	µg/L	2	2	0.2	ND (0.072)	ND (0.072)	ND (0.072)	---	---	---	---
EPA 7470A	Mercury	µg/L	2	2	0.2	---	---	---	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
EPA 6020B	Selenium	µg/L	50	50	10	ND (0.50)	ND (0.50)	ND (0.50)	0.18 J	0.39 J	0.19 J	0.43 J
EPA 6020B	Silver	µg/L	50	NE	10	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	0.042 J B	0.013 J B	0.069 J B

Notes:
[1]The Groundwater Cleanup Standards from Appenedix A of the LDF Tribe's Hazardous Substances Control Code are the primary project action levels
[2]When LDF Groundwater Cleanup Standards are not available, EPA MCLs established by the Safe Drinking Water Act apply
[3]Preventative Action Limits from Wisconsin Administrative Code, Chapter NR 140, Groundwater Quality are provided for reference purposes only
Bolded results exceed project action levels
Italicized non-detects have LOQs that exceed project action levels

µg/L = micrograms per liter
B = Analytical result considered a high estimated value due to contamination present in the blank
EPA = U.S. Environmental Protection Agency
H = Sample was extracted or analyzed outside of hold time
ID = identification
J = Positive result is less than the LOQ and considered an estimate
LDF = Lac du Flambeau
LOD = Limit of detection
LOQ = Limit of quantitation
MCL = Maximum Contaminant Level
MH = Analytical result is considered a high estimated value due to matrix effects
ML = Analytical result is considered a low estimated value due to matrix effects
ND = Analytical result not detected above the LOD (LOQ in parantheses)
PAL = Preventative Action Limit
QH = Analytical result is considered a high estimated value due to laboratory quality control failure
QL = Analytical result is considered a low estimated value due to laboratory quality control failure

EPA-R5-2017-010506_0002338

ATTACHMENT 5

Laboratory Analytical Reports

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

August 22, 2016

Matt Faust
Bristol Environmental Remediation Services, LLC
111 W. 16th Avenue
Anchorage, AK 99501

RE: Project: Tower, WI
Pace Project No.: 10358347

Dear Matt Faust:
Enclosed are the analytical results for sample(s) received by the laboratory on August 09, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Shawn Davis
shawn.davis@pacelabs.com
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

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(612)607-1700

CERTIFICATIONS

Project: Tower, WI
Pace Project No.: 10358347

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414
525 N 8th Street, Salina, KS 67401
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Alabama Certification #40770
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
Colorado Certification #Pace
Connecticut Certification #: PH-0256
EPA Region 8 Certification #: 8TMS-L
Florida/NELAP Certification #: E87605
Guam Certification #:14-008r
Georgia Certification #: 959
Georgia EPD #: Pace
Idaho Certification #: MN00064
Hawaii Certification #MN00064
Illinois Certification #: 200011
Indiana Certification#C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky Dept of Envi. Protection - DW #90062
Kentucky Dept of Envi. Protection - WW #:90062
Louisiana DEQ Certification #: 3086
Louisiana DHH #: LA140001
Maine Certification #: 2013011
Maryland Certification #: 322
Michigan DEPH Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New York Certification #: 11647
North Carolina Certification #: 530
North Carolina State Public Health #: 27700
North Dakota Certification #: R-036
Ohio EPA #: 4150
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Oregon Certification #: MN300001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Saipan (CNMI) #:MP0003
South Carolina #:74003001
Texas Certification #: T104704192
Tennessee Certification #: 02818
Utah Certification #: MN000642013-4
Virginia DGS Certification #: 251
Virginia/VELAP Certification #: Pace
Washington Certification #: C486
West Virginia Certification #: 382
West Virginia DHHR #:9952C
Wisconsin Certification #: 999407970

Montana Certification IDs

150 N. 9th Street, Billings, MT 59101
A2LA Certification #: 3590.01
EPA Region 8 Certification #: 8TMS-L
Idaho Certification #: MT00012
Minnesota Dept of Health Certification #: 030-999-442
Montana Certification #: MT CERT0040
North Dakota Dept. Of Health #: R-209
Washington Department of Ecology #: C993

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SAMPLE SUMMARY

Project: Tower, WI
Pace Project No.: 10358347

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10358347001	**1608TOWERMW16**	Water	08/08/16 10:55	08/09/16 09:30
10358347002	**1608TOWERMW16D**	Water	08/08/16 13:00	08/09/16 09:30
10358347003	**1608TOWERMW18D**	Water	08/08/16 13:30	08/09/16 09:30

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SAMPLE ANALYTE COUNT

Project: Tower, WI
Pace Project No.: 10358347

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10358347001	**1608TOWERMW16**	EPA 6020B	TT3	9	PASI-M
		EPA 245.1	LMW	1	PASI-M
		SM 2510B	CAC	1	PASI-MT
		SM 4500-H+B	CAC	1	PASI-MT
		SM 4500-S2-D	JME	1	PASI-MT
		SM 4500-S H	VRJ	1	PASI-MT
		SM 4500-NO3 H	DCL	2	PASI-M
		ASTM D516	KEO	1	PASI-M
		SM 4500-NO2 B	KEO	1	PASI-M
10358347002	**1608TOWERMW16D**	EPA 6020B	TT3	9	PASI-M
		EPA 245.1	LMW	1	PASI-M
		SM 2510B	CAC	1	PASI-MT
		SM 4500-H+B	CAC	1	PASI-MT
		SM 4500-S2-D	JME	1	PASI-MT
		SM 4500-S H	VRJ	1	PASI-MT
		SM 4500-NO3 H	DCL	2	PASI-M
		ASTM D516	KEO	1	PASI-M
		SM 4500-NO2 B	KEO	1	PASI-M
10358347003	**1608TOWERMW18D**	EPA 6020B	TT3	9	PASI-M
		EPA 245.1	LMW	1	PASI-M
		SM 2510B	CAC	1	PASI-MT
		SM 4500-H+B	CAC	1	PASI-MT
		SM 4500-S2-D	JME	1	PASI-MT
		SM 4500-S H	VRJ	1	PASI-MT
		SM 4500-NO3 H	DCL	2	PASI-M
		ASTM D516	KEO	1	PASI-M
		SM 4500-NO2 B	KEO	1	PASI-M

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SUMMARY OF DETECTION

Project: Tower, WI
Pace Project No.: 10358347

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10358347001	**1608TOWERMW16**					
EPA 6020B	Arsenic	1.4	ug/L	0.50	08/19/16 13:58	
EPA 6020B	Barium	181	ug/L	0.30	08/19/16 13:58	
EPA 6020B	Chromium	7.3	ug/L	0.50	08/19/16 13:58	
EPA 6020B	Iron	17000	ug/L	50.0	08/19/16 13:58	
EPA 6020B	Lead	1.7	ug/L	0.10	08/19/16 13:58	
EPA 6020B	Manganese	1760	ug/L	5.0	08/19/16 14:35	
SM 2510B	Specific Conductance	662	umhos/cm	10.0	08/16/16 15:00	
SM 4500-H+B	pH at 25 Degrees C	6.6	Std. Units	0.10	08/15/16 18:48	H6
ASTM D516	Sulfate	7.2	mg/L	3.5	08/12/16 08:34	
10358347002	**1608TOWERMW16D**					
EPA 6020B	Arsenic	0.55	ug/L	0.50	08/19/16 14:01	
EPA 6020B	Barium	173	ug/L	0.30	08/19/16 14:01	
EPA 6020B	Chromium	2.5	ug/L	0.50	08/19/16 14:01	
EPA 6020B	Iron	7220	ug/L	50.0	08/19/16 14:01	
EPA 6020B	Lead	0.41	ug/L	0.10	08/19/16 14:01	
EPA 6020B	Manganese	2260	ug/L	5.0	08/19/16 14:37	
SM 2510B	Specific Conductance	1020	umhos/cm	10.0	08/16/16 15:01	
SM 4500-H+B	pH at 25 Degrees C	7.1	Std. Units	0.10	08/15/16 18:52	H6
10358347003	**1608TOWERMW18D**					
EPA 6020B	Arsenic	0.58	ug/L	0.50	08/19/16 14:03	
EPA 6020B	Barium	172	ug/L	0.30	08/19/16 14:03	
EPA 6020B	Chromium	2.3	ug/L	0.50	08/19/16 14:03	
EPA 6020B	Iron	7200	ug/L	50.0	08/19/16 14:03	
EPA 6020B	Lead	0.42	ug/L	0.10	08/19/16 14:03	
EPA 6020B	Manganese	2250	ug/L	5.0	08/20/16 16:10	
SM 2510B	Specific Conductance	1030	umhos/cm	10.0	08/16/16 15:02	
SM 4500-H+B	pH at 25 Degrees C	7.4	Std. Units	0.10	08/15/16 19:07	H6
SM 4500-S2-D	Sulfide	0.40	mg/L	0.10	08/10/16 14:42	
SM 4500-S H	Sulfide as H2S (calc)	0.11	mg/L	0.10	08/16/16 16:40	AL

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PROJECT NARRATIVE

Project: Tower, WI
Pace Project No.: 10358347

Method: **EPA 6020B**
Description: 6020B MET ICPMS
Client: Bristol Environmental Remediation Services, LLC
Date: August 22, 2016

General Information:
3 samples were analyzed for EPA 6020B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3020 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 429937

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10358621007

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2342797)
  - Iron
  - Manganese
- MSD (Lab ID: 2342798)
  - Iron

Additional Comments:

Analyte Comments:

QC Batch: 429937

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 2342797)
  - Iron

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PROJECT NARRATIVE

Project: Tower, WI
Pace Project No.: 10358347

Method: **EPA 6020B**
Description: 6020B MET ICPMS
Client: Bristol Environmental Remediation Services, LLC
Date: August 22, 2016

Analyte Comments:

QC Batch: 429937

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 2342797)
  - Manganese
- MSD (Lab ID: 2342798)
  - Iron
  - Manganese

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PROJECT NARRATIVE

Project: Tower, WI
Pace Project No.: 10358347

Method: **EPA 245.1**
Description: 245.1 Mercury
Client: Bristol Environmental Remediation Services, LLC
Date: August 22, 2016

General Information:
3 samples were analyzed for EPA 245.1. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 245.1 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Tower, WI
Pace Project No.: 10358347

Method: **SM 2510B**
Description: 2510B Specific Conductance
Client: Bristol Environmental Remediation Services, LLC
Date: August 22, 2016

General Information:
3 samples were analyzed for SM 2510B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Tower, WI
Pace Project No.: 10358347

Method: **SM 4500-H+B**
Description: 4500H+ pH, Electrometric
Client: Bristol Environmental Remediation Services, LLC
Date: August 22, 2016

General Information:
3 samples were analyzed for SM 4500-H+B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H6: Analysis initiated outside of the 15 minute EPA required holding time.
- 1608TOWERMW16 (Lab ID: 10358347001)
- 1608TOWERMW16D (Lab ID: 10358347002)
- 1608TOWERMW18D (Lab ID: 10358347003)

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Tower, WI
Pace Project No.: 10358347

Method: **SM 4500-S2-D**
Description: 4500S2D Sulfide Water
Client: Bristol Environmental Remediation Services, LLC
Date: August 22, 2016

General Information:
3 samples were analyzed for SM 4500-S2-D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Tower, WI
Pace Project No.: 10358347

Method: **SM 4500-S H**
Description: 4500S2H Sulfide as H2S Calc
Client: Bristol Environmental Remediation Services, LLC
Date: August 22, 2016

General Information:
3 samples were analyzed for SM 4500-S H. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Tower, WI
Pace Project No.: 10358347

Method: **SM 4500-NO3 H**
Description: SM4500NO3-H, NO2 + NO3 pres.
Client: Bristol Environmental Remediation Services, LLC
Date: August 22, 2016

General Information:
3 samples were analyzed for SM 4500-NO3 H. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Tower, WI
Pace Project No.: 10358347

Method: **ASTM D516**
Description: ASTM D516 Sulfate Water
Client: Bristol Environmental Remediation Services, LLC
Date: August 22, 2016

General Information:
3 samples were analyzed for ASTM D516. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 430254

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10358170001,10358349004

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2340924)
  - Sulfate
- MSD (Lab ID: 2340925)
  - Sulfate

Additional Comments:

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PROJECT NARRATIVE

Project: Tower, WI
Pace Project No.: 10358347

Method: **SM 4500-NO2 B**
Description: SM4500NO2-B, Nitrite, unpres
Client: Bristol Environmental Remediation Services, LLC
Date: August 22, 2016

General Information:
3 samples were analyzed for SM 4500-NO2 B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: Tower, WI
Pace Project No.: 10358347

Sample: 1608TOWERMW16 **Lab ID: 10358347001** Collected: 08/08/16 10:55 Received: 08/09/16 09:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020								
Arsenic	**1.4**	ug/L	0.50	0.091	1	08/18/16 16:36	08/19/16 13:58	7440-38-2	
Barium	**181**	ug/L	0.30	0.019	1	08/18/16 16:36	08/19/16 13:58	7440-39-3	
Cadmium	ND	ug/L	0.080	0.013	1	08/18/16 16:36	08/19/16 13:58	7440-43-9	
Chromium	**7.3**	ug/L	0.50	0.14	1	08/18/16 16:36	08/19/16 13:58	7440-47-3	
Iron	**17000**	ug/L	50.0	18.5	1	08/18/16 16:36	08/19/16 13:58	7439-89-6	
Lead	**1.7**	ug/L	0.10	0.012	1	08/18/16 16:36	08/19/16 13:58	7439-92-1	
Manganese	**1760**	ug/L	5.0	1.3	10	08/18/16 16:36	08/19/16 14:35	7439-96-5	
Selenium	ND	ug/L	0.50	0.13	1	08/18/16 16:36	08/19/16 13:58	7782-49-2	
Silver	ND	ug/L	0.50	0.0092	1	08/18/16 16:36	08/19/16 13:58	7440-22-4	B
245.1 Mercury	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1								
Mercury	ND	ug/L	0.072	0.031	1	08/11/16 21:00	08/14/16 17:59	7439-97-6	
2510B Specific Conductance	Analytical Method: SM 2510B								
Specific Conductance	**662**	umhos/cm	10.0	10.0	1		08/16/16 15:00		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**6.6**	Std. Units	0.10	0.10	1		08/15/16 18:48		H6
4500S2D Sulfide Water	Analytical Method: SM 4500-S2-D								
Sulfide	ND	mg/L	0.10	0.011	1		08/10/16 14:44		
4500S2H Sulfide as H2S Calc	Analytical Method: SM 4500-S H								
Sulfide as H2S (calc)	ND	mg/L	0.10	0.020	1		08/16/16 16:40		AL
SM4500NO3-H, NO2 + NO3 pres.	Analytical Method: SM 4500-NO3 H								
Nitrate as N	ND	mg/L	0.058	0.018	1		08/12/16 13:23	14797-55-8	
Nitrogen, NO2 plus NO3	ND	mg/L	0.17	0.050	1		08/12/16 13:23		
ASTM D516 Sulfate Water	Analytical Method: ASTM D516								
Sulfate	**7.2**	mg/L	3.5	1.0	1		08/12/16 08:34	14808-79-8	
SM4500NO2-B, Nitrite, unpres	Analytical Method: SM 4500-NO2 B								
Nitrite as N	ND	mg/L	0.012	0.0036	1		08/10/16 09:17	14797-65-0	

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ANALYTICAL RESULTS

Project: Tower, WI
Pace Project No.: 10358347

Sample: 1608TOWERMW16D **Lab ID: 10358347002** Collected: 08/08/16 13:00 Received: 08/09/16 09:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020								
Arsenic	**0.55**	ug/L	0.50	0.091	1	08/18/16 16:36	08/19/16 14:01	7440-38-2	
Barium	**173**	ug/L	0.30	0.019	1	08/18/16 16:36	08/19/16 14:01	7440-39-3	
Cadmium	ND	ug/L	0.080	0.013	1	08/18/16 16:36	08/19/16 14:01	7440-43-9	
Chromium	**2.5**	ug/L	0.50	0.14	1	08/18/16 16:36	08/19/16 14:01	7440-47-3	
Iron	**7220**	ug/L	50.0	18.5	1	08/18/16 16:36	08/19/16 14:01	7439-89-6	
Lead	**0.41**	ug/L	0.10	0.012	1	08/18/16 16:36	08/19/16 14:01	7439-92-1	
Manganese	**2260**	ug/L	5.0	1.3	10	08/18/16 16:36	08/19/16 14:37	7439-96-5	
Selenium	ND	ug/L	0.50	0.13	1	08/18/16 16:36	08/19/16 14:01	7782-49-2	
Silver	ND	ug/L	0.50	0.0092	1	08/18/16 16:36	08/19/16 14:01	7440-22-4	B
245.1 Mercury	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1								
Mercury	ND	ug/L	0.072	0.031	1	08/11/16 21:00	08/14/16 18:01	7439-97-6	
2510B Specific Conductance	Analytical Method: SM 2510B								
Specific Conductance	**1020**	umhos/cm	10.0	10.0	1		08/16/16 15:01		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.1**	Std. Units	0.10	0.10	1		08/15/16 18:52		H6
4500S2D Sulfide Water	Analytical Method: SM 4500-S2-D								
Sulfide	ND	mg/L	0.10	0.011	1		08/10/16 14:36		
4500S2H Sulfide as H2S Calc	Analytical Method: SM 4500-S H								
Sulfide as H2S (calc)	ND	mg/L	0.10	0.020	1		08/16/16 16:40		AL
SM4500NO3-H, NO2 + NO3 pres.	Analytical Method: SM 4500-NO3 H								
Nitrate as N	ND	mg/L	0.058	0.018	1		08/12/16 13:27	14797-55-8	
Nitrogen, NO2 plus NO3	ND	mg/L	0.17	0.050	1		08/12/16 13:27		
ASTM D516 Sulfate Water	Analytical Method: ASTM D516								
Sulfate	ND	mg/L	3.5	1.0	1		08/12/16 08:34	14808-79-8	
SM4500NO2-B, Nitrite, unpres	Analytical Method: SM 4500-NO2 B								
Nitrite as N	ND	mg/L	0.012	0.0036	1		08/10/16 09:17	14797-65-0	

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ANALYTICAL RESULTS

Project: Tower, WI
Pace Project No.: 10358347

Sample: 1608TOWERMW18D **Lab ID: 10358347003** Collected: 08/08/16 13:30 Received: 08/09/16 09:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020								
Arsenic	**0.58**	ug/L	0.50	0.091	1	08/18/16 16:36	08/19/16 14:03	7440-38-2	
Barium	**172**	ug/L	0.30	0.019	1	08/18/16 16:36	08/19/16 14:03	7440-39-3	
Cadmium	ND	ug/L	0.080	0.013	1	08/18/16 16:36	08/19/16 14:03	7440-43-9	
Chromium	**2.3**	ug/L	0.50	0.14	1	08/18/16 16:36	08/19/16 14:03	7440-47-3	
Iron	**7200**	ug/L	50.0	18.5	1	08/18/16 16:36	08/19/16 14:03	7439-89-6	
Lead	**0.42**	ug/L	0.10	0.012	1	08/18/16 16:36	08/19/16 14:03	7439-92-1	
Manganese	**2250**	ug/L	5.0	1.3	10	08/18/16 16:36	08/20/16 16:10	7439-96-5	
Selenium	ND	ug/L	0.50	0.13	1	08/18/16 16:36	08/19/16 14:03	7782-49-2	
Silver	ND	ug/L	0.50	0.0092	1	08/18/16 16:36	08/19/16 14:03	7440-22-4	B
245.1 Mercury	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1								
Mercury	ND	ug/L	0.072	0.031	1	08/11/16 21:00	08/14/16 18:03	7439-97-6	
2510B Specific Conductance	Analytical Method: SM 2510B								
Specific Conductance	**1030**	umhos/cm	10.0	10.0	1		08/16/16 15:02		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.4**	Std. Units	0.10	0.10	1		08/15/16 19:07		H6
4500S2D Sulfide Water	Analytical Method: SM 4500-S2-D								
Sulfide	**0.40**	mg/L	0.10	0.011	1		08/10/16 14:42		
4500S2H Sulfide as H2S Calc	Analytical Method: SM 4500-S H								
Sulfide as H2S (calc)	**0.11**	mg/L	0.10	0.020	1		08/16/16 16:40		AL
SM4500NO3-H, NO2 + NO3 pres.	Analytical Method: SM 4500-NO3 H								
Nitrate as N	ND	mg/L	0.058	0.018	1		08/12/16 13:28	14797-55-8	
Nitrogen, NO2 plus NO3	ND	mg/L	0.17	0.050	1		08/12/16 13:28		
ASTM D516 Sulfate Water	Analytical Method: ASTM D516								
Sulfate	ND	mg/L	3.5	1.0	1		08/12/16 08:34	14808-79-8	
SM4500NO2-B, Nitrite, unpres	Analytical Method: SM 4500-NO2 B								
Nitrite as N	ND	mg/L	0.012	0.0036	1		08/10/16 09:17	14797-65-0	

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QUALITY CONTROL DATA

Project: Tower, WI
Pace Project No.: 10358347

QC Batch: 429746 Analysis Method: EPA 245.1
QC Batch Method: EPA 245.1 Analysis Description: 245.1 Mercury
Associated Lab Samples: 10358347001, 10358347002, 10358347003

METHOD BLANK: 2338266 Matrix: Water
Associated Lab Samples: 10358347001, 10358347002, 10358347003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.072	08/14/16 17:36	

LABORATORY CONTROL SAMPLE: 2338267

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	91	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2338268 2338269

Parameter	Units	10358348001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.00020 mg/L	5	5	4.3	4.4	87	87	70-130	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Tower, WI
Pace Project No.: 10358347

QC Batch: 429937 | Analysis Method: EPA 6020B
QC Batch Method: EPA 3020 | Analysis Description: 6020B Water UPD5
Associated Lab Samples: 10358347001, 10358347002, 10358347003

METHOD BLANK: 2339230 | Matrix: Water
Associated Lab Samples: 10358347001, 10358347002, 10358347003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	ug/L	ND	0.50	08/19/16 14:16	
Barium	ug/L	ND	0.30	08/19/16 14:16	
Cadmium	ug/L	ND	0.080	08/19/16 14:16	
Chromium	ug/L	ND	0.50	08/19/16 14:16	
Iron	ug/L	ND	50.0	08/19/16 14:16	
Lead	ug/L	ND	0.10	08/19/16 14:16	
Manganese	ug/L	ND	0.50	08/19/16 14:16	
Selenium	ug/L	ND	0.50	08/20/16 16:08	
Silver	ug/L	ND	0.50	08/19/16 14:16	

LABORATORY CONTROL SAMPLE: 2339231

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	100	89.0	89	80-120	
Barium	ug/L	100	102	102	80-120	
Cadmium	ug/L	100	101	101	80-120	
Chromium	ug/L	100	103	103	80-120	
Iron	ug/L	2000	1850	92	80-120	
Lead	ug/L	100	103	103	80-120	
Manganese	ug/L	100	100	100	80-120	
Selenium	ug/L	100	92.5	92	80-120	
Silver	ug/L	50	47.2	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2342797 2342798

Parameter	Units	10358621007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	ug/L	0.43J	100	100	92.4	86.1	92	86	75-125	7	20	
Barium	ug/L	299	100	100	399	401	100	102	75-125	1	20	
Cadmium	ug/L	<0.013	100	100	101	101	101	101	75-125	1	20	
Chromium	ug/L	4.4	100	100	105	105	101	101	75-125	0	20	
Iron	ug/L	65700	2000	2000	60200	56400	-274	-466	75-125	7	20	E,M1
Lead	ug/L	0.41	100	100	100	100	100	100	75-125	0	20	
Manganese	ug/L	1580	100	100	1660	1680	73	100	75-125	2	20	E,M1
Selenium	ug/L	0.19J	100	100	94.1	83.7	94	83	75-125	12	20	
Silver	ug/L	0.013J	50	50	45.6	41.9	91	84	75-125	9	20	

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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: Tower, WI
Pace Project No.: 10358347

QC Batch: 430853 | Analysis Method: SM 2510B
QC Batch Method: SM 2510B | Analysis Description: 2510B Specific Conductance
Associated Lab Samples: 10358347001, 10358347002, 10358347003

METHOD BLANK: 2343818 | Matrix: Water
Associated Lab Samples: 10358347001, 10358347002, 10358347003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Specific Conductance	umhos/cm	ND	10.0	08/16/16 14:58	

LABORATORY CONTROL SAMPLE: 2343819

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Specific Conductance	umhos/cm	1000	1010	101	90-110	

SAMPLE DUPLICATE: 2343820

Parameter	Units	10358347002 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	1020	1020	0	20	

SAMPLE DUPLICATE: 2343821

Parameter	Units	10358621007 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	2100	2100	0	20	

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QUALITY CONTROL DATA

Project: Tower, WI
Pace Project No.: 10358347

QC Batch: 430697 | Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B | Analysis Description: 4500H+B pH
Associated Lab Samples: 10358347001, 10358347002, 10358347003

LABORATORY CONTROL SAMPLE: 2343119

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
pH at 25 Degrees C	Std. Units	7	7.0	100	98-102	H6

SAMPLE DUPLICATE: 2343120

Parameter	Units	10358347002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.1	7.2	1	3	H6

SAMPLE DUPLICATE: 2343121

Parameter	Units	10358621007 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.5	6.4	0	3	H6

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QUALITY CONTROL DATA

Project: Tower, WI
Pace Project No.: 10358347

QC Batch: 429845 | Analysis Method: SM 4500-S2-D
QC Batch Method: SM 4500-S2-D | Analysis Description: 4500S2D Sulfide Water
Associated Lab Samples: 10358347001, 10358347002, 10358347003

METHOD BLANK: 2338757 | Matrix: Water
Associated Lab Samples: 10358347001, 10358347002, 10358347003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.10	08/10/16 14:24	

LABORATORY CONTROL SAMPLE: 2338758

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	.98	0.98	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2338759 2338760

Parameter	Units	10358288001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide	mg/L	ND	.98	.98	0.92	0.95	95	97	80-120	3	20	

SAMPLE DUPLICATE: 2338761

Parameter	Units	10358347001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide	mg/L	ND	ND		20	

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QUALITY CONTROL DATA

Project: Tower, WI
Pace Project No.: 10358347

QC Batch: 430242 | Analysis Method: SM 4500-NO3 H
QC Batch Method: SM 4500-NO3 H | Analysis Description: SM4500NO3-H, NO2 + NO3 pres.
Associated Lab Samples: 10358347001, 10358347002, 10358347003

METHOD BLANK: 2340871 | Matrix: Water
Associated Lab Samples: 10358347001, 10358347002, 10358347003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	0.17	08/12/16 12:59	

LABORATORY CONTROL SAMPLE: 2340872

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	2.5	2.5	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2340873 2340874

Parameter	Units	10357827002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	8.45	2.5	2.5	10.9	10.8	97	93	80-120	1	30	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2340875 2340876

Parameter	Units	10357853006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	ND	2.5	2.5	2.5	2.4	98	95	80-120	2	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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(612)607-1700

QUALITY CONTROL DATA

Project: Tower, WI
Pace Project No.: 10358347

QC Batch: 430254 | Analysis Method: ASTM D516
QC Batch Method: ASTM D516 | Analysis Description: ASTM D516 Sulfate Water
Associated Lab Samples: 10358347001, 10358347002, 10358347003

METHOD BLANK: 2340919 | Matrix: Water
Associated Lab Samples: 10358347001, 10358347002, 10358347003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	3.5	08/12/16 08:23	

LABORATORY CONTROL SAMPLE & LCSD: 2340920 2340921

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Sulfate	mg/L	7.5	8.3	8.3	111	111	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2340922 2340923

Parameter	Units	10358170001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	ND	20	20	19.4	19.5	94	95	80-120	0	30	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2340924 2340925

Parameter	Units	10358349004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	25.7	20	20	40.6	39.3	75	68	80-120	3	30	M1

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QUALITY CONTROL DATA

Project: Tower, WI
Pace Project No.: 10358347

QC Batch: 429639 | Analysis Method: SM 4500-NO2 B
QC Batch Method: SM 4500-NO2 B | Analysis Description: SM4500NO2-B, Nitrite, unpres
Associated Lab Samples: 10358347001, 10358347002, 10358347003

METHOD BLANK: 2337776 | Matrix: Water
Associated Lab Samples: 10358347001, 10358347002, 10358347003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrite as N	mg/L	ND	0.012	08/10/16 19:17	

LABORATORY CONTROL SAMPLE: 2337777

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrite as N	mg/L	.3	0.31	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2337778 2337779

Parameter	Units	10357833008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrite as N	mg/L	3.48	3	3	6.1	6.2	89	89	80-120	0	30	

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REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: Tower, WI
Pace Project No.: 10358347

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis
PASI-MT	Pace Analytical Services - Montana

ANALYTE QUALIFIERS

AL	The lab does not hold A2LA accreditation for this parameter.
B	Analyte was detected in the associated method blank.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Tower, WI
Pace Project No.: 10358347

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10358347001	**1608TOWERMW16**	EPA 3020	429937	EPA 6020B	431485
10358347002	**1608TOWERMW16D**	EPA 3020	429937	EPA 6020B	431485
10358347003	**1608TOWERMW18D**	EPA 3020	429937	EPA 6020B	431485
10358347001	**1608TOWERMW16**	EPA 245.1	429746	EPA 245.1	430319
10358347002	**1608TOWERMW16D**	EPA 245.1	429746	EPA 245.1	430319
10358347003	**1608TOWERMW18D**	EPA 245.1	429746	EPA 245.1	430319
10358347001	**1608TOWERMW16**	SM 2510B	430853		
10358347002	**1608TOWERMW16D**	SM 2510B	430853		
10358347003	**1608TOWERMW18D**	SM 2510B	430853		
10358347001	**1608TOWERMW16**	SM 4500-H+B	430697		
10358347002	**1608TOWERMW16D**	SM 4500-H+B	430697		
10358347003	**1608TOWERMW18D**	SM 4500-H+B	430697		
10358347001	**1608TOWERMW16**	SM 4500-S2-D	429845		
10358347002	**1608TOWERMW16D**	SM 4500-S2-D	429845		
10358347003	**1608TOWERMW18D**	SM 4500-S2-D	429845		
10358347001	**1608TOWERMW16**	SM 4500-S H	430947		
10358347002	**1608TOWERMW16D**	SM 4500-S H	430947		
10358347003	**1608TOWERMW18D**	SM 4500-S H	430947		
10358347001	**1608TOWERMW16**	SM 4500-NO3 H	430242		
10358347002	**1608TOWERMW16D**	SM 4500-NO3 H	430242		
10358347003	**1608TOWERMW18D**	SM 4500-NO3 H	430242		
10358347001	**1608TOWERMW16**	ASTM D516	430254		
10358347002	**1608TOWERMW16D**	ASTM D516	430254		
10358347003	**1608TOWERMW18D**	ASTM D516	430254		
10358347001	**1608TOWERMW16**	SM 4500-NO2 B	429639		
10358347002	**1608TOWERMW16D**	SM 4500-NO2 B	429639		
10358347003	**1608TOWERMW18D**	SM 4500-NO2 B	429639		

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10358347

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A
Required Client Information:

Company:	Bristol Environmental Remediation Services, LLC
Address:	111 W. 16th Avenue
	Anchorage, AK 99501
Email:	mfaust@bristol-companies.com
Phone: (907)743-9346	Fax:
Requested Due Date:	

Section B
Required Project Information:

Report To:	Matt Faust
Copy To:	
Purchase Order #:	
Project Name:	Tower, WI
Project #:	

Section C
Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	shawn.davis@pacelabs.com,
Pace Profile #:	35445

Regulatory Agency:

State / Location: WI

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test (Y/N)	VOC by 8260	EDB 8011	GRO by WIGRO	Sulfate/Nitrate	Nitrate + Nitrite	Metals by 6020	DRO by WIDRO	Sulfide by SM4500-S2-D	BTEX by 8260	6010 - Pb	Moisture/ Dry weight	Residual Chlorine (Y/N)		
1	1608TOWERMW1U	W	G	8/8/16	1055	←			4		X	X		X								X	X	X		X					MW-1U	001
2	1608TOWERMW1UD	W	↓	↓	1300	←			↓		X	X		X								X	X	X		X					MW-1UD	002
3	1608TOWERMW18D	W	↓	↓	1330	←			↓		X	X		X								X	X	X		X					MW-1BD	003
4																																
5																																
6																																
7																																
8																																
9																																
10																																
11																																
12																																

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	[signature] /Bris/bl	8/8/16	1430	[signature]	8-9-16	9:30	1.8	Y	Y	Y
	Robert Beckman									

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Robert Beckman

SIGNATURE of SAMPLER: [signature] DATE Signed: 8/8/16

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

Pace Analytical®	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 04Apr2016 Page 1 of 1
	Document No.: **F-MN-L-213-rev.16**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Bristol Enviro. Remediation **Project #:**

WO#: 10358347

10358347

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7837 7278 4727

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☑ Other: plastic bags **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☐ 151401163 ☑ 151401164 ☐ B88A912167504 ☐ B88A0143310098 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 1.8 **Cooler Temp Corrected (°C):** 1.8 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6°C **Correction Factor:** +0.0 **Date and Initials of Person Examining Contents:** KRC 8-9-16

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, AZ, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☑ Yes	☐ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation have been checked?	☑ Yes	☐ No	☐ N/A	13. ☑ HNO_3 1/1 ☑ H_2SO_4 1/1 ☑ NaOH 1/1 ☐ HCl Sample # 1-3
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)	☑ Yes	☐ No	☐ N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC	☐ Yes	☐ No	☑ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Matt Faust (email) Date/Time: 8/9/16

Comments/Resolution:

Double check required metals list 6020, as well as H2S test.

Project Manager Review: Shannon Davis **Date:** 8/9/16

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Intra-Regional Chain of Custody

Pace Analytical®
www.pacelabs.com

Workorder: 10358347 **Workorder Name:** Tower, WI **Owner Received Date:** 8/9/2016 **Due Date:** 8/23/2016

Received at:
Pace Analytical Minnesota
1700 Elm Street
Suite 200
Minneapolis, MN 55414
Phone (612)607-1700

Send To Lab:
Pace Analytical Billings MT
150 N Ninth Street
Billings, MT 59101
Phone (406)254-7226

Report To:
Shawn Davis

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other						Requested Analysis: SM 4500-S2-D	SM 4500-S-H											LAB USE ONLY
1	1608TOWERMW16	PS	8/8/2016 10:55	10358347001	Water	(						X	X											
2	1608TOWERMW16D	PS	8/8/2016 13:00	10358347002	Water	(						X	X											
3	1608TOWERMW18D	PS	8/8/2016 13:30	10358347003	Water	)						X	X											
4																								
5																								

Transfers	Released By	Date/Time	Received By	Date/Time
1	Shawn Davis/Pace MPS	8-9-16 1330		
2	Fed Ex		M Walters Pace	8/10/16 1000
3				
4				

Comments
pH, conductance done in mpls

Cooler Temperature on Receipt 0.6 °C **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 04Aug2016 Page 1 of 1
	Document No.: **F-MT-C-184-Rev.10**	Issuing Authority: Pace Montana Quality Office

Sample Condition Upon Receipt

Client Name: Pace-MT

Project #: 1035 8347

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number: 6751 5818 8004

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☒ 160285052 ☐ 140279186 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun ☐ NA

Cooler Temp Read: 1.1

Date and Initials of Person Examining Contents: MLW 8/10/16

Cooler Temp Corrected: 0.6

Biological Tissue Frozen? ☐ Yes ☒ No

Temp should be above freezing to 6°C

				Comments:
Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☐ Yes	☒ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: H_2O	☒ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation have been checked?	☒ Yes	☐ No	☐ N/A	13. ☐ HNO_3 ☐ H_2SO_4 3/3 ☐ NaOH ☐ HCl Sample # 001-003
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)	☒ Yes	☐ No	☐ N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, WI-DRO (water)	☐ Yes	☒ No		Initial when completed: MLW Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased): NA				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Shannon Davis **Date:** 8/10/16

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Intra-Regional Chain of Custody

Pace Analytical®
www.pacelabs.com

Workorder: 10358347 **Workorder Name:** Tower, WI **Owner Received Date:** 8/9/2016 **Due Date:** 8/23/2016

Received at:	Send To Lab:
Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone (612)607-1700	Pace Analytical Billings MT 150 N Ninth Street Billings, MT 59101 Phone (406)254-7226

Report To:
Shawn Davis

Requested Analysis

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Unpreserved					SM 4500-H+B	SM 4500-S2-D	SM 4500-S-H	SM 2510B									LAB USE ONLY
1	1608TOWERMW16	PS	8/8/2016 10:55	10358347001	Water	1						X	X	X	X									
2	1608TOWERMW16D	PS	8/8/2016 13:00	10358347002	Water	1						X	X	X	X									
3	1608TOWERMW18D	PS	8/8/2016 13:30	10358347003	Water	1						X	X	X	X									
4																								
5																								

Transfers	Released By	Date/Time	Received By	Date/Time
1	Shawn Davis/Pacmpls	8-12-16 1500		
2	Fed Ex		[illegible]	8/13/16 1030
3				
4				

Comments

Sulfide, H2S bottle already Sat 8/11

Cooler Temperature on Receipt 1.3 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.*
This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 04Aug2016 Page 1 of 1
	Document No.: **F-MT-C-184-Rev.10**	Issuing Authority: Pace Montana Quality Office

Sample Condition Upon Receipt

Client Name: Pace MN

Project #: 10358347

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number: 6751 5818 9445

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☒ 160285052 ☐ 140279186 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun ☐ NA

Cooler Temp Read: 1.8 **Date and Initials of Person Examining Contents:** 8/13 MH

Cooler Temp Corrected: 1.3 **Biological Tissue Frozen?** ☐ Yes ☒ No

Temp should be above freezing to 6°C

				Comments:
Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☐ Yes	☐ No	☒ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☒ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	NA
Exceptions: VOA, Coliform, TOC, Oil and Grease, WI-DRO (water)	☐ Yes	☒ No		Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased): NA				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Shannon Davis **Date:** 8/15/16

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

August 29, 2016

Matt Faust
Bristol Environmental Remediation Services, LLC
111 W. 16th Avenue
Anchorage, AK 99501

RE: Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Dear Matt Faust:
Enclosed are the analytical results for sample(s) received by the laboratory on August 10, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Shawn Davis
shawn.davis@pacelabs.com
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414
525 N 8th Street, Salina, KS 67401
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Alabama Certification #40770
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
Colorado Certification #Pace
Connecticut Certification #: PH-0256
EPA Region 8 Certification #: 8TMS-L
Florida/NELAP Certification #: E87605
Guam Certification #:14-008r
Georgia Certification #: 959
Georgia EPD #: Pace
Idaho Certification #: MN00064
Hawaii Certification #MN00064
Illinois Certification #: 200011
Indiana Certification#C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky Dept of Envi. Protection - DW #90062
Kentucky Dept of Envi. Protection - WW #:90062
Louisiana DEQ Certification #: 3086
Louisiana DHH #: LA140001
Maine Certification #: 2013011
Maryland Certification #: 322
Michigan DEPH Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New York Certification #: 11647
North Carolina Certification #: 530
North Carolina State Public Health #: 27700
North Dakota Certification #: R-036
Ohio EPA #: 4150
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Oregon Certification #: MN300001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Saipan (CNMI) #:MP0003
South Carolina #:74003001
Texas Certification #: T104704192
Tennessee Certification #: 02818
Utah Certification #: MN000642013-4
Virginia DGS Certification #: 251
Virginia/VELAP Certification #: Pace
Washington Certification #: C486
West Virginia Certification #: 382
West Virginia DHHR #:9952C
Wisconsin Certification #: 999407970

Montana Certification IDs

150 N. 9th Street, Billings, MT 59101
A2LA Certification #: 3590.01
EPA Region 8 Certification #: 8TMS-L
Idaho Certification #: MT00012
Minnesota Dept of Health Certification #: 030-999-442
Montana Certification #: MT CERT0040
North Dakota Dept. Of Health #: R-209
Washington Department of Ecology #: C993

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SAMPLE SUMMARY

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10358621001	**1608TOWERMW16**	Water	08/08/16 10:55	08/10/16 12:23
10358621002	**1608TOWERMW16D**	Water	08/08/16 13:00	08/10/16 12:23
10358621003	**1608TOWERMW18D**	Water	08/08/16 13:30	08/10/16 12:23
10358621004	**1608TOWERMW16E**	Water	08/09/16 09:00	08/10/16 12:23
10358621005	**1608TOWERMW21**	Water	08/09/16 11:20	08/10/16 12:23
10358621006	**1608TOWERMW21M**	Water	08/09/16 13:00	08/10/16 12:23
10358621007	**1608TOWERMW21D**	Water	08/09/16 14:50	08/10/16 12:23
10358621008	**1608TOWERTB1**	Solid	08/05/16 08:00	08/10/16 12:23
10358621009	**1608TOWERIDWSS**	Solid	08/05/16 14:30	08/10/16 12:23
10358621010	**1608TOWERTB2**	Water	08/08/16 08:00	08/10/16 12:23
10358621011	**1608TOWEREQB**	Water	08/09/16 09:30	08/10/16 12:23

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SAMPLE ANALYTE COUNT

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10358621001	**1608TOWERMW16**	EPA 8011	XV1	2	PASI-M
		EPA 8260B	PRD	70	PASI-M
10358621002	**1608TOWERMW16D**	EPA 8011	XV1	2	PASI-M
		EPA 8260B	EMC, PRD	70	PASI-M
10358621003	**1608TOWERMW18D**	EPA 8011	XV1	2	PASI-M
		EPA 8260B	EMC, PRD	70	PASI-M
10358621004	**1608TOWERMW16E**	EPA 8011	XV1	2	PASI-M
		EPA 6020B	TT3	9	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	EMC, PRD	70	PASI-M
		SM 2510B	CAC	1	PASI-MT
		SM 4500-H+B	CAC	1	PASI-MT
		SM 4500-S2-D	JME	1	PASI-MT
		SM 4500-S H	VRJ	1	PASI-MT
		SM 4500-NO3 H	DCL	2	PASI-M
		ASTM D516	KEO	1	PASI-M
		SM 4500-NO2 B	KEO	1	PASI-M
10358621005	**1608TOWERMW21**	EPA 8011	XV1	2	PASI-M
		EPA 6020B	TT3	9	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	EMC, PRD	70	PASI-M
		SM 2510B	CAC	1	PASI-MT
		SM 4500-H+B	CAC	1	PASI-MT
		SM 4500-S2-D	JME	1	PASI-MT
		SM 4500-S H	VRJ	1	PASI-MT
		SM 4500-NO3 H	DCL	2	PASI-M
		ASTM D516	KEO	1	PASI-M
		SM 4500-NO2 B	KEO	1	PASI-M
10358621006	**1608TOWERMW21M**	EPA 8011	XV1	2	PASI-M
		EPA 6020B	TT3	9	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	EMC, PRD	70	PASI-M
		SM 2510B	CAC	1	PASI-MT
		SM 4500-H+B	CAC	1	PASI-MT
		SM 4500-S2-D	JME	1	PASI-MT
		SM 4500-S H	VRJ	1	PASI-MT
		SM 4500-NO3 H	DCL	2	PASI-M

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SAMPLE ANALYTE COUNT

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		ASTM D516	KEO	1	PASI-M
		SM 4500-NO2 B	KEO	1	PASI-M
10358621007	**1608TOWERMW21D**	EPA 8011	XV1	2	PASI-M
		EPA 6020B	TT3	9	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	EMC	70	PASI-M
		SM 2510B	CAC	1	PASI-MT
		SM 4500-H+B	CAC	1	PASI-MT
		SM 4500-S2-D	JME	1	PASI-MT
		SM 4500-S H	VRJ	1	PASI-MT
		SM 4500-NO3 H	DCL	2	PASI-M
		ASTM D516	KEO	1	PASI-M
		SM 4500-NO2 B	KEO	1	PASI-M
10358621008	**1608TOWERTB1**	EPA 8260B	MRB	7	PASI-M
10358621009	**1608TOWERIDWSS**	EPA 6020B	TT3	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8260B	MRB	7	PASI-M
10358621010	**1608TOWERTB2**	EPA 8011	XV1	2	PASI-M
		EPA 8260B	PRD	70	PASI-M
10358621011	**1608TOWEREQB**	EPA 8011	XV1	2	PASI-M
		EPA 6020B	TT3	9	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	EMC	70	PASI-M
		SM 2510B	CAC	1	PASI-MT
		SM 4500-H+B	CAC	1	PASI-MT
		SM 4500-S2-D	JME	1	PASI-MT
		SM 4500-S H	VRJ	1	PASI-MT
		SM 4500-NO3 H	DCL	2	PASI-M
		ASTM D516	KEO	1	PASI-M
		SM 4500-NO2 B	KEO	1	PASI-M

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SUMMARY OF DETECTION

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10358621001	**1608TOWERMW16**					
EPA 8260B	Acetone	2.4J	ug/L	20.0	08/11/16 21:16	B
EPA 8260B	Benzene	0.75J	ug/L	1.0	08/11/16 21:16	
10358621002	**1608TOWERMW16D**					
EPA 8260B	Benzene	1240	ug/L	20.0	08/14/16 16:30	
EPA 8260B	n-Butylbenzene	3.3	ug/L	1.0	08/12/16 01:53	
EPA 8260B	sec-Butylbenzene	4.0	ug/L	1.0	08/12/16 01:53	
EPA 8260B	Ethylbenzene	61.8	ug/L	1.0	08/12/16 01:53	
EPA 8260B	Isopropylbenzene (Cumene)	26.0	ug/L	1.0	08/12/16 01:53	
EPA 8260B	p-Isopropyltoluene	1.6	ug/L	1.0	08/12/16 01:53	
EPA 8260B	4-Methyl-2-pentanone (MIBK)	0.69J	ug/L	5.0	08/12/16 01:53	
EPA 8260B	Methyl-tert-butyl ether	1.9	ug/L	1.0	08/12/16 01:53	
EPA 8260B	Naphthalene	109	ug/L	4.0	08/12/16 01:53	
EPA 8260B	n-Propylbenzene	66.9	ug/L	1.0	08/12/16 01:53	
EPA 8260B	Toluene	22.2	ug/L	1.0	08/12/16 01:53	
EPA 8260B	1,2,4-Trimethylbenzene	367	ug/L	20.0	08/14/16 16:30	
EPA 8260B	1,3,5-Trimethylbenzene	79.5	ug/L	1.0	08/12/16 01:53	
EPA 8260B	Xylene (Total)	1610	ug/L	60.0	08/14/16 16:30	
10358621003	**1608TOWERMW18D**					
EPA 8260B	Benzene	1300	ug/L	20.0	08/15/16 21:59	
EPA 8260B	n-Butylbenzene	3.5	ug/L	1.0	08/12/16 02:09	
EPA 8260B	sec-Butylbenzene	4.3	ug/L	1.0	08/12/16 02:09	
EPA 8260B	Ethylbenzene	65.3	ug/L	1.0	08/12/16 02:09	
EPA 8260B	Isopropylbenzene (Cumene)	26.7	ug/L	1.0	08/12/16 02:09	
EPA 8260B	p-Isopropyltoluene	1.7	ug/L	1.0	08/12/16 02:09	
EPA 8260B	4-Methyl-2-pentanone (MIBK)	0.72J	ug/L	5.0	08/12/16 02:09	
EPA 8260B	Methyl-tert-butyl ether	2.3	ug/L	1.0	08/12/16 02:09	
EPA 8260B	Naphthalene	114	ug/L	4.0	08/12/16 02:09	
EPA 8260B	n-Propylbenzene	69.5	ug/L	1.0	08/12/16 02:09	
EPA 8260B	Toluene	23.0	ug/L	1.0	08/12/16 02:09	
EPA 8260B	1,2,4-Trimethylbenzene	336	ug/L	20.0	08/15/16 21:59	
EPA 8260B	1,3,5-Trimethylbenzene	84.3	ug/L	1.0	08/12/16 02:09	
EPA 8260B	Xylene (Total)	1410	ug/L	60.0	08/15/16 21:59	
10358621004	**1608TOWERMW16E**					
EPA 6020B	Arsenic	0.59	ug/L	0.50	08/19/16 14:05	
EPA 6020B	Barium	205	ug/L	0.30	08/19/16 14:05	
EPA 6020B	Chromium	2.3	ug/L	0.50	08/19/16 14:05	
EPA 6020B	Iron	1460	ug/L	50.0	08/19/16 14:05	
EPA 6020B	Lead	0.29	ug/L	0.10	08/19/16 14:05	B
EPA 6020B	Manganese	1650	ug/L	5.0	08/20/16 16:13	
EPA 6020B	Selenium	0.18J	ug/L	0.50	08/19/16 14:05	
EPA 8260B	Acetone	10J	ug/L	20.0	08/12/16 09:19	B
EPA 8260B	Benzene	768	ug/L	20.0	08/14/16 16:46	
EPA 8260B	n-Butylbenzene	0.59J	ug/L	1.0	08/12/16 09:19	
EPA 8260B	sec-Butylbenzene	1.3	ug/L	1.0	08/12/16 09:19	
EPA 8260B	1,4-Dichlorobenzene	0.28J	ug/L	1.0	08/12/16 09:19	
EPA 8260B	Ethylbenzene	8.9	ug/L	1.0	08/12/16 09:19	

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Minneapolis, MN 55414
(612)607-1700

SUMMARY OF DETECTION

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10358621004	**1608TOWERMW16E**					
EPA 8260B	Isopropylbenzene (Cumene)	9.9	ug/L	1.0	08/12/16 09:19	
EPA 8260B	p-Isopropyltoluene	0.52J	ug/L	1.0	08/12/16 09:19	
EPA 8260B	Methyl-tert-butyl ether	10.0	ug/L	1.0	08/12/16 09:19	
EPA 8260B	Naphthalene	28.2	ug/L	4.0	08/12/16 09:19	
EPA 8260B	n-Propylbenzene	18.4	ug/L	1.0	08/12/16 09:19	
EPA 8260B	Toluene	6.1	ug/L	1.0	08/12/16 09:19	
EPA 8260B	1,2,4-Trimethylbenzene	96.6	ug/L	1.0	08/12/16 09:19	
EPA 8260B	1,3,5-Trimethylbenzene	16.9	ug/L	1.0	08/12/16 09:19	
EPA 8260B	Xylene (Total)	506	ug/L	3.0	08/12/16 09:19	
SM 2510B	Specific Conductance	1570	umhos/cm	10.0	08/16/16 15:02	
SM 4500-H+B	pH at 25 Degrees C	7.7	Std. Units	0.10	08/15/16 19:10	H6
SM 4500-S2-D	Sulfide	0.024J	mg/L	0.10	08/16/16 13:29	
ASTM D516	Sulfate	1.2J	mg/L	3.5	08/12/16 09:05	
SM 4500-NO2 B	Nitrite as N	0.0044J	mg/L	0.012	08/11/16 09:00	H1
10358621005	**1608TOWERMW21**					
EPA 8011	1,2-Dibromoethane (EDB)	0.0072J	ug/L	0.0098	08/18/16 04:37	
EPA 6020B	Arsenic	2.3	ug/L	0.50	08/19/16 14:19	
EPA 6020B	Barium	95.9	ug/L	0.30	08/19/16 14:19	
EPA 6020B	Cadmium	0.078J	ug/L	0.080	08/19/16 14:19	
EPA 6020B	Chromium	8.5	ug/L	0.50	08/19/16 14:19	
EPA 6020B	Iron	19200	ug/L	50.0	08/19/16 14:19	
EPA 6020B	Lead	8.6	ug/L	0.10	08/19/16 14:19	
EPA 6020B	Manganese	6550	ug/L	10.0	08/20/16 16:15	
EPA 6020B	Selenium	0.39J	ug/L	0.50	08/19/16 14:19	
EPA 6020B	Silver	0.042J	ug/L	0.50	08/19/16 14:19	B
EPA 8260B	Acetone	37.3	ug/L	20.0	08/12/16 09:34	
EPA 8260B	Benzene	458	ug/L	25.0	08/14/16 17:01	
EPA 8260B	n-Butylbenzene	52.4	ug/L	1.0	08/12/16 09:34	
EPA 8260B	sec-Butylbenzene	21.6	ug/L	1.0	08/12/16 09:34	
EPA 8260B	Ethylbenzene	1700	ug/L	25.0	08/14/16 17:01	
EPA 8260B	Isopropylbenzene (Cumene)	111	ug/L	1.0	08/12/16 09:34	
EPA 8260B	p-Isopropyltoluene	15.9	ug/L	1.0	08/12/16 09:34	
EPA 8260B	4-Methyl-2-pentanone (MIBK)	9.4	ug/L	5.0	08/12/16 09:34	
EPA 8260B	Methyl-tert-butyl ether	0.24J	ug/L	1.0	08/12/16 09:34	
EPA 8260B	Naphthalene	703	ug/L	100	08/14/16 17:01	
EPA 8260B	n-Propylbenzene	268	ug/L	25.0	08/14/16 17:01	
EPA 8260B	Styrene	12.5	ug/L	1.0	08/12/16 09:34	
EPA 8260B	Toluene	3280	ug/L	25.0	08/14/16 17:01	
EPA 8260B	1,2,4-Trimethylbenzene	2920	ug/L	25.0	08/14/16 17:01	
EPA 8260B	1,3,5-Trimethylbenzene	744	ug/L	25.0	08/14/16 17:01	
EPA 8260B	Xylene (Total)	9060	ug/L	75.0	08/14/16 17:01	
SM 2510B	Specific Conductance	411	umhos/cm	10.0	08/16/16 15:04	
SM 4500-H+B	pH at 25 Degrees C	6.7	Std. Units	0.10	08/15/16 19:12	H6
SM 4500-S2-D	Sulfide	0.022J	mg/L	0.10	08/16/16 13:30	
SM 4500-NO3 H	Nitrate as N	0.047J	mg/L	0.058	08/24/16 09:12	
ASTM D516	Sulfate	1.5J	mg/L	3.5	08/12/16 09:05	

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SUMMARY OF DETECTION

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10358621006	**1608TOWERMW21M**					
EPA 8011	1,2-Dibromoethane (EDB)	0.011	ug/L	0.0099	08/18/16 05:03	
EPA 6020B	Arsenic	1.5	ug/L	0.50	08/19/16 14:21	
EPA 6020B	Barium	80.9	ug/L	0.30	08/19/16 14:21	
EPA 6020B	Cadmium	0.057J	ug/L	0.080	08/19/16 14:21	
EPA 6020B	Chromium	9.5	ug/L	0.50	08/19/16 14:21	
EPA 6020B	Iron	8830	ug/L	50.0	08/19/16 14:21	
EPA 6020B	Lead	2.8	ug/L	0.10	08/19/16 14:21	
EPA 6020B	Manganese	3170	ug/L	10.0	08/20/16 16:18	
EPA 6020B	Selenium	0.43J	ug/L	0.50	08/19/16 14:21	
EPA 6020B	Silver	0.069J	ug/L	0.50	08/19/16 14:21	B
EPA 8260B	Acetone	32.1	ug/L	20.0	08/12/16 09:50	
EPA 8260B	Benzene	2150	ug/L	25.0	08/14/16 17:17	
EPA 8260B	n-Butylbenzene	29.3	ug/L	1.0	08/12/16 09:50	
EPA 8260B	sec-Butylbenzene	16.2	ug/L	1.0	08/12/16 09:50	
EPA 8260B	Ethylbenzene	1660	ug/L	25.0	08/14/16 17:17	
EPA 8260B	Isopropylbenzene (Cumene)	81.1	ug/L	1.0	08/12/16 09:50	
EPA 8260B	p-Isopropyltoluene	8.0	ug/L	1.0	08/12/16 09:50	
EPA 8260B	4-Methyl-2-pentanone (MIBK)	2.6J	ug/L	5.0	08/12/16 09:50	
EPA 8260B	Methyl-tert-butyl ether	7.4	ug/L	1.0	08/12/16 09:50	
EPA 8260B	Naphthalene	470	ug/L	100	08/14/16 17:17	
EPA 8260B	n-Propylbenzene	238	ug/L	1.0	08/12/16 09:50	
EPA 8260B	Styrene	5.9	ug/L	1.0	08/12/16 09:50	
EPA 8260B	Toluene	1320	ug/L	25.0	08/14/16 17:17	
EPA 8260B	1,2,4-Trimethylbenzene	1310	ug/L	25.0	08/14/16 17:17	
EPA 8260B	1,3,5-Trimethylbenzene	480	ug/L	25.0	08/14/16 17:17	
EPA 8260B	Xylene (Total)	4340	ug/L	75.0	08/14/16 17:17	
SM 2510B	Specific Conductance	595	umhos/cm	10.0	08/16/16 15:05	
SM 4500-H+B	pH at 25 Degrees C	6.6	Std. Units	0.10	08/15/16 19:13	H6
SM 4500-NO3 H	Nitrate as N	0.12	mg/L	0.058	08/24/16 09:13	
SM 4500-NO3 H	Nitrogen, NO2 plus NO3	0.12J	mg/L	0.17	08/24/16 09:13	
10358621007	**1608TOWERMW21D**					
EPA 6020B	Arsenic	0.43J	ug/L	0.50	08/19/16 14:23	
EPA 6020B	Barium	299	ug/L	0.30	08/19/16 14:23	
EPA 6020B	Chromium	4.4	ug/L	0.50	08/19/16 14:23	
EPA 6020B	Iron	65700	ug/L	500	08/20/16 16:20	M1
EPA 6020B	Lead	0.41	ug/L	0.10	08/19/16 14:23	
EPA 6020B	Manganese	1580	ug/L	5.0	08/20/16 16:20	M1
EPA 6020B	Selenium	0.19J	ug/L	0.50	08/19/16 14:23	
EPA 6020B	Silver	0.013J	ug/L	0.50	08/19/16 14:23	B
EPA 8260B	Acetone	2.2J	ug/L	20.0	08/17/16 01:09	
EPA 8260B	Benzene	45.9	ug/L	1.0	08/17/16 01:09	
EPA 8260B	n-Butylbenzene	1.8	ug/L	1.0	08/17/16 01:09	
EPA 8260B	sec-Butylbenzene	0.69J	ug/L	1.0	08/17/16 01:09	
EPA 8260B	Ethylbenzene	8.1	ug/L	1.0	08/17/16 01:09	
EPA 8260B	Isopropylbenzene (Cumene)	1.2	ug/L	1.0	08/17/16 01:09	
EPA 8260B	p-Isopropyltoluene	0.44J	ug/L	1.0	08/17/16 01:09	
EPA 8260B	Naphthalene	4.9	ug/L	4.0	08/17/16 01:09	

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SUMMARY OF DETECTION

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10358621007	**1608TOWERMW21D**					
EPA 8260B	n-Propylbenzene	5.3	ug/L	1.0	08/17/16 01:09	
EPA 8260B	Toluene	7.3	ug/L	1.0	08/17/16 01:09	
EPA 8260B	1,2,4-Trimethylbenzene	30.6	ug/L	1.0	08/17/16 01:09	
EPA 8260B	1,3,5-Trimethylbenzene	8.2	ug/L	1.0	08/17/16 01:09	
EPA 8260B	Xylene (Total)	64.5	ug/L	3.0	08/17/16 01:09	
SM 2510B	Specific Conductance	2100	umhos/cm	10.0	08/16/16 15:05	
SM 4500-H+B	pH at 25 Degrees C	6.5	Std. Units	0.10	08/15/16 19:14	H6
SM 4500-S2-D	Sulfide	0.014J	mg/L	0.10	08/16/16 13:34	
SM 4500-NO3 H	Nitrate as N	0.063	mg/L	0.058	08/24/16 09:14	
SM 4500-NO3 H	Nitrogen, NO2 plus NO3	0.063J	mg/L	0.17	08/24/16 09:14	
ASTM D516	Sulfate	1.1J	mg/L	3.5	08/12/16 09:07	
10358621009	**1608TOWERIDWSS**					
EPA 6020B	Lead	2.7	mg/kg	0.11	08/19/16 11:55	
ASTM D2974	Percent Moisture	20.7	%	0.10	08/15/16 16:34	
EPA 8260B	Benzene	601	ug/kg	29.5	08/15/16 23:24	
EPA 8260B	Ethylbenzene	2930	ug/kg	31.5	08/15/16 23:24	
EPA 8260B	Toluene	4330	ug/kg	40.4	08/15/16 23:24	
EPA 8260B	Xylene (Total)	14500	ug/kg	126	08/15/16 23:24	
10358621010	**1608TOWERTB2**					
EPA 8260B	Acetone	2.2J	ug/L	20.0	08/12/16 09:03	B
EPA 8260B	Toluene	0.17J	ug/L	1.0	08/12/16 09:03	B
10358621011	**1608TOWEREQB**					
EPA 6020B	Barium	0.070J	ug/L	0.30	08/19/16 14:33	B
EPA 6020B	Chromium	0.36J	ug/L	0.50	08/19/16 14:33	
EPA 6020B	Lead	0.076J	ug/L	0.10	08/19/16 14:33	B
EPA 6020B	Manganese	0.21J	ug/L	0.50	08/19/16 14:33	
EPA 6020B	Silver	0.043J	ug/L	0.50	08/19/16 14:33	B
EPA 8260B	Acetone	2.9J	ug/L	20.0	08/16/16 22:58	
EPA 8260B	Naphthalene	1.6J	ug/L	4.0	08/16/16 22:58	
EPA 8260B	Toluene	0.48J	ug/L	1.0	08/16/16 22:58	
SM 4500-H+B	pH at 25 Degrees C	5.7	Std. Units	0.10	08/15/16 19:19	H6
SM 4500-NO3 H	Nitrate as N	0.042J	mg/L	0.058	08/24/16 09:18	

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PROJECT NARRATIVE

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Method: **EPA 8011**
Description: 8011 GCS EDB and DBCP
Client: Bristol Environmental Remediation Services, LLC
Date: August 29, 2016

General Information:
9 samples were analyzed for EPA 8011. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 8011 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: 430673

S5: Surrogate recovery outside control limits due to matrix interferences (not confirmed by re-analysis).
- 1608TOWERMW16 (Lab ID: 10358621001)
  - 4-Bromofluorobenzene (S)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 430673

1M: Low surrogate recovery due to emulsion forming during the extraction process.
- 1608TOWERMW16 (Lab ID: 10358621001)
  - 4-Bromofluorobenzene (S)

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PROJECT NARRATIVE

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Method: **EPA 6020B**
Description: 6020B MET ICPMS
Client: Bristol Environmental Remediation Services, LLC
Date: August 29, 2016

General Information:
6 samples were analyzed for EPA 6020B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3050 with any exceptions noted below.
The samples were prepared in accordance with EPA 3020 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 429937

B: Analyte was detected in the associated method blank.
- BLANK for HBN 429937 [MPRP/658 (Lab ID: 2339230)
  - Barium
  - Lead
  - Silver

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 429937

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10358621007

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 2342797)
  - Iron
  - Manganese
- MSD (Lab ID: 2342798)
  - Iron

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PROJECT NARRATIVE

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Method: **EPA 6020B**
Description: 6020B MET ICPMS
Client: Bristol Environmental Remediation Services, LLC
Date: August 29, 2016

Additional Comments:

Analyte Comments:

QC Batch: 429937

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 2342797)
  - Iron
  - Manganese
- MSD (Lab ID: 2342798)
  - Iron
  - Manganese

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PROJECT NARRATIVE

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Method: **EPA 7470A**
Description: 7470A Mercury
Client: Bristol Environmental Remediation Services, LLC
Date: August 29, 2016

General Information:
5 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Method: **EPA 8260B**
Description: 8260B MSV UST
Client: Bristol Environmental Remediation Services, LLC
Date: August 29, 2016

General Information:
2 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 5035/5030B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Method: **EPA 8260B**
Description: 8260B VOC
Client: Bristol Environmental Remediation Services, LLC
Date: August 29, 2016

General Information:
9 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results may be biased low.
- 1608TOWERMW16 (Lab ID: 10358621001)
- 1608TOWERMW16D (Lab ID: 10358621002)
- 1608TOWERMW16E (Lab ID: 10358621004)
- 1608TOWERMW18D (Lab ID: 10358621003)
- 1608TOWERMW21 (Lab ID: 10358621005)
- 1608TOWERMW21M (Lab ID: 10358621006)
- 1608TOWERTB2 (Lab ID: 10358621010)

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 430040

B: Analyte was detected in the associated method blank.
- BLANK for HBN 430040 [MSV/3659 (Lab ID: 2339727)
  - Acetone

QC Batch: 430041

B: Analyte was detected in the associated method blank.
- BLANK for HBN 430041 [MSV/3659 (Lab ID: 2339729)
  - Acetone
  - Toluene

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

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PROJECT NARRATIVE

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Method: **EPA 8260B**
Description: 8260B VOC
Client: Bristol Environmental Remediation Services, LLC
Date: August 29, 2016

QC Batch: 430040

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 2339728)
  - Bromoform

QC Batch: 430041

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 2339730)
  - Bromoform

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 430040

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10358621001

R1: RPD value was outside control limits.

- MSD (Lab ID: 2341622)
  - Tetrahydrofuran

QC Batch: 430041

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10359186001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 2343936)
  - 1,1,1,2-Tetrachloroethane
  - 1,3-Dichlorobenzene
  - 2,2-Dichloropropane
  - Carbon tetrachloride
  - Dibromochloromethane
  - Dichlorodifluoromethane
  - Tetrachloroethene
  - Trichlorofluoromethane
  - cis-1,3-Dichloropropene

R1: RPD value was outside control limits.

- MSD (Lab ID: 2343936)
  - 1,1,2-Trichlorotrifluoroethane
  - 1,1-Dichloroethane
  - 1,2,4-Trichlorobenzene
  - n-Butylbenzene

QC Batch: 430893

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10358621007

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2343944)
  - 1,1,1,2-Tetrachloroethane
  - 1,1,2-Trichloroethane
  - Bromochloromethane

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PROJECT NARRATIVE

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Method: **EPA 8260B**
Description: 8260B VOC
Client: Bristol Environmental Remediation Services, LLC
Date: August 29, 2016

QC Batch: 430893

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10358621007

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- Trichlorofluoromethane
- MSD (Lab ID: 2343945)
  - 1,1,1,2-Tetrachloroethane
  - 1,1,1-Trichloroethane
  - 1,1,2,2-Tetrachloroethane
  - 1,1,2-Trichloroethane
  - 1,1,2-Trichlorotrifluoroethane
  - 1,2,3-Trichloropropane
  - 1,2,4-Trimethylbenzene
  - 1,2-Dibromoethane (EDB)
  - 1,2-Dichlorobenzene
  - 1,3-Dichloropropane
  - 2-Chlorotoluene
  - Benzene
  - Bromobenzene
  - Bromochloromethane
  - Bromodichloromethane
  - Bromomethane
  - Carbon tetrachloride
  - Chlorobenzene
  - Chloroethane
  - Chloroform
  - Chloromethane
  - Dibromomethane
  - Dichlorodifluoromethane
  - Dichlorofluoromethane
  - Hexachloro-1,3-butadiene
  - Tetrachloroethene
  - Trichloroethene
  - Trichlorofluoromethane
  - Vinyl chloride
  - cis-1,3-Dichloropropene
  - n-Butylbenzene
  - p-Isopropyltoluene
  - trans-1,2-Dichloroethene

R1: RPD value was outside control limits.

- MSD (Lab ID: 2343945)
  - Chloromethane

Additional Comments:

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PROJECT NARRATIVE

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Method: **SM 2510B**
Description: 2510B Specific Conductance
Client: Bristol Environmental Remediation Services, LLC
Date: August 29, 2016

General Information:
5 samples were analyzed for SM 2510B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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(612)607-1700

PROJECT NARRATIVE

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Method: **SM 4500-H+B**
Description: 4500H+ pH, Electrometric
Client: Bristol Environmental Remediation Services, LLC
Date: August 29, 2016

General Information:
5 samples were analyzed for SM 4500-H+B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H6: Analysis initiated outside of the 15 minute EPA required holding time.
- 1608TOWEREQB (Lab ID: 10358621011)
- 1608TOWERMW16E (Lab ID: 10358621004)
- 1608TOWERMW21 (Lab ID: 10358621005)
- 1608TOWERMW21D (Lab ID: 10358621007)
- 1608TOWERMW21M (Lab ID: 10358621006)

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Method: **SM 4500-S2-D**
Description: 4500S2D Sulfide Water
Client: Bristol Environmental Remediation Services, LLC
Date: August 29, 2016

General Information:
5 samples were analyzed for SM 4500-S2-D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Method: **SM 4500-S H**
Description: 4500S2H Sulfide as H2S Calc
Client: Bristol Environmental Remediation Services, LLC
Date: August 29, 2016

General Information:
5 samples were analyzed for SM 4500-S H. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Method: **SM 4500-NO3 H**
Description: SM4500NO3-H, NO2 + NO3 pres.
Client: Bristol Environmental Remediation Services, LLC
Date: August 29, 2016

General Information:
5 samples were analyzed for SM 4500-NO3 H. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 431923

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10358583039,10358621007

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2349008)
  - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 2349009)
  - Nitrogen, NO2 plus NO3

Additional Comments:

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PROJECT NARRATIVE

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Method: **ASTM D516**
Description: ASTM D516 Sulfate Water
Client: Bristol Environmental Remediation Services, LLC
Date: August 29, 2016

General Information:
5 samples were analyzed for ASTM D516. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 430263

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10358073002,10358621007

M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

- MS (Lab ID: 2340954)
  - Sulfate

Additional Comments:

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PROJECT NARRATIVE

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Method: **SM 4500-NO2 B**
Description: SM4500NO2-B, Nitrite, unpres
Client: Bristol Environmental Remediation Services, LLC
Date: August 29, 2016

General Information:
5 samples were analyzed for SM 4500-NO2 B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H1: Analysis conducted outside the recognized method holding time.
- 1608TOWERMW16E (Lab ID: 10358621004)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Sample: 1608TOWERMW16 **Lab ID: 10358621001** Collected: 08/08/16 10:55 Received: 08/10/16 12:23 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	**<0.0016**	ug/L	0.0097	0.0016	1	08/15/16 15:31	08/18/16 02:52	106-93-4	
Surrogates									
4-Bromofluorobenzene (S)	22	%.	30-150		1	08/15/16 15:31	08/18/16 02:52	460-00-4	1M,S5
8260B VOC	Analytical Method: EPA 8260B								
Acetone	**2.4J**	ug/L	20.0	0.64	1		08/11/16 21:16	67-64-1	B
Allyl chloride	**<0.25**	ug/L	4.0	0.25	1		08/11/16 21:16	107-05-1	
Benzene	**0.75J**	ug/L	1.0	0.16	1		08/11/16 21:16	71-43-2	
Bromobenzene	**<0.34**	ug/L	1.0	0.34	1		08/11/16 21:16	108-86-1	
Bromochloromethane	**<0.19**	ug/L	1.0	0.19	1		08/11/16 21:16	74-97-5	
Bromodichloromethane	**<0.24**	ug/L	1.0	0.24	1		08/11/16 21:16	75-27-4	
Bromoform	**<0.27**	ug/L	10.0	0.27	1		08/11/16 21:16	75-25-2	L2
Bromomethane	**<0.44**	ug/L	4.0	0.44	1		08/11/16 21:16	74-83-9	
2-Butanone (MEK)	**<1.1**	ug/L	5.0	1.1	1		08/11/16 21:16	78-93-3	
n-Butylbenzene	**<0.16**	ug/L	1.0	0.16	1		08/11/16 21:16	104-51-8	
sec-Butylbenzene	**<0.19**	ug/L	1.0	0.19	1		08/11/16 21:16	135-98-8	
tert-Butylbenzene	**<0.22**	ug/L	1.0	0.22	1		08/11/16 21:16	98-06-6	
Carbon tetrachloride	**<0.20**	ug/L	4.0	0.20	1		08/11/16 21:16	56-23-5	
Chlorobenzene	**<0.11**	ug/L	1.0	0.11	1		08/11/16 21:16	108-90-7	
Chloroethane	**<0.34**	ug/L	4.0	0.34	1		08/11/16 21:16	75-00-3	
Chloroform	**<0.21**	ug/L	1.0	0.21	1		08/11/16 21:16	67-66-3	
Chloromethane	**<0.25**	ug/L	4.0	0.25	1		08/11/16 21:16	74-87-3	
2-Chlorotoluene	**<0.30**	ug/L	1.0	0.30	1		08/11/16 21:16	95-49-8	
4-Chlorotoluene	**<0.26**	ug/L	1.0	0.26	1		08/11/16 21:16	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.60**	ug/L	10.0	0.60	1		08/11/16 21:16	96-12-8	
Dibromochloromethane	**<0.16**	ug/L	4.0	0.16	1		08/11/16 21:16	124-48-1	
1,2-Dibromoethane (EDB)	**<0.20**	ug/L	1.0	0.20	1		08/11/16 21:16	106-93-4	
Dibromomethane	**<0.19**	ug/L	4.0	0.19	1		08/11/16 21:16	74-95-3	
1,2-Dichlorobenzene	**<0.17**	ug/L	1.0	0.17	1		08/11/16 21:16	95-50-1	
1,3-Dichlorobenzene	**<0.12**	ug/L	1.0	0.12	1		08/11/16 21:16	541-73-1	
1,4-Dichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		08/11/16 21:16	106-46-7	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		08/11/16 21:16	75-71-8	
1,1-Dichloroethane	**<0.17**	ug/L	4.0	0.17	1		08/11/16 21:16	75-34-3	
1,2-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		08/11/16 21:16	107-06-2	
1,1-Dichloroethene	**<0.28**	ug/L	1.0	0.28	1		08/11/16 21:16	75-35-4	
cis-1,2-Dichloroethene	**<0.12**	ug/L	1.0	0.12	1		08/11/16 21:16	156-59-2	
trans-1,2-Dichloroethene	**<0.16**	ug/L	1.0	0.16	1		08/11/16 21:16	156-60-5	
Dichlorofluoromethane	**<0.21**	ug/L	1.0	0.21	1		08/11/16 21:16	75-43-4	
1,2-Dichloropropane	**<0.22**	ug/L	4.0	0.22	1		08/11/16 21:16	78-87-5	
1,3-Dichloropropane	**<0.096**	ug/L	1.0	0.096	1		08/11/16 21:16	142-28-9	
2,2-Dichloropropane	**<0.13**	ug/L	4.0	0.13	1		08/11/16 21:16	594-20-7	
1,1-Dichloropropene	**<0.23**	ug/L	1.0	0.23	1		08/11/16 21:16	563-58-6	
cis-1,3-Dichloropropene	**<0.15**	ug/L	4.0	0.15	1		08/11/16 21:16	10061-01-5	
trans-1,3-Dichloropropene	**<0.15**	ug/L	4.0	0.15	1		08/11/16 21:16	10061-02-6	
Diethyl ether (Ethyl ether)	**<0.19**	ug/L	4.0	0.19	1		08/11/16 21:16	60-29-7	
Ethylbenzene	**<0.15**	ug/L	1.0	0.15	1		08/11/16 21:16	100-41-4	

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ANALYTICAL RESULTS

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Sample: 1608TOWERMW16 **Lab ID: 10358621001** Collected: 08/08/16 10:55 Received: 08/10/16 12:23 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260B VOC	Analytical Method: EPA 8260B								
Hexachloro-1,3-butadiene	**<0.18**	ug/L	4.0	0.18	1		08/11/16 21:16	87-68-3	
Isopropylbenzene (Cumene)	**<0.25**	ug/L	1.0	0.25	1		08/11/16 21:16	98-82-8	
p-Isopropyltoluene	**<0.19**	ug/L	1.0	0.19	1		08/11/16 21:16	99-87-6	
Methylene Chloride	**<0.29**	ug/L	4.0	0.29	1		08/11/16 21:16	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<0.43**	ug/L	5.0	0.43	1		08/11/16 21:16	108-10-1	
Methyl-tert-butyl ether	**<0.15**	ug/L	1.0	0.15	1		08/11/16 21:16	1634-04-4	
Naphthalene	**<0.20**	ug/L	4.0	0.20	1		08/11/16 21:16	91-20-3	
n-Propylbenzene	**<0.23**	ug/L	1.0	0.23	1		08/11/16 21:16	103-65-1	
Styrene	**<0.29**	ug/L	1.0	0.29	1		08/11/16 21:16	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.17**	ug/L	4.0	0.17	1		08/11/16 21:16	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.22**	ug/L	1.0	0.22	1		08/11/16 21:16	79-34-5	
Tetrachloroethene	**<0.25**	ug/L	1.0	0.25	1		08/11/16 21:16	127-18-4	
Tetrahydrofuran	**<1.5**	ug/L	10.0	1.5	1		08/11/16 21:16	109-99-9	R1
Toluene	**<0.14**	ug/L	1.0	0.14	1		08/11/16 21:16	108-88-3	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		08/11/16 21:16	87-61-6	
1,2,4-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		08/11/16 21:16	120-82-1	
1,1,1-Trichloroethane	**<0.17**	ug/L	1.0	0.17	1		08/11/16 21:16	71-55-6	
1,1,2-Trichloroethane	**<0.15**	ug/L	1.0	0.15	1		08/11/16 21:16	79-00-5	
Trichloroethene	**<0.20**	ug/L	0.40	0.20	1		08/11/16 21:16	79-01-6	
Trichlorofluoromethane	**<0.33**	ug/L	1.0	0.33	1		08/11/16 21:16	75-69-4	
1,2,3-Trichloropropane	**<0.28**	ug/L	4.0	0.28	1		08/11/16 21:16	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<0.32**	ug/L	1.0	0.32	1		08/11/16 21:16	76-13-1	
1,2,4-Trimethylbenzene	**<0.18**	ug/L	1.0	0.18	1		08/11/16 21:16	95-63-6	
1,3,5-Trimethylbenzene	**<0.27**	ug/L	1.0	0.27	1		08/11/16 21:16	108-67-8	
Vinyl chloride	**<0.29**	ug/L	0.40	0.29	1		08/11/16 21:16	75-01-4	
Xylene (Total)	**<0.32**	ug/L	3.0	0.32	1		08/11/16 21:16	1330-20-7	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%.	75-125		1		08/11/16 21:16	17060-07-0	
Toluene-d8 (S)	105	%.	75-125		1		08/11/16 21:16	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125		1		08/11/16 21:16	460-00-4	

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ANALYTICAL RESULTS

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Sample: 1608TOWERMW16D **Lab ID: 10358621002** Collected: 08/08/16 13:00 Received: 08/10/16 12:23 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	**<0.0016**	ug/L	0.0098	0.0016	1	08/15/16 15:31	08/18/16 03:18	106-93-4	
Surrogates									
4-Bromofluorobenzene (S)	78	%.	30-150		1	08/15/16 15:31	08/18/16 03:18	460-00-4	
8260B VOC	Analytical Method: EPA 8260B								
Acetone	**<0.64**	ug/L	20.0	0.64	1		08/12/16 01:53	67-64-1	
Allyl chloride	**<0.25**	ug/L	4.0	0.25	1		08/12/16 01:53	107-05-1	
Benzene	**1240**	ug/L	20.0	3.1	20		08/14/16 16:30	71-43-2	
Bromobenzene	**<0.34**	ug/L	1.0	0.34	1		08/12/16 01:53	108-86-1	
Bromochloromethane	**<0.19**	ug/L	1.0	0.19	1		08/12/16 01:53	74-97-5	
Bromodichloromethane	**<0.24**	ug/L	1.0	0.24	1		08/12/16 01:53	75-27-4	
Bromoform	**<0.27**	ug/L	10.0	0.27	1		08/12/16 01:53	75-25-2	L2
Bromomethane	**<0.44**	ug/L	4.0	0.44	1		08/12/16 01:53	74-83-9	
2-Butanone (MEK)	**<1.1**	ug/L	5.0	1.1	1		08/12/16 01:53	78-93-3	
n-Butylbenzene	**3.3**	ug/L	1.0	0.16	1		08/12/16 01:53	104-51-8	
sec-Butylbenzene	**4.0**	ug/L	1.0	0.19	1		08/12/16 01:53	135-98-8	
tert-Butylbenzene	**<0.22**	ug/L	1.0	0.22	1		08/12/16 01:53	98-06-6	
Carbon tetrachloride	**<0.20**	ug/L	4.0	0.20	1		08/12/16 01:53	56-23-5	
Chlorobenzene	**<0.11**	ug/L	1.0	0.11	1		08/12/16 01:53	108-90-7	
Chloroethane	**<0.34**	ug/L	4.0	0.34	1		08/12/16 01:53	75-00-3	
Chloroform	**<0.21**	ug/L	1.0	0.21	1		08/12/16 01:53	67-66-3	
Chloromethane	**<0.25**	ug/L	4.0	0.25	1		08/12/16 01:53	74-87-3	
2-Chlorotoluene	**<0.30**	ug/L	1.0	0.30	1		08/12/16 01:53	95-49-8	
4-Chlorotoluene	**<0.26**	ug/L	1.0	0.26	1		08/12/16 01:53	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.60**	ug/L	10.0	0.60	1		08/12/16 01:53	96-12-8	
Dibromochloromethane	**<0.16**	ug/L	4.0	0.16	1		08/12/16 01:53	124-48-1	
1,2-Dibromoethane (EDB)	**<0.20**	ug/L	1.0	0.20	1		08/12/16 01:53	106-93-4	
Dibromomethane	**<0.19**	ug/L	4.0	0.19	1		08/12/16 01:53	74-95-3	
1,2-Dichlorobenzene	**<0.17**	ug/L	1.0	0.17	1		08/12/16 01:53	95-50-1	
1,3-Dichlorobenzene	**<0.12**	ug/L	1.0	0.12	1		08/12/16 01:53	541-73-1	
1,4-Dichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		08/12/16 01:53	106-46-7	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		08/12/16 01:53	75-71-8	
1,1-Dichloroethane	**<0.17**	ug/L	4.0	0.17	1		08/12/16 01:53	75-34-3	
1,2-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		08/12/16 01:53	107-06-2	
1,1-Dichloroethene	**<0.28**	ug/L	1.0	0.28	1		08/12/16 01:53	75-35-4	
cis-1,2-Dichloroethene	**<0.12**	ug/L	1.0	0.12	1		08/12/16 01:53	156-59-2	
trans-1,2-Dichloroethene	**<0.16**	ug/L	1.0	0.16	1		08/12/16 01:53	156-60-5	
Dichlorofluoromethane	**<0.21**	ug/L	1.0	0.21	1		08/12/16 01:53	75-43-4	
1,2-Dichloropropane	**<0.22**	ug/L	4.0	0.22	1		08/12/16 01:53	78-87-5	
1,3-Dichloropropane	**<0.096**	ug/L	1.0	0.096	1		08/12/16 01:53	142-28-9	
2,2-Dichloropropane	**<0.13**	ug/L	4.0	0.13	1		08/12/16 01:53	594-20-7	
1,1-Dichloropropene	**<0.23**	ug/L	1.0	0.23	1		08/12/16 01:53	563-58-6	
cis-1,3-Dichloropropene	**<0.15**	ug/L	4.0	0.15	1		08/12/16 01:53	10061-01-5	
trans-1,3-Dichloropropene	**<0.15**	ug/L	4.0	0.15	1		08/12/16 01:53	10061-02-6	
Diethyl ether (Ethyl ether)	**<0.19**	ug/L	4.0	0.19	1		08/12/16 01:53	60-29-7	
Ethylbenzene	**61.8**	ug/L	1.0	0.15	1		08/12/16 01:53	100-41-4	

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ANALYTICAL RESULTS

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Sample: 1608TOWERMW16D **Lab ID: 10358621002** Collected: 08/08/16 13:00 Received: 08/10/16 12:23 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260B VOC	Analytical Method: EPA 8260B								
Hexachloro-1,3-butadiene	**<0.18**	ug/L	4.0	0.18	1		08/12/16 01:53	87-68-3	
Isopropylbenzene (Cumene)	**26.0**	ug/L	1.0	0.25	1		08/12/16 01:53	98-82-8	
p-Isopropyltoluene	**1.6**	ug/L	1.0	0.19	1		08/12/16 01:53	99-87-6	
Methylene Chloride	**<0.29**	ug/L	4.0	0.29	1		08/12/16 01:53	75-09-2	
4-Methyl-2-pentanone (MIBK)	**0.69J**	ug/L	5.0	0.43	1		08/12/16 01:53	108-10-1	
Methyl-tert-butyl ether	**1.9**	ug/L	1.0	0.15	1		08/12/16 01:53	1634-04-4	
Naphthalene	**109**	ug/L	4.0	0.20	1		08/12/16 01:53	91-20-3	
n-Propylbenzene	**66.9**	ug/L	1.0	0.23	1		08/12/16 01:53	103-65-1	
Styrene	**<0.29**	ug/L	1.0	0.29	1		08/12/16 01:53	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.17**	ug/L	4.0	0.17	1		08/12/16 01:53	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.22**	ug/L	1.0	0.22	1		08/12/16 01:53	79-34-5	
Tetrachloroethene	**<0.25**	ug/L	1.0	0.25	1		08/12/16 01:53	127-18-4	
Tetrahydrofuran	**<1.5**	ug/L	10.0	1.5	1		08/12/16 01:53	109-99-9	
Toluene	**22.2**	ug/L	1.0	0.14	1		08/12/16 01:53	108-88-3	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		08/12/16 01:53	87-61-6	
1,2,4-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		08/12/16 01:53	120-82-1	
1,1,1-Trichloroethane	**<0.17**	ug/L	1.0	0.17	1		08/12/16 01:53	71-55-6	
1,1,2-Trichloroethane	**<0.15**	ug/L	1.0	0.15	1		08/12/16 01:53	79-00-5	
Trichloroethene	**<0.20**	ug/L	0.40	0.20	1		08/12/16 01:53	79-01-6	
Trichlorofluoromethane	**<0.33**	ug/L	1.0	0.33	1		08/12/16 01:53	75-69-4	
1,2,3-Trichloropropane	**<0.28**	ug/L	4.0	0.28	1		08/12/16 01:53	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<0.32**	ug/L	1.0	0.32	1		08/12/16 01:53	76-13-1	
1,2,4-Trimethylbenzene	**367**	ug/L	20.0	3.6	20		08/14/16 16:30	95-63-6	
1,3,5-Trimethylbenzene	**79.5**	ug/L	1.0	0.27	1		08/12/16 01:53	108-67-8	
Vinyl chloride	**<0.29**	ug/L	0.40	0.29	1		08/12/16 01:53	75-01-4	
Xylene (Total)	**1610**	ug/L	60.0	6.3	20		08/14/16 16:30	1330-20-7	
Surrogates									
1,2-Dichloroethane-d4 (S)	100	%.	75-125		1		08/12/16 01:53	17060-07-0	
Toluene-d8 (S)	106	%.	75-125		1		08/12/16 01:53	2037-26-5	
4-Bromofluorobenzene (S)	104	%.	75-125		1		08/12/16 01:53	460-00-4	

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ANALYTICAL RESULTS

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Sample: 1608TOWERMW18D **Lab ID: 10358621003** Collected: 08/08/16 13:30 Received: 08/10/16 12:23 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	**<0.0016**	ug/L	0.010	0.0016	1	08/15/16 15:31	08/18/16 03:44	106-93-4	
Surrogates									
4-Bromofluorobenzene (S)	80	%.	30-150		1	08/15/16 15:31	08/18/16 03:44	460-00-4	
8260B VOC	Analytical Method: EPA 8260B								
Acetone	**<0.64**	ug/L	20.0	0.64	1		08/12/16 02:09	67-64-1	
Allyl chloride	**<0.25**	ug/L	4.0	0.25	1		08/12/16 02:09	107-05-1	
Benzene	**1300**	ug/L	20.0	3.1	20		08/15/16 21:59	71-43-2	
Bromobenzene	**<0.34**	ug/L	1.0	0.34	1		08/12/16 02:09	108-86-1	
Bromochloromethane	**<0.19**	ug/L	1.0	0.19	1		08/12/16 02:09	74-97-5	
Bromodichloromethane	**<0.24**	ug/L	1.0	0.24	1		08/12/16 02:09	75-27-4	
Bromoform	**<0.27**	ug/L	10.0	0.27	1		08/12/16 02:09	75-25-2	L2
Bromomethane	**<0.44**	ug/L	4.0	0.44	1		08/12/16 02:09	74-83-9	
2-Butanone (MEK)	**<1.1**	ug/L	5.0	1.1	1		08/12/16 02:09	78-93-3	
n-Butylbenzene	**3.5**	ug/L	1.0	0.16	1		08/12/16 02:09	104-51-8	
sec-Butylbenzene	**4.3**	ug/L	1.0	0.19	1		08/12/16 02:09	135-98-8	
tert-Butylbenzene	**<0.22**	ug/L	1.0	0.22	1		08/12/16 02:09	98-06-6	
Carbon tetrachloride	**<0.20**	ug/L	4.0	0.20	1		08/12/16 02:09	56-23-5	
Chlorobenzene	**<0.11**	ug/L	1.0	0.11	1		08/12/16 02:09	108-90-7	
Chloroethane	**<0.34**	ug/L	4.0	0.34	1		08/12/16 02:09	75-00-3	
Chloroform	**<0.21**	ug/L	1.0	0.21	1		08/12/16 02:09	67-66-3	
Chloromethane	**<0.25**	ug/L	4.0	0.25	1		08/12/16 02:09	74-87-3	
2-Chlorotoluene	**<0.30**	ug/L	1.0	0.30	1		08/12/16 02:09	95-49-8	
4-Chlorotoluene	**<0.26**	ug/L	1.0	0.26	1		08/12/16 02:09	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.60**	ug/L	10.0	0.60	1		08/12/16 02:09	96-12-8	
Dibromochloromethane	**<0.16**	ug/L	4.0	0.16	1		08/12/16 02:09	124-48-1	
1,2-Dibromoethane (EDB)	**<0.20**	ug/L	1.0	0.20	1		08/12/16 02:09	106-93-4	
Dibromomethane	**<0.19**	ug/L	4.0	0.19	1		08/12/16 02:09	74-95-3	
1,2-Dichlorobenzene	**<0.17**	ug/L	1.0	0.17	1		08/12/16 02:09	95-50-1	
1,3-Dichlorobenzene	**<0.12**	ug/L	1.0	0.12	1		08/12/16 02:09	541-73-1	
1,4-Dichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		08/12/16 02:09	106-46-7	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		08/12/16 02:09	75-71-8	
1,1-Dichloroethane	**<0.17**	ug/L	4.0	0.17	1		08/12/16 02:09	75-34-3	
1,2-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		08/12/16 02:09	107-06-2	
1,1-Dichloroethene	**<0.28**	ug/L	1.0	0.28	1		08/12/16 02:09	75-35-4	
cis-1,2-Dichloroethene	**<0.12**	ug/L	1.0	0.12	1		08/12/16 02:09	156-59-2	
trans-1,2-Dichloroethene	**<0.16**	ug/L	1.0	0.16	1		08/12/16 02:09	156-60-5	
Dichlorofluoromethane	**<0.21**	ug/L	1.0	0.21	1		08/12/16 02:09	75-43-4	
1,2-Dichloropropane	**<0.22**	ug/L	4.0	0.22	1		08/12/16 02:09	78-87-5	
1,3-Dichloropropane	**<0.096**	ug/L	1.0	0.096	1		08/12/16 02:09	142-28-9	
2,2-Dichloropropane	**<0.13**	ug/L	4.0	0.13	1		08/12/16 02:09	594-20-7	
1,1-Dichloropropene	**<0.23**	ug/L	1.0	0.23	1		08/12/16 02:09	563-58-6	
cis-1,3-Dichloropropene	**<0.15**	ug/L	4.0	0.15	1		08/12/16 02:09	10061-01-5	
trans-1,3-Dichloropropene	**<0.15**	ug/L	4.0	0.15	1		08/12/16 02:09	10061-02-6	
Diethyl ether (Ethyl ether)	**<0.19**	ug/L	4.0	0.19	1		08/12/16 02:09	60-29-7	
Ethylbenzene	**65.3**	ug/L	1.0	0.15	1		08/12/16 02:09	100-41-4	

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ANALYTICAL RESULTS

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Sample: 1608TOWERMW18D **Lab ID: 10358621003** Collected: 08/08/16 13:30 Received: 08/10/16 12:23 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260B VOC	Analytical Method: EPA 8260B								
Hexachloro-1,3-butadiene	**<0.18**	ug/L	4.0	0.18	1		08/12/16 02:09	87-68-3	
Isopropylbenzene (Cumene)	**26.7**	ug/L	1.0	0.25	1		08/12/16 02:09	98-82-8	
p-Isopropyltoluene	**1.7**	ug/L	1.0	0.19	1		08/12/16 02:09	99-87-6	
Methylene Chloride	**<0.29**	ug/L	4.0	0.29	1		08/12/16 02:09	75-09-2	
4-Methyl-2-pentanone (MIBK)	**0.72J**	ug/L	5.0	0.43	1		08/12/16 02:09	108-10-1	
Methyl-tert-butyl ether	**2.3**	ug/L	1.0	0.15	1		08/12/16 02:09	1634-04-4	
Naphthalene	**114**	ug/L	4.0	0.20	1		08/12/16 02:09	91-20-3	
n-Propylbenzene	**69.5**	ug/L	1.0	0.23	1		08/12/16 02:09	103-65-1	
Styrene	**<0.29**	ug/L	1.0	0.29	1		08/12/16 02:09	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.17**	ug/L	4.0	0.17	1		08/12/16 02:09	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.22**	ug/L	1.0	0.22	1		08/12/16 02:09	79-34-5	
Tetrachloroethene	**<0.25**	ug/L	1.0	0.25	1		08/12/16 02:09	127-18-4	
Tetrahydrofuran	**<1.5**	ug/L	10.0	1.5	1		08/12/16 02:09	109-99-9	
Toluene	**23.0**	ug/L	1.0	0.14	1		08/12/16 02:09	108-88-3	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		08/12/16 02:09	87-61-6	
1,2,4-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		08/12/16 02:09	120-82-1	
1,1,1-Trichloroethane	**<0.17**	ug/L	1.0	0.17	1		08/12/16 02:09	71-55-6	
1,1,2-Trichloroethane	**<0.15**	ug/L	1.0	0.15	1		08/12/16 02:09	79-00-5	
Trichloroethene	**<0.20**	ug/L	0.40	0.20	1		08/12/16 02:09	79-01-6	
Trichlorofluoromethane	**<0.33**	ug/L	1.0	0.33	1		08/12/16 02:09	75-69-4	
1,2,3-Trichloropropane	**<0.28**	ug/L	4.0	0.28	1		08/12/16 02:09	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<0.32**	ug/L	1.0	0.32	1		08/12/16 02:09	76-13-1	
1,2,4-Trimethylbenzene	**336**	ug/L	20.0	3.6	20		08/15/16 21:59	95-63-6	
1,3,5-Trimethylbenzene	**84.3**	ug/L	1.0	0.27	1		08/12/16 02:09	108-67-8	
Vinyl chloride	**<0.29**	ug/L	0.40	0.29	1		08/12/16 02:09	75-01-4	
Xylene (Total)	**1410**	ug/L	60.0	6.3	20		08/15/16 21:59	1330-20-7	
Surrogates									
1,2-Dichloroethane-d4 (S)	103	%.	75-125		1		08/12/16 02:09	17060-07-0	
Toluene-d8 (S)	106	%.	75-125		1		08/12/16 02:09	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125		1		08/12/16 02:09	460-00-4	

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ANALYTICAL RESULTS

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Sample: 1608TOWERMW16E **Lab ID: 10358621004** Collected: 08/09/16 09:00 Received: 08/10/16 12:23 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	**<0.0016**	ug/L	0.0098	0.0016	1	08/15/16 15:31	08/18/16 04:10	106-93-4	
Surrogates									
4-Bromofluorobenzene (S)	84	%.	30-150		1	08/15/16 15:31	08/18/16 04:10	460-00-4	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020								
Arsenic	**0.59**	ug/L	0.50	0.091	1	08/18/16 16:36	08/19/16 14:05	7440-38-2	
Barium	**205**	ug/L	0.30	0.019	1	08/18/16 16:36	08/19/16 14:05	7440-39-3	
Cadmium	**<0.013**	ug/L	0.080	0.013	1	08/18/16 16:36	08/19/16 14:05	7440-43-9	
Chromium	**2.3**	ug/L	0.50	0.14	1	08/18/16 16:36	08/19/16 14:05	7440-47-3	
Iron	**1460**	ug/L	50.0	18.5	1	08/18/16 16:36	08/19/16 14:05	7439-89-6	
Lead	**0.29**	ug/L	0.10	0.012	1	08/18/16 16:36	08/19/16 14:05	7439-92-1	B
Manganese	**1650**	ug/L	5.0	1.3	10	08/18/16 16:36	08/20/16 16:13	7439-96-5	
Selenium	**0.18J**	ug/L	0.50	0.13	1	08/18/16 16:36	08/19/16 14:05	7782-49-2	
Silver	**<0.0092**	ug/L	0.50	0.0092	1	08/18/16 16:36	08/19/16 14:05	7440-22-4	
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	**<0.031**	ug/L	0.10	0.031	1	08/25/16 13:15	08/25/16 15:16	7439-97-6	
8260B VOC	Analytical Method: EPA 8260B								
Acetone	**10J**	ug/L	20.0	0.64	1		08/12/16 09:19	67-64-1	B
Allyl chloride	**<0.25**	ug/L	4.0	0.25	1		08/12/16 09:19	107-05-1	
Benzene	**768**	ug/L	20.0	3.1	20		08/14/16 16:46	71-43-2	
Bromobenzene	**<0.34**	ug/L	1.0	0.34	1		08/12/16 09:19	108-86-1	
Bromochloromethane	**<0.19**	ug/L	1.0	0.19	1		08/12/16 09:19	74-97-5	
Bromodichloromethane	**<0.24**	ug/L	1.0	0.24	1		08/12/16 09:19	75-27-4	
Bromoform	**<0.27**	ug/L	10.0	0.27	1		08/12/16 09:19	75-25-2	L2
Bromomethane	**<0.44**	ug/L	4.0	0.44	1		08/12/16 09:19	74-83-9	
2-Butanone (MEK)	**<1.1**	ug/L	5.0	1.1	1		08/12/16 09:19	78-93-3	
n-Butylbenzene	**0.59J**	ug/L	1.0	0.16	1		08/12/16 09:19	104-51-8	
sec-Butylbenzene	**1.3**	ug/L	1.0	0.19	1		08/12/16 09:19	135-98-8	
tert-Butylbenzene	**<0.22**	ug/L	1.0	0.22	1		08/12/16 09:19	98-06-6	
Carbon tetrachloride	**<0.20**	ug/L	4.0	0.20	1		08/12/16 09:19	56-23-5	
Chlorobenzene	**<0.11**	ug/L	1.0	0.11	1		08/12/16 09:19	108-90-7	
Chloroethane	**<0.34**	ug/L	4.0	0.34	1		08/12/16 09:19	75-00-3	
Chloroform	**<0.21**	ug/L	1.0	0.21	1		08/12/16 09:19	67-66-3	
Chloromethane	**<0.25**	ug/L	4.0	0.25	1		08/12/16 09:19	74-87-3	
2-Chlorotoluene	**<0.30**	ug/L	1.0	0.30	1		08/12/16 09:19	95-49-8	
4-Chlorotoluene	**<0.26**	ug/L	1.0	0.26	1		08/12/16 09:19	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.60**	ug/L	10.0	0.60	1		08/12/16 09:19	96-12-8	
Dibromochloromethane	**<0.16**	ug/L	4.0	0.16	1		08/12/16 09:19	124-48-1	
1,2-Dibromoethane (EDB)	**<0.20**	ug/L	1.0	0.20	1		08/12/16 09:19	106-93-4	
Dibromomethane	**<0.19**	ug/L	4.0	0.19	1		08/12/16 09:19	74-95-3	
1,2-Dichlorobenzene	**<0.17**	ug/L	1.0	0.17	1		08/12/16 09:19	95-50-1	
1,3-Dichlorobenzene	**<0.12**	ug/L	1.0	0.12	1		08/12/16 09:19	541-73-1	
1,4-Dichlorobenzene	**0.28J**	ug/L	1.0	0.21	1		08/12/16 09:19	106-46-7	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		08/12/16 09:19	75-71-8	

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ANALYTICAL RESULTS

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Sample: 1608TOWERMW16E **Lab ID: 10358621004** Collected: 08/09/16 09:00 Received: 08/10/16 12:23 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260B VOC	Analytical Method: EPA 8260B								
1,1-Dichloroethane	**<0.17**	ug/L	4.0	0.17	1		08/12/16 09:19	75-34-3	
1,2-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		08/12/16 09:19	107-06-2	
1,1-Dichloroethene	**<0.28**	ug/L	1.0	0.28	1		08/12/16 09:19	75-35-4	
cis-1,2-Dichloroethene	**<0.12**	ug/L	1.0	0.12	1		08/12/16 09:19	156-59-2	
trans-1,2-Dichloroethene	**<0.16**	ug/L	1.0	0.16	1		08/12/16 09:19	156-60-5	
Dichlorofluoromethane	**<0.21**	ug/L	1.0	0.21	1		08/12/16 09:19	75-43-4	
1,2-Dichloropropane	**<0.22**	ug/L	4.0	0.22	1		08/12/16 09:19	78-87-5	
1,3-Dichloropropane	**<0.096**	ug/L	1.0	0.096	1		08/12/16 09:19	142-28-9	
2,2-Dichloropropane	**<0.13**	ug/L	4.0	0.13	1		08/12/16 09:19	594-20-7	
1,1-Dichloropropene	**<0.23**	ug/L	1.0	0.23	1		08/12/16 09:19	563-58-6	
cis-1,3-Dichloropropene	**<0.15**	ug/L	4.0	0.15	1		08/12/16 09:19	10061-01-5	
trans-1,3-Dichloropropene	**<0.15**	ug/L	4.0	0.15	1		08/12/16 09:19	10061-02-6	
Diethyl ether (Ethyl ether)	**<0.19**	ug/L	4.0	0.19	1		08/12/16 09:19	60-29-7	
Ethylbenzene	**8.9**	ug/L	1.0	0.15	1		08/12/16 09:19	100-41-4	
Hexachloro-1,3-butadiene	**<0.18**	ug/L	4.0	0.18	1		08/12/16 09:19	87-68-3	
Isopropylbenzene (Cumene)	**9.9**	ug/L	1.0	0.25	1		08/12/16 09:19	98-82-8	
p-Isopropyltoluene	**0.52J**	ug/L	1.0	0.19	1		08/12/16 09:19	99-87-6	
Methylene Chloride	**<0.29**	ug/L	4.0	0.29	1		08/12/16 09:19	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<0.43**	ug/L	5.0	0.43	1		08/12/16 09:19	108-10-1	
Methyl-tert-butyl ether	**10.0**	ug/L	1.0	0.15	1		08/12/16 09:19	1634-04-4	
Naphthalene	**28.2**	ug/L	4.0	0.20	1		08/12/16 09:19	91-20-3	
n-Propylbenzene	**18.4**	ug/L	1.0	0.23	1		08/12/16 09:19	103-65-1	
Styrene	**<0.29**	ug/L	1.0	0.29	1		08/12/16 09:19	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.17**	ug/L	4.0	0.17	1		08/12/16 09:19	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.22**	ug/L	1.0	0.22	1		08/12/16 09:19	79-34-5	
Tetrachloroethene	**<0.25**	ug/L	1.0	0.25	1		08/12/16 09:19	127-18-4	
Tetrahydrofuran	**<1.5**	ug/L	10.0	1.5	1		08/12/16 09:19	109-99-9	
Toluene	**6.1**	ug/L	1.0	0.14	1		08/12/16 09:19	108-88-3	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		08/12/16 09:19	87-61-6	
1,2,4-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		08/12/16 09:19	120-82-1	
1,1,1-Trichloroethane	**<0.17**	ug/L	1.0	0.17	1		08/12/16 09:19	71-55-6	
1,1,2-Trichloroethane	**<0.15**	ug/L	1.0	0.15	1		08/12/16 09:19	79-00-5	
Trichloroethene	**<0.20**	ug/L	0.40	0.20	1		08/12/16 09:19	79-01-6	
Trichlorofluoromethane	**<0.33**	ug/L	1.0	0.33	1		08/12/16 09:19	75-69-4	
1,2,3-Trichloropropane	**<0.28**	ug/L	4.0	0.28	1		08/12/16 09:19	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<0.32**	ug/L	1.0	0.32	1		08/12/16 09:19	76-13-1	
1,2,4-Trimethylbenzene	**96.6**	ug/L	1.0	0.18	1		08/12/16 09:19	95-63-6	
1,3,5-Trimethylbenzene	**16.9**	ug/L	1.0	0.27	1		08/12/16 09:19	108-67-8	
Vinyl chloride	**<0.29**	ug/L	0.40	0.29	1		08/12/16 09:19	75-01-4	
Xylene (Total)	**506**	ug/L	3.0	0.32	1		08/12/16 09:19	1330-20-7	
Surrogates									
1,2-Dichloroethane-d4 (S)	103	%.	75-125		1		08/12/16 09:19	17060-07-0	
Toluene-d8 (S)	105	%.	75-125		1		08/12/16 09:19	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125		1		08/12/16 09:19	460-00-4	

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ANALYTICAL RESULTS

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Sample: 1608TOWERMW16E **Lab ID: 10358621004** Collected: 08/09/16 09:00 Received: 08/10/16 12:23 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
2510B Specific Conductance	Analytical Method: SM 2510B								
Specific Conductance	**1570**	umhos/cm	10.0	10.0	1		08/16/16 15:02		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.7**	Std. Units	0.10	0.10	1		08/15/16 19:10		H6
4500S2D Sulfide Water	Analytical Method: SM 4500-S2-D								
Sulfide	**0.024J**	mg/L	0.10	0.011	1		08/16/16 13:29		
4500S2H Sulfide as H2S Calc	Analytical Method: SM 4500-S H								
Sulfide as H2S (calc)	**<0.020**	mg/L	0.10	0.020	1		08/16/16 16:40		AL
SM4500NO3-H, NO2 + NO3 pres.	Analytical Method: SM 4500-NO3 H								
Nitrate as N	**<0.018**	mg/L	0.058	0.018	1		08/24/16 09:12	14797-55-8	
Nitrogen, NO2 plus NO3	**<0.050**	mg/L	0.17	0.050	1		08/24/16 09:12		
ASTM D516 Sulfate Water	Analytical Method: ASTM D516								
Sulfate	**1.2J**	mg/L	3.5	1.0	1		08/12/16 09:05	14808-79-8	
SM4500NO2-B, Nitrite, unpres	Analytical Method: SM 4500-NO2 B								
Nitrite as N	**0.0044J**	mg/L	0.012	0.0036	1		08/11/16 09:00	14797-65-0	H1

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ANALYTICAL RESULTS

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Sample: 1608TOWERMW21 **Lab ID: 10358621005** Collected: 08/09/16 11:20 Received: 08/10/16 12:23 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	**0.0072J**	ug/L	0.0098	0.0016	1	08/15/16 15:31	08/18/16 04:37	106-93-4	
Surrogates									
4-Bromofluorobenzene (S)	73	%.	30-150		1	08/15/16 15:31	08/18/16 04:37	460-00-4	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020								
Arsenic	**2.3**	ug/L	0.50	0.091	1	08/18/16 16:36	08/19/16 14:19	7440-38-2	
Barium	**95.9**	ug/L	0.30	0.019	1	08/18/16 16:36	08/19/16 14:19	7440-39-3	
Cadmium	**0.078J**	ug/L	0.080	0.013	1	08/18/16 16:36	08/19/16 14:19	7440-43-9	
Chromium	**8.5**	ug/L	0.50	0.14	1	08/18/16 16:36	08/19/16 14:19	7440-47-3	
Iron	**19200**	ug/L	50.0	18.5	1	08/18/16 16:36	08/19/16 14:19	7439-89-6	
Lead	**8.6**	ug/L	0.10	0.012	1	08/18/16 16:36	08/19/16 14:19	7439-92-1	
Manganese	**6550**	ug/L	10.0	2.5	20	08/18/16 16:36	08/20/16 16:15	7439-96-5	
Selenium	**0.39J**	ug/L	0.50	0.13	1	08/18/16 16:36	08/19/16 14:19	7782-49-2	
Silver	**0.042J**	ug/L	0.50	0.0092	1	08/18/16 16:36	08/19/16 14:19	7440-22-4	B
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	**<0.031**	ug/L	0.10	0.031	1	08/25/16 13:15	08/25/16 15:18	7439-97-6	
8260B VOC	Analytical Method: EPA 8260B								
Acetone	**37.3**	ug/L	20.0	0.64	1		08/12/16 09:34	67-64-1	
Allyl chloride	**<0.25**	ug/L	4.0	0.25	1		08/12/16 09:34	107-05-1	
Benzene	**458**	ug/L	25.0	3.9	25		08/14/16 17:01	71-43-2	
Bromobenzene	**<0.34**	ug/L	1.0	0.34	1		08/12/16 09:34	108-86-1	
Bromochloromethane	**<0.19**	ug/L	1.0	0.19	1		08/12/16 09:34	74-97-5	
Bromodichloromethane	**<0.24**	ug/L	1.0	0.24	1		08/12/16 09:34	75-27-4	
Bromoform	**<0.27**	ug/L	10.0	0.27	1		08/12/16 09:34	75-25-2	L2
Bromomethane	**<0.44**	ug/L	4.0	0.44	1		08/12/16 09:34	74-83-9	
2-Butanone (MEK)	**<1.1**	ug/L	5.0	1.1	1		08/12/16 09:34	78-93-3	
n-Butylbenzene	**52.4**	ug/L	1.0	0.16	1		08/12/16 09:34	104-51-8	
sec-Butylbenzene	**21.6**	ug/L	1.0	0.19	1		08/12/16 09:34	135-98-8	
tert-Butylbenzene	**<0.22**	ug/L	1.0	0.22	1		08/12/16 09:34	98-06-6	
Carbon tetrachloride	**<0.20**	ug/L	4.0	0.20	1		08/12/16 09:34	56-23-5	
Chlorobenzene	**<0.11**	ug/L	1.0	0.11	1		08/12/16 09:34	108-90-7	
Chloroethane	**<0.34**	ug/L	4.0	0.34	1		08/12/16 09:34	75-00-3	
Chloroform	**<0.21**	ug/L	1.0	0.21	1		08/12/16 09:34	67-66-3	
Chloromethane	**<0.25**	ug/L	4.0	0.25	1		08/12/16 09:34	74-87-3	
2-Chlorotoluene	**<0.30**	ug/L	1.0	0.30	1		08/12/16 09:34	95-49-8	
4-Chlorotoluene	**<0.26**	ug/L	1.0	0.26	1		08/12/16 09:34	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.60**	ug/L	10.0	0.60	1		08/12/16 09:34	96-12-8	
Dibromochloromethane	**<0.16**	ug/L	4.0	0.16	1		08/12/16 09:34	124-48-1	
1,2-Dibromoethane (EDB)	**<0.20**	ug/L	1.0	0.20	1		08/12/16 09:34	106-93-4	
Dibromomethane	**<0.19**	ug/L	4.0	0.19	1		08/12/16 09:34	74-95-3	
1,2-Dichlorobenzene	**<0.17**	ug/L	1.0	0.17	1		08/12/16 09:34	95-50-1	
1,3-Dichlorobenzene	**<0.12**	ug/L	1.0	0.12	1		08/12/16 09:34	541-73-1	
1,4-Dichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		08/12/16 09:34	106-46-7	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		08/12/16 09:34	75-71-8	

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ANALYTICAL RESULTS

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Sample: 1608TOWERMW21 **Lab ID: 10358621005** Collected: 08/09/16 11:20 Received: 08/10/16 12:23 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260B VOC	Analytical Method: EPA 8260B								
1,1-Dichloroethane	**<0.17**	ug/L	4.0	0.17	1		08/12/16 09:34	75-34-3	
1,2-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		08/12/16 09:34	107-06-2	
1,1-Dichloroethene	**<0.28**	ug/L	1.0	0.28	1		08/12/16 09:34	75-35-4	
cis-1,2-Dichloroethene	**<0.12**	ug/L	1.0	0.12	1		08/12/16 09:34	156-59-2	
trans-1,2-Dichloroethene	**<0.16**	ug/L	1.0	0.16	1		08/12/16 09:34	156-60-5	
Dichlorofluoromethane	**<0.21**	ug/L	1.0	0.21	1		08/12/16 09:34	75-43-4	
1,2-Dichloropropane	**<0.22**	ug/L	4.0	0.22	1		08/12/16 09:34	78-87-5	
1,3-Dichloropropane	**<0.096**	ug/L	1.0	0.096	1		08/12/16 09:34	142-28-9	
2,2-Dichloropropane	**<0.13**	ug/L	4.0	0.13	1		08/12/16 09:34	594-20-7	
1,1-Dichloropropene	**<0.23**	ug/L	1.0	0.23	1		08/12/16 09:34	563-58-6	
cis-1,3-Dichloropropene	**<0.15**	ug/L	4.0	0.15	1		08/12/16 09:34	10061-01-5	
trans-1,3-Dichloropropene	**<0.15**	ug/L	4.0	0.15	1		08/12/16 09:34	10061-02-6	
Diethyl ether (Ethyl ether)	**<0.19**	ug/L	4.0	0.19	1		08/12/16 09:34	60-29-7	
Ethylbenzene	**1700**	ug/L	25.0	3.8	25		08/14/16 17:01	100-41-4	
Hexachloro-1,3-butadiene	**<0.18**	ug/L	4.0	0.18	1		08/12/16 09:34	87-68-3	
Isopropylbenzene (Cumene)	**111**	ug/L	1.0	0.25	1		08/12/16 09:34	98-82-8	
p-Isopropyltoluene	**15.9**	ug/L	1.0	0.19	1		08/12/16 09:34	99-87-6	
Methylene Chloride	**<0.29**	ug/L	4.0	0.29	1		08/12/16 09:34	75-09-2	
4-Methyl-2-pentanone (MIBK)	**9.4**	ug/L	5.0	0.43	1		08/12/16 09:34	108-10-1	
Methyl-tert-butyl ether	**0.24J**	ug/L	1.0	0.15	1		08/12/16 09:34	1634-04-4	
Naphthalene	**703**	ug/L	100	5.1	25		08/14/16 17:01	91-20-3	
n-Propylbenzene	**268**	ug/L	25.0	5.8	25		08/14/16 17:01	103-65-1	
Styrene	**12.5**	ug/L	1.0	0.29	1		08/12/16 09:34	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.17**	ug/L	4.0	0.17	1		08/12/16 09:34	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.22**	ug/L	1.0	0.22	1		08/12/16 09:34	79-34-5	
Tetrachloroethene	**<0.25**	ug/L	1.0	0.25	1		08/12/16 09:34	127-18-4	
Tetrahydrofuran	**<1.5**	ug/L	10.0	1.5	1		08/12/16 09:34	109-99-9	
Toluene	**3280**	ug/L	25.0	3.6	25		08/14/16 17:01	108-88-3	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		08/12/16 09:34	87-61-6	
1,2,4-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		08/12/16 09:34	120-82-1	
1,1,1-Trichloroethane	**<0.17**	ug/L	1.0	0.17	1		08/12/16 09:34	71-55-6	
1,1,2-Trichloroethane	**<0.15**	ug/L	1.0	0.15	1		08/12/16 09:34	79-00-5	
Trichloroethene	**<0.20**	ug/L	0.40	0.20	1		08/12/16 09:34	79-01-6	
Trichlorofluoromethane	**<0.33**	ug/L	1.0	0.33	1		08/12/16 09:34	75-69-4	
1,2,3-Trichloropropane	**<0.28**	ug/L	4.0	0.28	1		08/12/16 09:34	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<0.32**	ug/L	1.0	0.32	1		08/12/16 09:34	76-13-1	
1,2,4-Trimethylbenzene	**2920**	ug/L	25.0	4.4	25		08/14/16 17:01	95-63-6	
1,3,5-Trimethylbenzene	**744**	ug/L	25.0	6.7	25		08/14/16 17:01	108-67-8	
Vinyl chloride	**<0.29**	ug/L	0.40	0.29	1		08/12/16 09:34	75-01-4	
Xylene (Total)	**9060**	ug/L	75.0	7.9	25		08/14/16 17:01	1330-20-7	
Surrogates									
1,2-Dichloroethane-d4 (S)	109	%.	75-125		1		08/12/16 09:34	17060-07-0	
Toluene-d8 (S)	102	%.	75-125		1		08/12/16 09:34	2037-26-5	
4-Bromofluorobenzene (S)	95	%.	75-125		1		08/12/16 09:34	460-00-4	

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ANALYTICAL RESULTS

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Sample: 1608TOWERMW21 **Lab ID: 10358621005** Collected: 08/09/16 11:20 Received: 08/10/16 12:23 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
2510B Specific Conductance	Analytical Method: SM 2510B								
Specific Conductance	**411**	umhos/cm	10.0	10.0	1		08/16/16 15:04		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**6.7**	Std. Units	0.10	0.10	1		08/15/16 19:12		H6
4500S2D Sulfide Water	Analytical Method: SM 4500-S2-D								
Sulfide	**0.022J**	mg/L	0.10	0.011	1		08/16/16 13:30		
4500S2H Sulfide as H2S Calc	Analytical Method: SM 4500-S H								
Sulfide as H2S (calc)	**<0.020**	mg/L	0.10	0.020	1		08/16/16 16:40		AL
SM4500NO3-H, NO2 + NO3 pres.	Analytical Method: SM 4500-NO3 H								
Nitrate as N	**0.047J**	mg/L	0.058	0.018	1		08/24/16 09:12	14797-55-8	
Nitrogen, NO2 plus NO3	**<0.050**	mg/L	0.17	0.050	1		08/24/16 09:12		
ASTM D516 Sulfate Water	Analytical Method: ASTM D516								
Sulfate	**1.5J**	mg/L	3.5	1.0	1		08/12/16 09:05	14808-79-8	
SM4500NO2-B, Nitrite, unpres	Analytical Method: SM 4500-NO2 B								
Nitrite as N	**<0.0036**	mg/L	0.012	0.0036	1		08/11/16 09:00	14797-65-0	

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ANALYTICAL RESULTS

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Sample: 1608TOWERMW21M **Lab ID: 10358621006** Collected: 08/09/16 13:00 Received: 08/10/16 12:23 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	**0.011**	ug/L	0.0099	0.0016	1	08/15/16 15:31	08/18/16 05:03	106-93-4	
Surrogates									
4-Bromofluorobenzene (S)	52	%.	30-150		1	08/15/16 15:31	08/18/16 05:03	460-00-4	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020								
Arsenic	**1.5**	ug/L	0.50	0.091	1	08/18/16 16:36	08/19/16 14:21	7440-38-2	
Barium	**80.9**	ug/L	0.30	0.019	1	08/18/16 16:36	08/19/16 14:21	7440-39-3	
Cadmium	**0.057J**	ug/L	0.080	0.013	1	08/18/16 16:36	08/19/16 14:21	7440-43-9	
Chromium	**9.5**	ug/L	0.50	0.14	1	08/18/16 16:36	08/19/16 14:21	7440-47-3	
Iron	**8830**	ug/L	50.0	18.5	1	08/18/16 16:36	08/19/16 14:21	7439-89-6	
Lead	**2.8**	ug/L	0.10	0.012	1	08/18/16 16:36	08/19/16 14:21	7439-92-1	
Manganese	**3170**	ug/L	10.0	2.5	20	08/18/16 16:36	08/20/16 16:18	7439-96-5	
Selenium	**0.43J**	ug/L	0.50	0.13	1	08/18/16 16:36	08/19/16 14:21	7782-49-2	
Silver	**0.069J**	ug/L	0.50	0.0092	1	08/18/16 16:36	08/19/16 14:21	7440-22-4	B
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	**<0.031**	ug/L	0.10	0.031	1	08/25/16 13:15	08/25/16 15:20	7439-97-6	
8260B VOC	Analytical Method: EPA 8260B								
Acetone	**32.1**	ug/L	20.0	0.64	1		08/12/16 09:50	67-64-1	
Allyl chloride	**<0.25**	ug/L	4.0	0.25	1		08/12/16 09:50	107-05-1	
Benzene	**2150**	ug/L	25.0	3.9	25		08/14/16 17:17	71-43-2	
Bromobenzene	**<0.34**	ug/L	1.0	0.34	1		08/12/16 09:50	108-86-1	
Bromochloromethane	**<0.19**	ug/L	1.0	0.19	1		08/12/16 09:50	74-97-5	
Bromodichloromethane	**<0.24**	ug/L	1.0	0.24	1		08/12/16 09:50	75-27-4	
Bromoform	**<0.27**	ug/L	10.0	0.27	1		08/12/16 09:50	75-25-2	L2
Bromomethane	**<0.44**	ug/L	4.0	0.44	1		08/12/16 09:50	74-83-9	
2-Butanone (MEK)	**<1.1**	ug/L	5.0	1.1	1		08/12/16 09:50	78-93-3	
n-Butylbenzene	**29.3**	ug/L	1.0	0.16	1		08/12/16 09:50	104-51-8	
sec-Butylbenzene	**16.2**	ug/L	1.0	0.19	1		08/12/16 09:50	135-98-8	
tert-Butylbenzene	**<0.22**	ug/L	1.0	0.22	1		08/12/16 09:50	98-06-6	
Carbon tetrachloride	**<0.20**	ug/L	4.0	0.20	1		08/12/16 09:50	56-23-5	
Chlorobenzene	**<0.11**	ug/L	1.0	0.11	1		08/12/16 09:50	108-90-7	
Chloroethane	**<0.34**	ug/L	4.0	0.34	1		08/12/16 09:50	75-00-3	
Chloroform	**<0.21**	ug/L	1.0	0.21	1		08/12/16 09:50	67-66-3	
Chloromethane	**<0.25**	ug/L	4.0	0.25	1		08/12/16 09:50	74-87-3	
2-Chlorotoluene	**<0.30**	ug/L	1.0	0.30	1		08/12/16 09:50	95-49-8	
4-Chlorotoluene	**<0.26**	ug/L	1.0	0.26	1		08/12/16 09:50	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.60**	ug/L	10.0	0.60	1		08/12/16 09:50	96-12-8	
Dibromochloromethane	**<0.16**	ug/L	4.0	0.16	1		08/12/16 09:50	124-48-1	
1,2-Dibromoethane (EDB)	**<0.20**	ug/L	1.0	0.20	1		08/12/16 09:50	106-93-4	
Dibromomethane	**<0.19**	ug/L	4.0	0.19	1		08/12/16 09:50	74-95-3	
1,2-Dichlorobenzene	**<0.17**	ug/L	1.0	0.17	1		08/12/16 09:50	95-50-1	
1,3-Dichlorobenzene	**<0.12**	ug/L	1.0	0.12	1		08/12/16 09:50	541-73-1	
1,4-Dichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		08/12/16 09:50	106-46-7	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		08/12/16 09:50	75-71-8	

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ANALYTICAL RESULTS

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Sample: 1608TOWERMW21M **Lab ID: 10358621006** Collected: 08/09/16 13:00 Received: 08/10/16 12:23 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260B VOC	Analytical Method: EPA 8260B								
1,1-Dichloroethane	**<0.17**	ug/L	4.0	0.17	1		08/12/16 09:50	75-34-3	
1,2-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		08/12/16 09:50	107-06-2	
1,1-Dichloroethene	**<0.28**	ug/L	1.0	0.28	1		08/12/16 09:50	75-35-4	
cis-1,2-Dichloroethene	**<0.12**	ug/L	1.0	0.12	1		08/12/16 09:50	156-59-2	
trans-1,2-Dichloroethene	**<0.16**	ug/L	1.0	0.16	1		08/12/16 09:50	156-60-5	
Dichlorofluoromethane	**<0.21**	ug/L	1.0	0.21	1		08/12/16 09:50	75-43-4	
1,2-Dichloropropane	**<0.22**	ug/L	4.0	0.22	1		08/12/16 09:50	78-87-5	
1,3-Dichloropropane	**<0.096**	ug/L	1.0	0.096	1		08/12/16 09:50	142-28-9	
2,2-Dichloropropane	**<0.13**	ug/L	4.0	0.13	1		08/12/16 09:50	594-20-7	
1,1-Dichloropropene	**<0.23**	ug/L	1.0	0.23	1		08/12/16 09:50	563-58-6	
cis-1,3-Dichloropropene	**<0.15**	ug/L	4.0	0.15	1		08/12/16 09:50	10061-01-5	
trans-1,3-Dichloropropene	**<0.15**	ug/L	4.0	0.15	1		08/12/16 09:50	10061-02-6	
Diethyl ether (Ethyl ether)	**<0.19**	ug/L	4.0	0.19	1		08/12/16 09:50	60-29-7	
Ethylbenzene	**1660**	ug/L	25.0	3.8	25		08/14/16 17:17	100-41-4	
Hexachloro-1,3-butadiene	**<0.18**	ug/L	4.0	0.18	1		08/12/16 09:50	87-68-3	
Isopropylbenzene (Cumene)	**81.1**	ug/L	1.0	0.25	1		08/12/16 09:50	98-82-8	
p-Isopropyltoluene	**8.0**	ug/L	1.0	0.19	1		08/12/16 09:50	99-87-6	
Methylene Chloride	**<0.29**	ug/L	4.0	0.29	1		08/12/16 09:50	75-09-2	
4-Methyl-2-pentanone (MIBK)	**2.6J**	ug/L	5.0	0.43	1		08/12/16 09:50	108-10-1	
Methyl-tert-butyl ether	**7.4**	ug/L	1.0	0.15	1		08/12/16 09:50	1634-04-4	
Naphthalene	**470**	ug/L	100	5.1	25		08/14/16 17:17	91-20-3	
n-Propylbenzene	**238**	ug/L	1.0	0.23	1		08/12/16 09:50	103-65-1	
Styrene	**5.9**	ug/L	1.0	0.29	1		08/12/16 09:50	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.17**	ug/L	4.0	0.17	1		08/12/16 09:50	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.22**	ug/L	1.0	0.22	1		08/12/16 09:50	79-34-5	
Tetrachloroethene	**<0.25**	ug/L	1.0	0.25	1		08/12/16 09:50	127-18-4	
Tetrahydrofuran	**<1.5**	ug/L	10.0	1.5	1		08/12/16 09:50	109-99-9	
Toluene	**1320**	ug/L	25.0	3.6	25		08/14/16 17:17	108-88-3	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		08/12/16 09:50	87-61-6	
1,2,4-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		08/12/16 09:50	120-82-1	
1,1,1-Trichloroethane	**<0.17**	ug/L	1.0	0.17	1		08/12/16 09:50	71-55-6	
1,1,2-Trichloroethane	**<0.15**	ug/L	1.0	0.15	1		08/12/16 09:50	79-00-5	
Trichloroethene	**<0.20**	ug/L	0.40	0.20	1		08/12/16 09:50	79-01-6	
Trichlorofluoromethane	**<0.33**	ug/L	1.0	0.33	1		08/12/16 09:50	75-69-4	
1,2,3-Trichloropropane	**<0.28**	ug/L	4.0	0.28	1		08/12/16 09:50	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<0.32**	ug/L	1.0	0.32	1		08/12/16 09:50	76-13-1	
1,2,4-Trimethylbenzene	**1310**	ug/L	25.0	4.4	25		08/14/16 17:17	95-63-6	
1,3,5-Trimethylbenzene	**480**	ug/L	25.0	6.7	25		08/14/16 17:17	108-67-8	
Vinyl chloride	**<0.29**	ug/L	0.40	0.29	1		08/12/16 09:50	75-01-4	
Xylene (Total)	**4340**	ug/L	75.0	7.9	25		08/14/16 17:17	1330-20-7	
Surrogates									
1,2-Dichloroethane-d4 (S)	102	%.	75-125		1		08/12/16 09:50	17060-07-0	
Toluene-d8 (S)	106	%.	75-125		1		08/12/16 09:50	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125		1		08/12/16 09:50	460-00-4	

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ANALYTICAL RESULTS

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Sample: 1608TOWERMW21M **Lab ID: 10358621006** Collected: 08/09/16 13:00 Received: 08/10/16 12:23 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
2510B Specific Conductance	Analytical Method: SM 2510B								
Specific Conductance	**595**	umhos/cm	10.0	10.0	1		08/16/16 15:05		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**6.6**	Std. Units	0.10	0.10	1		08/15/16 19:13		H6
4500S2D Sulfide Water	Analytical Method: SM 4500-S2-D								
Sulfide	**<0.011**	mg/L	0.10	0.011	1		08/16/16 13:33		
4500S2H Sulfide as H2S Calc	Analytical Method: SM 4500-S H								
Sulfide as H2S (calc)	**<0.020**	mg/L	0.10	0.020	1		08/16/16 16:40		AL
SM4500NO3-H, NO2 + NO3 pres.	Analytical Method: SM 4500-NO3 H								
Nitrate as N	**0.12**	mg/L	0.058	0.018	1		08/24/16 09:13	14797-55-8	
Nitrogen, NO2 plus NO3	**0.12J**	mg/L	0.17	0.050	1		08/24/16 09:13		
ASTM D516 Sulfate Water	Analytical Method: ASTM D516								
Sulfate	**<1.0**	mg/L	3.5	1.0	1		08/12/16 09:05	14808-79-8	
SM4500NO2-B, Nitrite, unpres	Analytical Method: SM 4500-NO2 B								
Nitrite as N	**<0.0036**	mg/L	0.012	0.0036	1		08/11/16 09:00	14797-65-0	

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ANALYTICAL RESULTS

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Sample: 1608TOWERMW21D **Lab ID: 10358621007** Collected: 08/09/16 14:50 Received: 08/10/16 12:23 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	**<0.0016**	ug/L	0.0099	0.0016	1	08/15/16 15:31	08/18/16 00:42	106-93-4	
Surrogates									
4-Bromofluorobenzene (S)	34	%.	30-150		1	08/15/16 15:31	08/18/16 00:42	460-00-4	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020								
Arsenic	**0.43J**	ug/L	0.50	0.091	1	08/18/16 16:36	08/19/16 14:23	7440-38-2	
Barium	**299**	ug/L	0.30	0.019	1	08/18/16 16:36	08/19/16 14:23	7440-39-3	
Cadmium	**<0.013**	ug/L	0.080	0.013	1	08/18/16 16:36	08/19/16 14:23	7440-43-9	
Chromium	**4.4**	ug/L	0.50	0.14	1	08/18/16 16:36	08/19/16 14:23	7440-47-3	
Iron	**65700**	ug/L	500	185	10	08/18/16 16:36	08/20/16 16:20	7439-89-6	M1
Lead	**0.41**	ug/L	0.10	0.012	1	08/18/16 16:36	08/19/16 14:23	7439-92-1	
Manganese	**1580**	ug/L	5.0	1.3	10	08/18/16 16:36	08/20/16 16:20	7439-96-5	M1
Selenium	**0.19J**	ug/L	0.50	0.13	1	08/18/16 16:36	08/19/16 14:23	7782-49-2	
Silver	**0.013J**	ug/L	0.50	0.0092	1	08/18/16 16:36	08/19/16 14:23	7440-22-4	B
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	**<0.031**	ug/L	0.10	0.031	1	08/25/16 13:15	08/25/16 15:22	7439-97-6	
8260B VOC	Analytical Method: EPA 8260B								
Acetone	**2.2J**	ug/L	20.0	2.0	1		08/17/16 01:09	67-64-1	
Allyl chloride	**<0.25**	ug/L	4.0	0.25	1		08/17/16 01:09	107-05-1	
Benzene	**45.9**	ug/L	1.0	0.16	1		08/17/16 01:09	71-43-2	
Bromobenzene	**<0.34**	ug/L	1.0	0.34	1		08/17/16 01:09	108-86-1	
Bromochloromethane	**<0.19**	ug/L	1.0	0.19	1		08/17/16 01:09	74-97-5	
Bromodichloromethane	**<0.24**	ug/L	1.0	0.24	1		08/17/16 01:09	75-27-4	
Bromoform	**<0.27**	ug/L	4.0	0.27	1		08/17/16 01:09	75-25-2	
Bromomethane	**<0.44**	ug/L	4.0	0.44	1		08/17/16 01:09	74-83-9	
2-Butanone (MEK)	**<1.1**	ug/L	5.0	1.1	1		08/17/16 01:09	78-93-3	
n-Butylbenzene	**1.8**	ug/L	1.0	0.16	1		08/17/16 01:09	104-51-8	
sec-Butylbenzene	**0.69J**	ug/L	1.0	0.19	1		08/17/16 01:09	135-98-8	
tert-Butylbenzene	**<0.22**	ug/L	1.0	0.22	1		08/17/16 01:09	98-06-6	
Carbon tetrachloride	**<0.20**	ug/L	4.0	0.20	1		08/17/16 01:09	56-23-5	
Chlorobenzene	**<0.11**	ug/L	1.0	0.11	1		08/17/16 01:09	108-90-7	
Chloroethane	**<0.34**	ug/L	1.0	0.34	1		08/17/16 01:09	75-00-3	
Chloroform	**<0.21**	ug/L	1.0	0.21	1		08/17/16 01:09	67-66-3	
Chloromethane	**<0.25**	ug/L	4.0	0.25	1		08/17/16 01:09	74-87-3	
2-Chlorotoluene	**<0.30**	ug/L	1.0	0.30	1		08/17/16 01:09	95-49-8	
4-Chlorotoluene	**<0.26**	ug/L	1.0	0.26	1		08/17/16 01:09	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.60**	ug/L	10.0	0.60	1		08/17/16 01:09	96-12-8	
Dibromochloromethane	**<0.16**	ug/L	4.0	0.16	1		08/17/16 01:09	124-48-1	
1,2-Dibromoethane (EDB)	**<0.20**	ug/L	1.0	0.20	1		08/17/16 01:09	106-93-4	
Dibromomethane	**<0.19**	ug/L	4.0	0.19	1		08/17/16 01:09	74-95-3	
1,2-Dichlorobenzene	**<0.17**	ug/L	1.0	0.17	1		08/17/16 01:09	95-50-1	
1,3-Dichlorobenzene	**<0.12**	ug/L	1.0	0.12	1		08/17/16 01:09	541-73-1	
1,4-Dichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		08/17/16 01:09	106-46-7	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		08/17/16 01:09	75-71-8	

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ANALYTICAL RESULTS

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Sample: 1608TOWERMW21D **Lab ID: 10358621007** Collected: 08/09/16 14:50 Received: 08/10/16 12:23 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260B VOC	Analytical Method: EPA 8260B								
1,1-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		08/17/16 01:09	75-34-3	
1,2-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		08/17/16 01:09	107-06-2	
1,1-Dichloroethene	**<0.28**	ug/L	1.0	0.28	1		08/17/16 01:09	75-35-4	
cis-1,2-Dichloroethene	**<0.12**	ug/L	1.0	0.12	1		08/17/16 01:09	156-59-2	
trans-1,2-Dichloroethene	**<0.16**	ug/L	1.0	0.16	1		08/17/16 01:09	156-60-5	
Dichlorofluoromethane	**<0.21**	ug/L	1.0	0.21	1		08/17/16 01:09	75-43-4	
1,2-Dichloropropane	**<0.22**	ug/L	4.0	0.22	1		08/17/16 01:09	78-87-5	
1,3-Dichloropropane	**<0.096**	ug/L	1.0	0.096	1		08/17/16 01:09	142-28-9	
2,2-Dichloropropane	**<0.13**	ug/L	4.0	0.13	1		08/17/16 01:09	594-20-7	
1,1-Dichloropropene	**<0.23**	ug/L	1.0	0.23	1		08/17/16 01:09	563-58-6	
cis-1,3-Dichloropropene	**<0.15**	ug/L	4.0	0.15	1		08/17/16 01:09	10061-01-5	
trans-1,3-Dichloropropene	**<0.15**	ug/L	4.0	0.15	1		08/17/16 01:09	10061-02-6	
Diethyl ether (Ethyl ether)	**<0.19**	ug/L	4.0	0.19	1		08/17/16 01:09	60-29-7	
Ethylbenzene	**8.1**	ug/L	1.0	0.15	1		08/17/16 01:09	100-41-4	
Hexachloro-1,3-butadiene	**<0.18**	ug/L	1.0	0.18	1		08/17/16 01:09	87-68-3	
Isopropylbenzene (Cumene)	**1.2**	ug/L	1.0	0.25	1		08/17/16 01:09	98-82-8	
p-Isopropyltoluene	**0.44J**	ug/L	1.0	0.19	1		08/17/16 01:09	99-87-6	
Methylene Chloride	**<0.29**	ug/L	4.0	0.29	1		08/17/16 01:09	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<0.43**	ug/L	5.0	0.43	1		08/17/16 01:09	108-10-1	
Methyl-tert-butyl ether	**<0.15**	ug/L	1.0	0.15	1		08/17/16 01:09	1634-04-4	
Naphthalene	**4.9**	ug/L	4.0	0.20	1		08/17/16 01:09	91-20-3	
n-Propylbenzene	**5.3**	ug/L	1.0	0.23	1		08/17/16 01:09	103-65-1	
Styrene	**<0.29**	ug/L	1.0	0.29	1		08/17/16 01:09	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.17**	ug/L	4.0	0.17	1		08/17/16 01:09	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.22**	ug/L	1.0	0.22	1		08/17/16 01:09	79-34-5	
Tetrachloroethene	**<0.25**	ug/L	1.0	0.25	1		08/17/16 01:09	127-18-4	
Tetrahydrofuran	**<1.5**	ug/L	10.0	1.5	1		08/17/16 01:09	109-99-9	
Toluene	**7.3**	ug/L	1.0	0.14	1		08/17/16 01:09	108-88-3	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		08/17/16 01:09	87-61-6	
1,2,4-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		08/17/16 01:09	120-82-1	
1,1,1-Trichloroethane	**<0.17**	ug/L	1.0	0.17	1		08/17/16 01:09	71-55-6	
1,1,2-Trichloroethane	**<0.15**	ug/L	1.0	0.15	1		08/17/16 01:09	79-00-5	
Trichloroethene	**<0.20**	ug/L	0.40	0.20	1		08/17/16 01:09	79-01-6	
Trichlorofluoromethane	**<0.33**	ug/L	1.0	0.33	1		08/17/16 01:09	75-69-4	
1,2,3-Trichloropropane	**<0.28**	ug/L	4.0	0.28	1		08/17/16 01:09	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<0.32**	ug/L	1.0	0.32	1		08/17/16 01:09	76-13-1	
1,2,4-Trimethylbenzene	**30.6**	ug/L	1.0	0.18	1		08/17/16 01:09	95-63-6	
1,3,5-Trimethylbenzene	**8.2**	ug/L	1.0	0.27	1		08/17/16 01:09	108-67-8	
Vinyl chloride	**<0.15**	ug/L	1.0	0.15	1		08/17/16 01:09	75-01-4	
Xylene (Total)	**64.5**	ug/L	3.0	0.32	1		08/17/16 01:09	1330-20-7	
Surrogates									
1,2-Dichloroethane-d4 (S)	96	%.	75-125		1		08/17/16 01:09	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1		08/17/16 01:09	2037-26-5	
4-Bromofluorobenzene (S)	103	%.	75-125		1		08/17/16 01:09	460-00-4	

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ANALYTICAL RESULTS

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Sample: 1608TOWERMW21D **Lab ID: 10358621007** Collected: 08/09/16 14:50 Received: 08/10/16 12:23 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
2510B Specific Conductance	Analytical Method: SM 2510B								
Specific Conductance	**2100**	umhos/cm	10.0	10.0	1		08/16/16 15:05		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**6.5**	Std. Units	0.10	0.10	1		08/15/16 19:14		H6
4500S2D Sulfide Water	Analytical Method: SM 4500-S2-D								
Sulfide	**0.014J**	mg/L	0.10	0.011	1		08/16/16 13:34		
4500S2H Sulfide as H2S Calc	Analytical Method: SM 4500-S H								
Sulfide as H2S (calc)	**<0.020**	mg/L	0.10	0.020	1		08/16/16 16:40		AL
SM4500NO3-H, NO2 + NO3 pres.	Analytical Method: SM 4500-NO3 H								
Nitrate as N	**0.063**	mg/L	0.058	0.018	1		08/24/16 09:14	14797-55-8	
Nitrogen, NO2 plus NO3	**0.063J**	mg/L	0.17	0.050	1		08/24/16 09:14		
ASTM D516 Sulfate Water	Analytical Method: ASTM D516								
Sulfate	**1.1J**	mg/L	3.5	1.0	1		08/12/16 09:07	14808-79-8	
SM4500NO2-B, Nitrite, unpres	Analytical Method: SM 4500-NO2 B								
Nitrite as N	**<0.0036**	mg/L	0.012	0.0036	1		08/11/16 09:00	14797-65-0	

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ANALYTICAL RESULTS

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Sample: 1608TOWERTB1 **Lab ID: 10358621008** Collected: 08/05/16 08:00 Received: 08/10/16 12:23 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV UST	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Benzene	**<4.3**	ug/kg	23.3	4.3	1	08/15/16 12:41	08/15/16 20:30	71-43-2	
Ethylbenzene	**<8.2**	ug/kg	24.9	8.2	1	08/15/16 12:41	08/15/16 20:30	100-41-4	
Toluene	**<8.5**	ug/kg	31.9	8.5	1	08/15/16 12:41	08/15/16 20:30	108-88-3	
Xylene (Total)	**<22.0**	ug/kg	99.6	22.0	1	08/15/16 12:41	08/15/16 20:30	1330-20-7	
Surrogates									
1,2-Dichloroethane-d4 (S)	100	%.	75-129		1	08/15/16 12:41	08/15/16 20:30	17060-07-0	
Toluene-d8 (S)	102	%.	75-125		1	08/15/16 12:41	08/15/16 20:30	2037-26-5	
4-Bromofluorobenzene (S)	103	%.	75-125		1	08/15/16 12:41	08/15/16 20:30	460-00-4	

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ANALYTICAL RESULTS

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Sample: 1608TOWERIDWSS **Lab ID: 10358621009** Collected: 08/05/16 14:30 Received: 08/10/16 12:23 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050								
Lead	**2.7**	mg/kg	0.11	0.020	20	08/17/16 10:01	08/19/16 11:55	7439-92-1	
Dry Weight	Analytical Method: ASTM D2974								
Percent Moisture	**20.7**	%	0.10	0.10	1		08/15/16 16:34		
8260B MSV UST	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Benzene	**601**	ug/kg	29.5	5.5	1	08/15/16 12:41	08/15/16 23:24	71-43-2	
Ethylbenzene	**2930**	ug/kg	31.5	10.4	1	08/15/16 12:41	08/15/16 23:24	100-41-4	
Toluene	**4330**	ug/kg	40.4	10.8	1	08/15/16 12:41	08/15/16 23:24	108-88-3	
Xylene (Total)	**14500**	ug/kg	126	27.8	1	08/15/16 12:41	08/15/16 23:24	1330-20-7	
Surrogates									
1,2-Dichloroethane-d4 (S)	101	%.	75-129		1	08/15/16 12:41	08/15/16 23:24	17060-07-0	
Toluene-d8 (S)	101	%.	75-125		1	08/15/16 12:41	08/15/16 23:24	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125		1	08/15/16 12:41	08/15/16 23:24	460-00-4	

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ANALYTICAL RESULTS

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Sample: 1608TOWERTB2 **Lab ID: 10358621010** Collected: 08/08/16 08:00 Received: 08/10/16 12:23 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	**<0.0016**	ug/L	0.010	0.0016	1	08/15/16 15:31	08/18/16 05:29	106-93-4	
Surrogates									
4-Bromofluorobenzene (S)	74	%.	30-150		1	08/15/16 15:31	08/18/16 05:29	460-00-4	
8260B VOC	Analytical Method: EPA 8260B								
Acetone	**2.2J**	ug/L	20.0	0.64	1		08/12/16 09:03	67-64-1	B
Allyl chloride	**<0.25**	ug/L	4.0	0.25	1		08/12/16 09:03	107-05-1	
Benzene	**<0.16**	ug/L	1.0	0.16	1		08/12/16 09:03	71-43-2	
Bromobenzene	**<0.34**	ug/L	1.0	0.34	1		08/12/16 09:03	108-86-1	
Bromochloromethane	**<0.19**	ug/L	1.0	0.19	1		08/12/16 09:03	74-97-5	
Bromodichloromethane	**<0.24**	ug/L	1.0	0.24	1		08/12/16 09:03	75-27-4	
Bromoform	**<0.27**	ug/L	10.0	0.27	1		08/12/16 09:03	75-25-2	L2
Bromomethane	**<0.44**	ug/L	4.0	0.44	1		08/12/16 09:03	74-83-9	
2-Butanone (MEK)	**<1.1**	ug/L	5.0	1.1	1		08/12/16 09:03	78-93-3	
n-Butylbenzene	**<0.16**	ug/L	1.0	0.16	1		08/12/16 09:03	104-51-8	
sec-Butylbenzene	**<0.19**	ug/L	1.0	0.19	1		08/12/16 09:03	135-98-8	
tert-Butylbenzene	**<0.22**	ug/L	1.0	0.22	1		08/12/16 09:03	98-06-6	
Carbon tetrachloride	**<0.20**	ug/L	4.0	0.20	1		08/12/16 09:03	56-23-5	
Chlorobenzene	**<0.11**	ug/L	1.0	0.11	1		08/12/16 09:03	108-90-7	
Chloroethane	**<0.34**	ug/L	4.0	0.34	1		08/12/16 09:03	75-00-3	
Chloroform	**<0.21**	ug/L	1.0	0.21	1		08/12/16 09:03	67-66-3	
Chloromethane	**<0.25**	ug/L	4.0	0.25	1		08/12/16 09:03	74-87-3	
2-Chlorotoluene	**<0.30**	ug/L	1.0	0.30	1		08/12/16 09:03	95-49-8	
4-Chlorotoluene	**<0.26**	ug/L	1.0	0.26	1		08/12/16 09:03	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.60**	ug/L	10.0	0.60	1		08/12/16 09:03	96-12-8	
Dibromochloromethane	**<0.16**	ug/L	4.0	0.16	1		08/12/16 09:03	124-48-1	
1,2-Dibromoethane (EDB)	**<0.20**	ug/L	1.0	0.20	1		08/12/16 09:03	106-93-4	
Dibromomethane	**<0.19**	ug/L	4.0	0.19	1		08/12/16 09:03	74-95-3	
1,2-Dichlorobenzene	**<0.17**	ug/L	1.0	0.17	1		08/12/16 09:03	95-50-1	
1,3-Dichlorobenzene	**<0.12**	ug/L	1.0	0.12	1		08/12/16 09:03	541-73-1	
1,4-Dichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		08/12/16 09:03	106-46-7	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		08/12/16 09:03	75-71-8	
1,1-Dichloroethane	**<0.17**	ug/L	4.0	0.17	1		08/12/16 09:03	75-34-3	
1,2-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		08/12/16 09:03	107-06-2	
1,1-Dichloroethene	**<0.28**	ug/L	1.0	0.28	1		08/12/16 09:03	75-35-4	
cis-1,2-Dichloroethene	**<0.12**	ug/L	1.0	0.12	1		08/12/16 09:03	156-59-2	
trans-1,2-Dichloroethene	**<0.16**	ug/L	1.0	0.16	1		08/12/16 09:03	156-60-5	
Dichlorofluoromethane	**<0.21**	ug/L	1.0	0.21	1		08/12/16 09:03	75-43-4	
1,2-Dichloropropane	**<0.22**	ug/L	4.0	0.22	1		08/12/16 09:03	78-87-5	
1,3-Dichloropropane	**<0.096**	ug/L	1.0	0.096	1		08/12/16 09:03	142-28-9	
2,2-Dichloropropane	**<0.13**	ug/L	4.0	0.13	1		08/12/16 09:03	594-20-7	
1,1-Dichloropropene	**<0.23**	ug/L	1.0	0.23	1		08/12/16 09:03	563-58-6	
cis-1,3-Dichloropropene	**<0.15**	ug/L	4.0	0.15	1		08/12/16 09:03	10061-01-5	
trans-1,3-Dichloropropene	**<0.15**	ug/L	4.0	0.15	1		08/12/16 09:03	10061-02-6	
Diethyl ether (Ethyl ether)	**<0.19**	ug/L	4.0	0.19	1		08/12/16 09:03	60-29-7	
Ethylbenzene	**<0.15**	ug/L	1.0	0.15	1		08/12/16 09:03	100-41-4	

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ANALYTICAL RESULTS

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Sample: 1608TOWERTB2 **Lab ID: 10358621010** Collected: 08/08/16 08:00 Received: 08/10/16 12:23 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260B VOC	Analytical Method: EPA 8260B								
Hexachloro-1,3-butadiene	**<0.18**	ug/L	4.0	0.18	1		08/12/16 09:03	87-68-3	
Isopropylbenzene (Cumene)	**<0.25**	ug/L	1.0	0.25	1		08/12/16 09:03	98-82-8	
p-Isopropyltoluene	**<0.19**	ug/L	1.0	0.19	1		08/12/16 09:03	99-87-6	
Methylene Chloride	**<0.29**	ug/L	4.0	0.29	1		08/12/16 09:03	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<0.43**	ug/L	5.0	0.43	1		08/12/16 09:03	108-10-1	
Methyl-tert-butyl ether	**<0.15**	ug/L	1.0	0.15	1		08/12/16 09:03	1634-04-4	
Naphthalene	**<0.20**	ug/L	4.0	0.20	1		08/12/16 09:03	91-20-3	
n-Propylbenzene	**<0.23**	ug/L	1.0	0.23	1		08/12/16 09:03	103-65-1	
Styrene	**<0.29**	ug/L	1.0	0.29	1		08/12/16 09:03	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.17**	ug/L	4.0	0.17	1		08/12/16 09:03	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.22**	ug/L	1.0	0.22	1		08/12/16 09:03	79-34-5	
Tetrachloroethene	**<0.25**	ug/L	1.0	0.25	1		08/12/16 09:03	127-18-4	
Tetrahydrofuran	**<1.5**	ug/L	10.0	1.5	1		08/12/16 09:03	109-99-9	
Toluene	**0.17J**	ug/L	1.0	0.14	1		08/12/16 09:03	108-88-3	B
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		08/12/16 09:03	87-61-6	
1,2,4-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		08/12/16 09:03	120-82-1	
1,1,1-Trichloroethane	**<0.17**	ug/L	1.0	0.17	1		08/12/16 09:03	71-55-6	
1,1,2-Trichloroethane	**<0.15**	ug/L	1.0	0.15	1		08/12/16 09:03	79-00-5	
Trichloroethene	**<0.20**	ug/L	0.40	0.20	1		08/12/16 09:03	79-01-6	
Trichlorofluoromethane	**<0.33**	ug/L	1.0	0.33	1		08/12/16 09:03	75-69-4	
1,2,3-Trichloropropane	**<0.28**	ug/L	4.0	0.28	1		08/12/16 09:03	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<0.32**	ug/L	1.0	0.32	1		08/12/16 09:03	76-13-1	
1,2,4-Trimethylbenzene	**<0.18**	ug/L	1.0	0.18	1		08/12/16 09:03	95-63-6	
1,3,5-Trimethylbenzene	**<0.27**	ug/L	1.0	0.27	1		08/12/16 09:03	108-67-8	
Vinyl chloride	**<0.29**	ug/L	0.40	0.29	1		08/12/16 09:03	75-01-4	
Xylene (Total)	**<0.32**	ug/L	3.0	0.32	1		08/12/16 09:03	1330-20-7	
Surrogates									
1,2-Dichloroethane-d4 (S)	109	%.	75-125		1		08/12/16 09:03	17060-07-0	
Toluene-d8 (S)	107	%.	75-125		1		08/12/16 09:03	2037-26-5	
4-Bromofluorobenzene (S)	105	%.	75-125		1		08/12/16 09:03	460-00-4	

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ANALYTICAL RESULTS

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Sample: 1608TOWEREQB **Lab ID: 10358621011** Collected: 08/09/16 09:30 Received: 08/10/16 12:23 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	**<0.0016**	ug/L	0.0098	0.0016	1	08/15/16 15:31	08/18/16 05:55	106-93-4	
Surrogates									
4-Bromofluorobenzene (S)	74	%.	30-150		1	08/15/16 15:31	08/18/16 05:55	460-00-4	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020								
Arsenic	**<0.091**	ug/L	0.50	0.091	1	08/18/16 16:36	08/19/16 14:33	7440-38-2	
Barium	**0.070J**	ug/L	0.30	0.019	1	08/18/16 16:36	08/19/16 14:33	7440-39-3	B
Cadmium	**<0.013**	ug/L	0.080	0.013	1	08/18/16 16:36	08/19/16 14:33	7440-43-9	
Chromium	**0.36J**	ug/L	0.50	0.14	1	08/18/16 16:36	08/19/16 14:33	7440-47-3	
Iron	**<18.5**	ug/L	50.0	18.5	1	08/18/16 16:36	08/19/16 14:33	7439-89-6	
Lead	**0.076J**	ug/L	0.10	0.012	1	08/18/16 16:36	08/19/16 14:33	7439-92-1	B
Manganese	**0.21J**	ug/L	0.50	0.13	1	08/18/16 16:36	08/19/16 14:33	7439-96-5	
Selenium	**<0.13**	ug/L	0.50	0.13	1	08/18/16 16:36	08/20/16 16:27	7782-49-2	
Silver	**0.043J**	ug/L	0.50	0.0092	1	08/18/16 16:36	08/19/16 14:33	7440-22-4	B
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	**<0.031**	ug/L	0.10	0.031	1	08/15/16 09:47	08/15/16 16:44	7439-97-6	
8260B VOC	Analytical Method: EPA 8260B								
Acetone	**2.9J**	ug/L	20.0	2.0	1		08/16/16 22:58	67-64-1	
Allyl chloride	**<0.25**	ug/L	4.0	0.25	1		08/16/16 22:58	107-05-1	
Benzene	**<0.16**	ug/L	1.0	0.16	1		08/16/16 22:58	71-43-2	
Bromobenzene	**<0.34**	ug/L	1.0	0.34	1		08/16/16 22:58	108-86-1	
Bromochloromethane	**<0.19**	ug/L	1.0	0.19	1		08/16/16 22:58	74-97-5	
Bromodichloromethane	**<0.24**	ug/L	1.0	0.24	1		08/16/16 22:58	75-27-4	
Bromoform	**<0.27**	ug/L	4.0	0.27	1		08/16/16 22:58	75-25-2	
Bromomethane	**<0.44**	ug/L	4.0	0.44	1		08/16/16 22:58	74-83-9	
2-Butanone (MEK)	**<1.1**	ug/L	5.0	1.1	1		08/16/16 22:58	78-93-3	
n-Butylbenzene	**<0.16**	ug/L	1.0	0.16	1		08/16/16 22:58	104-51-8	
sec-Butylbenzene	**<0.19**	ug/L	1.0	0.19	1		08/16/16 22:58	135-98-8	
tert-Butylbenzene	**<0.22**	ug/L	1.0	0.22	1		08/16/16 22:58	98-06-6	
Carbon tetrachloride	**<0.20**	ug/L	4.0	0.20	1		08/16/16 22:58	56-23-5	
Chlorobenzene	**<0.11**	ug/L	1.0	0.11	1		08/16/16 22:58	108-90-7	
Chloroethane	**<0.34**	ug/L	1.0	0.34	1		08/16/16 22:58	75-00-3	
Chloroform	**<0.21**	ug/L	1.0	0.21	1		08/16/16 22:58	67-66-3	
Chloromethane	**<0.25**	ug/L	4.0	0.25	1		08/16/16 22:58	74-87-3	
2-Chlorotoluene	**<0.30**	ug/L	1.0	0.30	1		08/16/16 22:58	95-49-8	
4-Chlorotoluene	**<0.26**	ug/L	1.0	0.26	1		08/16/16 22:58	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.60**	ug/L	10.0	0.60	1		08/16/16 22:58	96-12-8	
Dibromochloromethane	**<0.16**	ug/L	4.0	0.16	1		08/16/16 22:58	124-48-1	
1,2-Dibromoethane (EDB)	**<0.20**	ug/L	1.0	0.20	1		08/16/16 22:58	106-93-4	
Dibromomethane	**<0.19**	ug/L	4.0	0.19	1		08/16/16 22:58	74-95-3	
1,2-Dichlorobenzene	**<0.17**	ug/L	1.0	0.17	1		08/16/16 22:58	95-50-1	
1,3-Dichlorobenzene	**<0.12**	ug/L	1.0	0.12	1		08/16/16 22:58	541-73-1	
1,4-Dichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		08/16/16 22:58	106-46-7	
Dichlorodifluoromethane	**<0.23**	ug/L	1.0	0.23	1		08/16/16 22:58	75-71-8	

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ANALYTICAL RESULTS

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Sample: 1608TOWEREQB **Lab ID: 10358621011** Collected: 08/09/16 09:30 Received: 08/10/16 12:23 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260B VOC	Analytical Method: EPA 8260B								
1,1-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		08/16/16 22:58	75-34-3	
1,2-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		08/16/16 22:58	107-06-2	
1,1-Dichloroethene	**<0.28**	ug/L	1.0	0.28	1		08/16/16 22:58	75-35-4	
cis-1,2-Dichloroethene	**<0.12**	ug/L	1.0	0.12	1		08/16/16 22:58	156-59-2	
trans-1,2-Dichloroethene	**<0.16**	ug/L	1.0	0.16	1		08/16/16 22:58	156-60-5	
Dichlorofluoromethane	**<0.21**	ug/L	1.0	0.21	1		08/16/16 22:58	75-43-4	
1,2-Dichloropropane	**<0.22**	ug/L	4.0	0.22	1		08/16/16 22:58	78-87-5	
1,3-Dichloropropane	**<0.096**	ug/L	1.0	0.096	1		08/16/16 22:58	142-28-9	
2,2-Dichloropropane	**<0.13**	ug/L	4.0	0.13	1		08/16/16 22:58	594-20-7	
1,1-Dichloropropene	**<0.23**	ug/L	1.0	0.23	1		08/16/16 22:58	563-58-6	
cis-1,3-Dichloropropene	**<0.15**	ug/L	4.0	0.15	1		08/16/16 22:58	10061-01-5	
trans-1,3-Dichloropropene	**<0.15**	ug/L	4.0	0.15	1		08/16/16 22:58	10061-02-6	
Diethyl ether (Ethyl ether)	**<0.19**	ug/L	4.0	0.19	1		08/16/16 22:58	60-29-7	
Ethylbenzene	**<0.15**	ug/L	1.0	0.15	1		08/16/16 22:58	100-41-4	
Hexachloro-1,3-butadiene	**<0.18**	ug/L	1.0	0.18	1		08/16/16 22:58	87-68-3	
Isopropylbenzene (Cumene)	**<0.25**	ug/L	1.0	0.25	1		08/16/16 22:58	98-82-8	
p-Isopropyltoluene	**<0.19**	ug/L	1.0	0.19	1		08/16/16 22:58	99-87-6	
Methylene Chloride	**<0.29**	ug/L	4.0	0.29	1		08/16/16 22:58	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<0.43**	ug/L	5.0	0.43	1		08/16/16 22:58	108-10-1	
Methyl-tert-butyl ether	**<0.15**	ug/L	1.0	0.15	1		08/16/16 22:58	1634-04-4	
Naphthalene	**1.6J**	ug/L	4.0	0.20	1		08/16/16 22:58	91-20-3	
n-Propylbenzene	**<0.23**	ug/L	1.0	0.23	1		08/16/16 22:58	103-65-1	
Styrene	**<0.29**	ug/L	1.0	0.29	1		08/16/16 22:58	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.17**	ug/L	4.0	0.17	1		08/16/16 22:58	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.22**	ug/L	1.0	0.22	1		08/16/16 22:58	79-34-5	
Tetrachloroethene	**<0.25**	ug/L	1.0	0.25	1		08/16/16 22:58	127-18-4	
Tetrahydrofuran	**<1.5**	ug/L	10.0	1.5	1		08/16/16 22:58	109-99-9	
Toluene	**0.48J**	ug/L	1.0	0.14	1		08/16/16 22:58	108-88-3	
1,2,3-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		08/16/16 22:58	87-61-6	
1,2,4-Trichlorobenzene	**<0.21**	ug/L	1.0	0.21	1		08/16/16 22:58	120-82-1	
1,1,1-Trichloroethane	**<0.17**	ug/L	1.0	0.17	1		08/16/16 22:58	71-55-6	
1,1,2-Trichloroethane	**<0.15**	ug/L	1.0	0.15	1		08/16/16 22:58	79-00-5	
Trichloroethene	**<0.20**	ug/L	0.40	0.20	1		08/16/16 22:58	79-01-6	
Trichlorofluoromethane	**<0.33**	ug/L	1.0	0.33	1		08/16/16 22:58	75-69-4	
1,2,3-Trichloropropane	**<0.28**	ug/L	4.0	0.28	1		08/16/16 22:58	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<0.32**	ug/L	1.0	0.32	1		08/16/16 22:58	76-13-1	
1,2,4-Trimethylbenzene	**<0.18**	ug/L	1.0	0.18	1		08/16/16 22:58	95-63-6	
1,3,5-Trimethylbenzene	**<0.27**	ug/L	1.0	0.27	1		08/16/16 22:58	108-67-8	
Vinyl chloride	**<0.15**	ug/L	1.0	0.15	1		08/16/16 22:58	75-01-4	
Xylene (Total)	**<0.32**	ug/L	3.0	0.32	1		08/16/16 22:58	1330-20-7	
Surrogates									
1,2-Dichloroethane-d4 (S)	96	%.	75-125		1		08/16/16 22:58	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1		08/16/16 22:58	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125		1		08/16/16 22:58	460-00-4	

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ANALYTICAL RESULTS

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Sample: 1608TOWEREQB **Lab ID: 10358621011** Collected: 08/09/16 09:30 Received: 08/10/16 12:23 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
2510B Specific Conductance	Analytical Method: SM 2510B								
Specific Conductance	**<10.0**	umhos/cm	10.0	10.0	1		08/16/16 15:06		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**5.7**	Std. Units	0.10	0.10	1		08/15/16 19:19		H6
4500S2D Sulfide Water	Analytical Method: SM 4500-S2-D								
Sulfide	**<0.011**	mg/L	0.10	0.011	1		08/16/16 13:37		
4500S2H Sulfide as H2S Calc	Analytical Method: SM 4500-S H								
Sulfide as H2S (calc)	**<0.020**	mg/L	0.10	0.020	1		08/16/16 16:40		AL
SM4500NO3-H, NO2 + NO3 pres.	Analytical Method: SM 4500-NO3 H								
Nitrate as N	**0.042J**	mg/L	0.058	0.018	1		08/24/16 09:18	14797-55-8	
Nitrogen, NO2 plus NO3	**<0.050**	mg/L	0.17	0.050	1		08/24/16 09:18		
ASTM D516 Sulfate Water	Analytical Method: ASTM D516								
Sulfate	**<1.0**	mg/L	3.5	1.0	1		08/12/16 09:07	14808-79-8	
SM4500NO2-B, Nitrite, unpres	Analytical Method: SM 4500-NO2 B								
Nitrite as N	**<0.0036**	mg/L	0.012	0.0036	1		08/11/16 09:00	14797-65-0	

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QUALITY CONTROL DATA

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

QC Batch: 430004 | Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A | Analysis Description: 7470A Mercury Water
Associated Lab Samples: 10358621011

METHOD BLANK: 2339606 | Matrix: Water
Associated Lab Samples: 10358621011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.031	0.10	08/15/16 16:11	

LABORATORY CONTROL SAMPLE: 2339607

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2339608 2339609

Parameter	Units	10358540002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	0.54	5	5	5.3	5.4	96	98	80-120	2	20	

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QUALITY CONTROL DATA

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

QC Batch: 432384 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470A Mercury Water
Associated Lab Samples: 10358621004, 10358621005, 10358621006, 10358621007

METHOD BLANK: 2351398 Matrix: Water
Associated Lab Samples: 10358621004, 10358621005, 10358621006, 10358621007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.031	0.10	08/25/16 15:12	

LABORATORY CONTROL SAMPLE: 2351399

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.2	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2351400 2351401

Parameter	Units	10358621007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.031	5	5	5.1	5.2	101	105	80-120	3	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

QC Batch: 430644
QC Batch Method: EPA 3050
Analysis Method: EPA 6020B
Analysis Description: 6020B Solids UPD5
Associated Lab Samples: 10358621009

METHOD BLANK: 2342888
Matrix: Solid
Associated Lab Samples: 10358621009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lead	mg/kg	0.018J	0.092	08/19/16 11:50	

LABORATORY CONTROL SAMPLE: 2342889

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/kg	49	52.4	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2342890 2342891

Parameter	Units	10358621009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	mg/kg	2.7	53.8	54.9	58.4	61.5	103	107	75-125	5	20	

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QUALITY CONTROL DATA

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

QC Batch: 429937 Analysis Method: EPA 6020B
QC Batch Method: EPA 3020 Analysis Description: 6020B Water UPD5
Associated Lab Samples: 10358621004, 10358621005, 10358621006, 10358621007, 10358621011

METHOD BLANK: 2339230 Matrix: Water
Associated Lab Samples: 10358621004, 10358621005, 10358621006, 10358621007, 10358621011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	ug/L	<0.091	0.50	08/19/16 14:16	
Barium	ug/L	0.030J	0.30	08/19/16 14:16	
Cadmium	ug/L	<0.013	0.080	08/19/16 14:16	
Chromium	ug/L	<0.14	0.50	08/19/16 14:16	
Iron	ug/L	<18.5	50.0	08/19/16 14:16	
Lead	ug/L	0.036J	0.10	08/19/16 14:16	
Manganese	ug/L	<0.13	0.50	08/19/16 14:16	
Selenium	ug/L	<0.13	0.50	08/20/16 16:08	
Silver	ug/L	0.082J	0.50	08/19/16 14:16	

LABORATORY CONTROL SAMPLE: 2339231

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	100	89.0	89	80-120	
Barium	ug/L	100	102	102	80-120	
Cadmium	ug/L	100	101	101	80-120	
Chromium	ug/L	100	103	103	80-120	
Iron	ug/L	2000	1850	92	80-120	
Lead	ug/L	100	103	103	80-120	
Manganese	ug/L	100	100	100	80-120	
Selenium	ug/L	100	92.5	92	80-120	
Silver	ug/L	50	47.2	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2342797 2342798

Parameter	Units	10358621007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	ug/L	0.43J	100	100	92.4	86.1	92	86	75-125	7	20	
Barium	ug/L	299	100	100	399	401	100	102	75-125	1	20	
Cadmium	ug/L	<0.013	100	100	101	101	101	101	75-125	1	20	
Chromium	ug/L	4.4	100	100	105	105	101	101	75-125	0	20	
Iron	ug/L	65700	2000	2000	60200	56400	-274	-466	75-125	7	20	E,M1
Lead	ug/L	0.41	100	100	100	100	100	100	75-125	0	20	
Manganese	ug/L	1580	100	100	1660	1680	73	100	75-125	2	20	E,M1
Selenium	ug/L	0.19J	100	100	94.1	83.7	94	83	75-125	12	20	
Silver	ug/L	0.013J	50	50	45.6	41.9	91	84	75-125	9	20	

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QUALITY CONTROL DATA

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

QC Batch: 430659
QC Batch Method: ASTM D2974
Analysis Method: ASTM D2974
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 10358621009

SAMPLE DUPLICATE: 2343005

Parameter	Units	10359038001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	12.2	12.6	3	30	

SAMPLE DUPLICATE: 2343065

Parameter	Units	10358621009 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	20.7	21.1	2	30	

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QUALITY CONTROL DATA

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

QC Batch: 430540 | Analysis Method: EPA 8260B
QC Batch Method: EPA 5035/5030B | Analysis Description: 8260B MSV UST
Associated Lab Samples: 10358621008, 10358621009

METHOD BLANK: 2342270 | Matrix: Solid
Associated Lab Samples: 10358621008, 10358621009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/kg	<4.3	23.3	08/15/16 19:55	
Ethylbenzene	ug/kg	<8.2	24.9	08/15/16 19:55	
Toluene	ug/kg	<8.5	31.9	08/15/16 19:55	
Xylene (Total)	ug/kg	<22.0	99.6	08/15/16 19:55	
1,2-Dichloroethane-d4 (S)	%.	104	75-129	08/15/16 19:55	
4-Bromofluorobenzene (S)	%.	100	75-125	08/15/16 19:55	
Toluene-d8 (S)	%.	101	75-125	08/15/16 19:55	

LABORATORY CONTROL SAMPLE & LCSD: 2342271 2342272

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/kg	1000	927	979	93	98	64-125	5	20	
Ethylbenzene	ug/kg	1000	1040	1050	104	105	70-129	1	20	
Toluene	ug/kg	1000	966	1030	97	103	69-125	6	20	
Xylene (Total)	ug/kg	3000	2960	3100	99	103	73-128	5	20	
1,2-Dichloroethane-d4 (S)	%.				101	104	75-129			
4-Bromofluorobenzene (S)	%.				102	100	75-125			
Toluene-d8 (S)	%.				102	101	75-125			

MATRIX SPIKE SAMPLE: 2342799

Parameter	Units	10358819007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Benzene	ug/kg	<5.3	1260	1080	85	41-134	
Ethylbenzene	ug/kg	<10.1	1260	1200	95	56-141	
Toluene	ug/kg	12.6J	1260	1160	91	55-134	
Xylene (Total)	ug/kg	<27.1	3790	3490	92	56-137	
1,2-Dichloroethane-d4 (S)	%.				98	75-129	
4-Bromofluorobenzene (S)	%.				100	75-125	
Toluene-d8 (S)	%.				103	75-125	

SAMPLE DUPLICATE: 2342800

Parameter	Units	10358819008 Result	Dup Result	RPD	Max RPD	Qualifiers
Benzene	ug/kg	<5.5	<5.3		30	
Ethylbenzene	ug/kg	<10.4	<10.1		30	
Toluene	ug/kg	11.1J	<10.5		30	
Xylene (Total)	ug/kg	<27.9	<27.0		30	

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REPORT OF LABORATORY ANALYSIS

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(612)607-1700

QUALITY CONTROL DATA

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

SAMPLE DUPLICATE: 2342800

Parameter	Units	10358819008 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloroethane-d4 (S)	%.	102	99	6		
4-Bromofluorobenzene (S)	%.	104	104	3		
Toluene-d8 (S)	%.	101	104	0		

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QUALITY CONTROL DATA

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

QC Batch: 430040 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260B MSV 465 W
Associated Lab Samples: 10358621001, 10358621002, 10358621003

METHOD BLANK: 2339727 Matrix: Water
Associated Lab Samples: 10358621001, 10358621002, 10358621003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.17	4.0	08/11/16 20:30	
1,1,1-Trichloroethane	ug/L	<0.17	1.0	08/11/16 20:30	
1,1,2,2-Tetrachloroethane	ug/L	<0.22	1.0	08/11/16 20:30	
1,1,2-Trichloroethane	ug/L	<0.15	1.0	08/11/16 20:30	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.32	1.0	08/11/16 20:30	
1,1-Dichloroethane	ug/L	<0.17	4.0	08/11/16 20:30	
1,1-Dichloroethene	ug/L	<0.28	1.0	08/11/16 20:30	
1,1-Dichloropropene	ug/L	<0.23	1.0	08/11/16 20:30	
1,2,3-Trichlorobenzene	ug/L	<0.21	1.0	08/11/16 20:30	
1,2,3-Trichloropropane	ug/L	<0.28	4.0	08/11/16 20:30	
1,2,4-Trichlorobenzene	ug/L	<0.21	1.0	08/11/16 20:30	
1,2,4-Trimethylbenzene	ug/L	<0.18	1.0	08/11/16 20:30	
1,2-Dibromo-3-chloropropane	ug/L	<0.60	10.0	08/11/16 20:30	
1,2-Dibromoethane (EDB)	ug/L	<0.20	1.0	08/11/16 20:30	
1,2-Dichlorobenzene	ug/L	<0.17	1.0	08/11/16 20:30	
1,2-Dichloroethane	ug/L	<0.17	1.0	08/11/16 20:30	
1,2-Dichloropropane	ug/L	<0.22	4.0	08/11/16 20:30	
1,3,5-Trimethylbenzene	ug/L	<0.27	1.0	08/11/16 20:30	
1,3-Dichlorobenzene	ug/L	<0.12	1.0	08/11/16 20:30	
1,3-Dichloropropane	ug/L	<0.096	1.0	08/11/16 20:30	
1,4-Dichlorobenzene	ug/L	<0.21	1.0	08/11/16 20:30	
2,2-Dichloropropane	ug/L	<0.13	4.0	08/11/16 20:30	
2-Butanone (MEK)	ug/L	<1.1	5.0	08/11/16 20:30	
2-Chlorotoluene	ug/L	<0.30	1.0	08/11/16 20:30	
4-Chlorotoluene	ug/L	<0.26	1.0	08/11/16 20:30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.43	5.0	08/11/16 20:30	
Acetone	ug/L	2.9J	20.0	08/11/16 20:30	
Allyl chloride	ug/L	<0.25	4.0	08/11/16 20:30	
Benzene	ug/L	<0.16	1.0	08/11/16 20:30	
Bromobenzene	ug/L	<0.34	1.0	08/11/16 20:30	
Bromochloromethane	ug/L	<0.19	1.0	08/11/16 20:30	
Bromodichloromethane	ug/L	<0.24	1.0	08/11/16 20:30	
Bromoform	ug/L	<0.27	10.0	08/11/16 20:30	
Bromomethane	ug/L	<0.44	4.0	08/11/16 20:30	
Carbon tetrachloride	ug/L	<0.20	4.0	08/11/16 20:30	
Chlorobenzene	ug/L	<0.11	1.0	08/11/16 20:30	
Chloroethane	ug/L	<0.34	4.0	08/11/16 20:30	
Chloroform	ug/L	<0.21	1.0	08/11/16 20:30	
Chloromethane	ug/L	<0.25	4.0	08/11/16 20:30	
cis-1,2-Dichloroethene	ug/L	<0.12	1.0	08/11/16 20:30	
cis-1,3-Dichloropropene	ug/L	<0.15	4.0	08/11/16 20:30	

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QUALITY CONTROL DATA

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

METHOD BLANK: 2339727 Matrix: Water
Associated Lab Samples: 10358621001, 10358621002, 10358621003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromochloromethane	ug/L	<0.16	4.0	08/11/16 20:30	
Dibromomethane	ug/L	<0.19	4.0	08/11/16 20:30	
Dichlorodifluoromethane	ug/L	<0.23	1.0	08/11/16 20:30	
Dichlorofluoromethane	ug/L	<0.21	1.0	08/11/16 20:30	
Diethyl ether (Ethyl ether)	ug/L	<0.19	4.0	08/11/16 20:30	
Ethylbenzene	ug/L	<0.15	1.0	08/11/16 20:30	
Hexachloro-1,3-butadiene	ug/L	<0.18	4.0	08/11/16 20:30	
Isopropylbenzene (Cumene)	ug/L	<0.25	1.0	08/11/16 20:30	
Methyl-tert-butyl ether	ug/L	<0.15	1.0	08/11/16 20:30	
Methylene Chloride	ug/L	<0.29	4.0	08/11/16 20:30	
n-Butylbenzene	ug/L	<0.16	1.0	08/11/16 20:30	
n-Propylbenzene	ug/L	<0.23	1.0	08/11/16 20:30	
Naphthalene	ug/L	<0.20	4.0	08/11/16 20:30	
p-Isopropyltoluene	ug/L	<0.19	1.0	08/11/16 20:30	
sec-Butylbenzene	ug/L	<0.19	1.0	08/11/16 20:30	
Styrene	ug/L	<0.29	1.0	08/11/16 20:30	
tert-Butylbenzene	ug/L	<0.22	1.0	08/11/16 20:30	
Tetrachloroethene	ug/L	<0.25	1.0	08/11/16 20:30	
Tetrahydrofuran	ug/L	<1.5	10.0	08/11/16 20:30	
Toluene	ug/L	<0.14	1.0	08/11/16 20:30	
trans-1,2-Dichloroethene	ug/L	<0.16	1.0	08/11/16 20:30	
trans-1,3-Dichloropropene	ug/L	<0.15	4.0	08/11/16 20:30	
Trichloroethene	ug/L	<0.20	0.40	08/11/16 20:30	
Trichlorofluoromethane	ug/L	<0.33	1.0	08/11/16 20:30	
Vinyl chloride	ug/L	<0.29	0.40	08/11/16 20:30	
Xylene (Total)	ug/L	<0.32	3.0	08/11/16 20:30	
1,2-Dichloroethane-d4 (S)	%.	106	75-125	08/11/16 20:30	
4-Bromofluorobenzene (S)	%.	105	75-125	08/11/16 20:30	
Toluene-d8 (S)	%.	103	75-125	08/11/16 20:30	

LABORATORY CONTROL SAMPLE: 2339728

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	18.0	90	75-125	
1,1,1-Trichloroethane	ug/L	20	16.0	80	73-125	
1,1,2,2-Tetrachloroethane	ug/L	20	19.2	96	75-128	
1,1,2-Trichloroethane	ug/L	20	19.5	97	75-129	
1,1,2-Trichlorotrifluoroethane	ug/L	20	18.6	93	69-125	
1,1-Dichloroethane	ug/L	20	18.4	92	75-131	
1,1-Dichloroethene	ug/L	20	17.7	88	72-125	
1,1-Dichloropropene	ug/L	20	16.3	82	74-125	
1,2,3-Trichlorobenzene	ug/L	20	19.4	97	68-127	
1,2,3-Trichloropropane	ug/L	20	20.0	100	75-125	
1,2,4-Trichlorobenzene	ug/L	20	17.8	89	70-125	

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QUALITY CONTROL DATA

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

LABORATORY CONTROL SAMPLE: 2339728

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trimethylbenzene	ug/L	20	20.6	103	75-130	
1,2-Dibromo-3-chloropropane	ug/L	50	43.0	86	74-125	
1,2-Dibromoethane (EDB)	ug/L	20	18.9	94	75-125	
1,2-Dichlorobenzene	ug/L	20	19.8	99	75-125	
1,2-Dichloroethane	ug/L	20	17.4	87	72-129	
1,2-Dichloropropane	ug/L	20	17.1	86	71-129	
1,3,5-Trimethylbenzene	ug/L	20	19.8	99	75-127	
1,3-Dichlorobenzene	ug/L	20	19.0	95	75-125	
1,3-Dichloropropane	ug/L	20	19.3	97	75-125	
1,4-Dichlorobenzene	ug/L	20	19.1	96	75-125	
2,2-Dichloropropane	ug/L	20	15.0	75	71-125	
2-Butanone (MEK)	ug/L	100	88.3	88	58-150	
2-Chlorotoluene	ug/L	20	19.5	97	75-125	
4-Chlorotoluene	ug/L	20	19.9	99	75-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	95.4	95	72-140	
Acetone	ug/L	100	102	102	69-137	
Allyl chloride	ug/L	20	18.9	94	68-132	
Benzene	ug/L	20	18.2	91	75-125	
Bromobenzene	ug/L	20	20.3	102	75-125	
Bromochloromethane	ug/L	20	19.0	95	75-125	
Bromodichloromethane	ug/L	20	18.7	93	69-128	
Bromoform	ug/L	20	14.6	73	75-125	L0
Bromomethane	ug/L	20	19.9	100	30-150	
Carbon tetrachloride	ug/L	20	16.8	84	74-125	
Chlorobenzene	ug/L	20	18.8	94	75-125	
Chloroethane	ug/L	20	18.7	94	60-150	
Chloroform	ug/L	20	18.6	93	75-126	
Chloromethane	ug/L	20	18.5	93	46-150	
cis-1,2-Dichloroethene	ug/L	20	18.9	94	75-126	
cis-1,3-Dichloropropene	ug/L	20	17.3	86	75-125	
Dibromochloromethane	ug/L	20	17.0	85	75-125	
Dibromomethane	ug/L	20	18.2	91	72-127	
Dichlorodifluoromethane	ug/L	20	17.1	86	58-135	
Dichlorofluoromethane	ug/L	20	19.3	96	68-149	
Diethyl ether (Ethyl ether)	ug/L	20	19.7	99	66-144	
Ethylbenzene	ug/L	20	18.0	90	75-125	
Hexachloro-1,3-butadiene	ug/L	20	19.7	98	73-125	
Isopropylbenzene (Cumene)	ug/L	20	18.8	94	69-140	
Methyl-tert-butyl ether	ug/L	20	16.3	81	75-126	
Methylene Chloride	ug/L	20	17.7	88	71-130	
n-Butylbenzene	ug/L	20	19.3	97	71-129	
n-Propylbenzene	ug/L	20	18.9	95	71-133	
Naphthalene	ug/L	20	18.7	94	59-137	
p-Isopropyltoluene	ug/L	20	21.0	105	74-127	
sec-Butylbenzene	ug/L	20	19.0	95	66-140	
Styrene	ug/L	20	20.4	102	75-125	
tert-Butylbenzene	ug/L	20	19.1	96	73-129	

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QUALITY CONTROL DATA

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

LABORATORY CONTROL SAMPLE: 2339728

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Tetrachloroethene	ug/L	20	18.1	90	75-125	
Tetrahydrofuran	ug/L	200	229	114	71-129	
Toluene	ug/L	20	17.8	89	75-125	
trans-1,2-Dichloroethene	ug/L	20	15.7	78	75-125	
trans-1,3-Dichloropropene	ug/L	20	17.9	90	75-125	
Trichloroethene	ug/L	20	18.5	93	75-125	
Trichlorofluoromethane	ug/L	20	17.2	86	74-128	
Vinyl chloride	ug/L	20	17.1	85	71-131	
Xylene (Total)	ug/L	60	56.2	94	75-125	
1,2-Dichloroethane-d4 (S)	%.			105	75-125	
4-Bromofluorobenzene (S)	%.			98	75-125	
Toluene-d8 (S)	%.			102	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2341621 2341622

Parameter	Units	10358621001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.17	20	20	17.3	21.2	86	106	75-125	20	30	
1,1,1-Trichloroethane	ug/L	<0.17	20	20	18.0	22.5	90	112	71-144	22	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.22	20	20	20.0	24.8	100	124	75-131	22	30	
1,1,2-Trichloroethane	ug/L	<0.15	20	20	19.6	24.1	98	121	75-125	21	30	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.32	20	20	18.4	20.3	92	102	75-150	10	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	24.0	22.0	120	110	64-150	9	30	
1,1-Dichloroethene	ug/L	<0.28	20	20	19.8	25.4	99	127	68-150	25	30	
1,1-Dichloropropene	ug/L	<0.23	20	20	17.7	20.3	89	101	68-145	14	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	16.6	20.1	83	100	57-142	19	30	
1,2,3-Trichloropropane	ug/L	<0.28	20	20	20.0	24.8	100	124	75-125	21	30	
1,2,4-Trichlorobenzene	ug/L	<0.21	20	20	16.1	18.0	81	90	60-135	11	30	
1,2,4-Trimethylbenzene	ug/L	<0.18	20	20	18.9	21.8	95	109	67-148	14	30	
1,2-Dibromo-3-chloropropane	ug/L	<0.60	50	50	39.1	49.6	78	99	32-137	24	30	
1,2-Dibromoethane (EDB)	ug/L	<0.20	20	20	19.2	23.9	96	119	75-125	21	30	
1,2-Dichlorobenzene	ug/L	<0.17	20	20	18.7	22.2	93	111	75-125	17	30	
1,2-Dichloroethane	ug/L	<0.17	20	20	17.1	21.2	86	106	62-138	21	30	
1,2-Dichloropropane	ug/L	<0.22	20	20	17.4	22.2	87	111	62-144	25	30	
1,3,5-Trimethylbenzene	ug/L	<0.27	20	20	19.2	22.0	96	110	67-148	13	30	
1,3-Dichlorobenzene	ug/L	<0.12	20	20	17.7	20.0	89	100	74-131	12	30	
1,3-Dichloropropane	ug/L	<0.096	20	20	19.6	24.4	98	122	75-127	22	30	
1,4-Dichlorobenzene	ug/L	<0.21	20	20	18.0	20.8	90	104	74-126	15	30	
2,2-Dichloropropane	ug/L	<0.13	20	20	15.6	19.7	78	99	56-146	23	30	
2-Butanone (MEK)	ug/L	<1.1	100	100	79.7	101	80	101	47-150	23	30	
2-Chlorotoluene	ug/L	<0.30	20	20	19.1	22.2	96	111	74-137	15	30	
4-Chlorotoluene	ug/L	<0.26	20	20	19.0	21.4	95	107	72-138	12	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.43	100	100	88.9	112	89	112	60-147	23	30	
Acetone	ug/L	2.4J	100	100	99.9	126	98	123	61-150	23	30	

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QUALITY CONTROL DATA

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2341621 2341622

Parameter	Units	10358621001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Allyl chloride	ug/L	<0.25	20	20	19.3	23.4	97	117	53-150	19	30	
Benzene	ug/L	0.75J	20	20	17.8	22.5	85	109	52-147	23	30	
Bromobenzene	ug/L	<0.34	20	20	19.8	23.6	99	118	75-129	17	30	
Bromochloromethane	ug/L	<0.19	20	20	18.4	23.1	92	115	72-128	22	30	
Bromodichloromethane	ug/L	<0.24	20	20	18.1	22.6	91	113	65-137	22	30	
Bromoform	ug/L	<0.27	20	20	15.2	19.1	76	95	59-133	23	30	
Bromomethane	ug/L	<0.44	20	20	18.5	24.5	93	123	30-150	28	30	
Carbon tetrachloride	ug/L	<0.20	20	20	17.6	21.5	88	108	73-144	20	30	
Chlorobenzene	ug/L	<0.11	20	20	18.0	21.7	90	109	75-126	19	30	
Chloroethane	ug/L	<0.34	20	20	17.1	21.0	86	105	55-150	21	30	
Chloroform	ug/L	<0.21	20	20	18.7	22.6	93	113	66-143	19	30	
Chloromethane	ug/L	<0.25	20	20	20.3	23.0	101	115	42-150	12	30	
cis-1,2-Dichloroethene	ug/L	<0.12	20	20	17.7	21.6	88	108	65-143	20	30	
cis-1,3-Dichloropropene	ug/L	<0.15	20	20	16.4	20.4	82	102	75-125	22	30	
Dibromochloromethane	ug/L	<0.16	20	20	16.6	20.5	83	103	75-125	21	30	
Dibromomethane	ug/L	<0.19	20	20	18.1	22.5	91	113	66-133	22	30	
Dichlorodifluoromethane	ug/L	<0.23	20	20	18.8	22.0	94	110	74-150	16	30	
Dichlorofluoromethane	ug/L	<0.21	20	20	18.5	22.5	93	112	68-150	19	30	
Diethyl ether (Ethyl ether)	ug/L	<0.19	20	20	18.8	24.7	94	124	57-148	27	30	
Ethylbenzene	ug/L	<0.15	20	20	17.8	20.5	89	102	67-149	14	30	
Hexachloro-1,3-butadiene	ug/L	<0.18	20	20	18.2	21.2	91	106	65-143	15	30	
Isopropylbenzene (Cumene)	ug/L	<0.25	20	20	18.5	22.1	93	111	64-150	18	30	
Methyl-tert-butyl ether	ug/L	<0.15	20	20	20.5	19.7	103	98	71-130	4	30	
Methylene Chloride	ug/L	<0.29	20	20	21.1	22.9	106	114	67-137	8	30	
n-Butylbenzene	ug/L	<0.16	20	20	17.8	19.6	89	98	70-138	10	30	
n-Propylbenzene	ug/L	<0.23	20	20	19.0	21.4	95	107	70-148	12	30	
Naphthalene	ug/L	<0.20	20	20	16.9	20.8	84	104	39-150	21	30	
p-Isopropyltoluene	ug/L	<0.19	20	20	19.3	21.7	96	109	74-138	12	30	
sec-Butylbenzene	ug/L	<0.19	20	20	19.5	22.2	97	111	64-150	13	30	
Styrene	ug/L	<0.29	20	20	19.2	22.7	96	113	75-132	17	30	
tert-Butylbenzene	ug/L	<0.22	20	20	19.7	23.6	99	118	75-138	18	30	
Tetrachloroethene	ug/L	<0.25	20	20	17.8	19.5	89	98	73-136	9	30	
Tetrahydrofuran	ug/L	<1.5	200	200	181	274	90	137	68-142	41	30	R1
Toluene	ug/L	<0.14	20	20	18.1	22.0	91	110	69-139	19	30	
trans-1,2-Dichloroethene	ug/L	<0.16	20	20	20.5	19.3	103	97	75-135	6	30	
trans-1,3-Dichloropropene	ug/L	<0.15	20	20	17.5	22.2	88	111	66-136	24	30	
Trichloroethene	ug/L	<0.20	20	20	17.7	21.8	89	109	74-135	21	30	
Trichlorofluoromethane	ug/L	<0.33	20	20	18.9	23.5	94	118	75-150	22	30	
Vinyl chloride	ug/L	<0.29	20	20	18.3	22.7	92	114	69-150	22	30	
Xylene (Total)	ug/L	<0.32	60	60	56.0	65.5	93	109	70-147	16	30	
1,2-Dichloroethane-d4 (S)	%.						106	106	75-125			
4-Bromofluorobenzene (S)	%.						102	99	75-125			
Toluene-d8 (S)	%.						105	104	75-125			

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REPORT OF LABORATORY ANALYSIS

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(612)607-1700

QUALITY CONTROL DATA

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

QC Batch: 430041 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260B MSV 465 W
Associated Lab Samples: 10358621004, 10358621005, 10358621006, 10358621010

METHOD BLANK: 2339729 Matrix: Water
Associated Lab Samples: 10358621004, 10358621005, 10358621006, 10358621010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.17	4.0	08/12/16 05:28	
1,1,1-Trichloroethane	ug/L	<0.17	1.0	08/12/16 05:28	
1,1,2,2-Tetrachloroethane	ug/L	<0.22	1.0	08/12/16 05:28	
1,1,2-Trichloroethane	ug/L	<0.15	1.0	08/12/16 05:28	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.32	1.0	08/12/16 05:28	
1,1-Dichloroethane	ug/L	<0.17	4.0	08/12/16 05:28	
1,1-Dichloroethene	ug/L	<0.28	1.0	08/12/16 05:28	
1,1-Dichloropropene	ug/L	<0.23	1.0	08/12/16 05:28	
1,2,3-Trichlorobenzene	ug/L	<0.21	1.0	08/12/16 05:28	
1,2,3-Trichloropropane	ug/L	<0.28	4.0	08/12/16 05:28	
1,2,4-Trichlorobenzene	ug/L	<0.21	1.0	08/12/16 05:28	
1,2,4-Trimethylbenzene	ug/L	<0.18	1.0	08/12/16 05:28	
1,2-Dibromo-3-chloropropane	ug/L	<0.60	10.0	08/12/16 05:28	
1,2-Dibromoethane (EDB)	ug/L	<0.20	1.0	08/12/16 05:28	
1,2-Dichlorobenzene	ug/L	<0.17	1.0	08/12/16 05:28	
1,2-Dichloroethane	ug/L	<0.17	1.0	08/12/16 05:28	
1,2-Dichloropropane	ug/L	<0.22	4.0	08/12/16 05:28	
1,3,5-Trimethylbenzene	ug/L	<0.27	1.0	08/12/16 05:28	
1,3-Dichlorobenzene	ug/L	<0.12	1.0	08/12/16 05:28	
1,3-Dichloropropane	ug/L	<0.096	1.0	08/12/16 05:28	
1,4-Dichlorobenzene	ug/L	<0.21	1.0	08/12/16 05:28	
2,2-Dichloropropane	ug/L	<0.13	4.0	08/12/16 05:28	
2-Butanone (MEK)	ug/L	<1.1	5.0	08/12/16 05:28	
2-Chlorotoluene	ug/L	<0.30	1.0	08/12/16 05:28	
4-Chlorotoluene	ug/L	<0.26	1.0	08/12/16 05:28	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.43	5.0	08/12/16 05:28	
Acetone	ug/L	1.7J	20.0	08/12/16 05:28	
Allyl chloride	ug/L	<0.25	4.0	08/12/16 05:28	
Benzene	ug/L	<0.16	1.0	08/12/16 05:28	
Bromobenzene	ug/L	<0.34	1.0	08/12/16 05:28	
Bromochloromethane	ug/L	<0.19	1.0	08/12/16 05:28	
Bromodichloromethane	ug/L	<0.24	1.0	08/12/16 05:28	
Bromoform	ug/L	<0.27	10.0	08/12/16 05:28	
Bromomethane	ug/L	<0.44	4.0	08/12/16 05:28	
Carbon tetrachloride	ug/L	<0.20	4.0	08/12/16 05:28	
Chlorobenzene	ug/L	<0.11	1.0	08/12/16 05:28	
Chloroethane	ug/L	<0.34	4.0	08/12/16 05:28	
Chloroform	ug/L	<0.21	1.0	08/12/16 05:28	
Chloromethane	ug/L	<0.25	4.0	08/12/16 05:28	
cis-1,2-Dichloroethene	ug/L	<0.12	1.0	08/12/16 05:28	
cis-1,3-Dichloropropene	ug/L	<0.15	4.0	08/12/16 05:28	

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QUALITY CONTROL DATA

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

METHOD BLANK: 2339729 Matrix: Water
Associated Lab Samples: 10358621004, 10358621005, 10358621006, 10358621010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromochloromethane	ug/L	<0.16	4.0	08/12/16 05:28	
Dibromomethane	ug/L	<0.19	4.0	08/12/16 05:28	
Dichlorodifluoromethane	ug/L	<0.23	1.0	08/12/16 05:28	
Dichlorofluoromethane	ug/L	<0.21	1.0	08/12/16 05:28	
Diethyl ether (Ethyl ether)	ug/L	<0.19	4.0	08/12/16 05:28	
Ethylbenzene	ug/L	<0.15	1.0	08/12/16 05:28	
Hexachloro-1,3-butadiene	ug/L	<0.18	4.0	08/12/16 05:28	
Isopropylbenzene (Cumene)	ug/L	<0.25	1.0	08/12/16 05:28	
Methyl-tert-butyl ether	ug/L	<0.15	1.0	08/12/16 05:28	
Methylene Chloride	ug/L	<0.29	4.0	08/12/16 05:28	
n-Butylbenzene	ug/L	<0.16	1.0	08/12/16 05:28	
n-Propylbenzene	ug/L	<0.23	1.0	08/12/16 05:28	
Naphthalene	ug/L	<0.20	4.0	08/12/16 05:28	
p-Isopropyltoluene	ug/L	<0.19	1.0	08/12/16 05:28	
sec-Butylbenzene	ug/L	<0.19	1.0	08/12/16 05:28	
Styrene	ug/L	<0.29	1.0	08/12/16 05:28	
tert-Butylbenzene	ug/L	<0.22	1.0	08/12/16 05:28	
Tetrachloroethene	ug/L	<0.25	1.0	08/12/16 05:28	
Tetrahydrofuran	ug/L	<1.5	10.0	08/12/16 05:28	
Toluene	ug/L	0.20J	1.0	08/12/16 05:28	
trans-1,2-Dichloroethene	ug/L	<0.16	1.0	08/12/16 05:28	
trans-1,3-Dichloropropene	ug/L	<0.15	4.0	08/12/16 05:28	
Trichloroethene	ug/L	<0.20	0.40	08/12/16 05:28	
Trichlorofluoromethane	ug/L	<0.33	1.0	08/12/16 05:28	
Vinyl chloride	ug/L	<0.29	0.40	08/12/16 05:28	
Xylene (Total)	ug/L	<0.32	3.0	08/12/16 05:28	
1,2-Dichloroethane-d4 (S)	%.	103	75-125	08/12/16 05:28	
4-Bromofluorobenzene (S)	%.	104	75-125	08/12/16 05:28	
Toluene-d8 (S)	%.	107	75-125	08/12/16 05:28	

LABORATORY CONTROL SAMPLE: 2339730

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	17.3	87	75-125	
1,1,1-Trichloroethane	ug/L	20	16.5	83	73-125	
1,1,2,2-Tetrachloroethane	ug/L	20	20.9	105	75-128	
1,1,2-Trichloroethane	ug/L	20	19.8	99	75-129	
1,1,2-Trichlorotrifluoroethane	ug/L	20	20.7	103	69-125	
1,1-Dichloroethane	ug/L	20	20.2	101	75-131	
1,1-Dichloroethene	ug/L	20	21.1	105	72-125	
1,1-Dichloropropene	ug/L	20	16.6	83	74-125	
1,2,3-Trichlorobenzene	ug/L	20	19.5	97	68-127	
1,2,3-Trichloropropane	ug/L	20	21.0	105	75-125	
1,2,4-Trichlorobenzene	ug/L	20	19.3	96	70-125	

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QUALITY CONTROL DATA

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

LABORATORY CONTROL SAMPLE: 2339730

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trimethylbenzene	ug/L	20	21.8	109	75-130	
1,2-Dibromo-3-chloropropane	ug/L	50	42.6	85	74-125	
1,2-Dibromoethane (EDB)	ug/L	20	20.1	101	75-125	
1,2-Dichlorobenzene	ug/L	20	21.0	105	75-125	
1,2-Dichloroethane	ug/L	20	17.1	86	72-129	
1,2-Dichloropropane	ug/L	20	17.5	88	71-129	
1,3,5-Trimethylbenzene	ug/L	20	21.8	109	75-127	
1,3-Dichlorobenzene	ug/L	20	19.8	99	75-125	
1,3-Dichloropropane	ug/L	20	20.4	102	75-125	
1,4-Dichlorobenzene	ug/L	20	20.1	100	75-125	
2,2-Dichloropropane	ug/L	20	16.1	81	71-125	
2-Butanone (MEK)	ug/L	100	82.5	82	58-150	
2-Chlorotoluene	ug/L	20	20.9	105	75-125	
4-Chlorotoluene	ug/L	20	20.7	104	75-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	92.9	93	72-140	
Acetone	ug/L	100	115	115	69-137	
Allyl chloride	ug/L	20	18.2	91	68-132	
Benzene	ug/L	20	18.3	92	75-125	
Bromobenzene	ug/L	20	21.1	106	75-125	
Bromochloromethane	ug/L	20	21.7	109	75-125	
Bromodichloromethane	ug/L	20	18.1	90	69-128	
Bromoform	ug/L	20	14.6	73	75-125	L0
Bromomethane	ug/L	20	20.9	105	30-150	
Carbon tetrachloride	ug/L	20	17.0	85	74-125	
Chlorobenzene	ug/L	20	19.2	96	75-125	
Chloroethane	ug/L	20	19.6	98	60-150	
Chloroform	ug/L	20	19.0	95	75-126	
Chloromethane	ug/L	20	20.0	100	46-150	
cis-1,2-Dichloroethene	ug/L	20	23.1	116	75-126	
cis-1,3-Dichloropropene	ug/L	20	17.0	85	75-125	
Dibromochloromethane	ug/L	20	16.6	83	75-125	
Dibromomethane	ug/L	20	18.0	90	72-127	
Dichlorodifluoromethane	ug/L	20	17.4	87	58-135	
Dichlorofluoromethane	ug/L	20	19.7	99	68-149	
Diethyl ether (Ethyl ether)	ug/L	20	22.2	111	66-144	
Ethylbenzene	ug/L	20	18.7	93	75-125	
Hexachloro-1,3-butadiene	ug/L	20	20.2	101	73-125	
Isopropylbenzene (Cumene)	ug/L	20	19.3	97	69-140	
Methyl-tert-butyl ether	ug/L	20	17.3	87	75-126	
Methylene Chloride	ug/L	20	17.6	88	71-130	
n-Butylbenzene	ug/L	20	20.5	103	71-129	
n-Propylbenzene	ug/L	20	20.5	103	71-133	
Naphthalene	ug/L	20	20.3	102	59-137	
p-Isopropyltoluene	ug/L	20	22.5	113	74-127	
sec-Butylbenzene	ug/L	20	20.9	105	66-140	
Styrene	ug/L	20	21.1	106	75-125	
tert-Butylbenzene	ug/L	20	20.1	101	73-129	

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QUALITY CONTROL DATA

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

LABORATORY CONTROL SAMPLE: 2339730

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Tetrachloroethene	ug/L	20	18.2	91	75-125	
Tetrahydrofuran	ug/L	200	252	126	71-129	
Toluene	ug/L	20	19.2	96	75-125	
trans-1,2-Dichloroethene	ug/L	20	15.6	78	75-125	
trans-1,3-Dichloropropene	ug/L	20	16.7	83	75-125	
Trichloroethene	ug/L	20	18.6	93	75-125	
Trichlorofluoromethane	ug/L	20	17.6	88	74-128	
Vinyl chloride	ug/L	20	17.5	87	71-131	
Xylene (Total)	ug/L	60	59.0	98	75-125	
1,2-Dichloroethane-d4 (S)	%.			104	75-125	
4-Bromofluorobenzene (S)	%.			102	75-125	
Toluene-d8 (S)	%.			107	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2343935 2343936

Parameter	Units	10359186001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	16.3	13.8	81	69	75-125	16	30	M1
1,1,1-Trichloroethane	ug/L	ND	20	20	18.0	14.5	90	72	71-144	22	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	20.4	16.9	102	85	75-131	18	30	
1,1,2-Trichloroethane	ug/L	ND	20	20	20.0	16.7	99	82	75-125	18	30	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	20	20	21.7	15.8	109	79	75-150	32	30	R1
1,1-Dichloroethane	ug/L	ND	20	20	22.3	16.0	111	80	64-150	33	30	R1
1,1-Dichloroethene	ug/L	ND	20	20	21.6	17.0	108	85	68-150	24	30	
1,1-Dichloropropene	ug/L	ND	20	20	18.7	14.8	93	74	68-145	23	30	
1,2,3-Trichlorobenzene	ug/L	ND	20	20	19.4	14.8	93	70	57-142	27	30	
1,2,3-Trichloropropane	ug/L	ND	20	20	20.4	17.6	102	88	75-125	14	30	
1,2,4-Trichlorobenzene	ug/L	ND	20	20	20.2	14.4	98	69	60-135	33	30	R1
1,2,4-Trimethylbenzene	ug/L	34.2	20	20	58.3	50.8	121	83	67-148	14	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	39.8	33.2	80	66	32-137	18	30	
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	18.8	16.1	94	80	75-125	16	30	
1,2-Dichlorobenzene	ug/L	ND	20	20	20.1	15.6	100	78	75-125	25	30	
1,2-Dichloroethane	ug/L	ND	20	20	17.6	14.3	86	70	62-138	20	30	
1,2-Dichloropropane	ug/L	ND	20	20	17.4	14.9	87	75	62-144	15	30	
1,3,5-Trimethylbenzene	ug/L	10.1	20	20	31.8	25.5	108	77	67-148	22	30	
1,3-Dichlorobenzene	ug/L	ND	20	20	19.6	14.5	97	72	74-131	30	30	M1
1,3-Dichloropropane	ug/L	ND	20	20	19.3	16.4	97	82	75-127	16	30	
1,4-Dichlorobenzene	ug/L	ND	20	20	19.8	15.2	98	75	74-126	27	30	
2,2-Dichloropropane	ug/L	ND	20	20	12.9	10.6	64	53	56-146	19	30	M1
2-Butanone (MEK)	ug/L	ND	100	100	83.8	71.4	84	71	47-150	16	30	
2-Chlorotoluene	ug/L	ND	20	20	22.1	17.0	111	85	74-137	26	30	
4-Chlorotoluene	ug/L	ND	20	20	20.4	15.4	102	77	72-138	28	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	91.8	78.8	92	79	60-147	15	30	
Acetone	ug/L	ND	100	100	107	119	98	110	61-150	11	30	

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QUALITY CONTROL DATA

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2343935 2343936

Parameter	Units	10359186001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Allyl chloride	ug/L	ND	20	20	20.7	15.8	103	79	53-150	27	30	
Benzene	ug/L	43.7	20	20	61.9	56.0	91	62	52-147	10	30	
Bromobenzene	ug/L	ND	20	20	20.0	16.5	100	83	75-129	19	30	
Bromochloromethane	ug/L	ND	20	20	18.4	15.0	92	75	72-128	21	30	
Bromodichloromethane	ug/L	ND	20	20	17.0	14.3	85	71	65-137	18	30	
Bromoform	ug/L	ND	20	20	14.6	12.8	73	64	59-133	13	30	
Bromomethane	ug/L	ND	20	20	17.4	18.2	87	91	30-150	4	30	
Carbon tetrachloride	ug/L	ND	20	20	17.7	13.8	88	69	73-144	25	30	M1
Chlorobenzene	ug/L	ND	20	20	19.0	15.5	95	77	75-126	20	30	
Chloroethane	ug/L	ND	20	20	16.9	15.7	84	78	55-150	7	30	
Chloroform	ug/L	ND	20	20	18.4	15.4	92	77	66-143	18	30	
Chloromethane	ug/L	ND	20	20	18.4	15.3	92	77	42-150	18	30	
cis-1,2-Dichloroethene	ug/L	ND	20	20	18.4	14.8	92	74	65-143	22	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	16.0	13.0	80	65	75-125	20	30	M1
Dibromochloromethane	ug/L	ND	20	20	16.2	13.9	81	70	75-125	15	30	M1
Dibromomethane	ug/L	ND	20	20	17.4	14.4	87	72	66-133	19	30	
Dichlorodifluoromethane	ug/L	ND	20	20	16.4	13.5	82	67	74-150	20	30	M1
Dichlorofluoromethane	ug/L	ND	20	20	18.5	15.0	92	75	68-150	21	30	
Diethyl ether (Ethyl ether)	ug/L	ND	20	20	22.1	17.1	111	85	57-148	26	30	
Ethylbenzene	ug/L	7.8	20	20	27.3	22.6	97	74	67-149	19	30	
Hexachloro-1,3-butadiene	ug/L	ND	20	20	22.1	17.8	108	86	65-143	21	30	
Isopropylbenzene (Cumene)	ug/L	1.3	20	20	22.0	17.6	104	82	64-150	22	30	
Methyl-tert-butyl ether	ug/L	ND	20	20	18.3	17.6	90	87	71-130	4	30	
Methylene Chloride	ug/L	ND	20	20	19.2	14.7	96	74	67-137	27	30	
n-Butylbenzene	ug/L	2.8	20	20	26.6	19.0	119	81	70-138	33	30	R1
n-Propylbenzene	ug/L	6.1	20	20	27.7	22.1	108	80	70-148	22	30	
Naphthalene	ug/L	7.7	20	20	25.9	21.8	91	71	39-150	17	30	
p-Isopropyltoluene	ug/L	ND	20	20	23.4	17.6	113	84	74-138	28	30	
sec-Butylbenzene	ug/L	1.3	20	20	22.8	18.1	107	84	64-150	23	30	
Styrene	ug/L	ND	20	20	20.4	16.8	102	83	75-132	20	30	
tert-Butylbenzene	ug/L	ND	20	20	22.2	17.3	110	85	75-138	25	30	
Tetrachloroethene	ug/L	ND	20	20	18.8	14.3	94	71	73-136	27	30	M1
Tetrahydrofuran	ug/L	ND	200	200	218	210	109	105	68-142	4	30	
Toluene	ug/L	7.1	20	20	26.3	22.8	96	79	69-139	14	30	
trans-1,2-Dichloroethene	ug/L	ND	20	20	17.2	16.7	86	83	75-135	3	30	
trans-1,3-Dichloropropene	ug/L	ND	20	20	16.7	14.3	83	71	66-136	15	30	
Trichloroethene	ug/L	ND	20	20	18.0	14.7	90	74	74-135	20	30	
Trichlorofluoromethane	ug/L	ND	20	20	17.7	14.7	88	74	75-150	18	30	M1
Vinyl chloride	ug/L	ND	20	20	17.5	14.8	87	74	69-150	16	30	
Xylene (Total)	ug/L	65.6	60	60	131	113	109	79	70-147	15	30	
1,2-Dichloroethane-d4 (S)	%.						106	103	75-125			
4-Bromofluorobenzene (S)	%.						104	100	75-125			
Toluene-d8 (S)	%.						104	107	75-125			

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

QC Batch: 430893 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260B MSV 465 W
Associated Lab Samples: 10358621007, 10358621011

METHOD BLANK: 2343919 | Matrix: Water
Associated Lab Samples: 10358621007, 10358621011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.17	4.0	08/16/16 22:26	
1,1,1-Trichloroethane	ug/L	<0.17	1.0	08/16/16 22:26	
1,1,2,2-Tetrachloroethane	ug/L	<0.22	1.0	08/16/16 22:26	
1,1,2-Trichloroethane	ug/L	<0.15	1.0	08/16/16 22:26	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.32	1.0	08/16/16 22:26	
1,1-Dichloroethane	ug/L	<0.17	1.0	08/16/16 22:26	
1,1-Dichloroethene	ug/L	<0.28	1.0	08/16/16 22:26	
1,1-Dichloropropene	ug/L	<0.23	1.0	08/16/16 22:26	
1,2,3-Trichlorobenzene	ug/L	<0.21	1.0	08/16/16 22:26	
1,2,3-Trichloropropane	ug/L	<0.28	4.0	08/16/16 22:26	
1,2,4-Trichlorobenzene	ug/L	<0.21	1.0	08/16/16 22:26	
1,2,4-Trimethylbenzene	ug/L	<0.18	1.0	08/16/16 22:26	
1,2-Dibromo-3-chloropropane	ug/L	<0.60	10.0	08/16/16 22:26	
1,2-Dibromoethane (EDB)	ug/L	<0.20	1.0	08/16/16 22:26	
1,2-Dichlorobenzene	ug/L	<0.17	1.0	08/16/16 22:26	
1,2-Dichloroethane	ug/L	<0.17	1.0	08/16/16 22:26	
1,2-Dichloropropane	ug/L	<0.22	4.0	08/16/16 22:26	
1,3,5-Trimethylbenzene	ug/L	<0.27	1.0	08/16/16 22:26	
1,3-Dichlorobenzene	ug/L	<0.12	1.0	08/16/16 22:26	
1,3-Dichloropropane	ug/L	<0.096	1.0	08/16/16 22:26	
1,4-Dichlorobenzene	ug/L	<0.21	1.0	08/16/16 22:26	
2,2-Dichloropropane	ug/L	<0.13	4.0	08/16/16 22:26	
2-Butanone (MEK)	ug/L	<1.1	5.0	08/16/16 22:26	
2-Chlorotoluene	ug/L	<0.30	1.0	08/16/16 22:26	
4-Chlorotoluene	ug/L	<0.26	1.0	08/16/16 22:26	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.43	5.0	08/16/16 22:26	
Acetone	ug/L	<2.0	20.0	08/16/16 22:26	
Allyl chloride	ug/L	<0.25	4.0	08/16/16 22:26	
Benzene	ug/L	<0.16	1.0	08/16/16 22:26	
Bromobenzene	ug/L	<0.34	1.0	08/16/16 22:26	
Bromochloromethane	ug/L	<0.19	1.0	08/16/16 22:26	
Bromodichloromethane	ug/L	<0.24	1.0	08/16/16 22:26	
Bromoform	ug/L	<0.27	4.0	08/16/16 22:26	
Bromomethane	ug/L	<0.44	4.0	08/16/16 22:26	
Carbon tetrachloride	ug/L	<0.20	4.0	08/16/16 22:26	
Chlorobenzene	ug/L	<0.11	1.0	08/16/16 22:26	
Chloroethane	ug/L	<0.34	1.0	08/16/16 22:26	
Chloroform	ug/L	<0.21	1.0	08/16/16 22:26	
Chloromethane	ug/L	<0.25	4.0	08/16/16 22:26	
cis-1,2-Dichloroethene	ug/L	<0.12	1.0	08/16/16 22:26	
cis-1,3-Dichloropropene	ug/L	<0.15	4.0	08/16/16 22:26	

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EPA-R5-2017-010506_0002338

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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

METHOD BLANK: 2343919 Matrix: Water
Associated Lab Samples: 10358621007, 10358621011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromochloromethane	ug/L	<0.16	4.0	08/16/16 22:26	
Dibromomethane	ug/L	<0.19	4.0	08/16/16 22:26	
Dichlorodifluoromethane	ug/L	<0.23	1.0	08/16/16 22:26	
Dichlorofluoromethane	ug/L	<0.21	1.0	08/16/16 22:26	
Diethyl ether (Ethyl ether)	ug/L	<0.19	4.0	08/16/16 22:26	
Ethylbenzene	ug/L	<0.15	1.0	08/16/16 22:26	
Hexachloro-1,3-butadiene	ug/L	<0.18	1.0	08/16/16 22:26	
Isopropylbenzene (Cumene)	ug/L	<0.25	1.0	08/16/16 22:26	
Methyl-tert-butyl ether	ug/L	<0.15	1.0	08/16/16 22:26	
Methylene Chloride	ug/L	<0.29	4.0	08/16/16 22:26	
n-Butylbenzene	ug/L	<0.16	1.0	08/16/16 22:26	
n-Propylbenzene	ug/L	<0.23	1.0	08/16/16 22:26	
Naphthalene	ug/L	<0.20	4.0	08/16/16 22:26	
p-Isopropyltoluene	ug/L	<0.19	1.0	08/16/16 22:26	
sec-Butylbenzene	ug/L	<0.19	1.0	08/16/16 22:26	
Styrene	ug/L	<0.29	1.0	08/16/16 22:26	
tert-Butylbenzene	ug/L	<0.22	1.0	08/16/16 22:26	
Tetrachloroethene	ug/L	<0.25	1.0	08/16/16 22:26	
Tetrahydrofuran	ug/L	<1.5	10.0	08/16/16 22:26	
Toluene	ug/L	<0.14	1.0	08/16/16 22:26	
trans-1,2-Dichloroethene	ug/L	<0.16	1.0	08/16/16 22:26	
trans-1,3-Dichloropropene	ug/L	<0.15	4.0	08/16/16 22:26	
Trichloroethene	ug/L	<0.20	0.40	08/16/16 22:26	
Trichlorofluoromethane	ug/L	<0.33	1.0	08/16/16 22:26	
Vinyl chloride	ug/L	<0.15	1.0	08/16/16 22:26	
Xylene (Total)	ug/L	<0.32	3.0	08/16/16 22:26	
1,2-Dichloroethane-d4 (S)	%.	94	75-125	08/16/16 22:26	
4-Bromofluorobenzene (S)	%.	101	75-125	08/16/16 22:26	
Toluene-d8 (S)	%.	97	75-125	08/16/16 22:26	

LABORATORY CONTROL SAMPLE: 2343920

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	53.1	106	75-125	
1,1,1-Trichloroethane	ug/L	50	51.8	104	73-125	
1,1,2,2-Tetrachloroethane	ug/L	50	49.6	99	75-128	
1,1,2-Trichloroethane	ug/L	50	50.9	102	75-129	
1,1,2-Trichlorotrifluoroethane	ug/L	50	51.6	103	69-125	
1,1-Dichloroethane	ug/L	50	49.9	100	75-131	
1,1-Dichloroethene	ug/L	50	46.8	94	72-125	
1,1-Dichloropropene	ug/L	50	50.8	102	74-125	
1,2,3-Trichlorobenzene	ug/L	50	49.3	99	68-127	
1,2,3-Trichloropropane	ug/L	50	49.9	100	75-125	
1,2,4-Trichlorobenzene	ug/L	50	50.1	100	70-125	

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QUALITY CONTROL DATA

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

LABORATORY CONTROL SAMPLE: 2343920

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trimethylbenzene	ug/L	50	51.8	104	75-130	
1,2-Dibromo-3-chloropropane	ug/L	125	121	96	74-125	
1,2-Dibromoethane (EDB)	ug/L	50	52.6	105	75-125	
1,2-Dichlorobenzene	ug/L	50	49.6	99	75-125	
1,2-Dichloroethane	ug/L	50	47.5	95	72-129	
1,2-Dichloropropane	ug/L	50	51.2	102	71-129	
1,3,5-Trimethylbenzene	ug/L	50	48.8	98	75-127	
1,3-Dichlorobenzene	ug/L	50	47.0	94	75-125	
1,3-Dichloropropane	ug/L	50	50.9	102	75-125	
1,4-Dichlorobenzene	ug/L	50	44.9	90	75-125	
2,2-Dichloropropane	ug/L	50	48.5	97	71-125	
2-Butanone (MEK)	ug/L	250	250	100	58-150	
2-Chlorotoluene	ug/L	50	49.1	98	75-125	
4-Chlorotoluene	ug/L	50	47.3	95	75-130	
4-Methyl-2-pentanone (MIBK)	ug/L	250	253	101	72-140	
Acetone	ug/L	250	249	100	69-137	
Allyl chloride	ug/L	50	51.8	104	68-132	
Benzene	ug/L	50	49.8	100	75-125	
Bromobenzene	ug/L	50	52.1	104	75-125	
Bromochloromethane	ug/L	50	53.8	108	75-125	
Bromodichloromethane	ug/L	50	54.6	109	69-128	
Bromoform	ug/L	50	41.5	83	75-125	
Bromomethane	ug/L	50	47.4	95	30-150	
Carbon tetrachloride	ug/L	50	52.8	106	74-125	
Chlorobenzene	ug/L	50	48.9	98	75-125	
Chloroethane	ug/L	50	54.8	110	60-150	
Chloroform	ug/L	50	53.8	108	75-126	
Chloromethane	ug/L	50	50.0	100	46-150	
cis-1,2-Dichloroethene	ug/L	50	48.8	98	75-126	
cis-1,3-Dichloropropene	ug/L	50	52.3	105	75-125	
Dibromochloromethane	ug/L	50	43.9	88	75-125	
Dibromomethane	ug/L	50	52.1	104	72-127	
Dichlorodifluoromethane	ug/L	50	53.3	107	58-135	
Dichlorofluoromethane	ug/L	50	56.0	112	68-149	
Diethyl ether (Ethyl ether)	ug/L	50	50.8	102	66-144	
Ethylbenzene	ug/L	50	47.8	96	75-125	
Hexachloro-1,3-butadiene	ug/L	50	51.8	104	73-125	
Isopropylbenzene (Cumene)	ug/L	50	49.3	99	69-140	
Methyl-tert-butyl ether	ug/L	50	50.7	101	75-126	
Methylene Chloride	ug/L	50	49.2	98	71-130	
n-Butylbenzene	ug/L	50	52.1	104	71-129	
n-Propylbenzene	ug/L	50	47.1	94	71-133	
Naphthalene	ug/L	50	44.7	89	59-137	
p-Isopropyltoluene	ug/L	50	52.5	105	74-127	
sec-Butylbenzene	ug/L	50	47.6	95	66-140	
Styrene	ug/L	50	49.5	99	75-125	
tert-Butylbenzene	ug/L	50	47.1	94	73-129	

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QUALITY CONTROL DATA

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

LABORATORY CONTROL SAMPLE: 2343920

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Tetrachloroethene	ug/L	50	49.5	99	75-125	
Tetrahydrofuran	ug/L	500	490	98	71-129	
Toluene	ug/L	50	48.3	97	75-125	
trans-1,2-Dichloroethene	ug/L	50	49.4	99	75-125	
trans-1,3-Dichloropropene	ug/L	50	45.0	90	75-125	
Trichloroethene	ug/L	50	51.6	103	75-125	
Trichlorofluoromethane	ug/L	50	59.4	119	74-128	
Vinyl chloride	ug/L	50	50.7	101	71-131	
Xylene (Total)	ug/L	150	144	96	75-125	
1,2-Dichloroethane-d4 (S)	%.			103	75-125	
4-Bromofluorobenzene (S)	%.			100	75-125	
Toluene-d8 (S)	%.			100	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2343944 2343945

Parameter	Units	10358621007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.17	20	20	25.3	27.5	127	137	75-125	8	30	M1
1,1,1-Trichloroethane	ug/L	<0.17	20	20	26.2	29.0	131	145	71-144	10	30	M1
1,1,2,2-Tetrachloroethane	ug/L	<0.22	20	20	23.1	26.4	116	132	75-131	13	30	M1
1,1,2-Trichloroethane	ug/L	<0.15	20	20	25.3	27.5	126	137	75-125	8	30	M1
1,1,2-Trichlorotrifluoroethane	ug/L	<0.32	20	20	28.9	32.8	145	164	75-150	12	30	M1
1,1-Dichloroethane	ug/L	<0.17	20	20	24.4	26.8	122	134	64-150	10	30	
1,1-Dichloroethene	ug/L	<0.28	20	20	26.4	28.7	132	143	68-150	8	30	
1,1-Dichloropropene	ug/L	<0.23	20	20	26.2	29.4	131	147	68-145	12	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	22.6	26.0	113	130	57-142	14	30	
1,2,3-Trichloropropane	ug/L	<0.28	20	20	23.5	25.6	118	128	75-125	9	30	M1
1,2,4-Trichlorobenzene	ug/L	<0.21	20	20	22.9	26.3	115	131	60-135	14	30	
1,2,4-Trimethylbenzene	ug/L	30.6	20	20	57.4	62.2	134	158	67-148	8	30	M1
1,2-Dibromo-3-chloropropane	ug/L	<0.60	50	50	54.6	60.0	109	120	32-137	9	30	
1,2-Dibromoethane (EDB)	ug/L	<0.20	20	20	24.8	26.8	124	134	75-125	7	30	M1
1,2-Dichlorobenzene	ug/L	<0.17	20	20	23.6	26.1	118	131	75-125	10	30	M1
1,2-Dichloroethane	ug/L	<0.17	20	20	22.6	25.0	113	125	62-138	10	30	
1,2-Dichloropropane	ug/L	<0.22	20	20	24.8	27.5	124	138	62-144	10	30	
1,3,5-Trimethylbenzene	ug/L	8.2	20	20	33.3	35.4	125	136	67-148	6	30	
1,3-Dichlorobenzene	ug/L	<0.12	20	20	22.9	25.3	115	127	74-131	10	30	
1,3-Dichloropropane	ug/L	<0.096	20	20	24.2	25.9	121	130	75-127	7	30	M1
1,4-Dichlorobenzene	ug/L	<0.21	20	20	21.8	24.3	109	121	74-126	11	30	
2,2-Dichloropropane	ug/L	<0.13	20	20	22.7	25.5	114	127	56-146	11	30	
2-Butanone (MEK)	ug/L	<1.1	100	100	109	124	109	124	47-150	13	30	
2-Chlorotoluene	ug/L	<0.30	20	20	26.3	28.0	131	140	74-137	6	30	M1
4-Chlorotoluene	ug/L	<0.26	20	20	23.5	25.5	117	128	72-138	8	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.43	100	100	114	125	114	125	60-147	9	30	
Acetone	ug/L	2.2J	100	100	121	142	119	140	61-150	16	30	

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QUALITY CONTROL DATA

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2343944 2343945

Parameter	Units	10358621007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Allyl chloride	ug/L	<0.25	20	20	20.6	24.1	103	121	53-150	16	30	
Benzene	ug/L	45.9	20	20	71.9	80.3	130	172	52-147	11	30	M1
Bromobenzene	ug/L	<0.34	20	20	25.7	27.7	128	139	75-129	8	30	M1
Bromochloromethane	ug/L	<0.19	20	20	25.7	28.0	129	140	72-128	8	30	M1
Bromodichloromethane	ug/L	<0.24	20	20	25.5	28.9	127	145	65-137	13	30	M1
Bromoform	ug/L	<0.27	20	20	19.7	21.4	98	107	59-133	9	30	
Bromomethane	ug/L	<0.44	20	20	24.6	31.4	123	157	30-150	24	30	M1
Carbon tetrachloride	ug/L	<0.20	20	20	27.1	31.0	136	155	73-144	14	30	M1
Chlorobenzene	ug/L	<0.11	20	20	24.1	26.5	121	133	75-126	10	30	M1
Chloroethane	ug/L	<0.34	20	20	29.5	37.8	147	189	55-150	25	30	M1
Chloroform	ug/L	<0.21	20	20	25.8	28.7	129	144	66-143	11	30	M1
Chloromethane	ug/L	<0.25	20	20	21.1	35.5	105	177	42-150	51	30	M1,R1
cis-1,2-Dichloroethene	ug/L	<0.12	20	20	23.6	26.9	118	134	65-143	13	30	
cis-1,3-Dichloropropene	ug/L	<0.15	20	20	24.3	27.2	122	136	75-125	11	30	M1
Dibromochloromethane	ug/L	<0.16	20	20	21.2	23.1	106	115	75-125	9	30	
Dibromomethane	ug/L	<0.19	20	20	24.6	27.0	123	135	66-133	9	30	M1
Dichlorodifluoromethane	ug/L	<0.23	20	20	24.3	31.7	122	158	74-150	26	30	M1
Dichlorofluoromethane	ug/L	<0.21	20	20	26.1	33.3	130	166	68-150	24	30	M1
Diethyl ether (Ethyl ether)	ug/L	<0.19	20	20	25.1	27.5	126	138	57-148	9	30	
Ethylbenzene	ug/L	8.1	20	20	32.5	35.4	122	136	67-149	8	30	
Hexachloro-1,3-butadiene	ug/L	<0.18	20	20	25.9	31.0	130	155	65-143	18	30	M1
Isopropylbenzene (Cumene)	ug/L	1.2	20	20	26.2	28.2	125	135	64-150	7	30	
Methyl-tert-butyl ether	ug/L	<0.15	20	20	23.7	25.8	118	129	71-130	8	30	
Methylene Chloride	ug/L	<0.29	20	20	23.0	26.1	115	131	67-137	13	30	
n-Butylbenzene	ug/L	1.8	20	20	28.2	31.8	132	150	70-138	12	30	M1
n-Propylbenzene	ug/L	5.3	20	20	29.3	32.4	120	136	70-148	10	30	
Naphthalene	ug/L	4.9	20	20	25.0	28.6	100	118	39-150	13	30	
p-Isopropyltoluene	ug/L	0.44J	20	20	27.5	30.3	135	149	74-138	9	30	M1
sec-Butylbenzene	ug/L	0.69J	20	20	24.7	27.2	120	133	64-150	10	30	
Styrene	ug/L	<0.29	20	20	24.5	26.4	122	132	75-132	7	30	
tert-Butylbenzene	ug/L	<0.22	20	20	23.9	25.9	120	130	75-138	8	30	
Tetrachloroethene	ug/L	<0.25	20	20	26.3	27.7	132	138	73-136	5	30	M1
Tetrahydrofuran	ug/L	<1.5	200	200	246	278	123	139	68-142	12	30	
Toluene	ug/L	7.3	20	20	32.2	34.9	125	138	69-139	8	30	
trans-1,2-Dichloroethene	ug/L	<0.16	20	20	25.4	28.0	127	140	75-135	10	30	M1
trans-1,3-Dichloropropene	ug/L	<0.15	20	20	21.7	23.6	109	118	66-136	8	30	
Trichloroethene	ug/L	<0.20	20	20	26.2	29.3	131	146	74-135	11	30	M1
Trichlorofluoromethane	ug/L	<0.33	20	20	30.6	40.5	153	202	75-150	28	30	M1
Vinyl chloride	ug/L	<0.15	20	20	23.3	30.7	116	154	69-150	28	30	M1
Xylene (Total)	ug/L	64.5	60	60	138	152	122	145	70-147	10	30	
1,2-Dichloroethane-d4 (S)	%.						99	100	75-125			
4-Bromofluorobenzene (S)	%.						102	101	75-125			
Toluene-d8 (S)	%.						99	97	75-125			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

QC Batch: 430853 Analysis Method: SM 2510B
QC Batch Method: SM 2510B Analysis Description: 2510B Specific Conductance
Associated Lab Samples: 10358621004, 10358621005, 10358621006, 10358621007, 10358621011

METHOD BLANK: 2343818 Matrix: Water
Associated Lab Samples: 10358621004, 10358621005, 10358621006, 10358621007, 10358621011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Specific Conductance	umhos/cm	<10.0	10.0	08/16/16 14:58	

LABORATORY CONTROL SAMPLE: 2343819

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Specific Conductance	umhos/cm	1000	1010	101	90-110	

SAMPLE DUPLICATE: 2343820

Parameter	Units	10358347002 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	1020	1020	0	20	

SAMPLE DUPLICATE: 2343821

Parameter	Units	10358621007 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	2100	2100	0	20	

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QUALITY CONTROL DATA

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

QC Batch: 430697 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 10358621004, 10358621005, 10358621006, 10358621007, 10358621011

LABORATORY CONTROL SAMPLE: 2343119

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
pH at 25 Degrees C	Std. Units	7	7.0	100	98-102	H6

SAMPLE DUPLICATE: 2343120

Parameter	Units	10358347002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.1	7.2	1	3	H6

SAMPLE DUPLICATE: 2343121

Parameter	Units	10358621007 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.5	6.4	0	3	H6

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QUALITY CONTROL DATA

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

QC Batch: 430800 Analysis Method: SM 4500-S2-D
QC Batch Method: SM 4500-S2-D Analysis Description: 4500S2D Sulfide Water
Associated Lab Samples: 10358621004, 10358621005, 10358621006, 10358621007, 10358621011

METHOD BLANK: 2343402 Matrix: Water
Associated Lab Samples: 10358621004, 10358621005, 10358621006, 10358621007, 10358621011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide	mg/L	<0.011	0.10	08/16/16 13:26	

LABORATORY CONTROL SAMPLE: 2343403

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	.9	0.89	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2343404 2343405

Parameter	Units	10358621007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide	mg/L	0.014J	.9	.9	0.86	0.82	94	90	80-120	4	20	

SAMPLE DUPLICATE: 2343406

Parameter	Units	10358621005 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide	mg/L	0.022J	0.024J		20	

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QUALITY CONTROL DATA

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

QC Batch: 430673 Analysis Method: EPA 8011
QC Batch Method: EPA 8011 Analysis Description: GCS 8011 EDB DBCP
Associated Lab Samples: 10358621001, 10358621002, 10358621003, 10358621004, 10358621005, 10358621006, 10358621007, 10358621010, 10358621011

METHOD BLANK: 2343037 Matrix: Water
Associated Lab Samples: 10358621001, 10358621002, 10358621003, 10358621004, 10358621005, 10358621006, 10358621007, 10358621010, 10358621011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	<0.0016	0.010	08/17/16 23:50	
4-Bromofluorobenzene (S)	%.	102	30-150	08/17/16 23:50	

LABORATORY CONTROL SAMPLE: 2343038

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	.11	0.11	105	60-140	
4-Bromofluorobenzene (S)	%.			103	30-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2343039 2343040

Parameter	Units	10358621007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dibromoethane (EDB)	ug/L	<0.0016	.1	.11	0.11	0.11	103	102	60-140	0	20	
4-Bromofluorobenzene (S)	%.						48	45	30-150			

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QUALITY CONTROL DATA

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

QC Batch: 431923 Analysis Method: SM 4500-NO3 H
QC Batch Method: SM 4500-NO3 H Analysis Description: SM4500NO3-H, NO2 + NO3 pres.
Associated Lab Samples: 10358621004, 10358621005, 10358621006, 10358621007, 10358621011

METHOD BLANK: 2349006 Matrix: Water
Associated Lab Samples: 10358621004, 10358621005, 10358621006, 10358621007, 10358621011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.050	0.17	08/24/16 08:54	

LABORATORY CONTROL SAMPLE: 2349007

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	2.5	2.5	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2349008 2349009

Parameter	Units	10358583039 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	ND	2.5	2.5	0.77	0.74	30	29	80-120	3	30	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2349010 2349011

Parameter	Units	10358621007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	0.063J	2.5	2.5	2.2	2.2	87	87	80-120	0	30	

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QUALITY CONTROL DATA

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

QC Batch: 430263 Analysis Method: ASTM D516
QC Batch Method: ASTM D516 Analysis Description: ASTM D516 Sulfate Water
Associated Lab Samples: 10358621004, 10358621005, 10358621006, 10358621007, 10358621011

METHOD BLANK: 2340951 Matrix: Water
Associated Lab Samples: 10358621004, 10358621005, 10358621006, 10358621007, 10358621011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	<1.0	3.5	08/12/16 09:12	

LABORATORY CONTROL SAMPLE & LCSD: 2340952 2340953

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Sulfate	mg/L	7.5	7.9	7.8	106	105	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2340954 2340955

Parameter	Units	10358073002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	390	20	20	398	408	41	92	80-120	3	30	M6

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2340956 2340957

Parameter	Units	10358621007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	1.1J	20	20	17.6	17.8	82	83	80-120	1	30	

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QUALITY CONTROL DATA

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

QC Batch: 430036 Analysis Method: SM 4500-NO2 B
QC Batch Method: SM 4500-NO2 B Analysis Description: SM4500NO2-B, Nitrite, unpres
Associated Lab Samples: 10358621004, 10358621005, 10358621006, 10358621007, 10358621011

METHOD BLANK: 2339706 Matrix: Water
Associated Lab Samples: 10358621004, 10358621005, 10358621006, 10358621007, 10358621011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrite as N	mg/L	<0.0036	0.012	08/11/16 09:00	

LABORATORY CONTROL SAMPLE: 2339707

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrite as N	mg/L	.3	0.30	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2339708 2339709

Parameter	Units	10358621007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrite as N	mg/L	<0.0036	.3	.3	0.30	0.29	99	98	80-120	1	30	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis
PASI-MT	Pace Analytical Services - Montana

WORKORDER QUALIFIERS

WO: 10358621

[1]	Samples requiring thermal preservation were received outside of recommended temperature limits of 0-6 degrees Celsius.

ANALYTE QUALIFIERS

1M	Low surrogate recovery due to emulsion forming during the extraction process.
AL	The lab does not hold A2LA accreditation for this parameter.
B	Analyte was detected in the associated method blank.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
H1	Analysis conducted outside the recognized method holding time.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
L0	Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results may be biased low.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.
R1	RPD value was outside control limits.
S5	Surrogate recovery outside control limits due to matrix interferences (not confirmed by re-analysis).

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10358621001	**1608TOWERMW16**	EPA 8011	430673	EPA 8011	430820
10358621002	**1608TOWERMW16D**	EPA 8011	430673	EPA 8011	430820
10358621003	**1608TOWERMW18D**	EPA 8011	430673	EPA 8011	430820
10358621004	**1608TOWERMW16E**	EPA 8011	430673	EPA 8011	430820
10358621005	**1608TOWERMW21**	EPA 8011	430673	EPA 8011	430820
10358621006	**1608TOWERMW21M**	EPA 8011	430673	EPA 8011	430820
10358621007	**1608TOWERMW21D**	EPA 8011	430673	EPA 8011	430820
10358621010	**1608TOWERTB2**	EPA 8011	430673	EPA 8011	430820
10358621011	**1608TOWEREQB**	EPA 8011	430673	EPA 8011	430820
10358621009	**1608TOWERIDWSS**	EPA 3050	430644	EPA 6020B	431466
10358621004	**1608TOWERMW16E**	EPA 3020	429937	EPA 6020B	431485
10358621005	**1608TOWERMW21**	EPA 3020	429937	EPA 6020B	431485
10358621006	**1608TOWERMW21M**	EPA 3020	429937	EPA 6020B	431485
10358621007	**1608TOWERMW21D**	EPA 3020	429937	EPA 6020B	431485
10358621011	**1608TOWEREQB**	EPA 3020	429937	EPA 6020B	431485
10358621004	**1608TOWERMW16E**	EPA 7470A	432384	EPA 7470A	432584
10358621005	**1608TOWERMW21**	EPA 7470A	432384	EPA 7470A	432584
10358621006	**1608TOWERMW21M**	EPA 7470A	432384	EPA 7470A	432584
10358621007	**1608TOWERMW21D**	EPA 7470A	432384	EPA 7470A	432584
10358621011	**1608TOWEREQB**	EPA 7470A	430004	EPA 7470A	430622
10358621009	**1608TOWERIDWSS**	ASTM D2974	430659		
10358621008	**1608TOWERTB1**	EPA 5035/5030B	430540	EPA 8260B	430866
10358621009	**1608TOWERIDWSS**	EPA 5035/5030B	430540	EPA 8260B	430866
10358621001	**1608TOWERMW16**	EPA 8260B	430040		
10358621002	**1608TOWERMW16D**	EPA 8260B	430040		
10358621003	**1608TOWERMW18D**	EPA 8260B	430040		
10358621004	**1608TOWERMW16E**	EPA 8260B	430041		
10358621005	**1608TOWERMW21**	EPA 8260B	430041		
10358621006	**1608TOWERMW21M**	EPA 8260B	430041		
10358621007	**1608TOWERMW21D**	EPA 8260B	430893		
10358621010	**1608TOWERTB2**	EPA 8260B	430041		
10358621011	**1608TOWEREQB**	EPA 8260B	430893		
10358621004	**1608TOWERMW16E**	SM 2510B	430853		
10358621005	**1608TOWERMW21**	SM 2510B	430853		
10358621006	**1608TOWERMW21M**	SM 2510B	430853		
10358621007	**1608TOWERMW21D**	SM 2510B	430853		
10358621011	**1608TOWEREQB**	SM 2510B	430853		
10358621004	**1608TOWERMW16E**	SM 4500-H+B	430697		
10358621005	**1608TOWERMW21**	SM 4500-H+B	430697		
10358621006	**1608TOWERMW21M**	SM 4500-H+B	430697		
10358621007	**1608TOWERMW21D**	SM 4500-H+B	430697		
10358621011	**1608TOWEREQB**	SM 4500-H+B	430697		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BERS#34170026; EPA TO 3012 Tow
Pace Project No.: 10358621

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10358621004	**1608TOWERMW16E**	SM 4500-S2-D	430800		
10358621005	**1608TOWERMW21**	SM 4500-S2-D	430800		
10358621006	**1608TOWERMW21M**	SM 4500-S2-D	430800		
10358621007	**1608TOWERMW21D**	SM 4500-S2-D	430800		
10358621011	**1608TOWEREQB**	SM 4500-S2-D	430800		
10358621004	**1608TOWERMW16E**	SM 4500-S H	430947		
10358621005	**1608TOWERMW21**	SM 4500-S H	430947		
10358621006	**1608TOWERMW21M**	SM 4500-S H	430947		
10358621007	**1608TOWERMW21D**	SM 4500-S H	430947		
10358621011	**1608TOWEREQB**	SM 4500-S H	430947		
10358621004	**1608TOWERMW16E**	SM 4500-NO3 H	431923		
10358621005	**1608TOWERMW21**	SM 4500-NO3 H	431923		
10358621006	**1608TOWERMW21M**	SM 4500-NO3 H	431923		
10358621007	**1608TOWERMW21D**	SM 4500-NO3 H	431923		
10358621011	**1608TOWEREQB**	SM 4500-NO3 H	431923		
10358621004	**1608TOWERMW16E**	ASTM D516	430263		
10358621005	**1608TOWERMW21**	ASTM D516	430263		
10358621006	**1608TOWERMW21M**	ASTM D516	430263		
10358621007	**1608TOWERMW21D**	ASTM D516	430263		
10358621011	**1608TOWEREQB**	ASTM D516	430263		
10358621004	**1608TOWERMW16E**	SM 4500-NO2 B	430036		
10358621005	**1608TOWERMW21**	SM 4500-NO2 B	430036		
10358621006	**1608TOWERMW21M**	SM 4500-NO2 B	430036		
10358621007	**1608TOWERMW21D**	SM 4500-NO2 B	430036		
10358621011	**1608TOWEREQB**	SM 4500-NO2 B	430036		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

10858621

Page: 1 of 1

Section A Required Client Information:

Company:	Bristol Environmental Remediation Svc
Address:	111 W 16th Ave. Third Floor
	Anchorage, AK 99501
Email To:	Matt Faust
Phone: 907-743-9346	Fax:
Requested Due Date/TAT:	10 business days

Section B Required Project Information:

Report To:	Matt Faust
Copy To:	Robert Beckman
Purchase Order No.:	
Project Name:	Tower Standard LUST Site
Project Number:	BERS# 34170026; EPA TO 3012

Section C Invoice Information:

Attention:	Matt Faust
Company Name:	Bristol Environmental Remediation
Address:	See client info
Pace Quote Reference:	
Pace Project Manager:	Shawn Davis
Pace Profile #:	

REGULATORY AGENCY: ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☑ UST ☐ RCRA ☐ OTHER ____

Site Location STATE: WI

Valid Matrix Codes: DRINKING WATER DW, WATER WT, WASTE WATER WW, PRODUCT P, SOIL/SOLID SL, OIL OL, WIPE WP, AIR AR, OTHER OT, TISSUE TS

ITEM #	Section D Required Client Information: SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N)	SW8260 VOCs	SW8011 EDB	SW6020 RCRA 8, Mn, Fe	WI DRO	WI GRO	H2S SM4500-S2D	Sulfate, Nitrate EPA 300.0	1,3,5,7 8260	Pb 6020	% moisture			Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	1608TOWER MW16	W	G	8/8/16	1055	←			9				X						X	X			X									001
2	1608TOWER MW16D	↓	↓	↓	1300	←			↓				X						X	X			X									002
3	1608TOWER MW18A			↓	1330	←			↓				X						X	X		↓	X									003
4	1608TOWER MW16E			8/9/16	0900	←			3	X	X	X	X	X					X	X	X	X	X	X	X							004
5	1608TOWER MW21			↓	1120	←			↓	X	X	X	X	X					X	X	X		X	X	X							005
6	1608TOWER MW21M			↓	1300	←			↓	X	X	X	X	X					X	X	X		X	X	X							006
7	1608TOWER MW21D	↓	↓	↓	1450	←			2	X	X	X	X	X					X	X	X		X	X	X							MS/MSD 007
8	1608TOWER EQB	↓	↓	8/9/16	0930	←			12	X	X	X	X	X					X	X	X		X	X	X							~~008~~ 011
9	1608TOWER TB1	G	S	8/5/16	0800	←			2							X										X						~~009~~ 008
10	1608TOWER IDW SS	A	↓	↓	1430	←			4	X						X										Y	X	X				009
11	1608TOWER TB2	W	G	8/8/16	0800	←			6			X	X						X	X			X									010
12																																

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS		
Report analytical results to the MDL	[signature]	8/10/16	1000	Shawn [signature] / Pace	8/10/16	1223	4.5 / 2.5	Y	N	Y
Hold GRO Analysis pending PM approval									

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Robert Beckman

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 8/10/16

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.08, 12-Oct-2007

Pace Analytical®	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 04Apr2016 Page 1 of 1
	Document No.: F-MN-L-213-rev.16	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Bristol Environmental Remediation

Project #: WO#: 10358621

10358621

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☑ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☑ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☐ 151401163 ☐ B88A912167504 ☑ 151401164 ☐ B88A0143310098 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☑ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 4.5/8.5 **Cooler Temp Corrected (°C):** 4.5/8.5 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6°C **Correction Factor:** +0.0 **Date and Initials of Person Examining Contents:** GS 8/10/16

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, AZ, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☑ Yes	☐ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT/SL	☑ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation have been checked?	☑ Yes	☐ No	☐ N/A	13. ☑ HNO_3 ☑ H_2SO_4 ☐ NaOH ☐ HCl Sample # 1/1 1/1 4-8
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)	☑ Yes	☐ No	☐ N/A	Initial when completed: Lot # of added preservative:
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC	☑ Yes	☐ No	☐ N/A	
Headspace in VOA Vials (>6mm)?	☐ Yes	☑ No	☐ N/A	14.
Trip Blank Present?	☑ Yes	☐ No	☐ N/A	15.
Trip Blank Custody Seals Present? 052316-3/	☑ Yes	☐ No	☐ N/A	
Pace Trip Blank Lot # (if purchased): 062016-3BZA				

8/10/16

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Matt Faust (email) Date/Time: 8/11/16

Comments/Resolution:

temperature of one of two coolers received above temp

Project Manager Review: Shannon Davis **Date:** 8/11/16

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Pace Container Order #157449

Addresses

Order By :		Ship To :		Return To:	
Company	Bristol Environmental Remediation	Company	Quality Inn - Guest Bobby Beckman	Company	Pace Analytical Minnesota
Contact	Faust, Matt	Contact	Beckman, Bobby	Contact	Davis, Shawn
Email	mfaust@bristol-companies.com	Email	mfaust@bristol-companies.com	Email	shawn.davis@pacelabs.com
Address	111 W. 16th Avenue	Address	111 W. 16th Avenue	Address	1700 Elm Street
Address 2		Address 2	8729 US-51	Address 2	Suite 200
City	Anchorage	City	Minocqua	City	Minneapolis
State	AK Zip 99501	State	WI Zip 54548	State	MN Zip 55414
Phone	(907)743-9346	Phone	(907) 743-9346	Phone	612-607-6378

Info

Project Name	Tower, WI	**Due Date**	08/03/2016	**Profile**	35445	**Quote**	
Project Manager	Davis, Shawn	**Return**		**Carrier**	Spee-Dee	**Location**	WI

Trip Blanks

- [X] Include Trip Blanks

Bottle Labels

- [ ] Blank
- [X] Pre-Printed No Sample IDs
- [ ] Pre-Printed With Sample IDs

Bottles

- [ ] Boxed Cases
- [X] Individually Wrapped
- [ ] Grouped By Sample

Return Shipping Labels

- [ ] No Shipper Number
- [ ] With Shipper Number

Misc

- [ ] Sampling Instructions
- [X] Custody Seal
- [X] Temp. Blanks
- [X] Coolers
- [ ] Syringes
- [ ] Extra Bubble Wrap
- [X] Short Hold/Rush Stickers
- [ ] DI Water Liter(s)
- [ ] USDA Regulated Soils

COC Options

- [ ] Number of Blanks
- [X] Pre-Printed 1

# of Samples	Matrix	Test	Container	Total	# of QC	Lot #	Notes
8	WT	VOC by 8260	(3) 40 mL clear glass vials, HCL	30	6	062016-3BZA	
8	WT	EDB 8011	(3) 40 mL clear glass vials, HCL	30	6	062016-3BZA	
8	WT	GRO by WIGRO	None	30	6	062716-3BZA	
8	WT	Sulfate/Nitrate	250mL plastic unpres	8	0	032116-2ALL	
8	WT	Nitrate + Nitrite	None	8	0	051616-4CFX	
8	WT	Metals by 6020	None	8	0	071116-2AFW	
8	WT	DRO by WIDRO	2-1L ambers w/HCL	16	0	071116-1JG	
8	WT	Sulfide by SM4500-S2-D	None	8	0	110215-2BYU	H2S Calculation
1	SL	BTEX by 8260	2 MEOH Vials	2	0	052316-3	
1	SL	6010 - Pb	4oz clear straight side soil jars	1	0	050216-1KM	
1	SL	Moisture/ Dry weight	2oz plastic dry weight bottle	1	0	051616-5	

Hazard Shipping Placard In Place : NO

*Sample receiving hours are Mon-Fri 7:30am-7:00pm and S... ...cial arrangements are made with your project manager.

Return w/ Samples

*Pace Analytical reserves the right to return hazardous, ...u.

*Pace Analytical reserves the right to charge for unused ... ...on as cost associated with sample storage and disposal.

*Payment term are net 30 days.

*Please include the proposal number on the chain of custody to insure proper billing.

Sample Notes

Send 3 sets of water trip blanks, 1 solid trip blank.

Ship Date : 7-29-16

Prepared By: KG

Verified By:

Intra-Regional Chain of Custody

Pace Analytical®
www.pacelabs.com

Workorder: 10358621 **Workorder Name:** BERS#34170026; EPA TO 3012 Tow **Owner Received Date:** 8/10/2016 **Due Date:** 8/24/2016

Received at:
Pace Analytical Minnesota
1700 Elm Street
Suite 200
Minneapolis, MN 55414
Phone (612)607-1700

Send To Lab:
Pace Analytical Billings MT
150 N Ninth Street
Billings, MT 59101
Phone (406)254-7226

Report To:
Shawn Davis

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	SM 4500-S2-D	SM 4500-S-H	LAB USE ONLY
1	1608TOWERMW16E	PS	8/9/2016 09:00	10358621004	Water	1	X	X	
2	1608TOWERMW21	PS	8/9/2016 11:20	10358621005	Water	1	X	X	
3	1608TOWERMW21M	PS	8/9/2016 13:00	10358621006	Water	1	X	X	
4	1608TOWERMW21D	RQS	8/9/2016 14:50	10358621007	Water	1	X	X	
5	1608TOWEREQB	PS	8/9/2016 09:30	10358621011	Water	1	X	X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	Shawn Davis/Pace MN	8-11-16 1300		
2	Fed Ex		Michael Pace	8/12/16 0918
3				
4				

Comments

Cooler Temperature on Receipt 0.8 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 04Aug2016 Page 1 of 1
	Document No.: **F-MT-C-184-Rev.10**	Issuing Authority: Pace Montana Quality Office

Sample Condition Upon Receipt

Client Name: Pace MN

Project #: 10358621

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number: 6751 5818 9169

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☒ 160285052 ☐ 140279186 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun ☐ NA

Cooler Temp Read: 1.3 **Date and Initials of Person Examining Contents:** 8/12 NH

Cooler Temp Corrected: 0.8 **Biological Tissue Frozen?** ☐ Yes ☒ No

Temp should be above freezing to 6°C

				Comments:
Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☐ Yes	☐ No	☒ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact? 8/12 NH	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☒ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation have been checked?	☒ Yes	☐ No	☐ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ~~☒ NaOH~~ ☐ HCl Sample # 004-007, 011 +ZnAc
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)	☒ Yes	☐ No	☐ N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, WI-DRO (water)	☐ Yes	☒ No		Initial when completed: NH Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased): NA				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Shannon Davis **Date:** 8/12/16

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Intra-Regional Chain of Custody

Pace Analytical®
www.pacelabs.com

Workorder: 10358621 **Workorder Name:** BERS#34170026; EPA TO 3012 Tow **Owner Received Date:** 8/10/2016 **Due Date:** 8/24/2016

Received at:	Send To Lab:
Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone (612)607-1700	Pace Analytical Billings MT 150 N Ninth Street Billings, MT 59101 Phone (406)254-7226

Report To:
Shawn Davis

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Preserved Containers: Unpreserved	Requested Analysis: SM 4500-H+B	SM 4500-S2-D	SM 4500-S-H	SM 2510B	LAB USE ONLY
1	1608TOWERMW16E	PS	8/9/2016 09:00	10358621004	Water	1		X	X	X	X	
2	1608TOWERMW21	PS	8/9/2016 11:20	10358621005	Water	1		X	X	X	X	
3	1608TOWERMW21M	PS	8/9/2016 13:00	10358621006	Water	1		X	X	X	X	
4	1608TOWERMW21D	RQS	8/9/2016 14:50	10358621007	Water	1		X	X	X	X	
5	1608TOWEREQB	PS	8/9/2016 09:30	10358621011	Water	1		X	X	X	X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	Shawn Davis / Pace mpb	8-12-16 1217		
2	Fed Ex		N Hansen / Pace	8/13/16 1030
3				
4				

Comments

Sulfide + H2S bottle Sent 8/11

Cooler Temperature on Receipt 1.3 °C | **Custody Seal** Y or N | **Received on Ice** Y or N | **Samples Intact** Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.*
This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 04Aug2016 Page 1 of 1
	Document No.: **F-MT-C-184-Rev.10**	Issuing Authority: Pace Montana Quality Office

Sample Condition Upon Receipt

Client Name: Pace MN

Project #: 10358621

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other: _____

Tracking Number: 6751 5818 9445

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No **Optional:** Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other: _____ **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☒ 160285052 ☐ 140279186 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun ☐ NA

Cooler Temp Read: 1.8 **Date and Initials of Person Examining Contents:** 8/13 MH

Cooler Temp Corrected: 1.3 **Biological Tissue Frozen?** ☐ Yes ☒ No

Temp should be above freezing to 6°C

				Comments:
Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☐ Yes	☐ No	☒ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☒ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl Sample # NA
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, WI-DRO (water)	☐ Yes	☒ No		Initial when completed: _____ Lot # of added preservative: _____
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased): NA				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Shannon Davis **Date:** 8/15/16

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

ATTACHMENT 6

Data Verification Report

DATA VERIFICATION

Bristol Environmental Remediation Services, LLC (Bristol), prepared this data verification report in accordance with appropriate U.S. Environmental Protection Agency (EPA) procedural guidance documents, evaluating the completeness, correctness, consistency, compliance with method procedures and quality control (QC) requirements, and identification of anomalous data. All laboratory results relate to site investigation activities executed at the Tower Standard Site on the Lac du Flambeau (LDF) Indian Reservation in Lac Du Flambeau, Wisconsin. Bristol performed this work under EPA contract EP W-12-009, Task Order (TO) 3012.

Analytical results for project samples presented in this report were in the laboratory work order below. All analytical results reported to the reporting limit with the exception of 1,1,2,2-tetrachloroethane and chloromethane, which were slightly above the PAL due to laboratory instrument sensitivities. Results of these two analytes were all ND for the project samples.

Sample Data Type (Date collected)	Laboratory WO#
Monitoring well groundwater sampling (August 2016)	10358621 (6 primary samples)
Monitoring well groundwater sampling (August 2016)	10358347 (3 primary samples)

AUGUST 2016 MONITORING WELL GROUNDWATER SAMPLE ANALYTICAL DATA QUALITY

The analytical results for the August 2016 monitoring well groundwater samples were reported in laboratory work orders 10358621 and 10358347. The data met project data quality objectives. In general, the data verification found most data usable as delivered by the analytical laboratory. Some data required qualification, and have been flagged appropriately. Data are presented on the data tables with appropriate qualifiers.

Six primary groundwater samples, one water trip blank (TB) and one rinsate blank were analyzed by Pace Analytical Services (Pace) in Minneapolis, Minnesota. All containers in the

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sample coolers were received at the laboratory intact and in acceptable condition. The sample receipt form for laboratory work order 10358621 indicated one of two coolers was received above the sample cooler temperature range of 0-6 degrees Celsius (°C) at 8.5 °C. The other cooler in this work order was received at 4.5 °C—both coolers had been packed by Bristol personnel with similar amounts of ice and following the same procedure. Unfortunately, Pace has no record of which particular samples were associated with the warmer cooler. Pace has informed Bristol that they had some new hires in their sample receiving department who unpacked and sorted the samples before any notes were made. Bristol requested the laboratory to initiate a corrective action, including re-training of personnel. Metals data would not be affected as those tests do not require thermal preservation. Project samples for volatile organic compound results were mostly below detection limits (ND) or less than the limit of quantitation (LOQ). The slight exceedance above the optimal cooler temperature range should not significantly affect the data; therefore, sample results were determined as usable.

Hold Time Compliance

A quality control issue impacted the SM 4500-H-B and SM 4500-NO2 B results. Aqueous samples for WO# 10358621011, 10358621004, 10358621005, 10358621007, 10358621006, and WO# 10358347001, 10358347002, and 10358347003 were analyzed 15 minutes past EPA-required hold time. Nitrite sample 10358621004 was also analyzed past the hold time. These affected samples were flagged H for pH and nitrite analysis, and considered estimated due to hold time exceedances for these analytes. Samples were considered estimated with a potential low bias.

Laboratory Quality Assurance (QA)/QC

Method 8260B: Laboratory control sample (LCS) recovery for bromoform (73%) was below the lower QC criteria. The matrix spike/matrix spike duplicate (MS/MSD) recovery for this

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analyte recovered within the QC criteria. All associated project samples have been flagged QL and considered estimated with a potentially low bias. Affected samples include 10358621001, 10358621002, 10358621004, 10358621003, 10358621005, 10358621006, and 10358621010.

Method 8260B: Acetone and toluene were detected in the method blank (MB) for analytical batch 430040 and 430041 and at concentrations greater than limit of detection (LOD), but less than the LOQ. Associated samples were B flagged for high estimated value due to contamination present in the MB. Affected samples include 10358621001, 10358621004, 10358621005, 10358621006, and 10358621010 for acetone. 10358621004, 10358621005, 10358621006, and 10358621010 for toluene.

Method 6020B: Barium, lead, and silver were detected in the MB for batch 429937 at concentrations greater than LOD, but less than the LOQ. Associated sample concentrations greater than LOQ were flagged B for high estimated value due to contamination present in the MB. Affected project samples include: 10358621004, 10358621005, 10358621007, 10358621006, and 10358621011.

Method 6020A: MS/MSD of sample 10358621007 in batch 429937 recovered low for iron and manganese. The LCS met accuracy requirements. Results for iron and manganese were flagged ML for quality issues with potential low bias for this sample.

Method 8260B: MS/MSD relative percent difference (RPD) of parent sample 10358621001 for tetrahydrofuran did not meet QC criteria. The associated parent sample concentration for this analyte was ND, therefore the data was considered unaffected.

Method 8260B: MS/MSD recoveries for several analytes of sample 10358621007 were outside the QC criteria. The MS/MSD RPD for chloromethane was also outside of the QC control limit. The parent sample (10358621007) for these analytes were mostly ND, with the

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exception of 1,2,4-trimethylbenzene, benzene, n-propylbenzene, and p-isopropyltoluene. These analytes were flagged MH for quality issue with potential high bias.

Method SM 4500-NO3 H: MS/MSD of parent sample 10358621007 recovery for nitrogen (NO_2 plus NO_3) was below QC criteria. The LCS met accuracy requirements. Result for this analyte was flagged ML for this sample, and was considered estimated with potentially low bias.

Data Summary

No QC issues resulted in qualifications to the mercury, sulfide as H_2S (calculated), sulfide and specific conductance data, and the results were usable as reported by the laboratory. The tip blank and rinsate blank results were all less than LOQ, and showed no cross-contamination impact. The field duplicate pair submitted within this sample delivery group was 1608TOWERMW16D and 1608TOWERMW18D. The field duplicate results met precision criteria.

On the basis of this evaluation, the laboratory followed the specified analytical method. The data quality was determined acceptable. Acceptable data are associated with QC data that meet all QC criteria or with QC samples that did not meet QC criteria but data quality objectives (DQOs) were not affected. Data quality meets established DQO established for this project. All data are suitable for their intended use. All reportable results were usable for project purposes.

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ATTACHMENT 7

Waste Disposal Paperwork

LINCOLN COUNTY LANDFILL 715-536-9636
Site: N4750 Landfill Lane, Merrill, WI 54452
Mailing: 801 N Sales St, Ste 201, Merrill, WI 54452
OPERATING HOURS:
Monday-Friday
SUMMER (May 1 - Sept. 30) 7:00 am - 4:00 pm
WINTER (Oct. 1 - Apr. 30) 8:00 am - 4:00 pm
1st and 3rd Sat. 8:00 am - Noon

DATE: 9/16/2016 TICKET #: 219530 Vehicle #:
Time In: 12:06 PM Time Out: 12:15 PM

BILL TO: SGS Envirnomental Contracting, LLC
HAULER : SGS Envirnomental Contracting, LLC

JOB : 16 - 61 B - EPA Region 5, Lac du Flambeau
PO# :

$25 ton exempt (CON24) 1.57 tn
Gross: 34540 Tare: 31400 Net Weight: 3140

Scale Notes: Charge Transaction

HAVE A NICE DAY!

Customer Signature _____
Weighed By: Administrator

I certify that the waste in this vehicle complies with the Wisconsin Recycling law and the landfill bans. I also agree to pay 1.5% per month Late payment charge after 30 days.